TECHNICAL MEMORANDUM:

DATA AND ANALYSIS FOR

CONSERVATION ELEMENT

April 1989
Revised March 1991
Revised October 14, 1991

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Preparation of this document was aided through financial assistance received from the State of Florida under the Local Government Comprehensive Planning Assistance Program authorized by Chapter 86-167, Laws of Florida and administered by the Florida Department of Community Affairs.

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CITY OF DUNNELLON
CONSERVATION ELEMENT

I. INTRODUCTION

The purpose of the Conservation Element, according to 9J-5.013, F.A.C., is to promote the conservation, use and protection of natural resources. The natural resources in Dunnellon include clean air; wetland and upland forests, which provide habitat for wildlife, as well as offering open space amenities; groundwater, from which the City obtains its drinking water; soils and mineral resources, which have allowed mining and agriculture; and the Rainbow and Withlacoochee Rivers and associated wetlands, which provide numerous recreational and open space amenities, wildlife habitat and storage of floodwaters. Natural resources have played a role in attracting people to the area since early in the City's history; Dunnellon boomed upon discovery of hard-rock phosphate in 1888. The Rainbow Springs attraction, located outside Dunnellon at the headwaters, also attracted visitors during its operation from the 1890's to 1973.

The unspoiled beauty of the City's rivers continues to attract residents and visitors to its fishing and boating activities. Management of the City's natural resources is important towards ensuring that the City's existing and future residents can continue to enjoy the quality of life offered by the area's natural resources.

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This element contains an inventory of the City's surface and groundwaters, soil and mineral resources, air quality, vegetative communities, wildlife species and floodplain. Analysis of these data provides a foundation for the development of sound policies for the protection, conservation and use of the City's natural resources. Additional data, analysis and goals, objectives and policies for the Rainbow River can be found in the Rainbow River Watershed Management Plan.

A. Background Data for Water Resources

1. Surface Water Inventory

The primary surface waters in Dunnellon, as mentioned above, are the Rainbow and Withlacoochee Rivers and associated wetlands. The Rainbow River, also known as Blue Run, is a 5.7 mile, spring-fed river originating north of Dunnellon City limits. The river flows into the Withlacoochee River, which is the southerly border of Dunnellon. The Withlacoochee River is a blackwater river; dissolved organics from decaying vegetation produce its dark color. There is one lake within the City; it was made when the area was dredged to provide fill for US 41. There is no water quality data available regarding this lake, as it serves as FDOT's stormwater retention area, thus receiving treated stormwater.

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The wetlands in Dunnellon are predominantly bottomland floodplain forests and marshes bordering the rivers. The wetlands provide habitat and breeding grounds for a variety of indigenous animals, and food and shelter for migrating avian species. The natural wetland vegetation along the rivers function as natural water purification systems, assimilating nutrients and pollutants in the water. The vegetation also stabilizes the shoreline, reducing erosion by absorbing wave and storm energy and slowing water currents. Further, the open waters and vegetated wetlands offer unspoiled open spaces for the aesthetic enjoyment of nature, as well as active recreational activities.

Rivers, lakes and wetlands, as identified by the US Department of the Interior National Wetlands Inventory, are depicted in Figures 1 and 2. There are no estuarine marshes or bays in the Dunnellon area.

2. Water Quality

Recent water quality data contained in the Department of Environmental Regulation (DER) 305(B) report indicates the water quality of both rivers is good. The "good" water quality rating was determined using the EPA National Profiles Water Quality Index Procedure, which compiles seven water quality categories of dissolved oxygen, pH, bacteria, nutrients, turbidity, organic toxics, inorganic toxics, plus

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an overall average. These raw data are translated into index values ranging from 0 to 100 (less than 30 is good quality, greater than 60 is poor quality). An average water quality index value (WQI) is calculated based upon the seven categories. Because many waters of the state such as the Withlacoochee River have naturally low pH due to wetlands drainage, the pH value is not used in the average index if no other problems are present. The WQI index criteria, and Florida standards are provided in Table 1. The water quality values reported for the Rainbow and Withlacoochee Rivers are provided in Table 2.

Additional data were obtained for the Rainbow River by Henigar & Ray personnel in Spring of 1987 for the Rainbow River Watershed Management Plan. The results of that study provide further indication that water quality of the river is good, with high dissolved oxygen readings, low nutrient loadings, neutral or slightly basic pH, and medium to low total and fecal coliforms, respectively. The results of that study are listed in Table 3.

The Rainbow River Watershed Management Plan concludes the Rainbow River is in excellent condition, but is extremely vulnerable to the impacts of future development. It is estimated that the existing condition of the river is due to the fact that there are still large areas of undeveloped land

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along the river, including the headwaters, which are protected by a 500 foot buffer. Of particular concern is the threat of high density or intensity development without central sewer facilities and proper stormwater treatment, and the use of seawalls which are less effective than vegetative buffering

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Table 1

Florida Stream Water Quality Index Criteria
Percentile Distribution of STORET Data

Parameter	Unit	Best Quality 10%	20%	30%	40%	Median Value 50%	60%	70%	80%	Worst Quality 90%
** Category: Water Clarity										
Turbidity	JTU	1.50	3.00	4.00	4.50	5.20	8.80	12.20	16.50	31.00
Total Suspended Solids	mg/l	2.00	3.00	4.00	5.50	6.50	9.50	12.50	18.00	26.50
** Category: Dissolved Oxygen										
Dissolved Oxygen	mg/l	8.00	7.30	6.70	6.30	5.80	5.30	4.80	4.00	3.10
** Category: Oxygen Demand										
Biochemical Oxygen Demand	mg/l	0.80	1.00	1.10	1.30	1.50	1.90	2.30	3.30	5.10
Chemical Oxygen Demand	mg/l	16.00	24.00	32.00	38.00	46.00	58.00	72.00	102.00	146.00
Total Organic Carbon	mg/l	5.00	7.00	9.50	12.00	14.00	17.50	21.00	27.50	37.00
** Category: Nutrients										
Total Nitrogen	mg/l as N	0.55	0.75	0.90	1.00	1.20	1.40	1.60	2.00	2.70
Total Phosphorus	mg/l as P	0.02	0.03	0.05	0.07	0.09	0.16	0.24	0.46	0.83
** Category: Bacteria										
Total Coliform	#/100 ml	100.00	150.00	250.00	425.00	600.00	1100.00	1600.00	3700.00	7000.00
Fecal Coliform	#/100 ml	10.00	20.00	35.00	55.00	75.00	135.00	190.00	470.00	900.00
** Category: Biological Diversity										
Diversity Index Nat. Substrate	Index	3.50	3.10	2.80	2.60	2.40	2.15	1.95	1.50	1.10
Diversity Index Art. Substrate	Index	3.55	3.35	3.20	3.05	2.90	2.65	2.40	1.95	1.35
Becks Biotic Index	Index	32.00	28.00	23.00	18.50	14.00	11.00	8.00	5.50	3.50

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Table 2

Water Quality Index Results

Date of Study	Water Body	WQ1	WQ1#	pH	Turbidity	Dissolved Oxygen
1987	Withlacoochee River	Good	38	7.4	N/A	6.0
1981	Rainbow River (Blue Run)	Good	12	7.5	N/A	8.0

Source: 1990 Florida Water Quality Assessment 305(b) Technical Appendix, Bureau of Surface Water Management, DER.

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TABLE 3

WATER QUALITY DATA FOR

RAINBOW RIVER STATION IN DUNNELLON

Variable	Data 5/20/87
Station Depth (m)	3.6
Secchi Depth (m)	3.6
Water Temperature (°C)	22
DO (mg/l)	5.4
Specific Conductivity (mhos)	229
pH (units)	7.29
Carbonate Alkalinity (mg/l)	0
Bicarbonate Alkalinity (mg/l)	9.8
Total Kjeldahl (mg/l) Nitrogen	<.015
Total Phosphate (mg/l)	0.066
Total Coliform (mpn/100 ml)	1600
Fecal Coliform (mpn/100 ml)	140

Source: Henigar & Ray Engineering, Rainbow River Management Plan, Phase I, September 1987.

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to reduce shoreline erosion. The contribution of pollutants from improperly sited or operating septic systems should be minimized as a result of Senate Bill 1433, a law passed by the legislature in 1988 requiring Marion County to provide water and sewer services to the Rainbow River Management area. Please refer to the Infrastructure Element regarding the City's plans to improve drainage and stormwater deficiencies.

One method to ensure water quality is protected from future development is through the site plan review process. Developers for new residential subdivisions, commercial and industrial projects would be required to submit a site plan for review by City Staff and Council or Planning Commission. This review would ensure all appropriate stormwater and other permits are obtained, as well as meet river setback and landscaping requirements (discussed later in this document).

The Rainbow River is recognized by the residents of the City and County to be an irreplaceable natural resource. A joint venture between Marion County and the City of Dunnellon resulted in the development of the Rainbow River Watershed Management Plan, a comprehensive analysis of natural and cultural influences upon the river. The state has also acknowledged the river's value; the entire river is designated as an aquatic preserve, and Outstanding Florida Water, and the Southwest Florida Water Management District has designated the river under the Surface Water Improvement and

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Management Program (SWIM). The Withlacoochee River is also designated as an Outstanding Florida Water. A management program for protection of the river is now underway under SWIM. In addition, sections of the River have been placed on the priority list for acquisition under the Department of Natural Resources' Conservation and Recreational Lands Program (CARL).

3. Floodplain

The City is enrolled in the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Program. This agency provides government backed insurance against property damage caused by flooding. In order to qualify for this program, the City was required to adopt and enforce a local floodplain management ordinance which provides standards consistent with Federal standards for construction in the floodplain.

In order to provide a national standard without regional discrimination, the Federal Insurance Administration has adopted the 100-year flood as the base flood for purposes of floodplain management practices. The 100-year flood is defined as the flood that has a one percent probability of being equaled or exceeded in any given year. The Federal Insurance Program also identifies floodways for purposes of floodplain management. The floodway is the channel of a steam, plus any adjacent floodplain areas that must be kept free of encroachment in order that the 100-year flood may be

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carried without substantial increases in flood heights. No floodway was computed for the Withlacoochee River or Rainbow River within the City.

FEMA completed a flood insurance study on August 4, 1984 to aid in the administration of the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. This study resulted in the preparation of Flood Insurance Rate Maps for the Dunnellon area. These maps identify flood hazard boundaries for purposes of setting flood insurance rates and providing assistance to communities in developing sound floodplain management measures. According to the study, the most severe flooding usually occurs as a result of flooding of the Rainbow and Withlacoochee Rivers as a result of storm events such as summer thunderstorms and hurricanes. Areas of 100-year flood, as identified by FEMA, are depicted in Figures 3 and 4.

Encroachment on floodplains can occur as a result of artificial fill associated with development activity. Encroachment increases the flood height of streams and reduces the flood-carrying capacity of the area in general, thereby increasing flood hazards beyond existing flood-prone areas. In order to ensure public health and safety and minimize flood hazard to public and private property, it is recommended that net encroachment within the 100-year floodplain be prohibited.

Where no practical alternative to filling within the 100-year flood exists, compensatory storage for such fill should be provided through excavation of a volume of uplands equivalent to the loss of storage within the floodplain. In cases where development within the 100-year floodplain is allowed, such development shall be in accordance with dredge and fill requirements of the DER, U.S. Army Corps of Engineers and Southwest Florida Water Management District, where applicable, and building construction shall comply with the requirements of the Federal Emergency Management Agency.

B. Background Data for Air Resources

1. Ambient Air Quality

There are no Department of Environmental Regulation or other known ambient air monitoring stations in Dunnellon, or Marion County. In general, air monitoring stations are required in cities where a growing population generates significant increases in motorized traffic. Certain types of industries must also monitor air quality. There are no industries requiring air quality monitoring in the Dunnellon area.

In neighboring Citrus County, monitoring of sulfur dioxide and total suspended particulates has been established for the Crystal River Power Plant. Since it is possible that air pollutants from the Power Plant may be transported to the Dunnellon area, air monitoring data for 1985 for the

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Crystal River Power Plant are provided in Table 4. These data indicate that ambient air quality in close proximity to the power plant does not exceed National or Florida Ambient Air Quality standards. Based upon the data available, it is concluded that existing air quality in Dunnellon is good, and no air quality problems are projected for the near future. However, prior to permitting future industrial uses in the future, impacts on noise and air on the adjacent land use should be considered. Residential neighborhoods in particular should be protected from uses which generate large amounts of noise or air emissions. The land development regulations should ensure adequate vegetative buffering to protect adjacent land uses.

C. Background Data for Land Resources

1. Mineral Resources

Dunnellon falls within the Hardrock Phosphate District, according to the US Geological Survey The Industrial Minerals of Florida. Hardrock phosphate was discovered in Dunnellon in 1888. Hardrock phosphate is more difficult and costly to mine than other types of phosphate deposits; it has been largely replaced by mining of land pebble deposits. The mining of more economically available types of phosphate resulted in the end of mining of hardrock phosphate in Dunnellon by 1965. Residential development has occurred at several areas in the City where phosphate was once mined.

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TABLE 4
AIR MONITORING DATA
FOR THE CITY OF DUNNELLON

Pollutant	State Standard	Approximate Location of Monitoring Station in Crystal River		
		Curtis Tool	Twin Rivers	E. of Power Plant
Sulfur dioxide	1300/260/60 ug/m^3 for 3-hr.//24-hr. values//annual arithmetic mean	223/56/11	183/39/4	341/93/6
Total suspended particulate	60 ug/m^3 annual geometric mean// 150 ug/m^3 24-hr. value	28/53	29/82	22/44

Source: 1985 Air Quality Data, Department of Environmental Regulation, Bureau of Air Quality Management.

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Known sources of commercially valuable minerals for the Dunnellon area are depicted in Figure 5.

2. Soils and Erosion Problems

The soils of the City are an important consideration in determining future land use, because the properties of each soil may place limitations on its suitability for certain types of land use. A comprehensive analysis of the types of soils found in Dunnellon, along with their suitabilities for use, are provided in the Marion County Soil Survey, USDA Soil Conservation Service. Figures 6 and 7 depict the general soil types found in Dunnellon. However, it is recommended that the Soil Survey be referred to for site specific information.

According to the Soil Conservation Service, erosion problems in the Dunnellon area are limited to areas characterized by steep slope. Potential erosion problems may occur in areas of Candler sands, 5 to 12 percent slope, and Arredondo sand, 5 to 8 percent slope. Areas with these soils are particularly susceptible to erosion problems during construction activity, or when agricultural lands lie fallow. These problems can easily be prevented through the use of proper management techniques. Agricultural erosion is minimized with the use of best farm management practices such as crop sequence. Erosion can be minimized during construction activities through the

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use of hay bales and fabric fencing. Other methods to minimize erosion problems include: encourage that development activities be conducted in the dry season, and require all site preparation of new development to be completed prior to issuance of a certificate of occupancy.

Other areas with existing or potential soil erosion problems in Dunnellon were identified in the Rainbow River Watershed Management Plan. Development or recreational activities along the banks of the Rainbow and Withlacoochee Rivers may contribute to erosion problems. Areas within 50 feet of the river having steep slope are particularly susceptible to erosion activity. The 484 bridge tubing and canoe pickup site has steep, unstabilized banks, and has been identified as an erosion problem area. Other erosion concerns include the City's stormwater pipe which empties in the river and the City Beach.

Boat ramps can also contribute to erosion if not designed properly. Seawalls and removal of natural vegetation along river banks can also contribute to erosion problems; rip-rap and natural vegetation provide a more effective erosion deterrent.

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3. Radon

As discussed above, phosphate was mined extensively in Dunnellon up until 1965. Remnants of mining activity are evident in pits, hills of overburden and disturbed soil profiles of the area. Elevated radon levels have been associated with these phosphate remnants, and substantial areas within the City are susceptible to radon gas emission. The City received a discretionary grant from the Department of Community Affairs to identify areas of potential concern for radon emission. The results of the study identified potential elevated radon sources based upon soil classifications in the City. Figures 6 and 7 show the areas of potential elevated radon source within the City. The study suggests standards for construction be adopted for those areas of potential radon levels. Additional discussion of this issue is found in the radon study, as well as the Future Land Use Element.

