# CONSERVATION, AQUIFER RECHARGE AND DRAINAGE ELEMENT

## Introduction

It is the intent of this Element to identify, conserve, appropriately use, protect and restore as necessary the biological, geological and hydrological resources of Miami-Dade County. Since the adoption of the Comprehensive Development Master Plan (CDMP) in 1975, Miami-Dade County has been committed to protection of environmentally sensitive wetlands and aquifer recharge and water storage areas. Protecting and restoring environmentally sensitive uplands has been recognized as important to the County's present and future, thus, Miami-Dade County has sought to channel growth toward those areas that are most intrinsically suited for development. This Element and the proposed natural resources objectives, policies and maps in the Land Use Element and Coastal Management Element continue that established trend. In addition, many experts suggest that South Florida will be significantly affected by rising sea levels, intensifying droughts, floods, and hurricanes as a result of climate change. As a partner in the four county Southeast Florida Regional Climate Change Compact, Miami-Dade has committed to study the potential negative impacts to the County given climate change projections, and is working to analyze strategies to adapt to these impacts and protect the built environment and natural resources.

The environmental sensitivity of Miami-Dade County is underscored by the fact that the urban portion lies between two national parks, Everglades and Biscayne National Parks, and the Florida Keys National Marine Sanctuary. The close proximity of an expanding urbanized area to national and State resource-based parks, and over 6,000 acres of natural areas within County parks, presents a unique challenge to Miami-Dade County to provide sound management. The County has addressed this challenge in several ways including working closely with other public and private sector agencies and groups to obtain a goal of sustainability. The close relationship of tourism to the preservation of Miami-Dade County's unique native plants, wildlife, beaches, and near shore water quality is recognized as both an economic and an environmental issue. The Conservation Element builds upon past and present initiatives such as the East Everglades Resource Management Plan, and planning for the Bird Drive-Everglades, Arch Creek, and C-111 Basins, the Governor's Commission on a Sustainable Everglades Restoration Plan, the GreenPrint, the County's plan for sustainability, and over four decades of local planning, monitoring, and evaluating proposed activities in wetlands and uplands.

Since the establishment of the former Miami-Dade County Department of Environmental Resource Management (DERM) in 1974 (now the Division of Environmental Resources Management in the Department of Regulatory and Economic Resources), Miami-Dade County has developed several comprehensive and innovative programs such as the Northwest Wellfield Protection Plan to protect the Biscayne Aquifer, the County's primary source of drinking water. Moreover, since the adoption of the CDMP in 1975, Miami-Dade County has been sensitive to the multiple challenges of water resource management. The present County programs also implement stormwater management plans to eliminate pollution to water bodies: freshwater, estuarine, and coastal, and natural areas management, to eliminate the invasion of exotic pest plants that threaten native ecosystems. Through local and regional partnerships, the County will continue to work towards sustainable development patterns, while protecting unique natural resources critical to the County's and the South Florida economy.

Chapter 163.3177(6)(d), Florida Statutes mandates that this Element contain principles, guidelines, and standards for conservation that provide long-term one or more goal statements which address the conservation, use and protection of the following natural resources: air quality, water sources, recharge areas, wetlands, waterwells, soils, minerals, floodplains, forests, fisheries, wildlife, beaches, shores, estuarine marshes, rivers, lakes, bays, harbors, marine habitats, and other natural resources.

The Coastal Management Element also includes policies intended to protect important coastal resources including wetlands, estuaries, marine fisheries and habitats, and water quality. Coastal wetlands, beaches and shores, estuarine marshes, rivers, lakes, bays, harbors, marine fisheries, marine habitats, marine wildlife, estuarine water quality and other marine and oceanic resources are discussed in the Coastal Management Element.

The 2010 Evaluation and Appraisal Report contains information on air and water quality, wellfield protection, flood protection, aquifer recharge and drainage, wetlands, upland forests and fish and wildlife, and serves as the basis for updates to the Adopted Components of this Element. Appendices A and B have been updated herein to be consistent with the current State and federal endangered, threatened and species of special listings.

**GOAL**

**PROVIDE FOR THE CONSERVATION, ENVIRONMENTALLY SOUND USE, AND PROTECTION OF ALL AQUATIC AND UPLAND ECOSYSTEMS AND NATURAL RESOURCES, AND PROTECT THE FUNCTIONS OF AQUIFER RECHARGE AREAS AND NATURAL DRAINAGE FEATURES IN MIAMI-DADE COUNTY.**

**Objective CON-1**

**Improve air quality in the County to meet all National Ambient Air Quality Standards set by the Environmental Protection Agency (EPA) and their respective deadlines; reduce human exposure to air pollution; and take into consideration climate change mitigation and adaptation strategies.**

**Policies**

CON-1A. Miami-Dade County shall maintain the objectives of the County's air permitting and compliance programs in an effort to prevent and control industry emissions of EPA-defined criteria and hazardous air pollutants. The County shall also administer state and federal agreements and work plans, integrating any new rules and regulations into existing County programs.

CON-1B. Significant enhancement of public transit services and implementation of transportation system management (TSM) programs including such measures as ride-share incentives, employer-based transportation management and the use of flex-time shall continue to be implemented in Miami-Dade County to provide feasible and attractive alternatives to use of the private automobile.

CON-1C. Residential and other high occupancy land uses shall not be located in areas that may be adversely impacted by stationary sources of air pollutant emissions. Additionally, industrial and commercial uses with permitted stationary sources of air

pollutant emissions shall not be located in residential and other high occupancy areas.

CON-1D. The Miami-Dade County Cooperative Extension Service will continue to offer training and certification exams to allow pesticide applicators to be licensed in accordance with Florida Statutes. The Miami-Dade County Cooperative Extension Service shall continue to encourage the use of Integrated Pest Management practices whenever available and economically feasible.

CON-1E. As required by the Environmental Protection Agency's Fumigant Management Plan (FMP), the Miami-Dade County Cooperative Extension Service will continue to host training by manufacturers according to FMP guidelines for that portion of the agricultural industry that uses soil fumigants.

CON-1F. Renovation and demolition projects will be regulated pursuant to the National Emissions Standard for Asbestos to prevent exposure to asbestos, a known human carcinogen.

CON-1G. Continue cooperative federal and regional efforts to measure and analyze community impacts of hazardous air pollutants in Miami-Dade County.

CON-1H. The Class 1 Air Quality Area of Everglades National Park and the Class 2 Air Quality Area of Biscayne National Park and the Big Cypress National Preserve shall be protected.

CON-1I. The use of ozone depleting compounds such as chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs) as refrigerants shall be strictly regulated and controlled in Miami-Dade County. The sale and purchase of ozone depleting compounds shall be limited to permitted businesses and certified technicians only. All products that utilize or were manufactured using ozone depleting compounds as a propellant or blowing agent are prohibited for sale within Miami-Dade County.

CON-1J. Miami-Dade County shall continue to implement its $CO_2$ Plan recommendations to reduce $CO_2$ levels and take into consideration the recommendations of the Southeast Florida Regional Climate Change Compact to reduce greenhouse gas emissions in accordance with all applicable regulations.

CON-1K. Miami-Dade County shall maintain and expand its air monitoring network in order to better evaluate air quality throughout the County.

CON-1L. Miami-Dade County shall continue to identify and obtain funding sources for air monitoring programs and voluntary efforts to improve air quality.

**Objective CON-2**

**Protect ground and surface water resources from degradation, provide for effective surveillance for pollution and clean up polluted areas to meet all applicable federal, state and County ground and surface water quality standards.**

**Policies**

CON-2A. The basin stormwater master plans produced by Miami-Dade County pursuant to Objective CON-5 will continue to prioritize the listing of stormwater/drainage improvements to correct existing system deficiencies and problems and to provide for future development. At a minimum, these lists shall include:

- Drainage/stormwater sewer systems within wellfield protection areas;
- Drainage/stormwater sewer systems in industrial and heavy business areas and areas with large concentrations of small hazardous waste generators;
- Basins and sub-basins that fail to meet the target criteria for the twelve NPDES priority pollutants listed in Policy CON-5A and additional parameters, referenced in CON-5A.

CON-2B. Miami-Dade County's Stormwater Utility Program shall fund the identification and retrofitting of deteriorated storm sewer systems and positive outfalls and the proper maintenance of stormwater systems.

CON-2C. Interim wastewater treatment plants within the Urban Development Boundary shall continue to be phased out as sewer service becomes available, with highest priority given to phasing out of existing industrial wastewater plants in accord with regulations and procedures established by the Board of County Commissioners. The Division of Environmental Resources Management shall use its administrative, enforcement, and permitting authority to implement these regulations.

CON-2D. Sewer Improvement Special Taxing Districts shall be established for all industrial and potentially hazardous commercial areas within the Urban Development Boundary.

CON-2E. Industries and businesses that generate and/or handle more than 50 gallons of hazardous and industrial wastes per year shall be identified and monitored. Coordination among agencies that require reporting of hazardous wastes shall be improved.

CON-2F. Miami-Dade County shall continue to utilize Best Management Practices established for potential sources of water pollution, that discharge wastewater to the ground, to reduce environmental risk and, where possible, to begin effective water reuse and recycling. Established management practices may be reviewed and modified as new science becomes available. New management practices shall be developed for new potential sources of water pollution as they are identified.

CON-2G. Best Management Practices for potential sources of water pollution shall include reduction in the use of hazardous materials and, wherever possible, the reuse and recycling of materials on site. Best Management Practices shall also be established to address those wastes that must be removed from site, including reusing and recycling of the waste in other operations. All practical recycling and reuse alternatives shall be investigated before seeking permanent disposal of hazardous wastes.

CON-2H. The Miami-Dade County Cooperative Extension Service shall continue to provide educational training for the agricultural producers to promote the use of Best Management Practices whenever available and economically feasible.

