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LAKE WEIR

AQUATIC PRESERVE MANAGEMENT PLAN

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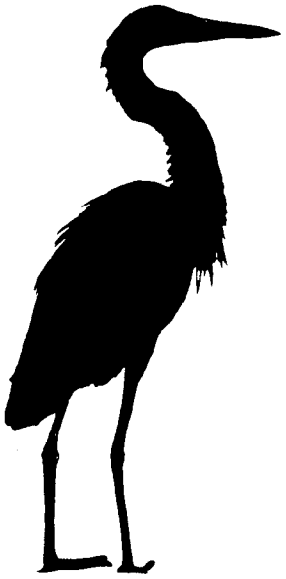

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DEPARTMENT OF NATURAL RESOURCES

LAKE WEIR

AQUATIC PRESERVE MANAGEMENT PLAN

(DRAFT)

September 1991

Tom Gardner

Executive Director

Department of Natural Resources

This plan was prepared by
the Bureau of Submerged Lands and Preserves
Division of State Lands

Funds for this management plan were provided by the Department of Environmental Regulation, Office of Coastal Management using funds made available through the National Oceanic and Atmospheric Administration under the Coastal Zone Management Act of 1972, as amended.

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Copies of the legal description of the Lake Weir Aquatic Preserve, as well as copies of Chapters 253 and 258, F.S., and Chapter 18-21, F.A.C., may be obtained from:

Bureau of Submerged Lands and Preserves
Department of Natural Resources
3900 Commonwealth Blvd.
Mail Station 125
Tallahassee, FL 32399-3000

CHAPTER I

INTRODUCTION

Lake Weir, designated by the Florida Legislature to become an aquatic preserve on July 1, 1988, is one of forty-two aquatic preserves located in various counties throughout the state (Figure 1). Aquatic preserves are designated for the general purpose of maintaining those areas of exceptional state submerged lands in their "natural or existing condition." With an aggregate total of 6,005 acres of submerged land and approximately 38 miles of shoreline, Lake Weir and Little Lake Weir combine to constitute the largest freshwater aquatic resource in Marion County (Figure 2). As the human population of Marion and the surrounding counties is expected to increase, so to is the anticipated amount of pressure upon its natural resources. This plan has been developed to assist in the public decision making process, which will ultimately determine how the impacts of increased population growth will affect these resources.

Historically, Lake Weir has been noted for its fishing. The lake's gamefish stocks have included populations of largemouth bass, bluegill, redear sunfish and black crappie. Coupled with the aesthetically pleasing surroundings and comfortable year round climate, the area's natural resources combined to stimulate the growth of a productive component of the areas economy.

Over the past several decades however, shoreline and sub-basin development have intensified. These factors, have combined with decreased water levels and a growing contingent of user groups, to alter the water quality and natural resource diversity of this lake system. As this scenario evolves in complexity, the need for innovative resource oriented planning and decision making will be required to ensure that long term resource protection goals are met.

This management plan has been developed, in part, to assist in the exploration of possible strategies and alternatives to managing this preserve's resources. It can also act as a tool which can be referenced by those concerned individuals or groups, in either the public or private sector, who choose to make informed decisions as to what they can do to help maintain the integrity of this preserve.

In addition, the plan addresses various facets of resource related policy development and management issue needs. It identifies problems associated with current resource uses, management issues relating to adjacent upland uses, and present and future uses of the preserve. This effort, to collect, review and comment on those factors, which have historically and are currently influencing the life cycle of this aquatic resource, should help ensure that the quality of the existing resources remain for future generations to enjoy.

Currently, the rules which govern the use of sovereign submerged lands within aquatic preserves are found in Chapter 18-20, F.A.C. Pending its adoption by the Governor and Cabinet (sitting as the Board of Trustees of the Internal Improvement Trust Fund), this plan will carry the same authority as that currently founded in rule criteria.

Specifically, this plan is divided into chapters according to their management application:

Chapter II cites the statutory authority upon which this resource management program and plan are founded.

Chapter III provides a description of the Lake Weir Aquatic Preserve and details the physical and biological resources within the preserve. Additional information includes the current and future uses of this preserve and use of the adjacent uplands.

Chapter IV delineates various management areas within the preserve. These areas are defined by taking into account the biological resources, the physical parameters, and the aesthetic values, in conjunction with the use of the adjacent uplands.

Chapter V addresses the specific needs and resource issues of Lake Weir and develops management initiatives addressing each need and/or issue.

Chapter VI outlines site specific goals, objectives and tasks required to meet the management needs of the preserve for resource management, resource protection, research and environmental education.

Chapter VII identifies federal, state, regional and local agencies, their authorities and programs and how they relate and assist in protection and management of this preserve. It also identifies non-regulatory organizations and interest groups which can assist in management.

Chapter VIII projects future staffing and fiscal needs necessary for providing effective management and protection of the preserve as well as supporting research and environmental education.

Chapter IX outlines a monitoring program for recording and reporting resource changes and establishes a tracking system for detailing the progress and accomplishments in resource management.

This plan was written by staff of the Department of Natural Resources, Division of State Lands, Bureau of Submerged Lands and Preserves.