4. Sinkholes

Sinkholes are depressions in the land surface formed as a result of natural dissolution of the limestone and subsequent collapse or subsidence of surficial materials. Sinkholes are a common and natural feature of areas underlain by limestone. Sinkholes occur when rainwater infiltrates a carbonate rock

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such as limestone, and reacts with carbon dioxide, forming an acid. Over time, this acid dissolves the limestone, penetrating channels which may result in sinkhole formation.

Over 56 sinkholes have been reported in Marion County, according to a 1984 survey by the Florida Sinkhole Research Institute. Only one sinkhole has been reported in the Dunnellon area. This sinkhole is approximately 8 feet deep and 10 feet wide, and is at least fifteen years old. There is no standing water in the sinkhole, and it has been stable for at least the last 15 years. The sinkhole is located on Florida Barge Canal property, thus its conservation is guaranteed, as this land will eventually become a park or other public use. The sinkhole is not directly connected to the aquifer. In Dunnellon, limestone is generally bare or thinly covered with sediments. This geological feature may produce two types of sinkholes, known as limestone-solution sinkholes and limestone-collapse sinkholes. Sinkhole development of this kind is very slow, and subsidence of the land surface is common.

Sinkhole formation can be increased by man's activities, such as heavy pumping of groundwater wells, or activities which alter the natural drainage pattern of an area, such as excavation associated with highway construction or mining. Areas cleared of surface materials may provide direct access

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for surface water to move downward into the aquifers and increase dissolution of limestone. It is estimated that sinkhole occurrence in the Dunnellon area may occur as the result of the movement of land associated with past mining activity, or the clearing of land during construction of the Barge Canal.

5. Existing Land Uses of Natural Resources

A. Commercial Uses

The commercial uses of the area's natural resources at this time are: Nature Preserves of America and Angler's Resort on the Withlacoochee River.

B. Recreational Uses

The recreational uses of the area's natural resources include: The City Beach located at the confluence of the Rainbow and Withlacoochee River, the City boat ramp on the Withlacoochee River, the tuber access at the 484 bridge, and private docks associated with residential use.

The Withlacoochee and Rainbow River provide a variety of recreational opportunities, including boating, fishing, swimming, tubing, snorkel and scuba and water-skiing. Recreational activities on the Rainbow River are described more thoroughly in the Rainbow River Watershed Management Plan.

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C. Potential for Conservation

There are several areas within the City which have the potential for conservation. The wetlands of the Rainbow and Withlacoochee Rivers would be appropriate areas for conservation designation. Several parcels have already been purchased by the Department of Natural Resources to protect floodplain capacity along the rivers. The Future Land Use Element establishes land use criteria for development in areas proposed as wetland conservation areas in the City.

6. Hazardous wastes

There are no known hazardous waste sites within Dunnellon, according to the Department of Environmental Regulation (DER) Sites List, 6/30/88. However, according to the Marion County Storage Tank Program, several sites have been identified within the City. These include: the Dunnellon Elementary School, C-Mart, Spitz Oil Company, Circle-K, Old Time Garage, and Shyam Gas & Food. The three major existing contamination sites are C-Mart, Circle K, and Spitz Oil.These leaks are currently undergoing cleanup procedures in accordance with DER requirements under Chapter 17-70, Petroleum Containment Site Cleanup Criteria. Continued intergovernmental coordination with DER and the entities responsible for cleanup is required to ensure appropriate remedies to this situation, as well as ensure future similar events are remedied promptly.

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Marion County has become authorized by the Florida Department of Environmental Regulation to undertake the Marion County Storage Tank Program. This program authorizes the County to inspect all existing storage tanks within the County and municipalities at least annually, and requires that all new systems be registered and approved by the County. The County can assist Dunnellon in enforcing DER rules for storage tanks. The County Program Director has recommended the following policies be placed in the City comprehensive plan, thus ensuring that storage tanks are properly regulated within the City:

All existing underground storage tanks within the City shall be inspected annually in accordance with the Marion County Underground Storage Tank Program.

Prior to permitting of demolition or redevelopment of land uses which contain underground storage tanks, the developer shall be required to submit closure plans consistent with DER rule 17-761 to the Marion County Storage Tank Program officials for prior approval.

Should the City police, fire department, public works personnel or other staff become aware of any spills throughout the City, the Public Works director shall report the information within 24 hours to the Marion County Underground

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Storage Tank Program and request assistance under the program towards enforcement of cleanup procedures. Coordination with the Marion County Program is an effective means for Dunnellon to protect its water resources without establishing its own regulatory program. By requiring that all new proposed land uses that utilize hazardous wastes or storage tanks and all existing storage tanks undergo mandatory review and approval under the DER authorized Marion County Storage Tank Program, the City will ensure its water resources are protected.

Other known pollution problems within the City are untreated stormwater runoff and discharge of treated wastewater effluent from the City's treatment plant into the Rainbow River, an Outstanding Florida Water. Please refer to the Infrastructure Element for additional discussion.

D. Background Data for Floral and Faunal Resources

1. Vegetative Communities

The vegetative communities occurring within Dunnellon have been inventoried and mapped by the Florida Department of Transportation Land Use, Cover and Forms Classification System (FLUCFCS). Where possible, the data were updated through field verification. The updated FLUCFCS inventory is provided in Figures 8 and 9.

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The upland vegetative communities occurring within the City include coniferous plantations (Series 441), mixed hardwoods (Series 438), live oak communities (Series 427), xeric oak (Series 421), longleaf pine-xeric oak (Series 412) and disturbed lands (urban or rural land in transition, Series 741, and 191).

Coniferous plantations are typically pine forests artificially generated by planting seedling stock or seeds. Pine plantations consist of slash pine, loblolly pine or sand pine. Subcanopy may be absent due to burning; when present, it generally consists of pine seedlings, was myrtle, gallberry, laurel oak and other opportunistic invader species. Table 5 lists the representative plant species of this community.

The mixed hardwood association is a community in which no single species appears to achieve a 66 percent dominance of the canopy. Canopy and sub-canopy species may include American holly, black cherry, Eastern hophornbean, flowering dogwood, hawthorn, sugarberry, laurel oak, live oak, pignut hickory, cabbage palm, southern magnolia, red cedar and sweetgum. A list of plant species representative to this community is provided in Table 6.

The live oak community is also referred to as upland temperate hammock. This community is common along the upper banks of the Withlacoochee and Rainbow Rivers. Live oak is the predominant species. Other principle species associated with this site include sweetgum, magnolia, holly and laurel oak.

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The plant species representative to this site are listed in Table 7.

The longleaf pine-xeric oak type is a drought-tolerant community also referred to as the sandhill association. This community typically occurs on well-drained to excessively well-drained (droughty), sandy soils with a water table far below the surface. Occasional fire contributes to the maintenance of this community; it prevents hardwoods from competing with the longleaf pine and other fire-resistant species. The dominant canopy species are longleaf pine and turkey oak, with a lesser component of scrub live oak. The subcanopy typically contains evergreen scrub oaks such as Chapman's oak, scrub live oak and myrtle oak. This community supports a wide variety of groundcover species, wiregrass being the dominant species. The representative species of this community are listed in Table 8.

The disturbed rural lands in transition category includes those areas which have been altered by man through past use, and are now in transition. Examples of disturbed sites include borrow pits, power line, railroad and road right-of-ways and the Barge Canal Authority lands. Since initial disturbance, ruderal and disturbed area plant species having a wide habitat tolerance have recolonized these areas. A list of representative species for this category is provided in Table 9.

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Xeric oak (FLUCFCS 421) community is characteristic of deep, infertile, sandy soils. Dominant plant species are described in Table 9A.

Shrub and brushland (FLUCFCS 320) is characterized as rangeland: the potential natural vegetation is predominantly grasses, grasslike plants, forbs or shrubs and is capable of being grazed. This category includes saw palmetto, gallberry, wax myrtle, and other woody scrub plant species as well as various types of short herbs and grasses.

Sand pine scrub (FLUCFCS 413) is predominantly a pine community growing on deep, infertile deposits of sands and clays. The predominant plant species are described in Table 9B.

Pasture (FLUCFCS 211, 212) consists of both unimproved and improved pasture land. Unimproved pasture includes cleared land with major stands of trees and brush where native grasses have been allowed to develop. Normally, this land will not be managed with brush control and/or fertilizer. Improved pasture is normally composed of land which has been cleared, tilled, reseeded with specific grass types and periodically improved with brush control and fertilizer application.

Inland ponds and sloughs (FLUCFCS 616) are associated with depressions and drainage areas that are not associated with streams or lakes. Predominant species are listed in Table 9C.

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Table 5

: Dominant Species of the Coniferous Plantations
In Dunnellon (FLUCFCS 441)

Andropogon virginicus	Broomsedge
Baccharis glomeruliflora	Groundsel tree
Bidens alba	Beggar-ticks
Buchnera americana	Blueheart
Bulbostylis ciliatifolia	Hair sedge
Callicarpa americana	Beauty berry
Cassia chamaecrista	Partridge pea
Circium horridulum	Bull thistle
Cnidoscolus stimulosus	Tread-softly
Cyperus esculentus	Nutsedge
Dichanthelium aciculare	Dichanthelium grass
Digitaria ciliaris	Southern crabgrass
Elephantopus elatus	Florida elephant's foot
Eragrostis elliottii	Elliott lovegrass
Erigeron quercifolius	Southern fleabane
Eryngium baldwinii	Button snakeroot
Eupatorium capillifolium	Dogfennel
Eustachys petraea	Fingergrass
Euthamia minor	Flat-top goldenrod
Gelsemium sempervirens	Yellow jessamine
Geranium carolinianum	Cranesbill
Gnaphalium purpureum	Rabbit tobacco
Hedyotis procumbens	Star flower
Heterotheca subaxillaris	Camphorweed
Hypericum hypericoides	St. Andrew's-cross
Hypoxis juncea	Yellow-star grass
Ilex glabra	Gallberry
Lepidium virginicum	Pepperweed
Lippia nodiflora	Matchweed
Mollugo verticillata	Carpet weed
Pinus clausa	Sand pine
Pinus elliottii	Slash pine
Pinus taeda	Loblolly pine
Polypremum procumbens	Polypremum
Pteridium aquilinum	Bracken fern
Pterocaulon virgatum	Blackroot
Rhus copallina	Winged sumac
Rhynchelytrum repens	Natal grass
Rubus cuneifolius	Sand blackberry
Rumex hastatulus	Sorrel
Smilax auriculata	Greenbrier
Solidago chapmanii	Goldenrod
Toxicodendron radicans	Poison ivy
Vitis munsoniana	Muscadine grape

MAS

Table 5 (Cont'd)

Dominant Species of the Coniferous Plantations
In Dunnellon (FLUCFCS 441)

Sources: Bell, C. R. and Taylor, B. J., 1982. Florida Wild Flowers and Roadside Plants. Laurel Hill Press Chapel Hill, 308 pp.

Duncan, W. H. and Foote, L. E., 1975. Wildflowers of the Southeastern United States. The University of Georgia Press, Athens. 296 pp.

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Wunderlin, R. P., 1982. Guide to the Vascular Plants of Central Florida. University Presses of Florida, Tampa, 472 pp.

Table 6

Dominant Plant Species of Mixed Hardwoods Association in Dunnellon (FLUCFCS 438)

Acer rubrum	Red maple
Adiantum capillus-veneris	Venus-hair fern
Agalinis tenuifolia	False Foxglove
Albizzia julibrissin	Mimosa
Ampelopsis arborea	Pepper vine
Antigonon leptopus	Coral vine
Aralia spinosa	Devil's walking stick
Arisaema triphyllum	Jack-in-the-pulpit
Asimina parviflora	Small-fruited pawpaw
Asplenium platyneuron	Ebony spleenwort
Aster dumosus	Bushy Aster
Baccharis glomeruliflora	Groundsel tree
Baccharis halimifolia	Groundsel tree
Bambusa sp.	Bamboo
Begonia semperflorens	Wax begonia
Berchemia scandens	Rattan vine
Bidens alba	Beggar-ticks
Botrychium biternatum	Southern grape fern
Bumelia lanuginosa	False buckthorn
Bumelia reclinata	Buckthorn
Callicarpa americana	Beauty berry
Campsis radicans	Trumpet vine
Carpinus caroliniana	Blue beech
Carya glabra	Pignut hickory
Carya tomentosa	Mockernut hickory
Cassytha filiformis	Love vine
Celtis laevigata	Sugarberry
Centella asiatica	Coinwort
Cercis canadensis	Redbud
Chionanthus virginica	Fringe tree
Cinnamomum camphora	Camphor tree
Citrus aurantium	Sour orange
Clematis virginiana	Virgin's bower
Commelina diffusa	Climbing day flower
Conoclinium coelestinum	Mist flower
Corallorhiza wisteriana	Coralroot
Cornus florida	Flowering dogwood
Crataegus flava	Hawthorn
Cyperus distinctus	Sedge
Decumaria barbara	Wild hydrangea
Desmodium incanum	Beggar weed
Desmodium paniculatum	Beggar Lice
Desmodium tortuosum	Big beggar weed
Dicanthelium commutatum	Panic grass
Dichanthelium dichotomum	Dichanthelium grass
Dichanthelium laxiflorum	Dichanthelium grass
Dichondra carolinensis	False pennywort
Diospyros virginiana	Common persimmon

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Table 6 (Cont'd)

Dominant Plant Species of Mixed Hardwoods Association in Dunnellon (FLUCFCS 438)

Elephantopus caroliniana	Elephant's Foot
Elephantopus elatus	Florida elephant's foot
Encyclia tampensis	Butterfly orchid
Epidendrum conopseum	Green-fly orchid
Equisetum hyemale	Scour rush
Erechtites hieracifolia	Fireweed
Erythrina herbacea	Coral Bean
Euonymus americanus	Strawberry bush
Fraxinus pennsylvanica	Green ash
Galium hispidulum	Bedstraw
Galium pilosum	Bedstraw
Galium tinctorium	Bedstraw
Gelsemium sempervirens	Yellow jessamine
Habenaria odontopetala	Habenaria orchid
Hamamelis virginiana	Witch hazel
Hedyotis procumbens	Star flower
Hypericum hypericoides	St. Andrew's-cross
Ilex ambigua	Sand holly
Ilex glabra	Gallberry
Ilex opaca	American holly
Ilex vomitoria	Yaupon
Ipomoea indica	Morning-glory
Juniperus silicicola	Southern red cedar
Lippia nodiflora	Matchweed
Liquidambar styraciflua	Sweetgum
Lonicera sempervirens	Coral honeysuckle
Lygodium japonicum	Japanese climbing fern
Magnolia grandiflora	Southern magnolia
Melia azedarach	China-berry
Melothria pendula	Creeping cucumber
Mikania scandens	Climbing hempvine
Mitchella repens	Partridge berry
Momordica charantia	Wild balsam apple
Morus rubra	Red mulberry
Myrica cerifera	Wax myrtle
Nephrolepis cordifolia	Boston fern
Nephrolepis exaltata	Boston fern
Oplismenus setarius	Woods grass
Osmanthus americana	Wild olive
Osmunda cinnamomea	Cinnamon fern
Ostrya virginiana	Hophornbeam
Oxalis florida	Wood Sorrel
Paedenia foetida	Skunk-vine
Panicum gymnocarpon	Savannah panicum
Panicum rigidulum	Redtop panicum
Parthenocissus quinquefolia	Virginia creeper
Paspalum floridanum	Florida paspalum

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Table 6 (Cont'd)

Dominant Plant Species of Mixed Hardwoods Association in Dunnellon (FLUCFCS 438)