CON-2I. Continue to collect the data and information from hazardous facilities inspection programs and clean-ups of current and historical hazardous waste spills on a Geographical Information System (GIS). In addition, continue to maintain the results of the wellfield and ambient groundwater monitoring well program in a database.

CON-2J. Miami-Dade County shall continue to enforce a 500-foot protection zone for non-community, non-transient water supplies that serve uses such as public or private schools and trailer parks.

CON-2K. Miami-Dade County shall use the data generated in its ambient ground and surface water monitoring programs to determine levels of concentrations for the twelve National Pollution Discharge Elimination Systems (NPDES) priority pollutants, as well as for the additional recommended NPDES parameters referenced in Policy CON-5A and any other pollutants of interest.

CON-2L. By 2020, Miami-Dade County shall prepare a management plan for the protection and proper utilization of the Floridan Aquifer. This management plan should identify potential areas of water withdrawals, potential sources of contamination, the impact of potential withdrawals to other legal users, and the development of practices that will maintain this aquifer as a viable water supply source.

CON-2M. Through partnerships with municipalities and other agencies, the County will assist in coordinating and distributing information regarding beach water quality.

**Objective CON-3**

**Regulations governing approved wellfield protection areas shall be strictly enforced. The recommendations of the NW Wellfield Protection Plan, and the Lakebelt Planning Process and from other ongoing planning activities aimed at refining and improving protection of local drinking water supplies shall continue to be fully implemented.**

**Policies**

CON-3A. No new facilities that use, handle, generate, transport or dispose of hazardous wastes shall be permitted within wellfield protection areas, and all existing facilities that use, handle, generate, transport or dispose of more than the maximum allowable quantity of hazardous wastes (as specified in Chapter 24-43 of the Code of Miami-Dade County, as may be amended from time to time) within wellfield protection areas shall be required to take substantial measures such as secondary containment and improved operating procedures to ensure environmentally safe operations.

CON-3B. The water management systems that recharge regional wellfields shall be protected and enhanced.

CON-3C. County-owned and operated facilities that use hazardous materials or generate hazardous wastes shall be moved to locations that are outside and downgradient of

wellfield protection areas whenever such facilities need to be expanded by more than fifty (50) percent.

CON-3D. Miami-Dade County shall continue to utilize Best Management Practices established for agriculture within wellfield protection areas.

CON-3E. The area west of the Turnpike, east of the Dade-Broward Levee, north of NW 12th Street and south of Okeechobee Road shall be reserved for limestone mining and approved ancillary uses as provided for in Chapters 24 and 33 of the Miami-Dade County Code and the entire area west of the Turnpike, north of NW 25th Street and south of Okeechobee Road shall remain unurbanized.

CON-3F. The ambient groundwater monitoring program, which includes all wellfield protection areas, shall be continued to serve as an "early warning system" for monitoring high-risk land uses and point sources.

CON-3G. Miami-Dade County shall re-evaluate the extent, and mandate periodic updating, of the protection areas for all public water supply wellfields to adjust the protection areas and programs for those wellfields, as warranted. The County shall ensure that new surface water bodies are adequately set back from wellfields to provide an adequate rock buffer to ensure protection of water quality and maintenance of the groundwater classification of the wellfields.

CON-3H. Miami-Dade County shall identify facilities that handle, use or generate hazardous wastes in wellfield protection areas and address the feasibility of removing the grandfathering provision for facilities that have been determined to be significant sources of pollution within wellfield protection areas.

**Objective CON-4**

**The aquifer recharge and water storage capacity of the presently undeveloped areas in western and southern Miami-Dade County shall be maintained or increased.**

**Policies**

CON-4A. The aquifer-recharge values of undeveloped land and the water storage values of wetland areas shall be maintained and, where feasible, enhanced or restored. There shall be no further positive drainage of wetlands to accommodate urban development or agricultural uses.

CON-4B. All future development and redevelopment shall use retention, infiltration and detention systems to retain to the maximum extent feasible, the full runoff from a one in five year storm and minimize the use of impermeable surfaces. In the event that an emergency overflow is provided, a minimum of the first inch of runoff shall be retained on-site.

CON-4C. The approved fill encroachment criteria for the Western C-9 Basin as established by the South Florida Water Management District and for all other basins as established by the Miami-Dade County Division of Environmental Resource Management (Basin B, North Trail and Bird Drive) shall continue to govern the extent to which land can be filled, and additional fill encroachment criteria shall be developed for all the

undeveloped, poorly drained areas in western and southern Miami-Dade County which are determined to have urban development potential. These criteria shall retain the predevelopment net recharge and runoff values for basin areas.

CON-4D. Water conserving irrigation and other landscape practices such as Florida Friendly landscaping shall be used wherever feasible. Through its site and landscape reviews, Miami-Dade County shall ensure that appropriate native and Florida Friendly landscaping plant materials are used, particularly in the salt-intruded areas of the County where public water is used to water lawns, golf courses and landscaped green spaces.

CON-4E. Miami-Dade County shall continue to investigate the feasibility of large-scale water reuse through water reuse demonstration projects and other appropriate means. Investigate the suitability of reused water in wetland hydration.

CON-4F. The Miami-Dade County Division of Environmental Resources Management (DERM) shall work with the County's Cooperative Extension Department to develop guidelines for improving the efficiency and/or uniformity of irrigation systems for appropriate crops grown in Miami-Dade County.

CON-4G. In accordance with the goals of the South Florida Water Management District's *Lower East Coast Regional Water Supply Plan* and Objective WS-7, and its related policies, Miami-Dade County shall develop alternative water supply sources to supplement withdrawals from the Biscayne Aquifer. Such sources may include withdrawals from the Floridan Aquifer, implementation of water conservation methods and projects, and development of reclaimed and wastewater reuse strategies and projects.

**Objective CON-5**

**Miami-Dade County shall continue to develop and implement the Stormwater Master Plan~~s~~ comprised of basin plans for each of the sixteen primary hydrologic basins being addressed by the County, and cut and fill criteria as necessary to: provide adequate flood protection; correct system deficiencies in County maintained drainage facilities; coordinate the extension of facilities to meet future demands throughout the unincorporated area; and maintain and improve water quality. Each of the basins' Master Plans is to be updated every five years, with the next update to be completed by 2017. The implementing actions recommended in each basin plan shall continue to commence immediately after the applicable plan is approved. Outside of the Urban Development Boundary the County shall not provide, or approve, additional drainage facilities that would impair flood protection to easterly developed areas of the County, exacerbate urban sprawl or reduce water storage.**

**Policies**

CON-5A. The Stormwater Management (Drainage) Level of Service (LOS) Standards for Miami-Dade County contain both a Flood Protection (FPLOS) and Water Quality (WQLOS) component. The minimum acceptable Flood Protection Level of Service (FPLOS) standards for Miami-Dade County shall be protection from the degree of flooding that would result for a duration of one day from a ten-year storm, with exceptions in previously developed canal basins as provided below, where

additional development to this base standard would pose a risk to existing development. All structures shall be constructed at, or above, the minimum floor elevation specified in the federal Flood Insurance Rate Maps for Miami-Dade County, or as specified in Chapter 11-C of the Miami-Dade County Code, whichever is higher.

1. Basin-specific FPLOS standards shall be established through the adoption of a Stormwater Master Plan to be approved by the Miami-Dade County Board of County Commissioners and the South Florida Water Management District. Until the approval of basin-specific FPLOS standards through this coordinated process, the following additional exceptions shall apply:

   a) Wherever Miami-Dade County has adopted cut and fill criteria pursuant to Chapter 24-48.3(6) of the County Code (November 30, 2004) including fill encroachment limitations necessary to prevent unsafe flood stages in special drainage basins, the minimum applicable FPLOS standard shall be the degree of protection provided by the applicable cut and fill criteria;

   b) Where cut and fill criteria have not been established north of S.W. 152 Street inside the Urban Development Boundary (UDB), the minimum acceptable FPLOS standard shall be protection from the degree of flooding that would result for a duration of one day from a ten-year storm;

   c) West of Levee-31 N, there shall be no off-site drainage, all septic tank drainfields shall be elevated above the hundred-year flood elevation, and the extent of land filling shall be minimized as provided in applicable provisions of the Miami-Dade County East Everglades Zoning Overlay Ordinance. The County shall review these criteria when the water management facilities programmed in the N.E. Shark River Slough General Design Memorandum and the C-111 General Reconnaissance Review are fully operational.

2. The Stormwater Management Water Quality Level of Service (WQLOS) component of the standard shall be met when the annual geometric mean for each of the following twelve priority NPDES pollutants does not exceed the following target criteria for each of those pollutants within a canal basin, or sub-basin, as determined in accordance with procedures established by Miami-Dade County DERM:

| Pollutant | Target Criterion |
|---|---|
| Biological Oxygen Demand (BOD) | 9 mg/l |
| Chemical Oxygen Demand (COD) | 65 mg/l |
| Total Suspended Solids (TSS) | 40 mg/l |
| Total Dissolved Solids (TDS) | 1,000 mg/l |
| Total Kjeldahl Nitrogen (Ammonia-Nitrogen and Organic Nitrogen) | 1.5 mg/l |
| Total Nitrate ($NO_{X-N}$) | 0.68 mg/l |
| Total Phosphate ($TPO_4$) | 0.33 mg/l |
| Dissolved Phosphate ($OPO_4$) | Not Available |
| Cadmium (Cd) | 0.0023 mg/l |
| Copper (Cu) | 0.0258 mg/l |
| Lead (Pb) | 0.0102 mg/l |
| Zinc (Zn) | 0.231 mg/l |

Additionally, recommended NPDES parameters may not exceed established Federal, State or Local Criteria for the water body, as listed in Table 2, "Guidance for Preparing Monitoring Plan as recommended for Phase I Municipal Separate Storm Sewer System (MS4) Permits," FDEP August 1, 2009.