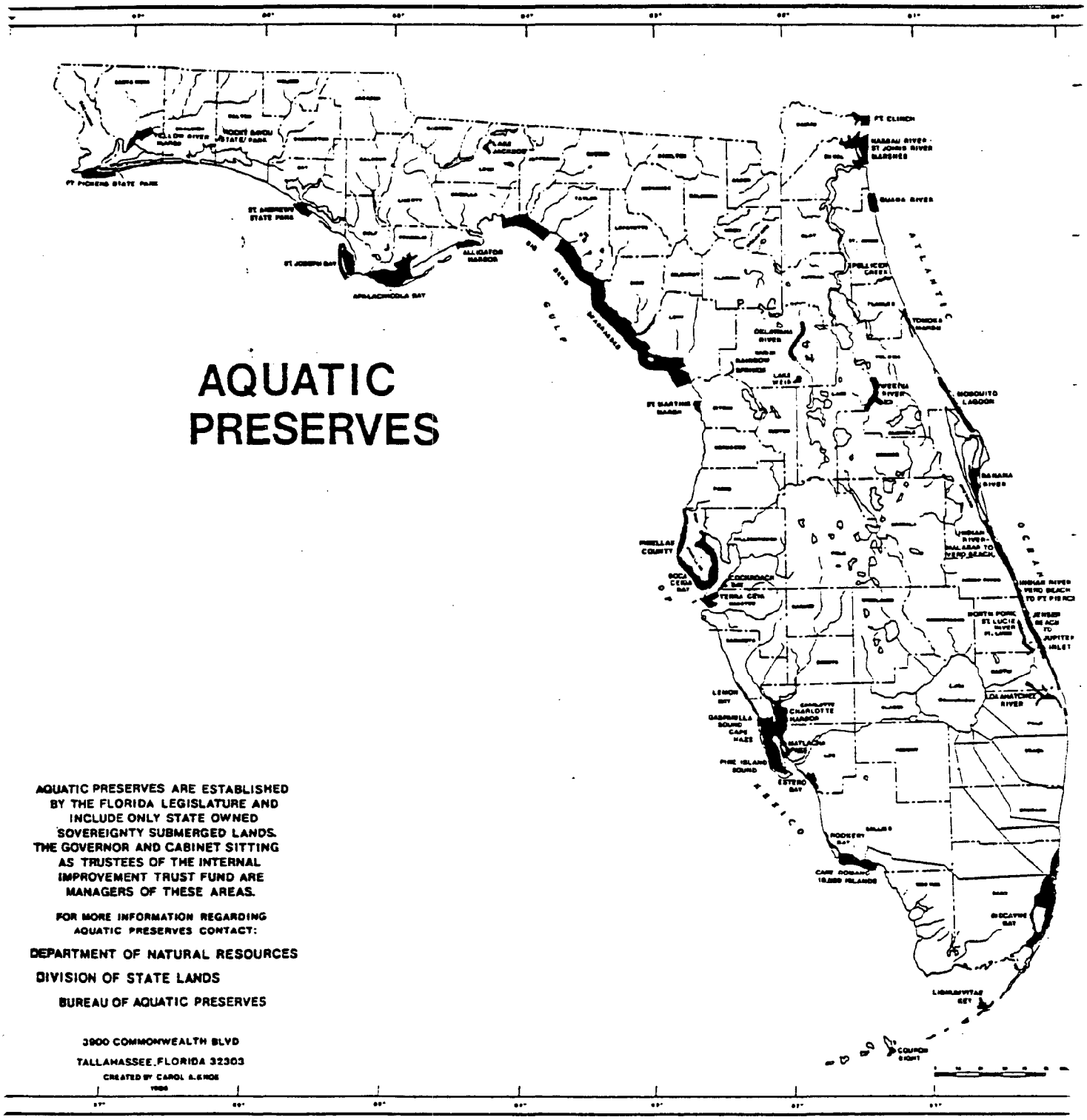


FIGURE 1. FLORIDA AQUATIC PRESERVE SYSTEM

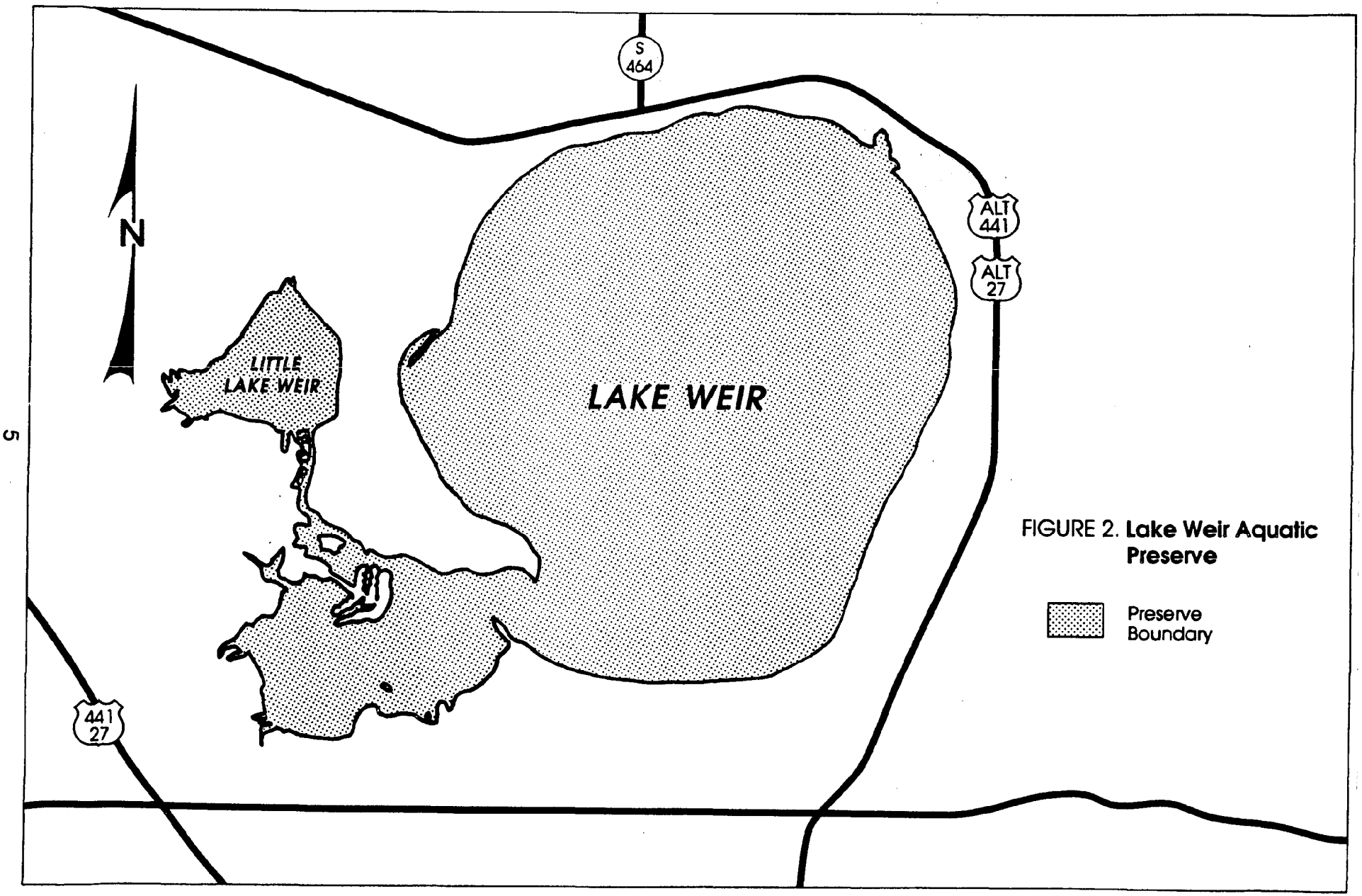


FIGURE 2. **Lake Weir Aquatic Preserve**

CHAPTER II

MANAGEMENT AUTHORITY

A. STATUTORY AUTHORITY

The fundamental laws providing management authority for the Lake Weir Aquatic Preserve are contained in Chapters 258 and 253, Florida Statutes (F.S.). These statutes establish the proprietary role of the Governor and Cabinet, sitting as the Board of Trustees of the Internal Improvement Trust Fund, as Trustees over all sovereignty submerged lands. In addition, these statutes empower the Trustees to adopt and enforce rules and regulations for managing all sovereignty submerged lands, including aquatic preserves.

In particular, Sections 258.35-258.46, F.S., enacted in 1975 by the Florida Legislature, represent the **Florida Aquatic Preserve Act**. These statutes set forth a standardized set of management criteria for all designated aquatic preserves, and represent the primary laws governing use of sovereignty submerged lands within aquatic preserves.

The Legislative intent for establishing aquatic preserves is stated in Section 258.36, F.S.: **"It is the intent of the Legislature that the state-owned submerged lands in areas which have exceptional biological, aesthetic, and scientific value, as hereinafter described, be set aside forever as aquatic preserves or sanctuaries for the benefit of future generations."** This statement along with the other applicable laws clearly mark the direction for management of aquatic preserves. Management will emphasize the maintenance of essentially natural conditions, and will include only sovereign or state-owned submerged lands and lands leased by the state and specifically authorized for inclusion as part of a preserve.

Management responsibilities for aquatic preserves may be fulfilled directly by the Board of Trustees or by staff of the Division of State Lands of the Department of Natural Resources through delegation of authority. Other governmental bodies may also participate in the management of aquatic preserves under appropriate instruments of authority issued by the Board of Trustees. The Division staff serve as the primary managers who implement provisions of the management plans and rules applicable to the aquatic preserves. Staff evaluate proposed uses or activities in the preserve, and assess the possible impacts on the natural resources. Project reviews are primarily evaluated in accordance with the criteria in Sections 258.35-46, F.S. (Florida Aquatic Preserves Act), Chapter 18-20, Florida Administrative Code (Rules of Florida Aquatic Preserves), and in accordance with the policies set forth in this plan.

Staff comments on proposed uses are submitted for consideration in developing recommendations to be presented to the Board of Trustees. This mechanism provides a basis for the Board of Trustees to evaluate public interest and the merits of any project while also considering potential environmental impacts upon the aquatic preserves. Any activity located on sovereignty submerged lands will require a consent of use, a lease or easement, or other approval from the Board of Trustees. Consent of use may be granted on small projects from the Division of State Lands in accordance with the authority delegated by the Board.

