PROJECT ASSESSMENT

WATERMELON POND
Alachua and Levy Counties

CONSERVATION AND RECREATION LANDS PROJECT

prepared by
Land Acquisition Advisory Council Liaison Staff
and
Florida Natural Areas Inventory

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approved by
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CONTRIBUTORS

FIELD INSPECTIONS

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ASSESSMENT TEXT

Although development of the text for the CARL Assessments is a cooperative staff effort, the bulk of information for a given section is provided by the staff member(s) from the particular agency or agency division(s) that has the most expertise in the subject area addressed by that section. Consensus approval of the LAAC liaison staff determined the final form of the Acquisition/ Management Goals and Objectives. Compilation and editing of Assessments were done by Erik Johnson. Below is a list of the major sections in the Assessment and contributors to them.

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Key to Commonly Used Acronyms

CARL = Conservation and Recreation Lands Program
LAAC = Land Acquisition Advisory Council
RPB = Resource Planning Boundary
DCA = Department of Community Affairs
DEP = Department of Environmental Protection
DHR = Division of Historical Resources, Department of State
DOF = Division of Forestry, Department of Agriculture and Consumer Services
FNAI = Florida Natural Areas Inventory
GFC = Florida Game and Fresh Water Fish Commission

WATERMELON POND
PROJECT ASSESSMENT

ALACHUA AND LEVY COUNTIES

I. Introduction

The Watermelon Pond project (estimated post-inspection acreage, ~16,600) is of great importance, both regionally and statewide for the protection of xeric upland communities and associated ephemeral wetlands. The project encompasses a relatively large remnant tract of once extensive acreage of Sandhill and Scrub on the Brooksville Ridge. The importance of the Watermelon Pond tract to the preservation of Florida's biodiversity is especially great with the loss of the Sandhills portion of the Levy County Forest/Sandhills CARL project (also on the Brooksville Ridge).

No comparable system of xeric uplands and closely associated Depression Marsh wetlands, resulting in a diverse fauna, is protected in north-central Florida. Six animals and two plants tracked by the Florida Natural Areas Inventory (FNAI) are known to occur within the project boundaries. Further surveys are likely to locate occurrences of other rare species.

With only the western portion of the project as an exception, the entire Watermelon Pond tract is surrounded by piecemeal development and/or extensive agriculture and is in a highly fragmented landscape. Approximately 26% of the project is disturbed to the extent that FNAI does not classify that area as a natural community (this percentage may now be somewhat less following post-inspection FNAI deletions). Unless protected soon, the rapid encroachment of small acreage housing/trailer developments is likely to completely eliminate the xeric upland communities of north-central Florida in the near future.

II. Resource Description

A. Natural Resources

1. Natural Communities

This assessment of Natural Communities is based on the proposal application, data in the FNAI data base, 1991 aerial photographs, GFC LANDSAT land cover data, and site visits by an FNAI botanist on May 16, 17, and 18, 1993. Natural Communities within the project, listed in order of approximate aerial extent, include: Sandhill, Depression Marsh/Sandhill Upland Lake, Scrub, Xeric Hammock, Wet Prairie (?), and Sinkhole. The approximate acreage and percentage of the project comprised of each community type is listed in the table at the end of this section. Approximately 26% (5,571 acres) of the project is disturbed to the extent that FNAI does not classify that area as a natural community.

The Watermelon Pond project consists of an extensive tract of Sandhill and associated natural communities in southwestern Alachua and northeastern Levy counties. The project is of great importance to the protection of xeric upland communities in the state, both Scrub and Sandhill, particularly to those of the Brooksville Ridge physiographic region. These nearly endemic community types and their associated flora and fauna are rapidly vanishing from the

state because of the extensive development of these high, dry ecosystems. Additionally, acquisition and management of the extensive and seasonally interconnected wetlands system within the project is imperative to the survival of numerous amphibian species (see *Fish and Wildlife* section) that form a vital link in the food chain of north-central Florida herpeto- and avi-faunal species.

While outstanding examples of both Scrub and Sandhill natural communities are protected in adjacent counties (e.g., Marion and Gilchrist counties, respectively), these occurrences do not contain the floristic composition or community structure present in the xeric uplands of the Watermelon Pond tract. While asserting that the xeric uplands of the Watermelon Pond project are truly unique within Florida may be an overstatement, it is fair to contend that there are few other areas with these types of community (or plant association) systems currently protected within the state. The strategic importance of the Watermelon Pond tract to the preservation of Florida's biodiversity has been tremendously enhanced by the impending loss of the sandhills portion of the Levy County Forest/Sandhills CARL project. Alternatively, its overall importance has been somewhat diminished by the advent of the Longleaf Pine Ecosystem CARL project, particularly the Ross Prairie (Marion County) tract, and two other CARL projects: Etoniah Creek (Clay and Putnam counties) and Dunn's Creek (Putnam County). Except for Ross Prairie, however, no other comparable system of xeric uplands and closely associated Depression Marsh wetlands, housing a diverse and rapidly disappearing fauna, is protected in north-central Florida. With only the western boundary as a partial exception, the entire Watermelon Pond tract is surrounded by piecemeal development and/or extensive agriculture. Unless protected soon, the rapid encroachment of small acreage housing/trailer developments is likely to eliminate the xeric upland communities of north-central Florida in the near future.

The natural community component of this project is dominated by two xeric upland communities, Scrub and Sandhill. There is extensive intergradation between these two community types, however, apparently due to fire history and past land management practices that included logging often accompanied by significant disturbance of the groundcover. Imposed upon these two factors are likely topographic and edaphic (soil) influences that affect the development and existence of the predominant vegetation type. There are, too, often far more similarities between these two community types with regard to floristic composition and overall structure than would be expected in areas that likely received less human impact over the past one hundred or so years. These kinds of areas will be discussed in detail below. There are, however, many areas where there is excellent quality Sandhill, that although previously logged of the majority of its longleaf pine (*Pinus palustris)* overstory, still retains intact, diverse, and characteristic groundcover components for true Sandhill. Many of these latter areas are under Loncala Corporation ownership and management and will be discussed separately below.

The vast majority of the areas termed Scrub, however, appear for the most part to be degraded Sandhill. In these areas of the project, typical Scrub components such as Florida rosemary (*Ceratiola ericoides* - which often becomes a subcanopy dominant), myrtle and sand live oaks (*Quercus myrtifolia* and *Q. geminata*), and occasional sand pine (*Pinus clausa*), appear to have invaded formerly intact Sandhill after long periods of fire suppression that have nearly eliminated the wiregrass (*Aristida stricta*)-dominated groundcover or after logging and subsequent mechanical disruption of the groundcover. Considering the reported allelopathic ability of rosemary to eliminate competitors from its immediate sphere of influence, this species over time can likely create areas referred to in the project as "rosemary balds" that are virtually devoid of groundcover vegetation. The large areas of bare sand characteristic of this type of plant association also perpetuate rosemary's existence by reducing fuel loads

from closely adjacent areas. According to Michael Drummond of Alachua County, rosemary is a characteristic component of the flora of Brooksville Ridge Sandhill. Excellent quality Sandhill further south along the Brooksville Ridge in Citrus and Hernando counties, however, does not typically support sub-dominant, or even abundant, rosemary in the understory. It seems more likely in view of the known successional sequences for Scrub and Sandhill that Scrub components have invaded and are further displacing groundcover and herbaceous species in previously disturbed Sandhill. Otherwise, it appears that some unknown phyto-geographical and/or -sociological factors peculiar to the Sandhills of Alachua and Levy counties (as well as further west in Putnam County) are at work to create these "Scrubby Sandhills" that are prevalent within much of the Watermelon Pond project.

Because of the large size of the project, and the somewhat extensive Resource Planning Boundary (RPB) modifications to the tract, the entire project will be systematically discussed beginning with the northeastern corner of the project (*i.e.*, the Boggs ownership). The Boggs ownership consists of approximately three sections that form an "arm" that juts eastward along the extreme northeastern boundary of the project. Because much of this tract appeared disturbed (*i.e.*, grazed pasture land) on the aerial photographs, some consideration was given to recommending deletion of this portion of the project during the Resources Planning Boundary phase. It was decided, however, to leave this area in for assessment purposes. The bulk of the land was not readily accessible during the three days spent assessing the Watermelon Pond project. Locked gates, fences, and no trespassing signs all deterred entry. The afternoon of the third day, after meeting with Tom Mastin and several owners, I was told that access along a western road into the property could be obtained. I therefore entered the property along its northern and western boundary at several points by crossing a fence and walking some distance into the area. I also viewed much of the extreme eastern boundary of the Boggs ownership from along the railroad right-of-way.

In short, the eastern half (approximately one and a half sections) of the property is quite disturbed in that it is likely former Sandhill that has been converted to large blocks of improved pasture or has been mostly fire suppressed. Like much of north-central Florida with a similar land use history, these areas may be characterized as artificially created Xeric Hammock and are dominated by a secondary growth of laurel oak (*Quercus hemisphaerica*), persimmon (*Diospyros virginiana*), live oak (*Quercus virginiana*), black cherry (*Prunus serotina*), with a few scattered, remnant longleaf pines. Various shrubby species, including winged sumac (*Rhus copallina*), sparkleberry (*Vaccinium arboreum*), tooth-ache tree (*Zanthoxylum clava-herculis*), beautyberry (*Callicarpa americana*), dwarf pawpaw (*Asimina pygmaea*), as well as several vines such as cat briar (*Smilax bona-nox*), southern fox grape and summer grape (*Vitis rotundifolia* and *V. aestivalis*, respectively), are also present. The understory vegetation and groundcover are quite variable, but with wiregrass typically absent or very sparse. Numerous weedy species predominant what groundcover is present including sand blackberry and southern dewberry (*Rubus cuneifolius* and *R. trivialis*, respectively), bracken fern (*Pteridium aquilinum*), and Florida elephant's-foot (*Elephantopus elatus*), among others.

Further west on the Bogg's tract, however, in an area with a rather recent fire, lands on the east side of section 1 are mostly devoid of significant, natural Sandhill groundcover, while in the western half of this section, just across a north-south running fence line (apparently on the half section line and subject to different past land use/management), there is a moderately well-developed Sandhill herbaceous component, including a significant groundcover of pineywoods dropseed (*Sporobolus junceus*) as well as other expected species such as wild buckwheat (*Eriogonum tomentosum*), rabbit bells (*Crotalaria rotundifolia*), tread softly (*Cnidoscolus stimulosus*), tragia (*Tragia urens*), queen's delight (*Stillingia sylvatica*),

carphephorus (*Carphephorus corymbosus*), roseling (*Cuthbertia ornata*), silphium (*Silphium simpsonii*), twinflower (*Dyschoriste oblongifolia*), silver croton (*Croton argyranthemus*), tephrosia (*Tephrosia chrysophylla*), and golden aster (*Chrysopsis* aff. *mariana*), among several others. This area also has a good stand of longleaf pine present as a scattered overstory. There is, however, much intervening improved pasture, dominated by bahiagrass (*Paspalum notatum*), as well as several other weedy species, between the better and more natural areas of this tract. A very well developed Sandhill of good to excellent overall quality is present over approximately one section at the extreme western boundary of the Boggs' ownership (*i.e.*, the majority of section 2). This Sandhill is replete with a longleaf pine overstory, turkey oak and bluejack oak (*Quercus laevis* and *Q. incana*, respectively) subcanopy, and a fully intact and diverse groundcover including wiregrass, pineywoods dropseed, and numerous dicotyledons herbs (*i.e.*, forbs). If any of the Boggs property is to remain in the final project boundary, it is herein recommended that only the western half of their ownership be included.

Working northwestward around the top of the project (*i.e.*, the Metzger, Goring, and Barry's Ranch, Inc. ownerships) there is a tremendous amount of highly disturbed land. In effect, there are nearly three full sections that consist primarily of improved pasture and/or plowed agricultural fields, with some secondary Xeric Hammock, scattered parcels of remnant, fire suppressed Sandhill, and a few small Depression Marshes remaining in the intervening areas. Much of this land was inaccessible because of fencing and liberally posted no trespassing signs. These properties were viewed from along a north-south access road, however, and groundtruthing of the aerial photographs at various points allows for a reasonably accurate assessment of these entire lands.

