

Record # 12531

Upland Vegetation of Biscayne National Park

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Biscayne National Park comprises 181,000 acres in area though most of the land (171,925 acres) is submerged. The areas that are above sea level are the barrier islands that run in a SWS direction down the center of the Park and a thin strip of upland area along the western coastline (Figure 1). Terrestrial vegetation communities within the Park can be categorized as mangrove, hardwood hammock, grasslands and marshes, which account for 6,905, 126, and 197 acres of Park land respectively {Stalter, Tamory, et al. 1999 #8361}. Most of the investigations involving terrestrial systems within Biscayne National Park boundaries have been conducted on the eastern barrier islands. These islands are composed of Key Largo Limestone underlain by porous Miami Oolite (limestone) and are exposed to saline conditions via wave action and salt spray. Freshwater for the vegetation is only available as rainfall of which a considerable amount is lost to runoff or leached through the highly porous limestone. As such, only drought- and salt-tolerant vegetation can thrive on the islands.

Species Identified

Hammer & Bradley in 1997 compiled a comprehensive checklist of the native and naturalized vascular plants of the upland and marine habitats within Biscayne National Park {Hammer & Bradley 1997 #7071}. They reported 302 species and delineated naturalized exotic species, Florida endemic species, state endangered species, state threatened species, and state commercially exploited species (See Appendix A) but did not report on cultivated species. A recent listing of the vascular plants occurring within Biscayne National Park was compiled by Stalter *et al* (1999) who listed 372 plant species within 277 genera and 92 families {Stalter, Tamory, et al. 1999 #8361}. They identified the largest families as Poaceae (grasses) with 47 species, Asteraceae (Aster family) with 34 species and Fabaceae (Pea Family) with 28 species (See Appendix B).

An extensive research project to determine hammock vegetation data on the larger islands within the Park was conducted by Bennett & Shamblin from 1995-1998 {Bennett & Shamblin 1995 #9311}. Keys investigated were Boca Chita, Elliott, Sands, Totten, Old Rhodes. It was determined that Pigeon Plum (*Coccoloba diversifolia*) and Poisonwood (*Metopium toxiferum*) were the dominant canopy species on all the islands and accounted for more than 30% of all sampled trees. Other frequently-encountered canopy species were Wild Tamarind (*Lysiloma latisliqua*), Gumbo Limbo (*Bursera simaruba*), and Mathogany (*Swietenia mahagoni*). Spanish Stopper (*Eugenia foetida*) and White Stopper (*E. axillaris*) dominated the shrub (subcanopy) layer. Buttonwood (*Conocarpus erectus*), Cat's Claw (*Pithecellobium unguis-catii*), Blackbead (*P. guadalupense*), and Black Mangrove (*Avicennia germinans*) were the dominant species along the margins of the hammock habitats. [For a detailed description of inter- and intra-island species dominances, see {Bennett & Shamblin 1995 #9311}.

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Endemic Species

Two of the five vascular plant species endemic to Biscayne National Park are listed on the State's endangered species list: Porter's Spurge (aka Sandmat) (*Chamaesyce porteri*) and Prickly-Apple (*Harrisia aboriginum*) {Hammer & Bradley 1997 #7071}{Stalter, Tamory, et al. 1999 #8361}.

Exotic Species

Exotic plants are those that "occur in a given area as a result of direct or indirect, deliberate or accidental introduction of the plant by humans" {author unknown 1985 #9311}. They are not natural components of the ecosystems and have not evolved with the species native to the area. Exotic plants tend to be difficult to eliminate and invade disturbed sites very rapidly. Once they are established in a system they quickly overrun the native vegetation. In Biscayne National Park, the most prolific and detrimental exotics are Australian Pine (*Casuarina equisetifolia*), Colubrina (*Colubrina asiatica*), and Brazilian Pepper (*Schinus terebinthifolius*).