BACKGROUND

The laws supporting aquatic preserve management are the direct result of the public's awareness and interest in protecting Florida's aquatic environment. The rampant dredge and fill activities that occurred in the late 1960's fostered this widespread concern.

In 1967, the Florida Legislature passed the Randall Act (Chapter 67-393, Laws of Florida), which established procedures regulating previously unrestricted dredge and fill activities on state-owned submerged lands. That same year, the legislature provided the statutory authority (Section 253.03, F.S.) for the Board of Trustees to exercise proprietary control over state-owned lands. Also, in 1967, government focus on protecting Florida's productive water bodies from development led the Board of Trustees to establish a moratorium on the sale of submerged lands to private interests. That same year, an Interagency Advisory Committee (IAC) was created to develop strategies for the protection and management of state-owned submerged lands.

In 1968, the Florida Constitution was revised to declare in Article II, Section 7, the state's policy of conserving and protecting natural resources and scenic beauty. That constitutional provision also established the authority for the legislature to enact measures for the abatement of air and water pollution. Later that same year, the IAC issued a report recommending the establishment of twenty-six aquatic preserves.

On October 21, 1969, the Governor and Cabinet acted upon the recommendations of the IAC and adopted, by resolution, eighteen of the water bodies as aquatic preserves. Other preserves were individually adopted at subsequent times through 1989, including Lake Weir, which was designated July 1, 1988.

B. ADMINISTRATIVE RULES GOVERNING AQUATIC PRESERVES

Chapters 18-20 and 18-21, Florida Administrative Code (F.A.C.), are the two administrative rules directly applicable to the uses of aquatic preserves specifically, and submerged lands in general. The general rules in Chapter 18-20, F.A.C., are supplemental to the rules in Chapter 18-21, F.A.C, in the regulation of activities in aquatic preserves.

1. CHAPTER 18-20, F.A.C.

Chapter 18-20, F.A.C., specifically addresses aquatic preserves and derives its authority from Sections 258.35, 258.36, 258.37, and 258.38, F.S. The intent of this rule is contained in Section 18-20.001, F.A.C., which states:

"(1) All sovereignty lands within a preserve shall be managed primarily for the maintenance of essentially natural conditions, the propagation of fish and wildlife, and public recreation including hunting and fishing where deemed appropriate by the board and the managing agency.

(2) The aquatic preserves which are described in Chapter 73-534, Laws of Florida, Sections 258.39, 258.391, 258.392, and 258.393, Florida Statutes, future aquatic preserves established pursuant to general or special acts of the legislature, and in Rule 18-20.002, Florida Administrative Code, were established for the purpose of being preserved in essentially natural or existing condition so that their aesthetic, biological and scientific values may endure for the enjoyment of future generations.