The improved pastures in this northern area of the project consist of the usual bahiagrass-dominated vegetation with occasional weedy species such as dog fennel (*Eupatorium compositifolium*), southern dewberry, rhodesgrass (*Chloris gayana*), and southern gaura (*Gaura angustifolia*), present. Some of the Xeric Hammock areas are well developed and aesthetically pleasing, with vegetation as described above, but also including redbay (*Persea borbonia*) and yellow jessamine (*Gelsemium sempervirens*) among others. Within these ownerships, the Xeric Hammocks are particularly well developed north and northeast of the series of water bodies known as Watermelon Pond. It appears that the Xeric Hammocks have developed via succession from fire suppressed Sandhill natural community, although other interpretations are also possible. Although most of these Xeric Hammocks are likely not restorable to Sandhill, there is actually no need to attempt any restoration, as these areas are natural communities in their own right and present a varied landscape pattern that adds to the overall diversity of the project. It is possible that their proximity to the water bodies, as well as their development on often slightly lower slopes than Sandhills, has naturally protected them from frequent fire and so allowed their natural development. The small areas of Depression Marsh on these ownerships (known as Horseshoe Pond, a formerly loosely connected area of small Depression Marshes that are now severed by a hard dirt road) are not overly significant as they are currently surrounded by improved pasture and they constitute only the extreme periphery of the Watermelon Pond core area. The Depression Marsh/Sandhill Upland Lake system will be described below.

The remnant Sandhills within the Barry's Ranch ownership appear to have a varied fire history. Some areas have definitely been fire suppressed and have grown up into a fairly dense stand of laurel oak, live oak, turkey oak, persimmon, and black cherry, with greatly diminished groundcover (succeeding to Xeric Hammock), while other areas have a good groundcover of wiregrass, pineywoods dropseed, and other expected herbaceous components. From what could be observed, it is fair to say that the groundcover is highly variable, depending upon fire history, grazing pressure, and alteration to improved pasture. A few areas visible from the

road disclosed a good growth of longleaf pine, and it appears from the aerials that a significant stand of longleaf pine occurs within the southern half (section 4) of Barry's Ranch, Inc. It is impossible to accurately comment on the groundcover of the bulk of the Barry's Ranch Sandhill, however.

Concerning the northern boundary of the entire project, it is recommended that the northern section of Barry's Ranch, Inc. (section 33), the Goring ownership (southwestern quarter of section 34), and all but the southwestern quarter of the Metzger ownership (section 3), be eliminated from the project, unless there are compelling reasons to include these highly disturbed tracts. The extreme northwestern corner of section 4 (eighth of a section) is owned by the University of Florida Foundation, Inc., while a small sliver (ca. 10 acres) in the extreme southeastern corner of this section is owned by Alachua County and is maintained as Watermelon Pond Park. These latter ownerships, as well as the Outer ownership in the southern quarter of section 4, appear suitable for acquisition.

Along the northwestern edge of the original application boundary (note: all FNAI additions will be addressed separately below in a single section), the 240 acre parcel of Barry's Ranch, Inc. that lies in section 32 consists of good Xeric Hammock and Sandhill, with some improved pasture. It is recommended that this tract be acquired. The Wang ownership within this same section, however, consists entirely of a young slash pine (*Pinus elliottii*) plantation that is probably on its third rotation and, consequently, has no native groundcover. What herbaceous vegetation is present consists of various weedy species such as southern fleabane (*Erigeron quercifolius*), sand blackberry, and broomsedge (*Andropogon virginicus*), among a few others. This tract is not considered recoverable and, if at all possible, should be eliminated from state acquisition efforts.

Continuing south on County Road 337 along the northwestern edge of the original application boundary, lies a section (section 5) of Loncala Phosphate Co. ownership. This tract consists of good to excellent Sandhill, mostly undisturbed Depression Marsh/Sandhill Upland Lakes, and well developed Xeric Hammocks. In the main, this Sandhill area has excellent and intact groundcover of both wiregrass and pineywoods dropseed, as well as all of the expected herbaceous components for Sandhill as described above, including beard-tongue (*Penstemon australis*), bluestar (*Amsonia ciliata*), and sand milkweed (*Asclepias humistrata*), among others. This area shows evidence of fire in perhaps the past five years, supports a good overstory of longleaf pines, and exhibits a healthy crop of longleaf pine saplings. Some of the finest Sandhills in the project are within Loncala ownership and it is recommended that virtually all Loncala lands within the project boundary (both original and RPB additions) be acquired.

The Depression Marsh/Sandhill Upland Lake system is very well developed within this tract (*i.e.*, Loncala ownership, section 5) and includes the northwestern portion of Watermelon Pond proper. The reason that this system (*i.e.*, the series of intermittently [seasonally] connected water bodies known as Watermelon Pond) has been consistently referred to by a dual natural community name throughout this assessment is that it appears to exhibit characteristics of both natural community types. Because the water level was low (perhaps much lower than normal?) during the assessment, there was much dry to moist intervening land between the water bodies that had grown up in a mixture of weedy as well as more natural vegetation. As well, concentric bands of vegetation (similar to Depression Marshes that are more characteristic of Flatwoods systems) were often well developed as one proceeded from xeric upland areas down toward water's edge. Alternatively, these water bodies are definitely situated within Sandhills and are bordered by at least one other xeric community (Xeric Hammock), are relatively permanent, and support a suite of fresh water

species that are typical for true Sandhill Upland Lakes. In fact, the project lists Basin Marsh as one kind of natural community occurring within the boundaries of the tract and, depending upon where one wishes to draw the line between these similar and subtly intergrading community types, various names could be applied to this intricate wetland system. By whatever name one wishes to call these core wetland features, they are exceptionally aesthetically pleasing and are important both in terms of active aquifer recharge (Tom Mastin and Michael Drummond, pers. comm.) and to a diverse amphibian fauna (Paul Moler and Richard Franz, article in The Gainesville Sun, 10 May 1993). Their inclusion in the project is extremely important in terms of both community and species (including faunal) biodiversity, watershed and aquifer protection, and carefully regulated recreational opportunities.

The dominant vegetation of these "ponds" is highly variable depending upon time since last inundation, topography, soil(s), and perhaps grazing and fire histories, but typically consists of a mixture of sand cordgrass (*Spartina bakeri*), broomsedge, bushy bluestem (*Andropogon glomeratus*), various St. John's worts (*Hypericum crux-andraea* and *H. tetrapetalum*), prickly-pear cactus (*Opuntia humifusa*), gallberry (*Ilex glabra*), wax myrtle (*Myrica cerifera*), groundsel tree (*Baccharis halimifolia*), and sand blackberry on the upland edges. As one proceeds downslope, sand cordgrass, bushy bluestem, and shortspike bluestem (*Andropogon brachystachyus*) often become more frequent, followed by open areas that were apparently recently inundated. These latter areas support coinwort (*Centella asiatica*), several species of paspalum (*Paspalum urvillei*, *P.* aff. *boscianum* and *P. notatum*), pink sundew (*Drosera capillaris*), dog fennel, camphorweed (*Pluchea foetida*), yellow-eyed grasses (*Xyris ambigua* and *X. brevifolia*), rhodesgrass, beaked panicum (*Panicum anceps*), ludwigia (*Ludwigia suffruticosa*), pale meadow beauty (*Rhexia mariana*), yellow nutgrass (*Cyperus esculentus*), club moss (*Lycopodium prostratum*), and snakeroot (*Eryngium baldwinii*), among others. Along the water's edge, a mixed flora of torpedo grass (*Panicum repens*), water paspalum (*Paspalum repens*), ludwigia (*Ludwigia microcarpa*), barnyardgrass (*Echinochloa crusgalli*), marsh pennywort (*Hydrocotyle umbellata*), bantam-buttons (*Syngonanthus flavidulus*), rush (*Juncus scirpoides*), bog-buttons (*Lachnocaulon anceps*), St. John's worts (*Hypericum fasciculatum* and *H.* aff. *myrtifolium*), and fimbristylis (*Fimbristylis* aff. *autumnalis*), among others, occurs. Proceeding from water's edge into the deeper, more permanent water one encounters maidencane (*Panicum hemitomon*), pondweed (*Potamogeton* aff. *perfoliatus*), pickerelweed (*Pontederia cordata*), and white waterlily (*Nymphaea odorata*), among perhaps a few others.

The proposal application apparently refers to the drier, intervening areas between the more permanent water bodies as "wet prairies". As based on the FNAI natural community classification, and their species composition, hydrology, substrate, and probable fire regime, these areas of the project may indeed be considered as true Wet Prairies. Whether one wishes to refer to these areas as somewhat contiguous, more upland margins of Depression Marshes/Sandhill Upland Lakes or as Wet Prairies does not diminish their significance to the overall project.

Section 8, designated as "D-1" in Attachment 2, should definitely be deleted from the project. It is far too disturbed and fragmented with numerous houses, trailers, pastures, and a particularly weedy flora. Based on apparent fence line placement, it is possible that the extreme northeastern corner of this section (that area containing a significant portion of Watermelon Pond) is under Loncala or Gladman ownership and should perhaps be added to the project as it appears little disturbed.

Further south along CR 337, the section situated at the extreme southwestern corner of the broad northern portion of the original application boundary (*i.e.*, section 17 in Loncala

ownership) is a young [perhaps 10-15 year old] slash pine plantation. As stated in the project, the northwestern quarter of this section has had the groundcover virtually completely destroyed through past plowing for agriculture. In the remainder of the section, however, the groundcover is variable but mainly intact, and consists of a sparse to moderate matrix of wiregrass and pineywoods dropseed in which various Sandhill forbs (as well as various weedy species) still survive. With expeditious removal of slash pines, prescribed fire, and replanting of the area with a less dense stand of longleaf pines, the area is marginally recoverable as a natural Sandhill community. As it appears to be a resource with a reasonably good chance of successful restoration and is under Loncala ownership, it is recommended that the entire section be acquired.

Along the southern edge of the broad northern portion of the original application boundary, within the Gladman, Matson, Miller, Burch, and additional Loncala ownerships, is an excellent and high quality mosaic of Sandhill, Xeric Hammock, and Depresssion Marsh/Sandhill Upland Lake natural communities. Some of the best wiregrass/pineywoods dropseed-based Sandhill groundcover seen within the project occurs in these sections, particularly within the Burch and Loncala ownerships. The Burch property recently experienced a "barbecue cut" in which some of the turkey and bluejack oaks were thinned out by fire wood vendors. This cut has indeed helped to preserve the groundcover within the tract by opening up the canopy and mimicking natural disturbance to some degree. There are few, if any, mature longleaf pines remaining on the Burch tract, but there are abundant saplings that will begin to form a natural canopy in about 20 years. The southernmost jutting piece of Loncala ownership in this area of the project (northeastern portion of section 21) is a young, very unhealthy slash pine plantation growing over an understory of abundant rosemary shrubs. The area appears to have undergone considerably more site preparation than is typical of the other Loncala properties seen within the project, creating much open, bare, and disturbed ground that was readily colonized by the rosemary. The groundcover within this plantation area is quite variable, but mostly poor to moderate. With a quick and concerted effort, this area appears to be marginally restorable.

The Loncala property along the southeastern edge of the broad northern tract of the project (*i.e.*, section 15, or that area just west of where the narrow corridor that connects the northern tracts to the southern parcels begins) contains truly outstanding Sandhill with highly intact groundcover and all expected forb components. As well, some near-pristine Wet Prairie areas that form an extensive series of wetlands between the seasonal pond system (*i.e.*, Depression Marsh/Basin Marsh, not Sandhill Upland Lake) referred to as Barrel Pond, occur within this area of Loncala, Doughtie, and West ownerships.

The constricted connector between the broad northern tract and the narrow southern parcels consists of four ownerships (*i.e.*, Bates, West, Ocala Manufacturing Co., and McClain) and supports good to excellent quality Sandhill, some Xeric Hammock, Depression Marsh, and Wet Prairie (the latter two communities in the Gosman Pond area). Although quite narrow and probably needing to be broadened by acquisition of additional lands as recommended in the RPB phase, this corridor should definitely be acquired as it contains both high quality xeric and wetland habitats.