3. Applicants seeking development orders in canal basins, or sub-basins that do not meet either the FPLOS or the WQLOS shall be required to conform to Best Management Practices (BMPs) as provided by Miami-Dade County Code. Owners of commercial or industrial properties where BMPs are required, shall, at a minimum, demonstrate that their on-site stormwater system is inspected two times per year and maintained and cleaned as required. Private residential developments in areas where BMPs are required shall demonstrate that their on-site stormwater systems are inspected two times per year and maintained and cleaned as required.

CON-5B. Applicants seeking development orders approving any new use or site alteration outside the Urban Development Boundary where the elevation of any portion of the site will remain below County Flood Criteria shall be advised by the permitting agency that those portions of the land that are not filled to Miami-Dade County Flood Criteria may be subject to periodic flooding.

CON-5C. Miami-Dade County shall work with the South Florida Water Management District to better identify the developed urban areas within the County that do not have protection from a one in ten year storm. The County shall develop stormwater management criteria and plans for all unincorporated areas identified. Where such areas fall within municipal boundaries, the County will coordinate the stormwater management planning with the appropriate municipality(ies).

CON-5D. Miami-Dade County shall seek funding for a comprehensive basin-by-basin drainage engineering study which will include: identification of public drainage facilities and private drainage facilities that impact the public facilities, and the entities having operational responsibility for them; establishment of geographic service areas for the drainage facilities; and, a facility capacity analysis by geographic service area for the planning periods 2015 and 2025.

CON-5E. Miami-Dade County shall establish a priority listing of stormwater drainage and aquifer recharge improvements needed to correct existing system deficiencies and problems, and to provide for future drinking water needs. This shall include:

- Drainage/stormwater sewer system improvements in developed urban areas with persistent drainage problems;
- Canal and/or stormwater drainage improvements in developed urban areas that have less than one in ten year storm protection and where no roadway drainage improvements are planned or proposed, which would remedy the problems;
- Hydrologic modifications that are needed to deliver water to public waterwells or to protect those waterwells from prospective contamination.

This shall be based on such factors as:

- Miles of canals with out-of-bank flow;
- Miles of collector and local streets impassable during a 5 year storm;

- Miles of minor arterial streets impassable during a 10 year storm;
- Miles of principal arterials, including major evacuation routes, that are impassable during a 100 year storm; and
- Number or structures flooded by a 100-year storm.

CON-5F. Miami-Dade County shall implement cut and fill criteria for land in the North Trail, Bird Drive, Basin B, and Western C-9 basins, as defined in Chapter 24 of the County Code, and other areas west of the easterly boundary of Area B identified in the Corps of Engineers Design Memorandum V Supplement 12 dated March 23, 1954, as necessary to protect natural hydrological characteristics of the basins, protect against flooding of developed land in the basins and downstream, and ensure continued proper recharge of groundwater supplies.

CON-5G. Miami-Dade County shall encourage, based on analysis of water impoundment areas, the need for buffers between water impoundment areas and development in order to increase the level of flood protection provided to developed areas.

CON-5H. Miami-Dade County shall periodically evaluate stormwater drainage criteria as outlined in the County Code to ensure proper flood protection is being provided to County residents.

CON-5I. When building, expanding or planning for new facilities such as water treatment plants, Miami-Dade County shall consider areas that will be impacted by sea level rise.

**Objective CON-6**

**Soils and mineral resources in Miami-Dade County shall be conserved and appropriately utilized in keeping with their intrinsic values.**

**Policies**

CON-6A. Areas of highest suitability for mineral extraction in Miami-Dade County shall be reserved for that use and shall be protected from encroachment by incompatible uses.

CON-6B. Rockmining or quarrying uses may be approved in the Rockmining Overlay Zoning Area, the Lake Belt Area as defined by state law, and in those Open Land Subareas specified by the CDMP. However, the County shall continue to protect natural resources including surface water and groundwater, agricultural land, and publicly owned wetlands including the Everglades National Park.

CON-6C. Miami-Dade County shall develop guidelines for rock quarries that will provide high potential for the support of native flora and fauna and compatible recreational use in these areas once the quarrying operations have been completed.

CON-6D. Areas in Miami-Dade County having soils with good potential for agricultural use without additional drainage of wetlands shall be protected from premature urban encroachment.

CON-6E. Miami-Dade County shall continue to pursue programs and mechanisms to support the local agriculture industry, and the preservation of land suitable for agriculture.

CON-6F. Miami-Dade County shall coordinate with cities to develop a long-term vision for agricultural and other undeveloped lands outside of the UDB to ensure these lands continue to support urban communities and protect native plant and animal species from climate related impacts. Long-term land planning outside the UDB should also consider water storage opportunities.

**Objective CON-7**

**Miami-Dade County shall protect and preserve the biological and hydrological functions of the Future Wetlands identified in the Land Use Element. Future impacts to the biological functions of publicly and privately owned wetlands shall be mitigated. All privately owned wetlands identified by the South Florida Regional Planning Council as Natural Resources of Regional Significance and wetlands on Federal, State, or County land acquisition lists shall be supported as a high priority for public acquisition. Publicly acquired wetlands shall be restored and managed for their natural resource, habitat and hydrologic values.**

**Policies**

CON-7A. The degradation or destruction of wetlands shall be limited to activities that 1) are necessary to prevent or eliminate a threat to public health, safety or welfare; or 2) are water dependent, clearly in the public interest and no other reasonable alternative exists; or 3) are carried out in accordance with an approved basin management plan; or 4) are in areas that have been highly disturbed or degraded and where restoration of a wetland with an equal or greater value in accordance with federal, State and local regulations is feasible. Habitats critical to endangered or threatened species shall not be degraded or destroyed.

CON-7B. Off-road vehicles shall not be allowed in the future publicly owned and managed wetlands identified in the adopted Land Use Element unless there are permitted facilities or areas specified for their use.

CON-7C. Miami-Dade County shall continue to promote the restoration and maintenance of the natural, surface water flow regimes into, and through wetland systems such as the Shark River Slough, Everglades National Park and the saline wetlands of southeastern Miami-Dade County.

CON-7D. Management plans shall be developed to govern all development activity within all natural communities on County-owned lands to protect natural and historic resources. The Division of Environmental Resources Management (DERM) and the Office of Historic and Archeological Resources shall assist the appropriate County agencies in the development of these plans, which shall be subject to public review and comment as they are prepared and implemented.

CON-7E. All wetlands on the State Save Our Rivers, Florida Forever or Miami-Dade County Environmentally Endangered Lands acquisition lists shall be given very high priority for public acquisition as are all lands within the Environmental Protection category on the Land Use Plan (LUP) map.

CON-7F. Wetland mitigation areas shall be preferentially located in biologically degraded wetlands and serve as corridors between Resources of Regional Significance.

CON-7G. Miami-Dade County shall continue to work with the appropriate federal, State, regional and local agencies to develop wetland basin management plans for all the planned future wetlands areas in Miami-Dade County. Miami-Dade County shall continue to coordinate with all levels of government in their respective permitting functions in order to retain the long term, net wetland values of these areas. Priority for plan development shall be given to the wetlands in South Miami-Dade County that are slated for purchase under the Save Our Rivers, Florida Forever and Miami-Dade County Environmentally Endangered Lands programs.

CON-7H. Miami-Dade County shall provide new dedicated funding sources that are in addition to current sources and expiring revenue streams for the long-term management and maintenance of Environmentally Endangered Lands and publicly owned Natural Forest Communities by 2020. This shall be funded from ad valorem tax revenues unless other revenue streams sufficient for this purpose are identified and implemented prior to 2020.

CON-7I. Miami-Dade County shall coordinate with the South Florida Water Management District in order to implement strategies to streamline the wetland permitting process, which may include but not be limited to the delegation of additional permitting functions to the County.

CON-7J. In evaluating applications that will result in alterations or adverse impacts to wetlands Miami-Dade County shall consider the applications' consistency with Comprehensive Everglades Restoration Program (CERP) objectives. Applications that are found to be inconsistent with CERP objectives, projects or features shall be denied.

**Objective CON-8**

**Upland forests included on Miami-Dade County's Natural Forest Inventory shall be maintained and protected.**

**Policies**

CON-8A. Specimen trees and Natural Forest Communities in Miami-Dade County shall be protected through the maintenance and enforcement of the County's Tree and Forest Protection and Landscape Code, as may be amended from time to time. The County's Natural Forest Inventory shall be revised periodically to reflect current Natural Forest Community conditions. A Natural Forest Community shall not be removed from the inventory unless its quality and resource values have been degraded to the point where it cannot be restored.

CON-8B. The environmentally sensitive hardwood hammocks and the pinelands on the Florida Forever and Miami-Dade County Environmentally Endangered Lands Acquisition lists shall be given very high priority for public acquisition as are lands within the Environmental Protection category on the Land Use Plan (LUP) map.

CON-8C. Development in the forested portions of publicly owned Natural Forest Communities designated by the Board of County Commissioners pursuant to Resolution No. R-1764-84, as may be amended from time to time, shall be permitted only if it is clearly in the public interest, there is no feasible alternative, and such development does not adversely impact other remaining natural forest resources on-site.

CON-8D. Where hammocks or pinelands are contained within prospective development sites, they shall be given priority for designation as landscape and open space areas and left intact. The extent of hammock and pineland area destroyed shall be minimized by the use of native plant buffers, clustering, large lot zoning, and/or reduced roadway widths. Care shall be exercised when developing adjacent land to minimize root damage and filling. Disturbance to the forest canopy and understory shall be minimized and confined to the least viable areas. Preservation areas shall be located and configured to protect rare, threatened and endangered species and to allow for prescribed burning, where applicable. In the protected forest areas, understory vegetation and associated geologic features shall be protected and maintained in perpetuity.

