DISTRIBUTION AND SPECIES COMPOSITION OF TREE ISLANDS IN MARTIN AND PALM BEACH COUNTIES

by

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This thesis was prepared under the direction of the candidate's thesis advisor, Dr. Daniel F. Austin, Department of Biological Sciences and has been approved by the members of her supervisory committee. It was submitted to the faculty of the College of the Science and was accepted in partial fulfillment of the requirements for the degree of Master of Science.

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ABSTRACT

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Sixty-two coastal and inland tree islands (hammocks) in Martin and Palm Beach Counties were mapped. Species composition was determined for 36 sites and used to test several hypotheses. The hypothesis was tested and supported that the percentage of tropical species inhabiting a tree island increases on north to south and west to east gradients. A linear regression was run to determine patterns in percent composition of tropical species and whether low hammocks were separable from high hammocks. Data suggested that a range from 75 to 80 percent tropical species composition might be used to define "tropical" hammocks. Since hammocks in southern Florida are considered habitat islands, the MacArthur and Wilson concept was tested. An obtained slope (z value) of 0.18 compares well with the slope of 0.17 predicted by the MacArthur and Wilson model. A cluster analysis showed similarities of 36 sites based on 83 tree and shrub species present.

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INTRODUCTION

Hammocks in southern Florida are islands of trees surrounded by other forest types, grasslands, or some other community (Harshberger, 1914; Davis, 1943; Egler, 1952; Austin, 1978, 1983). The islands are spatially separated from each other and are composed of various combinations of temperate and tropical species. Tropical hammocks, tree islands with a high tropical species composition, are mostly confined to coastal areas of both the east and west coasts of Florida (Davis, 1943; Alexander, 1958; Alexander, 1959, Austin et al., 1977). The northern limit of tropical hammock vegetation is Turtle Mound, an Indian shell mound on a barrier island in Volusia County (Norman, 1976). Tropical hammocks once existed as narrow, linear tropical forests on the Atlantic Coastal Ridge from Dade County northward to Brevard County (Richardson, 1977). Because of development in coastal Florida, many of these hammocks no longer exist (Alexander, 1959), and some only as fragments (Austin et al., 1977). Most remaining hammocks are in federal, county, or state ownership.

Hammocks with some tropical species also occur inland as isolated islands of trees on elevated areas of limestone or sand in wetlands (Harshberger, 1914; Richardson, 1977;

Duever, 1984), where they are usually referred to as low hammocks. Inland tree islands may be combinations of communities and may be surrounded by cypress swamp or bay species. The species composition is variable, depending on many factors, some of which may be local climate, protection from cold and fire, proximity to major slough areas that tend to moderate temperatures (Austin et al., 1977), and exposure to disturbance by man.

Indian shell or sand mounds with tropical species may be inland or coastal. Mounds have not been treated separately in the study, but deserve some discussion. Indian occupation and mound building in southern Florida began about 6500 B.C. and continued for 8000 years (Carr and Beriault, 1980). Radiocarbon samples dating peat strata intermixed with cultural material collected by Carr and Beriault (1980) suggested that some tree islands were occupied by Indians while the sites were still inundated. These authors also hypothesized that this occupation may have been an important contribution toward physiography and floristic development of these tree islands.

Hammocks in southern Florida are closed canopy forests with shrubs in the understory and few herbaceous species. The canopy may be composed of tree species that are of tropical and temperate affinities, with the percentage of tropical and temperate species depending on many factors including geology, topography, climate, and geography.

It has been proposed that a gradual change in percentage of tropical vs. temperate species occurs depending on the geographic position of the tree island. Northern habitats seem to have more temperate species and southern stands seem to have more tropical species (Davis, 1943). Central geographic areas have intermediate numbers of either temperate or tropical species (Austin et al., 1977). Also, coastal forests seem to have more tropical taxa than inland stands (Harper, 1927; Kurz, 1941).

Hammocks have been divided into as few as two categories (Ives in Richardson, 1977) or as many as eight (Davis, 1943). Many authorities on southern Florida plant communities recognize low or temperate hammocks and high or tropical hammocks. The division into high and low hammocks are based on the relative elevations, species composition, and structure. High hammocks are dominated by tropical species and occupy higher elevations while low hammocks are dominated by temperate species and occur on lower elevations. Frequently these two entities occur together and the distinction is not always readily recognized, as the plants in these hammocks include both temperate species and tropical species (Davis, 1943). Austin et al. (1977) suggested that tropical species composition near 85 percent might be acceptable by many Florida botanists in separating the two categories.

The island biogeography concept of species/area relationships proposed by MacArthur and Wilson (1967) predicted that the number of species on any island was numerically related to the size of the land mass. Since hammocks are island of trees, this theory may apply to these habitats.

Although many individual hammocks have been studied (Egler, 1952; Alexander, 1958 and 1959; Austin and Weise, 1972; Steinberg, 1976; Austin et al., 1977; Richardson, 1977), no previous studies have been made concerning the geographical locations of this southern Florida community nor have any comparative analyses of tree islands been based on their composition. This study is designed to determine the distribution and species composition of tree islands (hammocks) in Martin and Palm Beach Counties. Using the locations and species composition of 36 hammock sites, the following questions are addressed:

1. Does the percentage of tropical species in hammocks increase from north to south and from west to east as hypothesized?

2. Since there are two recognized types of tree islands known as hammocks, does a continuum exist or are there two distinct and separate types of hammocks?

3. Do the tree islands fit the concept of island biogeography hypothesized by MacArthur and Wilson relating number of species to the area of an island.?

4. Based on species composition, can these tree islands be grouped and compared according to species present, and how similar are they?

METHODS AND MATERIALS

DISTRIBUTION

Based on a review of the literature, hammock locations were listed and charted on Palm Beach and Martin County maps. Because many hammocks are associated with certain soil types underlain by rock substrate, Palm Beach and Martin County Soil Surveys (U. S. D. A., 1974 and 1978) were used to locate sites for study. Reported hammock locations were verified using recent aerial photographs and by physically visiting the sites. The ground search concentrated on coastal dunes and inland along major wetlands such as the Allapattah Marsh and Loxahatchee Marsh where hammocks were known to exist. The Florida Division of Historical Resources was contacted to obtain the location of Indian Mounds since these mounds are known to have been sites for hammock occurrence.

Sites selected for the study ranged from low hammocks with tropical species to tropical hardwood hammocks. Hammocks were located by range, township, and section on the Everglades Drainage District Map of 1944 from Florida Geological Survey, Bulletin 27, plate 13 (Parker and Cook, 1944). Criteria for inclusion in this study included

accessibility, species composition, and an arbitrarily selected minimum number of trees and shrubs. Tree islands were selected that were representative of the habitat and had tree and shrub species characteristic of low and high hammocks. To be included, the hammock had to contain a minimum of ten tree and/or shrub species. using this approach, bay heads and swamps were excluded. Thirty-six hammocks were selected for comparison from 62 known sites.

Sites in the study were named according to location where possible and assigned three letter designations for ease of identification on graphs and charts. All Indian Mounds were given an "I" for the third letter; for example, BBI was assigned to Barley Barber Swamp Indian Mound. Coastal sites on the lee side of the dunes were given a C as the third letter; hammocks that were coastal but not on the primary dune did not have this designation.

DATA COLLECTION

Data were collected for each site regarding number of canopy species and understory species, successional stage, surrounding vegetation, soil type, disturbance history, ownership, location within the county, local climate conditions, and other pertinent information. Historical information was also collected for sites where available. Data on several sites (e.g., Butts Hammock and Big Mound Complex sites) that were not personally field verified were

also used in the study. Hammock sites which were located as this study progressed but which were not investigated, were noted for possible future study.

Both shrubs and trees were included for study because of structural difficulties in distinguishing between small trees and large shrubs. Widespread exotic or naturalized species such as Brazilian pepper (Schinus terebinthifolius) that frequently occurred were included in the plant lists and data analysis. Cultivated species that occurred in isolated sites were not included because this analysis was used to examine natural systems. Verification of temperate and tropical nomenclature follows Long and Lakela (1976) and Tomlinson (1980).

DATA ANALYSIS

To test the hypothesis that the percentage of tropical species in tree islands increases from north to south and from west to east, distances were plotted against the percent tropical. Regression analysis using Lotus 123 on an IBM-PC computer was used to determine spatial patterns in percent composition of tropical species.

To test the MacArthur and Wilson theory of island biogeography, areas of hammocks were determined using recent aerial photos and an Apple II Graphics Tablet computer program. Three trials were made for each area and averaged. These areas were converted to square miles to conform to

methods used by MacArthur and Wilson for permitting a comparison with other studies.

The MacArthur and Wilson hypothesis was tested using regression analysis. Species/area relationships for all sites were determined by plotting the log of the number of species for each of the 36 sites in the study against the log of the area of each site, and a linear regression run on an IBM-PC computer. In the MacArthur and Wilson equation of $S = CA^z$, when converted to a double log plot, the z becomes the slope and can be resolved in the regression analysis. The results of this study were then compared to the results of MacArthur and Wilson (1967) and to studies by other authors.

To determine if similarity exists among hammocks based on species composition, data were analyzed using a computer program written by Clifton Nauman (1986) of Fairchild Tropical Gardens. Data were entered into a data file using two-state characters (binary) and the program was run which created a matrix of similarity coefficients. Thirty-seven hammocks were entered as a data set of "OTU'S" (Operational Taxonomic Units), and 83 species were entered as characters. Cluster analysis was produced by an unweighted pair group method of arithmetic averages and provided formatted pages for manual plotting of a cladogram. Data were plotted and the hammocks were grouped according to similarity of species present. Data for Turtle Mound (Norman, 1976) in Volusia

County were included in this analysis to compare this northernmost hammock to the hammocks in my study.

RESULTS AND DISCUSSION

DISTRIBUTION

Sixty-two hammocks in Martin and Palm Beach Counties were located and 36 selected for study (Table 1). Additional hammocks (Table 2) are denoted by x's and study sites are denoted by solid dots with three letter abbreviations on Fig. 1. Seventeen sites were coastal and 19 were inland. Twelve of the sites were in Martin County and 24 were in Palm Beach County. Of the 12 sites in Martin County, eight were coastal and four were inland. In Palm Beach County nine sites were coastal and 15 inland.

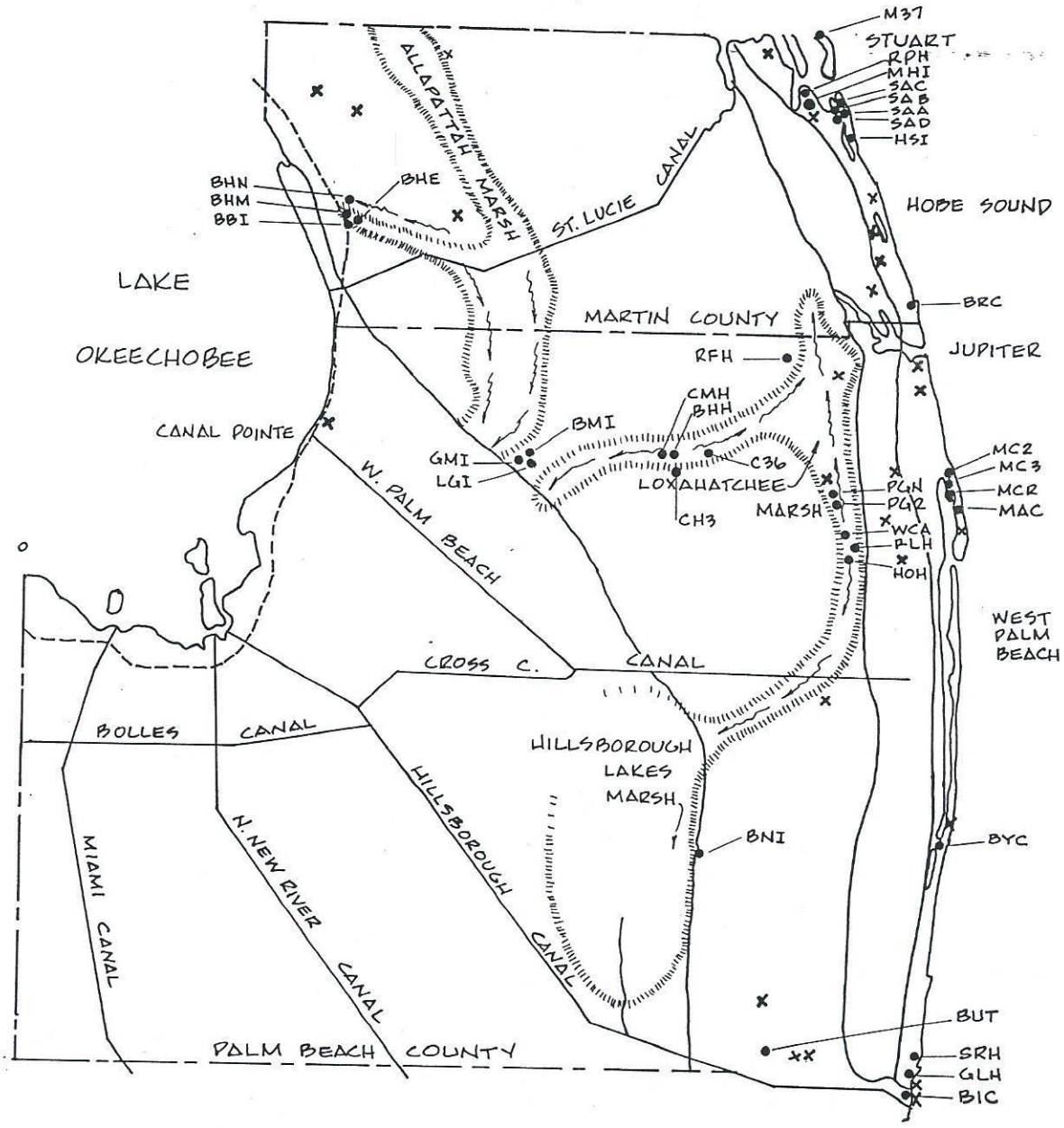
Coastal hammocks were located on the lee sides of dunes on barrier islands and on elevated areas west of the Intracoastal Waterway. Extensive coastal hammocks that once extended from the northern Martin County line southward into Broward and Dade Counties now exist as fragments because of rapid development of the coastal ridge (Richardson, 1977). These barrier island fragments were once part of continuous or near-continuous linear systems bordered by beach strand to the east and inland lakes and rivers to the west. Hammocks of this type are Blowing Rocks Hammock in southern Martin County, and MacArthur Hammock, Boynton Hammock, Spanish River Hammock, Gumbo Limbo Hammock, and Boca Inlet

TABLE 1. HAMMOCKS IN STUDY

Hammock Name	Site	Type Hammock	County
Barley Barber Swamp	BBI	INDIAN	MA
Barley Hammock East	BHE	INLAND	MA
Big Hungryland	BHH	INLAND	PB
Barley Barber Hammock 2	BHM	INLAND	MA
Barley Hammock North	BHN	INLAND	MA
Boca Inlet	BIC	COASTAL	PB
B-Line	BLH	INLAND	PB
Big Mound	BMI	INDIAN	PB
Boynton Burial Mound	BNI	INDIAN	PB
Blowing Rocks	BRC	COASTAL	MA
Butts Hammock	BUT	INLAND	PB
Boynton Hammock	BYC	COASTAL	PB
C-36	C36	INLAND	PB
Corbett Hammock 3	CH3	INLAND	PB
Corbett Moon	CMH	INLAND	PB
Gumbo Limbo	GLC	COASTAL	PB
Big Gopher Mound	GMI	INDIAN	PB
Hog Island	HOH	INLAND	PB
Hobe Sound Wildlife Refuge	HSI	INDIAN	MA
Little Gopher Mound	LGI	INDIAN	PB
8MT37	M37	INDIAN	MA
MacArthur 2	MC2	COASTAL	PB
MacArthur 3	MC3	COASTAL	PB
MacArthur C	MAC	COASTAL	PB
MacArthur R	MCR	COASTAL	PB
Hurchalla Indian Mound	MHI	INDIAN	MA
PG2 Hammock	PG2	INLAND	PB
PGA N Hammock	PGN	INLAND	PB
Rain Forest	RFH	INLAND	PB
Rocky Point	RPH	INLAND	MA
St Lucie A	SAA	COASTAL	MA
St Lucie B	SAB	COASTAL	MA
St Lucie C	SAC	COASTAL	MA
St Lucie D	SAD	COASTAL	MA
Spanish River	SRC	COASTAL	PB
WCA Hammock	WCA	INLAND	PB

TABLE 2. ADDITIONAL HAMMOCKS FOR STUDY

Hammock Name	Site	Type Hammock	County
8MT15	M15	INDIAN	MA
8MT20	M20	INDIAN	MA
8PB223	P223	INDIAN	PB
Bloods Hammock Grove	BHG	INLAND	PB
Boar Hammock	BOA	INLAND	MA
Boca Beach Park	BBP	COASTAL	PB
Boca Inlet Arvida	BIA	COASTAL	PB
Boca West 1	BW1	INLAND	PB
Boca West 2	BW2	INLAND	PB
Demick Reese Hammock	DRH	INLAND	PB
Donald Ross Area	DRA	INLAND	PB
Earmine River Hammock	ERH	INLAND	PB
Forty Fifth Street	FFS	INLAND	PB
Francis Langfords Hammock	FLH	INLAND	MA
Hood Rd	HRH	INLAND	PB
Juno Jupiter Coastal	JJC	COASTAL	PB
Loblolly Bay Indian	8MT33	INDIAN	MA
MacArthur 1	Mc1	COASTAL	PB
Myer Hammock	MYH	INLAND	MA
Owens Grove	OGH	INLAND	MA
Palm Beach Farms Hammock	PBF	INLAND	PB
PB54 Boynton Inlet	BII	INDIAN	PB
Riviera site	RBH	INLAND	PB
Rolling Hills Hammock	RHH	INLAND	MA
Schooner Oaks Indian	SOI	INDIAN	MA
Willow Bustic Indian	WBI	INDIAN	MA



LEGEND:

- ● HAMMOCKS IN STUDY
- × ADDITIONAL HAMMOCKS

FIGURE 1.: HAMMOCKS IN MARTIN AND PALM BEACH COUNTIES
SOURCE: MODIFIED FROM PARKER AND COOK (1944)

Park Hammock in Palm Beach County.