The three and one half sections of land that form the major north-south connection between the northern parcels and the extreme southern boundary tracts of the original proposal contain numerous ownerships, including the large ownerships of E.M. Burch, C.M. Mabry, and Loncala Phosphate. Overall, this area of the project consists of excellent quality Sandhill, replete with all necessary groundcover attributes, often intergrading to Scrub. The Scrub is often the unusual type discussed at the beginning of the assessment ("Scrubby Sandhill"),

containing abundant rosemary and turkey oaks (but with an absent or infrequent overstory of longleaf pines) over a sparse graminaceous and forb groundcover that is of somewhat intermediate character between Sandhill and Scrub. As discussed above, this type of "Scrubby Sandhill" is probably the result of past, poorly controlled logging practices that greatly scarred the soil surface, followed by a long period of fire suppression. These areas typically support abundant rosemary and turkey oaks (the former forming "balds" [see below], while the latter may form areas of "turkey oak barrens" where turkey oaks are the dominant subcanopy component [there is rarely a longleaf pine overstory in these scattered barrens]) over a variable shrub and groundcover of Sandhill and Scrub elements, including saw palmetto (*Serenoa repens*), winged sumac, wild buckwheat, persimmon, silver croton, silkbay (*Persea humilis*), sand live oak (*Quercus geminata*), gopher apple (*Licania michauxii*), arrowfeather (*Aristida purpurascens*), flag pawpaw (*Asimina obovata*), sandspur (*Krameria lanceolata*), hair sedge (*Bulbostylis warei*), corkscrew threeawn (*Aristida gyrans*), little bluestem (*Schizachyrium scoparium*), shortspike bluestem, and false gromwell (*Onosmodium virginianum*), among others.

Even after carefully examining these areas, however, it is impossible for me to accurately reconstruct their fire history or what their predominate vegetation may naturally have been. The close juxtaposition of more typical Scrub and of some "rosemary balds" (*i.e.*, areas dominated almost exclusively by a shrubby layer of rosemary and with few herbaceous elements present, but often with a thick carpet of reindeer moss [*Cladonia leporina* and *Cladina evansii*]), leads me to conclude that at least some of these areas are true Scrub natural communities. Whatever the historic relationships of the Sandhill and Scrub communities of this area may have been, it is accurate to say that the majority of the lands within this three and one half section parcel contain some of the finest xeric uplands of the entire tract, in terms of overall diversity, quality, community structure, and groundcover constituents.

Unfortunately, within section 36 of this Sandhill/Scrub area, there has been much recent clearcutting of the forestry resources, including both oak and pine species. Much of this section has been recently, and in some cases for several years, planted in sand pine - frequently over a large amount of downed and decaying timber. Most of the groundcover of this particular section has been largely destroyed, but if acquired soon and managed properly it may be recoverable over the long term. There are also some small areas of marginally improved pasture within this section, with some adjacent areas even bedded and now a mass of weedy species including hastate-leaved dock (*Rumex hastatulus*), sand blackberry, dog fennel, winged sumac, broomsedge, annual garden phlox (*Phlox drummondii*), and white sweet clover (*Melilotus alba*), among others. Fortunately, however, this ecologically highly disturbed section is situated between sections on its north and south that still retain excellent Sandhill and Scrub resources, particularly a rich and predominately intact groundcover in the former community type. On the downside, again, much of the area is for sale in small acreage lots by Etherington Realty, (904) 374-4542 ("$199 down, $100 month").

It was not possible to gain access to the section that forms a small "wing" due east of the Mabry ownership (section 25) and south of SR 24. This section (section 30), owned by the O'Steen Brothers Incorporated, was unfortunately fenced and locked. It is stated in the project (citing a KBN survey of Alachua County) to contain the finest scrub remaining within Alachua County. Based upon the aerial photographs and a direct comparison with other ground-truthed scrubs in the immediate vicinity, this section probably contains all that it is reported to in terms of high quality Scrub natural community. An active sand mine on-site (visible on aerials) is the most imminent threat to this section. Because of its natural resources and immediate threat, it is recommended that efforts be made to acquire this

section as soon as possible. Unfortunately, an Alachua County landfill is located just along the northern border of this tract (section 19) and the stench from the landfill is so overpowering that it would probably limit most recreational activities on this parcel.

The southern and easternmost tracts of the original application boundary are predominately owned by Loncala Phosphate Co. Overall, these areas represent outstanding Sandhill and "Scrubby Sandhill" vegetation. The groundcover is excellent and there is a variable, often very good, overstory of longleaf pines present, particularly in section 7. As far as section 8 is concerned, the Patterson ownership should probably be deleted (improved pasture, house, barn, sheds, etc.), while the rest of the section presents an area rapidly succeeding from Xeric Hammock (former Sandhill?) toward an Upland Mixed Forest. The predominate forest vegetation consists of sweetgum (*Liquidambar styraciflua*), live oak, laurel oak, some pignut hickory (*Carya glabra*), both loblolly and slash pine (the former is *Pinus taeda*), and some black cherry, among others. There is not much in the way of significant groundcover as the area is overgrown and has long been fire-suppressed. It is also possible that this area has long been a natural Upland Mixed Forest community and thus never had appreciable xeric upland groundcover. In any event, section 8 could be deleted without adversely affecting the natural resources aspect of the project.

Overall, the author of the project constructed a reasonably good boundary, based both on ownerships and natural resources. There are on the immediately adjacent periphery of the project, however, some xeric upland resources that are just as significant as those within the original boundary. Because of the enormous and immediate threat to xeric upland habitats (particularly Sandhill and Scrub) throughout the state, it is, from a natural resources protection viewpoint, not only justified but imperative to incorporate additional high quality examples of these community types into the project's final boundaries. For this reason, several additions were made by FNAI during the RPB phase, additions that specifically targeted good to high quality xeric uplands and that made the boundary of the project much more workable and defensible in the long-term.

The following narrative is a brief discussion of each of the FNAI RPB additions.

FNAI addition in S 1/2 of section 31, T10S, R17E and section 6, T11S, R17E (A-1 in Attachment 2): This area is in rough-planted slash pine plantation (~12-15 year old). The plantation was completely fenced and full access was not possible. This plantation is in far better ecological condition in terms of remnant groundcover than the one within the original application boundary, just east of it across CR 337 (*i.e.*, the Wang ownership). There are scattered clumps of at least one important graminoid groundcover component (pineywoods dropseed) present, as well as several forbs characteristic of Sandhill. The plantation (*Loncala* ownership?) is very likely recoverable to natural Sandhill with prompt harvesting of slash pines, prescribed fire, and replanting with longleaf pines. The northern two thirds section 6 consists of good to excellent quality Sandhill, that although showing some signs of disturbance (*i.e.*, weedy species) still has a highly intact groundcover and numerous characteristic herbaceous species (at least 18 typical Sandhill forbs observed). The longleaf pine overstory is also variable, in some places virtually logged out, in others quite good. Although much of this tract has not been burned in some time, the limited disturbance created by past logging has partially mimicked fire and allowed the groundcover to persist in an open, pineland setting. Unfortunately, there are approximately a dozen houses and/or trailers within this tract, but the vast majority of the property is unoccupied.

FNAI addition in section S1/3 section 6, T11S, R17E (A-2 in Attachment 2): As previously known from the aerial photographs, this area is an agricultural field. It was included in order to have a reasonable boundary should adjacent additions to the north and south prove to be worthy of acquisition (which they indeed did). This area has apparently been plowed and cultivated for years, has no native vegetation that is non-weedy, and is not restorable in the foreseeable future. Depending upon final boundary considerations, this relatively small acreage parcel may be recommended as an outparcel.

FNAI addition in section 7 of T11S, R17E (A-3 in Attachment 2): This section is rough-planted to slash pine plantation (~12-15 years old) and is under *Loncala* ownership. During harvesting and planting there was little disturbance to the Sandhill groundcover which is still reasonably intact. The moderately diverse groundcover is in jeopardy of being eliminated within the next five or so years because of shading and fire suppression; at this point, however, it is still recoverable if steps similar to those suggested for section 31 above are taken soon.

FNAI addition in sections 18 and 19 of T11S, R17E (A-4 in Attachment 2): The northern part of section 18 is in moderately-disturbed to good quality Sandhill (with many weedy species along the edges). Away from the road, there is good to very good groundcover, but there is some limited sand pine invasion beneath a variable longleaf pine overstory and portions of the area are succeeding to Xeric Hammock due to lack of fire. Although there are definitely good Sandhill resources within this addition, there are numerous houses/trailers (18 or so - mainly of the latter) within the northern part of this section. The lower half of the section has some good xeric upland resources along its western boundary, but has a large pasture, grazed with some 100 head of cattle, and a nice looking (*i.e.*, moderately expensive) ranch house and associated facilities. The pasture is definitely not recoverable to any natural community within our lifetimes. Section 19 contains good and recoverable Sandhill vegetation, with mostly intact groundcover, and numerous trailers and other semi-permanent structures (perhaps 20). Despite fire suppression for perhaps 20-30 years (as judged from the size of the turkey and bluejack oaks and extent of rosemary colonization), the groundcover is still in good condition. Because there are good to high quality Sandhill resources within this addition, it would be desirable to attempt to acquire those that are available. It is recommended, however, that the pasture and farm house be deleted from the final boundary.

FNAI addition in section 29 of T11S, R17E (A-5 in Attachment 2): This recommended addition consists of about 60% good to excellent quality Sandhill and 40% improved to marginally improved pasture (but all pasture areas unrecoverable in the short-term). The Sandhills in this section are some of the finest in terms of structure (*i.e.*, vegetational strata and openness) and species composition in the entire project. They have a lush, fully intact, and diverse groundcover with a good longleaf pine overstory, yet are being destroyed by piecemeal development; there are currently over 20 structures within this addition. Those natural parcels that can be acquired within this section should be acquired.

FNAI addition in sections 21 and 28 of T11S, R17E (A-6 in Attachment 2): This addition, consisting of portions of these sections, contains outstanding Sandhill in terms of community structure, species composition, and intactness and richness of groundcover components. The few roads provide ready fire breaks. This addition is also quickly succumbing to piecemeal development, particularly mobile homes on small acreages. There are approximately 30 structures within this section and a half of land. If it is possible to acquire significant blocks within these sections, their acquisition should be vigorously pursued. Some of the tracts within this area are offered by Miller Real Estate, Inc., Bronson, Florida, (904) 486-2966.

FNAI addition in S of sections 15, 22, 27, and 23 of T11S, R17E (A-7 in Attachment 2): This addition encompassing the southern portion of section 15, all of section 22, northern fourth of section 27, and the western half of section 23, contains excellent and high quality Sandhill, some of which has succeeded to Xeric Hammock. There is also one small improved pasture in the addition and some of the inhabitants have created clearings of about five to 10 acres around their residences. The addition supports excellent quality Sandhills. There are approximately 30 houses/trailers within this addition, and without some creative and relatively rapid acquisition efforts, these areas will be lost. Some of the lands within this tract, especially the southernmost portions, may be available through University Oaks, (904) 375-4152.

FNAI addition in section 26 and 35 of T11S, R17E (A-8 in Attachment 2): Although containing good to high quality Sandhill, piecemeal development and intervening improved pasture will make acquisition within this addition difficult. Depending upon ownership, it is recommended to acquire as much of this land as is feasible.

FNAI addition in sections 12 and 13 of T12S, R17E and SW1/4 of section 18 in T12S, R18E (B-1 in Attachment 2): Except for a few (perhaps a dozen) trailers and other semi-permanent structures within this addition (portions of three adjoining sections that total over a section and a half), this tract contains as outstanding examples of Sandhill and "Scrubby Sandhill" as previously described for the original application boundaries. These lands should be acquired as they represent rapidly vanishing xeric uplands that may be unique to the northern Brooksville Ridge physiographic region. At least some acreage is available from Levy Realty, (904) 528-6670, and other through an unnamed realtor at (407) 388-3662. Some acreage in the extreme southeastern portion of the B-1 addition is called North-South Estates as is being offered by Penn-Flo Real Estate out of Bronson, (904) 486-2582.