CON-8E. The destruction of environmentally sensitive Natural Forest Communities shall be kept to a minimum; a long-term mitigation and management plan shall be developed to assure the continued maintenance of the remaining forest lands and the restoration or creation of at least an equal amount of forest lands to those destroyed.

CON-8F. Miami-Dade County shall continue to seek natural areas land management funds to conduct prescribed burns, and other appropriate techniques to establish the appropriate fire regime for natural areas, while minimizing deleterious off-target effects to native plant and animal species and negative impacts to the public health, safety and welfare. The County shall also seek funds to control and remove exotic plant species from public rights-of-way and other County-owned land outside of parks and natural areas.

CON-8G. The Natural Forest Communities that are owned by the Miami-Dade County School District shall be preserved and maintained and used as natural outdoor laboratories. Tracts of land that are to be developed as future school sites should be landscaped with appropriate xeriscape and/or native plant material. Wherever feasible, upland or wetland revegetation projects should be incorporated into the school's landscape design, and teaching curriculum.

CON-8H. Miami-Dade County's tree preservation and landscape requirements shall be coordinated. Tree preservation programs should focus primarily on Natural Forest Communities and specimen tree protection, maintenance, and restoration. The County shall adopt and enforce a comprehensive landscape code and promote xeriscape principles and the planting and protection of trees with an emphasis upon the provision and preservation of canopy and understory for aesthetics, physical comfort, energy savings, economic benefits, and wildlife habitat.

CON-8I. The exotic pest plant and nuisance species listed in Chapter 24-49.4 of the County Code, shall not be sold, propagated, or planted within Miami-Dade County. If existing on a development site, they shall be removed prior to development or redevelopment and developed parcels shall be maintained to prevent the growth or

accumulation of prohibited species. The County shall update the list from time to time as new scientific information becomes available and the updates shall include category 1 and category 2 species listed by the Florida Exotic Pest Plant Council if the species have been documented to invade natural areas in south Florida. In addition, any category 1 or category 2 species that are added to the prohibited list shall also be made exempt from requirements to obtain a tree removal permit provided that the removal of such trees in upland areas within the UDB shall require the same amount of canopy mitigation as is currently required. Therefore the exemption shall be conditioned on meeting this requirement including through a donation to the tree trust fund if applicable.

The exotic plant species listed in the County's adopted Landscape Manual as amended may not be planted within 500 feet of native plant communities. These plant species have been documented by the Florida Exotic Pest Plant Council, the Miami-Dade County Parks, Recreation and Open Spaces Department's Natural Area's Management Program, and the Miami-Dade County Division of Environmental Resources Management to be invasive pests in natural areas of Miami-Dade County.

CON-8J. Efforts should be made to propagate and reestablish where practical, endangered, threatened, and potentially endangered native plants and animals in Miami-Dade County. (See Appendix A). The current list of state and federally listed plants in Miami-Dade County should be reevaluated and additional species should be proposed for listing and listed animal species should be included, if appropriate. Through its land acquisition and regulatory processes, Miami-Dade County shall continue to protect federally and State-listed plant and animal species to the maximum extent possible.

CON-8K. All new plantings on lands owned and managed by Miami-Dade County shall include federally or State listed plants, if appropriate, and other native plant and/or xeriscape plant material, wherever feasible.

CON-8L. The 24,560 acres of native habitat at the Training and Transition Airport outside of the security fence shall be managed by the same standards applied to the Big Cypress National Preserve.

CON-8M. Miami-Dade County shall seek to increase the percentage of tree canopy from the present level of 10% to the national average of 30% by 2020 through the implementation and/or enforcement of: Adopt-A-Tree and other programs; landscape and tree protection ordinance changes to further increase canopy; and, other mechanisms as feasible and appropriate.

CON-8N. Miami-Dade County shall evaluate the feasibility of creating new or enhanced programs to provide technical assistance to private Environmentally Endangered Lands and Natural Forest Communities covenant holders.

**Objective CON-9**

**Freshwater fish, wildlife and plants shall be conserved and used in an environmentally sound manner and undeveloped habitat critical to federal, state or County designated endangered, threatened, or rare species or species of special concern shall be preserved.**

**Policies**

CON-9A. All activities that adversely affect habitat that is critical to federal or State designated, endangered or threatened species shall be prohibited unless such activity(ies) are a public necessity and there are no possible alternative sites where the activity(ies) can occur. (See Appendix B)

CON-9B. All nesting, roosting and feeding habitats used by federal or State designated endangered or threatened species, shall be protected and buffered from surrounding development or activities and further degradation or destruction of such habitat shall not be authorized.

CON-9C. Rookeries and nesting sites used by federal or State designated endangered or threatened species shall not be moved or destroyed.

CON-9D. The County should work with the US Fish and Wildlife Service, the Florida Fish and Wildlife Conservation Commission and other appropriate entities to describe and map wildlife populations, and by 2020, to determine the wildlife habitat values for all remaining freshwater wetlands and environmentally sensitive natural forest communities.

CON-9E. Conservation of upland wildlife habitats shall be taken into consideration during development evaluation and permitting processes.

CON-9F. The County's planning for the future development of open space and wetland mitigation areas shall include the protection, conservation and/or restoration of wildlife habitats.

## Monitoring and Data Programs

**Objective CON-1. Air Quality**
This objective will be measured by the number of exceedances of the National Ambient Air Quality Standards (NAAQS) or exceedances of any future additional standards promulgated by the US Environmental Protection Agency during the period covered by the EAR. A second monitoring measure will include the number of permit violations.

**Objective CON-2. Ground and Surface Water Quality**
This objective will be met in any of the primary drainage basins, or individual sub-basins within a primary basin, when the ambient five year average geometric mean value for each of the twelve NPDES priority pollutants in that basin or sub-basin does not exceed the target criteria. A second monitoring measure will be the number of groundwater exceedances based on the groundwater and wellfield monitoring programs.

**Objective CON-3. Wellfield Protection**
This objective will be measured by the number of exceedances of any applicable water quality standard within wellfield protection areas, and the number of times that pumpage has to be curtailed due to pollution incidents that threaten water resources within any defined wellfield protection area.

**Objective CON-4. Aquifer Recharge and Water Storage**
This objective will be measured by the number of cut and fill permits issued in the various basin areas, the amount of French drain installed and the number of permitted developments with insufficient land storage retention areas.

**Objective CON-5. Basin Management**
This objective will be measured by the number of stormwater master plans that have been completed and implemented, and the number of stormwater system improvements that have been made, and the number of permits issued for drainage facilities outside the UDB.

**Objective CON-6. Soil and Mineral Resources**
This objective will be measured by the number of acres that have been retained in agriculture and the acreage of open land areas where rockmining is an allowable use that are being actively rockmined.

**Objective CON-7. Wetland Protection and Restoration**
This objective will be measured by the acreage of wetlands that have been acquired and managed through the South Florida Water Management District Save Our Rivers Program, Florida Forever, the Miami-Dade County Environmentally Endangered Lands Program or other public land acquisition and management program to preserve their wetland values.

**Objective CON-8. Upland Protection and Restoration**
This objective will be measured by the acreage of hammocks and pinelands retained in public ownership or acquired by public land acquisition programs. Additional measures will include the number of sites where management plans have been, or are being implemented, the number of Endangered Lands Covenants and the number of sites and acreage retained in Natural Forest Communities.

**Objective CON-9. Freshwater Fishes and Wildlife Protection**
This objective will be measured by the net changes in the number of listed plant and animal species and the net changes in numbers of species in individual categories.

## Appendix A

### List of Federal, State and County Endangered, Threatened, Rare, and Special Concern Flora In Miami-Dade County

| Scientific Name | Common Name | Designated State | Status Federal | County |
|---|---|---|---|---|
| *Acacia choriophylla* | Tamarindillo; cinnecord | E | NL | Y |
| *Acanthocereus tetragenus* | Triangle cactus | T | NL | Y |
| *Acoelorraphe wrightii* | Everglades palm | T | NL | Y |
| *Acrostichum aureum* | Golden leather fern | T | NL | Y |
| *Adiantum capillus-veneris* | Venus hair fern; southern maidenhair fern | NL | NL | Y |
| *Adiantum melanoleucum* | Fragrant maidenhair fern | E | NL | Y |
| *Adiantum tenerum* | Brittle maidenhair fern | E | NL | Y |
| *Aeschynomene pratensis* | Meadow joint-vetch | E | NL | Y |
| *Agalinis filifolia* | Seminole false fox glove | NL | NL | Y |
| *Aletris bracteata* | White colic root | E | NL | Y |
| *Alvaradoa amorphoides* | Mexican alvaradoa | E | NL | Y |
| *Amorpha herbacea* var. *crenulata* | Crenulate (=Miami) lead plant | E | E | Y |
| *Amphitecna latifolia* | Black calabash | NL | NL | Y |
| *Anemia wrightii* | Wright's pineland fern | E | NL | Y |
| *Angadenia berteroi* | Pineland golden trumpet | T | NL | Y |
| *Argusia gnaphalodes* | Sea rosemary | E | NL | Y |
| *Argythamnia blodgettii* | Blodgett's silverbush | E | C | Y |
| *Aristolochia pentandra* | Marsh's dutchmans pipe | E | NL | Y |
| *Asplenium abscissum* | Cutleaf spleenwort | NL | NL | Y |
| *Asplenium dentatum* | Toothed spleenwort | E | NL | Y |
| *Asplenium serratum* | Wild bird nest fern | E | NL | Y |
| *Asplenium verecundum* | Modest spleenwort | E | NL | Y |
| *Asplenium x biscaynianum* | Biscayne spleenwort | NL | NL | Y |
| *Asteraea lobata* | Lobed croton; Florida treefern | NL | NL | Y |
| *Baccharis dioica* | Broombush falsewillow | E | NL | Y |
| *Basiphyllaea corallicola* | Carter's orchid | E | NL | Y |
| *Bletia patula* | Flor de Pesmo | NL | NL | Y |
| *Bletia purpurea* | Pinepink orchid | T | NL | Y |
| *Bourreria cassinifolia* | Smooth strongback | E | NL | Y |
| *Bourreria succulenta* | Bahama strongback | E | NL | Y |
| *Brassia caudata* | Spider orchid | E | NL | Y |
| *Brickellia eupatorioides* var. *floridana Brickellia mosieri* | Brickell-brush; Mosier's false boneset | E | C | Y |
| *Byrsonima lucida* | Locustberry | T | NL | Y |
| *Caesalpinia major* | Yellow nickerbean | E | NL | Y |
| *Calopogon multiflorus* | Many-flowered grass pink | E | NL | Y |
| *Calyptranthes pallens* | Spicewood; pale lid flower | T | NL | Y |
| *Calyptranthes zuzygium* | Myrtle-of-the-river | E | NL | Y |
| *Campyloneurum angustifolium* | Narrow strap fern | E | NL | Y |
| *Campyloneurum costatum* | Tailed strap fern | E | NL | Y |
| *Campyloneurum latum* | Broad strap fern | E | NL | Y |
| *Canella winterana* | Pepper cinnamon bark | E | NL | Y |
| *Catopsis berteroniana* | Powdery strap airplant | E | NL | Y |
| *Catopsis floribunda* | Florida strap airplant | E | NL | Y |
| *Cayaponia americana* | American melonleaf | NL | NL | Y |

