QUESTION 12 - VEGETATION AND WILDLIFE

See State Comprehensive Plan (Chapter 187, F.S.)

GOAL(9); POLICY (7)

GOAL (10); POLICIES (1),(3),(4),(6)

GOAL (16); POLICY (2)

A. Identify the dominant species and other unusual or unique features of the plant communities on Map F. Identify and describe the amount of all plant communities that will be preserved in a natural state following development as shown on Map H.

The 152± acre site can generally be characterized as pasture land and is heavily grazed by cattle. Approximately 13 acres of jurisdictional wetlands were identified on-site with the remainder of the site classified as non-jurisdictional wetlands and uplands. In accordance with the Florida Land Use, Cover and Forms Classification (FLUCCS) (FDOT 1999), jurisdictional wetlands are classified as Depression Marshes (643) and non-jurisdictional wetlands and uplands have been classified as Mixed Rangeland (330). The Existing Land Use Cover Map, Map D, and Vegetation Associations Map, Map F, are provided in this report. Depression Marsh and Mixed Rangeland community statistics for the site are provided in Exhibit 12-1.

Exhibit 12-1 Existing Land Uses of The Commons Property				
Community	FLUCCS* Code	Percent of Project Area	Size (acres)	
Depression Marsh	641	8.6	13.1	
Mixed Rangeland	330	81.8	124.4	
Electrical Power Lines and Easements	832	7.6	11.2	
Other Surface Waters		2	3	

^{*}Florida Land Use, Cover and Forms Classification System (FDOT 1999)

Depression Marshes (641)

Langan Engineering & Environmental Services, Inc. (Langan) wetland scientists identified thirty-seven depression wetlands, which met the FLUCCS classification criteria of a "depression marsh". These depression marshes are seasonally

inundated wetland systems that range in size from 0.010 to 1.40 acres. During site visits conducted in March 2005 approximately 90% of the depression areas had standing water. The property was nearly dry during several site visits conducted in April and May 2005, with depression wetlands and shallow ditches having saturated soils but no flooding. The depression marsh communities on-site are palustrine emergent systems dominated by para grass (*Urochloa mutica*), canoe grass (*Paspalum acuminatum*), wax weed (Cuphea carthagenesis), smooth waterhyssop (*Bacopa monnieri*), wild water-pepper (*Polygonum hydropiperoides*), and penny-wort (*Hydrocotyle* species). Exotic species such as para grass and canoe grass were dominant species within many of these wetlands. Each of these areas is mowed periodically and are heavily grazed and impacted by cattle.

Mixed Rangeland (330)

Most of the property consists of Mixed Rangeland. Approximately two-thirds of this community consists of grasses and forbs. The dominant vegetation is St. Augustine grass (Stenotaphrum secundatum), with other common species including para grass, frog-fruit (*Phylla nodiflora*), white clover (*Trifolium repens*), horse nettle (*Solanum carolinense*) and wireweed (*Sida acuta*). The remaining one-third consists of shrubs dominated by day jessamine (*Cestrum diurnum*). Other common shrubs include Brazilian pepper (*Schinus terebinthifolius*) and castor bean (*Ricinus communis*). All three of these shrubs are exotic species.

Electrical Power Transmission Lines (832)

The powerline easements contain both mixed rangeland and depression marsh areas. The easements do not appear to be maintained differently from the rest of the property.

Other Surface Waters

The property contains two drainage ways. The N-31 drainageway is on the east and N-32 drainageway is on the west side of the property.

B. Discuss what survey methods were used to determine the absence or presence of state or federally listed wildlife and plants. (Sampling methodology should be agreed to by the regional planning council and other reviewing agencies at preapplication conference stage.) State actual sampling times and dates, and discuss any factors that may have influenced the results of the sampling effort. Show on Map G the location of all transects, trap grids, or other sampling stations used to determine the on-site status of state or federally listed wildlife and plant resources.