(3) The preserves shall be administered and managed in accordance with the following goals:

(a) to preserve, protect, and enhance these exceptional areas of sovereignty submerged lands by reasonable regulation of human activity within the preserves through the development and implementation of a comprehensive management program;

(b) to protect and enhance the waters of the preserves so that the public may continue to enjoy the traditional recreational uses of those waters such as swimming, boating, and fishing;

(c) to coordinate with federal, state, and local agencies to aid in carrying out the intent of the Legislature in creating the preserves;

(d) to use applicable federal, state, and local management programs, which are compatible with the intent and provisions of the act and these rules, and to assist in managing the preserves;

(e) to encourage the protection, enhancement, or restoration of the biological, aesthetic, or scientific values of the preserves, including but not limited to the modification of existing man-made conditions towards their natural condition, and discourage activities which would degrade the aesthetic, biological, or scientific values, or the quality, or utility of a preserve, when reviewing applications, or when developing and implementing management plans for the preserves;

(f) to preserve, promote, and utilize indigenous life forms and habitats, including but not limited to: sponges, soft coral, hard corals, submerged grasses, mangroves, saltwater marshes, freshwater marshes, mud flats, estuarine, aquatic and marine reptiles, game and non-game fish species, estuarine, aquatic, and marine invertebrates, estuarine, aquatic, and marine mammals, birds, shellfish and mollusks;

(g) to acquire additional title interests in lands wherever such acquisitions would serve to protect or enhance the biological, aesthetic, or scientific values of the preserve;

(h) to maintain those beneficial hydrologic and biologic functions, the benefits of which accrue to the public at large."

2. CHAPTER 18-21, F.A.C.

Chapter 18-21, F.A.C., controls activities conducted on sovereignty submerged lands in general and is predicated on the provisions of Sections 253.03, and 253.12, F.S. The stated intent of this administrative rule is:

"(1) to aid in fulfilling the trust and fiduciary responsibilities of the Board of Trustees of the Internal Improvement Trust Fund for the administration, management, and disposition of sovereignty lands;

(2) to insure maximum benefit and use of sovereignty lands for all citizens of Florida;

(3) to manage, protect, and enhance sovereignty lands so that the public may continue to enjoy traditional uses including, but not limited to, navigation, fishing and swimming;

(4) to manage and provide maximum protection for all sovereignty lands, especially those important to public drinking water supply, shellfish harvesting, public recreation, and fish and wildlife propagation and management;

(5) to insure that all public and private activities on sovereignty lands which generate revenues or exclude traditional public uses provide just compensation for such privileges;

(6) to aid in the implementation of the State Lands Management Plan."

C. RELATIONSHIP TO OTHER APPLICABLE PLANS AND PROGRAMS

The State Comprehensive Plan, established by Chapter 187, F.S., provides long-range policy guidance for the orderly social, economic and physical growth of the State. As such, the State Comprehensive Plan provides direction for the management of the physical resources within the state. The goals, objectives and policies set forth in this aquatic preserve management plan are designed to be consistent with those in the State Comprehensive Plan that pertain to the water resources, coastal and marine resources and natural systems.

The Conceptual State Lands Management Plan, adopted on March 17, 1981, and amended by the Board of Trustees on July 7, 1981 and March 15, 1983, contains specific policies concerning spoil islands, submerged land leases, "Outstanding Native Florida Landscapes," unique natural features, aquatic grass beds, archaeological and historical resources, and endangered species. These policies provide some of the fundamental direction for formulating management plans and policies of the Aquatic Preserves Program.

The Local Government Comprehensive Plan (LGCP) for Marion County is required by the Local Government Comprehensive Planning and Land Development Regulation Act to have a comprehensive management plan with elements relating to different governmental functions (e.g., housing, physical facilities, conservation, land use, etc.) The plan, in effect, is intended to guide the future development of Marion County. Cities and counties are to adopt land development regulations and conform to the criteria, policies, and practices of their comprehensive plans, which must be updated periodically as required by recent statutory amendments.

Bureau of Submerged Lands and Preserves staff will review Marion County's Comprehensive Plan to determine if the pertinent planning criteria and objectives are consistent with the objectives of aquatic preserve management. Each aquatic preserve management plan provides management guidance for those state managed preserve lands which are beyond the jurisdiction of the County's Local Government Comprehensive Plan. Consequently, if coordinated properly, the management plan for an aquatic preserve can serve as a waterward extension of County's LGCP. Marion County's LGCP should be implemented by 1991.

**** Refer to Chapter VII for other applicable management authorities.**

CHAPTER III

DESCRIPTION OF LAKE WEIR AQUATIC PRESERVE

A. LOCATION, BOUNDARY AND GENERAL UPLANDS DESCRIPTION

The Lake Weir Aquatic Preserve is situated in the southeastern corner of Marion County, approximately 16 miles southeast of the City of Ocala. The preserve consists of those state-owned submerged lands lying below the ordinary high water line, excluding all privately held uplands. Although categorized as the Lake Weir Preserve, this preserve is actually a lake system composed of three basins; Lake Weir, Little Lake Weir and Sunset Harbor (Crissman et al., 1988).

A variety of land uses, infrastructure and ownership patterns are found throughout the uplands surrounding the preserve. The northern and western uplands surrounding the main lake (specifically the Town of Oklawaha and the Sunset Harbor Community) are densely populated. The uplands surrounding Little Lake Weir have sustained development on the north and south however, the eastern and western uplands currently exhibit little or no residential development.

The main transportation routes appurtenant to the preserve include U.S. Alt. 27/441 (the principal arterial lying due west) and C.R. 25, a collector road which circumvents Lake Weir along its' northern and eastern shorelines, intersecting with collector road C.R. 42 at the southeastern corner of the main lake (Weirsdale). At this point C.R. 42 proceeds east to Altoona and west to intersect with U.S. 27/441 (Sunset Harbor Road parallels C.R. 42 west). In the Sunset Harbor Area, C.R. 42 links with Sunset Harbor Road (via S.E. 104 Terrace) and S.E. 100 Ave. to complete the north to south transportation leg on the western side of the preserve and complete the transportation network around the lake system.

Interwoven among these major transportation routes is a network of minor feeder roads (both improved and unimproved) which serve to access those properties immediately adjacent to and upland of Lake Weir, Little Lake Weir and Sunset Harbor.