Persea borbonia	Red bay
Phlebodium aureum	Golden Polypody
Phoradendraon serotinum	Mistletoe
Phytolacca americana	Pokeweed
Pinus elliottii	Slash pine
Pinus taeda	Loblolly pine
Polypodium dispersum	Polypody fern
Polypodium plumula	Resurrection fern
Polypodium polypodioides	Resurrection fern
Prunus caroliniana	Carolina laurel cherry
Prunus serotina	Black cherry
Psilotum nudum	Whisk fern
Psychotria nervosa	Wild coffee
Quercus falcata	Southern red oak
Quercus laurifolia	Diamond-leaf oak
Quercus michauxii	Swamp chestnut oak
Quercus nigra	Water oak
Quercus shumardii	Shumard oak
Quercus virginiana	Live oak
Rhamnus caroliniana	Buckthorn
Rhus copallina	Winged sumac
Rubus betulifolius	Blackberry
Rubus trivialis	Southern dewberry
Ruellia carolinensis	Wild petunia
Sabal minor	Dwarf cabbage palm
Sabal palmetto	Cabbage palm
Sageretia minutiflora	Buckthorn
Salvia coccinea	Tropical sage
Salvia lyrata	Lyre-leaved sage
Sambucus canadensis	Elderberry
Samolus valerandi	Pineland pimpernel
Sanicula canadensis	Snakeroot
Smilax auriculata	Greenbrier
Smilax bona-nox	Greenbrier
Smilax glauca	
Smilax pumila	
Solanum americanum	Common nightshade
Solanum capsicoides	Soda-apple
Solidago gigantea	Goldenrod
Spermacoce assurgens	Spermacoce
Thelypteris dentata	Downy shield fern
Tilia caroliniana	Carolina basswood
Tillandsia bartramii	Airplant
Tillandsia recurvata	Ball moss
Tillandsia setacea	Air plant
Tillandsia usneoides	Spanish moss
Tillandsia utriculata	Wild pine

Table 6 (Cont'd)

Dominant Plant Species of Mixed Hardwoods Association in Dunnellon (FLUCFCS 438)

Toxicodendron radicans	Poison ivy
Tradescantia ohiensis	Spiderwort
Ulmus americana	Elm
Urena lobata	Caesar weed
Vaccinium arboreum	Sparkleberry
Vaccinium corymbosum	Highbush blueberry
Viburnum obovatum	Black-haw
Vigna luteola	Cow-pea
Viola affinis	Violet
Viola lanceolata	Long-leaf violet
Viola primulifolia	Violet
Viola septemloba	Violet
Vitis aestivalis	Summer grape
Vitis munsoniana	Muscadine grape
Vitis shuttleworthii	Calusa grape
Vittaria lineata	Shoestring fern
Woodwardia areolata	Netted chain fern
Zanthoxylum clava-herculis	Hercules-club

Sources: Bell, C. R. and Taylor, B. J., 1982. Florida Wild flowers and Roadside Plants. Laurel Hill Press Chapel Hill, 308 pp.

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Wunderlin, R. P., 1982. Guide to the Vascular Plants of Central Florida. University Presses of Florida, Tampa, 472 pp.

Table 7

Dominant species of Live Oak Community
in Dunnellon (FLUCFCS 427)

Ampelopsis arborea	Pepper vine
Andropogon virginicus	Broomsedge
Antigonon leptopus	Coral vine
Aralia spinosa	Devil's walking stick
Asplenium platyneuron	Ebony spleenwort
Baccharis glomeruliflora	Groundsel tree
Baccharis halimifolia	Groundsel tree
Botrychium biternatum	Southern grape fern
Bumelia reclinata	Buckthorn
Callicarpa americana	Beauty berry
Campsis radicans	Trumpet vine
Carphephorus paniculatus	Deer's tongue
Carya glabra	Pignut hickory
Celtis laevigata	Sugarberry
Centrosema virginianum	Butterfly-pea
Chrysopsis scabrella	Rough-leaf goldenaster
Cinnamomum camphora	Camphor tree
Cladonia evansii	Deer moss
Cladonia leporina	Deer moss
Desmodium tortuosum	Big beggar weed
Dichanthelium dichotomum	Dichanthelium grass
Dichanthelium laxiflorum	Dichanthelium grass
Diospyros virginiana	Common persimmon
Elephantopus caroliniana	Elephant's Foot
Elephantopus elatus	Florida elephant's foot
Encyclia tampensis	Butterfly orchid
Epidendrum conopseum	Green-fly orchid
Erythrina herbacea	Coral Bean
Galactia regularis	Milk-pea
Galium hispidulum	Bedstraw
Gelsemium sempervirens	Yellow jessamine
Hedyotis procumbens	Star flower
Hypericum hypericoides	St. Andrew's-cross
Ilex ambigua	Sand holly
Ilex glabra	Gallberry
Ilex opaca	American holly
Ilex vomitoria	Yaupon
Ipomoea indica	Morning-glory
Juniperus silicicola	Southern red cedar
Liquidambar styraciflua	Sweetgum
Lonicera sempervirens	Coral honeysuckle
Magnolia grandiflora	Southern magnolia
Melothria pendula	Creeping cucumber
Mitchella repens	Partridge berry
Momordica charantia	Wild balsam apple
Myrica cerifera	Wax myrtle

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Table 7 (Cont'd)

Dominant species of Live Oak Community
in Dunnellon (FLUCFCS 427)

Nephrolepis cordifolia	Boston fern
Nephrolepis exaltata	Boston fern
Oplismenus setarius	Woods grass
Osmanthus americana	Wild olive
Osmunda cinnamomea	Cinnamon fern
Phoradendraon serotinum	Mistletoe
Phytolacca americana	Pokeweed
Pinus elliottii	Slash pine
Polypodium dispersum	Polypody fern
Polypodium plumula	Resurrection fern
Polypodium polypodioides	Resurrection fern
Prunus serotina	Black cherry
Psilotum nudum	Whisk fern
Quercus nigra	Water oak
Quercus virginiana	Live oak
Rhus copallina	Winged sumac
Rubus cuneifolius	Sand blackberry
Sabal palmetto	Cabbage palm
Scoparia duleis	Sweet broom
Serenoa repens	Saw palmetto
Sida acuta	Broomweed
Sida cordifolia	Ironweed
Smilax auriculata	Greenbrier
Smilax glauca	
Smilax pumila	
Solanum capsicoides	Soda-apple
Tillandsia bartramii	Airplant
Tillandsia recurvata	Ball moss
Tillandsia usneoides	Spanish moss
Toxicodendron radicans	Poison ivy
Trichostema dichotomum	Blue-curls
Vaccinium arboreum	Sparkleberry
Viola septemloba	Violet
Vitis aestivalis	Summer grape
Vitis munsoniana	Muscadine grape
Vittaria lineata	Shoestring fern
Ximenia americana	Hog plum
Zamia pumila	Florida coontie

Sources: Bell, C. R. and Taylor, B. J., 1982. Florida Wild Flowers and Roadside Plants. Laurel Hill Press Chapel Hill, 308 pp.

Duncan, W. H. and Foote, L. E., 1975. Wildflowers of the Southeastern United States. The University of Georgia Press, Athens. 296 pp.

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Table 7 (Cont'd)

Dominant species of Live Oak Community
in Dunnellon (FLUCFCS 427)

Hall, D. W., 1978. The Grasses of Florida. University Microfilms International, Ann Arbor. 498 pp.

Lakela, O. and Wunderlin, R. P. Trees of Central Florida. Banyan Books, Miami, 208 pp.

Lakela, O. and Long, R. W., 1976. Ferns of Florida. Banyan Books, Miami, 116 pp.

Wunderlin, R. P., 1982. Guide to the Vascular Plants of Central Florida. University Presses of Florida, Tampa, 472 pp.

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Table 8

Dominant Species in Longleaf Pine-Xeric Community in Dunnellon (FLUCFCS 412)

Aeschynomene viscidula	Shyleaves
Agalinis setacea	
Andropogon ternarius	Beard grass
Andropogon virginicus	Broomsedge
Anthaenantia villosa	Green silky-scale
Aristida condensata	Big three-awn
Aristida gyrans	Corkscrew three-awn
Aristida lanosa	Longleaf three-awn
Aristida purpurascen	Arrow feather
Aristida spiciformis	Bottlebush threeawn
Aristida stricta	Wiregrass
Aristida tenuispica	Hillsborough threeawn
Asclepias curtissii	Curtiss milkweed
Asclepias humistrata	Sandhill milkweed
Asclepias tuberosa	Butterfly weed
Asimina obovata	Pawpaw
Asimina pygmaea	Dwarf pawpaw
Aster adnatus	Aster
Aster tortifolius	White-topped Aster
Aureolaria pectinata	Downy false-foxglove
Balduina angustifolia	Yellow buttons
Baptisia lecontei	Wild Indigo
Berlandiera subacaulis	Green eyes
Bidens alba	Beggar-ticks
Buchnera americana	Blueheart
Bulbostylis ciliatifolia	Hair sedge
Bulbostylis warei	Bulbostylis sedge
Bumelia lanuginosa	False buckthorn
Bumelia tenax	Tough buckthorn
Carphephorus corymbosus	Deer's-tongue
Carphephorus odoratissimus	Vanilla plant
Carya glabra	Pignut hickory
Cassia chamaecrista	Partridge pea
Cassia nictitansu	Wild sensitive Plant
Ceanothus microphyllus	Ceanothus
Cenchrus gracillimus	Slender sandspur
Cenchrus incertus	Sandspur
Centrosema virginianum	Butterfly-pea
Ceratiola ericoides	Rosemary
Chapmannia floridana	Alicia
Chrysopogon pauciflorus	Sandhill grass
Chrysopsis mariana	Goldenmaster
Chrysopsis scabrella	Rough-leaf goldenaster
Clitoria mariana	Butterfly-pea
Cnidoscolus stimulosus	Tread-softly
Commelina erecta	Erect Day-flower
Crataegus flava	Hawthorn

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Table 8 (Cont'd)

Dominant Species in Longleaf Pine-Xeric Community in Dunnellon (FLUCFCS 412)

Crotolaria rotundifolia	Rabbit bells
Croton argyranthemus	Silver Croton
Croton glandulosus	Croton
Crotonopsis linearis	Rushfoil
Cuthbertia ornata	Spiderwort
Cyperus esculentus	Nutsedge
Dalea carnea	Dalea
Desmodium tenuifolium	Beggar Lice
Dichanthelium aciculare	Dichanthelium grass
Dichanthelium laxiflorum	Dichanthelium grass
Digitaria ciliaris	Southern crabgrass
Digitaria villosa	Shaggy crabgrass
Diodia teres	Button-weed
Diospyros virginiana	Common persimmon
Elephantopus elatus	Florida elephant's foot
Eragrostis elliottii	Elliott lovegrass
Eragrostis spectabilis	Purple lovegrass
Eremochloa ophiuroides	Centipedegrass
Eriogonum tomentosum	Wild buckwheat
Eryngium aromaticum	Fragrant eryngium
Eryngium yuccafolium	Button snakeroots
Erythrina herbacea	Coral Bean
Eupatorium capillifolium	Dogfennel
Eupatorium compositifolium	Dogfennel
Eupatorium leptophyllum	Fennel
Eupatorium pilosum	Thoroughwort
Eustachys glauca	Fingergrass
Eustachys petraea	Fingergrass
Euthamia minor	Flat-top goldenrod
Froelichia floridana	Cottonweed
Gaillardia pulchella	Blanket flower
Galactia elliottii	Milk-pea
Galactia regularis	Milk-pea
Galactia volubilis	Trailing milk-pea
Garberia fruticosa	Garberia
Gaura angustifolia	Gaura
Gaylussacia dumosa	Dwarf huckleberry
Gaylussacia nana	Dangleberry
Gelsemium sempervirens	Yellow jessamine
Geranium carolinianum	Cranesbill
Gnaphalium obtusifolium	Rabbit tobacco
Gnaphalium purpureum	Rabbit tobacco
Gratiola hispida	Gratiola
Gymnopogon ambiguus	Bearded skeletongrass
Gymnopogon chapmanianus	
Helenium amarum	Sneeze weed
Helianthemum corymbosum	Rockrose

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Table 8 (Cont'd)

Dominant Species in Longleaf Pine-Xeric Community in Dunnellon (FLUCFCS 412)

Heterotheca subaxillaris	Camphorweed
Hieracium megacephalon	Rattlesnake weed
Hypericum gentianoides	Pineweed
Hypericum reductum	St. John's-wort
Indigofera caroliniana	Indigo plant
Juniperus silicicola	Southern red cedar
Krameria secundiflora	Sandspur
Krigia virginica	Dwarf dandelion
Lechea deckertii	Pinweed
Lechea sessiliflora	Pinweed
Lepidium virginicum	Pepperweed
Lespedeza hirta	Creeping lespedeza
Liatris chapmanii	Blazing star
Liatris elegans	Blazing star
Liatris gracilis	Blazing star
Liatris graminifolia	Blazing star
Liatris paucifloria	Blazing star
Liatris tenuifolia	Blazing star
Licania michauxii	Gopher apple
Linaria floridana	Toadflax
Lobelia puberula	Downy lobelia
Lupinus diffusus	Sky-blue lupine
Lygodesmia aphylla	Roserush
Lyonia ferruginea	Staggerbush
Lyonia fruticosa	Fetterbush
Matelea pubiflora	Matelea
Monarda punctata	Spotted beebalm
Muhlenbergia capillaris	Hairawn muhylgrass
Myrica cerifera	Wax myrtle
Opuntia humifusa	Prickly-pear cactus
Palafoxia feayi	Palafoxia
Palafoxia integrifolia	Many wings Polypteris
Paronychia rugelii	Sand squares
Paspalum bifidum	Paspalum grasses
Paspalum notatum	Bahia grass
Passiflora incarnata	Passion flower
Penstemon multiflorus	Penstemon
Phoebanthus grandiflora	Phoebanthus
Physalis arenicola	Physalis
Piloblephis rigida	Pennyroyal
Pinus palustris	Longleaf pine
Piriqueta caroliniana	Piriqueta
Pityopsis graminifolia	Silver Sword
Polygala lewtonii	Milkwort
Polygonella fimbriata	Sandhill wireweed
Polygonella gracilis	Wireweed
Polygonella polygama	Jointweed

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Table 8 (Cont'd)

Dominant Species in Longleaf Pine-Xeric Community in Dunnellon (FLUCFCS 412)

Polypremum procumbens	Polypremum
Portulaca pilosa	Purslane
Prunus umbellata	Hog plum
Pteridium aquilinum	Bracken fern
Pterocaulon virgatum	Blackroot
Pyrrhopappus carolinianus	False dandelion
Quercus chapmanii	Chapman's oak
Quercus geminata	Scrub live oak
Quercus incana	Bluejack oak
Quercus laevis	Turkey oak
Quercus minima	Dwarf live oak
Quercus myrtifolia	Myrtle oak
Quercus stellata	Post oak
Rhus copallina	Winged sumac
Rhynchelytrum repens	Natal grass
Rhynchosia cinerea	Dollarweed
Rhynchosia difformis	Dollarweed
Rhynchosia reniformis	Sand dollar
Rhynchospora intermedia	Beak rush
Rhynchospora megalocarpa	Beak rush
Richardia scabra	Carpet-weed
Rubus cuneifolius	Sand blackberry
Ruellia carolinensis	Wild petunia
Rumex hastatulus	Sorrel
Sabal etonia	Scrub palmetto
Salvia azurea	Blue sage
Sanicula canadensis	Snakeroot
Schizachyrium hirtiflorum	Schizachyrium grass
Schizachyrium scoparium	Little bluestem
Schrankia microphylla	Sensitive Briar
Scleria ciliata	Nutgrass
Scoparia duleis	Sweet broom
Scutellaria arenicola	Skullcap
Scutellaria integrifolia	Rough skullcap
Serenoa repens	Saw palmetto
Setaria corrugata	Foxtail
Seymeria pectinata	Seymeria
Silphium asteriscus	Rosin-weed
Solidago chapmanii	Goldenrod
Solidago fistulosa	Goldenrod
Sorghastrum secundum	Lop-sided indian grass
Spiranthes lacera	Slender ladies' tresses
Sporobolus junceus	Pineywoods dropseed
Stachys floridana	Hedge-nettle
Stillingia sylvatica	Queen's-delight
Stylisma patens	Stylisma
Tephrosia chrysophylla	Hoary pea

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Table 8 (Cont'd)

Dominant Species in Longleaf Pine-Xeric Community in Dunnellon (FLUCFCS 412)

Tillandsia recurvata	Ball moss
Tillandsia usneoides	Spanish moss
Toxicodendron radicans	Poison ivy
Trichostema dichotomum	Blue-curls
Triplasis americana	Perennial sandgrass
Vaccinium arboreum	Sparkleberry
Vaccinium darrowii	Ground huckleberry
Vaccinium myrsinites	Ground huckleberry
Vaccinium stamineum	Deerberry
Vernonia angustifolia	Ironweed
Vitis munsoniana	Muscadine grape
Ximenia americana	Hog plum
Xyris caroliniana	Yellow-eyed grass
Yucca filamentosa	Bear grass
Zamia pumila	Florida coontie

Source: Bell, C. R. and Taylor, B. J., 1982. Florida Wild Flowers and Roadside Plants. Laurel Hill Press Chapel Hill, 308 pp.