Introduction

In preparation for the habitat mapping and formal flora and fauna survey, letters requesting information regarding the presence of endangered or threatened plant and animal species, species of special concern and the existence of critical or significant habitat for the property and surrounding area were sent to the United States Fish and Wildlife Service (USFWS) and the Florida Fish and Wildlife

Conservation Commission (FFWCC). The Species and Natural Communities Summary for Broward County and elemental occurrence records prepared by the Florida Natural Areas Inventory (FNAI) and the Florida Department of Agriculture and Consumer Services (listing of Florida's plants as endangered threatened and commercially exploited) were also reviewed. Lastly the listing of species identified as rare within Broward County by the Florida Committee on Rare and Endangered Plants and Animals (FCREPA) was reviewed (Sec. 26-2 Rare Species). Responses from these USFWS and FFWCC are attached.

Based upon information obtained from each of the above referenced sources, a literature review was conducted to establish preferred habitat and biogeographic ranges within the county.

Vegetation and wildlife studies were conducted during the early and late part of the dry season. Numerous species are likely to utilize wetlands during this time period, especially the early part of the dry season, as receding water habitat. Therefore, it is likely that species that utilize the site with any frequency were considered when the studies were conducted.

Wetlands within the project area were determined to be isolated, grassy, and of low quality. Detailed field analysis was undertaken to delineate the extent of wetland habitat. The surrounding project area is also previously disturbed land that does not offer high quality habitat to any floral or faunal species.

Wildlife Surveys

Prior to establishing wildlife survey methodologies, the listed species most likely to be found at The Commons property were determined from compiled background information. Probability of occurrence was estimated based on results of the habitat community surveys and a literature review of species' habitat needs. Exhibit 12-2 identifies the protected wildlife species potentially occurring on the site and their probability of occurrence.

Exhibit 12-2 Listed Wildlife Species Potentially Occurring on-Site					
Species	Federal Status	State Status	FNAI Status	Habitat	Probability of Occurrence in Project Area
			Amphibians		
Gopher frog (Rana capito)		SSC	G3G4/S3	Dry, sandy uplands, chiefly sand hill and scrub, that include isolated wetlands or large ponds within about 1 mi.	low
	-L		Reptiles		·
Drymarchon corais couperi (Eastern indigo snake))	T	T	G4T3/S3	Wet prairies to xeric uplands	low
Drymarchon corais couperi (Gopher tortoise)		SSC	G4T3/S3	Sandhill, sand pine scrub, coastal strand, disturbed habitats-pastures, road shoulder	low

Exhibit 12-2 Listed Wildlife Species Potentially Occurring on-Site

Species	Federal Status	State Status	FNAI Status Birds	Habitat	Probability of Occurrence in Project Area
Aramus quarauna (Limpkin)		SSC	G5/S3	Inhabits mangroves, freshwater marshes, swamps, springs and spring runs, and pond and river margins.	low
Athene cunicularia floridana (Burrowing Owl)		SSC	G4/T3	High, sparsely vegetated, sandy ground	low
Egretta caerulea (Little blue heron))	p===	SSC	G5/S4	Shallow, freshwater, brackish and saltwater habitat	moderate
Egretta thula (Snowy Egret)		SSC	G5/S4	Marshes, swamps, ponds and mudflats	low-moderate
Egretta tricolor (Tricolored heron)		SSC	G5/S4	Seasonally flooded wetlands, mangrove swamps, tidal creeks, ditches, and edges of ponds and lakes.	low
Elanus leucurus (White-tailed kite)*			G5/S1	Grasslands	low-moderate
Eudocimus albus (White ibis)	_	SSC	G5/S4	Freshwater and brackish marshes, forested wetlands, wet prairies, swales, ditches	moderate
Falco sparverius paulus (Southeastern American kestrel)		Т	G5T/S3	Open pine habitats, woodland edges, prairies and pastures	low
Grus Canadensis pratensis (Florida sandhill crane)		Ť	G5T2T3/	Prairies, freshwater marshes, and pasture lands.	low-moderate
Haliaeetus leucocephalus (Bald eagle)	Т	Т	G4/S3	Coastal areas, bays, rivers, lakes, or other bodies of water that provide concentrations of food sources	low
Rostrhamus socialbilis plumbeus (Snail kite)	Е	E	G4G5T2/S2	Large open freshwater marshes and lakes with shallow water	low
Wood stork (Mycteria Americana)	Е	Е	G4/S2	Cypress stands, mixed hardwood swamps, sloughs, and artificial areas (dredge areas, ditches)	low