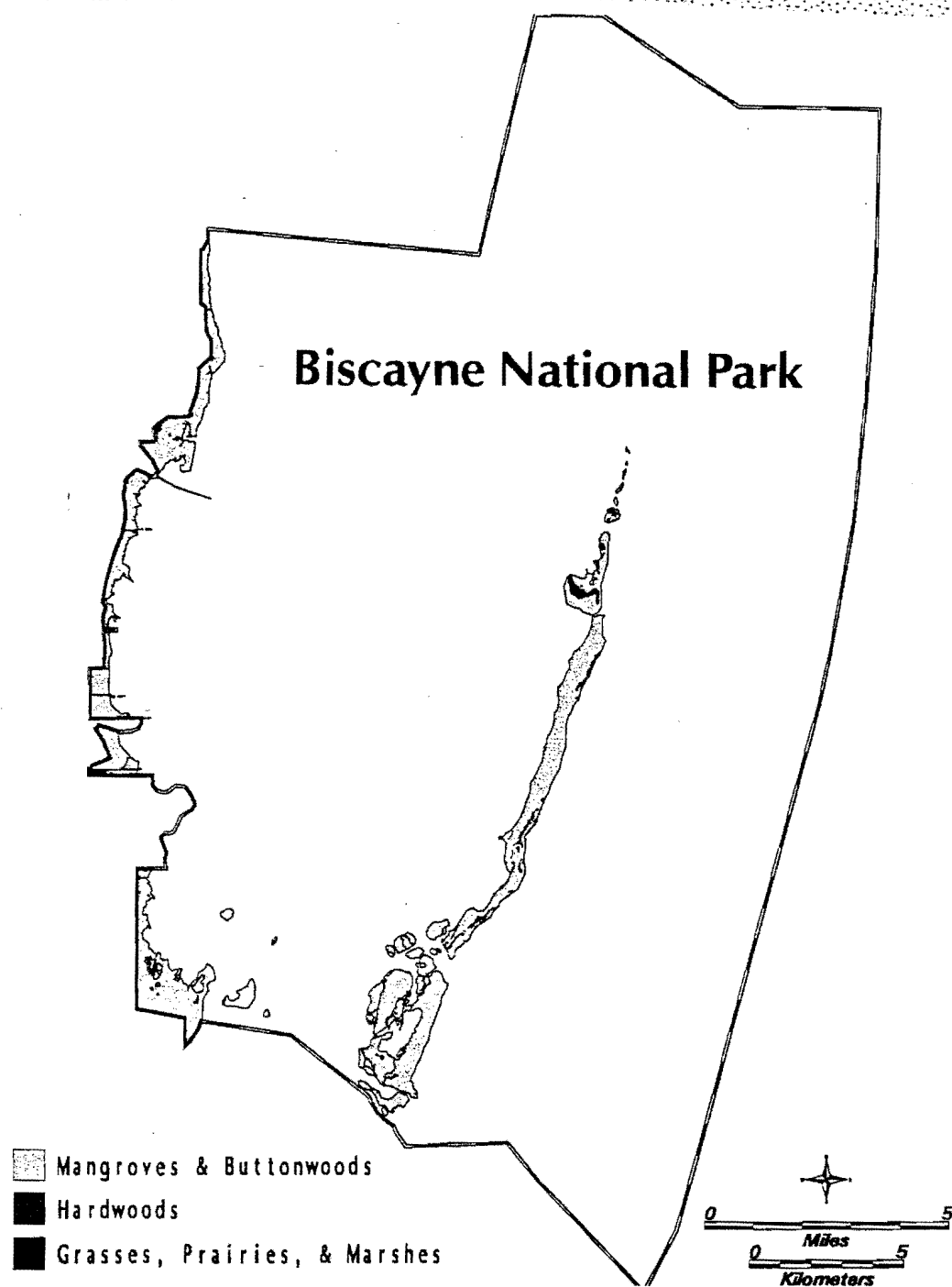


FIG. 1. Map of Biscayne National Park. Shown here are the plant communities referred to in the flora.

Appendix A
Hammer & Bradley, 1997

@ - notable exotic invasive

* - see Appendix B

Naturalized Exotic Species

- Aloe vera (*Aloe barbadensis*) *
- Asia Crabgrass (*Digitaria bicornis*) *
- Australian Pine (*Casuarina equisetifolia*) @ *
- Bahia Grass (*Paspalum notatum*) *
- Ballon Vine/Love-in-a-puff (*Cardiospermum halicacabum*) *
- Balsam Pear (*Momordica charantia*) *
- Bermuda Grass (*Cynodon dactylon*) *
- Bowstring Hemp/African Bowstring/Mother-in-Law Tongue (*Sansevieria hyacinthoides*) *
- Brazilian Pepper (*Schinus terebinthifolius*) @ *
- Burma Reed/Silkreed (*Neyraudia reynaudiana*) *
- Chinese Brake (*Pteris vittata*) *
- Christmas Palm/Manila Palm (*Veitchia merillii*) *
- Clustered Yellowtops (*Flaveria trinervia*)
- Coconut Palm (*Cocos nucifera*) *
- Common Sowthistle (*Sonchus oleraceus*) *
- Creeping Oxeye (*Wedelia trilobata*)
- Date Palm (*Phoenix dactylifera*) *
- Devil's Backbone (*Kalanchoe daigremontiana*) *
- Durban Crowfootgrass (*Dactyloctenium aegyptium*) *
- Feather Lovegrass (*Eragrostis amabilis*) *
- Fishtail Boston Fern (*Nephrolepis falcata* cv. 'furcans')
- Gale-of-Wind (*Phyllanthus amarus*) *
- Geiger Tree (*Cordia sebestena*) **
- Golden Pothos (*Epipremnum pinnatum*) *
- Gophertail Lovegrass (*Eragrostis ciliaris*) *
- Green Shrimp-Plant (*Blechnum pyramidatum*) *
- Indian Almond/West Indian Almond (*Terminalia catappa*) *
- Indian Goosegrass (*Eleusine indica*) *
- Jerusalem Thorn (*Parkinsonia aculeata*) *
- Key Lime (*Citrus aurantifolia*) *
- Leatherleaf/Asian Nakedwood (*Colubrina asiatica*) @ *
- Life Plant/Cathedral Bells (*Kalanchoe pinnata*) *
- Little Ironweed (*Vernonia cinerea*) *
- Lofty Fig/Council Tree (*Ficus altissima*) *
- Madagascar Periwinkle (*Catharanthus roseus*) *
- Mamancillo/Spanish Lime (*Melicoccus bijugatus*) *
- Mano (*Mangifera indica*) *
- Manila Templegrass/Mascarenegrass (*Zoysia matrella* var. *tenuifolia*) *
- Manila-Tamarind/Monkeypod (*Pithecellobium dulce*) *