Coastal hammocks on the borders of inland lakes or waterways, were more insular than the linear hammocks on the barrier islands because they were surrounded by mangrove swamp, freshwater swamp, or low hammock habitats. The construction of the Intracoastal Waterway in the 1880's and early 1900's, changed a system of freshwater lakes and marshes to a saltwater system which influenced some of these hammocks (Austin et al., 1977). In Martin County, the St. Lucie hammocks were south of the St. Lucie Inlet and in Palm Beach County, three MacArthur Hammocks were at the northern end of Lake Worth. Hobe Sound Indian Mound is the only Indian mound on a barrier island that was not associated with a linear system, and Hurchalla Indian Mound is in a freshwater swamp on the west side of the Intracoastal Waterway. Rocky Point Hammock, located on a peninsula in scrub habitat, is the only known hammock of this type in southern Florida and warrants further study.

Many of the coastal hammocks are managed by agencies such as the Florida Department of Natural Resources (St. Lucie County Park, MacArthur Park), U. S. Fish and Wildlife Service (Hobe Sound Indian Mound on Jupiter Island), Martin County (Rocky Point Hammock), Palm Beach County (Boynton Beach Park, Spanish River Park, Boca Inlet Park), City of Boca Raton (Gumbo Limbo), and The Nature Conservancy (Blowing Rocks Nature Preserve).

Inland sites in both Martin and Palm Beach Counties occurred on elevated islands associated with major waterways of the Allapattah Marsh, the Loxahatchee Slough, the eastern edge of the Everglades, and the Hillsborough Marsh. Inland tree islands in Martin County occur along the margins of the Allapattah Slough. The slough has small branch drainages leading west into Lake Okeechobee and also disperse into the center of the county. Recent (1920's) construction of the St. Lucie Canal from Port Mayaca on Lake Okeechobee east and north to the St. Lucie River cut through the southern end of the slough (Parker and Cook, 1944). Historical drainage of the slough was southwest into the eastern edge of the Everglades, and southeast into the Loxahatchee River. Four tree islands are located in this slough just north of Port Mayaca in the Florida Power and Light Barley Barber Swamp. One of these sites is a known Indian mound.

Tree islands in interior Palm Beach County occur along a narrow wishbone-shaped area from the Loxahatchee River south to the West Palm Beach Canal and from the Loxahatchee River southwest through the Hungryland Slough to the eastern edge of the Everglades. The eastern branch of this area was known as the Loxahatchee Slough and drained into the Hillsborough Lake (Parker and Cook, 1944). Remaining portions of the Loxahatchee Slough are now in the Water Catchment Area of West Palm Beach, and Hillsborough Lake is now in Water Conservation Area I (Loxahatchee National

Wildlife Refuge).

One site, Rain Forest Hammock, is located in the Jupiter Farms area which was once part of the northern drainage route of the Loxahatchee Marsh. Four study sites, Corbett Moon Hammock, Big Hungryland Hammock, Corbett Hammock Three, and Corbett 36 Hammock, were located in the Hungryland Slough in the J. W. Corbett Conservation Area. Big Mound Indian Hammock, Gopher Mound Indian Hammock, and Little Gopher Mound Hammock, are part of the Big Mound Complex on the eastern edge of the Everglades at the western intersection of an Allapattah Marsh drainage area and the western edge of the Hungryland Slough. The Big Mound Complex plant lists were provided by Daniel F. Austin and were not site inspected. Three sites, Water Catchment Hammock, Hog Island Hammock, and B-Line Hammock, are in the Water Catchment Area and two sites, PG North and PG2 Hammock are north along the remnant slough of the Loxahatchee River. Two Palm Beach County inland sites occurred along the southern edge of the Hillsborough Lakes area; Boynton Indian Mound is east of Conservation Area I, and Butts Hammock is in the Hillsborough Lakes drainage basin in Boca Raton. The Butts Hammock plant list and description was obtained from Austin et al. (1977), and the site was not observed.

Soils associated with coastal hammocks included Palm Beach Series and Canaveral sand. Inland hammocks occurred

on Waveland, Riviera sand, Hallandale, Pinellas fine sand, and other soil series underlain by limestone near the surface. These designations are arbitrary in that mapping soils may be mixtures of other soil types because of the differences of soil properties occurring over short distances (U.S.D.A., 1978). Appendix A contains a list of hammocks showing location by range, township, and section; number of species; percent tropical species; soil types and other pertinent information.

Additional inland hammocks (Table 2), not in the study, occurred along the Allapattah Marsh and the Loxahatchee Slough, extending northward to the Loxahatchee River, westward toward Lake Okeechobee, and southward along the Loxahatchee slough through Hillsborough Lakes region.

SPECIES COMPOSITION

Eighty-three species of trees and shrubs were recorded from the 36 sites and are listed in Table 3. Sixty-nine species (83.1 percent) were trees, 13 species (15.7 percent) were shrubs. One (one percent) herbaceous species, bloodberry (Rivina humilis), was included because it occurred in 19 sites (52.8 percent). Of the 83 species, 31 (37.3 percent) were of temperate affinity and 52 (62.7 percent) were tropical.

The percentage of tropical species in coastal hammocks ranged from 80.6 percent in Rocky Point Hammock, one of the

TABLE 3. SPECIES LIST FOR ALL HAMMOCKS IN STUDY

Scientific Name	Common Name
HERB	
Rivina humilis	Bloodberry
SHRUBS	
Callicarpa americana (N)	Beautyberry
Dalbergia ecastophyllum	Fish Poison
Hypericum hypericoides (N)	St. Andrews Cross
Itea virginica (N)	Virginia Willow
Lantana camara	Lantana
Lyonia ferruginea (N)	Rusty Lyonia
Lyonia lucida (N)	Shiny Lyonia
Phytolacca americana (N)	Pokeweed
Solanum bahamense	Bahama Nightshade
Solanum erianthum	Potato Tree
Vaccinium arboreum (N)	Sparkleberry
Vaccinium myrsinites (N)	Shiny Blueberry
Yucca aloifolia	Spanish Bayonet
TREES	
Acer rubrum (N)	Red Maple
Amyris elemifera	Torchwood
Annona glabra	Pond Apple
Ardisia escallonioides	Marlberry
Baccharis sp. (N)	Saltbush
Bumelia tenax (N)	Buckthorn
Bursera simaruba	Gumbo Limbo
Capparis cynophallophora	Jamaica Caper
Capparis flexuosa	Limber Caper
Carica papaya	Papaya
Carya floridana (N)	Scrub Hickory
Casuarina sp.	Australian Pine
Celtis laevigata (N)	Sugarberry
Cephalanthus occidentalis (N)	Buttonbush
Chiococca alba	Snowberry
Chrysobalanus icaco	Coco-plum
Chrysophyllum oliviforme	Satin Leaf
Citrus aurantium	Sour Orange
Citrus paradisi	Grapefruit
Citrus sinensis	Sweet Orange
Coccoloba diversifolia	Pigeon Plum
Coccoloba uvifera	Sea Grape
Diospyros virginiana (N)	Persimmon
Dipholis salicifolia	Bustic

TABLE 3. SPECIES LIST FOR ALL HAMMOCKS IN STUDY

Scientific Name	Common Name
Drypetes lateriflora	Guiana Plum
Erythrina herbacea	Coral Bean
Eugenia axillaris	White Stopper
Eugenia foetida	Spanish Stopper
Exothea paniculata	Inkwood
Ficus aurea	Strangler Fig
Forestiera segregata	Florida Privet
Guapira discolor	Blolly
Hamelia patens	Firebush
Ilex cassine (N)	Dahoon Holly
Ilex glabra (N)	Gallberry
Krugiodendron ferreum	Ironwood
Lysiloma latisiliqua	Wild Tamarind
Magnolia virginiana (N)	Sweet Bay
Mastichodendron foetidissimum	Mastic
Metopium toxiferum	Poisonwood
Morus rubra (N)	Red Mulberry
Myrcianthes fragrans	Naked Wood
Myrica cerifera (N)	Wax Myrtle
Myrsine guianensis	Myrsine
Nectrandra coriacea	Lancewood
Persea borbonia (N)	Red Bay
Pinus elliottii (N)	Slash Pine
Pithecellobium keyense	Black Bead
Psidium guajava	Guava
Psychotria nervosa	Wild Coffee
Psychotria sulzneri	Wild Coffee
Quercus chapmanii (N)	Chapman's Oak
Quercus laurifolia (N)	Laurel Oak
Quercus myrtifolia (N)	Myrtle Oak
Quercus virginiana (N)	Live Oak
Randia aculeata	White Indigo-berry
Rhus copallina (N)	Southern Sumac
Sabal palmetto	Cabbage Palm
Salix caroliniana (N)	Willow
Sambucus canadensis (N)	Elderberry
Schinus terebinthifolius	Brazilian Pepper
Schoepfia chrysophylloides	Gulf Greytwig
Serenoa repens	Saw Palmetto
Simarouba glauca	Paradise Tree
Taxodium distichum (N)	Cypress
Trema micrantha	Florida Trema
Ximenia americana	Tallow Wood
Zanthoxylum clava-herculis (N)	Hercules Club
Zanthoxylum fagara	Wild Lime

most northern sites, to 96.1 percent in Boca Inlet Hammock, the southernmost site. The 59 mile distance from 8MT37 in north Martin County to Boca Inlet Hammock was used in the regression analysis to test the increase in tropical composition from north to south (Fig. 2). The regression analysis in Appendix B shows a slope of 0.03 and a correlation coefficient of 0.17, indicating a slight overall increase in tropical species composition. Different environmental influences of ocean currents and inland waters, the opening of inlets, dredging of the Intracoastal Waterway and subsequent erosion of the barrier islands may have affected the species composition of some of these coastal hammocks. The most probable factor contributing to the low correlation from north to south is that the sample area of 59 miles of coastline in Martin and Palm Beach Counties does not cover a sufficient distance to adequately test the hypothesis.

Plant lists were obtained from two sites north of the study area and one site in the Florida Keys to compare species composition with the study area. Turtle Mound, a coastal hammock in Volusia County, shows a tropical species composition of 58.8 percent (Norman, 1976) and Highlands Hammock State Park (Beck et al., 1966), the northernmost inland hammock has 48.8 percent tropical species composition. Lignum Vitae Key in the Florida Keys has 97.9

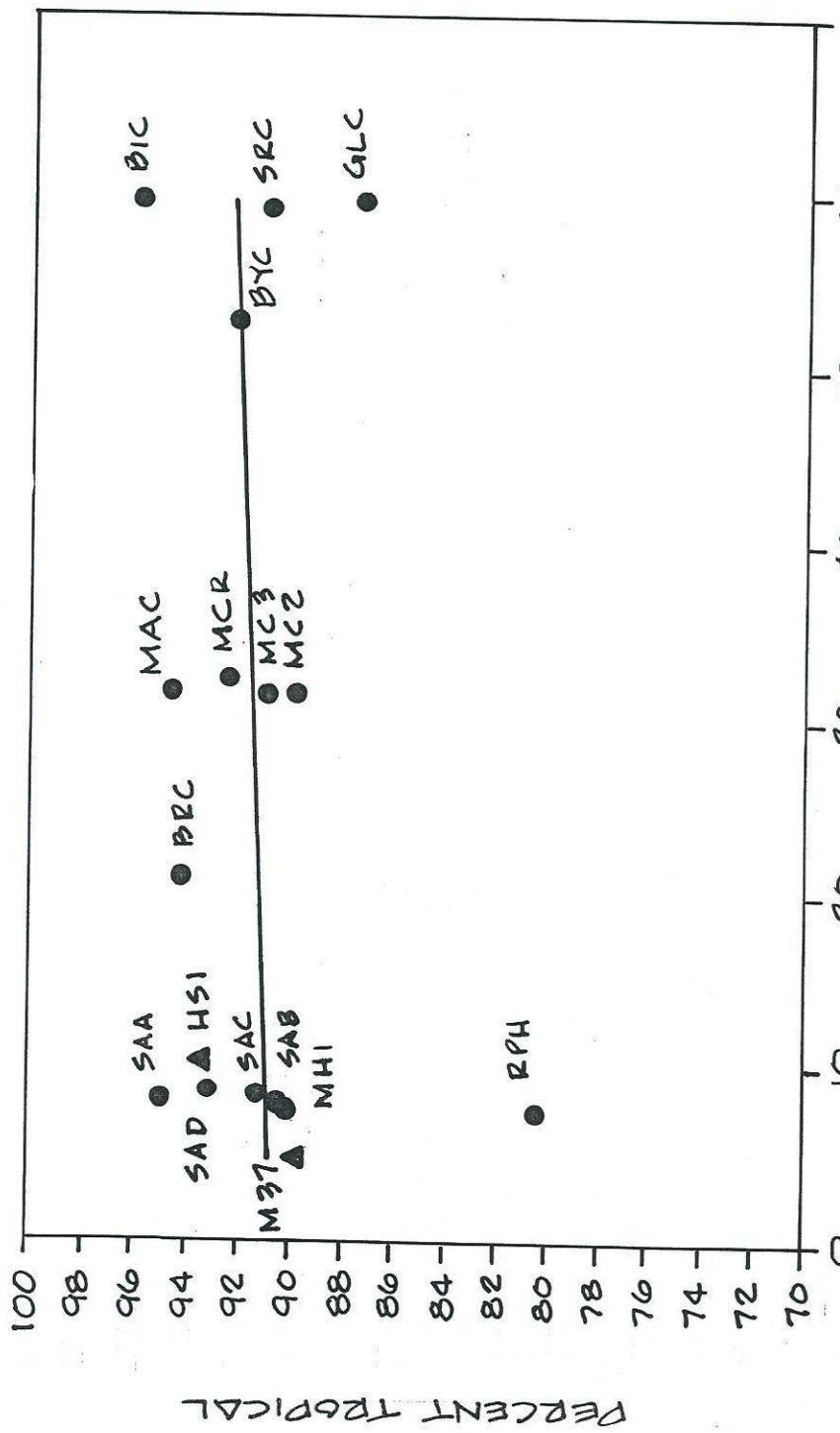


FIGURE 2: DISTRIBUTION OF COASTAL HAMMOCKS NORTH TO SOUTH

percent tropical species composition (Avery, 1968). The increased tropical species composition of 39.1 percent (from 58.8 to 97.9 percent), over a distance of 279 miles indicates a better test of this hypothesis than the range obtained in this study of 15.5 percent (from 80.6 to 96.1 percent). Plant lists for these three hammocks are in Appendix C.

The distribution and percent tropical composition of inland hammocks is shown graphically in Fig. 3. Nineteen inland sites were used in the study with 31.6 miles (relative position) from the westernmost site, Barley Hammock Mound to the easternmost inland site, B-Line hammock. The distance measurement is a west to east measurement and did not account for north to south distribution. Regression analysis (Appendix B) shows a slope of 0.26 with a correlation coefficient (r) of 0.27. The correlation is higher than the 0.17 for north to south distribution, however, it is still low. The 31.6 mile distance is also less than the 59 miles for coastal hammocks, however, data are not presently available for sites west of the study area.

The percent tropical composition for inland sites ranged from 40.0 to 74.3 percent, which was lower than the 80.6 percent lower limit for the coastal hammocks. The lower tropical percent composition is estimated to be the

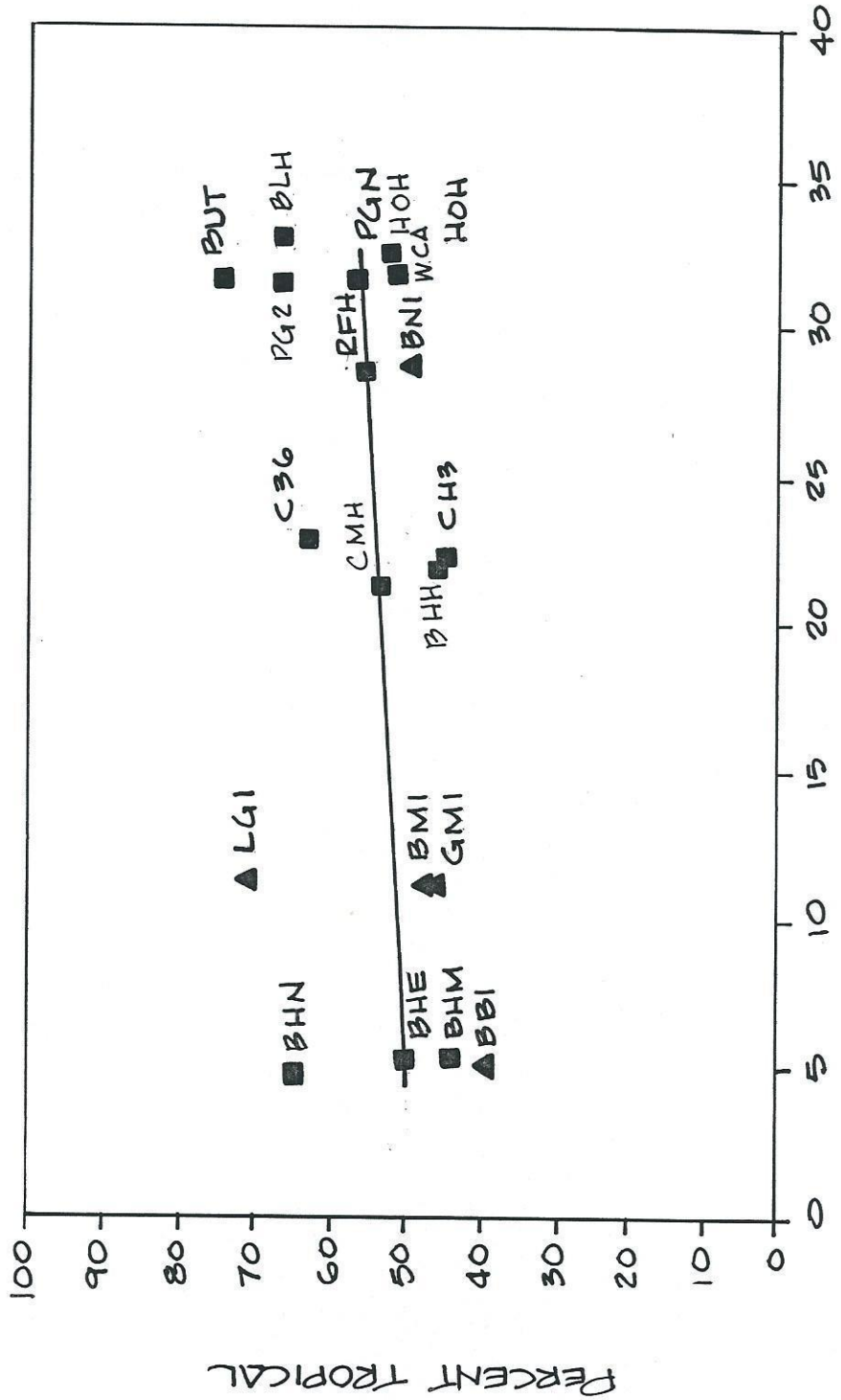


FIGURE 3: DISTRIBUTION OF INLAND HAMMOCKS
WEST TO EAST

result of arrested stages of succession encountered by inland communities because of variable environmental conditions. Many of the tropical tree and shrub species showed signs of cold damage as evidenced by dead limbs as much as halfway down the trunk. Proximity to deep bodies of water, canopy height, maturity of the forest, distribution of seeds and other factors beyond the scope of this study are probably involved.