| Scientific Name | Common Name | Designated State | Status Federal | County |
|---|---|---|---|---|
| *Ceretopteris pteridoides* | Water horn fern | NL | NL | Y |
| *Celosia nitida* | West Indian cock's comb | E | NL | Y |
| *Chamaesyce deltoidea* ssp. *adherens* | Gould's wedge sandmat | E | NL | Y |
| *Chamaesyce deltoidea deltoidea* | Wedge sandmat; rockland spurge | E | E | Y |
| *Chamaesyce deltoidea garberi* | Garber's sandmat; Garber's spurge | E | T | Y |
| *Chamaesyce deltoidea pinetorum* | Pineland sandmat | E | C | Y |
| *Chamaesyce pergamena* | Southern Florida sandmat | T | NL | Y |
| *Chamaesyce porteriana* | Porter's sandmat | E | NL | Y |
| *Chaptalia albicans* | White sunbonnets | T | NL | Y |
| *Cheilanthes microphylla* | Southern lip fern | E | NL | Y |
| *Chrysophyllum oliviforme* | Satin leaf | T | NL | Y |
| *Cissampelos pareira* | Velvet leaf; pareira brava | E | NL | Y |
| *Clitoria mariana* | Butterfly pea; Atlantic pigeonwings | NL | T | Y |
| *Coccothrinax argentata* | Florida silver palm | T | NL | Y |
| *Colubrina cubensis* var. *floridana* | Cuban nakedwood | E | NL | Y |
| *Colubrina elliptica* | Soldierwood | E | NL | Y |
| *Conradina grandiflora* | Large flowered false rosemary | T | NL | Y |
| *Cordia globosa* | Curacao bush | E | NL | Y |
| *Cranichis muscosa* | Cypress knee helmet orchid; moss orchid | E | NL | Y |
| *Crossopetalum ilicifolium* | Christmas berry | T | NL | Y |
| *Crossopetalum rhacoma* | Rhacoma maidenberry | T | NL | Y |
| *Croton humilis* | Pepperbush | E | NL | Y |
| *Ctenitis sloanei* | Red-hair comb fern | E | NL | Y |
| *Ctenitis submarginalis* | Brown-hair comb fern | E | NL | Y |
| *Cupania glabra* | Florida toadwood | E | NL | Y |
| *Cuscuta amerciana* | American dodder | NL | NL | Y |
| *Cynanchum blodgettii* | Blodgett's swallowwort | T | NL | Y |
| *Cyperus pendunculatus* | Beach star | E | NL | Y |
| *Cyrtopodium punctatum* | Cow-horn orchid; cigar orchid | E | NL | Y |
| *Dalbergia brownei* | Browne’s Indian rosewood | E | NL | Y |
| *Dalea carthagenensis* var. *floridana* | Florida prairie clover | E | C | Y |
| *Dendrophylax lindenii* | Ghost orchid | E | NL | Y |
| *Desmodium floridanum* | Florida ticktrefoil | NL | NL | Y |
| *Desmodium strictum* | Pinebarren ticktrefoil | NL | NL | Y |
| *Digitaria filiformis* var. *dolichophylla* | Caribbean crabgrass | T | NL | Y |
| *Digitaria pauciflora* | Two-spike crabgrass; Florida pineland crabgrass | E | C | Y |
| *Drypetes diversifolia* | White wood; milkbark | E | NL | Y |
| *Drypetes lateriflora* | Guiana plum | T | NL | Y |
| *Eleocharis albida* | White albida | NL | NL | Y |
| *Eleocharis rostellata* | Beaked spikerush | E | NL | Y |

| Scientific Name | Common Name | Designated State | Status Federal | County |
|---|---|---|---|---|
| *Eltroplectris calcarata* | Long-clawed orchid; spurred neottia | E | NL | Y |
| *Encyclia tampensis* | Butterfly orchid | CE | NL | Y |
| *Epidendrum anceps* | Dingy-flowered star orchid; dingy-flowered epidendrum | E | NL | Y |
| *Epidendrum floridense* | Umbrella star orchid; umbrella epidendrum | E | NL | Y |
| *Epidendrum nocturnum* | Night scented; night scented epidendrum | E | NL | Y |
| *Epidendrum rigidum* | Stiff-flowered star orchid; rigid epidendrum | E | NL | Y |
| *Erithalis fruticosa* | Black torch | T | NL | Y |
| *Ernodea cokeri* | Coker's beach creeper; one nerved ernodea | E | NL | Y |
| *Eugenia confusa* | Redberry stopper; redberry eugenia | E | NL | Y |
| *Eugenia rhombea* | Red stopper | E | NL | Y |
| *Eupatoriam compositifolium* | Yankeeweed | T | NL | Y |
| *Evolvulus convolvuloides* | Bindweed dwarf morning glory; dwarf bindweed | E | NL | Y |
| *Exostema caribaeum* | Caribbean princewood | E | NL | Y |
| *Galactia smallii* | Small's milkpea | E | E | Y |
| *Galeandra bicarinata* | Helmet orchid; two keeled hooded orchid | E | NL | Y |
| *Glandularia maritima* | Coastal mock vervain | E | NL | Y |
| *Gossypium hirsutum* | Upland cotton; wild cotton | E | NL | Y |
| *Govenia floridana* | Gowen's orchid; Florida govenia | E | NL | Y |
| *Guaiacum sanctum* | Holywood lignumvitae | E | NL | Y |
| *Guzmania monostachia* | Fuch's bromeliad; West Indian tufted airplant | E | NL | Y |
| *Gyminda latifolia* | West Indian false box | E | NL | Y |
| *Gymnopogon ambiguus* | Bearded skeleton grass | NL | NL | Y |
| *Gymnopogon brevifolius* | Shortleaf skeleton grass | NL | NL | Y |
| *Habenaria nivea* | Snowy orchid | T | NL | Y |
| | Johnson’s seagrass | T | T | Y |
| *Harrisia fragrans* | Caribbean apple cactus; Indian River prickly-apple; Simpson's applecactus | E | E | Y |
| *Harrisela porrecta* | Needleroot airplant | T | NL | Y |
| *Helenium flexuosum* | Purple sneeze weed | NL | NL | Y |
| *Hibiscus poeppigii* | Poepigg's rosemallow | E | NL | Y |
| *Hippomane mancinella* | Manchineel | E | NL | Y |
| *Hypelate trifoliata* | White ironwood | E | NL | Y |
| *Hypericum myrtifolium* | Myrtle leaf St. John's wort | NL | NL | Y |
| *Ilex krugiana* | Krug's holly | T | NL | Y |
| *Indigofera trita* ssp. *scabra keyensis* | Florida Keys indigo | E | C | Y |
| *Ipomoea microdactyla* | Bejuco colorado; wild potato morning glory; man-in-the-ground | E | NL | Y |
| *Ipomoea tenuissima* | Rockland morning glory | E | NL | Y |
| *Isoetes flaccida* | Florida quillwort | NL | NL | Y |