FNAI addition in N1/2 of section 17 of T12S, R18E (B-2 in Attachment 2): This area was added during the RPB phase in order to be able to assess the resources present (although they were thought questionable at the time) and to provide for a more defensible boundary. Upon assessment, about three fourths of this area has been found highly disturbed (including a slash pine plantation that was added to determine if it retained significant groundcover). It is recommended that this area be deleted.

FNAI addition in section 31 of T11S, R18E and sections 5, 6, and 8 of T12S, R18E (B-3 in Attachment 2): Because of excessive disturbance (pastures, fire suppression, obtrusive logging practices, and houses), it is recommended that the entire eastern half of this RPB addition (northeast corner of section 8 and eastern three quarters of section 5) be eliminated. Except for numerous houses/trailers in the remainder of sections 5, 6, and 31 (those parts within the RPB addition), the xeric upland resources are good to excellent. Groundcover varies from good to moderate to excellent, while some of the best remaining longleaf pine resources (even occasional flat-topped individuals) were encountered in the northern part of section 6 and the southern portion of section 31. Despite the ecological value of the resources present, it is doubtful that much of this area can be successfully acquired because of the excessive number of houses. Nonetheless, other than that area previously recommended for deletion, acquisition efforts in this area are strongly suggested. In order to be realistic, however, this area can be relegated to a "Phase III" acquisition priority.

Summary Table of Natural Communities
(Acreages and percentages are estimates)

Natural Community	FNAI Global/State Rank*	Acres	%
Sandhill	G2G3/S2	11,337	54%
Depression Marsh/	G4?/S3	1,793	8%
Sandhill Upland Lake	(G3/S2)	"	"
Scrub	G2/S2	1,280	6%
Xeric Hammock	G?/S3	1,089	5%
Wet Prairie?	G?/S4	?	?
Sinkhole	G?/S2	60	<1%

* Please refer to **Attachment 1** for interpretation of FNAI element ranks.

2. Forest Resources

The Watermelon Pond project contains a variety of forest types, including upland slash pine forests, upland mixed forest, longleaf pine sandhills, sand pine/oak scrub, and xeric hammock. The *Natural Communities* section of this assessment provides a general description of the forest resources of this project. This section will not repeat that description but will address the forest resources from a multiple-use and ecosystem management perspective.

According to the USDA Soil Survey, portions of this project have an average site index (base age 50) of 80-90 for loblolly pine, 70 to 90 for slash pine, 60 to 80 for longleaf pine, and 75 for sand pine. Site index is a measure of site productivity which indicates the height a dominant or codominant tree would be expected to reach within a given time period, in this case 50 years. On this project, for example, a dominant or codominant slash pine or loblolly pine would be expected to reach a height of 70 to 90 feet or 80 to 90 feet respectively, within 50 years, while a longleaf pine might attain a height of 60 to 80 feet, and a sand pine would be expected to reach a height of 75 feet. Productivity for these soils would be considered high to very high for loblolly pine, medium to high for slash pine, low to high for longleaf pine, and medium for sand pine.

As indicated above, portions of this project are comprised of manageable forestlands which could be utilized to help offset operational costs. Where practical, these resources could be carefully managed using appropriate silvicultural techniques as recommended by the Division of Forestry (see *Acquisition/ Management Goals and Objectives*). Plantations planted to off-site pines should be restored to longleaf pine. Natural regeneration should be utilized where practical and care should be taken to protect any rare or sensitive resources.

3. Vascular Plants

This assessment of vascular plants is based on the proposal application, data in the FNAI data base, and site visits by an FNAI botanist on May 16, 17, and 18, 1993.

The following table lists rare species of vascular plants recorded from the project. Federal, state (FL Department of Agriculture and Consumer Services), and FNAI ranks (see Attachment for interpretations) are included.

Species/Common Name	FNAI	Federal	State
Coelorachis tuberculosa	G3/S3	C2	N

(Piedmont jointgrass)

Persea humilis (scrub bay)	G4/S3	3C	N

The importance of these species to plant conservation in Florida is moderately significant. While there are only nine recorded occurrences in the FNAI data base for the Piedmont jointgrass in Florida, six of these are protected (e.g., Jonathan Dickinson State Park, Savannas State Reserve). The occurrence within the Watermelon Pond tract, however, is the furthest north in Florida for which FNAI has verification and is the only one in Alachua County. It should be noted, too, that this rare species is a candidate for federal listing.

The near-endemic scrub bay has over 200 known occurrences in Florida. While the vast majority of these are on the Central Ridge, and many occurrences are protected, the presence of this species in the Watermelon Pond project represents both the only known population for Alachua County and the northernmost population recorded by FNAI in Florida. While the Watermelon Pond project is not tremendously rich in rare plant species, it is clear that it contains the northernmost populations of at least two species and thus that it may possess some unusual ecological and/or habitat requirements.

4. Fish and Wildlife

This assessment of fish and wildlife is based on information in the FNAI data base, data in the Game and Fresh Water Fish Commission wildlife habitat data base, information in the proposal application, and site visits by FNAI and CARL staff.

The combined upland/wetland complex of this site is especially important to wildlife; the xeric uplands represent the last large undeveloped tract in Alachua County and provide the best opportunity to preserve the native sandhill fauna in this rapidly developing region.

The following rare animals have been recorded on-site (FNAI global and state ranks, federal and state statuses given in parentheses):

Cicindela hirtilabris	peninsular tiger beetle	(G3?/S3?;N;N)
note: excellent population, 1990		
Drymarchon corais couperi	eastern indigo snake	(G4T3/S3;LT;LT)
note: at least 3 specimens, 1970's		
Gopherus polyphemus	gopher tortoise	(G3/S3;C2;LS)
Falco sparverius paulus	SE American kestrel	(G5T3T4;S3?;C2;LT)
note: several territorial pairs, 1982, on or near site		
Grus canadensis pratensis	FL sandhill crane	(G5T2T3/S2S3;N;LT)
note: 3-4 nesting pairs, 1983-1985		
Sciurus niger shermani	Sherman's fox squirrel	(G5T2/S2;/C2;LS)
note: small population, mid 1980's		

The following rare animals may occur on-site, given their known distributions and habitat requirements (FNAI global and state ranks, federal and state statuses given in parentheses):

Rana capito	gopher frog	(G3/S3;C2;LS)
Alligator mississippiensis	American alligator	(G5/S4;LTSA;LS)
note: reported in proposal application		
Pituophis melanoleucus mugitus	Florida pine snake	(G5T3?/S?;C2;LS)

note: 4 specimens within 2 mi, 1950's-1977

Stilosoma extenuatum	short-tailed snake	(G3/S3;C2;LT)
Aphelocoma c. coerulescens	Florida scrub jay	(G5T3/S3;LT;LT)

note: reported in proposala application; FNAI has records within 1 km, 1980

Egretta tricolor	tricolored heron	(G5/S4;N;LS)
Podomys floridanus	Florida mouse	(G3/S3;C2;LS)

Potential wildlife usage was also determined by correlating the CARL site boundaries with the detailed potential habitat maps of over 30 focal wildlife species. Focal species were selected based on: whether habitat requirements for the species could be described using the land-cover maps developed for these analyses and other geographic data sets; whether the species was rare, exhibited large home-range requirements, or might be susceptible to increasing fragmentation of contiguous forest tracts; whether the species was closely tied to some specific rare plant community so that protection plans for a focal species might provide greater protection for these communities; or whether the species exhibited declining populations or special habitat requirements, and were the subjects of special studies that resulted in precise data on known occurrences. The habitat maps were generated through species by species analysis of a variety of factors including occurrence data, species/land cover associations, habitat area requirements, proximity to known population centers, avoidance of select cover types, and other features. Based on this analysis, the project site, if protected, contains suitable habitat of sufficient areal extent to be of potential long-term importance to the following species: American swallow-tailed kite, mottled duck, southern bald eagle, fox squirrel, gopher tortoise, sandhill crane, and southeastern kestrel.

A more complete list of those wildlife species that may occur on the project site based on the predominant Landsat cover types, known ranges of the species, scientific literature available, and county in which the project is located is included in **Appendix 1**.

A printout summarizing LANDSAT vegetation cover type data for this project, derived from analysis of LANDSAT imagery (LANDSAT thematic mapper data for 1993 CARL projects collected from 1985-89), is attached as **Appendix 2**. Twenty-two (22) cover type classes are recognized by GFC Environmental Services and include 17 natural vegetation types, one class for water, and 4 classes that are most often associated with disturbed areas. As reference, a copy of the LANDSAT vegetation cover type map and color-coded key will be kept in the Project Assessment file of the DEP CARL office.

5. Water Resources

Surface Water Resources

Watermelon Pond is a system of seasonally connected freshwater ponds, marshes and wet prairies occupying depressions formed from the uneven topography of the Brooksville Ridge. Watermelon Pond is the largest of several named water bodies, although all are shallow, and some are merely slight depressions in flat areas. Watermelon Pond has a surface area of 526 acres. Average depth is 5 feet and volume is 2,586 acre-feet. The water level of the ponds fluctuates in response to rainfall and surface runoff. There are no surface streams draining into or out of the basin. During the rainy season or periods of high water, the ponds intergrade to form a broad, shallow basin marsh with deeper areas as marsh lakes. The Watermelon Pond system might be classified as a highland marsh, basin marsh, or sandhill upland lake.

Many ephemeral wetlands occur within the project as well. These serve an important function in the breeding cycle of many amphibians. Because these wetlands are nearly or completely dry during part of every year, they are easily and often converted to other uses, such as pasture. The pond system is generally mesotrophic and possesses good water quality. Present threats to water quality are minimal, given the rural, undeveloped nature of the surrounding area. However, an increase in more intensive agricultural practices or waterfront development could cause serious nutrient-loading problems.

Groundwater Resources

The project area has an uneven, solution-ridden limestone substrate that is overlain by a limited thickness of highly permeable sediments. Infiltration of rainwater is rapid, and solution of the underlying limestone plays a major role in determining topography. A thin, clayey layer underlies some of the area and may contribute to sustaining a minimum water level in some ponds. In this area of the two counties, the Floridan Aquifer is unconfined. There is unrestricted movement of water between the limestone and the overlying surficial sands. The groundwater level is under water table conditions, either at the top of the aquifer or in the surficial sediments, depending strictly upon local conditions.

This is the major aquifer recharge area in Alachua County. With the absence of surface drainage, water percolates downward through the porous sands and directly recharges the aquifer. The rate of recharge is high; approximately 10 inches per year. This also means that the groundwater supply is highly susceptible to contamination. Improper disposal of hazardous wastes, including pesticides or other contaminants, would pose a serious threat to the water resources of this project area. A review of EPA's CERCLIS and, which lists known or suspected hazardous waste contamination sites in Florida, was conducted. No sites were located within the current project boundary. However, the project area is not known to have been subjected to an environmental audit: a systematic, professional survey to locate such sites. Most large, remote areas of land are subject to trespass and indiscriminate dumping that could introduce substances such as asbestos or urea-formaldehyde from insulation, lead from batteries, mercury from lighting elements, waste oil or other potentially hazardous materials. The illegal disposal of any hazardous materials within the project area is not determined by this assessment; however, no evidence of such was observed during site visits.

Jurisdiction

The waters of the Watermelon Pond system and contiguous wetlands are Class III waters of the State, meaning that their intended uses are recreation and the propagation and maintenance of a healthy well-balanced population of fish and wildlife. The Department of Environmental Protection's wetland permitting jurisdiction is determined primarily pursuant to Section 403.817, Florida Statutes, using the vegetative index in Chapter 17-301.400, Florida Administrative Code, which delineates the landward extent of waters of the state. The Suwannee River Water Management District and the U.S. Army Corps of Engineers have jurisdictions similar to that of DEP's in the project area. Water management districts have regulatory authority over certain activities affecting water quality and the withdrawal of groundwater. Also, the Trustees of the Internal Improvement Trust Fund may exert a claim of sovereign ownership over submerged lands which are within the ordinary or mean high water line of a navigable and/or meandered water body. Fifteen percent of the project area is wetlands that appear to be subject to DEP's jurisdiction.