B. PHYSIOGRAPHY

Lake Weir, lies at an elevation of 57.85 ft. above mean sea level with depths varying from six up to eight meters (Crissman et al., 1988). The lake receives its' inflow and nutrients from three sources; ground water seepage, precipitation and surface water runoff (Messer, 1975). Although considered to be a closed basin system, there is one outflow containing a weir structure located along the northern shoreline

of the main lake, which allows for periodic outflow to the Oklawaha River (Crissman et al., 1988).

Lake Weir is situated in the physiographic division of Florida known as the Central Highlands. This region is characterized by large numbers of ponds and lakes in the southern half, and numerous lakes, ponds, surface and subterranean streams, in the north (Berner, 1950). The general topography of the uplands surrounding the preserve is representative of this regional character in that there are nearly level to small sloping sandhills, with numerous smaller ponds and lakes, in the vicinity (Messer, 1975).

In their study to assess the cultural eutrophication of Lake Weir, Crissman et al. (1988) calculated the drainage area of the Lake Weir basin. Using the topographic highs surrounding the lake basin as a methodological boundary, and including all wetland acreage within this designated area, they determined the watershed area to be 17.4 sq. miles.

C. GEOLOGY

The Karst topography of central Florida contains many lakes formed by the dissolution, by water, of the underlying limestone bedrock. Lake basins formed by this process may have resulted from the downward percolation of water through the soil into fractures or weak points in the underlying bedrock, ultimately dissolving the limestone until a doline develops. Obversely, this process may involve the movement of subterranean water sources, such that when this water continuously moves through a subsurface aquifer it weakens the roof of the chamber to the point of collapse, leaving a basin of fairly regular shape on the surface (Reid and Wood, 1976). Lakes formed by this process have been categorized as "solution-lakes" and Messer (1975) has concluded that the Lake Weir basin system was formed by this process.

As to the present day hydrogeology of the Lake Weir area, two distinct aquifers have been identified. The upper or shallow aquifer is composed of permeable sand in the upper level and clay like sand interspersed with clay lenses, at greater depths. This aquifer is underlain by low permeability soils and clays of the Hawthorne Formation (Messer, 1975).

The second deep aquifer present underneath the upper shallow aquifer, is the Floridan Aquifer. Underlying all of Marion County, this aquifer is composed largely of limestones and dolostones. It has an area of approximately 82,000 square miles and underlies Coastal Plain areas including the entire state of Florida, parts of South Carolina, Georgia and Alabama (Fernald and Patton eds., 1984) (Messer, 1975).

D. WATER QUALITY

Water quality sampling has been performed on Lake Weir by various agencies over the past thirty-five years. The resultant observations have provided data for a number of research projects which have analyzed various facets of the preserves water quality.

Messer (1975) studied the nutrient budget (loading and cycling) and trophic level of the lake stating, " The levels of chlorophyll A and the primary productivity of the lake are representative of mesotrophy, i.e., the lake is productive but not so much as to create problems with water use." Researchers with the St. Johns River Water Management District (1991) have studied the water quality of the lake and documented nutrient loading sources, and the general good water quality of the main lake body. The Florida Game and Freshwater Fish Commission (1989) concluded that "Lake Weir is in the mesotrophic range based on water quality criteria" and that, "Water quality parameters varied little from year to year during the study, although seasonal trends in nutrient cycling were apparent". They also documented the algal bloom phenomenom.

Finally, Crissman et al. (1991) in the Final Report for Phases I, II and III of the Lake Weir Eutrophication Study state, "Although conventional chemical indicators of trophic state do not indicate an acceleration of cultural eutrophication since the mid 1970's, biological parameters, especially those of the microbial loop, suggest that while the trophic state changes may be subtle, they are nevertheless occurring".

E. HYDROLOGY

Although underlain by the Floridan Aquifer, the primary source of freshwater in the central Florida area is rainfall (Fernald and Patton eds., 1984). Precipitation (in the form of rainfall directly on the lake surface), artesian groundwater and surface water entering the lake are the inflow components of Lake Weirs' hydrologic budget. Evaporation, outflow through effluents and groundwater recharge (into the groundwater system from the lake bottom) are the elements of outflow, which affect the quantity of water stored in the lake basin (Messer, 1975).

Water levels in the Lake Weir Preserve have fluctuated over the years from being as low as 54 feet MSL in 1957, to as high as 59 feet in 1961. As of 1983 these levels were again dropping and currently the lake level is at one of the lowest stages ever recorded (Crissman et al., 1988). Fluctuation in the lake stages of Lake Weir are due to the variability of rainfall, whether in quantity or quality. "The alternate conditions of surplus and deficiency in the water supply of Marion County results from the imbalance between the rate and chronological distribution of input (rainfall and inflow) and output (infiltration, runoff and evapotranspiration) (Anderson and Faulkner, 1988).

Even as rainfall is the primary climatic factor influencing lake levels, modifications to the watershed, in the form of changes to the existing natural land uses, may have altered the natural surface and groundwater runoff patterns of the watershed. Other modifications including activities on the immediate shoreline (e.g., canal dredging, the placement of fill for causeways, roadbeds and the stabilization of upland property) may have altered the natural nearshore hydrologic regime.

F. ARCHEOLOGICAL AND HISTORICAL RESOURCES

1. Archeological Resources

In 1987, the Archeological Survey of Marion County (a survey designed to identify historic structures and potential sites of archeological importance) was undertaken to augment the existing data base of these resources within the county. According to this document, little professional archeological research has been completed in the preserve area.