| Scientific Name | Common Name | Designated State | Status Federal | County |
|---|---|---|---|---|
| *Jacquemontia curtisii* | Pineland jacquemontia | T | NL | Y |
| *Jacquemontia havanensis* | Havana clustervine | E | NL | Y |
| *Jacquemontia pentanthos* | Skyblue clustervine | E | NL | Y |
| *Jacquemontia reclinata* | Beach clustervine; beach jacquemontia | E | E | Y |
| *Jacquinia keyensis* | Joewood | T | NL | Y |
| *Koanophyllon villosum* | Florida shrub thoroughwood | E | NL | Y |
| *Lantana canescens* | Hammock shrub verbena | E | NL | Y |
| *Lantana depressa* | Rockland shrub verbena | E | NL | Y |
| *Lactuca floridana* | Woodland lettuce | NL | NL | Y |
| *Lechea divaricata* | Drysand pinweed; spreading pinweed | E | NL | Y |
| *Leptochloa fusca* var. *uninervia* | Mexican sprangletop | NL | NL | Y |
| *Leptochloa virgata* | Tropical sprangletop | NL | NL | Y |
| *Licaria triandra* | Pepper leaf sweetwood | E | NL | Y |
| *Linum arenicola* | Sand flax | E | C | Y |
| *Linum carteri* | Everglades flax | E | C | Y |
| *Linum carteri* var. *carterii* | Carter's Everglades flax | E | C | Y |
| *Linum carteri* var. *smallii* | Small's flax | E | NL | Y |
| *Linum floridanum* | Florida yellow flax | NL | NL | Y |
| *Lippia stoechadifolia* | Southern fogfruit; southern matchsticks | E | NL | Y |
| *Liparis nervosa* | Pantropical widelip orchid; tall tway blade | E | NL | Y |
| *Lomariopsis kunzeana* | Hollyvine fern; climbing holly fern | E | NL | Y |
| *Macradenia lutescens* | Long-gland orchid; Trinidad macradenia | E | NL | Y |
| *Manilkara jaimiqui* ssp. *emarginata* | Wild dilly | T | NL | Y |
| *Matelea floridana* | Florida milkvine; Florida spiny pod | E | NL | Y |
| *Maytenus phyllanthoides* | Florida mayten | T | NL | Y |
| *Melanthera parvifolia* | Small leaved cat-tongue | T | NL | Y |
| *Microgramma heterophylla* | Climbing vine fern | E | NL | Y |
| *Mosiera longpipes* | Mangrove berry | T | NL | Y |
| *Myrcianthes fragrans* | Simpson's stopper | T | NL | Y |
| *Nephrolepis biserrata* | Giant swordfern | T | NL | Y |
| *Nevrodium lanceolatum* | Ribbon fern | E | NL | Y |
| *Nymphaea mexicana* | Yellow waterlily | NL | NL | Y |
| *Ocimum campechianum* | Wild sweet basil; wild mosquito plant | E | NL | Y |
| *Odontosoria clavata* | Wedgelet fern | E | NL | Y |
| *Okenia hypogaea* | Burrowing four-o-clock; beach peanut | E | NL | Y |
| *Oncidium ensatum* | Florida dancing lady orchid; Florida oncidium | E | NL | Y |
| *Ophioglossum palmatum* | Hand fern | E | NL | Y |
| *Ophioglossum nudicaule* | Slender adders tongue | NL | NL | Y |
| *Opuntia corallicola* | Semaphore pricklypear; semaphore cactus | E | NL | Y |
| *Opuntia stricta* | Erect pricklypear; shell-mound pricklypear | T | NL | Y |

| Scientific Name | Common Name | Designated State | Status Federal | County |
|---|---|---|---|---|
| *Osmunda cinnamomea* | Cinnamon fern | CE | NL | Y |
| *Osmunda regalis* | Royal fern | CE | NL | Y |
| *Paspalidium chapmanii* | Coral panicum; coral panicgrass | E | NL | Y |
| *Passiflora multiflora* | White-flower passionflower; white-flowered passionvine | E | NL | Y |
| *Passiflora pallens* | Pineland passionflower; pineland passionvine | E | NL | Y |
| *Passiflora sexflora* | Goats foot | E | NL | Y |
| *Pavonia paludicola* | Swampbush | E | NL | Y |
| *Pecluma dispersa* | Widespread polypody | E | NL | Y |
| *Pecluma plumula* | Plume polypody | E | NL | Y |
| *Pecluma ptilodon* var. *bourgeanuana* | Comb polypody; swamp plume polypody; plumed rockcap fern; palmleaf rockcap fern | E | NL | Y |
| *Pelexia adnata* | Hachuela pelexia | E | NL | Y |
| *Peperomia amplexicaulis* | Jackie's saddle; clasping peperomia | E | NL | Y |
| *Peperomia humilis* | Low peperomia | E | NL | Y |
| *Peperomia magnoliifolia* | Spoonleaf peperomia; spatulate peperomia | E | NL | Y |
| *Peperomia obtusifolia* | Florida peperomia; baby rubberplant | E | NL | Y |
| *Phoradendron rubrum* | Mahogany mistletoe | E | NL | Y |
| *Physalis cordata* | Heartleaf ground cherry | NL | NL | Y |
| *Picramnia pentandra* | Florida bitterbush | E | NL | Y |
| *Pithecellobium keyense* | Florida Keys blackbead | T | NL | Y |
| *Poinsettia pinetorum* | Pineland spurge; Everglades poinsettia | E | NL | Y |
| *Polygala polygama* | Racemed milkwort | NL | NL | Y |
| *Polygala smallii* | Small's milkwort; ~~T~~tiny polygala | E | E | Y |
| *Polygonella gracilis* | Tall jointweed | NL | NL | Y |
| *Polygonum setaceum* | Bog smartweed | NL | NL | Y |
| *Polystachya concreta* | Greater yellow spike orchid | E | NL | Y |
| *Ponthieva brittoniae* | Britton's shadowwitch | E | NL | Y |
| *Prescotia oligantha* | Small prescott orchid; small flowered orchid | E | NL | Y |
| *Prosthechea boothiana* var. *erythronoides* | Dollar orchid | E | NL | Y |
| *Prosthechea cochleata* | Clamshell orchid; Florida cockleshell orchid | E | NL | Y |
| *Prunus myrtifolia* | West Indian cherry | T | NL | Y |
| *Pseudophoenix sargentii* | Seargants cherry palm; buccaneer palm | E | NL | Y |
| *Psidium longipes* | Mangrove berry | T | NL | Y |
| *Psychotria ligustrifolia* | Bahama wild coffee; smooth wild coffee | E | NL | Y |
| *Pteris bahamensis* | Bahama ladder brake | T | NL | Y |
| *Pteroglossaspis encristata ecristata* | Giant orchid | T | NL | Y |

| Scientific Name | Common Name | Designated State | Status Federal | County |
|---|---|---|---|---|
| *Remirea maritima* | Beach star | E | NL | Y |
| *Reynosia septentrionalis* | Darling plum | T | NL | Y |
| *Rhipsalis baccifera* | Mistletoe cactus | E | NL | Y |
| *Rhynchosia parvifolia* | Small leaf snoutbean | T | NL | Y |
| *Rhynchosia swartzii* | Swartz's snoutbean | E | NL | Y |
| *Rhynchospora pusilla* | Fairy beaksedge | NL | NL | Y |
| *Nasturtium floridanum* | Florida watercress | NL | NL | Y |
| *Roystonea regia* | Florida royal palm | E | NL | Y |
| *Sachsia polycephala* | Bahama sachsia | T | NL | Y |
| *Sacoila lanceolata* | Leafless beaked ladiestresses | T | NL | Y |
| *Sacoila lanceolata* var. *paludicola* | Leafy beaked ladiestresses | T | NL | Y |
| *Salvia misella* | Southern river sage; river sage | NL | NL | Y |
| *Scaevola plumieri* | Beachberry; inkberry; gullfeed | T | NL | Y |
| *Schaefferia frutescens* | Florida boxwood | E | NL | Y |
| *Schizaea pennulata* | Ray fern | E | NL | Y |
| *Scleria ciliata* var. *curtissii* | Fringed nutrush | NL | NL | Y |
| *Scleria lithosperma* | Florida Keys nutrush | E | NL | Y |
| *Scutellaria havanensis* | Havana scullcap | E | NL | Y |
| *Selaginella armata* var. *eatonii* | Eaton's spike-moss; pygmy spike-moss | E | NL | Y |
| *Senna mexicana* var. *chapmanii* | Chapman's sensitive plant | T | NL | Y |
| *Sericarpus tortifolius* | White top aster | NL | NL | Y |
| *Smilax havanensis* | Everglades greenbrier | T | NL | Y |
| *Sideroxylon reclinatum* ssp. *austrofloridense* | Everglades bully | NL | C | Y |
| *Solanum donianum* | Mullein nightshade | T | NL | Y |
| *Solanum chenopodoiodes* | Black nightshade | NL | NL | Y |
| *Spermacoce terminalis* | False buttonwood | T | NL | Y |
| *Spiranthes brevilabris* | Texas ladiestresses; small ladiestresses | E | NL | Y |
| *Spiranthes costaricensis* | Costa Rican ladiestresses | E | NL | Y |
| *Spiranthes elata* | Tall neottia; tall ladiestresses | E | NL | Y |
| *Spiranthes laciniata* | Lace lip ladiestresses | T | NL | Y |
| *Spiranthes longilabris* | Long lip ladiestresses | T | NL | Y |
| *Spiranthes lucayana* | Gray ladiestresses; | E | NL | Y |
| *Spiranthes torta* | Southern ladiestresses | E | NL | Y |
| *Sporobolus compositus* var. *clandestinus* | Hidden dropseed | NL | NL | Y |
| *Stylosanthes calcicola* | Everglades Key pencilflower | E | NL | Y |
| *Swietenia mahagoni* | Mahogany | T | NL | Y |
| *Tectaria coriandrifolia* | Hairy halberd fern; Hattie Bauer halberd fern | NL | NL | Y |
| *Tectaria fibriata* | Least halberd fern | E | NL | Y |
| *Tectaria heracleifolia* | Broad halberd fern | T | NL | Y |
| *Tephrosia angustissima* | Narrowleaf hoarypea | E | NL | Y |