Acquisition of Watermelon Pond would not provide a buffer to any Outstanding Florida Water. No springs are found within the project area. The project area encompasses the entire drainage basin of a significant lacustrine community. The project has significant groundwater

and water management benefits. The project possesses attributes that would qualify it as a Save Our Rivers project, although it is not proposed as a joint acquisition with the Suwannee River Water Management District.

6. Coastal Resources
Not applicable.

7. Geologic Resources
Watermelon Pond is situated on a karstified portion of the Brooksville Ridge geomorphic zone. There are no outstanding or significant geologic features present in this parcel.

8. Summary of Natural Resource Merits
The Watermelon Pond project (~16,600 acres) is of great importance for the protection of xeric upland communities and associated ephemeral wetlands. The project encompasses a relatively large remnant tract of Sandhill and Scrub on the Brooksville Ridge. The importance of the Watermelon Pond tract to the preservation of Florida's biodiversity is especially great with the loss of the Sandhills portion of the Levy County Forest/Sandhills CARL project.

No other comparable system of xeric uplands and closely associated Depression Marsh wetlands, resulting in a diverse fauna, is protected in north-central Florida. Six animals and two plants tracked by the FNAI are known to occur within the project.

B. Outdoor Recreation Resources

The Watermelon Pond project can support a variety of resource-based recreational opportunities such as hiking and nature trails, horseback riding trails, camping, both RV and primitive camping, environmental education, picnicking, boating, canoeing, freshwater fishing and bicycling.
With the exception of electric motors, use of the ponds in the project should be limited to nonmotorized boats and canoes. Air boats should not be allowed. The latter often has a considerable effect on wildlife, which is a significant aspect of this project. Protection of water quality of the lakes is important. Hence, all upland activities should be planned and monitored so as not to adversely affect this sensitive resource.

Of the indicated activities, the 1989 Florida Statewide Comprehensive Outdoor Recreation Plan identifies 1995 needs for freshwater fishing and horseback riding for the two regions in which the project is located.

C. Archaeological and Historical

A review of the information contained in the Florida Site File has determined that there are no archaeological or historical sites recorded within the Watermelon Pond project area. This lack of sites is not considered significant because the area has never been subjected to a systematic, professional survey to locate such sites. However, data from environmentally similar areas in Alachua County indicate that there is good potential for archaeological sites to be located in the subject area, especially around the pond.

When compared to other acquisition projects, the archaeological and historical resources of the subject tract is considered to be low to moderate.

III. Vulnerability and Endangerment

Vulnerability - Most of the upland areas of the project are vulnerable to degradation or destruction by development, clearing for pastureland or other agricultural purposes, or management for silvicultural purposes that do not emphasize maintenance of natural communities. The Sandhill communities are susceptible to loss of groundcover by suppressing fire.

Endangerment - The area around Watermelon Pond in both Alachua and Levy counties is characterized by ranchette type development, agriculture, and mobile homes. The future land use designations of the site are typically low-density residential or agriculture. Given the current development patterns of the area, it is likely that the project site will ultimately be subdivided and converted to agricultural and low-density residential uses if not protected by public ownership.

IV. Acquisition/ Management Goals and Objectives

The following Goals and Objectives are the result of consensus approval of the Land Acquisition Advisory Council liaison staff. The five enumerated goals (in bold-face) represent the CARL acquisition criteria as amended in the Florida Statutes (1992 HB-315-H), while the objectives define resource concerns known to be specific to this project and identify appropriate strategies for the management of those resources.

1. **To conserve and protect environmentally unique and irreplaceable lands that contain native, relatively unaltered flora and fauna representing a natural area unique to, or scarce within, a region of this state or a larger geographic area.**

   a. The Watermelon Pond project is of great importance, both regionally and statewide for the protection of xeric upland communities and associated ephemeral wetlands. The project encompasses a relatively large remnant tract of once extensive acreage of Sandhill and Scrub on the Brooksville Ridge. Very little Brooksville Ridge Sandhill has been, or is likely to be, acquired in the Levy County Forest/ Sandhills project.

   To the greatest extent possible, the existing natural communities shall be managed to perpetuate (or restore if necessary) natural species composition and relative abundances, natural age structure, and natural processes. Fire dependent communities have suffered from fire exclusion and will benefit from the re-introduction of fire, particularly growing-season fire.

   Use of prescribed fire shall be a major component of management for this project. Under natural conditions in fire-adapted natural communities, species composition and relative abundances were maintained, in large part, by lightning-set fires. Such fires occurred in each community type with characteristic and varying average frequencies, depending on factors including soil type, fuel loads - burnable biomass, amounts of rainfall, and lightning strike frequency). Fires occurred in all seasons, but, predominantly during the spring and summer months. The regularity of prescribed fire in a natural community can have profound effects on the species composition and relative abundances, particularly plants. For example, burning a site every two years in mid-May would select for species with life cycles, reproductive strategies, and other demographic characteristics most suited to regular burning in mid-May. Accordingly, a prescribed fire regime should be established for this project which incorporates the following to the greatest extent practical:

   1) Fire should be introduced with average frequencies appropriate to each community type [the *Guide to the Natural Communities of Florida*, the FNAI and Department of Natural Resources (DNR), 1990, provides average frequency estimates, and may be useful as a reference],

2) Once fuel loads are reduced (most likely via winter burning), prescribed fire should be introduced on a random basis (*i.e.*, at random, non-regular, intervals) with the preponderance of fires being introduced during the growing or lightning season (mid-April to the end of August; Division of Forestry data),

3) Contingency plans should be made to allow natural fires (via lightning strikes) to burn if they are within the parameters of a written prescription.

4) Native groundcover should not be disturbed by the construction of additional plow lines. Instead, existing lines, natural fire breaks, roads, and black lines should be used to contain prescribed fires. Any unnecessary fire lines should be allowed to revegetate naturally or should be planted to native groundcover.

b. Under natural conditions, fire would occasionally burn downslope from the xeric uplands of this project into the Depression Marshes and Wet Prairies. Therefore, prescribed fire should be periodically introduced into the wetland systems of this project.

c. Non-native, invasive species of plants and animals shall not be introduced, and, when present, shall be controlled to the greatest extent practical.

d. To the greatest extent practical, facilities (such as buildings, parking lots, *etc.*) should be sited in already disturbed areas.

e. Hydrology should be allowed to remain as natural as possible and water quality should be maintained or improved. The ephemeral wetlands of the project should continue to be allowed to fluctuate with natural patterns of precipitation. Where necessary and practical, the natural, preexisting hydrology should be restored by removing or cutting roads and filling or plugging any ditches.

2. To conserve and protect native species habitat or endangered or threatened species.

a. Although an exhaustive survey has not been conducted for vascular flora and animals, 2 Special Plants (one a C2 candidate for possible federal listing) and 6 Special Animals are recorded in the FNAI data base from within the project. There is potential for additional rare species. Care will be necessary to insure that any facilities development is planned and that recreational uses are managed so as not to cause degradation of rare species habitat.

b. The state-threatened Florida sandhill crane nests within the boundaries of this project. Any nesting grounds for this species should be located and carefully protected from human intrusion during the nesting season.

c. For populations of gopher tortoise and other species within the project that have been extirpated or experienced severe population decline due to over-harvest or other causes, populations should be restored through careful protection, habitat management, and monitoring.

d. When available, FNAI Element (special plants, animals, and natural communities) location data should be obtained from the FNAI, preferably on maps such as on copies of USGS Topographic Quadrangle maps. Up-to-date Special Element data should be incorporated into management plans and used to assist in management decision-making (such as development of burn schedules, choice of fire management techniques, and poaching/ collecting prevention.

3. **To conserve, protect, manage, or restore important ecosystems, landscapes, and forests, if the protection and conservation of such lands is necessary to enhance or protect significant surface water, ground water, coastal, recreational, and timber resources, or to protect fish or wildlife resources which cannot otherwise be accomplished through local and state regulatory programs.**

   a. Uses, public or private, that are incompatible or would interfere with the protection, restoration, or management of the natural or cultural resources for which this project is to be acquired shall be prohibited.

   b. All management activities on CARL lands should include a monitoring component so that managers can judge the effectiveness of their actions. Management plans, which are required for all CARL lands, should indicate specifically how and when the results of management activities will be monitored and how that information will be used to improve subsequent management activities.

   c. The majority of the disturbed areas within the Resource Planning Boundary were once Sandhills (converted largely to various agricultural uses). Any disturbed areas acquired should be restored to their original natural character to the greatest extent possible. To the greatest extent practical, on site plant germplasm (seeds and other propagules) should be used in restoration efforts.

      A number of areas within the project boundaries have relatively intact native groundcover, but have been planted with an overstory of offsite pines (slash and sand pine on longleaf pine soils, in this case). Dense pine plantations, particularly of sandpine will shade out, and eventually eliminate most native groundcover. In order to maintain the groundcover in such areas (*e.g.*, slash pine plantation in section 7, T11S, R17E, or sand pine in section 36, T12S, R17E), plantations should at least be thinned, and should be burned, as soon as possible.

   d. Management should stress perpetuation of an integrated ecosystem, with attention given to natural regeneration of forest resources to the greatest extent practical. Where feasible, sites should be reforested to the original species.

   e. Because the protection and conservation of the wetlands in this project cannot be adequately accomplished through local, state, or federal regulatory programs, management shall ensure their protection and, where appropriate, restoration.

   f. Vehicles operated by the public shall be restricted to designated areas.

   g. Any trash piles or dumped refuse should be removed.

   h. This project has the size and resource diversity to qualify for management and use as a state forest, wildlife management area, wilderness area, or unit of the state park system.

4. **To provide areas, including recreational trails, for natural resource-based recreation.**

   Management should provide for uses and recreational activities that are compatible with the protection of the rare and sensitive resources. The project area could accommodate varied recreational opportunities such as hiking and nature trails, horseback riding trails, camping (both RV and primitive), environmental education, picnicking, boating, canoeing, freshwater fishing, and bicycling. With the exception of electric motors, use of the ponds in the project should be limited to nonmotorized boats and canoes. No airboats should be allowed.

5. **To preserve archeological or historic sites.**

No archaeological sites are recorded in the Florida Site File within the project. However, the project has not been subjected to a cultural resource assessment survey; there is good potential for archeological sites, particularly around the ponds of the project. Prior to any land clearing or ground disturbing activities within the project area, project plans shall be submitted to the Division of Historical Resources in a timely manner for review and comment. Cultural resource assessment surveys of specific areas may be recommended. In addition, fortuitous finds may occur on this tract and Historical Resources should be immediately notified if archaeological or historic remains are uncovered.

V. **Location**

The Watermelon Pond CARL project is located in all or portions of: In Alachua County, Township (T) 10 South (S), Range (R) 17 East (E), Sections (S) 31-32; T11S, R17E, S2-7, 9-11; and T11S, R18E, S30, 31. In Levy County, T11S, R17E, S14-29; T12S, R17E, S1, 2, 12, 13; and T12S, R18E, S5-7, 17, 18.

VI. **Proximity to Other Dedicated Conservation Lands**

Based on information in the FNAI data base other lands managed by the state, federal or local government, water management districts, or by private organizations for conservation of natural or cultural resources that are located within 10 miles of the Watermelon Pond project include:

Agriculture Experiment Station/UF 3.2 mi. SW
Dudley Farms/DNR 5.5 mi. N
Paynes Prairie State Preserve/DNR 10 mi. E

Nearby Carl projects/proposals:

Waccassassa Flats CARL project 5 mi. WNW
Kanapaha Prairie proposal
SE Bat Maternity Caves project

VII. **Ownership Pattern and Cost**

A. Known or estimated number of owners

There are several large ownerships and multiple smaller ownerships (not including several subdivided areas).

B. Known or estimated tax assessed value

To be determined during Project Design

C. Availability of other acquisition funds

There is no other known source of acquisition funding available.