Duncan, W. H. and Foote, L. E., 1975. Wildflowers of the Southeastern United States. The University of Georgia Press, Athens. 296 pp.

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Wunderlin, R. P., 1982. Guide to the Vascular Plants of Central Florida. University Presses of Florida, Tampa, 472 pp.

Table 9

Dominant Plant Species of Rural Lands in Transition
(FLUCFCS 741)

Acer rubrum	Red maple
Aeschynomene americana	Aeschynomene
Aeschynomene viscidula	Shyleaves
Albizzia julibrissin	Mimosa
Amaranthus hybridus	Common pigweed
Amaranthus spinesus	Spiny amaranth
Ambrosia artemisiifolia	Ragweed
Ampelopsis arborea	Pepper vine
Andropogon glomeratus	Bushy beard bluestem
Andropogon virginicus	Broomsedge
Andropogon virginicus var. glaucus	Chalky bluestem
Antigonon leptopus	Coral vine
Aristida condensata	Big three-awn
Aristida gyrans	Corkscrew three-awn
Aristida purpurascens	Arrow feather
Asimina incarna	Polecat bush
Baccharis halimifolia	Groundsel tree
Bambusa sp.	Bamboo
Berlandiera subacaulis	Green eyes
Bidens alba	Beggar-ticks
Bidens bipinnata	Spanish Needles
Brachiara mutica	Paragrass
Brachiara platyphylla	Signal Grass
Buchnera americana	Blueheart
Callicarpa americana	Beauty berry
Campsis radicans	Trumpet vine
Carya illinoensis	Pecan hickory
Cassia chamaecrista	Partridge pea
Cassia nictitans	Wild sensitive Plant
Cassia obtusifolia	Sicklepod
Cassytha filiformis	Love vine
Casuarina equistifolia	Australian pine
Celtis laevigata	Sugarberry
Cenchrus echinatus	Southern sandspur
Cenchrus gracillimus	Slender sandspur
Cenchrus incertus	Sandspur
Centella asiatica	Coinwort
Cercis canadensis	Redbud
Chamaesyce hyssopifolia	Eyebane
Chenopodium album	Lamb's-quarters
Chrysopogon pauciflorus	Sandhill grass
Chrysopsis scabrella	Rough-leaf goldenaster
Cinnamomum camphora	Camphor tree
Circium horridulum	Bull thistle
Clematis virginiana	Virgin's bower
Cnidoscolus stimulosus	Tread-softly
Commelina diffusa	Climbing day flower
Conyza canadensis	Horse-weed

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Table 9 (Cont'd)

Dominant Plant Species of Rural Lands in Transition
(FLUCFCS 741)

Coreopsis leavenworthii	Tick weed
Cornus florida	Flowering dogwood
Crotolaria lanceolata	Rabbit bells
Crotolaria rotundifolia	Rabbit bells
Crotolaria spectabilis	Rattlebox
Croton glandulosus	Croton
Cynodon dactylon	Bermuda grass
Cyperus esculentus	Nutsedge
Cyperus globulosus	Globe sedge
Cyperus odoratus	Flat-sedge
Cyperus papyrus	Papyrus
Cyperus retrorsus	Gallingale sedge
Cyperus surinamensis	Sedge
Desmodium incanum	Beggar weed
Desmodium paniculatum	Beggar Lice
Desmodium tortuosum	Big beggar weed
Dichanthelium aciculare	Dichanthelium grass
Dichondra carolinensis	False pennywort
Digitaria ciliaris	Southern crabgrass
Digitaria decumbens	Pangola grass
Digitaria serotina	Crabgrass
Digitaria villosa	Shaggy crabgrass
Diodia teres	Button-weed
Diospyros virginiana	Common persimmon
Drosera capillaris	Pink sundew
Echinochloa crusgalli	Barnyard grass
Eclipta alba	Eclipta
Eleusine indica	Goose grass
Equisetum hyemale	Scour rush
Eragrostis elliottii	Elliott lovegrass
Eragróstis hirsuta	Lovegrass
Eragrostis spectabilis	Purple lovegrass
Erechtites hieracifolia	Fireweed
Eremochloa ophiuroides	Centipedegrass
Erigeron quercifolius	Southern fleabane
Erigeron strigosus	Daisy Fleabane
Erigeron vernus	Fleabane
Eriobotrya japonica	Loquat
Eryngium baldwinii	Button snakeroot
Eupatorium capillifolium	Dogfennel
Eupatorium compositifolium	Dogfennel
Eustachys glauca	Fingergrass
Eustachys petraea	Fingergrass
Euthamia minor	Flat-top goldenrod
Fimbristylis autumnalis	Fimbristylis
Froelichia floridana	Cottonweed
Gaillardia pulchella	Blanket flower

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Table 9 (Cont'd)

Dominant Plant Species of Rural Lands in Transition
(FLUCFCS 741)

Gaura angustifolia	Gaura
Gelsemium sempervirens	Yellow jessamine
Geranium carolinianum	Cranesbill
Gnaphalium obtusifolium	Rabbit tobacco
Gnaphalium purpureum	Rabbit tobacco
Hedyotis procumbens	Star flower
Helenium amarum	Sneeze weed
Heterotheca subaxillaris	Camphorweed
Hieracium gronovii	Hawkweed
Hieracium megacephalon	Rattlesnake weed
Hyptis alata	Musky Mint
Imperata cylindrica	Cogon grass
Indigofera hirsuta	Hairy indigo
Ipomoea indica	Morning-glory
Ipomoea quamoclit	Cypress-vine
Juniperus silicicola	Southern red cedar
Krigia virginica	Dwarf dandelion
Lactuca graminifolia	Wild lettuce
Leersia hexandra	Southern cutgrass
Leonotis nepetaefolia	Lion's-ear
Lepidium virginicum	Pepperweed
Leptochloa fascicularis	Bearded spangletop
Linaria canadensis	Blue toadflax
Lippia nodiflora	Matchweed
Liquidambar styraciflua	Sweetgum
Lonicera sempervirens	Coral honeysuckle
Lygodesmia aphylla	Roserush
Lygodium japonicum	Japanese climbing fern
Macroptilium lathyroides	Red bean
Melaleuca quinquenervia	Melaleuca
Melia azedarach	China-berry
Melilotus alba	White sweet cloves
Melothria pendula	Creeping cucumber
Mimosa strigillosa	Mimosa
Mollugo verticillata	Carpet weed
Momordica charantia	Wild balsam apple
Monarda punctata	Spotted beebalm
Morus rubra	Red mulberry
Muhlenbergia capillaris	Hairawn muhylgrass
Murdannia nudiflora	Murdannia
Myrica cerifera	Wax myrtle
Oenothera laciniata	Evening primrose
Oxalis florida	Wood Sorrel
Panicum anceps	Beaked panicum
Panicum maximum	Guinea grass
Panicum rigidulum	Redtop panicum
Panicum tenerum	Bluejoint panicum

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Table 9 (Cont'd)

Dominant Plant Species of Rural Lands in Transition
(FLUCFCS 741)

Panicum virgatum	Switch grass
Parietaria floridana	Pellitory
Parkinsonia aculeata	Jerusalem thorn
Paronychia rugelii	Sand squares
Paspalidium geminatum	Egyptian paspalidium
Paspalum floridanum	Florida paspalum
Paspalum notatum	Bahia grass
Paspalum repens	Water paspalum
Paspalum setaceum	Thin paspalum
Paspalum urvillei	Vaseygrass
Passiflora incarnata	Passion flower
Pennisetum purpureum	Elephantgrass
Phlox drummondii	Phlox
Phragmites australis	Giant reed
Phytolacca americana	Pokeweed
Plantago virginica	Southern plantain
Polygala grandiflora	Milkwort
Polypremum procumbens	Polypremum
Portulaca oleracea	Purslane
Portulaca pilosa	Purslane
Prunus caroliniana	Carolina laurel cherry
Prunus serotina	Black cherry
Prunus umbellata	Hog plum
Pteridium aquilinum	Bracken fern
Pterocaulon virgatum	Blackroot
Pyrrhopappus carolinianus	False dandelion
Quercus laurifolia	Diamond-leaf oak
Quercus virginiana	Live oak
Rhus copallina	Winged sumac
Rhynchelytrum repens	Natal grass
Richardia brasiliensis	Florida Purslane
Richardia scabra	Carpet-weed
Rubus betulifolius	Blackberry
Rubus trivialis	Southern dewberry
Rudbeckia hirta	Blackeyed susan
Ruellia brittoniana	Ruellia
Rumex hastatulus	Sorrel
Sabal palmetto	Cabbage palm
Sacciolepis striata	American cupscale
Sambucus canadensis	Elderberry
Sapium sebiferum	Tallow tree
Schinus terebinthefolius	Brazilian pepper
Scoparia duleis	Sweet broom
Senecio glabellus	Butterweed
Sesbania emerus	Bequilla
Sesbania punicea	Danglepod
Sesbania vesicaria	Bladderpod
Setaria corrugata	Foxtail

Table 9 (Cont'd)

Dominant Plant Species of Rural Lands in Transition
(FLUCFCS 741)

Setaria geniculata	Knotroot
Sida acuta	Broomweed
Sida cordifolia	Ironweed
Sisyrinchium atlanticum	Blue-eyed grass
Smilax auriculata	Greenbrier
Solanum americanum	Common nightshade
Solanum capsicoides	Soda-apple
Sonchus oleraceus	Common sow thistle
Sorghum halepense	Johnsongrass
Sporobolus indicus	Smutgrass
Sporobolus junceus	Pineywoods dropseed
Stachys floridana	Hedge-nettle
Stellaria media	Common chickweed
Stenotaphrym secundatum	St. Augustine grass
Taraxacum officinale	Common dandelion
Toxicodendron radicans	Poison ivy
Tradescantia ohiensis	Spiderwort
Tridens flavus	Purple top
Trifolium repens	White clover
Urena lobata	Caesar weed
Vigna luteola	Cow-pea
Vitis munsoniana	Muscadine grape
Vitis shuttleworthii	Calusa grape
Youngia japonica	Youngia
Yucca aloifolia	Spanish dagger
Zanthoxylum clava-herculis	Hercules-club
Zeuxine strateumatica	Zeuxine

Sources: Bell, C. R. and Taylor, B. J., 1982. Florida Wild Flowers and Roadside Plants. Laurel Hill Press Chapel Hill, 308 pp.

Duncan, W. H. and Foote, L. E., 1975. Wildflowers of the Southeastern United States. The University of Georgia Press, Athens. 296 pp.

Hall, D. W., 1978. The Grasses of Florida. University Microfilms International, Ann Arbor. 498 pp.

Lakela, O. and Wunderlin, R. P. Trees of Central Florida. Banyan Books, Miami, 208 pp.

Lakela, O. and Long, R. W., 1976. Ferns of Florida. Banyan Books, Miami, 116 pp.

Wunderlin, R. P., 1982. Guide to the Vascular Plants of Central Florida. University Presses of Florida, Tampa, 472 pp.

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Table 9A

Dominant Plant Species of Xeric Oak Association
in Dunnellon (FLUCFCS 421)

Pteridium aquilinum	Bracken fern
Pinus clausa	Sand pine
Pinus elliottii	Slash pine
Pinus palustris	Longleaf pine
Pinus taeda	Loblolly pine
Andropogon glomeratus	Bushy beard bluestem
Andropogon virginicus	Broomsedge
Aristida stricta	Wine grass
Aristida spiciformis	Three-awn grass
Eragrostis spp.	Lovegrass
Panicum spp.	Lowpanic grass
Sorghastrum secundum	Lopsided indian grass
Serenoa repens	Saw palmetto
Smilax auriculata	Greenbrier
Smilax bona-nox	Greenbrier
Yucca filamentosa	Bear grass
Myrica cerifera	Wax myrtle
Myrica pusilla	Dwarf wax myrtle
Carya glabra	Pignut hickory
Carya tomentosa	Mockernut hickory
Quercus incana	Bluejack oak
Quercus laeris	Turkey oak
Quercus laurifolia	Laurel oak
Quercus margaretta	Sand post oak
Quercus nigra	Water oak
Quercus pumila	Runner oak
Quercus virginiana	Live oak
Quercus virginiana var.geminata	Sand live oak
Phorandendron flavescens	Mistletoe
Polgonella gracilis	Joint weed
Polygonella polygama	Joint weed
Rumex hastatulus	Sorrel
Asimina spp.	Paw paws
Persea borbonia	Red bay

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Lepidium virginicum	Pepperweed
Liquidambar styraciflua	Sweetgum
Crataegus lanata	Hawthorn
Crataegus uniflora	Hawthorn
Rubus cuneifolius	Blackberry
Rubus floridanus	Blackberry
Rubus trivialis	Dewberry
Licania michauxii	Gopher apple
Cassia fa sciculata	Partridge pea
Desmodium spp.	Beggar lices
Lupinus diffusus	Lupine
Cnidoscolus stimulosus	Tread-softly
Rhus copallina	Shining sumac
Tosicodendron radicans	Poison ivy
Ilex glabra	Gallberry
Ilex opaca	American holly
Ampelopsis arborea	Pepper vine
Parthenocissus quinquefolia	Virginia creeper
Vitis spp.	Wild grapes
Lechea parula	Pin-weed
Opuntia spp.	Prickly pear cacti
Lyonia ferruginea	Staggerbush
Lyonia fruticosa	Fetterbush
Vaccinium arboreum	Sparkleberry
Vaccinium elliottii	Blueberry
Vaccinium myrsinites	Ground huckleberry
Piospyros virginiana	Common persimmon
Osmanthus americana	Wild olive
Gelsemium sempervirens	Yellow jessamine
Callicarpa americana	American beautyberry
Satureja rigida	Pennyroyal
Linaria canadensis	Blue toadflax
Baccharis glomeruliflora	Groudsel tree
Berlandiera subacaulis	Greeneyes
Bidens spp.	Beggar ticks
Carphephorous corymbosus	Deer's tongue
Carphephorus odoratissimus	Vanilla plant
Circium horridulum	Bull thistle
Elephantopus tomentosa	Elephant's foot
Erectitites hieracifolia	Fire weed
Eupatorium compositifolium	Dogfennel
Eupatorium recurvans	Throughwort
Helenium amarum	Sneeze weed
Helenium vernale	Sneeze weed
Heterothera graminifolia	Grassyleaf golden aster
Heterotheca scabrella	Golden aster
Heterotheca subaxillaris	Camphor weed
Hieracium venosum	Rattlesnake weed
Liatrus chapmanii	Blazing star
Liatrus gracilis	Blazing star
Liatrus graminifolia	Blazing star
Solidago fistulosa	Goldenrod

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Solidago microcephala	Goldenrod
Solidago odora	Goldenrod
Solidago stricta	Goldenrod
Cladonia evansii	Deer moss
Cladonia leporina	Deer moss

Sources:

Bell, C. R. and Taylor, B. J., 1982. Florida Wild Flowers and Roadside Plants. Laurel Hill Press Chapel Hill. 308 pp.

Duncan, W. H. and Foote, L. E., 1975. Wildflowers of the Southeastern United States. The University of Georgia Press, Athen. 296 pp.

Hall, D. W., 1978. The Grasses of Florida. University Microfilms International, Ann Arbor. 498 pp.

Lakela, O. and Wunderlin, R. P. Trees of Central Florida. Banyan Books, Miami. 208 pp.