The following excerpts from the survey summarize 1) the archeological work previously accomplished around Lake Weir, and 2) those recently identified archeological resource sites, which could prove significant in a prehistorical analysis of the preserve:

"Another previously uninvestigated area believed to have a high potential for prehistoric site location is in the Lake Weir vicinity. With the exception of an excavation of a Weeden Island village complex on Bird (Timucua) Island in the southwest portion of Lake Weir, no professional archaeological fieldwork has been carried out in the entire Lake Weir and adjacent Lady Lake quadrangle areas", and:

"In summary, eight new prehistoric sites were located on the basis of surface inspection only. Several instances of isolated cultural materials were also observed. The sites discovered, which fall into both the lithic scatter (6) and artifact scatter (2) type categories, were all small. It is probable that subsurface testing would serve to provide additional data for each. All the sites were directly associated with water, including sink-holes, ponds, lakes and prairies. No riverine areas were investigated. In the absence of water, only single artifact occurrences were noted. These findings were completely consistent with our expectations. Although not all types of environments were systematically sampled, it is believed that the general validity and usefulness of the predictive model have been demonstrated. Above all else, WATER appears to be the key to aboriginal site location". (Archeological Consultants, Inc., 1987).

2. Historical Resources

In conjunction with the Florida Department of State, the Marion County Historical Commission and Planning Department received a grant to complete a variety of preservation projects relating to the county's historic preservation program. One of the main components of this work included the completion of National Register nominations for various properties surveyed in the county. Of these properties, eight from the preserve area were nominated primarily due to their association with the citrus industry, a topic which is under-represented in the National Register listing for Florida (Historic Property Associates, Inc., 1990).

The sites which have qualified for the Multiple Property National Register nomination, currently under review in Tallahassee include:

1) Belle Air or "Ma" Barker House

2) James Riley Josselyn House

3) General Robert Bullock House

4) Thomas B. Snook House

5) Alfred Ayer House

6) T.R. Ayers House

7) Lake Weir Yacht Club

8) Vanna P. Kelsey House

Source: Marion County Historic Preservation Project. Final Report. 1990.

The above referenced list represents only a small number of those resources located in the vicinity of the preserve, which might be considered historically significant. Although a great number of these resources are not currently protected by any type of special local land-use regulation, the Marion County Board of County Commissioners have recommended that the currently proposed Historic Preservation Ordinance (Draft) be adopted (as recommended in the Comprehensive Plan) to protect designated archeological or historic resources within the county (Historic Property Associates, Inc., 1990.).

G. VEGETATIVE COMMUNITIES

A brief overview of the vegetative communities of the preserve is provided in the following text (individual illustrations of some of the various species can be found in Appendix B). A general freshwater aquatic vegetation key (Figure 3) and vegetation profile (Figure 4) are also provided.

For purposes of discussion, the vegetative types have been divided into the following four categories including: emergent, submergent, exotic and algae. Vegetative communities on Lake Weir are illustrated in Figure 5.