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Mauritius hemp (*Furcraea foetida*)
Monk Orchid (*Oeceoclades maculata*) *
Oyster-Plant (*Tradescantia spathecea*) *
Papaya (*Carica papaya*) *
Purplequeen (*Tradescantia pallida*) *
Queensland Umbrella/Australian Umbrella Tree (*Schefflera actinophylla*) *
Rabbit Thistle/Coatbuttons (*Tridax procumbens*) *
Rocketweed/Oriental False Hawskbeard (*Youngia japonica*) *
Rose Natalgrass (*Rhynchelytrum repens*) *
Rough Lemon/Lemon (*Citrus limon*) **
Sansevieria metallica
Sapodilla (*Manilkara zapota*) *
Sea Hibiscus (*Hibiscus tiliaceus*) *
Seaside Mahoe/Portia Tree (*Thespesia populnea*) *
Senegal Date Palm (*Phoenix reclinata*) *
She-Oak/Suckering Australian Pine (*Casuarina glauca*) *
Shrub Verbena (*Lantana camara*) *
Shrubby False Buttonweed (*Spermacoce verticillata*) *
Sisal Hemp (*Agave sisalana*) *
Sour Orange (*Citrus aurantium*) **
Spanish Bayonet/Yucca (*Yucca aloifolia*) *
Surinam Cherry (*Eugenia uniflora*) *
Tamarind (*Tamarindus indica*) *
Torpedograss (*Panicum repens*) *
Tropical Signalgrass (*Urochloa subquadriflora*) *
Umbrella Plant (*Cyperus involucratus*) *

Florida Endemic Species

Cankerberry/Bahama Nightshade (*Solanum bahamense* var. *luxurians*)
False Sisal (*Agave decipiens*)
Porters Spurge/Sandmat (*Chamaesyce porteri*) [also a State Endangered Species] *
Prickly-Apple (*Harrisia aboriginum*) [also a State Endangered Species]

State Endangered Species

Bahama Wild Coffee (*Psychotria ligustrifolia*)
Birthwort/Marsh's Dutchman's Pipe (*Aristolochia pentandra*) ***
Brittle Thatch Palm/Key Thatch Palm (*Thrinax morrisii*) ***
Brown's Indian Rosewood (*Dalbergia brownii*) ***
Buccaneer Palm/Sargent's Cherry Palm (*Pseudophoenix sargentii*)
Caribbean Princewood (*Exostema caribaeum*) ***
Cinnamon Bark/Wild Cinnamon (*Canella winterana*) ***
Climbing Vine Fern (*Microgamma heterophylla*) ***
Coffee Colubrina (*Colubrina arborescens*) ***
Dollar Orchid (*Encyclia boothiana* var. *erythronioides*) ***
Florida Boxwood (*Schaefferia frutescens*) ***
Florida Keys Ladie's Tresses (*Spiranthes polyantha*) ***

Florida Thatch Palm (*Thrinax radiata*) ***
Lignum-vitae (*Guajacum sanctum*) ***
Maidenberry (*Crossopetalum rhacoma*) ***
Manchineel (*Hippomane mancinella*) ***
Milkbark (*Drypetes diversifolia*) ***
Parasitic Ghostplant (*Leiphaemos parasitica*) ***
Pearlberry/Tearshrub (*Vallesia antillana*) ***
Porter's Spurge (*Chamaesyce porteriana*) [also a Florida Endemic Species]
Red Stopper (*Eugenia rhombea*)
Redberry Stopper (*Eugenia confusa*)
Ribbon Fern (*Nevrodium lanceolatum*) ***
Soldierwood/Nakedwood (*Colubrina elliptica*) ***
West Indian Mahogany (*Swietenia mahogoni*)
West Indian Trema (*Trema lamarkianum*)
Whiteflower Passionflower (*Passiflora multiflora*) ***