Lakela, O. and Long, R. W., 1976. Ferns of Florida. Banyan Books, Miami. 116 pp.

Wunderlin, R. P., 1982. Guide to the Vascular Plants of Central Florida. University Presses of Florida, Tampa. 472 pp.

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Table 9B

Dominant Plant Species of Sandpine Scrub
in Dunnellon (FLUCFCS 413)

Quercus incana	Bluejack oak
Quercus chapmannii	Chapman oak
Quercus myrtifolia	Myrtle oak
Quercus virginiana var. germinata	Sand live oak
Pinus clausa	Sand pine
Gaylussacia dumosa	Dwarf huckleberry
Chrysobalanus oblongifolius	Gopher apple
Opuntia spp.	Prickly pear
Serenoa repens	Saw plametto
Heterotheca graminifolia	Grassleaf golden aster
Cladonia spp.	Deer moss
Smilax glauca	Cat. green briar

Sources: Soil Conservation Service, 26 Ecoligical Communities of Florida.

Florida Department of Transportation, Florida Land Use, Cover and Forms Classification System, September 1985.

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Table 9C

Dominant Plant Species of Sloughs
in Dunnellon (FLUCFCS 616)

Ascyrum stans	St. Peters wort
Pontederia cordata	Pickerel weed
Drosera spp.	Sundew
Sabatia spp.	Marsh pink
Rhexia spp.	Meadowbeauty
Polygala spp.	Milkwort
Xyris spp.	Yellow-eyed grass
Rhynchospora spp.	Beak rushes
Amphicarpum muhlenbergianum	Blue maidencane
Panicum tenerum	Bluejoint panicum
Aristida spiciformis	Bottlebrush threeawn
Dichanthelium dichotomum	Panicum
Panicum spp.	Low panicum
Spartina bakeri	Sand cordgrass
Scleria spp.	Sloughgrass
Junus effusvs	Soft rush

Sources: Soil Conservation Service, 26 Ecoligical Communities of Florida.

Florida Department of Transportation, Florida Land Use, Cover and Forms Classification System, September 1985.

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The wetland vegetative communities occurring within the City include open water-lakes and rivers (Series 520-524, 510), freshwater marshes (Series 641), wet prairies (Series 643), bottomland river and lake swamps (Series 615) and cypress association (Series 621). Plant species of the open water environment, such as the Rainbow and Withlacoochee Rivers, are distinguished from marsh and wet prairie communities in that they have deep water which will not support rooted, emergent vegetation. Plant species representative of the open water community are listed in Table 10. Freshwater marshes are emergent aquatic systems typically without woody species. Sawgrass and cattails are dominant species of freshwater marshes. The dominant plant species listed in Table 11. The wet prairies classification is distinguished from marshes by having less water and shorter herbage. The wet prairies community is composed of grassy vegetation on wet soils, and is predominated by the following species: sawgrass (Cladium jamaicensis, maidencane (Panicum hemitomon), cordgrasses (Spartina bakeri), spike rushes (Eleocharis sp.), beach rushes (Rhynchospora sp.), St. John's wort (Hypericum sp.), spiderlily (Hymenocallis palmeri), swamplily (Crinum americanum), yellow-eyed grass (Xeric ambigua) and whitetop sedge (Dichromena colorata). Bottomland river and lake swamps, also referred to as the floodplain forest, are found on river, creek and lake floodplain or overflow areas. This association consists of a variety of predominately hardwood species such as red maple, blackgum, laurel oak, water oak, redbay, sweetbay, loblolly

bay,cabbage palm and sweetgum. Slash pine and loblolly pine may also be found in the floodplain forest. A list of representative species are provided in Table 12. The cypress association includes cypress heads, strands and other systems where cypress canopy cover exceeds 60%. Other wetland trees associated with this category include blackgum, sweetbay, dahoon holly, redbay, red maple and slash pine. Associations having dense sub-canopy systems are represented by the following species: fetterbush, buttonbush, waxmyrtle, gallberry and willow. The representative species of this category are listed in Table 13. Tables 14-17 lists the wildlife species for these communities. Discussion of wildlife follows.

Table 10

Dominant Plant Species of Open Water
(FLUCFCS 520, 510)

Azolla caroliniana	Mosquito fern
Brasenia schreberi	Water-shield
Cabomba caroliniana	Fanwort
Ceratophyllum demersum	Coontail
Ceratopteris thalictroides	Water sprite
Chara spp.	Musk grass
Cicuta mexicana	Water hemlock
Egeria densa	Brazilian elodea
Eichhornia crassipes	Floating water-hyacinth
Eleocharis cellulosa	Spike rush
Hydrilla verticillata	Hydrilla
Juncus repens	Rush
Lemna spp.	Duckweed
Limnobium spongia	Frog's-bit
Myriophyllum aquaticum	Parrot's-feather
Najas guadalupensis	Southern naiad
Nelumbo lutea	Yellow water lotus
Nuphar luteum	Spatterdock
Nymphaea odorata	Fragrant water lily
Nymphoides aquatica	Floating heart
Panicum repens	Guinea grass
Pistia stratiotes	Water-lettuce
Pontederia cordata	Pickerelweed
Potamogeton diversifolius	Variable-leaf pondweed
Potamogeton illinoensis	Pondweed
Sagittaria lancifolia	Arrowhead
Sagittaria subulata	Dwarf arrowhead
Salvinia minima	Water spangles
Scirpus californicus	Giant bulrush
Spirodela polyrhiza	Giant duckweed
Typha domingensis	Southern cattail
Typha latifolia	Common cattail
Utricularia cornuta	Horned bladderwort
Utricularia floridana	Bladderwort
Utricularia foliosa	Bladderwort
Utricularia inflata	Big floating bladderwort
Utricularia purpurea	Purple bladderwort
Vallisneria americiana	Tapegrass or eel-grass
Zizania aquatica	Wild rice

Sources: Hall, D. W., 1978. The Grasses of Florida. University Microfilms International, Ann Arbor. 498 pp.

Wunderlin, R. P., 1982. Guide to the Vascular Plants of Central Florida. University Presses of Florida, Tampa, 472 pp.

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Table 11

Dominant Plant Species of Freshwater Marshes
(FLUCFCS 641)

Agalinis purpurea	Gerardia
Aletris lutea	Yellow collic-root
Alternanthera philoxeroides	Alligator-weed
Amaranthus australis	Southern water hemp
Amaranthus floridanus	Pigweed
Amphicarpum muhlenbergianum	Blue maidencane
Andropogon glomeratus	Bushy beard bluestem
Andropogon virginicus	Broomsedge
Andropogon virginicus var. glaucus	Chalky bluestem
Arundinaria gigantea	Switch cane
Aster subulatus	Aster
Axonopus affinis	Common carpet grass
Axonopus furcatus	Big carpet grass
Azolla caroliniana	Mosquito fern
Baccharis halimifolia	Groundsel tree
Bacopa caroliniana	Lemon bacopa
Bacopa monnieri	Hyssop
Bidens laevis	Burmarigold
Bidens mitis	Marsh Beggar-tick
Blechnum serrulatum	Sinkhole fern
Boehmeria cylindrica	Bog hemp
Boltonia diffusa	Doll's daisy
Brasenia schreberi	Water-shield
Buchnera americana	Blueheart
Calopogon turberosus	Grass pink
Canna flaccida	Golden canna
Carex albolutescens	Carex sedge
Carex bromoides	Sedge
Carex lupulina	Sedge
Cassytha filiformis	Love vine
Centella asiatica	Coinwort
Cephalanthus occidentalis	Buttonbush
Ceratophyllum demersum	Coontail
Chaptalia tomentosa	Pineland daisy
Chara spp.	Musk grass
Cicuta mexicana	Water hemlock
Cladium jamaicense	Sawgrass
Conoclinium coelestinum	Mist flower
Coreopsis leavenworthii	Tick weed
Cuscuta compacta	Love vine
Cynodon dactylon	Bermuda grass
Cyperus brevifolius	Sedge
Cyperus globulosus	Globe sedge
Cyperus haspan	Sedge
Cyperus lecontei	Leconte sedge
Cyperus odoratus	Flat-sedge
Cyperus polystachyos	Gallingale sedge
Cyperus retrorsus	Gallingale sedge
Cyperus surinamensis	Sedge

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Table 11 (Cont'd)

Dominant Plant Species of Freshwater Marshes
(FLUCFCS 641)

Decodon verticilatus	Swamp loosestrife
Dichondra carolinensis	False pennywort
Dichromena colorata	White-top sdege
Dichromena latifolia	White-top sedge
Diodia virginiana	Button-weed
Drosera capillaris	Pink sundew
Eclipta alba	Eclipta
Eichhornia crassipes	Floating water-hyacinth
Eleocharis baldwinii	Slender spikerush
Eleocharis cellulosa	Spike rush
Eleocharis elongata	Spider lily
Eleocharis equisetoides	Knotted spikerush
Eleocharis flavescens	Spike-rushe
Eleocharis geniculata	Spike-rushe
Eleocharis vivipara	Maidenhair sedge
Erechtites hieracifolia	Fireweed
Erianthus giganteus	Sugarcane plume grass
Erigeron quercifolius	Southern fleabane
Erigeron vernus	Fleabane
Eriocaulon compressum	Bog button
Eriocaulon decangulare	Hatpin
Eupatorium capillifolium	Dogfennel
Eupatorium mikanioides	Semaphore eupatorium
Euthamia minor	Flat-top goldenrod
Fimbristylis autumnalis	Fimbristylis
Fimbristylis puberula	Fimbristylis
Fraxiun caroliniana	Pop ash
Fuirena breviseta	Umbrellagrass
Fuirena pumila	Umbrellagrass
Fuirena scirpoidea	Umbrellagrass
Gratiola ramosa	Hedge-hyssop
Habenaria repens	Habenaria orchid
Hibiscus coccineus	Red mallow
Hibiscus grandiflorus	Swamp hibiscus
Hydrichloa carolinensis	Southern water-grass
Hydrilla verticillata	Hydrilla
Hydrocotyle umbellata	Water pennywort
Hydrolea corymbosa	Sky flower
Hymenocallis crassifolia	Swamp lily
Hypericum cistifolium	St. John's-wort
Hypericum fasiculatum	Sandbush St. John's-wort
Hypericum mutilum	Dwarf St. John's-wort
Hypericum myrtifolium	St. John's-wort
Hypericum tetrapetalum	St. John's-wort
Hypoxis leptocarpa	Yellow-star grass
Hyptis alata	Musky Mint

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Table 11 (Cont'd)

Dominant Plant Species of Freshwater Marshes
(FLUCFCS 641)

Hyptis mutablis	Bitter mint
Ilex cassine	Dahoon holly
Ilex glabra	Gallberry
Iris hexagona	Blue-flag iris
Isoetes flaccida	Florida Cypress-vine
Juncus dichotomus	Rush
Juncus effusus	Soft rush
Juncus elliotti	Rush
Juncus marginatus	Rush
Juncus megacephalus	Rush
Juncus polycephalus	Rush
Juncus repens	Rush
Juncus scirpoides	Rush
Justicia angusta	Justicia
Justicia ovata	Justicia
Lachnanthes caroliniana	Red root
Lachnocaulon anceps	Bog buttons
Lachnocaulon minor	Bog buttons
Lebelia feayana	Bay lobelia
Leersia hexandra	Southern cutgrass
Lemna spp.	Duckweed
Leptochloa fascicularis	Bearded spangletop
Lilium catesbaei	Catesby's lily
Limnobium spongia	Frog's-bit
Lippia nodiflora	Matchweed
Lobelia glandulosa	Lobelia
Ludwigia arcuata	Ludwigia
Ludwigia leptocarpa	Ludwigia
Ludwigia maritima	Ludwigia
Ludwigia microcarpa	Ludwigia
Ludwigia octovalis	Water primrose
Ludwigia repens	Red ludwigia
Ludwigia suffruticosa	
Lycopodium alopecuroides	Foxtail clubmoss
Lythrum alatum	Loosestrife
Mayaca fluviatilis	Bog moss
Micranthemum glomeratum	Baby-tears
Micranthemum umbrosum	Baby-tears
Mikania scandens	Climbing hempvine
Mitreola petiolata	Miterwort
Myrica cerifera	Wax myrtle
Nymphaea odorata	Fragrant water lily
Nymphoides aquatica	Floating heart
Nyssa sylvatica var. biflora	Blackgum
Osmunda regalis	Royal fern
Panicum anceps	Beaked panicum
Panicum dichotomiflorum	Fall panicum

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Table 11 (Cont'd)

Dominant Plant Species of Freshwater Marshes
(FLUCFCS 641)

Panicum gymnocarpon	Savannah panicum
Panicum hemitomon	Maidencane
Panicum repens	Guinea grass
Panicum rigidulum	Redtop panicum
Panicum tenerum	Bluejoint panicum
Panicum virgatum	Switch grass
Parietaria floridana	Pellitory
Paspalidium geminatum	Egyptian paspalidium
Paspalum repens	Water paspalum
Paspalum urvillei	Vaseygrass
Peltandra virginica	Arrow-arum
Pennisetum purpureum	Elephantgrass
Phragmites australis	Giant reed
Physostegia purpurea	Dragonhead
Pinguicula caerulea	Blue butterwort
Pinguicula lutea	Butterwort
Platanthera ciliaris	Yellow fringed orchid
Pluchea foetida	Fleabane
Pluchea odorata	Marsh fleabane
Pogonia ophioglossoides	Rose pogonia
Polygala nana	Batchelor's button
Polygala ramosa	Milkwort
Polygala rugelii	Yellow Batchelor's button
Polygonum densiflorum	Smartweed
Polygonum hydropiperoides	Smartweed
Polygonum punctatum	Dotted smartweed
Pontederia cordata	Pickerelweed
Proserpinaca palustris	Mermaid-weed
Proserpinaca pectinata	Mermaids weed
Psilocarya nitens	Rush
Ptilimnium capillaceum	Mock bishop's-weed
Pyrus arbutifolia	Red choleeberry
Rhexia cubensis	Meadow beauty
Rhexia mariana	Meadow beauty
Rhexia nashii	Meadow beauty
Rhynchospora cephalantha	Beak rush
Rhynchospora corniculata	Beak rush
Rhynchospora divergens	Beak rush
Rhynchospora fascicularis	Beak rush
Rhynchospora globularis	Beak rush
Rhynchospora inundata	Beak rush
Rhynchospora microcarpa	Small-fruited beakrush
Rhynchospora microcephala	Tiny-headed beakrush
Rhynchospora miliacea	Beak rush
Rhynchospora rariflora	Beak rush
Rhynchospora tracyi	Beak rush

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Table 11 (Cont'd)

Dominant Plant Species of Freshwater Marshes
(FLUCFCS 641)

Rosa palustris	Swamp rose
Rubus betulifolius	Blackberry
Sabatia brevifolia	Marsh pink
Sabatia grandiflora	Marsh pink
Sacciolepis striata	American cupscale
Sagittaria graminea	Arrowhead
Sagittaria lancifolia	Arrowhead
Sagittaria latifolia	Common arrowhead
Salix caroliniana	Coastal-plain willow
Salvinia minima	Water spangles
Sambucus canadensis	Elderberry
Saururus cernuus	Lizard's tail
Schoenus nigricans	Black sedge
Scirpus californicus	Giant bulrush
Scirpus cyperinus	Woolgrass bulrush
Scirpus validus	Soft-stem bulrush
Scleria ciliata	Nutgrass
Scleria oligantha	Nut rushes
Scleria pauciflora	Nut rushes
Senecio glabellus	Butterweed
Sesbania emerus	Bequilla
Sesbania punicea	Danglepod
Sesbania vesicaria	Bladderpod
Setaria magna	Giant foxtail
Sisyrinchium atlanticum	Blue-eyed grass
Smilax bona-nox	Greenbrier
Solidago sempervirens	Goldenrod
Solidago stricta	Goldenrod
Sonchus oleraceus	Common sow thistle
Spartina bakeri	Sand cordgrass
Spiranthes praecox	Ladies' tresses
Spiranthes. vernalis	Ladies' tresses
Spirodela polyrhiza	Giant duckweed
Stillingia aquatica	Corkwood
Taxodium ascendens	Pond cypress
Thalia geniculata	Flag
Thelypteris interrupta	Shield fern
Thelypteris palustris	Marsh fern
Triadenum virginicum	Marsh St. John's wort
Typha domingensis	Southern cattail
Typha latifolia	Common cattail
Utricularia cornuta	Horned bladderwort
Utricularia inflata	Big floating bladderwort
Utricularia purpurea	Purple bladderwort
Vernonia gigantea	Ironweed
Vicia acutifolia	Vetch
Vicia floridana	Florida vetch
Viola lanceolata	Long-leaf violet

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Table 11 (Cont'd)

Dominant Plant Species of Freshwater Marshes
(FLUCFCS 641)

Viola primulifolia	Violet
Wolffiella gladiata	Bog-mat
Woodwardia areolata	Netted chain fern
Woodwardia virginiana	Chain fern
Xyris ambigua	Yellow-eyed grass
Xyris brevifolia	Yellow-eyed grass
Xyris elliottii	Yellow-eyed grass
Xyris jupicai	Yellow-eyed grass
Xyris platylepis	Yellow-eyed grass
Xyris smalliana	Yellow-eyed grass
Zephyranthes simpsonii	Rain lilies
Zigadenus densus	Crow-poison
Zizania aquatica	Wild rice
Zizaniopsis miliacea	Southern wild rice

Sources: Bell, C. R. and Taylor, B. J., 1982. Florida Wild Flowers and Roadside Plants. Laurel Hill Press Chapel Hill, 308 pp.