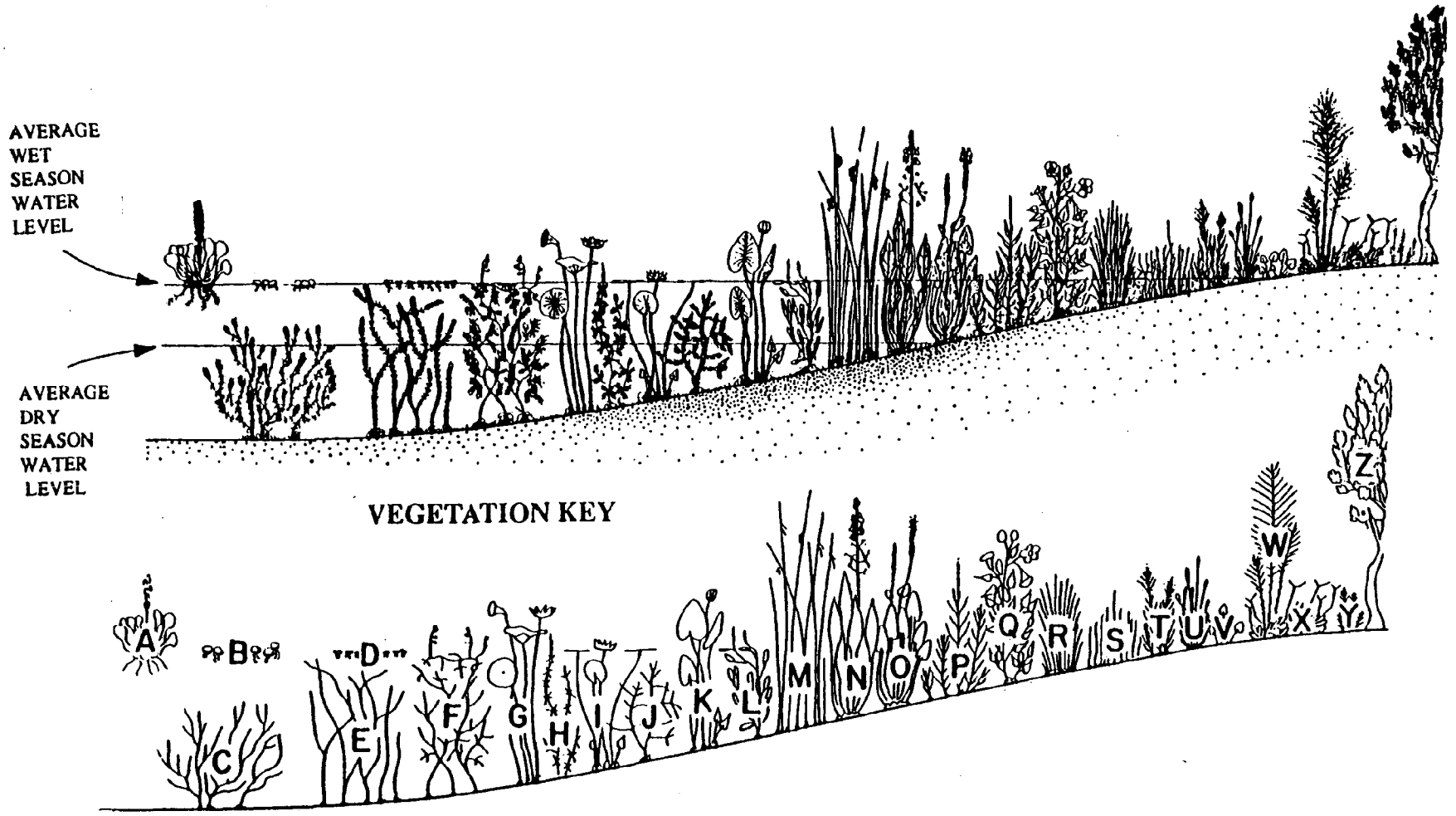
1. Emergent Vegetation

Major concentrations of native emergents, surveyed by the Florida Game and Freshwater Fish Commission (FGFWFC) for the period 1984-1989, include maidencane (Pancium sp.) and spikerush (Eleochirus elongata). Both species proliferate on Lake Weir along the eastern, northern and southern shorelines, and smaller concentrations along the shoreline in and around Sunset Harbor. Concentrations of maidencane have been identified in waters up to 8 feet deep, while spikerush normally inhabits the shallower shoreline region. Other concentrations of emergents in the preserve include: spatterdock (Nuphar lutem), cattail (Typha sp.), pickerelweed (Pontederia lanceolata), fragrant water lily (Nymphaea odorata)and sawgrass (Cladium jamaicense)(Table 1). These species are located throughout the Sunset Harbor - Little Lake Weir canal area and in other various areas throughout Lake Weir proper (FGFWFC, 1989).

2. Submergent Vegetation

Submergent vegetation typically forms the inner most or waterward boundary of aquatic vascular plants. This vegetation is generally characterized by having long sinnuous leaves or a bushy growth-form with highly branched leaves (Reid and Wood, 1976). The function of this vegetation within the aquatic community varies, however certain species are known to act as cover for fish, food sources for waterfowl, and habitat for other small aquatic life (Tarver et al., 1986).

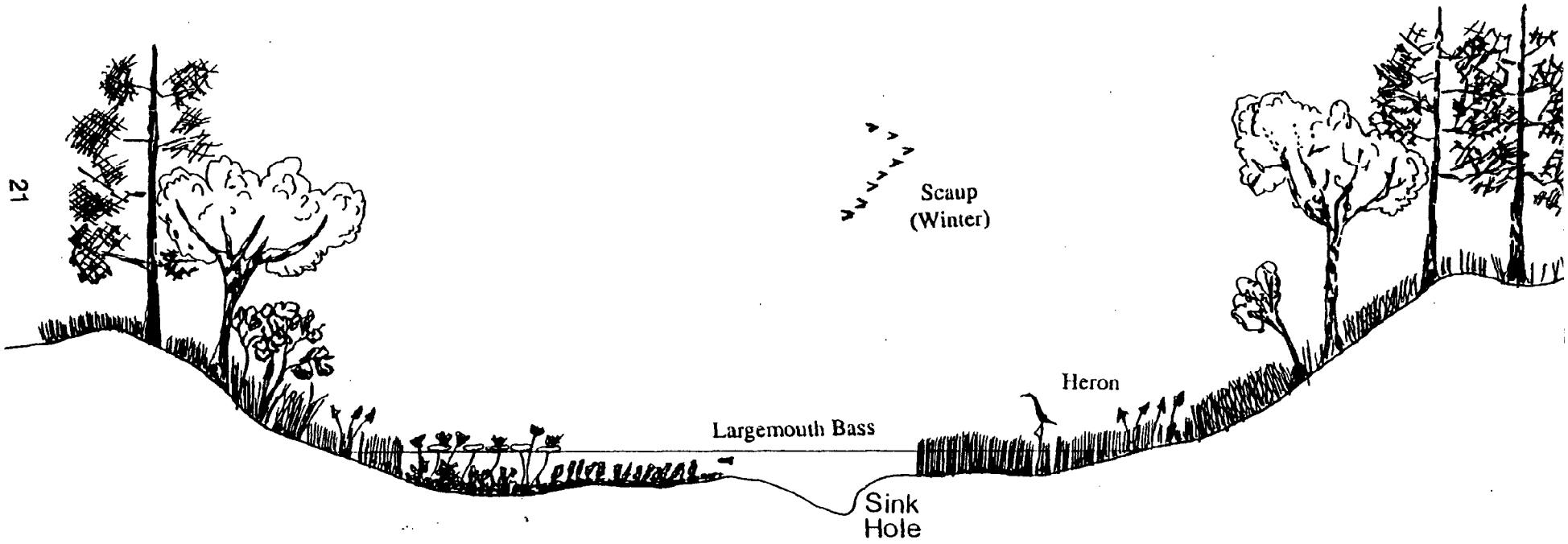
Species composition on Lake Weir is dominated primarily by the submergent Illinois pondweed (Potamogeton illinoensis). Found to inhabit depths of up to twelve feet, this pondweed is important to fisheries as a source of cover, and as a marginally important food source for waterfowl (FGFWFC, 1989) (Tarver et al., 1986). Other prominent submergents in the preserve include hairgrass (Eleochirus baldwini) and bacopa (Bacopa caroliniana). Noticable plant species which were missing from the 1988-1989 FGFWFC Aquatic Vegetation Surveys include: dwarf arrowhead (Sagiltria subulata), southern naiad (Najas quadalupensis), coontail (Ceratophyllum



A. *Eichhornia crassipes* (Water hyacinth)
B. *Salvinia minima* (Water fern)
C. *Najas* spp. (Naiad)
D. *Lemna* spp. (Duckweed)
E. *Hydrilla verticillata* (Hydrilla)
F. *Utricularia* spp. (Blatterwort)
G. *Nelumbo lutea* (Lotus)
H. *Myriophyllum* spp. (Water milfoil)
I. *Nymphea odorata* (White water lily)
J. *Ceratophyllum demersum* (Coontail)
K. *Nuphar luteum* (Spatterdock)
L. *Potamogeton* spp. (Pondweed)
M. *Scirpus validus* (Griant bulrush)
N. *Sagittaria lancifolia* (Arrowhead)
O. *Pontederia cordata* (Pickerelweed)
P. *Panicum hemitomon* (Maidencane)
Q. *Hibiacus* spp. (Hibiscus)
R. *Juncus effusus* (Soft rush)
S. *Eleocharis* spp. (Spike rush)
T. *Panicum virgatum* (Switch grass)
U. *Xyris elliottii* (Yellow-eyed grass)
V. *Centella asiatica* (Coinwort)
W. *Eupatorium capillifolium* (Dog fennel)
X. *Axonopus* spp. (Carpet grass)
Y. *Panicum* spp. (Low panicum)
Z. *Myrica cerifera* (Wax myrtle)

FIGURE 3.
COMMON FRESHWATER VEGETATION
(After Steve Gatewood)

Wetland/Upland Ecotone	Emergent Species	Submerged Species	Broad Aquatic Marsh	Uplands
Loblolly Pine	Maidencane	Bacopa	Maidencane	Pines
Sweetgum	Smartweed	Coontail	Pickerelweed	Hardwoods
Fennel	Lillies	Hydrilla	Soft Rush	
Willows	Hairgrass	Milfoil		



NOTE: Lake width greatly lessened.