Notes: E = Endangered, T = Threatened

FNAI ranks indicate global (G) and state (S) rarity, if subspecies listed (T)

- 1: critically imperiled, or less than six occurrences
- 2: imperiled or less than 20 occurrences
- 3: rare, restricted, or otherwise vulnerable to extinction
- 4: apparently secure
- 5: demonstrably secure
- * On the rare animals list for the Town of Davie

A complete list of the wildlife observed and reported for the property is presented in Dr. Thomas Lodge's attached letter report "Table 1-Listed wildlife species potentially occurring on the Davie site."

Generic pedestrian surveys were conducted over a period of four days (March 21-24, 2005) throughout property. Binoculars were carried at all times while on the property and used to identify avian species flying over the property and/or foraging in the wetland areas. For three of the field days, surveys were conducted in conjunction with the wetland delineation activities. On the fourth day the property was divided into four quadrants and two wildlife biologists spent two hours walking through each quadrant covering at least 70% of each area. The quadrants are identified on Map G.

In addition to the above surveys, Dr. Thomas E. Lodge, a world renowned wetlands and threatened and endangered species expert, conducted a site reconnaissance walking through all representative areas of the property observing general conditions of the plant communities, ground surface, and hydrology and making lists of plants and animals observed. Dr. Thomas Lodge's observations are incorporated into the survey results.

Wetland Surveys Results

A number of listed birds are to be expected to use the depression wetlands on the property on a transient basis without nesting. Generic pedestrian surveys were conducted as described above for the following species: Florida sandhill crane, limpkin, little blue heron, snowy egret, tricolored heron, white ibis and wood stork. The site is primarily a fly over site that may occasionally be used for foraging, but does not provide nesting habitat. The only listed species observed were the little blue heron and white ibis. Two little blue herons were observed in Wetland B on 21 March 2005. White ibis were observed flying over the site.

Upland Survey Results

Based on the Broward County Soil Survey (USDA-NRCS 1991) information and site investigations there was no quality habitat identified for upland species survey on the property. The species determined to have a low potential for occurrence include the bald eagle, burrowing owl, gopher frog, gopher tortoise, eastern indigo snake, the snail kite, Southeastern American kestrel, and the white tailed kite, however based on the habitats present on the property, the probability for occurrence of these species is very low. Additionally there have been no recorded observations of these species in the vicinity of the Property.

The peat soil and high water table are not conducive to burrowing animals utilizing the property. Without such burrows, the probability of site use by eastern indigo snake or gopher frog is very low. The few holes observed on the property appeared to be collapsed fire ant colonies. Based on this information no specific surveys were conducted for these species.

The power line easement running from northeast to southwest on the property was also observed, particularly for the Southeastern American Kestrel. The highest area on the property is on the west end by the on-site trailer. This area of the property was surveyed in more detail for the burrowing owl. Neither of these

species was observed on the property.

Transient use by the bald eagle may occur during migration or foraging, but was not observed during any of the site surveys. No trees conducive to eagle nesting were observed. No open water that would support fish or apple snail populations were found, so that site use by the least tern, snail kite or osprey is not expected

Plant Survey Methodologies

In preparation for listed plant surveys, pertinent sources were reviewed to identify those species that potentially occur in Broward County, and within which habitat types they are likely to occur. Subsequent to review of background information and identification of suitable habitats for protected species, a watch list was compiled and used for surveying purposes. Exhibit 12-3 identifies the protected plant species that potentially inhabit the site and their probability of occurrence.