| Scientific Name | Common Name | Designated State | Status Federal | County |
|---|---|---|---|---|
| *Tephrosia angustissima* var. *corallicola* | Coral hoarypea | E | NL | Y |
| *Tephrosia spicata* | Spiked hoarypea | NL | NL | Y |
| *Tetrazygia bicolor* | Florida clover ash | T | NL | Y |
| *Thelypteris augescens* | Abrupt tipped maiden fern | T | NL | Y |
| *Thelypteris hispidula* var. *versicolor* | Hairy maiden fern | NL | NL | Y |
| *Thelypteris patens* | Grid-scale maiden fern | E | NL | Y |
| *Thelypteris reptans* | Creeping star-hair fern | E | NL | Y |
| *Thelypteris reticulata* | Lattice vein fern | E | NL | Y |
| *Thelypteris sclerophylla* | Stiff star-hair fern | E | NL | Y |
| *Thelypteris serrata* | Toothed lattice-vein fern | E | NL | Y |
| *Thrinax morissii* | Brittle thatch palm; Silver thatch palm | E | NL | Y |
| *Thrinax radiata* | Florida thatch palm | E | NL | Y |
| *Tillandsia balbisiana* | Northern needleleaf | T | NL | Y |
| *Tillandsia fasciculata* | Cardinal airplant; common wildpine | E | NL | Y |
| *Tillandsia fasciculata* var. *clavispica* | Clubspike cardinal airplant | E | NL | Y |
| *Tillandsia fasciculata* var. *densispica* | Mez stiff-leaved wild pine | E | NL | Y |
| *Tillandsia flexuosa* | Twisted air plant | T | NL | Y |
| *Tillandsia utriculata* | Giant airplant; giant wild pine | E | NL | Y |
| *Tillandsia variabilis* | Leatherleaf airplant | T | NL | Y |
| *Tournefortia hirsutissima* | Chiggery grapes | E | NL | Y |
| *Tragia saxicola* | Rockland noseburn | T | NL | Y |
| *Trema lamarckaina* | West Indian trema; Lamarck's trema | E | NL | Y |
| *Trichomanes krausii* | Kraus' bristle fern | E | NL | Y |
| *Trichomanes lineolatum* | Lined bristle fern | E | NL | Y |
| *Trichomanes punctatum* ssp. *floridanum* | Florida bristle fern | E | C | Y |
| *Tricocentrum undulata* | Mule-eared oncidium; Cape Sable dancing lady orchid | E | NL | Y |
| *Tridens flavus* | Tall redtop; purple tridens | NL | NL | Y |
| *Triplasis americana* | Perennial sandgrass | NL | NL | Y |
| *Tripsacum floridanum* | Florida gamagrass | T | NL | Y |
| *Tropidia polystachya* | Young palm orchid | E | NL | Y |
| *Utricularia juncea* | Southern bladderwort | NL | NL | Y |
| *Vallesia antillana* | Tearshrub | E | NL | Y |
| *Vanilla barbellata* | Worm-vine orchid | E | NL | Y |
| *Vanilla dilloniana* | Leafless vanilla; Dillon's vanilla | E | NL | Y |
| *Vanilla mexicana* | Mexican vanilla; unscented vanilla; Fuch's vanilla | E | NL | Y |
| *Voyria parasitica* | Parasitic ghostplant | E | NL | Y |
| *Warea carteri* | Carter's pinelandcress; Carter's mustard | E | E | Y |
| *Zamia pumila* | Florida arrowroot; coontie | CE | NL | Y |

| Scientific Name | Common Name | Designated State | Status Federal | County |
|---|---|---|---|---|
| *Zanthoxylum coriaceum* | Biscayne pricklyash; leathery pricklyash | E | NL | Y |
| *Zaphranthes atamasca* | Atamasco lily | T | NL | Y |
| *Zornia bracteata* | Viperina | NL | NL | Y |

Key:
NL = Not Listed

1) Federal Listings:

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

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

C = Candidate Species for addition to the List of Endangered and Threatened Wildlife and Plants. Includes taxa for which: the US Fish and Wildlife Service (USFWS) currently has substantial information on hand to support the biological appropriateness of proposing to list the species as endangered or threatened; or the USFWS currently possesses information indicating that proposing to list the species as endangered or threatened is possibly appropriate, but for which conclusive data on biological vulnerability and threat(s) are not currently available to support proposed rules at this time.

2) State Listings:

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

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

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

3) County Listings:

Y = Miami-Dade County endangered, threatened, rare or special concern flora species as updated from previously adopted CDMP lists, due to low population numbers or limited/localized population; impacts resulting from habitat destruction or environmental contamination; or nesting destruction/disturbance/failures.

## Appendix B

### List of Federal State and County Endangered, Threatened, Rare, and Special Concern Fauna in Miami-Dade County

| Scientific Name | Common Name | Designated State | Status Federal | County |
|---|---|---|---|---|
| **FISH** | | | | |
| *Acipenser brevirostrum* | Shortnose sturgeon | FE | E | Y |
| *Acipenser oxyrinchus desotoi* | Gulf sturgeon | FT | T | Y |
| *Acipenser oxyrinchus oxyrinchus* | Atlantic sturgeon | FE | E | Y |
| *Etheostoma olmstedi maculaticeps* | Southern tessellated darter | SSC | NL | Y |
| *Fundulus jenkinsi* | Saltmarsh topminnow | SSC | NL | Y |
| *Menidia conchorum* | Key silverside | ST | NL | Y |
| *Pristis pectinata* | Smalltooth sawfish | FE | E | Y |
| *Rivulus marmoratus* | Mangrove rivulus | SSC | NL | Y |
| **AMPHIBIANS AND REPTILES** | | | | |
| *Alligator mississippiensis* | American alligator | FT(S/A) | T(S/A) | Y |
| *Caretta caretta* | Loggerhead sea turtle | FT | T | |
| *Chelonia mydas* | Green sea turtle | FE | E | |
| *Crocodylus acutus* | American crocodile | FT | E | Y |
| *Dermochelys coriacea* | Leatherback sea turtle | FE | E | |
| *Drymarchon corais couperi* | Eastern indigo snake | FT | T | Y |
| *Elaphe guttata guttata* | Red rat snake | NL | NL | Y |
| *Eretmochelys imbricata* | Hawksbill sea turtle | FE | E | |
| *Eumeces egregieus egregioeus* | Florida Keys mole skink | SSC | NL | Y |
| *Gopherus polyphemus* | Gopher tortoise | ST | C | Y |
| *Kinosternon baurii* | Striped mud turtle | ST | NL | Y |
| *Lepidochelys kempii* | Kemp's ridley sea turtle | FE | E | |
| *Malaclyemys terrapin* | Mangrove terrain turtle | NL | NL | Y |
| *Neoseps reynoldsi* | Sand skink | FT | T | |
| *Nerodia clarkii taeniata* | Atlantic salt marsh snake | FT | T | Y |
| *Pituophis melanoleucus mugitus* | Florida pine snake | SSC | NL | Y |
| *Pseudemys concinna suwanniensis* | Suwannee cooter | SSC | NL | Y |
| *Lithobates capito* | Gopher frog | SSC | NL | Y |
| *Sitlosima extenuatum* | Short-tailed snake | ST | NL | Y |
| *Tantilla oolitica* | Rim rock crowned snake | ST | NL | Y |
| *Thamnophis sauritus sackeni* | Florida ribbon snake | NL | NL | Y |
| **BIRDS** | | | | |
| *Accipiter cooperii* | Cooper's hawk | NL | NL | Y |
| *Aimophila aestivalis* | Bachman's sparrow | NL | NL | Y |
| *Ammodramus maritimes pennisulae* | Scott's seaside sparrow | SSC | NL | Y |
| *Ammodramus maritimus mirabilis* | Cape sable seaside sparrow | FE | E | Y |
| *Aphelocoma coerulescens coerulescens* | Florida scrub jay | FT | T | |
| *Aramus guarauna* | Limpkin | SSC | NL | Y |
| *Ardea herodias* | Great blue heron | NL | NL | Y |
| *Athene cunicularia* | Florida burrowing owl | SSC | NL | Y |
| *Botaurus lentiginosus* | American bittern | NL | NL | Y |
| *Buteo brachyurus* | Short-tailed hawk | NL | NL | Y |
| *Calidris canutus rufa* | Red knot | NL | C | Y |

| Scientific Name | Common Name | Designated State | Status Federal | County |
|---|---|---|---|---|
| *Campephilus principalis principalis* | Ivory-billed woodpecker | FE | E | Y |
| *Charadrius melodus* | Piping plover | FT | T | Y |
| *Charadrius alexandrinues* | Southeastern (Cuban) snowy plover | ST | NL | Y |
| *Chordeliles minor* | Antillean nighthawk | NL | NL | Y |
| *Circus cyaneus* | Northern harrier | NL | NL | Y |
| *Cistothorus palustris griseus* | Worthington's marsh wren | SSC | NL | Y |
| *Cistothorus palustris marianae* | Marian's marsh wren | SSC | NL | Y |
| *Coccyzus minor* | Mangrove cuckoo | NL | NL | Y |
| *Dendroica kirtlandii* | Kirtland's warbler | FE | E | |
| *Dendroica petechia gundlachi* | Cuban yellow throated warbler | NL | NL | Y |
| *Egretta caerulea* | Little blue heron | SSC | NL | Y |
| *Egretta rufescens* | Reddish egret | SSC | NL | Y |
| *Egretta thula* | Snowy egret | SSC | NL | Y |
| *Egretta tricolor* | Tricolored heron | SSC | NL | Y |
| *Elanoides forficatus* | Swallow-tailed kite | NL | NL | Y |
| *Elanus leucurus* | White-tailed kite | NL | NL | Y |
| *Eudocimus albus* | White ibis | SSC | NL | Y |
| *Falco columbarius* | Merlin | NL | NL | Y |
| *Falco peregrinus* | Peregrine falcon | NL | NL | Y |
| *Falco sparverius paulus* | Southeastern American kestrel | ST | NL | Y |
| *Frigata magnificens* | Magnificent frigate bird | NL | NL | Y |
| *Grus canadensis pratensis* | Florida sandhill crane | ST | NL | Y |
| *Grus americana* | Whooping crane | FE/XN | E/XN | |
| *Haematopus palliatus* | American oyster catcher | SSC | NL | Y |
| *Haliaeetus leucocephalus* * | Bald eagle | NL* | NL | Y |
| *Ixobrychus exilis* | Least bittern | NL | NL | Y |
| *Laterallus jamaicensis* | Black rail | NL | NL | Y |
| *Mycteria americana* | Wood stork | FE | E | Y |
| *Nyctanassa violacea* | Yellow-crowned night heron | NL | NL | Y |
| *Nycticorax nycticorax* | Black-crowned night heron | NL | NL | Y |
| *Pandion haliaetus* | Osprey | NL | NL | Y |
| *Passerina ciris* | Painted bunting | NL | NL | Y |
| *Patagioenas leucocephala* | White crowned pigeon | ST | NL | Y |
| *Pelecanus occidentalis* | Brown pelican | SSC | NL | |
| *Picoides borealis* | Red-cockaded woodpecker | FE | E | Y |
| *Picoides villosus* | Hairy woodpecker | NL | NL | Y |
| *Platalea ajaja* | Roseate spoonbill | SSC | NL | Y |
| *Polyborus plancus audubonii* | Audobon's crested caraca | FT | T | Y |
| *Pterodroma hasitata* | Black-capped petrel | NL | NL | Y |
| *Rallus longirostris insularum* | Mangrove clapper rail | NL | NL | Y |
| *Rostrhamus sociabilis plumbeus* | Everglade snail kite | FE | E | Y |
| *Rynchops niger* | Black skimmer | SSC | C | Y |
| *Setophaga discolor* | Prairie warbler | NL | NL | Y |
| *Sterna antillarum* | Least tern | ST | NL | Y |
| *Sterna dougallii douglallii* | Roseate tern | FT | T | Y |
| *Thalasseus sandvicensis* | Sandwich tern | NL | NL | Y |
| *Vermivora bachmanii* | Bachman's warbler | FE | E | Y |
| *Vireo altiloquus* | Black-whisked vireo | NL | NL | Y |