Since there are two recognized types of hammocks, it is possible that a continuum exists rather than two distinct and separate types of hammocks. This question was addressed by Austin et al. (1977) who suggested a range of 80 to 85 percent tropical composition for distinguishing tropical hammock from temperate hammocks.

The tropical species composition in the 36 sites ranged from 40.0 to 96.1 percent. Coastal hammocks had higher percent tropical species than inland with the range between 80.6 to 96.1 percent; and the inland hammocks ranged from 40.0 to 74.3 percent. There was no overlap of percentage tropical species between the coastal and inland sites (Fig. 4). Regression analysis (Appendix B) with number of species in the 36 hammocks and percent tropical for each site shows a slope of 0.27 and a correlation coefficient (r) of 0.64. The results (Fig. 4) show 16 of the 17 coastal sites clustering around 90 to 95 percent, and 13 of the 19 inland

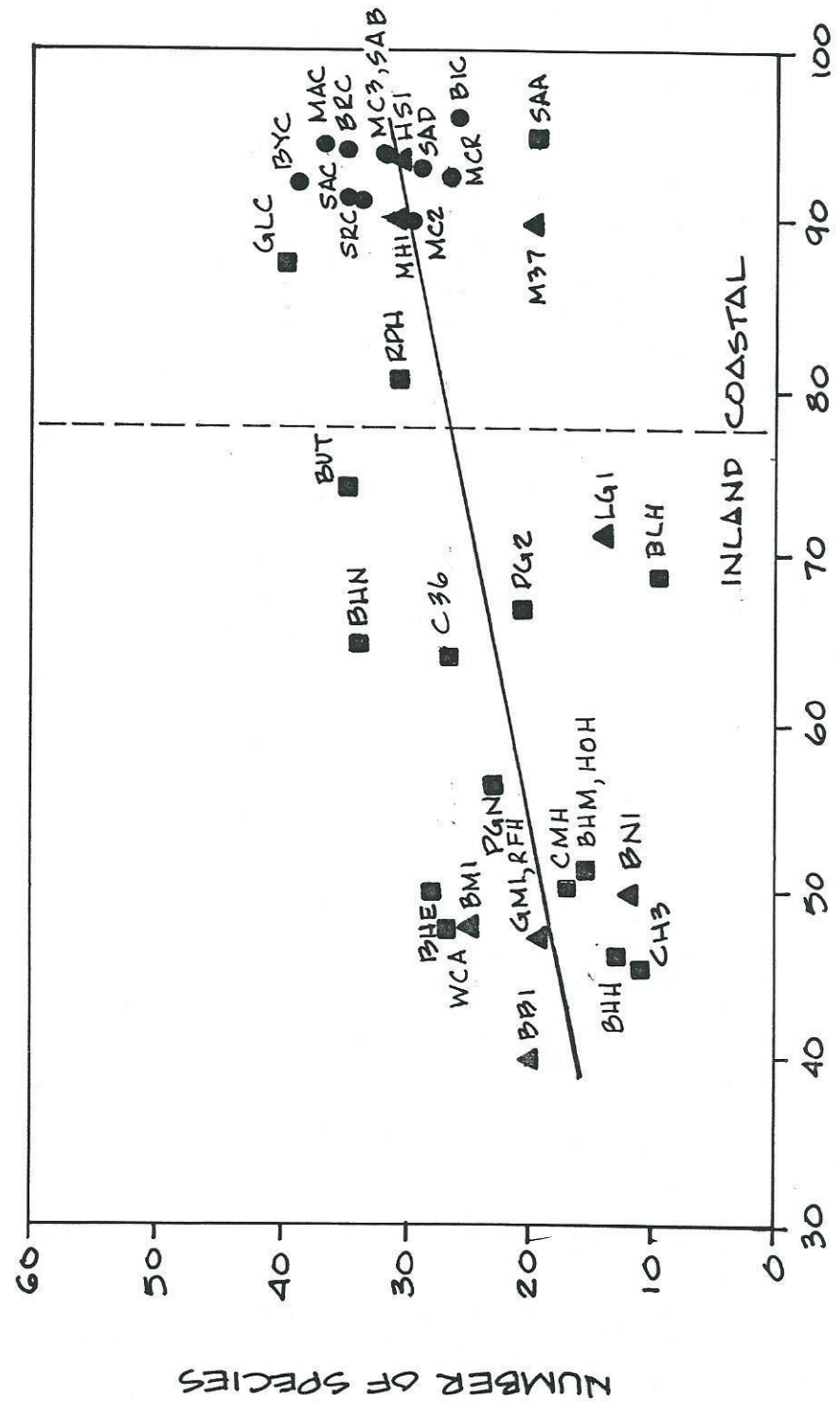


FIGURE 4: NUMBER OF SPECIES VS % TROPICAL
ALL HAMMOCKS

sites in a loose grouping around 50 percent. Of the coastal sites, two (St. Lucie "A" and 8MT37) have low numbers of species (20 each) and are isolated below the cluster. Rocky Point Hammock with 80.6 percent tropical composition has the lowest percent for coastal sites and appears to be more continuous with the inland hammocks than associated with coastal sites. The Rocky Point site is the only hammock in the study that has scrub as the surrounding community, and Scrub hickory (Carya floridana) as the most abundant canopy species.

Wide ranges of environmental conditions associated with inland communities would account for the looser clustering effect and more spreading distribution. Inland tree islands are associated with bay heads, cypress swamps, and cabbage palm hammocks which also add to variation within sites as well as between sites (Fig. 4). There is no overlap of coastal and inland sites in this study. Coastal sites, with the higher number of species and higher tropical composition, are more compact and similar in composition than inland hammocks. Although the sites show a continuous range graphically, it appears that no continuum exists from low to high hammocks. Tropical species composition of 75 percent or less for low hammocks and tropical species composition of 80 percent or greater for high hammocks should be considered as distinguishing these two types of hammocks.

ISLAND BIOGEOGRAPHY

One aspect of MacArthur and Wilson's theory of island biogeography relating the number of species on an island to the area of that island may be applicable to southern Florida hammocks since these are islands surrounded by other vegetation types and physically separated from each other. MacArthur and Wilson (1967) stated that insularity is a universal feature of biogeography and that "many of the principles graphically displayed in the Galapagos and other remote archipelagos apply in lesser or greater degree to all natural habitats."

The equation $S = CA^z$ relates the number of species (S) of a given taxon found on an island to an area (A) of that island. C is a parameter that is specific to the taxon and biogeographic region. Z is a parameter that changes little among the taxa or within a given taxon in different parts of the world. Actual values of z have been determined from a number of studies, most clustering in the range 0.20-0.35 on true islands. In non-isolated sample areas within islands or within continents, a similar relation exists between area and species number, and a smaller z value is obtained, usually between 0.12 and 0.17 (MacArthur and Wilson, 1967).

The tree islands in this study appear to fit the concept of island biography hypothesized by MacArthur and Wilson relating number of species to the area of an island. Regression analysis (Appendix B) of log number of species

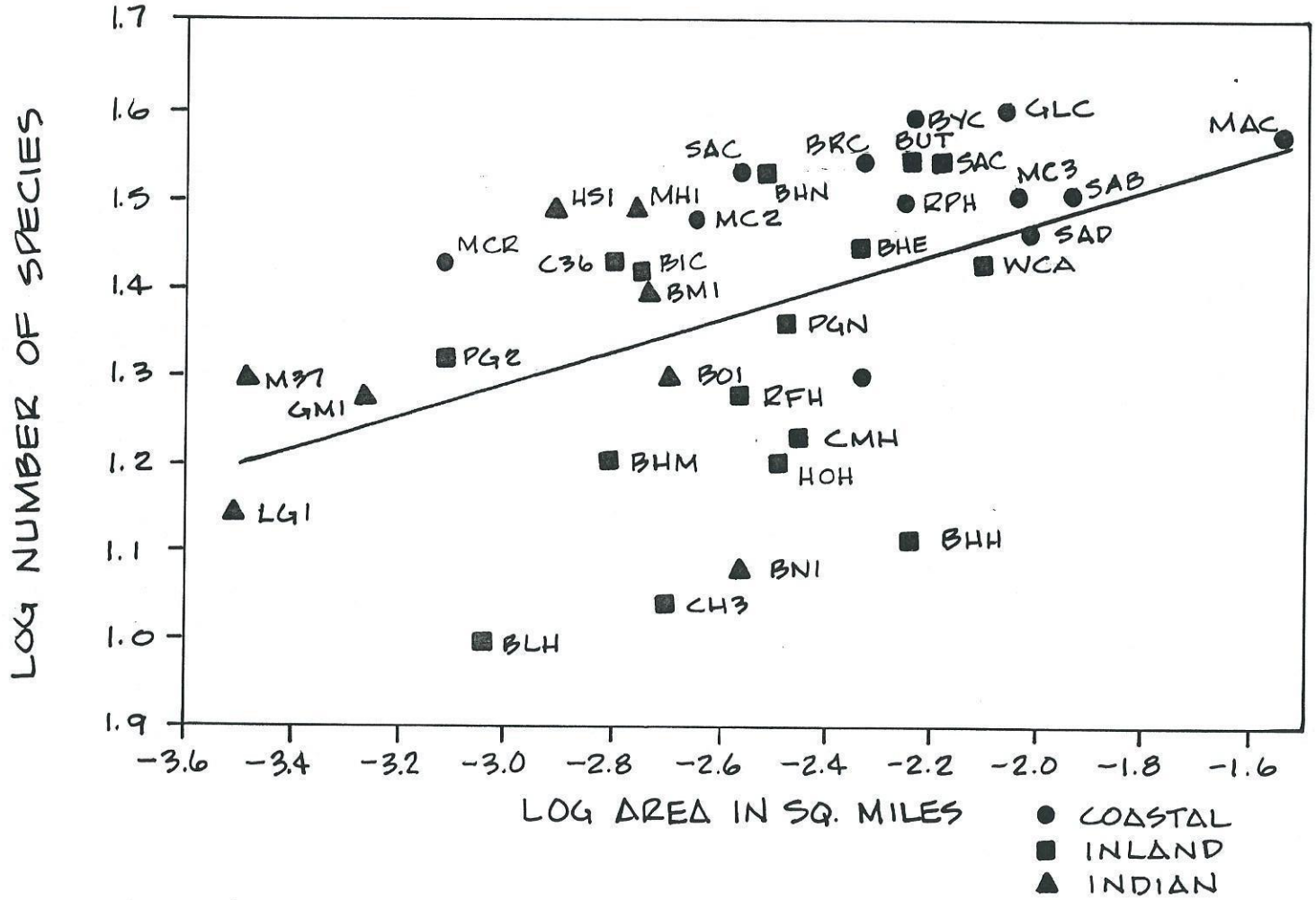


FIGURE 5: LOG NUMBER SPECIES VS LOG AREA
ALL HAMMOCKS

Austin, et al. (1987) and it did not work.

CLUSTER ANALYSIS

A matrix was compiled from 36 study sites and Turtle Mound, with the species present in each of the sites recorded. This matrix of 36 sites and 83 species was used as a basis of the data file for the calculation of similarity coefficients for the cluster analysis and cladogram produced (Fig. 6). The matrix of species and hammocks is in Appendix D and data for the cluster analysis are in Appendix E.

As graphically shown in the cladogram (Fig. 6), the percent similarity of the hammocks ranged from 85 percent similarity for two coastal hammocks, St. Lucie "B" and "D" sites, to 20 percent similarity between the two major clades, coastal and the inland hammocks. There were seven minor clades with 70 percent or greater similarity in coastal sites compared to one minor clade with 70 percent in inland hammocks.

Species occurring in several sites are considered as indicators of communities and described by Oosting (1956) as presence. This degree of regularity of species occurring in stands can be tabulated from the matrix in Appendix D. Sabal palmetto occurred in all 35 sites (97.2 percent); Ficus aurea in 33 sites (92 percent), Schinus terebinthifolius in 32 sites (89 percent), Psychotria

nervosa in 31 sites (86 percent), Eugenia axillaris in 27 sites (75 percent), and Myrsine guianensis in 26 sites (72 percent).

The coastal hammocks were more similar to each other than the inland hammocks and this can be accounted for in part because ten species occurred in coastal sites that did not occur in inland sites. These species are: Amyris elemifera, Capparis cynophallophora, Capparis flexuosa, Dalbergia ecastophyllum, Krugiodendron ferreum, Pithecellobium keyense, Randia aculeata, Solanum bahamense, and Solanum erianthum. Dalbergia ecastophyllum and Solanum bahamense are considered strand species and occur in the ecotone between strand and hammocks. All the species are bird dispersed and no studies have been done which would examine this limited occurrence.

These tree islands can be grouped according to species present and their similarity compared. The St. Lucie "A", St. Lucie "B", St. Lucie "D", Blowing Rocks, and Hobe Sound Indian Mound grouping is natural in that these hammocks are clustered physically in northern Martin County south of the St. Lucie Inlet. Because of the physical closeness, they would be expected to have many of the same species.

Spanish River, Gumbo Limbo, Boynton, and MacArthur Coastal hammocks are all fragments of linear coastal sites on the lee side of the dune. MacArthur Rock, MacArthur 3, and MacArthur 2 hammocks are located at MacArthur Park and

link to the Spanish River hammock group. The Boca Inlet hammock is a coastal fragment. The last four coastal hammocks: Maggie Hurchalla Mound, St. Lucie "A", 8Mt37, and Rocky Point hammocks are in the same area, but are similar to a lesser degree. Turtle Mound, the last site, with a 30 percent similarity to the other coastal hammocks is located in Volusia County, far to the north.

The lower percentages exhibited by the inland sites can be attributed to environmental variation discussed with other tests. The clade with Water Catchment, Corbett 36, PG North, Corbett Moon, Hog Island, Rain Forest, PG 2, and Barley Barber Hammock includes sites from north-central Palm Beach County. The next clade shows Butts Hammock, a south Palm Beach County site grouped with Barley Hammock North, Barley Hammock East, Barley Hammock Mound, and Barley Barber Indian, which are geographically located in northwest Martin County. An explanation might be that they are all near a single cypress drainage basin, even though these sites are located at opposite ends of the study area.

The cluster analysis program utilized by this study used presence or absence of species to obtain the percent similarity. Multiple factors can be utilized by the cluster analysis program and more study of biological and environmental conditions associated with hammocks would contribute to the present knowledge of hammock communities.

APPENDICES

APPENDIX A:

HAMMOCKS IN THESIS STUDY INCLUDING AREA; NUMBER OF SPECIES; PERCENT TROPICAL; TYPE HAMMOCK; LOCATION BY RANGE, TOWNSHIP, SECTION; SOIL TYPE, OWNERSHIP, LOCATION, AND SURROUNDING VEGETATION

APPENDIX A: HAMMOCKS IN STUDY

NAME	SITE	AREA	NUMBER SPECIES	PERCENT TROPICAL	COUNTY
Barley Barber Swamp	BBI	1.0	20	40.0	MA
Barley Hammock East	BHE	3.0	28	50.0	MA
Big Hungryland	BHH	3.7	13	46.2	PB
Barley Barber Hammock 2	BHM	1.0	16	43.8	MA
Barley Hammock North	BHN	2.0	34	64.7	MA
Boca Inlet	BIC	1.2	26	96.1	PB
B-Line	BLH	0.6	10	70.0	PB
Big Mound	BMI	1.2	25	48.0	PB
Boynton Burial Mound	BNI	1.8	12	50.0	PB
Blowing Rocks	BRC	3.0	35	94.3	MA
Butts Hammock	BUT	3.7	35	74.3	PB
Boynton Hammock	BYC	3.7	39	92.3	PB
C-36	C36	1.0	27	63.0	PB
Corbett Hammock 3	CH3	1.3	11	45.5	PB
Corbett Moon	CMH	2.3	17	52.9	PB
Gumbo Limbo	GLC	5.5	40	87.5	PB
Big Gopher Mound	GMI	0.4	19	47.4	PB
Hog Island	HOH	2.1	16	50.0	PB
Hobe Sound Wildlife Refuge	HSI	0.8	31	93.5	MA
Little Gopher Mound	LGI	0.2	14	71.4	PB
8MT37	M37	0.2	20	90.0	MA
MacArthur 2	MC2	1.5	30	90.0	PB
MacArthur 3	MC3	5.9	32	90.6	PB
MacArthur C	MAC	18.4	37	94.6	PB
MacArthur R	MCR	0.5	27	92.6	PB
Hurchalla Indian Mound	MHI	1.1	31	90.3	MA
PG2 Hammock	PG2	0.5	21	66.7	PB
PGA N Hammock	PGN	2.2	23	56.5	PB
Rain Forest	RFH	1.8	19	47.4	PB
Rocky Point	RPH	3.6	31	80.6	MA
St Lucie A	SAA	3.0	20	95.0	MA
St Lucie B	SAB	7.6	32	90.6	MA
St Lucie C	SAC	4.2	36	91.2	MA
St Lucie D	SAD	6.3	29	93.1	MA
Spanish River	SRC	1.8	34	91.2	PB
WCA Hammock	WCA	5.1	27	48.1	PB