		Exhibi	t 12-3	
Listed Plant Species Potentially Occurring on-Site				
Species	Federal Status	State Status	Habitat	Probability of Occurrence in Project Area
Ecyclia tampensis (Florida butterfly orchid)		CE	Swamps, hammocks and moist hardwood forests.	low
Nephrolepsis biserrata (giant sword fern or Boston fern)		T	Forested wetlands and open disturbed habitats	low
Osmunda cinnamomea (Cinnamon fern)		CE	Moist to wet woods, shallow swamps, seepage slopes,	low
Osmunda regalis var. sectabilis (Royal fern)		CE	Wet woods, shallow swamps, shallow ponds	low
Phyla stoechadifolia (Southern frog fruit)		E	Marl prairies, pastures, waste places, disturbed ground and fill	moderate
Tillandsia fasciculate (Common wild-pine or cardinal air plant)		Е	Cypress swamps and hammocks	low
Tillandsia utriculata (Giant wild pine)		Е	Cypress swamps and hammocks	low
Trichostigma octandrum (Hoop vine)		E	Hammocks, roadsides and disturbed sites	low

The representative upland habitats and 37 wetlands on the property were surveyed with transects conducted in Wetlands C, M and CC. No listed plant species were observed on the property. Once again, the site represents a damp to wet-pasture condition that does not present probable habitat for listed plants. A complete list of plants observed and reported for the property is presented in Dr. Thomas Lodge's attached letter report "Revised Table 2 - Plants Observed at the Commons Site."

C. List all state or federally listed wildlife and plant resources that were observed on the site and show location on Map G. Given the plant communities on-site, list any additional state or federally listed wildlife and plant resources expected to occur on the site and show the location of suitable habitat on Map G. Additionally, address

any unique wildlife and plant resources, such as colonial bird nesting sites and migrating bird concentration areas. For species that are either observed or expected to utilize the site, discuss the known or expected location and population size on-site, existence (and extent, if known)of adjacent, contiguous habitat off-site, and any special habitat requirements of the species.

The property was analyzed for the potential presence of protected plant and wildlife resources. According to the USFWS the project area is located within the 18.6 mile radius of core foraging area of the endangered wood stork and the threatened eastern indigo snake may occur in the project area. The FFWCC reported that there are no records for listed species or critical habitats within the project area. An anticipated wildlife species list has been compiled for Broward County and the general project area. Generic pedestrian surveys of upland habitat did not reveal the presence of any listed species or suitable habitat. Surveys of the wetland areas revealed the presence of little blue heron. Additionally white ibis were observed flying over the property, but were not observed on the property. No listed plant species or suitable habitat was identified in the upland or wetland areas. The location of the two little blue heron observed on the property is reflected on Map G.

No unique vegetative associations were noted during field reviews within the boundaries of the project area. Also, no evidence of colonial bird nesting sites were observed, or otherwise documented on the property.

D. Indicate what impact development of the site will pose to affected state or federally listed wildlife and plant resources.

Based on field investigation by wildlife biologists from Langan, and Dr. Thomas Lodge, The Commons development will not cause any adverse affect to state or federally listed wildlife and plant species.

E. Discuss what measures are proposed to be taken to mitigate impacts to state and federally listed wildlife and plant resources. If protection is proposed to occur onsite, describe what legal instrument will be used to protect the site, and what management actions will be taken to maintain habitat value. If protection is proposed to occur off-site, identify the proposed amount and type of lands to be mitigated as well as whether mitigation would be through a regional mitigation land bank, by acquisition of lands that adjoin existing public holdings, or by other means.

There will be no impacts to state and federally listed wildlife and plant resources, therefore no mitigation is being proposed.

Thomas E. Lodge Ecological Advisors, Inc. 2420 Indian Mound Trail, Coral Gables, Florida 33134 (305) 446-6568 (voice); (305) 446-8224 (fax) tel ea@bellsouth.net

June 1, 2005

R.S. Murali, M.S., Associate Langan Engineering & Environmental Services 7900 Miami Lakes Drive West Suite 102 Miami Lakes, Florida 33016

Subject:

Listed plant and animal survey on 152 acres in Davie, Florida

Dear Mr. Murali:

Pursuant to our contract, I have completed a survey of the subject property located in Section 16, Twp. 50S, Range 40E, in Davie, Florida. This report presents the methodology, results, and conclusions.