VIII. **Conformance with Management Plans**

This project conforms with: (1) the Statewide Comprehensive Outdoor Recreation Plan developed pursuant to s. 375.021; (2) the state lands management plan adopted pursuant to s. 253.03(7); and (3) the statewide land acquisition plan developed pursuant to s. 259.04(1)(a).

IX. Resource Planning Boundary

A. Boundary Modifications Recommended by the Florida Natural Areas Inventory (see Attachment 2)

April 23, 1993: Additions totalling ~ 10,070 acres.

B. Boundary Modifications Recommended by Prospective Management Agencies and/or Council-member Agencies (see Attachment 3)

May 7, 1993 LAAC staff meeting (pre-inspection):

Addition: ~40 acres (T10S, R17E, section 31); intact natural community adjacent to project boundary.

Addition: ~40 acres (T11S, R17E, section 27); same as previous.

Addition: ~20 acres (T11S, R17E, section 35); same as previous.

Addition: ~40 acres (T12S, R17E, section 12); same as previous.

Addition: ~40 acres (T11S, R17E, section 11); same as previous.

Addition: ~150 acres (T11S, R17E, section 14); same as previous.

June 9, 1993 LAAC staff meeting (post-inspection):

Deletion of ~6,060 acres in various locations around the project due to disturbance, trailer park developments, *etc.* (see *Natural Communities* section, beginning page 11, for further discussion).

C. Location Map Showing Resource Planning Boundary (see Attachment 3)

Florida Natural Areas Inventory - *Element Rank Explanations*

global rank, state rank, federal status, state status

November 1992

ATTACHMENT 1

An element is any exemplary or rare component of the natural environment, such as a species, plant community, bird rookery, spring, sinkhole, cave, or other ecological feature. An element occurrence (EO) is a single extant habitat which sustains or otherwise contributes to the survival of a population or a distinct, self-sustaining example of a particular element. The major function of the Florida Natural Areas Inventory is to define the state's elements of natural diversity, then collect information about each element occurrence.

The Florida Natural Areas Inventory assigns two ranks for each element. The global element rank is based on a element's worldwide status; the state element rank is based on the status of the element in Florida. Element ranks are based on many factors, the most important ones being estimated number of element occurrences (EOs), estimated abundance (number of individuals for species; area for natural communities), range, estimated adequately protected EOs, relative threat of destruction, and ecological fragility.

FNAI GLOBAL/STATE RANK

GLOBAL ELEMENT RANK (priority)

G1 = Critically imperiled globally because of extreme rarity (5 or fewer occurrences or less than 1000 individuals) or because of extreme vulnerability to extinction due to some natural or man-made factor.

G2 = Imperiled globally because of rarity (6 to 20 occurrences or less than 3000 individuals) or because of vulnerability to extinction due to some biological or man-made factor.

G3 = Either very rare and local throughout its range (21-100 occurrences or less than 10,000 individuals) or found locally in a restricted range or vulnerable to extinction because of other factors.

G4 = apparently secure globally (may be rare in parts of range)

G5 = demonstrably secure globally

GH = of historical occurrence throughout range, may be rediscovered (e.g., ivory-billed woodpecker)

GX = believed to be extinct throughout range

GXC = extirpated from the wild but still known from captivity/cultivation

G#? = Tentative rank (e.g., G2?)

G#G# = range of rank; insufficient data to assign specific global rank (e.g., G2G3)

G#T# = rank of taxonomic subgroup such as subspecies or variety; numbers have same definition as above (e.g., G3T1)

G#Q = rank of questionable species - ranked as species but questionable whether it is species or subspecies; numbers have same definition as above (e.g., G2Q)

G#T#Q = same as above, but validity as subspecies or variety is questioned.

GU = due to lack of information, no rank or range can be assigned (e.g., GUT2).

G? = not yet ranked (temporary)

STATE ELEMENT RANK (priority)

Definition parallels global element rank: substitute "S" for "G" in above global ranks, and "in state" for "globally" in above global rank definitions.

Additional state element ranks:

SA = accidental in Florida, i.e., not part of the established biota

SE = an exotic species established in state; may be native elsewhere in North America

SN = Regularly occurring, but widely and unreliably distributed; sites for conservation hard to determine

FEDERAL/STATE LEGAL STATUS

FEDERAL (U. S. Fish and Wildlife Service- USFWS)

LE = Listed as Endangered Species in the List of Endangered and Threatened Wildlife and Plants under the provisions of the Endangered Species Act. Defined as any species which is in danger of extinction throughout all or a significant portion of its range.

PE = Proposed for addition to the List of Endangered and Threatened Wildlife and Plants as Endangered Species.

LT = Listed as Threatened Species. Defined as any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

PT = Proposed for listing as Threatened Species.

C1 = Candidate Species for addition to the List of Endangered and Threatened Wildlife and Plants, Category 1. Taxa for which the USFWS currently has substantial information on hand to support the biological appropriateness of proposing to list the species as endangered or threatened.

C2 = Candidate Species, Category 2. Taxa for which information now in possession of the USFWS indicates that proposing to list the species as endangered or threatened is possibly appropriate, but for which conclusive data on biological vulnerability and threat(s) are not currently available to support proposed rules at this time.

3A = Category 3A. Taxa which are no longer being considered for listing as endangered or threatened because of persuasive evidence of extinction.

3B = Category 3B. Taxa which are no longer being considered for listing as endangered or threatened because the names do not represent taxa meeting the Endangered Species Act's definition of "species."

3C = Category 3C. Taxa that have proven to be more abundant or widespread than was previously believed and/or those that are not subject to any identifiable threat.

AC = Agency Concern. Species which are not currently listed or candidates, but which are a matter of concern to the USFWS.

LTSA = Threatened due to similarity of appearance.

N = Not currently listed, nor currently being considered for addition to the List of Endangered and Threatened Wildlife and Plants.

STATE

<u>Animals</u> (Florida Game and Fresh Water Fish Commission- FGFWFC)

LE = Listed as Endangered Species by the FGFWFC. Defined as a species, subspecies, or isolated population which is so rare or depleted in number or so restricted in range of habitat due to any man-made or natural factors that it is in immediate danger of extinction or extirpation from the state, or which may attain such a status within the immediate future.

LT = Listed as Threatened Species by the FGFWFC. Defined as a species, subspecies, or isolated population which is acutely vulnerable to environmental alteration, declining in number at a rapid rate, or whose range or habitat is declining in area at a rapid rate and as a consequence is destined or very likely to become an endangered species within the foreseeable future.

LS = Listed as Species of Special Concern by the FGFWFC. Defined as a species, subspecies, or isolated population which warrants special protection, recognition, or consideration because it has an inherent significant vulnerability to habitat modification, environmental alteration, human disturbance, or substantial human exploitation which, in the foreseeable future, may result in its becoming a threatened species

N = Not currently listed, nor currently being considered for listing.

<u>Plants</u> (Florida Department of Agriculture and Consumer Services- FDACS)

LE = Listed as Endangered Plants in the Preservation of Native Flora of Florida Act. Defined as species of plants native to the state that are in imminent danger of extinction within the state, the survival of which is unlikely if the causes of a decline in the number of plants continue, and includes all species determined to be endangered or threatened pursuant to the Federal Endangered Species Act of 1973, as amended.

PE = Proposed by the FDACS for listing as Endangered Plants.

LT = Listed as Threatened Plants in the Preservation of Native Flora of Florida Act. Defined as species native to the state that are in rapid decline in the number of plants within the state, but which have not so decreased in such number as to cause them to be endangered.

PT = Proposed by the FDACS for listing as Threatened Plants.

CE = Listed as a Commercially Exploited Plant in the Preservation of Native Flora of Florida Act. Defined as species native to the state which are subject to being removed in significant numbers form native habitats in the state and sold or transported for sale.

PC = Proposed by the FDACS for listing as Commercially Exploited Plants.

(LT) = Listed threatened as a member of a larger group but not specifically listed by species name.

N = Not currently listed, nor currently being considered for listing.

ATTACHMENT 2, FNAI RPB MEMO

FLORIDA NATURAL AREAS INVENTORY

1018 Thomasville Road, Suite 200-C, Tallahassee, Florida 32303 (904) 224-8207

MEMORANDUM

To: O. Greg Brock, DNR CARL Program

From: Richard A. Hilsenbeck, FNAI RAH

Date: 21 April 1993

Re: Natural Resource Planning Boundary for Watermelon Pond 1993 CARL Proposal

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According to DNR's memo of 5 April 1993, and after reviewing this proposal's resources and the list of possible natural resource-based acquisition purposes, acquisition of Watermelon Pond is proposed to: 1) conserve and protect environmentally unique and irreplaceable lands that contain native, relatively unaltered flora and fauna representing a natural area unique to, or scarce within, a region of this state or a larger geographic area; 2) conserve and protect significant habitat for native species or endangered and threatened species; 3) conserve, protect, manage, or restore important ecosystems, landscapes and forests, if the protection and conservation of such lands is necessary to enhance or protect significant surface water, coastal, recreational, timber, fish or wildlife resources which cannot otherwise be accomplished through local or state regulatory programs; and 4) provide areas, including recreational trails, for natural resource-based recreation. These acquisition purposes may be amended by the Land Acquisition Advisory Council liaison staff members after review of the boundaries, and are subject to approval by the Land Acquisition Advisory Council.

Natural resource values for this proposal are highlighted in the 1993 CARL Proposals Natural Resource Evaluation Matrix (5 March 1993). Proposed boundaries were evaluated using GFC Landsat data, topographic maps and recent aerial photography [12 November 1991], and data in the FNAI data base. Because of rapid development in the state, however, ground truthing during the assessment phase is necessary to confirm the proposed boundaries.

The originally proposed boundaries of the Watermelon Pond proposal were generally well drawn from a natural resources standpoint. The apparent effort to avoid any areas with roads, however, has resulted in two very narrow, and perhaps indefensible in the long-term, "isthmuses" that connect the northern and south-central portions of the proposal to the south-central and extreme southern portions, respectively. In order to construct more defensible boundaries, as well as to incorporate significant natural resources (although they may contain various human impacted areas), several additions are recommended. The first area, labeled "A" on the map and accompanying aerial, is designed to greatly increase the available habitat under conservation protection by widening the connection between the broad northern area of the proposal and the southern extending narrow "leg". Although this addition will incorporate some roaded, pasture, and pine plantation areas, as well as some structures (most appearing to be mobile homes), it will tremendously enhance the xeric uplands targeted for protection by the proposal. Because much apparently high quality xeric upland occurs near the western and southwestern periphery of the original tract, often bordered by disturbance, it was impossible to increase the long-term conservation value of the proposal without incorporating some of these impacted areas. As suggested below,

however, two of these more disturbed/developed areas are perhaps best considered as out parcels.

Beginning at the northwestern corner of the original boundary and moving south, the following landscapes are recommended as part of the "A" RPB additions to the proposal. Labeled as "A1" is an area of somewhat open, probably young, pine (likely slash pine) plantation that borders to its south nearly an entire section of good to high quality Sandhill natural community. Just to the south of this latter area, is an intervening strip of pasture ("A2") before encountering a section of pine plantation ("A3"). (Note: the proposal states that the plantation just catercorner [to the southeast] of this area is a 20 year old slash pine plantation, a third of which did not have any site preparation. The authors of the proposal think that this area has retained groundcover components and can be restored with fire. If so, it appears to me that the area of addition has been similarly treated and may also harbor restorable upland resources.) Due east of this plantation is an area ("D1") that is somewhat developed with houses and pastures and that was outside the boundary of the original proposal. It is recommended that this area be considered during the assessment phase to determine if any of its lands may be included in the final boundary of the proposal. It is likely that much of the area of this tract will be deleted following assessment. Just to the south of the plantation is an area of approximately two sections ("A4") of excellent quality Sandhill, Xeric Hammock, some Depression Marsh, as well as pasture and a few structures. It is likely that during project design that information from the assessment will likely result in deletion of the pasture and structures. Final boundaries during the project design phase, however, may depend upon ownership considerations within this section. Due east of this area, is a section of cleared and currently cultivated land that is to be considered an out parcel (labeled "out"). Due south of this out parcel is a section of high quality Sandhill with intervening pastures ("A5"). Due east and northeast of this latter parcel are areas labeled as "A6", "A7", and "A8", that while roaded and contain scattered houses, appear to contain good to high quality Sandhill, Xeric Hammock, some pasture, and possibly some Upland Mixed Forest. The addition of these latter areas greatly enhance the east-west width of the proposal, while adding significant xeric upland natural resources.