APPENDIX A: PAGE 2

SITE	TYPE HAMMOCK	LOCATION R. T. S.	SOIL TYPE
BBI	INDIAN	R37,T39,S26	Waveland Sand
BHE	INLAND	R37,T39,S29	Riviera Fine Sand
BHH	INLAND	R40,T41,S33	Riviera Sand
BHM	INLAND	R37,T39,S26	Waveland Sand
BHN	INLAND	R37,T39,S13	Hallandale
BIC	COASTAL	R43,T47,S32	Palm Beach Sand
BLH	INLAND	R42,T42,S16	Hallandale
BMI	INDIAN	R39,T41,S30	Immokalee Fine Sand
BNI	INDIAN	R41,T45,S24	Boca Fine Sand
BRC	COASTAL	R43,T40,S18	Canaveral Sand
BUT	INLAND	R42,T47,S15	Pompano Fine Sand
BYC	COASTAL	R43,T45,S22	Pomello Fine Sand
C36	INLAND	R40,T41,S36	Pinellas Fine Sand
CH3	INLAND	R40,T42,S03	Pinellas Fine Sand
CMH	INLAND	R40,T41,S33	Pinellas Fine Sand
GLC	COASTAL	R43,T47,S16	Palm Beach Sand
GMI	INDIAN	R39,T41,S30	Immokalee Fine sand
HOH	INLAND	R42,T42,S20	Hallandale
HSI	INDIAN	R42,T38,S33	Okeelanta Muck
LGI	INDIAN	R39,T41,S30	Immokalee Fine Sand
M37	INDIAN	R42,T37,S05	Palm Beach Sand
MC2	COASTAL	R43,T42,S10	Canaveral Sand
MC3	COASTAL	R43,T42,S10	Canaveral Sand
MAC	COASTAL	R43,T42,S10	Palm Beach Sand
MCR	COASTAL	R43,T42,S15	Tidal Swamp Mineral
MHI	INDIAN	R42,T38,S19	Canaveral Sand
PG2	INLAND	R42,T42,S07	Hallandale
PGN	INLAND	R42,T42,S06	Hallandale
RFH	INLAND	R41,T41,S14	Hallandale
RPH	INLAND	R42,T38,S19	Paola Sand
SAA	COASTAL	R42,T38,S20	Canaveral Sand
SAB	COASTAL	R42,T38,S20	Canaveral Sand
SAC	COASTAL	R42,T38,S20	Canaveral Sand
SAD	COASTAL	R42,T38,S20	Canaveral Sand
SRC	COASTAL	R43,T47,S16	Palm Beach Sand
WCA	INLAND	R42,T42,S17	Hallandale

APPENDIX A: PAGE 3

SITE	OWNERSHIP	LOCATION
BBI	FPL	Barley Barber Swamp
BHE	FPL	East of FPL Power Plant
BHH	CORBETT	Corbett
BHM	FPL	Barley Barber
BHN	FPL	N. of Barley Barber Swamp
BIC	BOCA, CITY	Boca Inlet
BLH	WPB, CITY	North WCA, W. Lake Park Rd.
BMI	CORBETT	Corbett Conservation Area
BNI	PB COUNTY	NE LOX Ref
BRC	NATURE CONSERVANCY	Blowing Rocks Preserve
BUT	PRIVAT	Associated / Hillsboro River
BYC	PB COUNTY	Boynton Beach
C36	CORBETT	Corbett Conservation Area
CH3	CORBETT	Corbett Conservation Area
CMH	CORBETT	Corbett Conservation Area
GLC	BOCA, CITY	City of Boca Raton
GMI	CORBETT	Corbett Conservation Area
HOH	WPB, CITY	West Lake Park Road
HSI	USF&WS	Jupiter Island, F&WS
LGI	CORBETT	Corbett Conservation Area
M37	UNKNOWN	North House of Refuge
MC2	DNR	MacArthur Park
MC3	DNR	MacArthur Park
MAC	DNR	MacArthur Park
MCR	DNR	MacArthur Park
MHI	PRIVATE	Rocky Point, Nassau Road
PG2	BANKERS LAND	South of PGA Blvd.
PGN	BANKERS LAND	North of PGA Blvd.
RFH	PRIVATE	Jupiter Farms
RPH	MARTIN COUNTY	Rocky Point
SAA	DNR	St. Lucie Inlet Park
SAB	DNR	St. Lucie Inlet Park
SAC	DNR	St. Lucie Inlet Park
SAD	DNR	St. Lucie Inlet Park
SRC	BOCA, CITY	City of Boca Raton
WCA	WPB, CITY	North of West Lake Park Rd.

APPENDIX A: PAGE 4

SITE	SURROUNDING VEGETATION
BBI	SW 2/3, FL 2/3
BHE	DP, SW
BHH	WP
BHM	SW 2/3, FL 1/3
BHN	SW, LH
BIC	BC, RD
BLH	WP
BMI	SW
BNI	SW
BRC	ST, RD
BUT	SW, LH
BYC	ST, RD
C36	WP
CH3	WP
CMH	WP
GLC	MN, RD
GMI	SW
HOH	WP 3/4, RD 1/4
HSI	MN 3/4, DS 1/4
LGI	WP
M37	MN
MC2	LH
MC3	LH, DS
MAC	MN, ST
MCR	MN 2/3, DS 1/3
MHI	MN 1/2, SW 1/2
PG2	WP, LH, PW
PGN	WP
RFH	PW, SW, DS
RPH	SC
SAA	MN
SAB	MN
SAC	MN
SAD	MN
SRC	DS
WCA	WP 9/10, CA 1/10

KEY

BC = Beach
CA = Canal
DA = Disturbed
DP = Dry Prairie
LH = Low Hammock
MN = Mangrove
PW = Pinewoods
RD = Road
SC = Scrub
ST = Strand
SW = Swamp
WP = Wet Prairie

APPENDIX B: DATA FOR REGRESSION ANALYSIS

REGRESSION ANALYSIS DATA FOR FIGURE 2
DISTRIBUTION OF COASTAL HAMMOCKS, NORTH TO SOUTH

1" = 4 MILES ON GRAPH
NORTH TO SOUTH

NAME	RELATIVE POSITION MAP(INCHES)	PERCENT TROPICAL (Y)	LOCATION DISTANCE MILES (X)	Predicted Y
M37	1.15	90.0	5	91
RPH	1.85	80.6	7	91
MHI	1.88	90.3	8	91
SAB	1.95	90.6	8	91
SAA	2.00	95.0	8	91
SAC	2.05	91.2	8	91
SAD	2.10	93.1	8	91
HSI	2.50	93.5	10	91
BRC	5.20	94.3	21	91
MC3	7.80	90.6	31	92
MC2	7.83	90.0	31	92
MAC	7.85	94.6	31	92
MCR	8.05	92.6	32	92
BYC	13.10	92.3	52	92
SRC	14.75	91.2	59	92
GLC	14.85	87.5	59	92
BIC	14.86	96.1	59	92

REGRESSION ANALYSIS DATA FOR FIGURE 2
DISTRIBUTION OF COASTAL HAMMOCKS, NORTH TO SOUTH

Linear Regression

17	=n
439	=sum of x
1557	=sum of y
18193	=sum of x^2
142791	=sum of y^2
40409	=sum of x*y
26	= x mean
92	= y mean
6853	=sum of x^2-((sum of x)^2)/n
206	=sum of y^2-((sum of y)^2)/n
197	=sum of x*y-(sum of x)*(sum of y)/n
0.03	=slope b
91	=intercept a
0.17	=r (coefficient of correlation)
4	=SD of points about the fitted line

x^2	y^2	x*y
21	8100	414
55	6496	596
57	8154	679
61	8208	707
64	9025	760
67	8354	749
71	8668	782
100	8742	935
433	8892	1961
973	8798	2927
981	8100	2819
986	8949	2970
1037	8575	2982
2746	8519	4837
3481	8317	5381
3528	7656	5198
3533	9235	5712

REGRESSION ANALYSIS DATA FOR FIGURE 3
DISTRIBUTION OF INLAND HAMMOCKS, WEST TO EAST

1" = 4 MILES ON GRAPH
WEST TO EAST

NAME	RELATIVE POSITION MAP(INCHES)	LOCATION DISTANCE MILES (X)	PERCENT TROPICAL (Y)	Predicted Y
BHN	1.20	4.8	64.7	50.6
BBI	1.25	5.0	40.0	50.6
BHM	1.35	5.4	43.8	50.7
BHE	1.35	5.4	50.0	50.7
GMI	2.80	11.2	47.4	52.2
BMI	2.80	11.2	48.0	52.2
LGI	2.80	11.2	71.4	52.2
CMH	5.30	21.2	52.9	54.8
BHH	5.50	22.0	46.2	55.0
CH3	5.55	22.2	45.5	55.0
C36	5.70	22.8	66.7	55.2
RFH	7.10	28.4	57.9	56.6
BNI	7.15	28.6	50.0	56.7
PG2	7.85	31.4	66.7	57.4
PGN	7.90	31.6	56.5	57.4
BUT	7.90	31.6	74.3	57.4
WCA	7.95	31.8	51.9	57.5
HOH	8.00	32.0	43.8	57.6
BLH	8.20	32.8	60.0	57.8

REGRESSION ANALYSIS DATA FOR FIGURE 3
DISTRIBUTION OF INLAND HAMMOCKS, WEST TO EAST

Linear Regression

19	=n
391	=sum of x
1038	=sum of y
10147	=sum of x^2
58531	=sum of y^2
21876	=sum of x*y
21	= x mean
55	= y mean
2118	=sum of x^2 - ((sum of x)^2)/n
1857	=sum of y^2 - ((sum of y)^2)/n
543	=sum of x*y - (sum of x)*(sum of y)/n
0.26	=slope b
49	=intercept a
0.27	=r (coefficient of correlation)
10	=SD of points about the fitted line

x^2	y^2	x*y
23	4186	311
25	1600	200
29	1918	237
29	2500	270
125	2247	531
125	2304	538
125	5098	800
449	2798	1121
484	2134	1016
493	2070	1010
520	4449	1521
807	3352	1644
818	2500	1430
986	4449	2094
999	3192	1785
999	5520	2348
1011	2694	1650
1024	1918	1402
1076	3600	1968

REGRESSION ANALYSIS DATA FOR FIGURE 4
NUMBER OF SPECIES VS PERCENT TROPICAL, ALL HAMMOCKS

NAME	NUMBER OF SPECIES (Y)	PERCENT TROPICAL (X)	Predicted Y
BBI	20	40.0	16.7
BHM	16	43.8	17.8
CH3	11	45.5	18.2
BHH	13	46.2	18.4
GMI	19	47.4	18.8
RFH	19	47.4	18.8
BMI	25	48.0	18.9
WCA	27	48.1	18.9
BNI	12	50.0	19.5
BHE	28	50.0	19.5
HOH	16	52.9	20.2
CMH	17	52.9	20.2
PGN	23	56.5	21.2
C36	27	63.0	23.0
BHN	34	64.7	23.4
PG2	21	66.7	24.0
BLH	10	70.0	24.9
LGI	14	71.4	25.3
BUT	35	74.3	26.0
RPH	31	80.6	27.7
GLC	40	87.5	29.6
M37	20	90.0	30.3
MC2	30	90.0	30.3
MHI	31	90.3	30.4
SAB	32	90.6	30.4
MC3	32	90.6	30.4
SRC	34	91.2	30.6
SAC	34	91.4	30.7
BYC	39	92.3	30.9
MCR	27	92.6	31.0
SAD	29	93.1	31.1
HSI	31	93.5	31.2
BRC	35	94.3	31.5
MAC	37	94.6	31.5
SAA	20	95.0	31.6
BIC	26	96.1	31.9

REGRESSION ANALYSIS DATA FOR FIGURE 4
NUMBER OF SPECIES VS PERCENT TROPICAL, ALL HAMMOCKS

Linear Regression	x^2	y^2	x*y
36.0 =n	1600	400	800
2592.5 =sum of x	1918	256	701
916.0 =sum of y	2070	121	501
200946.4 =sum of x^2	2134	169	601
25844.0 =sum of y^2	2247	361	901
69842.3 =sum of x*y	2247	361	901
72.0 = x mean	2304	625	1200
25.4 = y mean	2314	729	1299
14250 =sum of x^2 - ((sum of x)^2)/n	2500	144	600
2536.9 =sum of y^2 - ((sum of y)^2)/n	2500	784	1400
3877.6 =sum of x*y -	2798	256	846
(sum of x)*(sum of y)/n	2798	289	899
0.27 =slope b	3192	529	1300
5.85 =intercept a	3969	729	1701
0.64 =r (coefficient of correlation)	4186	1156	2200
	4449	441	1401
	4900	100	700
6.6 =SD of points about the fitted line	5098	196	1000
	5520	1225	2601
	6496	961	2499
	7656	1600	3500
	8100	400	1800
	8100	900	2700
	8154	961	2799
	8208	1024	2899
	8208	1024	2899
	8317	1156	3101
	8354	1225	3199
	8519	1521	3600
	8575	729	2500
	8668	841	2700
	8742	961	2899
	8892	1225	3301
	8949	1369	3500
	9025	400	1900
	9235	676	2499

REGRESSION ANALYSIS DATA FOR FIGURE 5
LOG SPECIES VS LOG AREA, ALL HAMMOCKS

Name	# SPP	LOG NUMBER SPECIES (Y)	ACRES	LOG ACRES	SQUARE MILES	LOG SQUARE MILES (X)	Predicted Y
LGI	14	1.1461	0.20	-0.699	0.0003	-3.5051	1.2
M37	20	1.3010	0.21	-0.678	0.0003	-3.4840	1.2
GMI	19	1.2788	0.35	-0.456	0.0005	-3.2621	1.2
MCR	27	1.4314	0.49	-0.310	0.0008	-3.1160	1.3
PG2	21	1.3222	0.50	-0.301	0.0008	-3.1072	1.3
BLH	10	1.0000	0.59	-0.229	0.0009	-3.0353	1.3
HSI	31	1.4914	0.79	-0.102	0.0012	-2.9086	1.3
BHM	16	1.2041	1.00	0.000	0.0016	-2.8062	1.3
C36	27	1.4314	1.03	0.013	0.0016	-2.7933	1.3
MHI	31	1.4914	1.14	0.057	0.0018	-2.7493	1.3
BIC	26	1.4150	1.15	0.061	0.0018	-2.7455	1.3
BMI	25	1.3979	1.20	0.079	0.0019	-2.7270	1.3
CH3	11	1.0414	1.29	0.111	0.0020	-2.6956	1.4
BBI	20	1.3010	1.30	0.114	0.0020	-2.6922	1.4
MC2	30	1.4771	1.45	0.161	0.0023	-2.6448	1.4
RFH	19	1.2788	1.78	0.250	0.0028	-2.5558	1.4
BNI	12	1.0792	1.78	0.250	0.0028	-2.5558	1.4
SRC	34	1.5315	1.78	0.250	0.0028	-2.5558	1.4
BHN	34	1.5315	1.98	0.297	0.0031	-2.5095	1.4
HOH	16	1.2041	2.13	0.328	0.0033	-2.4778	1.4
PGN	23	1.3617	2.19	0.340	0.0034	-2.4657	1.4
CMH	17	1.2304	2.29	0.360	0.0036	-2.4463	1.4
SAA	20	1.3010	3.00	0.477	0.0047	-2.3291	1.4
BHE	28	1.4472	3.00	0.477	0.0047	-2.3291	1.4
BRC	35	1.5441	3.00	0.477	0.0047	-2.3291	1.4
RPH	31	1.4914	3.62	0.559	0.0057	-2.2475	1.4
BUT	35	1.5441	3.71	0.569	0.0058	-2.2368	1.4
BHH	13	1.1139	3.73	0.572	0.0058	-2.2345	1.4
BYC	39	1.5911	3.74	0.573	0.0058	-2.2333	1.4
SAC	34	1.5315	4.20	0.623	0.0066	-2.1829	1.4
WCA	27	1.4314	5.07	0.705	0.0079	-2.1012	1.5
GLC	40	1.6021	5.54	0.744	0.0087	-2.0627	1.5
MC3	32	1.5051	5.93	0.773	0.0093	-2.0331	1.5
SAD	29	1.4624	6.30	0.799	0.0098	-2.0068	1.5
SAB	32	1.5051	7.57	0.879	0.0118	-1.9271	1.5
MAC	37	1.5682	18.35	1.264	0.0287	-1.5425	1.6

REGRESSION ANALYSIS FOR FIGURE 5
LOG SPECIES VS LOG AREA, ALL HAMMOCKS

Linear Regression	x^2	y^2	x*y
36.0 =n	12.29	1.3	-4.0
-91.6 =sum of x	12.14	1.7	-4.5
49.6 =sum of y	10.64	1.6	-4.2
239.9 =sum of x^2	9.71	2.0	-4.5
69.3 =sum of y^2	9.65	1.7	-4.1
-125.0 =sum of x*y	9.21	1.0	-3.0
-2.55 = x mean	8.46	2.2	-4.3
1.38 = y mean	7.87	1.4	-3.4
6.67 =sum of x^2 - ((sum of x)^2)/n	7.80	2.0	-4.0
0.95 =sum of y^2 - ((sum of y)^2)/n	7.56	2.2	-4.1
1.21 =sum of x*y -	7.54	2.0	-3.9
(sum of x)*(sum of y)/n	7.44	2.0	-3.8
0.18 =slope b	7.27	1.1	-2.8
1.84 =intercept a	7.25	1.7	-3.5
0.48 =r (coefficient of correlation)	7.00	2.2	-3.9
	6.53	1.6	-3.3
	6.53	1.2	-2.8
0.15 =SD of points about the fitted	6.53	2.3	-3.9
line	6.30	2.3	-3.8
	6.14	1.4	-3.0
	6.08	1.9	-3.4
	5.98	1.5	-3.0
	5.42	1.7	-3.0
	5.42	2.1	-3.4
	5.42	2.4	-3.6
	5.05	2.2	-3.4
	5.00	2.4	-3.5
	4.99	1.2	-2.5
	4.99	2.5	-3.6
	4.77	2.3	-3.3
	4.41	2.0	-3.0
	4.25	2.6	-3.3
	4.13	2.3	-3.1
	4.03	2.1	-2.9
	3.71	2.3	-2.9
	2.38	2.5	-2.4

APPENDIX C: PLANT LISTS OF ALL HAMMOCKS IN THE STUDY

Barley Barber Indian Mound Hammock (BBI)
MARTIN, R37E, T39S, S26 — FPL Martin County Site