Duncan, W. H. and Foote, L. E., 1975. Wildflowers of the Southeastern United States. The University of Georgia Press, Athens. 296 pp.

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Wunderlin, R. P., 1982. Guide to the Vascular Plants of Central Florida. University Presses of Florida, Tampa, 472 pp.

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Table 12

Dominant Species of Bottomland River and Lake Swamps
(FLUCFCS 615)

Acer rubrum	Red maple
Alternanthera philoxeroides	Alligator-weed
Amaranthus australis	Southern water hemp
Amaranthus floridanus	Pigweed
Amorpha fruticosa	Bastard indigo
Ampelopsis arborea	Pepper vine
Amphicarpum muhlenbergianum	Blue maidencane
Aralia spinosa	Devil's walking stick
Arisaema triphyllum	Jack-in-the-pulpit
Arundinaria gigantea	Switch cane
Asplenium platyneuron	Ebony spleenwort
Aster carolinianus	Swamp aster
Aster dumosus	Bushy Aster
Aster subulatus	Aster
Axonopus affinis	Common carpet grass
Axonopus furcatus	Big carpet grass
Azolla caroliniana	Mosquito fern
Baccharis glomeruliflora	Groundsel tree
Baccharis halimifolia	Groundsel tree
Bacopa caroliniana	Lemon bacopa
Bacopa monnieri	Hyssop
Bambusa sp.	Bamboo
Begonia semperflorens	Wax begonia
Berchemia scandens	Rattan vine
Bidens mitis	Marsh Beggar-tick
Blechnum serrulatum	Sinkhole fern
Boehmeria cylindrica	Bog hemp
Boltonia diffusa	Doll's daisy
Brachiara platyphylla	Signal Grass
Bumelia reclinata	Buckthorn
Cabomba caroliniana	Fanwort
Calopogon turberosus	Grass pink
Campsis radicans	Trumpet vine
Canna flaccida	Golden canna
Carex albolutescens	Carex sedge
Carex bromoides	Sedge
Carex lupulina	Sedge
Carpinus caroliniana	Blue beech
Carya aquatica	Water hickory
Celtis laevigata	Sugarberry
Centella asiatica	Coinwort
Cephalanthus occidentalis	Buttonbush
Ceratophyllum demersum	Coontail
Ceratopteris thalictroides	Water sprite
Chasmanthium sessiliflorum	Loneleaf chasmanthium
Chionanthus virginica	Fringe tree
Cicuta mexicana	Water hemlock

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Table 12 (Cont'd)

Dominant Species of Bottomland River and Lake Swamps
(FLUCFCS 615)

Cinnamomum camphora	Camphor tree
Citrus aurantium	Sour orange
Cladium jamaicense	Sawgrass
Clematis virginiana	Virgin's bower
Colocasia esculentum	Elephant-ear
Commelina diffusa	Climbing day flower
Conoclinium coelestinum	Mist flower
Cornus foemina	Swamp dogwood
Crinum americanum	Swamp lily
Cuscuta compacta	Love vine
Cyperus distinctus	Sedge
Cyperus globulosus	Globe sedge
Cyperus haspan	Sedge
Cyperus papyrus	Papyrus
Cyperus polystachyos	Gallingale sedge
Cyperus tetragonus	
Decodon verticilatus	Swamp loosestrife
Decumaria barbara	Wild hydrangea
Dicanthelium commutatum	Panic grass
Dichondra carolinensis	False pennywort
Dichromena colorata	White-top sdege
Dichromena latifolia	White-top sedge
Diodia virginiana	Button-weed
Diospyros virginiana	Common persimmon
Eichhornia crassipes	Floating water-hyacinth
Eleocharis baldwinii	Slender spikerush
Eleocharis elongata	Spider lily
Eleocharis equisetoides	Knotted spikerush
Eleocharis flavescens	Spike-rushe
EIeocharis geniculata	Spike-rushe
Eleocharis vivipara	Maidenhair sedge
Encyclia tampensis	Butterfly orchid
Epidendrum conopseum	Green-fly orchid
Erechtites hieracifolia	Fireweed
Erianthus giganteus	Sugarcane plume grass
Eriocaulon compressum	Bog button
Eriocaulon decangulare	Hatpin
Eupatorium capillifolium	Dogfennel
Fimbristylis autumnalis	Fimbristylis
Fimbristylis puberula	Fimbristylis
Fraxinus pennsylvanica	Green ash
Fraxiun caroliniana	Pop ash
Fuirena breviseta	Umbrellagrass
Fuirena pumila	Umbrellagrass
Fuirena scirpoidea	Umbrellagrass
Gelsemium sempervirens	Yellow jessamine

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Table 12 (Cont'd)

Dominant Species of Bottomland River and Lake Swamps
(FLUCFCS 615)

Gordonia lasianthus	Loblolly bay
Habenaria odontopetala	Habenaria orchid
Habenaria repens	Habenaria orchid
Hibiscus coccineus	Red mallow
Hibiscus grandiflorus	Swamp hibiscus
Hydrichloa carolinensis	Southern water-grass
Hydrilla verticillata	Hydrilla
Hydrocotyle umbellata	Water pennywort
Hydrolea corymbosa	Sky flower
Hymenocallis crassifolia	Swamp lily
Hypericum cistifolium	St. John's-wort
Hypericum mutilum	Dwarf St. John's-wort
Hypericum myrtifolium	St. John's-wort
Hypericum reductum	St. John's-wort
Hypericum tetrapetalum	St. John's-wort
Hypoxis leptocarpa	Yellow-star grass
Hyptis mutablis	Bitter mint
Ilex cassine	Dahoon holly
Ilex coriacea	Large gallberry
Ilex glabra	Gallberry
Ilex vomitoria	Yaupon
Iris hexagona	Blue-flag iris
Itea virginica	Sweetspires
Juncus dichotomus	Rush
Juncus effusus	Soft rush
Juncus elliotti	Rush
Juncus megacephalus	Rush
Juncus polycephalus	Rush
Juncus repens	Rush
Juncus scirpoides	Rush
Juniperus silicicola	Southern red cedar
Lachnanthes caroliniana	Red root
Lachnocaulon anceps	Bog buttons
Leersia hexandra	Southern cutgrass
Lemna spp.	Duckweed
Leptochloa fascicularis	Bearded spangletop
Limnobium spongia	Frog's-bit
Liquidambar styraciflua	Sweetgum
Lobelia cardinalis	Cardinal flower
Lobelia glandulosa	Lobelia
Ludwigia arcuata	Ludwigia
Ludwigia leptocarpa	Ludwigia
Ludwigia microcarpa	Ludwigia
Ludwigia octovalis	Water primrose
Ludwigia repens	Red ludwigia
Lycopus rubellus	Water hoarhound

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Table 12 (Cont'd)

Dominant Species of Bottomland River and Lake Swamps
(FLUCFCS 615)

Lygodium japonicum	Japanese climbing fern
Magnolia virginiana	Sweetbay
Mayaca fluviatilis	Bog moss
Micranthemum glomeratum	Baby-tears
Micranthemum umbrosum	Baby-tears
Mikania scandens	Climbing hempvine
Mimosa strigillosa	Mimosa
Mitchella repens	Partridge berry
Morus rubra	Red mulberry
Myrica cerifera	Wax myrtle
Myriophyllum aquaticum	Parrot's-feather
Myriophyllum heterophyllum	Variable-leaf milfoil
Najas guadalupensis	Southern naiad
Nasturtium officinale	Watercress
Nephrolepis exaltata	Boston fern
Nuphar luteum	Spatterdock
Nymphaea odorata	Fragrant water lily
Nymphoides aquatica	Floating heart
Nyssa sylvatica var. biflora	Blackgum
Oplismenus setarius	Woods grass
Orontium aquaticum	Golden-club
Osmanthus americana	Wild olive
Osmunda cinnamomea	Cinnamon fern
Osmunda regalis	Royal fern
Ostrya virginiana	Hophornbeam
Panicum anceps	Beaked panicum
Panicum gymnocarpon	Savannah panicum
Panicum hemitomon	Maidencane
Panicum repens	Guinea grass
Panicum rigidulum	Redtop panicum
Panicum virgatum	Switch grass
Parietaria floridana	Pellitory
Parthenocissus quinquefolia	Virginia creeper
Paspalidium geminatum	Egyptian paspalidium
Paspalum repens	Water paspalum
Peltandra virginica	Arrow-arum
Persea borbonia	Red bay
Phlebodium aureum	Golden Polypody
Phoradendraon serotinum	Mistletoe
Phragmites australis	Giant reed
Physostegia purpurea	Dragonhead
Pistia stratiotes	Water-lettuce
Platanthera flava	Gypsy-spikes
Pluchea odorata	Marsh fleabane
Polygonum densiflorum	Smartweed
Polygonum hydropiperoides	Smartweed
Polygonum punctatum	Dotted smartweed

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Table 12 (Cont'd)

Dominant Species of Bottomland River and Lake Swamps
(FLUCFCS 615)

Polypodium plumula	Resurrection fern
Polypodium polypodioides	Resurrection fern
Pontederia cordata	Pickerelweed
Potamogeton illinoensis	Pondweed
Proserpinaca palustris	Mermaid-weed
Proserpinaca pectinata	Mermaids weed
Psychotria nervosa	Wild coffee
Ptilimnium capillaceum	Mock bishop's-weed
Pyrus arbutifolia	Red choleeberry
Quercus laurifolia	Diamond-leaf oak
Quercus nigra	Water oak
Quercus virginiana	Live oak
Rhapidophyllum hystrix	Needle palm
Rhexia nashii	Meadow beauty
Rhus copallina	Winged sumac
Rhynchospora cephalantha	Beak rush
Rhynchospora corniculata	Beak rush
Rhynchospora fascicularis	Beak rush
Rhynchospora inundata	Beak rush
Rhynchospora miliacea	Beak rush
Rhynchospora tracyi	Beak rush
Rosa palustris	Swamp rose
Rubus betulifolius	Blackberry
Rubus trivialis	Southern dewberry
Ruellia brittoniana	Ruellia
Ruellia carolinensis	Wild petunia
Rumex verticillatus	Swamp dock
Sabal minor	Dwarf cabbage palm
Sabal palmetto	Cabbage palm
Sabatia calycina	Marsh pink
Sacciolepis striata	American cupscale
Sagittaria graminea	Arrowhead
Sagittaria lancifolia	Arrowhead
Sagittaria latifolia	Common arrowhead
Sagittaria subulata	Dwarf arrowhead
Salix caroliniana	Coastal-plain willow
Salvinia minima	Water spangles
Sambucus canadensis	Elderberry
Samolus valerandi	Pineland pimpernel
Saururus cernuus	Lizard's tail
Scirpus californicus	Giant bulrush
Scirpus validus	Soft-stem bulrush
Scleria oligantha	Nut rushes
Senecio glabellus	Butterweed
Serenoa repens	Saw palmetto
Sesbania punicea	Danglepod
Setaria magna	Giant foxtail
Smilax bona-nox	Greenbrier
Smilax laurifolia	Bamboo brier

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Table 12 (Cont'd)

Dominant Species of Bottomland River and Lake Swamps
(FLUCFCS 615)

Solanum capsicoides	Soda-apple
Solidago gigantea	Goldenrod
Spartina bakeri	Sand cordgrass
Spermacoce assurgens	Spermacoce
Spiranthes odorata	Fragrant ladies' tresses
Spiranthes. vernalis	Ladies' tresses
Spirodela polyrhiza	Giant duckweed
Taxodium ascendens	Pond cypress
Taxodium distichum	Bald cypress
Teucrium canadense	Wood sage
Thalia geniculata	Flag
Thelypteris dentata	Downy shield fern
Thelypteris interrupta	Shield fern
Thelypteris kunthii	Wood fern
Thelypteris palustris	Marsh fern
Tilia caroliniana	Carolina basswood
Tillandsia setacea	Air plant
Tillandsia usneoides	Spanish moss
Tillandsia utriculata	Wild pine
Toxicodendron radicans	Poison ivy
Triadenum virginicum	Marsh St. John's wort
Tripsacum dactyloides	Eastern gammagrass
Typha domingensis	Southern cattail
Typha latifolia	Common cattail
Ulmus americana	Elm
Urena lobata	Caesar weed
Utricularia foliosa	Bladderwort
Utricularia purpurea	Purple bladderwort
Vaccinium corymbosum	Highbush blueberry
Vallisneria americiana	Tapegrass or eel-grass
Vernonia gigantea	Ironweed
Viburnum obovatum	Black-haw
Vicia acutifolia	Vetch
Vicia floridana	Florida vetch
Viola affinis	Violet
Viola lanceolata	Long-leaf violet
Viola primulifolia	Violet
Vitis munsoniana	Muscadine grape
Vittaria lineata	Shoestring fern
Wolffiella gladiata	Bog-mat
Woodwardia areolata	Netted chain fern
Woodwardia virginiana	Chain fern
Xyris smalliana	Yellow-eyed grass
Zizania aquatica	Wild rice
Zizaniopsis miliacea	Southern wild rice

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Table 12 (Cont'd)

Dominant Species of Bottomland River and Lake Swamps
(FLUCFCS 615)

Sources: Bell, C. R. and Taylor, B. J., 1982. Florida Wild Flowers and Roadside Plants. Laurel Hill Press Chapel Hill, 308 pp.

Duncan, W. H. and Foote, L. E., 1975. Wildflowers of the Southeastern United States. The University of Georgia Press, Athens. 296 pp.

Godfrey, R. K. and Wooten, J. W., 1979. Aquatic and Wetland Plants of the Southeastern United States. The University of Georgia Press, Athens (2 volumes).

Hall, D. W., 1978. The Grasses of Florida. University Microfilms International, Ann Arbor. 498 pp.

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Wunderlin, R. P., 1982. Guide to the Vascular Plants of Central Florida. University Presses of Florida, Tampa, 472 pp.