Although high quality natural resources have been added by the inclusion of parcels "A1" through "A8", the unfortunate fragmentation of the natural landscape has made design of the proposed RPB a difficult one. This is true both in terms of the choices and trade-offs necessary to include additional, invaluable xeric upland resources, while also encompassing undesirable and developed lands. The inevitable, initial inclusion, of these latter kinds of land, however, do not have to lessen the overall natural resource values of the proposal as they may be deleted after the assessment process. It is realized, too, that some sort of access easement to the residents/farmers of the out parcel will have to be provided. It is a fact, however, that many of our state's Managed Areas have significant out parcels and that these do not always allow for the cleanest looking boundaries. It is thought, however, that during the RPB process that it is better to target the greatest available resources for possible acquisition while recognizing that there may be occasional areas of intervening, poorer quality lands that need be assessed prior to their possible deletion. In any event, I have considered numerous options in the construction of this western-southwestern RPB that included or did not include various parcels, particularly focusing on "A2", "A3", and "D1". All of these alternative designs can be presented and discussed, if necessary, at the 7 May 1993 meeting to resolve boundaries.

The next set of additions is less extensive and complicated by fewer factors. This recommended addition consists of three parcels all around the southern and southeastern boundary of the proposal. The first, labeled "B1" is approximately a section and a half of roaded, but good to high quality, Sandhill and presumed Upland Mixed Forest at the

extreme southwestern corner of the proposal. The area labeled "B2" is less than half a section of good quality Xeric Hammock (Upland Mixed Forest?), Sandhill, and a small block of pine plantation along the southeastern boundary of the proposal that makes the entire boundary more manageable. Area "B3" consists of approximately two and a quarter sections of good to excellent Scrub, Xeric Hammock, Sandhill, and Depression Marsh. This area also includes some acreage under pasture and a few structures. It is being added primarily for its natural resources value, especially the xeric upland communities. It also makes for a far more manageable unit of land than the very narrow corridor that it augments. One of the factors in adding this area, especially the northernmost portion, is that this area lies just south of the section containing the "best remaining example of a scrub community in Alachua County" (according to proposal) and does itself contain some of this exceptional Scrub. Various alternatives to these suggested/recommended additions are also open to discussion at the 7 May 1993 meeting.

Two areas that were considered for possible deletion are the long eastward extending "arm" at the northeastern corner of the boundary and much of the land just within the northern boundary of the proposal. The "arm", however, is under single ownership (Arthur Boggs) and, while containing significant pasture areas, also contains "substantial acreage of Sandhills and Rosemary Scrub which is relatively intact" (according to proposal). Although the intactness of the groundcover is questionable, the area is probably worth exploring during the assessment phase. The other area (i.e., northernmost boundary) consisting of much pasture, some improvements, and limited pine plantation (the Barry's Ranch, R.L. Goring, and George and Grace Wang, ownerships), may also be a candidate for deletion. Barry's Ranch, however, also owns nearly another section just south of this area that extends down into Watermelon Pond, proper, and that appears to contain some significant xeric uplands. It appears worthwhile to at least assess these areas prior to any final recommendations for deletion.

It is possible that much of the area surrounding Watermelon Pond and the other wetland systems in the north-central portion of the proposal may be jurisdictional wetlands. The CARL committee may want the Florida Department of Environmental Regulation to review these sites prior to any acquisition efforts and determine jurisdictional boundaries. The question of whether the CARL committee wishes to purchase jurisdictional wetlands may affect the project boundaries later in the acquisition process.

The Division of Historic Resources should be consulted concerning known/possible archaeological sites in the area.

[C:\CARL\WATERMEL.RPB]

APPENDIX 1
WILDLIFE SPECIES THAT MAY OCCUR ON THE WATERMELON POND CARL PROJECT

SCIENTIFIC NAME	COMMON NAME	STATUS
	REPTILES	
C. s. osceola	Florida snapping turtle	NL
Macroclemys temminckii	Alligator snapping turtle	SSC
Clemmys guttata	Spotted turtle	NL
D. reticularia r.	Eastern chicken turtle	NL
Deirochelys r. chrysea	Florida chicken turtle	NL
Pseudemys c. suwanniensis	Suwannee cooter	SSC
Pseudemys f. peninsularis	Peninsula cooter	NL
Pseudemys nelsoni	Florida red-bellied turtle	NL
Trachemys scripta s.	Yellow-bellied slider	NL
Terrapene carolina bauri	Florida box turtle	NL
Kinosternon baurii	Striped mud turtle	E*
Kinosternon s. steindachneri	Florida mud turtle	NL
Sternotherus m. minor	Loggerhead musk turtle	NL
Sternotherus odoratus	Common musk turtle	NL
Gopherus polyphemus	Gopher tortoise	SSC
Trionyx ferox	Florida softshell turtle	NL
Rhineura floridana	Florida worm lizard	NL
Ophisaurus a. longicaudus	Eastern slender glass lizard	NL
Ophisaurus compressus	Island glass lizard	NL
Ophisaurus ventralis	Eastern glass lizard	NL
Anolis carolinensis	Green anole	NL
Sceloporus u. undulatus	Southern fence lizard	NL
Eumeces e. onocrepis	Peninsula mole skink	NL
Eumeces fasciatus	Five-lined skink	NL
Eumeces inexpectatus	Southeastern five-lined skink	NL
Eumeces laticeps	Broad-headed skink	NL
Scincella lateralis	Ground skink	NL
Cnemidophoris sexlineatus s.	Six-lined racerunner	NL
Cemophora c. copei	Northern scarlet snake	NL
Coluber c. priapus	Southern black racer	NL
Diadophis p. punctatus	Southern ring-necked snake	NL
Drymarchon couperi c.	Eastern indigo snake	T
Elaphe guttata guttata	Corn snake	SSC*
Elaphe obsoleta quadrivittata	Yellow rat snake	NL
Farancia abacura a.	Eastern mud snake	NL
Farancia erytrogramma	Rainbow snake	NL
Farancia erytrogramma e.	Rainbow snake	NL
Heterodon platyrhinos	Eastern hog-nosed snake	NL
Heterodon simus	Southern hog-nosed snake	NL
Lampropeltis g. getulus	Eastern kingsnake	NL
Lampropeltis triangulum	Milk snake	NL
Lampropeltis t. elapsoides	Scarlet kingsnake	NL
Masticophis flagellum f.	Coachwhip	NL
Nerodia floridana	Florida green water snake	NL
Nerodia e. erythrogaster	Red-bellied water snake	NL
Nerodia f. pictiventris	Florida banded water snake	NL
Nerodia taxispilota	Brown water snake	NL
Opheodrys aestivus	Rough green snake	NL
Pituophis melanoleucus mugitus	Pine snake	SSC
Regina alleni	Striped crayfish snake	NL
Regina rigida r.	Glossy crayfish snake	NL
Rhadinaea flavilata	Pine woods snake	NL
Seminatrix pygaea	Black swamp snake	NL
Seminatrix p. pygaea	North Florida swamp snake	NL
Stilosoma extenuatum	Short-tailed snake	T
Storeria d. victa	Florida brown snake	T*
Storeria o. obscura	Florida red-bellied snake	NL
Tantilla relicta	Florida crowned snake	NL
Tantilla r. neilli	Central Florida crowned snake	NL
Thamnophis s. sackenii	Peninsula ribbon snake	T*
Thamnophis s. similis	Blue-striped garter snake	NL
Virginia striatula	Rough earth snake	NL

Virginia valeriae v.	Smooth earth snake	NL
Micrurus fulvius f.	North American coral snake	NL
Agkistrodon p. conanti	Florida cottonmouth	NL
Crotalus adamanteus	Eastern diamondback rattlesnake	NL
Crotalis horridus	Timber rattlesnake	NL
Sistrurus miliarius barbouri	Pygmy rattlesnake	NL

AMPHIBIANS

Bufo quercicus	Oak toad	NL
Bufo terrestris	Southern toad	NL
Acris gryllus g. & dorsalis	Southern cricket frog	NL
Hyla chrysoscelis	Cope's gray treefrog	NL
Hyla cinerea	Green treefrog	NL
H. c. bartramiana	Southern spring peeper	NL
Hyla femoralis	Pine woods treefrog	NL
Hyla gratiosa	Barking treefrog	NL
Hyla squirella	Squirrel treefrog	NL
Limnaoedus ocularis	Little grass frog	NL
P. n. nigrita	Southern chorus frog	NL
P. n. verrucosa	Florida chorus frog	NL
Pseudacris ornata	Ornate chorus frog	NL
Gastrophryne carolinensis	Eastern narrow-mouthed toad	NL
Scaphiopus holbrookii h.	Eastern spadefoot	NL
Rana aerolata aesopus	Florida gopher frog	SSC
Rana catesbeiana	Bullfrog	NL
R. c. clamitans	Bronze frog	NL
Rana grylio	Pig frog	NL
Rana heckscheri	River frog	NL
Rana sphenocephala	Southern leopard frog	NL
Ambystoma cingulatum	Flatwoods salamander	NL
Ambystoma talpoideum	Mole salamander	NL
A. t. tigrinum	Eastern tiger salamander	NL
Amphiuma means	Two-toed amphiuma	NL
Desmognathus auriculatus	Southern dusky salamander	NL

MAMMALS

Didelphis virginiana pigra	Virginia opossum	NL
Sorex longirostris l.	Southeastern shrew	NL
Blarina carolinensis	Sherman's short-tailed shrew	SSC
Cryptotis parva floridana	Least shrew	NL
Scalopus aquaticus	Eastern mole	NL
Myotis austroriparius	Southeastern myotis	NL
Pipistrellus subflavus s.	Eastern pipistrelle	NL
Plecotus rafinesquii macrotis	Rafinesque's big-eared bat	NL
Eptesicus fuscus	Big brown bat	NL
Lasiurus cinereus cinereus	Hoary bat	NL
Lasiurus borealis borealis	Red bat	NL
Lasiurus seminolus	Seminole bat	NL
Lasiurus intermedius floridanus	Northern yellow bat	NL
Nycticeius humeralis	Evening bat	NL
Tadarida brasiliensis cynocephala	Brazilian free-tailed bat	NL
Dasypus novemcinctus mexicanus	Nine-banded armadillo	NL
Sylvilagus floridanus	Eastern cottontail	NL
Sciurus carolinensis	Gray squirrel	NL
Sciurus niger	Fox squirrel	NL
Sciurus n. shermani	Sherman's fox squirrel	SSC
Glaucomys volans	Southern flying squirrel	NL
Geomys pinetis	Southeastern pocket gopher	NL
Neotoma floridana	Eastern woodrat	NL
Sigmodon hispidus	Cotton rat	NL
Reithrodontomys humulis	Eastern harvest mouse	NL
Oryzomys palustris	Marsh rice rat	NL
Podomys floridanus	Florida mouse	SSC

Peromyscus polionotus	Oldfield mouse	NL
Peromyscus gossypinus	Cotton mouse	NL
Ochrotomys nuttalli	Golden mouse	NL
Microtus pinetorum	Pine vole	NL
Neofiber alleni	Round-tailed muskrat	NL
Ursus a. floridanus	Florida black bear	T*
Procyon lotor	Raccoon	NL
Mustela frenata	Long-tailed weasel	NL
Mephitis mephitis	Striped skunk	NL
Spilogale putorius	Spotted skunk	NL
Lutra canadensis vaga	River otter	NL
Urocyon cinereoargenteus	Gray fox	NL
Canis latrans	Coyote	NL
Felis rufus floridanus	Bobcat	NL
Odocoileus virginianus	White-tailed deer	NL