Scientific Name	Common Name
HERB	
Rivina humilis	Bloodberry
SHRUBS	
Callicarpa americana (N)	Beautyberry
Lyonia ferruginea (N)	Rusty Lyonia
Lyonia lucida (N)	Shiny Lyonia
Phytolacca americana (N)	Pokeweed
Vaccinium myrsinites (N)	Shiny Blueberry
TREES	
Baccharis sp. (N)	Saltbush
Diospyros virginiana (N)	Persimmon
Erythrina herbacea	Coral Bean
Ficus aurea	Strangler Fig
Ilex cassine (N)	Dahoon Holly
Morus rubra (N)	Red Mulberry
Myrsine guianensis	Myrsine
Persea borbonia (N)	Red Bay
Psychotria sulzneri	Wild Coffee
Quercus laurifolia (N)	Laurel Oak
Quercus virginiana (N)	Live Oak
Sabal palmetto	Cabbage Palm
Schinus terebinthifolius	Brazilian Pepper
Serenoa repens	Saw Palmetto

Number Species 20
Percent Tropical = 8/20 = 40

February, March, 1986 — Partial plant list
Richard Moyroud — Total List Available
Anne Cox — Martin Site

Barley Barber Hammock East (BHE)
MARTIN, R37E, T39S, S29 — FPL Martin County Site

Scientific Name	Common name
SHRUBS	
Callicarpa americana (N)	Beautyberry
Phytolacca americana (N)	Pokeweed
TREES	
Acer rubrum (N)	Red Maple
Annona glabra	Pond Apple
Ardisia escallonioides	Marlberry
Cephalanthus occidentalis (N)	Buttonbush
Diospyros virginiana (N)	Persimmon
Erythrina herbacea	Coral Bean
Eugenia axillaris	White Stopper
Ficus aurea	Strangler Fig
Hamelia patens	Firebush
Morus rubra (N)	Red Mulberry
Myrica cerifera (N)	Wax Myrtle
Myrsine guianensis	Myrsine
Persea borbonia (N)	Red Bay
Pinus elliottii (N)	Slash Pine
Psidium guajava	Guava
Psychotria nervosa	Wild Coffee
Psychotria sulzneri	Wild Coffee
Quercus laurifolia (N)	Laurel Oak
Quercus virginiana (N)	Live Oak
Rhus copallina (N)	Southern Sumac
Sabal palmetto	Cabbage Palm
Sambucus canadensis (N)	Elderberry
Schinus terebinthifolius	Brazilian Pepper
Serenoa repens	Saw Palmetto
Ximenia americana	Tallow Wood
Zanthoxylum clava-herculis (N)	Hercules-club

Number Species 28
Percent Tropical = 14/28 = 50

April 1986 — Partial plant list
Richard Moyroud — Total Plant list
Anne Cox — Available at Martin Site

BIG HUNGRYLAND HAMMOCK (BHH)
PALM BEACH, R40E, T41S, S33 CORBETT HAMMOCK

Scientific Name	Common Name
TREES	
Cephalanthus occidentalis (N)	Buttonbush
Chrysobalanus icaco	Coco-plum
Ficus aurea	Strangler Fig
Ilex cassine (N)	Dahoon Holly
Myrica cerifera (N)	Wax Myrtle
Myrsine guianensis	Myrsine
Persea borbonia (N)	Red Bay
Pinus elliottii (N)	Slash Pine
Psychotria nervosa	Wild Coffee
Quercus laurifolia (N)	Laurel Oak
Sabal palmetto	Cabbage Palm
Schoepfia chrysophylloides	Gulf Greytwig
Taxodium distichum (N)	Cypress

Number Species 13
Percent Tropical = 6/13 = 46.2

APRIL 1986
Mark Robson
Anne Cox

Barley Barber Hammock Mound (BHM)
PALM BEACH, R37E, T39S, S26 — FPL Martin County Site

Scientific Name	Common Name
HERB	
Rivina humilis	Bloodberry
SHRUB	
Callicarpa americana (N)	Beautyberry
TREES	
Acer rubrum (N)	Red Maple
Baccharis sp. (N)	Saltbush
Diospyros virginiana (N)	Persimmon
Ficus aurea	Strangler Fig
Morus rubra (N)	Red Mulberry
Myrsine guianensis	Myrsine
Persea borbonia (N)	Red Bay
Psychotria sulzneri	Wild Coffee
Quercus virginiana (N)	Live Oak
Sabal palmetto	Cabbage Palm
Sambucus canadensis (N)	Elderberry
Schinus terebinthifolius	Brazilian Pepper
Serenoa repens	Saw Palmetto
Taxodium distichum (N)	Cypress

Number Species 16
Percent Tropical = 7/16 = 43.8

MARCH 1986 — Partial Plant List
Richard Moyroud — Total Plant List
Anne Cox — Available at Martin Site

Barley Barber Hammock North (BHN)
MARTIN COUNTY, R37E, T39S, S13 — FPL Site

Scientific Name	Common Name
SHRUB	
Callicarpa americana (N)	Beautyberry
TREES	
Acer rubrum (N)	Red Maple
Ardisia escallonioides	Marlberry
Bursera simaruba	Gumbo Limbo
Celtis laevigata (N)	Hackberry
Chiococca alba	Snowberry
Chrysophyllum oliviforme	Satin Leaf
Citrus aurantium	Sour Orange
Citrus paradisi	Grapefruit
Diospyros virginiana (N)	Persimmon
Erythrina herbacea	Coral Bean
Eugenia axillaris	White Stopper
Ficus aurea	Strangler Fig
Hamelia patens	Firebush
Ilex cassine (N)	Dahoon Holly
Mastichodendron foetidissimum	Mastic
Morus rubra (N)	Red Mulberry
Myrcianthes fragrans	Naked Wood
Myrica cerifera (N)	Wax Myrtle
Myrsine guianensis	Myrsine
Nectandra coriacea	Lancewood
Persea borbonia (N)	Red Bay
Pinus elliottii (N)	Slash Pine
Psidium guajava	Guava
Psychotria nervosa	Wild Coffee
Psychotria sulzneri	Wild Coffee
Quercus laurifolia (N)	Laurel Oak
Quercus virginiana (N)	Live Oak
Sabal palmetto	Cabbage Palm
Schinus terebinthifolius	Brazilian Pepper
Serenoa repens	Saw Palmetto
Simarouba glauca	Paradise Tree
Taxodium distichum (N)	Cypress
Zanthoxylum fagara	Wild Lime
Number Species 34	Partial Plant List
Percent Tropical = 22/34 = 64.7	Total Plant List
	Available at Martin Site

MARCH 1986
Richard Moyroud
Anne Cox

Boca Inlet (BIC)
PALM BEACH, R43E, T47S,S32 — City of Boca Raton

	Scientific Name	Common Name
HERB		
	Rivina humilis	Bloodberry
SHRUBS		
	Dalbergia ecastophyllum	Fish Poison
	Solanum bahamense	Bahama Nightshade
	Yucca aloifolia	Spanish Bayonet
TREES		
	Ardisia escallonioides	Marlberry
	Bursera simaruba	Gumbo Limbo
	Casuarina SP.	Australian Pine
	Chiococca alba	Snowberry
	Coccoloba uvifera	Sea Grape
	Diospyros virginiana (N)	Persimmon
	Erythrina herbacea	Coral Bean
	Eugenia axillaris	White Stopper
*	Eugenia uniflora (exotic)	Surinam Cherry
	Eugenia foetida	Spanish Stopper
	Ficus aurea	Strangler Fig
	Forestiera segregata	Florida Privet
	Guapira discolor	Blolly
	Mastichodendron foetidissimum	Mastic
	Metopium toxiferum	Poison Wood
	Nectandra coriacea	Lancewood
*	Phoenix sp. (exotic)	Date Palm
	Pithecellobium keyense	Cat's Claw
	Psychotria nervosa	Wild Coffee
	Randia aculeata	White Indigo-berry
	Sabal palmetto	Cabbage Palm
	Schinus terebinthifolius	Brazilian Pepper
	Simarouba glauca	Paradise Tree
	Zanthoxylum fagara	Wild Lime

Number Species 26
Percent Tropical 25/26 = 96.1

APRIL 1987 — Plant list D. F. Austin
Darrell Rich — 1976
Anne Cox

B-Line Hammock (BLH)
PALM BEACH, R42E, T42S, S16 City of West Palm Beach

Scientific Name	Common Name
TREES	
Baccharis sp. (N)	Saltbush
Chrysobalanus icaco	Coco-plum
Eugenia axillaris	White Stopper
Ficus aurea	Strangler Fig
Magnolia virginiana (N)	Sweet Bay
Myrica cerifera (N)	Wax Myrtle
Myrsine guianensis	Myrsine
Psychotria nervosa	Wild Coffee
Schinus terebinthifolius	Brazilian Pepper
Serenoa repens	Saw Palmetto

Number Species 10
Percent Tropical = 7/10 = 70

APRIL 1985
Sandra Austin
Daniel F. Austin
Jean Takekawa
Sandy Cummings
Anne Cox

Big Mound Indian Mound. (BMI)
PALM BEACH CO. R39E, T41S, S30 — Corbett Wildlife Preserve

	Scientific Name	Common Name
HERB		
	Rivina humilis	Bloodberry
SHRUBS		
*	Allamanda cathartica (exotic)	Allamanda
*	Bambusa sp. (exotic)	Bamboo
	Hypericum hypericoides (N)	St. Andrew's Cross
	Lyonia ferruginea (N)	Staggerbush
	Lyonia lucida (N)	Fetterbush
	Vaccinium arboreum (N)	Sparkleberry
	Vaccinium myrsinites (N)	Shiny Blueberry
TREES		
	Acer rubrum (N)	Red Maple
	Annona glabra	Pond Apple
	Baccharis sp. (N)	Saltbush
	Casuarina sp.	Australian Pine
	Celtis laevigata (N)	Hackberry
	Citrus aurantium	Sour Orange
	Citrus paradisi	Grapefruit
	Citrus sinensis	Sweet Orange
*	Eriobotrya japonica (exotic)	Loquat
	Ficus aurea	Strangler Fig
	Ilex glabra (N)	Gallberry
	Myrsine guianensis	Myrsine
	Persea borbonia (N)	Red Bay
	Psidium guajava	Guava
	Psychotria sulzneri	Wild Coffee
	Quercus laurifolia (N)	Laurel Oak
	Quercus virginiana (N)	Live Oak
	Sabal palmetto	Cabbage Palm
	Schinus terebinthifolius	Brazilian Pepper
	Taxodium distichum (N)	Cypress

Number Species 25
Percent Tropical = 12/25 = 48

SITE NOT INVESTIGATED

Plant list D. F. Austin
March 1978
MAPS FG&FWFC

Boynton Burial Mound Complex (BNI)
PALM BEACH CO. R41E, T45S, S24 — Palm Beach County

Scientific Name	Common Name
SHRUBS	
Callicarpa americana (N)	Beautyberry
Itea virginica (N)	Virginia Willow
TREES	
Acer rubrum (N)	Red Maple
Baccharis sp. (N)	Saltbush
Citrus aurantium	Sour Orange
Ficus aurea	Strangler Fig
Myrsine guianensis	Myrsine
Persea borbonia (N)	Red Bay
Psychotria nervosa	Wild Coffee
Quercus laurifolia (N)	Laurel Oak
Sabal palmetto	Cabbage Palm
Schinus terebinthifolius	Brazilian Pepper

Number Species 12
Percent Tropical = 6/12 = 50

JANUARY 1986 — Plant list
Sherrie Cummings — Richard Moyroud
Richard Moyroud — 1986
Anne Cox
MAY 1987
Sandy Cummings
Anne Cox

Blowing Rocks Hammock (BRC)
MARTIN CO., R42E, T40S, S18 — Nature Conservancy

Scientific Name	Common Name
HERB	
Rivina humilis	Bloodberry
SHRUBS	
Dalbergia ecastophyllum	Fish Poison
Phytolacca americana (N)	Pokeweed
Yucca aloifolia	Spanish Bayonet
TREES	
Amyris elemifera	Torchwood
Ardisia escallonioides	Marlberry
Bursera simaruba	Gumbo Limbo
Capparis cynophallophora	Jamaica Caper
Capparis flexuosa	Limber Caper
Carica papaya	Papaya
Casuarina sp.	Australian Pine
Chiococca alba	Snowberry
Chrysophyllum oliviforme	Satinleaf
Coccoloba diversifolia	Pigeon Plum
Coccoloba uvifera	Seagrape
Drypetes lateriflora	Guiana Plum
Erythrina herbacea	Coral Bean
Eugenia axillaris	White Stopper
Eugenia foetida	Spanish Stopper
Exothea paniculata	Inkwood
Ficus aurea	Strangler Fig
Forestiera segregata	Florida-privet
Guapira discolor	Blolly
Krugiodendron ferreum	Ironwood
Mastichodendron foetidissimum	Mastic
Morus rubra (N)	Red Mulberry
Myrsine guianensis	Myrsine
Nectandra coriacea	Lancewood
Psychotria nervosa	Wild Coffee
Randia aculeata	White Indigo-berry
Sabal palmetto	Cabbage Palm
Schinus terebinthifolius	Brazilian Pepper
Serenoa repens	Saw Palmetto
Simarouba glauca	Paradise Tree
Zanthoxylum fagara	Wild Lime

Number Species 35
Percent Tropical = 33/35 = 94.3

APRIL 1986
Richard Moyroud
Anne Cox

Plant List Richard Roberts, Department Natural Resources, 1986

Butts Hammock (BUT)
PALM BEACH CO., R42E, T47S, S15 — Private

Scientific Name	Common Name
HERB	
Rivina humilis	Bloodberry
SHRUBS	
Callicarpa americana (N)	Beautyberry
Lantana camara	Lantana
Lyonia ferruginea (N)	Staggerbush
* Malvavicus arboreus (exotic)	Sleeping Hibiscus
TREE	
Ardisia escallonioides	Marlberry
Baccharis sp. (N)	Saltbush
Bursera simaruba	Gumbo Limbo
Carica papaya	Papaya
Chrysophyllum oliviforme	Satin Leaf
Citrus paradisi	Grapefruit
Citrus sinensis	Sour Orange
Coccoloba diversifolia	Pigeon Plum
Diospyrous virginiana (N)	Persimmon
Drypetes lateriflora	Guiana Plum
Eugenia axillaris	White Stopper
Exothea paniculata	Inkwood
Ficus aurea	Strangler Fig
Mastichodendron foetidissimum	Mastic
Morus rubra (N)	Red Mulberry
Myrcianthes fragrans	Simpson's Stopper
Myrsine guianensis	Myrsine
Nectandra coriacea	Lancewood
Pinus elliottii (N)	Slash Pine
Psidium guajava	Guava
Psychotria nervosa	Wild Coffee
Psychotria sulzneri	Wild Coffee
Quercus chapmanii (N)	Chapmans Oak
Quercus virginiana (N)	Live Oak
Rhus copallina (N)	Southern Sumac
Sabal Palmetto	Cabbage Palm
Schinus terebinthifolius	Brazilian Pepper
Serenoa repens	Saw Palmetto
Trema micrantha	Florida Trema
Ximenia americana	Tallow Wood
Zanthoxylum fagara	Wild Lime

Number Species 35
Percent Tropical = 26/35 = 74.3

SITE NOT INVESTIGATED

Plant list D.F.Austin and D.R.Richardson, 1977

Boynton Hammock (BYC)
PALM BEACH CO., R43E, T45S, S22 — Palm Beach County

Scientific Name	Common Name
HERB	
Rivina humilis	Bloodberry
SHRUBS	
Solanum bahamense	Bahama Nightshade
Yucca aloifolia	Spanish Bayonet
TREES	
Amyris elemifera	Torchwood
Annona glabra	Pond Apple
Ardisia escallonioides	Marlberry
Baccharis sp. (N)	Saltbush
Bursera simaruba	Gumbo Limbo
Capparis cynophallophora	Jamaica Caper
Capparis flexuosa	Limber Caper
Carica papaya	Papaya
Casuarina sp.	Australian Pine
Chiococca alba	Snowberry
Chrysobalanus icaco	Coco-plum
Coccoloba diversifolia	Pigeon Plum
Coccoloba uvifera	Sea Grape
Drypetes lateriflora	Guiana Plum
Erythrina herbacea	Coral Bean
Eugenia axillaris	White Stopper
Eugenia foetida	Spanish Stopper
Exothea paniculata	Inkwood
Ficus aurea	Strangler Fig
Forestiera segregata	Florida Privet
Guapira discolor	Blolly
Krugiodendron ferreum	Ironwood
Lysiloma latisiliqua	Wild Tamarind
Mastichodendron foetidissimum	Mastic
Metopium toxiferum	Poisonwood
Morus rubra (N)	Red Mulberry
Myrsine guianensis	Myrsine
Nectandra coriacea	Lancewood
Persea borbonia (N)	Red Bay
Psychotria nervosa	Wild Coffee
Randia aculeata	White Indigo-berry
Sabal palmetto	Cabbage Palm
Schinus terebinthifolius	Brazilian Pepper
Serenoa repens	Saw Palmetto
Simarouba glauca	Paradise Tree
Zanthoxylum fagara	Wild Lime

Number Species 39
Percent Tropical = 36/39 = 92.3

MAY 1987
Anne Cox

Plant list
D. R. Richardson 1977

HAMMOCK C-36 (C-36)
PALM BEACH CO., R40E, T41S, S36 — Corbett Conservation Area

Scientific Name	Common Name
SHRUB	
Hypericum hypericoides (N)	St. John's Wort
TREES	
Annona glabra	Pond Apple
Ardisia escallionioides	Marlberry
Baccharis sp. (N)	Saltbush
Celtis laevigata (N)	Hackberry
Cephalanthus occidentalis (N)	Buttonbush
Chrysobalanus icaco	Coco-plum
Chrysophyllum oliviforme	Satinleaf
Coccoloba diversifolia	Pigeon Plum
Eugenia axillaris	White Stopper
Ficus aurea	Strangler Fig
Mastichodendron foetidissimum	Mastic
Morus rubra (N)	Mulberry
Myrica cerifera (N)	Wax Myrtle
Myrsine guianensis	Myrsine
Nectandra coriacea	Lancewood
Persea borbonia (N)	Red Bay
Psychotria nervosa	Wild Coffee
Psychotria sulzneri	Wild Coffee
Quercus laurifolia (N)	Laurel Oak
Quercus virginiana (N)	Live Oak
Sabal palmetto	Cabbage Palm
Schinus terebinthifolius	Brazilian Pepper
Schoepfia chrysophylloides	Gulf Greytwig
Serenoa repens	Saw Palmetto
Simarouba glauca	Paradise Tree
Taxodium distichum (N)	Cypress