State Threatened Species

Blacktorch (*Erithalis fruticosa*)
Coastal Leather Fern (*Acrostichum aureum*)
Darlingplum (*Reynosia septentrionalis*) ****
Everglades Greenbrier (*Smilax havanensis*)
Florida Mayten (*Maytenus phyllanthoides*) ****
Giant Airplant (*Tillandsia utriculata*) ***
Guiana Plum (*Drypetes lateriflora*) ****
Joewood/Cudjoe Wood (*Jacquinia keyensis*) ****
Northern Needleleaf (*Tillandsia balbisiana*) ****
Prickly-Apple (*Harrisia aboriginum*) [also a Florida Endemic Species]
Satinleaf (*Chrysophyllum oliviforme*) ****
Sea Lavender (*Argusia gnaphalodes*)
Silver Palm (*Coccothrinax argentata*) ****
Twisted Airplant (*Tillandsia paucifolia*)
Wild Dilly (*Manilkara jaimiqui* subsp. *emarginata*)
Wild-Pine (*Tillandsia faxiculata* var. *densispica*)

State Commercially-Exploited Species

Florida Butterfly Orchid (*Encyclia tampensis*) *****

Appendix B
Stalter et al, 1999

The vascular plants listed below were categorized in Stalter et al, 1999 and were not listed in Hammer & Bradley, 1997. Asterisks indicate the following categories as names by Stalter et al:

- * = Naturalized Exotic Species [= Hammer & Bradley Naturalized Exotic Species]
- ** = Cultivated species; not escaped [not identified by Hammer & Bradley]
- *** = Florida Endangered species [= Hammer & Bradley State Endangered species]
- **** = Florida Threatened species [= Hammer & Bradley State Threatened species]
- ***** = Florida Commercially-Exploited species [= Hammer & Bradley State Commercially-Exploited species]

Asterisks appearing after species listed in Hammer & Bradley, 1997 refer to Stalter et al categorization. Note that Stalter et al occasionally place species into different category from Hammer & Bradley.

Achicoria Azul (*Launaea intybacea*) *
African Bostring (*Sansevieria trifasciata*) *
Arabian Jasmin (*Jasminum sambac*) **
Beardgrass (*Bothriochloa barbinodis*) *
Black Medick (*Medicago lupulina*) *
Bougainvillea/Choisy Paper Flower (*Bougainvillea glabra*) *
Castorbean (*Ricinus communis*) *
Chandelier Plant (*Kalanchoe tubiflora*) *
Coontie/Florida Arrowroot (*Zamia pumila*) * and ***
Coralbush (*Jatropha multifida*) *
Dwarf Banana/Dwarf Davendish (*Musa acuminata*) **
Egg Fruit /Canistel (*Pouteria campechiana*) *
Erect Pricklypear (*Opuntia stricta* var. *dillenii*)
Florida Keys Blackbead (*Pithecellobium keyense*) *
Gardenia (*Gardenia angusta*) **
Gliricidia sepium *
Hawaii Pearls (*Caesalpinia major*) ***
Japanese Lawngrass/Korean Templegrass (*Zoysia japonica*) *
Lavender Scallops (*Kalanchoe fedtschenkoi*) *
Little Hogweed (*Portulaca oleracea*) *
Luckynut (*Thevetia peruviana*) **
Oleander (*Nereum oleander*) **
Palm Beachbells (*Kalanchoe gastonis-bonnien*) *
Palmgrass (*Setaria palmifolia*) *
Paragrass (*Urochloa mutica*) *
Pine Pink (*Bletia purpurea*) *
Pitted Beardgrass (*Bothriochloa pertusa*) *

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Pond Apple/Pitchapple (*Clusia rosea*) *
Pouteria domingensis *
Rosemallow/Shoe-Back Plant (*Hibiscus rosa-sinensis*)
Sword Fern (*Nephrolepis biserrata*) ****
Tangerine (*Citrus reticulata*) **
Trailing Indigo (*Indigofera spicata*) *
Triangle Cactus/Dildoe Cactus (*Acanthocereus tetragonus*) ****
Twisted Airplant (*Tillandsia flexuosa*) ***
White Clover/Dutch Clover (*Trifolium repens*) *
White Leadtree (*Leucaena leucocephala*) *
White Twinevine (*Sarcostemma clausum*) *
Yellow Nutgrass/Chufa Flatsedge (*Cyperus esculentus*) *
Yellow Sweetclover (*Melilotis officinalis*) *