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Table 13

Dominant Species of Cypress Association
(FLUCFCS 621)

Alternanthera philoxeroides	Alligator-weed
Amaranthus australis	Southern water hemp
Amaranthus floridanus	Pigweed
Ampelopsis arborea	Pepper vine
Andropogon virginicus var. glaucus	Chalky bluestem
Aster carolinianus	Swamp aster
Azolla caroliniana	Mosquito fern
Baccharis glomeruliflora	Groundsel tree
Baccharis halimifolia	Groundsel tree
Bacopa caroliniana	Lemon bacopa
Bacopa monnieri	Hyssop
Berchemia scandens	Rattan vine
Bidens laevis	Burmarigold
Bidens mitis	Marsh Beggar-tick
Blechnum serrulatum	Sinkhole fern
Boehmeria cylindrica	Bog hemp
Brasenia schreberi	Water-shield
Canna flaccida	Golden canna
Centella asiatica	Coinwort
Cephalanthus occidentalis	Buttonbush
Ceratophyllum demersum	Coontail
Chasmanthium sessiliflorum	Loneleaf chasmanthium
Cicuta mexicana	Water hemlock
Cladium jamaicense	Sawgrass
Coreopsis leavenworthii	Tick weed
Cornus foemina	Swamp dogwood
Cyperus haspan	Sedge
Cyperus polystachyos	Gallingale sedge
Decodon verticilatus	Swamp loosestrife
Decumaria barbara	Wild hydrangea
Dichromena colorata	White-top sdege
Dichromena latifolia	White-top sedge
Diodia virginiana	Button-weed
Drosera capillaris	Pink sundew
Eichhornia crassipes	Floating water-hyacinth
Eleocharis baldwinii	Slender spikerush
Eleocharis elongata	Spider lily
Eleocharis equisetoides	Knotted spikerush
Eleocharis flavescens	Spike-rushe
Eleocharis geniculata	Spike-rushe
Eleocharis vivipara	Maidenhair sedge
Encyclia tampensis	Butterfly orchid
Epidendrum conopseum	Green-fly orchid
Erianthus giganteus	Sugarcane plume grass
Eriocaulon compressum	Bog button
Eriocaulon decangulare	Hatpin

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Table 13 (Cont'd)

Dominant Species of Cypress Association
(FLUCFCS 621)

Fimbristylis autumnalis	Fimbristylis
Fimbristylis puberula	Fimbristylis
Fraxinus pennsylvanica	Green ash
Fraxiun caroliniana	Pop ash
Fuirena breviseta	Umbrellagrass
Fuirena pumila	Umbrellagrass
Fuirena scirpoidea	Umbrellagrass
Gordonia lasianthus	Loblolly bay
Habenaria odontopetala	Habenaria orchid
Habenaria repens	Habenaria orchid
Hibiscus coccineus	Red mallow
Hydrichloa carolinensis	Southern water-grass
Hydrilla verticillata	Hydrilla
Hydrocotyle umbellata	Water pennywort
Hydrolea corymbosa	Sky flower
Hypericum fasiculatum	Sandbush St. John's-wort
Hypericum mutilum	Dwarf St. John's-wort
Hypericum myrtifolium	St. John's-wort
Hypericum tetrapetalum	St. John's-wort
Hypoxis leptocarpa	Yellow-star grass
Ilex cassine	Dahoon holly
Ilex coriacea	Large gallberry
Ilex glabra	Gallberry
Iris hexagona	Blue-flag iris
Itea virginica	Sweetspires
Juncus dichotomus	Rush
Juncus effusus	Soft rush
Juncus elliotti	Rush
Juncus megacephalus	Rush
Juncus polycephalus	Rush
Juncus repens	Rush
Juncus scirpoides	Rush
Lachnanthes caroliniana	Red root
Lachnocaulon anceps	Bog buttons
Lachnocaulon minor	Bog buttons
Leersia hexandra	Southern cutgrass
Lemna spp.	Duckweed
Leptochloa fascicularis	Bearded spangletop
Limnobium spongia	Frog's-bit
Lobelia glandulosa	Lobelia
Ludwigia arcuata	Ludwigia
Ludwigia leptocarpa	Ludwigia
Ludwigia microcarpa	Ludwigia
Ludwigia octovalis	Water primrose
Ludwigia repens	Red ludwigia
Ludwigia suffruticosa	
Lycopodium alopecuroides	Foxtail clubmoss

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Table 13 (Cont'd)

Dominant Species of Cypress Association
(FLUCFCS 621)

Lycopus rubellus	Water hoarhound
Lyonia lucida	Fetterbush
Magnolia virginiana	Sweetbay
Micranthemum glomeratum	Baby-tears
Micranthemum umbrosum	Baby-tears
Mikania scandens	Climbing hempvine
Myrica cerifera	Wax myrtle
Myriophyllum aquaticum	Parrot's-feather
Myriophyllum heterophyllum	Variable-leaf milfoil
Nephrolepis exaltata	Boston fern
Nymphaea odorata	Fragrant water lily
Nymphoides aquatica	Floating heart
Nyssa sylvatica var. biflora	Blackgum
Osmunda cinnamomea	Cinnamon fern
Osmunda regalis	Royal fern
Panicum anceps	Beaked panicum
Panicum gymnocarpon	Savannah panicum
Panicum hemitomon	Maidencane
Panicum repens	Guinea grass
Panicum rigidulum	Redtop panicum
Panicum virgatum	Switch grass
Parietaria floridana	Pellitory
Paspalidium geminatum	Egyptian paspalidium
Paspalum repens	Water paspalum
Peltandra virginica	Arrow-arum
Persea borbonia	Red bay
Physostegia purpurea	Dragonhead
Platanthera flava	Gypsy-spikes
Pluchea odorata	Marsh fleabane
Polygonum densiflorum	Smartweed
Polygonum hirsutum	Hairy smartweed
Polygonum hydropiperoides	Smartweed
Polygonum punctatum	Dotted smartweed
Pontederia cordata	Pickerelweed
Proserpinaca palustris	Mermaid-weed
Proserpinaca pectinata	Mermaids weed
Psilocarya nitens	Rush
Ptilimnium capillaceum	Mock bishop's-weed
Pyrus arbutifolia	Red choleeberry
Quercus laurifolia	Diamond-leaf oak
Quercus nigra	Water oak
Rhexia nashii	Meadow beauty
Rhynchospora cephalantha	Beak rush
Rhynchospora corniculata	Beak rush
Rhynchospora divergens	Beak rush
Rhynchospora fascicularis	Beak rush
Rhynchospora globularis	Beak rush
Rhynchospora inundata	Beak rush

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Table 13 (Cont'd)

Dominant Species of Cypress Association
(FLUCFCS 621)

Rhynchospora microcarpa	Small-fruited beakrush
Rhynchospora microcephala	Tiny-headed beakrush
Rhynchospora miliacea	Beak rush
Rhynchospora rariflora	Beak rush
Rhynchospora tracyi	Beak rush
Rosa palustris	Swamp rose
Rubus betulifolius	Blackberry
Rubus trivialis	Southern dewberry
Sacciolepis striata	American cupscale
Sagittaria graminea	Arrowhead
Sagittaria lancifolia	Arrowhead
Sagittaria latifolia	Common arrowhead
Salix caroliniana	Coastal-plain willow
Salvinia minima	Water spangles
Sambucus canadensis	Elderberry
Saururus cernuus	Lizard's tail
Scirpus cyperinus	Woolgrass bulrush
Scirpus validus	Soft-stem bulrush
Scleria oligantha	Nut rushes
Scleria pauciflora	Nut rushes
Setaria magna	Giant foxtail
Smilax bona-nox	Greenbrier
Smilax laurifolia	Bamboo brier
Spartina bakeri	Sand cordgrass
Spiranthes odorata	Fragrant ladies' tresses
Spiranthes. vernalis	Ladies' tresses
Spirodela polyrhiza	Giant duckweed
Taxodium ascendens	Pond cypress
Taxodium distichum	Bald cypress
Thalia geniculata	Flag
Thelypteris interrupta	Shield fern
Thelypteris kunthii	Wood fern
Thelypteris palustris	Marsh fern
Tillandsia setacea	Air plant
Tillandsia usneoides	Spanish moss
Tillandsia utriculata	Wild pine
Toxicodendron radicans	Poison ivy
Triadenum virginicum	Marsh St. John's wort
Typha domingensis	Southern cattail
Typha latifolia	Common cattail
Utricularia cornuta	Horned bladderwort
Utricularia foliosa	Bladderwort
Utricularia inflata	Big floating bladderwort
Utricularia purpurea	Purple bladderwort

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Table 13 (Cont'd)

Dominant Species of Cypress Association
(FLUCFCS 621)

Vaccinium corymbosum	Highbush blueberry
Vicia acutifolia	Vetch
Vicia floridana	Florida vetch
Vitis munsoniana	Muscadine grape
Wolffiella gladiata	Bog-mat
Woodwardia areolata	Netted chain fern
Woodwardia virginiana	Chain fern
Xyris ambigua	Yellow-eyed grass
Xyris jupicai	Yellow-eyed grass
Xyris smalliana	Yellow-eyed grass

Sources: Bell, C. R. and Taylor, B. J., 1982. Florida Wild Flowers and Roadside Plants. Laurel Hill Press Chapel Hill, 308 pp.

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Wunderlin, R. P., 1982. Guide to the Vascular Plants of Central Florida. University Presses of Florida, Tampa, 472 pp.

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Table 14

Representative Fish Species Known to Occur In Dunnellon

Amia calva	Bowfin
Anquilla rostrata	American eel
Aphredoderus sayanus	Pirate perch
Dorosoma cepedianum	Gizzard shad
Dorosoma pretense	Threadfin shad
Elassoma evergladei	Everglades pygmy sunfish
Enneacanthus gloriosus	Bluespotted sunfish
Erimyzon sucetta	Lake chubsucker
Esox niger	Chain pickerel
Esox americanus americanus	Redfin pickerel
Etheostoma fusiforme	Swamp darter
Fundulus seminolis	Seminole killifish
Fundulus chrysotus	Golden topminnow
Gambusia affinis	Mosquitofish,
Heterandria fromosa	Least killifish
Ictalurus natalis	Yellow bullhead
Ictalurus nebulosus	Brown bullhead
Ictalurus punctatus	Channel catfish
Ictalurus catus	White catfish
Jordanella floridae	Flagfish
Labidesthes sicculus	Brook silverside
Lepisosteus platyrhincus	Florida gar
Lepisosteus osseus	Longnose gar
Lepomis marginatus	Dollar sunfish
Lepomis punctatus	Spotted Sunfish
Lepomis microlophus	Readear Sunfish
Lepomis macrochirus	Bluegill
Lepomis (Chaenobryttus) gluosus	Warmouth
Lepomis auritus	Redbreast sunfish
Lucania parva	Rainwater killifish
Lucania goodei	Bluefin killifish
Menidia beryllina	Tidewater silversides
Micropterus salmoides	Largemouth bass
Mugil cephalus	Striped mullet
Notemigonus crysoleucas	Golden shiner
Notropis maculatus	Tailight shiner
Notropis hypselopterus	Sailfin shiner
Notropis petersoni	Coastal shiner
Noturus gyrinus	Tadpole madtom
Poecilia latipinna	Sailfin Molly
Pomoxis nigromaculatus	Black crappie
Strongylurus marian	Atlantic needlefish
Trinectes maculatus	Hogchoker

Source: Pritchard, P. C. H., editor, 1978. Rare and Endangered Biota of Florida and Fishes, Volume 4. Florida Committee on Rare and Endangered Plants and Animals, University Presses of Florida, Gainesville.

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Table 15

Representative Species of Mammals
Known to Occur in Dunnellon

Blarina carolinensis	Short-tail Shrew
Blarina brevicauda	Northern short-tailed shrew
Cryptotis parva	Least shrew
Dasypus novemcinctus	Nine-banded armadillo
Dasypus novemcinctus	Armadillo
Didelphis marsupialis	Opossum
Felis rufus floridanus	Florida Bobcat
Geomys pinetis	Southeastern pocket gopher
Glaucomys volans	Southern flying squirrel
Lasiurus seminolus	Seminole bat
Lasiurus borealis	Red bat
Lasiurus cinereus	Hoary bat
Lasiurus intermedius	Northern yellow bat
Lutra canadensis	River otter
Lynx rufus floridanus	Florida bobcat
Mephitis mephitis	Striped skunk
Mus musculus	House mouse
Neotoma floridana	Eastern woodrat
Nycticeius humeralis	Evening bat
Ochrotomys nuttalli	Golden mouse
Odocoileus virginianus	Whitetail deer
Oryzomys palustris	Marsh rice rat
Peromyscus floridanus	Florida mouse
Peromyscus gossypinus	Cotton mouse
Peromyscus polionotus	Oldfield mouse
Pipisterellus subflavus	Eastern pipistrelle
Pitymys pinetorum	Pine vole
Plecotus rafinesquii	Eastern big-eared bat
Procyon lotor	Raccoon
Rattus norvegicus	Norway rat
Rattus rattus	Black rat
Reithrodontomys humulis	Eastern harvest mouse
Scalopus aquaticus	Eastern mole
Sciurus niger	Eastern fox squirrel
Sciurus niger shermani	Sherman's fox squirrel
Sciurus carolinensis	Gray squirrel
Sigmodon hispidus	Hispid cotton rat
Sorex l. longirostris	Southeastern shrew
Spilogale putorius	Eastern spotted skunk
Sus scrofa x S. vittatus	Feral hog
Sylvilagus palustris	Marsh rabbit
Sylvilagus floridanus	Eastern cottontail rabbit
Tadarida brasiliensis	Brazilian free-tailed bat
Urocyon cinereoargenteus	Gray fox
Vulpes fulva	Red fox

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Table 15 (Cont'd)

Representative Species of Mammals
Known to Occur in Dunnellon

Source: Burt, W.H. and Grossenheider, R.P. 1952. A Field Guide to the Houghton Mifflin Co., Boston. 200 pp.

Layne, J.N. 1978. Mammals. Rare and Endangered Biota of Florida, Volume 1. Univ. Presses of Florida, Gainesville. 52 pp.

Whitaker, J. O., Jr. 1980. The Audubon Society Field Guide to North American Mammals. Chanticleer Press, Inc., New York.

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Table 16

Representative Species of Reptiles and Amphibians
Known to Occur in Dunnellon

Acris gryllus dorsalis	Florida cricket frog
Agkistrodon p. piscivorus	Eastern cottonmouth
Alligator mississippiensis	American alligator
Anolis carolinensis	Green anole
Bufo quercicus	Oak toad
Bufo terrestris	Southern toad
Cemophora coccinea	Scarlet snake
Chrysemys concinna suwanniensis	Suwannee cooter
Chrysemys f. floridana	Florida cooter
Chrysemys nelsoni	Fla. red-bellied turtle
Cnemidophorus sexlineatus	Six-lined racerunner
Coluber constrictor priapus	Southern black racer
Crotalus adamanteus	Eastern diamondback rattlesnake
Deirochelys reticularia chrysea	Florida chicken turtle
Diadophis p. punctatus	Ringneck snake
Drymarchon corais couperi	Eastern indigo snake
Elaphe obsoleta	Yellow rat snake
Elaphe guttata	Corn snake
Eleutherodactylus planirostris	Greenhouse frog
Eumeces egregius	Mole skink
Eumeces laticeps	Broad-headed skink
Eumeces inexpectatus	Southeastern five-lined skink
Gopherus polyphemus	Florida gopher tortoise
Heterodon simus	Southern hognose snake
Heterodon platyrhinos	Eastern hognose snake
Hyla cinerea	Green treefrog
Hyla squirella	Squirrel treefrog
Hyla femoralis	Pine woods treefrog
Hyla cinerea	Green treefrog
Kinosternon subrubrum steindachneri	Florida mud turtle
Lampropeltis triangulum	Scarlet king snake
Lampropeltis getulus	Florida king snake
Leiolopisma laterale	Ground skink
Limnaoedus ocularis	Little grass frog
Masticophis flagellum	Eastern coachwhip
Micrurus fulvius	Eastern coral snake
Ophisaurus ventralis	Eastern glass lizard
Pituophis melanoleucus	Florida pine snake
Pseudacris nigrita	Southern chorus frog
Rana areolata	Gopher frog
Rana catesbeiana	Bullfrog
Rana areolata	Florida gopher frog
Rana utricularia	Southern Leopard Frog

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Table 16 (Cont'd)

Representative Species of Reptiles and Amphibians
Known to Occur in Dunnellon

Rana grylio	Pig frog
Rhineura floridana	Worm lizard
Scaphiopus holbrooki	Eastern spadefoot
Sceloporus undulatus	Southern fence lizard
Scincella lateralis	Ground skink
Sistrurus miliarius barbouri	Dusky pygmy rattlesnake
Sternotherus odoratus	Stinkpot
Stilosoma extenuatum	Short-tailed snake
Storeria dekayi victa	Florida brown snake
Tantilla relicta	Florida crowned snake
Terrapene carolina bauri	Eastern box turtle
Thamnophis sirtalis	Eastern garter snake
Thamnophis sauritus sackeni	Peninsula ribbon snake
Trionyx ferox	Florida softshell turtle

Source: Auffenburg, W. and Franz, R. 1982. "The Status and Distribution of the Gopher Tortoise: in North American Tortoises: Conservation and Ecology. U.S. Dept. of Interior, U.S. Fish and Sildlife Serv., Washington, D.C. Wildlife Res. Rpt. No. 12.