Number Species 27
Percent Tropical = 17/27 = 63

JANUARY 1987
Laura Bariess, FG&FWFC
Anne Cox

Plant list D. F. Austin
and S. K. Austin
January 1977

Corbett Hammock 3 (CH3)
PALM BEACH CO., R40E, T42S, S3 Corbett Conservation Area

Scientific Name	Common Name
SHRUBS	
Lyonia ferruginea (N)	Rusty Lyonia
Lyonia lucida (N)	Shiny Lyonia
Vaccinium arboreum (N)	Sparkleberry
TREES	
Baccharis sp. (N)	Saltbush
Myrica cerifera (N)	Wax Myrtle
Myrsine guianensis	Myrsine
Psychotria nervosa	Wild Coffee
Quercus laurifolia (N)	Laurel Oak
Sabal palmetto	Cabbage Palm
Schinus terebinthifolius	Brazilian Pepper
Serenoa repens	Saw Palmetto

Number Species 11
Percent Tropical = 5/11 = 45.5

APRIL 1986
Mark Robson
Anne Cox

CORBETT MOON HAMMOCK (CMH)
PALM BEACH CO., R40E, T41S, S33 Corbett Conservation Area

Scientific Name	Common Name
TREES	
Baccharis sp. (N)	Saltbush
Cephalanthus occidentalis (N)	Buttonbush
Chrysobalanus icaco	Coco-plum
Chrysophyllum oliviforme	Satin Leaf
Eugenia axillaris	White Stopper
Ficus aurea	Strangler Fig
Magnolia virginiana (N)	Sweet Bay
Morus rubra (N)	Red Mulberry
Myrica cerifera (N)	Wax Myrtle
Myrsine guianensis	Myrsine
Persea borbonia (N)	Red Bay
Psychotria nervosa	Wild Coffee
Quercus laurifolia (N)	Laurel Oak
Sabal palmetto	Cabbage Palm
Schoepfia chrysophylloides	Gulf Greytwig
Serenoa repens	Saw Palmetto
Taxodium distichum (N)	Cypress

Number Species 17
Percent Tropical = 9/17 = 52.9

APRIL 1986
Mark Robson
Anne Cox

Gumbo Limbo Coastal Hammock Park (GLC)
PALM BEACH CO. R43E, T47S, S16 City of Boca Raton

Scientific Name	Common Name
HERB	
Rivina humilis	Bloodberry
SHRUBS	
Callicarpa americana (N)	Beautyberry
Dalbergia ecastophyllum	Fish Poison
Phytolacca americana (N)	Pokeweed
Solanum bahamense	Bahama Nightshade
TREES	
Amyris elemifera	Torchwood
Annona glabra	Pond Apple
Ardisia escallonioides	Marlberry
Baccharis sp. (N)	Saltbush
Bursera simaruba	Gumbo Limbo
Capparis cynophallophora	Limber Caper
Capparis flexuosa	Flexible Caper
Carica papaya	Papaya
Casuarina sp.	Australian Pine
Chiococca alba	Snowberry
Chrysobalanus icaco	Coco-plum
Coccoloba diversifolia	Pigeon Plum
Coccoloba uvifera	Sea Grape
Drypetes lateriflora	Guiana Plum
Eugenia axillaris	White Stopper
Eugenia foetida	Spanish Stopper
Exothea paniculata	Inkwood
Ficus aurea	Strangler Fig
Guapira discolor	Blolly
Krugiodendron ferreum	Ironwood
Mastichodendron foetidissimum	Mastic
Metopium toxiferum	Poison Wood
Morus rubra (N)	Red Mulberry
Myrsine guianensis	Myrsine
Nectandra coriacea	Lancewood
Persea borbonia (N)	Red Bay
Pithecellobium keyense	Black Bead
Psychotria nervosa	Wild Coffee
Randia aculeata	White Indigo-berry
Sabal palmetto	Cabbage Palm
Schinus terebinthifolius	Brazilian Pepper
Serenoa repens	Saw Palmetto
Simarouba glauca	Paradise Tree
Trema floridana	Florida Trema
Zanthoxylum fagara	Wild Lime

Number Species 40
Percent Tropical = 35/40 = 87.5

JUNE 1986 Plant list D. F. Austin
Richard Moyroud 1976
Anne Cox

Big Gopher Mound (GMI)
PALM BEACH CO., R39E, T41S, S30 — Corbett Conservation Area

Scientific Name	Common Name
HERB	
Rivina humilis	Bloodberry
SHRUB	
Callicarpa americana (N)	Beautyberry
Hypericum hypericoides (N)	St. Andrew's Cross
Solanum erianthum	Potato Tree
TREES	
Baccharis sp. (N)	Saltbush
Carica papaya	Papaya
Celtis laevigata (N)	Hackberry
Cephalanthus occidentalis (N)	Buttonbush
Citrus paradisii	Grapefruit
Citrus sinensis	Sweet Orange
Magnolia virginiana (N)	Sweet Bay
Myrica cerifera (N)	Wax Myrtle
Myrsine guianensis	Myrsine
Psychotria sulzneri	Wild Coffee
Quercus laurifolia (N)	Laurel Oak
Sabal palmetto	Cabbage Palm
Sambucus canadensis (N)	Elderberry
Schinus terebinthifolius	Brazilian Pepper
Taxodium distichum (N)	Cypress

Number Species 19
Percent Tropical = 9/19 = 47.4

SITE NOT INVESTIGATED — Plant list D. F. Austin March 1984

Hog Island Hammock (HOH)
PALM BEACH CO., R42E, T42S, S20 City WPB

	Scientific Name	Common Name
SHRUB		
	Hypericum hypericoides (N)	St Andrews Cross
TREES		
*	Ardisia solanacea (exotic)	Marlberry (Exotic)
	Baccharis sp. (N)	Saltbush
	Cephalanthus occidentalis (N)	Buttonbush
	Chrysobalanus icaco	Coco-plum
	Eugenia axillaris	White Stopper
	Ilex cassine (N)	Dahoon Holly
	Myrica cerifera (N)	Wax Myrtle
	Myrsine guianensis	Myrsine
	Persea borbonia (N)	Red Bay
	Psychotria nervosa	Wild Coffee
	Psychotria sulzneri	Wild Coffee
	Quercus laurifolia (N)	Laurel Oak
	Sabal palmetto	Cabbage Palm
	Schinus terebinthifolius	Brazilian Pepper
	Serenoa repens	Saw Palmetto
	Taxodium distichum (N)	Cypress

Number Species 16
Percent Tropical = 8/16 = 50

APRIL 1985
D. F. Austin
Sandra Austin
Jean Takekawa
Sandy Commings
Anne Cox

Hobe Sound Wildlife Refuge Indian Mound (HSI)
MARTIN CO., R42E, T38S, S33 USF&WS

	Scientific Name	Common Name
HERB		
	Rivina humilis	Bloodberry
SHRUBS		
	Dalbergia ecastophyllum	Fish Poison
	Solanum erianthum	Potato Tree
TREES		
	Amyris elemifera	Torchwood
	Ardisia escallonioides	Marlberry
	Bursera simaruba	Gumbo Limbo
*	Calophyllum inophyllum (exotic)	Kamani
	Capparis cynophallophora	Jamaica Caper
	Capparis flexuosa	Limber Caper
	Carica papaya	Papaya
	Casuarina sp.	Australian Pine
	Celtis laevigata (N)	Hackberry
	Chiococca alba	Snowberry
	Coccoloba diversifolia	Pigeon Plum
	Coccoloba uvifera	Sea Grape
	Drypetes lateriflora	Guiana Plum
	Eugenia axillaris	White Stopper
	Eugenia foetida	Spanish Stopper
	Exothea paniculata	Inkwood
	Ficus aurea	Strangler Fig
	Forestiera segregata	Florida Privet
	Guapira discolor	Blolly
	Krugiodendron ferreum	Ironwood
	Mastichodendron foetidissimum	Mastic
	Nectandra coriacea	Lancewood
	Persea borbonia (N)	Red Bay
	Psychotria nervosa	Wild Coffee
	Randia aculeata	White Indigo-berry
	Sabal palmetto	Cabbage Palm
	Schinus terebinthifolius	Brazilian Pepper
	Simarouba glauca	Paradise Tree
	Zanthoxylum fagara	Wild Lime

Number Species 31
Percent Tropical = 29/31 = 93.5

JULY 1986 Plant list
Richard Moyroud T. R. Alexander and
Anne Cox A. G. Crook 1973

Little Gopher Hammock (LGI)
PALM BEACH CO. R39E, T41S, S30 Corbett Conservation Area

Scientific Name	Common Name
TREES	
Celtis laevigata (N)	Hackberry
Citrus aurantium	Sour Orange
Citrus paradisi	Grapefruit
Citrus sinensis	Sweet Orange
Diospyros virginiana (N)	Persimmon
Eugenia axillaris	White Stopper
Ficus aurea	Strangler Fig
Myrsine guianensis	Myrsine
Persea borbonia (N)	Red Bay
Psychotria nervosa	Wild Coffee
Psychotria sulzneri	Wild Coffee
Quercus laurifolia (N)	Laurel Oak
Sabal palmetto	Cabbage Palm
Schinus terebinthifolius	Brazilian Pepper

Number Species 14
Percent Tropical = 10/14 = 71.4

SITE NOT INVESTIGATED

Plant list D. F. Austin
March 1984

8MT37 St Lucie Inlet (M37)
MARTIN CO., R42E, T38S, S05

USGS OWNER UNKNOWN

Scientific Name	Common Name
HERB	
Rivinia humilis	Bloodberry
SHRUBS	
Dalbergia ecastophyllum	Fish Poison
Yucca aloifolia	Spanish Bayonet
TREES	
Ardisia escallonioides	Marlberry
Baccharis sp. (N)	Saltbush
Bursera simaruba	Gumbo Limbo
Capparis flexuosa	Limber Caper
Chiococca alba	Snowberry
Coccoloba diversifolia	Pigeon Plum
Coccoloba uvifera	Seagrape
Eugenia foetida	Spanish Stopper
Ficus aurea	Strangler Fig
Mastichodendron foetidissimum	Mastic
Nectandra coriacea	Lancewood
Psychotria nervosa	Wild Coffee
Randia aculeata	White Indigo berry
Sabal palmetto	Cabbage Palm
Serenoa repens	Saw Palmetto
Zanthoxylum clava-herculis (N)	Hercules Club
Zanthoxylum fagara	Wild Lime

Number Species 20
Percent Tropical = 18/20 = 90

FEBRUARY 1987
Darrell Rich
Anne Cox

MacArthur Park Hammock 2 (MC2)
PALM BEACH CO., R43E, T42S, S10 DNR

	Scientific Name	Common Name
HERB		
	Rivina humilis	Bloodberry
SHRUB		
	Dalbergia ecastophyllum	Fish Poison
TREES		
*	Amphitecna latifolia	Black Calabash
	Ardisia escallonioides	Marlberry
*	Brassaia actinophylla (exotic)	Schefflera
	Bursera simaruba	Gumbo Limbo
	Casuarina sp.	Australian Pine
	Chiococca alba	Snowberry
	Chrysobalanus icaco	Coco-plum
	Chrysophyllum oliviforme	Satin Leaf
	Coccoloba diversifolia	Pigeon Plum
	Coccoloba uvifera	Sea Grape
	Erythrina herbacea	Coral Bean
	Eugenia axillaris	White Stopper
	Eugenia foetida	Spanish Stopper
	Ficus aurea	Strangler Fig
	Forestiera segregata	Foriesteria
	Mastichodendron foetidissimum	Mastic
	Metopium toxiferum	Poisonwood
	Morus rubra (N)	Red Mulberry
	Myrsine guianensis	Myrsine
	Nectandra coriacea	Lancewood
	Persea borbonia (N)	Red Bay
	Psychotria nervosa	Wild Coffee
	Quercus virginiana (N)	Live Oak
	Randia aculeata	White Indigo-berry
	Sabal palmetto	Cabbage Palm
	Schinus terebinthifolius	Brazilian Pepper
	Schoepfia chrysophylloides	Gulf Greytwig
	Serenoa repens	Saw Palmetto
	Simarouba glauca	Paradise tree
	Zanthoxylum fagara	Wild Lime

Number Species 30
Percent Tropical = 27/30 = 90

MARCH 1987 Plant list
Darrell Rich Grace Iverson 1986
Anne Cox D. F. Austin 1981

MacArthur Park Hammock 3 (MC3)
PALM BEACH CO., R43, T42, S10 DNR

	Scientific Name	Common Name
HERB		
	Rivina humilis	Bloodberry
SHRUB		
	Dalbergia ecastophyllum	Fish Poison
TREES		
*	Amphitecna latifolia	Black Calabash
	Ardisia escallonioides	Marlberry
	Bursera simaruba	Gumbo Limbo
	Capparis cynophallophora	Limber Caper
	Carica papaya	Payapa
	Casuarina sp.	Australian Pine
	Chiococca alba	Snowberry
	Chrysobalanus icaco	Coco-plum
	Chrysophyllum oliviforme	Satin Leaf
	Coccoloba diversifolia	Pigeon Plum
	Coccoloba uvifera	Sea Grape
	Drypetes lateriflora	Guiana Plum
	Erythrina herbacea	Coral Bean
	Eugenia axillaris	White Stopper
	Eugenia foetida	Spanish Stopper
	Ficus aurea	Strangler Fig
	Guapira discolor	Blolly
	Mastichodendron foetidissimum	Mastic
	Morus rubra (N)	Red Mulberry
	Myrsine guianensis	Myrsine
	Nectandra coriacea	Lancewood
	Persea borbonia (N)	Red Bay
	Psychotria nervosa	Wild Coffee
	Quercus virginiana (N)	Live Oak
	Randia aculeata	White Indigo Berry
	Sabal palmetto	Cabbage Palm
	Schinus terebinthifolius	Brazilian Pepper
	Schoepfia chrysophylloides	GulfGreytwig
	Serenoa repens	Saw Palmetto
	Simarouba glauca	Paradise tree
	Zanthoxylum fagara	Wild Lime

Number Species 32
Percent Tropical = 29/32 = 90.6

MARCH 1987 Plant lists
Sandy Cummings Grace Iverson 1986
Anne Cox D. F. Austin 1981

MacArthur Coastal (MAC)
PALM BEACH CO., R43E, T42S, S10 Department Natural Resour

Scientific Name	Common Name
HERB	
Rivina humilis	Bloodberry
SHRUBS	
Dalbergia ecastophyllum	Fish Poison
Solanum bahamense	Bahama Nightshade
Yucca aloifolia	Spanish Bayonet
TREES	
Amyris elemifera	Torchwood
Ardisia escallonioides	Marlberry
Baccharis sp. (N)	Saltbush
Bursera simaruba	Gumbo Limbo
Capparis cyanophallophora	Jamaica Caper
Capparis flexuosa	Limber Caper
Casuarina sp.	Australian Pine
Chiococca alba	Snowberry
Chrysobalanus icaco	Coco-plum
Coccoloba diversifolia	Pigeon Plum
Coccoloba uvifera	Sea Grape
Dipholis salicifolia	Bustic
Drypetes lateriflora	Guiana Plum
Erythrina herbacea	Coral Bean
Eugenia axillaris	White Stopper
Eugenia foetida	Spanish Stopper
Ficus aurea	Strangler Fig
Foresteria segregata	Florida Privet
Guapira discolor	Blolly
Krugiodendron ferreum	Ironwood
Mastichodendron foetidissimum	Mastic
Metopium toxiferum	Poisonwood
Nectandra coriacea	Lancewood
Pithecellobium keyense	Black Beard
Psychotria nervosa	Wild Coffee
Randia aculeata	White Indigo Berry
Sabal palmetto	Cabbage Palm
Schinus terebinthifolius	Brazilian Pepper
Schoepfia chrysophylloides	Gulf Greytwig
Serenoa repens	Saw Palmetto
Simarouba glauca	Paradise tree
Zanthoxylum clava-herculis (N)	Hercules Club
Zanthoxylum fagara	Wild Lime

Number Species 37
Percent Tropical = 35/37 = 94.6

JUNE 1987 Plant list
Sandy Cummings Grace Iverson 1986
Anne Cox D. F. Austin 1981

MacArthur Park Rock Hammock (MCR)
PALM BEACH CO., R43E, T42S, S15 DNR

Scientific Name	Common Name
SHRUB	
Dalbergia ecastophyllum	Fish Poison
TREES	
Amyris elemifera	Torchwood
Ardisia escallonioides	Marlberry
Bursera simaruba	Gumbo Limbo
Capparis cynophallophora	Limber Caper
Capparis flexuosa	Flexible Caper
Casuarina sp.	Australian Pine
Chiococca alba	Snowberry
Chrysobalanus icaco	Coco-plum
Coccoloba diversifolia	Pigeon Plum
Coccoloba uvifera	Sea Grape
Erythrina herbacea	Coral Bean
Eugenia axillaris	White Stopper
Eugenia foetida	Spanish Stopper
Ficus aurea	Strangler Fig
Forestiera segregata	Florida Privett
Guapira discolor	Blolly
Masticodendron foetidissimum	Mastic
Metopium toxiferum	Poisonwood
Morus rubra (N)	Red Mulberry
Psychotria nervosa	Wild Coffee
Quercus virginiana (N)	Live Oak
Randia aculeata	White Indigo-berry
Sabal palmetto	Cabbage Palm
Schinus terebinthifolius	Brazilian Pepper
Serenoa repens	Saw Palmetto
Zanthoxylum fagara	Wild Lime

Number Species 27
Percent Tropical = 25/27 = 92.6

MARCH 1987 Plant list
Darrell Rich Grace Iverson 1986
Anne Cox D. F. Austin 1981

Hurchalla Indian Mound (MHI)
MARTIN CO., R42E, T38S, S19 PRIVATE

Scientific Name	Common Name
HERB	
Rivina humilis	Bloodberry
SHRUBS	
Dalbergia ecastophyllum	Fish Poison
Yucca aloifolia	Spanish Bayonet
TREES	
Annona glabra	Pond Apple
Ardisia escallonioides	Marlberry
Bursera simaruba	Gumbo Limbo
Capparis flexuosa	Limber Caper
Carica papaya	Papaya
Celtis laevigata (N)	Hackberry
Chiococca alba	Snowberry
Chrysobalanus icaco	Coco-plum
Coccoloba diversifolia	Pigeon Plum
Coccoloba uvifera	Sea Grape
Drypetes lateriflora	Guiana Plum
Erythrina herbacea	Coral Bean
Eugenia axillaris	White Stopper
Eugenia foetida	Spanish Stopper
Exothea paniculata	Inkwood
Ficus aurea	Strangler Fig
Guapira discolor	Blolly
Krugiodendron ferreum	Ironwood
Mastichodendron foetidissimum	Mastic
Myrica cerifera (N)	Wax Myrtle
Myrsine guianensis	Myrsine
Nectandra coriacea	Lancewood
Psychotria nervosa	Wild Coffee
Sabal palmetto	Cabbage Palm
Salix caroliniana (N)	Carolina Willow
Schinus terebinthifolius	Brazilian Pepper
Simarouba glauca	Paradise Tree
Zanthoxylum fagara	Wild Lime