BIRDS

Podilymbus podiceps	Pied-billed grebe	NL
Pelecanus erythrorhynchos	American white pelican	NL
Pelecanus occidentalis	Brown pelican	SSC
Phalacrocorax auritus	Double-crested cormorant	NL
Anhinga anhinga	Anhinga	NL
Botaurus lentiginosus	American bittern	NL
Ixobrychus exilis e.	Least bittern	NL
Ardea herodias	Great blue heron	NL
Casmerodius albus egretta	Great egret	NL
Egretta caerulea	Little blue heron	SSC
Egretta tricolor ruficolis	Tricolored heron	SSC
Bubulcus ibis ibis	Cattle egret	NL
Butorides striatus	Green-backed heron	NL
Nycticorax nycticorax hoactli	Black-crowned night heron	NL
Nycticorax violaceus v.	Yellow-crowned night heron	NL
Eudocimus albus	White ibis	NL
Plegadis falcinellus f.	Glossy ibis	NL
Mycteria americana	Wood stork	E
Aix sponsa	Wood duck	NL
Anas crecca	Green-winged teal	NL
Anas rubripes	American black duck	NL
Anas fulvigula f.	Mottled duck	NL
Anas platyrhynchos p.	Mallard	NL
Anas acuta acuta	Northern pintail	NL
Anas discors	Blue-winged teal	NL
Anas clypeata	Northern shoveler	NL
Anas strepera	Gadwall	NL
Anas americana	American wigeon	NL
Aythya valisineria	Canvasback	NL
Aythya americana	Redhead	NL
Aythya collaris	Ring-necked duck	NL
Aythya marila mariloides	Greater scaup	NL
Aythya affinis	Lesser scaup	NL
Bucephala clangula americana	Common goldeneye	NL
Bucephala albeola	Bufflehead	NL
Lophodytes cucullatus	Hooded merganser	NL
Oxyura jamaicensis rubida	Ruddy duck	NL
Coragyps atratus	Black vulture	NL
Cathartes aura A.	Turkey vulture	NL
Pandion haliaetus carolinensis	Osprey	SSC*
Elanoides forficatus f.	American swallow-tailed kite	NL
Ictinia mississippiensis	Mississippi kite	NL
Haliaeetus leucocephalus	Bald eagle	T
Circus cyaneus hudsonius	Northern harrier	NL
Accipiter striatus velox	Sharp-shinned hawk	NL
Accipiter cooperii	Cooper's hawk	NL
Buteo lineatus alleni & extimus	Red-shouldered hawk	NL
Buteo brachyurus fuliginosus	Short-tailed hawk	NL
Buteo jamaicensis	Red-tailed hawk	NL
F. s. sparverius	American kestrel	NL

Falco s. paulus	Southeastern kestrel	T
Falco columbarius c.	Merlin	NL
Falco peregrinus tundrius	Peregrine falcon	E
Meleagris gallopavo osceola	Wild turkey	NL
Colinus virginianus	Northern bobwhite	NL
Coturnicops noveboracensis n.	Yellow rail	NL
Laterallus jamaicensis j.	Black rail	NL
Rallus elegans e.	King rail	NL
Rallus limicola l	Virginia rail	NL
Porzana carolina	Sora	NL
Porphyrula martinica	Purple gallinule	NL
Gallinula chloropus cachinnans	Common moorhen	NL
Fulica americana a.	American coot	NL
Aramus guarauna pictus	Limpkin	SSC
G. canadensis pratensis	Florida sandhill crane	T
G. canadensis tabida	Greater sandhill crane	NL
Charadrius vociferus v.	Killdeer	NL
Tringa melanoleuca	Greater yellowlegs	NL
Tringa flavipes	Lesser yellowlegs	NL
Actitis macularia	Spotted sandpiper	NL
Calidris minutilla	Least sandpiper	NL
Gallinago gallinago delicata	Common snipe	NL
Scolopax minor	American woodcock	NL
Larus delawarensis	Ring-billed gull	NL
Larus argentatus	Herring gull	NL
Zenaida macroura	Mourning dove	NL
Columbina passerina	Common ground-dove	NL
Coccyzus americanus a.	Yellow-billed cuckoo	NL
Tyto alba pratincola	Common barn-owl	NL
Otus asio floridana	Eastern screech-owl	NL
Bubo virginianus v.	Great horned owl	NL
A. c. floridana	Florida burrowing owl	SSC
Strix varia georgica	Barred owl	NL
Chordeiles minor chapmani	Common nighthawk	NL
Caprimulgus carolinensis	Chuck-will's-widow	NL
Caprimulgus vociferus v.	Whip-poor-will	NL
Chaetura pelagica	Chimney swift	NL
Archilochus colubris	Ruby-throated hummingbird	NL
Ceryle alcyon a.	Belted kingfisher	NL
Melanerpes erythrocephalus e.	Red-headed woodpecker	NL
Melanerpes carolinus	Red-bellied woodpecker	NL
Sphyrapicus varius	Yellow-bellied sapsucker	NL
Picoides pubescens p.	Downy woodpecker	NL
Picoides villosus audubonii	Hairy woodpecker	NL
Picoides borealis	Red-cockaded woodpecker	T
Colaptes auratus a.	Northern flicker	NL
Dryocopus pileatus p.	Pileated woodpecker	NL
Contopus virens	Eastern wood-peewee	NL
Empidonax virescens	Acadian flycatcher	NL
Sayornis phoebe	Eastern phoebe	NL
Myiarchus crinitus	Great crested flycatcher	NL
Tyrannus tyrannus	Eastern kingbird	NL
Tyrannus dominicensis	Gray kingbird	NL
Progne subis	Purple martin	NL
Tachycineta bicolor	Tree swallow	NL
Stelgidopteryx serripennis	Northern rough-winged swallow	NL
Cyanocitta cristata	Blue jay	NL
Corvus brachyrhynchos	American crow	NL
Corvus ossifragus	Fish crow	NL
Parus carolinensis	Carolina chickadee	NL
Parus bicolor	Tufted titmouse	NL
Sitta pusilla	Brown-headed nuthatch	NL
Certhia americana	Brown creeper	NL
Thryothorus ludovicianus	Carolina wren	NL
Troglodytes aedon	House wren	NL
Cistothorus palustris	Marsh wren	NL
Regulus satrapa	Golden-crowned kinglet	NL
Regulus calendula	Ruby-crowned kinglet	NL
Polioptila caerulea	Blue-gray gnatcatcher	NL

Sialia sialis	Eastern bluebird	NL
Catharus fuscescens	Veery	NL
Catharus minimus	Gray-cheeked thrush	NL
Catharus ustulatus	Swainson's thrush	NL
Catharus guttatus	Hermit thrush	NL
Turdus migratorius	American robin	NL
Dumetella carolinensis	Gray catbird	NL
Mimus polyglottos	Northern mockingbird	NL
Toxostoma rufum	Brown thrasher	NL
Anthus spinoletta	Water pipit	NL
Bombycilla cedrorum	Cedar waxwing	NL
Lanius ludovicianus	Loggerhead shrike	NL
Vireo griseus	White-eyed vireo	NL
Vireo solitarius	Solitary vireo	NL
Vireo flavifrons	Yellow-throated vireo	NL
Vireo olivaceus	Red-eyed vireo	NL
Vermivora pinus	Blue-winged warbler	NL
Vermivora chrysoptera	Golden-winged warbler	NL
Vermivora peregrina	Tennessee warbler	NL
Vermivora celata	Orange-crowned warbler	NL
Vermivora ruficapilla	Nashville warbler	NL
Parula americana	Northern parula	NL
D. petechia aestiva	Yellow warbler	NL
Dendroica pensylvanica	Chestnut-sided warbler	NL
Dendroica caerulescens	Black-throated blue warbler	NL
Dendroica coronata	Yellow-rumped warbler	NL
Dendroica virens	Black-throated green warbler	NL
Dendroica fusca	Blackburnian warbler	NL
Dendroica dominica	Yellow-throated warbler	NL
Dendroica pinus	Pine warbler	NL
Dendroica palmarum	Palm warbler	NL
Dendroica striata	Blackpoll warbler	NL
Dendroica cerulea	Cerulean warbler	NL
Mniotilta varia	Black-and-white warbler	NL
Setophaga ruticilla	American redstart	NL
Protonotaria citrea	Prothonotary warbler	NL
Helmitheros vermivorus	Worm-eating warbler	NL
Limnothlypis swainsonii	Swainson's warbler	NL
Seiurus motacilla	Louisiana waterthrush	NL
Oporornis formosus	Kentucky warbler	NL
Geothlypis trichas	Common yellowthroat	NL
Piranga rubra	Summer tanager	NL
Piranga olivacea	Scarlet tanager	NL
Cardinalis cardinalis	Northern cardinal	NL
Pheucticus ludovicianus	Rose-breasted grosbeak	NL
Guiraca caerulea	Blue grosbeak	NL
Passerina cyanea	Indigo bunting	NL
Pipilo erythrophthalmus	Rufous-sided towhee	NL
Aimophila aestivalis	Bachman's sparrow	NL
Spizella passerina	Chipping sparrow	NL
Spizella pusilla	Field sparrow	NL
Pooecetes gramineus	Vesper sparrow	NL
Passerculus sandwichensis	Savannah sparrow	NL
Ammodramus savannarum pratensis	Grasshopper sparrow	NL
Melospiza melodia	Song sparrow	NL
Melospiza georgiana	Swamp sparrow	NL
Zonotrichia albicollis	White-throated sparrow	NL
Agelaius phoeniceus	Red-winged blackbird	NL
Sturnella magna	Eastern meadowlark	NL
Euphagus carolinus	Rusty blackbird	NL
Quiscalus major	Boat-tailed grackle	NL
Quiscalus quiscula	Common grackle	NL
Molothrus ater	Brown-headed cowbird	NL
Icterus spurius	Orchard oriole	NL
Icterus galbula	Northern oriole	NL
Carduelis tristis	American goldfinch	NL

APPENDIX 2

SUMMARY OF LANDSAT VEGETATION COVER TYPE DATA

Header listing for GIS file: WATEPROJ.GIS
Date statistics printed: 16-JUN-1993
Date statistics created: 16-JUN-1993

This file has 514 rows, and 425 columns

This image is geo-referenced to a UTM coordinate system
The upper left corner has coordinate: 339580, 3273200

The cell size is (X, Y): 30, 30
The number of hectares per cell is: 0.09
Upper left corner data file coordinate (X,Y) is: 4286, 4592

Number of classes in this variable is: 23
This file contains 8-bit data
The VARIABLE name is Watermelon Pond

VALUE	POINTS	Hectares	%	DESCRIPTION
0	108280.	9745.200	0.00 %	background
1	0.	0.000	0.00 %	Coastal strand
2	0.	0.000	0.00 %	Dry prairie
3	7276.	654.840	6.60 %	Pinelands
4	0.	0.000	0.00 %	Sand pine scrub
5	53176.	4785.840	48.27 %	Sandhill
6	0.	0.000	0.00 %	Xeric oak scrub
7	3969.	357.210	3.60 %	Mixed hardwood-pine forests
8	1756.	158.040	1.59 %	Hardwood hammocks and forests
9	0.	0.000	0.00 %	Tropical hardwood hammock
10	0.	0.000	0.00 %	Coastal salt marsh
11	4163.	374.670	3.78 %	Freshwater marsh & wet prairie
12	302.	27.180	0.27 %	Cypress swamp
13	121.	10.890	0.11 %	Hardwood swamp
14	0.	0.000	0.00 %	Bay swamp
15	99.	8.910	0.09 %	Shrub swamp
16	0.	0.000	0.00 %	Mangrove swamp
17	0.	0.000	0.00 %	Bottomland hardwoods
18	4861.	437.490	4.41 %	Open water
19	12380.	1114.200	11.24 %	Grassland (agriculture)
20	8913.	802.170	8.09 %	Shrub and brushland
21	0.	0.000	0.00 %	Exotic plant communities
22	13154.	1183.860	11.94 %	Barren
Totals:	110170.	9915.301		

Totals and Percentages are Based on Non-zero points