Conant, R. 1958. A Field Guide to Reptiles and Amphibians of the United States and Canada East of the 100th Meridian. Houghton Mifflin Co., Boston. 366 pp.

Behler, L., and King, F., 1979. The Audubon Society Field Guide to North American Reptiles and Amphibians, Chanticleer Press, Inc., New York.

McDiarmid, R.W. 1978. Amphibians and Reptiles. Rare and Endanger Biota of Florida, Volume 3. Univ. Presses of Florida, Gainesville. 74 pp.

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Table 17

Representative Bird Species
Known to Occur in Dunnellon

Actitus macularia	Spotted Sandpiper
Aix sponsa	Wood Duck
Anas acuta	Northen Pintail
Anas americana	American Wigeon
Anas clypeata	Northen Shover
Anas crecca	Green-winged Teal
Anas discors	Blue-winged Teal
Anas fulriqula	Mottled Duck
Aythya affinis	Lesser Scaup
Botaurus lentiginosus	American Bittern
Cistothorus palustris	Marsh Wren
Haliaeetus leucocephalus	Bald Eagle
Ixobrychus exilis	Least Bittern
Molothrus ater	Brown-headed Cowbird
Nycticorax nycticorax	Black-crowned Night-Heron
Oxyura jamaicensis	Ruddy Duck
Podolymbus podiceps	Pied-billed Grebe
Protonotaria citrea	Prothonotary Warbler
Rallus elegans	King Rail
Scolopax minor	American Woodcock
Seiurus motacilla	Louisiana Waterthrush
Tringa melanoleuca	Greater Yellowlegs
Troglodytes aedon	House Wren
Wilsonia critrina	Hooded Warbler

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2. Wildlife Species

The variety of upland, wetland and transitional ecological communities in Dunnellon provide habitat for a multitude of wildlife species. Based upon existing literature and field observation, 45 species of mammals, 57 species of reptiles and amphibians, 43 species of fish and 24 species of birds are representative of the Dunnellon area.

Several species of plants and animals have been designated by state and federal agencies as endangered, threatened or of special concern status. A summary of wildlife species protected by the Florida Game and Fresh Water Fish Commission and US Fish and Wildlife Service, and species occurrence in Dunnellon are provided in Table 18.

The Florida Department of Agriculture and Consumer Services, and US Fish and Wildlife Service currently designate certain plant species as endangered, threatened or special concern status. Those species which are known to occur or have the potential to occur in Dunnellon are listed in Table 19.

The Dunnellon area is blessed with numerous large live oak and other tree species which provide shade as well as contribute to the City's historic atmosphere. In order to protect the benefits or large shade trees, as well as provide food and shelter for birds and other wildlife, it is recommended the

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TABLE 18

THREATENED AND ENDANGERED WILDLIFE SPECIES
FLORIDA TURNPIKE EXTENSION STUDY AREA

Species	Status GFC/FWS	Study Area Occurrence
MAMMALS		
Florida panther		
Felis concolor coryi	E/E	Unlikely
Florida black bear		
Ursus americanus floridanus	T/UR2	Unlikely
Florida mouse		
Peromyscus floridanus	SSC/UR2	Possible
Sherman's fox squirrel		
Sciurus niger shermani	SSC/UR2	Known
Florida long-tailed weasel		
Mustela frenata peninsulae	-/UR2	Possible
Southeastern big-ear bat		
Plecotus rafinesquii	-/UR2	Possible
Round-tailed muskrat		
Neofiber alleni	-/UR2	Possible
West Indian manatee		
Trichechus manatus latirostris	E/E	Known
RDS		
Wood Stork		
Mycteria americana	E/E	Known
Red-cockaded Woodpecker		
Picoides borealis	T/E	Unlikely
Bald Eagle		
Haliaeetus leucocephalus	T/E	Known
Southeastern Kestrel		
Falco sparverius paulus	T/UR2	Probable
Florida Scrub Jay		
Aphelocoma c. coerulescens	T/T	Unlikely
Florida Sandhill Crane		
Grus canadensis pratensis	T/-	Known
Burrowing Owl		
Athene cunicularia	SSC/-	Unlikely
Limpkin		
Aramus guarauna	SSC/-	Known
Little Blue Heron		
Egretta caerulea	SSC/-	Known
Snowy Egret		
Egretta thula	SSC/-	Known
Tricolored Heron		
Egretta tricolor	SSC/-	Known
allow-tailed Kite		
Elanoides foricatus	-/UR2	Known

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TABLE 18 (CONT'D)

THREATENED AND ENDANGERED WILDLIFE SPECIES
FLORIDA TURNPIKE EXTENSION STUDY AREA

Species	Status GFC/FWS	Study Area Occurrence
REPTILES AND AMPHIBIANS		
American alligator *Alligator mississippiensis*	SSC/T(S/A)	Known
Suwanee cooter *Chrysemys concinna suwanniensis*	SSC/UR5	Known
Eastern indigo snake *Drymarchon corais couperi*	T/T	Possible
Gopher tortoise *Gopherus polyphemus*	SSC/UR2	Known
Florida pine snake *Pituophis melanoleucus mugitus*	SSC/UR2	Possible
Gopher frog *Rana areolata*	SSC/UR2	Probable
Florida scrub lizard *Sceloporus woodi*	-/UR2	Possible
Short-tailed snake *Stilosoma extenuatum*	T/UR2	Probable
FISHES		
None		

E = Endangered, T = Threatened, and SSC = Species of Special Concern
UR2 = Under review for federal listing, but substantial evidence of biological vulnerability and/or threat is lacking.
UR5 = Still formally under federal review for listing, but no longer considered for listing because recent information indicates species is more widespread or abundant than previously believed.
T(S/A) = Threatened due to similarity of appearance.
GFC = Florida Game and Fresh Water Fish Commission.
FWS = U.S. Fish and Wildlife Service under the U.S. Department of Interior

Sources: 1. Prichard, P.C.H., editor, 1978. Rare and Endangered Biota of Florida. Mammals - Volume 1; Birds - Volume 2; Amphibians and Reptiles - Volume 3; Fishes - Volume 4
Florida Committee on Rare and Endangered Plants and Animals, University Presses of Florida, Gainesville.
2. Personal conversation with Florida Game and Fresh Water Fish Commission (FGFWFC) biologist (e.g., D.A. Wood, T. O'Meara, S.A. Nesbitt; P.E. Moler, C. Beldon, S. Cerulean, J. Rogers, J. Diemer, J. Cox, J. Hovis and B. Sermons).
3. Field observations within the study area by Henigar & Ray ecologists.
4. Interviews with other knowledgeable field biologists (e.g., Wilson Baker).

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TABLE 19

ENDANGERED AND THREATENED PLANT SPECIES
WITH POSSIBLE OCCURRENCE IN DUNNELLON

Scientific Binominal	Common Name	Status FDA/USFWS
Adiantum capillus-veneris	Venus's-hair fern	E/-
Agrimonia incisa	Harvest lice	-/UR2
Asclepias curtissii	Curtiss milkweed	T/-
Bonamia grandiflora	Large-flowered bonamia	E/UR1
Cacalia diversifolia	Indian plantain	T/UR2
Calamintha ashei	Lavender basil	T/UR1
Carex chapmanii	Chapman's sedge	UR2
Clematis catesbyana (micrantha)	Virgin's bower	-/UR4
Ctenium floridanum	Florida orange-grass	-/UR5
Dicerandra cornutissima	Long-spurred mint	E/E
Drosera intermedia	Water sundew	T/-
Eriogonum floridanum	Scrub buckwheat	T/-
Lechea cernua	Nodding pinweed	-/UR2
Lythrum curtissii	Curtiss' lythrum	-/UR2
Matelea floridana	Florida milkvine	E/UR2
Nolina atopocarpa	Florida beargrass	E/UR2
Ophioglossum palmatum	Hand adder's tongue fern	E/UR5
Paronychia chartacea	Paper-like nailwort	-/T
Persea borbonia var. humilis	Dwarf redbay	-/UR4
Phyllanthus liebmannianus	Pinewood dainties	T/UR5
Physostegia leptophylla	False dragonhead	-/UR2
Platanthera integra	Orange rain orchid	T/UR5
Platanthera flava	Gypsy-spikes orchid	T/UR5
Polygala lewtonii	Scrub milkwort	E/UR1
Rhapidophyllum hystrix	Needle palm	C/UR5
Rhynchosia cinerea	Brown-haired snoutbean	-/UR2
Sageretia minutiflora	Tiny-leaved buckthorn	-/UR5
Salix floridana	Florida willow	T/UR5
Spigelia loganioides	Levy pinkroot	E/UR5
Warea amplexifolia	Clasping warea	E/UR2
Zephyranthes simpsonii	Zephyr lily	E/UR5
Zama integrifolia	Florida coontie	C/UR5

Sources:

1. A Report on Some Rare, Threatened or Endangered Forest-Related Vascular Plants of the South, (Volumes 1 and 2), USDA Forest Service, Technical Publication R8-TP2, March 1983.

2. Pritchard, P.C.H., editor 1978, Rare and Endangered Biota of Florida - Plants (Volume 5), Florida Committee on Rare and Endangered Plants and Animals, University Presses of Florida, Gainesville.

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City prohibit cutting or clearing of such canopy trees in residential neighborhoods and the Historic District, except for situations in which clearing is necessary to protect right-of-way view, or to prevent hardship in construction. The City has adopted a tree protection ordinance to meet these needs. It is also recommended the City incorporate landscaping requirements into the land development regulations. All new industrial and commercial uses should be required to use appropriate landscaping buffers. In addition, the City should develop a site plan review process for new residential subdivisions, commercial and industrial development. This site plan review would require a developer to indicate the location of all trees on-site. No trees would be allowed to be cut or removed unless necessary for placement of buildings and driveways.

E. Potable Water Needs, Sources, Protection and Conservation Measures

1. Existing and projected uses of potable water:

The City of Dunnellon's potable water system provides its residential, commercial and industrial users with water. The City's wells obtain water from the Floridan aquifer. Discussion of the City's wells, as well as the groundwater supply, projections for potable water needs and methodology,

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are provided in the Infrastructure Element. The quality of this water meets DER standards for potable water. The projections for potable water by all users during the planning timeframe are provided in Table 20. The projections assume a level of service per capita of 125 gallons per day, and assume 10 percent line loss. The data indicate a demand of 420,200 gallons per day in the year 2001, 453,475 gallons per day in 2006, and 495,550 gallons per day in 2010.

2. Existing and projected industrial uses of water:

According to historical data for potable water in Dunnellon, industrial users were supplied a total of approximately 2.349 million gallons for the period from January through December 1988. The source of this water is the City's potable water system, as stated above. Therefore, the quality of this water is the same as for potable water users.

It is possible that existing and proposed industrial uses of water within the City do not require treated water for use.

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TABLE 20

REVISED POTABLE WATER DEMAND PROJECTIONS

USING 10% LINE LOSS

Year	Projected* Average Daily Demand	Projected Average Daily Demand Considering Line Loss	Projected Peak Day Demand	Projected Demand During Peak Hour (gpm)*
1996	343,875	378,263	563,612	392
2001	382,000	420,200	626,098	435
2006	412,250	453,475	675,678	469
2010	450,500	495,550	738,370	513

*Includes Chatmire.

Source: Henigar & Ray, Inc., March 1989. Revised September 1991.

Note: Assumes level of service of 125 gpd per capita. *gpm = gallons per minute. Numbers have been rounded to the nearest 10th.

In other words, non-potable water demands should be met using water of the lowest quality supply which is both available and acceptable for the intended use. In order that unnecessary costs of pumping, storing and treating potable water be reduced, it is suggested the City evaluate all existing and proposed industrial water uses within the City. Prior to approval of hookup of industrial uses to the City's water supply, the proposed user should provide documentation that potable water must be used rather than water of a lower quality. Reuse of treated wastewater, stormwater and gray water should also be a consideration in meeting industrial water needs. (Gray water includes domestic waste carried off by bath, lavatory, laundry and sinks, but not toilets, urinals, kitchen drains or sewers.)

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3. Existing and projected agricultural uses of water:

Existing agricultural uses of water were derived through SWFWMD Consumptive Use Permitting data. According to SWFWMD, permitting of water use for irrigation and livestock purposes in Dunnellon consists of a total permitted average of 0.16 million gallons per day. The source of this water is private groundwater wells. Depending upon the use, this water may or may not be treated. Because farmland in the area is generally being converted to more intensive uses, it is estimated that water use for agricultural purposes will stay the same or decrease in Dunnellon.

4. Water conservation and use:

The Southwest Florida Water Management District (SWFWMD) has a Water Shortage Plan in accordance with Florida Statutes. Under this plan, the District evaluates water conditions in the area, and can declare a water shortage and implement user restrictions when necessary. Through intergovernmental coordination, the City and SWFWMD can carry out measures necessary for water conservation and protection.

There are no water reuse programs in Dunnellon at this time. However, future water reuse programs may be considered as the City develops alternatives to disposal of wastewater effluent. Other reuse considerations which would conserve potable water include requirements that proposed golf courses or other large grassed areas within the City use recycled water for irrigation. Large scale developments should collect stormwater runoff or gray water on-site to be recycled for flushing of toilets, air conditioning, fire protection and irrigation.

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As part of the requirement to update the City's Consumptive Use Permit, the City was required to outline a plan for implementation of water conservation measures. The recommendations were included in the plan, adopted by resolution in February 1991. This outline is now included as an appendix to the plan.

5. Water Protection:

As discussed previously, there is at least one incidence of groundwater contamination by leaking gas tanks within the City. In order to prevent such problems in the future, the City shall require all new and existing gas storage tanks meet DER standards. Further, future siting of stationary gas tanks shall be prohibited within 1320 feet from existing and proposed wells.

In order to protect current and future supplies of potable water from the potential impacts of future land uses, a cone of influence can be defined. The cone of influence refers to the land area surrounding a well on which a present or future land use has the potential to negatively impact an aquifer, because of the physical drawdown in the water table resulting from a pumping well. The designation of the cone of influence depends upon the natural characteristics of the aquifer and the amount of pumpage. The radius of the protection area is also a function of the method chosen to calculate the cone of influence. Calculation of the cone of influence is not

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within the scope of this plan. However, there are various guidelines to be used in lieu of such calculations. One alternative is the G-1 rule proposed by DER. The intent of the rule is to protect surrounding water wells from contamination associated with existing and proposed sanitary landfills, sewage and industrial wastewater, stormwater and underground storage tanks. The G-1 rule provides for two concentric zones of protection around public well fields; the first is a 200 foot radius from the wellhead, and the outer zone is based upon a formula for a five year travel time (the point at which it would take five years for water on the land's surface to reach a well system. The G-1 rule would prohibit new installation of wastewater treatment plants, landfills, underground facilities and any other type of development using underground pipes within the 200 foot radius. Existing systems in both zones would require monitoring of some type, depending on the type of facility.

The State, under Chapter 17-555.312 F.A.C., requires that public drinking water supply wells serving systems having total sewage flows greater than 2,000 gallons per day shall be placed no closer than 200 feet from on-site sewage disposal systems (septic tanks), and 500 feet away from land application of reclaimed water areas. Public drinking water

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supply wells shall not be constructed within 300 feet of storage and treatment facilities of dairy farms, and 100 feet from sanitary hazards, as defined in Chapter 17-550.200. F.A.C.

Since the G-1 rule is still undergoing modification, the City should develop a wellfield protection ordinance. This ordinance would prohibit certain types of land use within the cone of influence, as well as defined radius from the well.

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