Number Species 31
Percent Tropical = 28/31 = 90.3

AUGUST 1986
Anne Cox

PGA-2 (PG2)
PALM BEACH CO., R42E, T42S, S7 Private

Scientific Name	Common Name
SHRUB	
Callicarpa americana (N)	Beauty Berry
TREES	
Acer rubrum (N)	Red Maple
Ardisia escallonioides	Marlberry
Chrysobalanus icaco	Coco-plum
Chrysophyllum oliviforme	Satin leaf
Eugenia axillaris	White Stopper
Ficus aurea	Strangler Fig
Ilex cassine (N)	Dahoon Holly
Magnolia virginiana (N)	Sweet Bay
Morus rubra (N)	Red Mulberry
Myrsine guianensis	Myrsine
Nectandra coriacea	Lancewood
Persea borbonia (N)	Red Bay
Psychotria nervosa	Wild Coffee
Psychotria sulzneri	Wild Coffee
Quercus laurifolia (N)	Laurel Oak
Sabal palmetto	Cabbage Palm
Schinus terebinthifolius	Brazilian Pepper
Schoepfia chrysophylloides	Gulf Greytwig
Simarouba glauca	Paradise Tree
Zanthoxylum fagara	Wild Lime

Number Species 21
Percent Tropical = 14/21 = 66.7

MARCH 1986
Richard Moyroud
Anne Cox
MARCH 1987
Darrell Rich
Anne Cox

PGA Boulevard Hammock North (PGN)
PALM BEACH CO., R42E, T42S, S6 Private

	Scientific Name	Common Name
	SHRUB	
	Callicarpa americana (N)	Beautyberry
	TREES	
	Acer rubrum (N)	Red Maple
	Ardisia escallonioides	Marlberry
*	Ardisia solanacea (exotic)	Marlberry (Exotic)
	Baccharis sp. (N)	Saltbush
	Cephalanthus occidentalis (N)	Buttonbush
	Chrysobalanus icaco	Coco-plum
	Chrysophyllum oliviforme	Satin Leaf
	Dipholis salicifolia	Bustic
	Eugenia axillaris	White Stopper
	Ficus aurea	Strangler Fig
	Magnolia virginiana (N)	Sweet Bay
	Morus rubra (N)	Red Mulberry
	Myrica cerifera (N)	Wax Myrtle
	Persea borbonia (N)	Red Bay
	Psychotria nervosa	Wild Coffee
	Psychotria sulzneri	Wild Coffee
	Quercus laurifolia (N)	Laurel Oak
	Sabal palmetto	Cabbage Palm
	Schinus terebinthifolius	Brazilian Pepper
	Schoepfia chrysophylloides	Gulf Greytwig
	Serenoa repens	Saw Palmetto
	Simarouba glauca	Paradise Tree
	Taxodium distichum (N)	Cypress

Number Species 23
Percent Tropical = 13/23 = 56.5

MARCH 1987
Darrel Rich
Anne Cox

Rain Forest Hammock (RFH)
PALM BEACH CO., R41E, T41S, S14 Private

Scientific Name	Common Name
SHRUB	
Callicarpa americana (N)	Beautyberry
TREES	
Acer rubrum (N)	Red Maple
Baccharis sp. (N)	SaltBush
Chrysobalanus icaco	Coco-plum
Eugenia axillaris	White Stopper
Ficus aurea	Strangler Fig
Ilex cassine (N)	Dahoon Holly
Morus rubra (N)	Red Mulberry
Myrica cerifera (N)	Wax Myrtle
Myrsine guianensis	Myrsine
Persea borbonia (N)	Redbay
Pinus elliotii (N)	Slash Pine
Psychotria nervosa	Wild Coddee
Quercus laurifolia (N)	Laurel Oak
Quercus virginiana (N)	Live Oak
Sabal palmetto	Cabbage Palm
Schinus terebinthifolius	Brazilian Pepper
Serenoa repens	Saw Palmetto
Simarouba glauca	Paradise Tree

Number Species 19
Percent Tropical = 9/19 = 47.4

JULY 1986
Anne Cox
FEBRUARY 1987
Darrell Rich
Anne Cox

Rocky Point Hammock (RPH)
MARTIN CO., R42E, T38S, S19

Scientific Name	Martin Co. Parks Common Name
HERB	
Rivinia humilis	Bloodberry
SHRUBS	
Callicarpa americana (N)	Beautyberry
Lantana camara	Lantana
TREES	
Amyris elemifera	Torchwood
Ardisia escallonioides	Marlberry
Bumelia tenax (N)	Buckthorn
Bursera simaruba	Gumbo Limbo
Carica papaya	Papaya
Carya floridana	Scrub Hickory
Chiococca alba	Snowberry
Chrysobalanus icaco	Coco-plum
Chrysophyllum oliviforme	Satin Leaf
Drypetes lateriflora	Guiana Plum
Erythrina herbacea	Coral Bean
Eugenia axillaris	White Stopper
Ficus aurea	Strangler Fig
Krugiodendron ferreum	Ironwood
Morus rubra (N)	Red Mulberry
Myrsine guianensis	Myrsine
Persea borbonia (N)	Red Bay
Psychotria nervosa	Wild Coffee
Psychotria sulzneri	Wild Coffee
Quercus myrtifolia (N)	Myrtle Oak
Quercus virginiana (N)	Live Oak
Randia aculeata	White Indigo-berry
Sabal palmetto	Cabbage Palm
Schoepfia chrysophylloides	Gulf Greytwig
Serenoa repens	Saw Palmetto
Simarouba glauca	Paradise Tree
Ximenia americana	Tallow Wood
Zanthoxylum fagara	Wild lime

Number Species 31
Percent Tropical = 25/31 = 80.6

AUGUST 1986
Anne Cox

St Lucie Inlet State Park 'A' (SAA)
MARTIN CO., R42E, T38S, S20 DNR

Scientific Name	Common Name
SHRUBS	
Dalbergia ecastophyllum	Fish Poison
Yucca aloifolia	Spanish Bayonet
TREES	
Amyris elemifera	Torchwood
Ardisia escallonioides	Marlberry
Bursera simaruba	Gumbo Limbo
Casuarina sp.	Australian Pine
Celtis laevigata (N)	Hackberry
Chiococca alba	Snowberry
Coccoloba diversifolia	Pigeon Plum
Coccoloba uvifera	Sea Grape
Ficus aurea	Strangler Fig
Forestiera segregata	Florida Privet
Krugiodendron ferreum	Ironwood
Mastichodendron foetidissium	Mastic
Pithecellobium keyense	Black Bead
Psychotria nervosa	Wild Coffee
Randia aculeata	White Indigo-berry
Sabal palmetto	Cabbage Palm
Schinus terebinthifolius	Brazilian Pepper
Zanthoxylum fagara	Wild Lime

Number Species 20
Percent Tropical = 19/20 = 95

JUNE, JULY 1986	Plant List D. F. Austin
Richard Moyroud	Sandra Austin 1976
Sandy Cummings	Richard Roberts
Anne Cox	1986

St Lucie Inlet State Park 'B' (SAB)
MARTIN CO., R42E, T38S, S20 DNR

Scientific Name	Common Name
HERB	
Rivina humilis	Bloodberry
SHRUB	
Callicarpa americana (N)	Beautyberry
Dalbergia ecastophyllum	Fish Poison
Yucca aloifolia	Spanish Bayonet
TREES	
Amyris elemifera	Torchwood
Ardisia escallonioides	Marlberry
Bursera simaruba	Gumbo Limbo
Carica papaya	Papaya
Casuarina sp.	Australian Pine
Chiococca alba	Snowberry
Chrysophyllum oliviforme	Satin Leaf
Coccoloba diversifolia	Pigeon Plum
Coccoloba uvifera	Sea Grape
Erythrina herbacea	Coral Bean
Eugenia axillaris	White Stopper
Eugenia foetida	Spanish Stopper
Exothea paniculata	Inkwood
Ficua aurea	Strangler Fig
Guapira discolor	Blolly
Krugiodendron ferreum	Ironwood
Mastichodendron foetidissium	Mastic
Nectandra coriacea	Lancewood
Persea borbonia (N)	Red Bay
Pithecellobium keyense	Black Bead
Psychotria nervosa	Wild Coffee
Quercus virginiana (N)	Live Oak
Randia aculeata	White Indigo-berry
Sabal palmetto	Cabbage Palm
Schinus terebinthifolius	Brazilian Pepper
Serenoa repens	Saw Palmetto
Simarouba glauca	Paradise Tree
Zanthoxylum fagara	Wild Lime

Number Species 32
Percent Tropical = 29/32 = 90.6

JUNE, JULY 1986 Plant list D. F. Austin
Richard Moyroud Sandra Austin 1976
Sandy Cummings Richard Roberts 1986
Anne Cox

St Lucie Inlet State Park 'C' (SAC)
MARTIN CO., R42E, T38S, S20 DNR

Scientific Name	Common Name
HERB	
Rivina humilis	Bloodberry
SHRUB	
Dalbergia ecastophyllum	Fish Poison
Phytolacca americana (N)	Pokeweed
Yucca aloifolia	Spanish Bayonet
TREES	
Amyris elemifera	Torchwood
Ardisia escallonioides	Marlberry
Bursera simaruba	Gumbo Limbo
Capparis cynophallophora	Jamaica Caper
Capparis flexuosa	Limber Caper
Carica papaya	Papaya
Casuarina sp.	Australian Pine
Celtis laevigata (N)	Hackberry
Chiococca alba	Snowberry
Coccoloba diversifolia	Pigeon Plum
Coccoloba uvifera	Sea Grape
Erythrina herbacea	Coral Bean
Eugenia axillaris	White Stopper
Eugenia foetida	Spanish Stopper
Exothea paniculata	Inkwood
Ficua aurea	Strangler Fig
Forestiera segregata	Florida Privet
Guapira discolor	Blolly
Krugiodendron ferreum	Ironwood
Mastichodendron foetidissium	Mastic
Morus rubra (N)	Red Mulberry
Nectandra coriacea	Lancewood
Pithecellobium keyense	Black Beard
Psychotria nervosa	Wild Coffee
Randia aculeata	White Indigo-berry
Sabal palmetto	Cabbage Palm
Schinus terebinthifolius	Brazilian Pepper
Serenoa repens	Saw Palmetto
Simarouba glauca	Paradise Tree
Zanthoxylum fagara	Wild Lime

Number Species 34
Percent Tropical = 31/34 = 91.2

JUNE, JULY 1986 Plant List D. F. Austin
Richard Moyroud Sandra Austin 1976
Sandy Cummings Richard Roberts 1986
Anne Cox

St Lucie Inlet State Park 'D' (SAD)
MARTIN CO. R42E, T38S, S20

Scientific Name	Common Name
HERB	
Rivina humilis	Bloodberry
SHRUB	
Dalbergia ecastophyllum	Fish Poison
Yucca aloifolia	Spanish Bayonet
TREES	
Amyris elemifera	Torchwood
Ardisia escallonioides	Marlberry
Bursera simaruba	Gumbo Limbo
Casuarina sp.	Australian Pine
Chiococca alba	Snowberry
Chrysophyllum oliviforme	Satin Leaf
Coccoloba diversifolia	Pigeon Plum
Coccoloba uvifera	Sea Grape
Eugenia axillaris	White Stopper
Eugenia foetida	Spanish Stopper
Exothea paniculata	Inkwood
Ficua aurea	Strangler Fig
Forestiera segregata	Florida Privet
Guapira discolor	Blolly
Krugiodendron ferreum	Ironwood
Mastichodendron foetidissium	Mastic
Nectandra coriacea	Lancewood
Persea borbonia (N)	Red Bay
Pithecellobium keyense	Black Beard
Psychotria nervosa	Wild Coffee
Quercus virginiana (N)	Live Oak
Randia aculeata	White Indigo-berry
Sabal palmetto	Cabbage Palm
Schinus terebinthifolius	Brazilian Pepper
Serenoa repens	Saw Palmetto
Zanthoxylum fagara	Wild Lime

Number Species 29
Percent Tropical = 27/29 = 93.1

JUNE, JULY 1986
Richard Moyroud
Sandy Cummings
Anne Cox

Plant list D. F. Austin
Sandra Austin 1976
Richard Roberts 1986

Spanish River Park Hammock (SRC)
PALM BEACH CO., R43E, T47S, S16 City of Boca Raton

	Scientific Name	Common Name
	HERB	
	Rivina humilis	Bloodberry
	SHRUBS	
	Dalbergia ecastophyllum	Fish Poison
	Solanum bahamense	Bahama Nightshade
	TREES	
	Ardisia escallonioides	Marlberry
	Bursera simaruba	Gumbo Limbo
	Capparis cynophallophora	Jamaice Caper
	Carica papaya	Papaya
	Casuarina sp.	Australian Pine
	Chiococca alba	Snowberry
	Chrysobalanus icaco	Coco-plum
	Coccoloba diversifolia	Pigeon Plum
	Coccoloba uvifera	Sea Grape
	Eugenia axillaris	White Stopper
	Eugenia foetida	Spanish Stopper
	Exothea paniculata	Inkwood
	Ficus aurea	Strangler Fig
	Forestiera segregata	Florida Privet
	Guapira discolor	Blolly
	Krugiodendron ferreum	Ironwood
	Mastichodendron foetidissimum	Mastic
	Metopium toxiferum	Poison Wood
	Morus rubra (N)	Red Mulberry
	Myrsine guianensis	Myrsine
	Nectandra coriacea	Lancewood
	Persea borbonia (N)	Red Bay
	Pithecellobium keyense	Black Beard
	Psychotria nervosa	Wild Coffee
*	Ptychosperma elegans (exotic)	Palm
	Quercus virginiana (N)	Live Oak
	Randia aculeata	White Indigo-berry
	Sabal palmetto	Cabbage Palm
	Schinus terebinthifolius	Brazilian Pepper
	Serenoa repens	Saw Palmetto
	Simarouba glauca	Paradise tree
*	Syzygium cuminii (exotic)	Java Plum
	Zanthoxylum fagara	Wild Lime

Number Species 34
Percent Tropical = 31/34 = 91.2

JUNE 1986
Richard Moyroud
Anne Cox

Plant list D. F. Austin 1976

Water Catchment Area Hammock (WCA)
PALM BEACH CO., R42E, T42S, S17 City West Palm Beach

Scientific Name	Common Name
SHRUB	
Hypericum hypericoides (N)	St. John's Wort
TREES	
Annona glabra	Pond Apple
Ardisia escallionioides	Marlberry
Baccharis glomeruliflora (N)	Saltbush
Celtis laevigata (N)	Hackberry
Cephalanthus occidentalis (N)	Buttonbush
Chrysobalanus icaco	Coco-plum
Chrysophyllum oliviforme	Satin leaf
Diospyros virginiana (N)	Persimmon
Eugenia axillaris	White Stopper
Ficus aurea	Strangler Fig
Ilex cassine (N)	Dahoon Holly
Magnolia virginiana (N)	Sweet Bay
Morus rubra (N)	Mulberry
Myrica cerifera (N)	Wax Myrtle
Myrsine guianensis	Myrsine
Persea borbonia (N)	Red Bay
Psychotria nervosa	Wild Coffee
Quercus laurifolia (N)	Laurel Oak
Quercus virginiana (N)	Live Oak
Sabal palmetto	Cabbage Palm
Salix caroliniana (N)	Carolina Willow
Schinus terebinthifolius	Brazilian Pepper
Schoepfia chrysophylloides	Gulf Greytwig
Serenoa repens	Saw Palmetto
Simarouba glauca	Paradise Tree
Taxodium distichum (N)	Cypress

Number Species 27
Percent Tropical = 14/27 = 48.1

FEBRUARY 1985 RM & AC	Plant list: 1985
Richard Moyroud	Ann Buckley
Anne Cox	Ted Hendrickson
APRIL 1985	D. F. Austin
FAU Class, D. F. Austin	Grace Iverson
JUNE 1985	
Sandy Cummings	
Anne Cox	

Highlands Hammocks State Park
HIGHLANDS COUNTY

State of Florida

	Scientific Name	Common Name
HERB		
	Rivinia humilis	Bloodberry
SHRUBS		
	Asimina parviflora (N)	Small Flowered Pawpaw
	Mitchella repens (N)	Partridge Berry
	Hypericum hypericoides (N)	St. Andrews Cross
	Itea virginica (N)	Virginia Willow
	Viburnum obovatum (N)	Walters Blackhaw
TREES		
	Acer rubrum (N)	Red Maple
	Ardisia escallonioides	Marlberry
	Carica papaya	Papaya
	Carya glabra (N)	Pignut Hickory
	Celtis laevigata (N)	Hackberry
	Citrus aurantium	Sour Orange
	Citrus limon	Wild Lemon
	Citrus paradisi	Grapefruit
	Citrus reticulata	Tangerine
	Citrus siniensis	Sweet Orange
*	Cocos plumosa	Queen Palm
	Erythrina herbacea	Coral Bean
	Hamelia patens	Firebush
	Ilex cassine (N)	Dahoon Holly
	Liquidambar styraciflua (N)	Sweetgum
	Magnolia virginiana (N)	Sweet Bay
	Morus rubra (N)	Red Mulberry
	Myrica cerifera (N)	Wax Myrtle
	Myrsine guianensis	Myrsine
	Nectandra coriacea	Lancewood
	Persea palustris (N)	Swamp Bay
*	Phoenix reclinata	Fiji Island Date Palm
	Pinus elliotti (N)	Slash Pine
	Prunus caroliniana (N)	Laurel Cherry
	Psidium guajava	Guava
	Psychotria nervosa	Wild Coffee
	Psychotria sulzneri	Wild Coffee
	Quercus laurifolia (N)	Laurel Oak
	Quercus nigra (N)	Water Oak
	Quercus virginiana (N)	Live Oak
*	Rhapidophyllum hystrix	Needle Palm
	Sabal minor	Bluestem Palmetto
	Sabal palmetto	Cabbage Palm
	Sapindus marginatus	Soapberry