Methodology. Listings by the US Fish and Wildlife Service (federally listed plants and animals as threatened and endangered); the Florida Fish and Wildlife Conservation Commission (state-listed animals as endangered, threatened, and species of special concern) and the Florida Department of Agriculture and Consumer Services (state-plants as endangered, threatened, and commercially exploited) were reviewed. A current, combined listing by the USFWS and FFWCC, prepared by the FFWCC, was downloaded from its web site. Current state-listed plants were taken from a Florida Department of Agriculture web site publication (Coile and Garland, 2003). In addition, a Broward County list of species in the categories stated above was downloaded from the Florida Natural Areas Inventory (FNAI) web site. This list was supplemented by information from Gann et al., 2002 (Rare Plants of South Florida: Their History, Conservation, and Restoration, The Institute for Regional Conservation) and my experience. Using these sources, a final selection of listed wildlife (plants and animals) that would potentially occur was developed for the site (Table 1).

Prior to the site visit, a recent color infrared aerial photograph of the site was reviewed. It showed circular features that appeared to be depressions, but no features that appeared to be remnant Everglades tree islands. These features guided formulation of the listed wildlife above, and served as a basis the site reconnaissance, which was conducted on May 23, 2005. My associate and I walked through all representative areas of the site observing general conditions of plant communities, ground surface, and hydrology, and making lists of plants and animals. We were especially concerned about any burrows that may be due to gopher tortoises and their ecological associates, and burrowing owls.

Results. The property was nearly dry during the site visit, with depressional wetlands and shallow ditches having saturated soils but no flooding. The site was being used for pasture, with numerous cows present. None of the species listed in Table 1 was seen, nor any evidence of

burrows that may have been used by gopher tortoises or burrowing owls. Also, the peat soil and apparent high water table would not be conducive to burrowing animals. Without such burrows, the probability of site use by the eastern indigo snake or gopher frog is very low. The few holes seen appeared to be collapsed fire-ant colonies.

A large number of listed birds are to be expected to use the property on a transient or seasonal basis. The depressional wetlands, in particular, would be used by herons, egrets, and white ibis. Transient use by the peregrine falcon and bald eagle may occur during migration or foraging. No trees conducive to eagle nesting were observed. No open water was found that would support fish or applesnail populations so that site use by the least tern, osprey or snail kite is not expected. Other animal species have similar expected limitations.

Incidental sightings of animal species included gray fox, red-tailed hawk, boat-tailed grackle, common grackle, cardinal, blue jay, mourning dove, mockingbird, and eastern meadow lark. All of these species are of common, widespread occurrence, although the gray fox is normally nocturnal and thus seldom seen.

Plants encountered in the field include those listed in Table 2. Most are characteristic of moist fallow fields and are of widespread occurrence in similar terrain. The list includes several invasive exotics. Examples were trees and shrubs on the edges of fields, including Brazilian pepper, Javanese bishopwood, and dayflowering jessamine. The latter was also widespread through the northwestern quarter of the property, accounting for an apparent recently developed shrubby character of that area, which was not apparent on the aerial photograph. An abundance of St. Augustine grass in many pasture areas indicates a probable past use for sod farming. Typical wetland plants such as smartweed and pickerelweed were abundant in the numerous depressional wetlands. No habitats were encountered that would likely harbor listed plants.

Conclusion. The site represents a damp to wet-pasture condition that was historically mostly Everglades marshland, prior to regional drainage. As such, it does not present probable habitat for listed plants and is not conducive to significant dependent use by listed animal species — only transient use without nesting. No listed species nor evidence of their presence was observed.

Sincerely,

Thomas E. Lodge Ecological Advisors, Inc.

Thomas E. Lodge, Ph.D., CEP Consulting Ecologist

Table 1. Listed wildlife species potentially occurring on the Davie site.