| Scientific Name | Common Name | Designated State | Status Federal | County |
|---|---|---|---|---|
| **MAMMALS** | | | | |
| *Balaenoptera borealis* | Sei whale | FE | E | |
| *Balaenoptera physalus* | Finback whale | FE | E | |
| *Eubalaena glacialis* | North Atlantic right whale | FE | E | |
| *Eumops glaucinus floridanus* | Florida mastiff bat | ST | C | Y |
| *Lutra canadensis* | River otter | NL | NL | Y |
| *Megaptera novaeangliae* | Humpback whale | FE | E | |
| *Monachus tropicalis* | Caribbean monk seal | NL | NL | Y |
| *Neotoma floridana smalli* | Key Largo woodrat | FE | E | Y |
| *Neovision vision evergladensis* | Everglades mink | ST | NL | Y |
| *Peromyscus gossypinus allapaticola* | Key Largo cotton mouse | FE | E | Y |
| *Peromyscus polionotus niveiventris* | Southeastern beach mouse | FT | T | Y |
| *Physeter catodon* | Sperm whale | FE | E | |
| *Plecotus rafinesquii* | Rafinesque's big eared bat | NL | NL | Y |
| *Podomys floridanus* | Florida mouse | SSC | NL | Y |
| *Puma (= Felis) concolor coryi* | Florida panther | FE | E | Y |
| *Sciurus niger avicennia* | Big Cypress fox squirrel | ST | NL | Y |
| *Sciurus niger shermani* | Sherman's fox squirrel | SSC | NL | Y |
| *Trichechus manatus latirostris* | Florida manatee | E | E | Y |
| *Ursus americanus floridanus* | Florida black bear | NL* | NL | Y |
| **INVERTEBRATES** | | | | |
| **CRUSTACEANS** | | | | |
| *Crangonyx gradimanus* | Florida cave amphipod | NL | NL | Y |
| **CORALS** | | | | |
| *Acropora cervicornis* | Staghorn coral | FT | T | Y |
| *Acropora palmata* | Elkhorn coral | FT | T | Y |
| *Agaricia lamarcki* | Lamarck’s sheet coral | NL | NL | Y |
| *Agaricia spp* | Lettuce corals | NL | NL | Y |
| *Colpophyllia natans* | Boulder brain coral | NL | NL | Y |
| *Dendrogyra cylindrus* | Pillar coral | ST | NL | Y |
| *Diploria cilvosa* | Knobby brain coral | NL | NL | Y |
| *Diploria labyrinthiformis* | Grooved brain coral | NL | NL | Y |
| *Dipolria strigosa* | Symmetrical brain coral | NL | NL | Y |
| *Eusmilia fastigiata* | Smooth flower coral | NL | NL | Y |
| *Meandrina meandrites* | Maze coral | NL | NL | Y |
| *Montastrea annularis* | Boulder star coral | NL | NL | Y |
| *Montastrea cavernosa* | Great star coral | NL | NL | Y |
| *Montastera faveolata* | Mountainous star coral | NL | NL | Y |
| *Montastrea franksi* | Star coral | NL | NL | Y |
| *Mussa angulosa* | Spiny flower coral | NL | NL | Y |
| *Mycetophyllia aliciae* | Knobby cactus coral | NL | NL | Y |
| *Mycetophyllia ferox* | Rough cactus coral | NL | NL | Y |
| *Mycetophyllia lamarckiana* | Lamarck’s cactus coral | NL | NL | Y |
| *Siderastera siderea* | Elliptical star coral | NL | NL | Y |
| **INSECTS** | | | | |
| *Anaea troglodyta floridalis* | Florida leafwing butterfly | NL | C | Y |
| *Aphodius troglodytes* | Gopher tortoise aphopdius commensal scarab beetle | NL | NL | Y |

| Scientific Name | Common Name | Designated State | Status Federal | County |
|---|---|---|---|---|
| *Atrytone agros argos* | Eastern beard-grass skipper | NL | NL | Y |
| *Ceraclea floridana* | Florida ceraclean long horn caddishfly | NL | NL | Y |
| *Cyclargus thomasi bethunebakeri* | Miami blue butterfly | FE | E | Y |
| *Cyclophala miamiensis* | Miami roundhead scarab beetle | NL | C | Y |
| *Eumaeus atala floridana* | Florida atala butterfly | NL | C | Y |
| *Heraclides aristodemus ponceanus* | Schaus swallowtail butterfly | FE | E | Y |
| *Micronaspsis floridana* | Florida intertidal firefly | NL | NL | Y |
| *Mixogaster delongi* | Delong's mixogaster flower fly | NL | NL | Y |
| *Mycotrupes pedester* | Scrub island burrowing scarab beetle | NL | NL | Y |
| *Oxyethira florida* | Florida oxeythiran micro-caddishfly | NL | NL | Y |
| *Photuris brunnipennis floridana* | Everglades brownwing firefly | NL | NL | Y |
| *Strymon acis bartrami* | Bartram's scrub-hairstreak butterfly | NL | C | Y |
| **MOLLUSCS** | | | | |
| *Liguus fasciatus* var. | Florida tree snail | SSC | NL | Y |
| *Orthalicus reses reses* | Stock Island tree snail | FT | T | Y |
| *Strombus gigas* | Queen conch | NL | C | Y |

Key:
NL = Not Listed

1) Federal Listings:

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

T(S/A) = Listed only because of similarity in appearance to the American crocodile.

FE/FX = Experimental population in Florida.

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

C = Candidate Species for addition to the List of Endangered and Threatened Wildlife and Plants. Includes taxa for which: the US Fish and Wildlife Service (USFWS) currently has substantial information on hand to support the biological appropriateness of proposing to list the species as endangered or threatened; or the USFWS currently possesses information indicating that proposing to list the species as endangered or threatened is possibly appropriate, but for which conclusive data on biological vulnerability and threat(s) are not currently available to support proposed rules at this time.

2) State Listings:

FE/FT= Listed as Federally-designated Endangered and Threatened Species. Defined as species of fish or wild animal life, subspecies or isolated populations of species or subspecies, whether

vertebrate or invertebrate, that are native to Florida and are classified as Endangered and Threatened under the Fish and Wildlife Conservation Commission (Commission) rule by virtue of designation by the United States Departments of Interior or Commerce as endangered or threatened under the Federal Endangered Species Act, 16 U.S.C. §1531 et seq. and rules thereto; the definition of Federally-designated Endangered and Threatened Species does not include species that are not within the Commission's constitutional authority.

FT(S/A) = Listed only because of similarity in appearance to the American crocodile.

FE/FX = Experimental population in Florida

ST= Listed as State-designated Threatened Species by the Fish and Wildlife Conservation Commission (Commission). Defined as species of fish or wild animal life, subspecies, or isolated population of a species or subspecies, whether vertebrae or invertebrate, that are native to Florida and are classified as Threatened as determined by paragraph (a), (b), (c), (d), or (e) in accordance with Rule 68A-27.0012, F.A.C. The designation of a species as threatened shall include all subspecies unless stated otherwise in Commission rule.

SSC= Listed as a Species of Special Concern by the Fish and Wildlife Conservation Commission under an earlier listing process. Either the species is being evaluated for listing as a State-designated Threatened species or not enough data currently exist to make a listing determination.

C= A species of fish or wild animal life, subspecies, or isolated populations of species or subspecies, whether invertebrate or vertebrate, that the Fish and Wildlife Conservation Commission (Commission) has determined warrants listings as a State-designated Threatened Species in accordance with Rule 68A-27.0012, F.A.C., and is awaiting final Commission action to be added to the list of Florida Endangered and Threatened Species in Rule 68A-27.003, F.A.C.

*= The Fish and Wildlife Conservation Commission has delisted these species; however, the bald eagle continues to be under the protection of the state in accordance to rule 68A-16.002, F.A.C., and its Bald Eagle Management Plan, adopted on April 9, 2008, and the bear is protected under rule 68A-4.009, F.A.C., and the Florida Black Bear Management Plan, approved on June 27, 2012.

3) County Listings:

Y = Miami-Dade County endangered, threatened, rare or special concern fauna species as updated from previously adopted CDMP lists, due to low population numbers or limited/localized population; impacts resulting from habitat destruction or environmental contamination; or nesting destruction/disturbance/failures.

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