Highlands Hammock P-2

Serenoa repens	Saw Palmetto
Ulmus americana (N)	American Elm
Ulmus floridana (N)	Florida Elm
Xanthoxylum fagara	Wild Lime

Number Species 41
Percent Tropical = 20/41 = 48.8

Plant list Carol Beck and
James B. McFarland, 1966

Lignum Vitae Key
MONROE COUNTY

DNR

Scientific Name	Common Name
TREES	
Amyris elemifera	Torchwood
Annona glabra	Pond-apple
Ardisia escallonioides	Marlberry
Baccharis sp. (N)	Saltbush
Bumelia celastrina	Saffron-plum
Bursera simaruba	Gumbo Limbo
Canella winterana	Cinnamon-bark
Capparis cynophallophora	Jamaica Caper
Capparis flexuosa	Limber Caper
Carica papaya	Papaya
Casasia clusiifolia	Seven-year-apple
Casuarina equisetifolia	Australian Pine
Chiococca alba	Snowberry
Citharexylum fruiticosum	Fiddlewood
Coccoloba diversifolia	Pigeon Plum
Coccoloba uvifera	Sea Grape
Cocos nucifera	Coconut Palm
Cordia sebestina	Geiger-tree
Drypetes diversifolia	Milkbark
Drypetes lateriflora	Guiana Plum
Eugenia axillaris	White Stopper
Eugenia myrtoides	Boxleaf Stopper
Exothea paniculata	Inkwood
Ficus aurea	Strangler Fig
Ficus citrifolia	Shortleaf Fig
Guapira longifolia	Blolly
Guettarda elliptica	Velvet-seed
Guiacum sanctum	Lignum Vitae
Hamelia patens	Firebush
Krugiodendron ferreum	Ironwood
Mastichodendron foetidissimum	Mastic
Metopium toxiferum	Poison Wood
Nectandra coriacea	Lancewood
Piscidia piscipula	Jamaica-dogwood
Pithecellobium guadelupense	Blackbead
Pithecellobium unguis-cati	Catclaw Blackbead
Psychotria nervosa	Wild Coffee
Randia aculeata	White Indigo-berry
Rivina humilis	Bloodberry

Lignum Vitae P-2

Sapindus saponaria	Soapberry
Schaefferia fruitescens	Florida-boxwood
Schoepfia chrysophylloides	Gulf Greytwig
Solanum bahamense	Bahama Nightshade
Sweitenia mahagoni	Mahogany
Thespesia populnea	Cork-tree
Thrinax floridana	Thatch Palm
Ximenia americana	Hog-plum
Zanthoxylum fagara	Wild Lime

Number Species 48
Percent Tropical = 47/48 = 97.9
Plant list George Avery
1968

Introduced species are not listed.

Turtle Mound
VOLUSIA COUNTY

State Historic Memorial

Scientific Name	Common Name
HERB	
Rivina humilis	Bloodberry
SHRUBS	
Callicarpa americana (N)	Beautyberry
Phytolacca americana (N)	Pokeweed
Yucca aloifolia	Spanish Bayonet
TREES	
Amyris elemifera	Torchwood
Ardisia escallonioides	Marlberry
Baccharis sp. (N)	Saltbush
Bumelia tenax (N)	Buckthorn
Carica papaya	Papaya
Celtis laevigata (N)	Hackberry
Chiococca alba	White Indigo-berry
Citrus aurantium	Sour Orange
Erythrina herbacea	Coral Bean
Eugenia axillaris	White Stopper
Exothea paniculata	Inkwood
Foresteria segregata	Florida Privet
Ilex vomitoria (N)	Yaupon
Juniperus silicicola (N)	Southern Red-Cedar
Mastichodendron foetidissimum	Mastic
Myrcianthes fragrans	Nakedwood
Myrica cerifera (N)	Wax Myrtle
Myrsine guianensis	Myrsine
Nectandra coriacea	lancewood
Persea borbonia (N)	Red Bay
Psychotria nervosa	Wild Coffee
Quercus laurifolia (N)	Laurel Oak
Quercus virginiana (N)	Live Oak
Rhus copallina (N)	Southern Sumac
Sabal palmetto	Cabbage Palm
Sageretia minutiflora (N)	Buckthorn
Schoepfia chrysophylloides	Gulf Greytwig
Serenoa repens	Saw Palmetto
Xanthoxylum clava-herculis (N)	Hercules Club
Xanthoxylum fagara	Wild Lime

Number Species 34
Percent Tropical = 20/34 = 58.8

Plant List from Norman 1976

AUGUST 1985
Grace Iverson
Anne Cox

APPENDIX D: MATRIX OF SPECIES AND HAMMOCKS IN STUDY

APPENDIX D: MATRIX OF SPECIES AND HAMMOCKS

#	Scientific Name	WCA 1	C36 2	PGN 3	CMH 4	PG2 5
1	Rivina humilis					
2	Callicarpa americana (N)			1		1
3	Dalbergia ecastophyllum					
4	Hypericum hypericoides (N)	1	1			
5	Itea virginica (N)					
6	Lantana camara					
7	Lyonia ferruginea (N)					
8	Lyonia lucida (N)					
9	Phytolacca americana (N)					
10	Solanum bahamense					
11	Solanum erianthum					
12	Yucca aloifolia					
13	Vaccinium arboreum (N)					
14	Vaccinium myrsinites (N)					
15	Acer rubrum (N)			1		1
16	Amyris elemifera					
17	Annona glabra	1	1			
18	Ardisia escallonioides	1	1	1		1
19	Baccharis sp. (N)	1	1	1	1	
20	Bumelia tenax (N)					
21	Bursera simaruba					
22	Capparis cynophallophora					
23	Capparis flexuosa					
24	Carica papaya					
25	Carya floridana					
26	Casuarina sp.					
27	Celtis laevigata (N)	1	1			
28	Cephalanthus occidentalis (N)	1	1	1	1	
29	Chiococca alba					
30	Chrysobalanus icaco	1	1	1	1	1
31	Chrysophyllum oliviforme	1	1	1	1	1
32	Citrus aurantium					
33	Citrus paradisi					
34	Citrus sinensis					
35	Coccoloba diversifolia		1			
36	Coccoloba uvifera					
37	Diospyros virginiana (N)	1				
38	Dipholis salicifolia			1		
39	Drypetes lateriflora					
40	Erythrina herbacea					
41	Eugenia axillaris	1	1	1	1	1
42	Eugenia foetida					
43	Exothea paniculata					
44	Ficus aurea	1	1	1	1	1
45	Forestiera segregata					
46	Guapira discolor					

APPENDIX D: MATRIX OF SPECIES AND HAMMOCKS

#	Scientific Name	WCA	C36	PGN	CMH	PG2
47	Hamelia patens					
48	Ilex cassine (N)	1				1
49	Ilex glabra (N)					
50	Krugiodendron ferreum					
51	Lysiloma latisiliqua					
52	Magnolia virginiana (N)	1		1	1	1
53	Mastichodendron foetidissimum		1			
54	Metopium toxiferum					
55	Morus rubra (N)	1	1	1	1	1
56	Myrcianthes fragrans					
57	Myrica cerifera (N)	1	1	1	1	
58	Myrsine guianensis	1	1		1	1
59	Nectandra coriacea		1			1
60	Persea borbonia (N)	1	1	1	1	1
61	Pinus elliottii (N)					
62	Pithecellobium keyense					
63	Psidium guajava					
64	Psychotria nervosa	1	1	1	1	1
65	Psychotria sulzneri		1	1		1
66	Quercus chapmanii (N)					
67	Quercus laurifolia (N)	1	1	1	1	1
68	Quercus myrtifolia (N)					
69	Quercus virginiana (N)	1	1			
70	Randia aculeata					
71	Rhus copallina (N)					
72	Sabal palmetto	1	1	1	1	1
73	Salix caroliniana (N)	1				
74	Sambucus canadensis (N)					
75	Schinus terebinthifolius	1	1	1		1
76	Schoepfia chrysophylloides	1	1	1	1	1
77	Serenoa repens	1	1	1	1	
78	Simarouba glauca	1	1	1		1
79	Taxodium distichum (N)	1	1	1	1	
80	Trema micrantha					
81	Ximenia americana					
82	Zanthoxylum clava-herculis (N)					
83	Zanthoxylum fagara					1

APPENDIX D: MATRIX OF SPECIES AND HAMMOCKS

#	HOH	BHH	BUT	BHN	BHE	RFH	BHM	BBI	LGI	BMI	BNI	CH3	BLH
	6	7	8	9	10	11	12	13	14	15	16	17	18
1			1				1	1					
2			1	1	1	1	1	1			1		
3													
4	1									1			
5											1		
6			1										
7			1					1		1		1	
8								1		1		1	
9					1			1					
10													
11													
12													
13										1		1	
14								1		1			
15				1	1	1	1			1	1		
16													
17					1					1			
18			1	1	1								
19	1		1			1	1	1		1	1	1	1
20													
21			1	1									
22													
23													
24			1										
25													
26										1			
27				1					1	1			
28	1	1			1								
29				1									
30	1	1				1							1
31			1	1									
32				1					1	1	1		
33			1	1					1	1			
34			1						1	1			
35			1										
36													
37			1	1	1		1	1	1				
38													
39			1										
40				1	1			1					
41	1		1	1	1	1			1				1
42													
43			1										
44		1	1	1	1	1	1	1	1	1	1		1
45													
46													

APPENDIX D: MATRIX OF SPECIES AND HAMMOCKS

#	HOH	BHH	BUT	BHN	BHE	RFH	BHM	BBI	LGI	BMI	BNI	CH3	BLH
47				1	1								
48	1	1		1		1		1					
49										1			
50													
51													
52													1
53			1	1									
54													
55			1	1	1	1	1	1					
56			1	1									
57	1	1		1	1	1						1	1
58	1	1	1	1	1	1	1	1	1	1	1	1	1
59			1	1									
60	1	1		1	1	1	1	1	1	1	1		
61		1	1	1	1	1							
62													
63			1	1	1					1			
64	1	1	1	1	1	1			1		1	1	1
65	1		1	1	1		1	1	1	1			
66			1										
67	1	1		1	1	1		1	1	1	1	1	
68													
69			1	1	1	1	1	1		1			
70													
71			1		1								
72	1	1	1	1	1	1	1	1	1	1	1	1	
73													
74					1		1						
75	1		1	1	1	1	1	1	1	1	1	1	1
76		1											
77	1		1	1	1	1	1	1				1	1
78				1		1							
79	1	1		1			1			1			
80			1										
81			1		1								
82					1								
83			1	1									

APPENDIX D: MATRIX OF SPECIES AND HAMMOCKS

#	GMI 19	SRC 20	GLC 21	BYC 22	MAC 23	SAC 24	BRC 25	HSI 26	SAB 27	MCR 28	MC3 29	MC2 30	MHI 31
1	1	1	1	1	1	1	1	1	1		1	1	1
2	1		1						1				
3		1	1		1	1	1	1	1	1	1	1	1
4	1												
5													
6					1								
7													
8													
9			1			1	1						
10		1	1	1	1								
11	1							1					
12				1	1	1	1		1				1
13													
14													
15													
16			1	1	1	1	1	1	1	1			
17			1	1									1
18		1	1	1	1	1	1	1	1	1	1	1	1
19	1		1	1	1								
20													
21		1	1	1	1	1	1	1	1	1	1	1	1
22		1	1	1	1	1	1	1		1	1		
23			1	1	1	1	1	1		1			1
24	1	1	1	1		1	1	1	1		1		1
25													
26		1	1	1	1	1	1	1	1	1	1	1	
27	1					1		1					1
28	1												
29		1	1	1	1	1	1	1	1	1	1	1	1
30		1	1	1	1					1	1	1	1
31							1		1		1	1	
32													
33	1												
34	1												
35		1	1	1	1	1	1	1	1	1	1	1	1
36		1	1	1	1	1	1	1	1	1	1	1	1
37													
38					1								
39			1	1	1		1	1			1		1
40				1	1	1	1		1	1	1	1	1
41		1	1	1	1	1	1	1	1	1	1	1	1
42		1	1	1	1	1	1	1	1	1	1	1	1
43		1	1	1		1	1	1	1				1
44		1	1	1	1	1	1	1	1	1	1	1	1
45		1		1	1	1	1	1		1		1	
46		1	1	1	1	1	1	1	1	1	1		1

APPENDIX D: MATRIX OF SPECIES AND HAMMOCKS

#	GMI	SRC	GLC	BYC	MAC	SAC	BRC	HSI	SAB	MCR	MC3	MC2	MHI
47													
48													
49													
50		1	1	1	1	1	1	1	1				1
51				1									
52	1												
53		1	1	1	1	1	1	1	1	1	1	1	1
54		1	1	1	1					1		1	
55		1	1	1		1	1			1	1	1	
56													
57	1												1
58	1	1	1	1			1				1	1	1
59		1	1	1	1	1	1	1	1		1	1	1
60		1	1	1				1	1		1	1	
61													
62		1	1		1	1			1				
63													
64		1	1	1	1	1	1	1	1	1	1	1	1
65	1												
66													
67	1												
68													
69		1							1	1	1	1	
70		1	1	1	1	1	1	1	1	1	1	1	
71													
72	1	1	1	1	1	1	1	1	1	1	1	1	1
73													1
74	1												
75	1	1	1	1	1	1	1	1	1	1	1	1	1
76					1						1	1	
77		1	1	1	1	1	1		1	1	1	1	
78		1	1	1	1	1	1	1	1		1	1	1
79	1												
80			1										
81													
82					1								
83		1	1	1	1	1	1	1	1	1	1	1	1

APPENDIX D: MATRIX OF SPECIES AND HAMMOCKS

#	BIC 32	SAA 33	M37 34	RPH 35	SAD 36	TMI 37
1	1		1	1	1	1
2				1		1
3	1	1	1		1	
4						
5						
6				1		
7						
8						
9						1
10	1					
11						
12	1	1	1		1	1
13						
14						
15						
16		1		1	1	1
17						
18	1	1	1	1	1	1
19			1			1
20				1		1
21	1	1	1	1	1	
22						
23			1			
24				1		1
25				1		
26	1	1			1	
27		1				1
28						
29	1	1	1	1	1	1
30				1		
31				1	1	
32						1
33						
34						
35		1	1		1	
36	1	1	1		1	
37	1					
38						
39				1		
40	1			1		1
41	1			1	1	1
42	1		1		1	
43					1	1
44	1	1	1	1	1	
45	1	1			1	1
46	1				1	

APPENDIX D: MATRIX OF SPECIES AND HAMMOCKS

#	BIC	SAA	M37	RPH	SAD	TMI
47						
48						
49						
50		1		1	1	
51						
52						
53	1	1	1		1	1
54	1					
55				1		
56						1
57						1
58				1		1
59	1		1		1	1
60				1	1	1
61						
62	1	1			1	
63						
64	1	1	1	1	1	1
65				1		
66						
67						1
68				1		
69				1	1	1
70	1	1	1	1	1	
71						
72	1	1	1	1	1	1
73						
74						
75	1	1			1	
76				1		1
77			1	1	1	1
78	1			1		
79						
80						
81				1		
82			1			1
83	1	1	1	1	1	1

APPENDIX E: DATA FOR CLUSTER ANALYSIS

DATA FOR CLUSTER ANALYSIS

JOB TITLE - UPGMA CLUSTER ANALYSIS

ROUND NUMBER		1			
OTU'S	1	AND	2	CLUSTER AT	0.741936
OTU'S	3	AND	4	CLUSTER AT	0.066667
OTU'S	6	AND	11	CLUSTER AT	0.590909
OTU'S	9	AND	10	CLUSTER AT	0.512195
OTU'S	12	AND	13	CLUSTER AT	0.565217
OTU'S	21	AND	22	CLUSTER AT	0.795455
OTU'S	24	AND	25	CLUSTER AT	0.837838
OTU'S	27	AND	36	CLUSTER AT	0.848485
OTU'S	29	AND	30	CLUSTER AT	0.823530
ROUND NUMBER		2			
OTU'S	1	AND	3	CLUSTER AT	0.606716
OTU'S	14	AND	16	CLUSTER AT	0.444445
OTU'S	20	AND	21	CLUSTER AT	0.750000
OTU'S	24	AND	26	CLUSTER AT	0.757310
ROUND NUMBER		3			
OTU'S	1	AND	6	CLUSTER AT	0.535104
OTU'S	24	AND	27	CLUSTER AT	0.700950
OTU'S	28	AND	29	CLUSTER AT	0.657680
ROUND NUMBER		4			
OTU'S	1	AND	5	CLUSTER AT	0.490503
OTU'S	14	AND	15	CLUSTER AT	0.370370
OTU'S	20	AND	23	CLUSTER AT	0.678802
ROUND NUMBER		5			
OTU'S	1	AND	7	CLUSTER AT	0.454510
OTU'S	17	AND	18	CLUSTER AT	0.400000
OTU'S	20	AND	24	CLUSTER AT	0.654437
ROUND NUMBER		6			
OTU'S	8	AND	9	CLUSTER AT	0.401489
OTU'S	20	AND	28	CLUSTER AT	0.620307
ROUND NUMBER		7			
OTU'S	20	AND	32	CLUSTER AT	0.579306
ROUND NUMBER		8			
OTU'S	20	AND	31	CLUSTER AT	0.563021

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      ROUND NUMBER   9
OTU'S     20 AND     33 CLUSTER AT 0.485603

      ROUND NUMBER  10
OTU'S     20 AND     34 CLUSTER AT 0.472175

      ROUND NUMBER  11
OTU'S     20 AND     35 CLUSTER AT 0.380172

      ROUND NUMBER  12
OTU'S      8 AND     12 CLUSTER AT 0.358821

      ROUND NUMBER  13
OTU'S      1 AND      8 CLUSTER AT 0.338206
OTU'S     20 AND     37 CLUSTER AT 0.300989

      ROUND NUMBER  14
OTU'S      1 AND     14 CLUSTER AT 0.303996

      ROUND NUMBER  15
OTU'S      1 AND     17 CLUSTER AT 0.287078

      ROUND NUMBER  16
OTU'S      1 AND     19 CLUSTER AT 0.278694

      ROUND NUMBER  17
OTU'S      1 AND     20 CLUSTER AT 0.198468
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