Plants		Listir	g Status
Scientific Name	Common Name	Fed.	State
Ecyclia tampensis	Florida butterfly orchid	N	CE
Nephrolepis biserrata	giant sword fern or Boston fern	N	T
Osmunda cinnamomea	cinnamon fern	N	CE
Osmunda regalis var. spectabilis	royal fern	N	CE
Phyla stoechadifolia	southern frogfruit	N	E
Tillandsia fasciculate	common wild-pine or cardinal airplant	N	E
Tillandsia utriculata	Giant wild-pine	N	E
Tournefortia hirsutissima	chiggery-grapes or soldierbush	N	E
Trichostigma octandrum	hoop vine	N	E
	•	†	<u> </u>
Animals		 	
Scientific Name	Common Name		
Amphibians			
Rana capito	gopher frog	N	SSC
Reptiles		1 -	===
Drymarchon couperi	eastern indigo snake	T	T
Gopherus polyphemus	gopher tortoise	N	SSC
Birds			
Aramus quarauna	Limpkin	N	SSC
Athene cunicularia floridana	Florida burrowing owl	N	SSC
Egretta caerulea	little blue heron	N	SSC
Egretta thula	snowy egret	N	SSC
Egretta tricolor	Tricolored heron	N	SSC
Eudocimus albus	white ibis	N	SSC
Falco peregrinus	peregrine falcon	N	Е
Falco sparverius paulus	southeastern American kestrel	N	T
Grus canadensis pratensis	Florida sandhill crane	N	T
Haliaeetus leucocephalus	bald eagle	T	T
Mycteria Americana	wood stork	Е	Е
Pandion haliaetus	Osprey	N	SSC
Rostrhamus socialbilis plumbeus	snail kite	Е	Е
Sterna antillarum	least tern	N	T

Status key: CE = commercially exploited E = endangered; N = not listed; SSC = species of special concern; T = threatened.

Note: Both listings noted in the original Table 2 submission are in error. The wrong species of Spermacoce was inadvertently recorded in the table. Neither of the correct two species that were identified during field studies is listed as threatened or endangered species by federal and state regulatory agencies. The specimens identified in field work were Spermacoce verticillata (shrubby false buttonweed), a common, non-native roadside and turfgrass weed in southern Florida seen widely on the site. After the report, referenced above, was completed, the identification of the Solanum species was found to be incorrect. The correct identification is Solanum capsicoides (soda apple), which is not listed as a threatened or endangered species, and is common in moist disturbed sites through most of Florida. The following revised Table 2 is the corrected version of the "Plants Observed at the Commons Site."

Revised Table 2. Plants Observed at the Commons Site

Scientific Name	Common Name		
Amaranthus spinosus	spiny amaranth		
Ambrosia artemisifolia	common ragweed		
Argemone mexicana	prickly poppy		
Asclepias curassavica	scarlet milkweed		
Bacopa monnieri	herb-of-grace		
Bidens pilosa	Spanish needles		
Bischofia javanica	Javanese bishopwood		
Boehmeria cylindrica	false nettle		
Centella asiatica	spadeleaf		
Cephalanthus occidentalis	common buttonbush		
Cestrum diurnum	dayflowering jessamine		
Commelina diffusa	common dayflower		
Desmodium incanum	beggar ticks		
Dichondra caroliniensis	Carolina ponysfoot		
Dioscorea bulbifera	air potato		
Eclipta prostrata	densilflorum		
Eleocharis interstincta	knotted spikerush		
Ficus aurea	strangler fig		
Hydrocotyle verticillata	whorled marshpennywort		
Ludwigia octovalvis	Mexican primrose willow		
Melilotus albus	white sweetclover		
Momordica charantia	balsampear		
Parthenocissus quinquefolia	Virginia creeper		
Phyla nodiflora	creeping Charlie		
Ptilimnium capillaceum	mock bishopsweed		
Pluchea carolinensis	cure for all		
Polygonum sp	smartweed		
Pontederia cordata	pickerelweed		
Psvchotria nervosa	wild coffee		
Ricinus communis	castorbean		
Sambucus nigra	American elder		
Schinus terebinthifolius	Brazilian pepper		
Sida acuta	common wireweed		

Scientific Name	Common Name		
Solanum capiscoides	soda apple		
Spermacoce assurgens	woodland false buttonweed		
Spermacoce verticillata	shrubby false buttonweed		
Sphagneticola trilobata	creeping oxeye, wedelia		
Thelypteris kunthii	widespread maiden fern		
Terma micranthus	nettle tree		
Vinca minor	common periwinkle		