FIGURE 4.
VEGETATION PROFILE

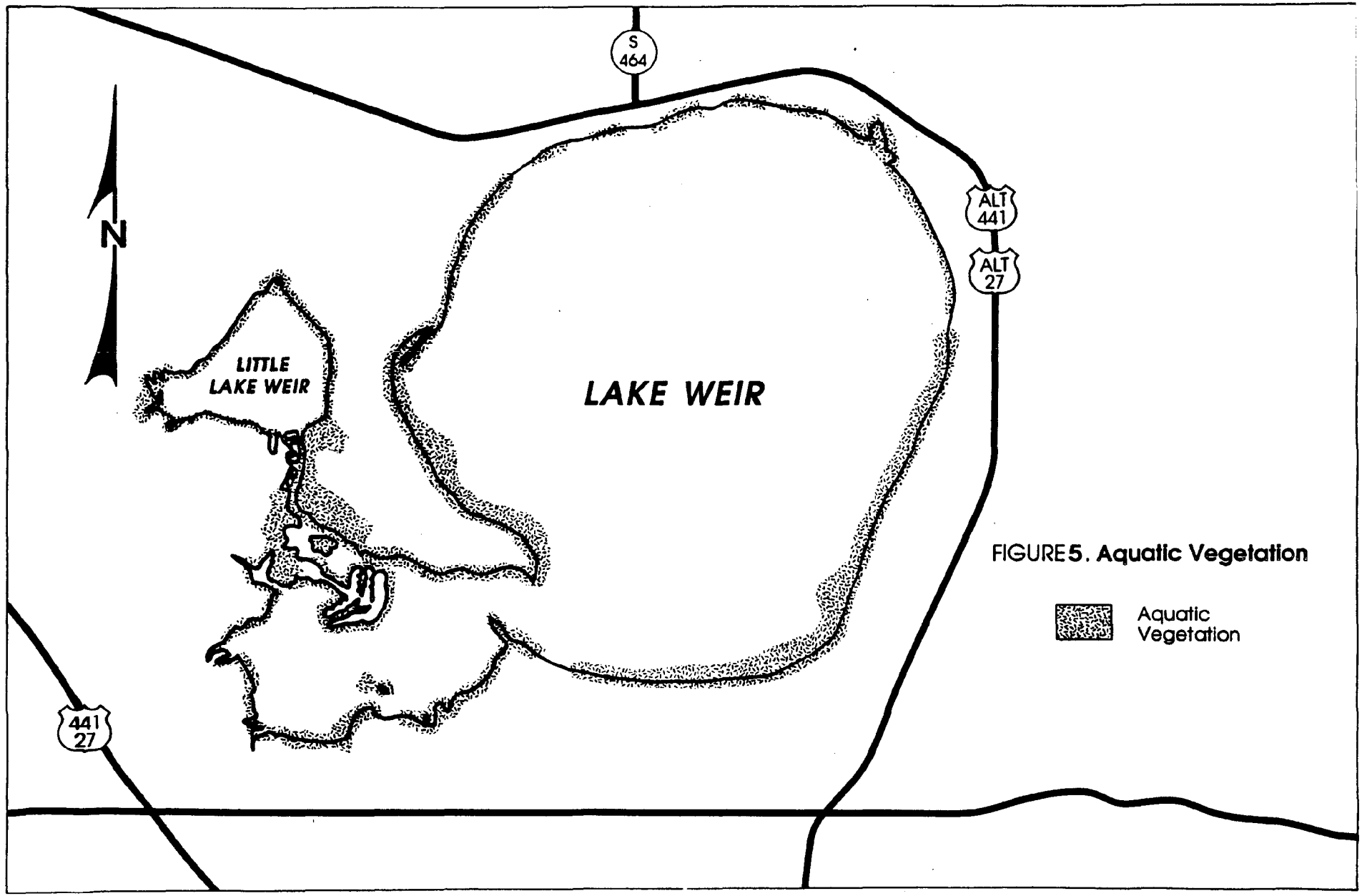


FIGURE 5. **Aquatic Vegetation**

demersum), and eelgrass (Vallisneria americana). Researchers with the FGFWFC consider that this reduction in plant species diversity is likely due to the effects of the algal blooms which can hinder light penetration and inhibit the photosynthetic process. (FGFWFC, 1989).*

(*Note: Although missing from the FGFWFC 1988-1989 vegetation surveys, the submergents coontail (Ceratophyllum demersum) and eelgrass (Vallisneria americana) were retained on the Aquatic Vegetation Species List, Table , due to their identification on Lake Weir in 1988 by the FDNR, Bureau of Aquatic Plants, Survey and Management Report.)

3. Exotic Vegetation

A complete listing of those exotic plant species found within the preserve is unavailable at this time, however two species of exotics have been identified including hydrilla (Hydrilla verticillata) and the water hyacinth (Eichornia crassipes). The expansion of these species has been contained by chemical controls (FGFWFC, 1989).

4. Algae

Algae represents the non-vascular vegetation found in the preserve. Located throughout the euphotic zone of the lake, agal communities can more specifically, be found on bottom sediments, distributed in or floating on the water column, attached to existing vegetation or secured to existing man-made structures. The predominant algal species identified by Messer (1975) included: Chroococuss rufescens, Lyngbya digueti, Lyngbya contortata, Lyngbya putealis and Microcystis aueruginosa. These algae belong to the blue-green group termed cyanophytes which can impact water clarity during algal blooms, by releasing the blue pigment phycocyanin, which reduces light penetration and ultimately the photosynthetic process of other plants (Reid and Wood, 1976). Other problems associated with various species of blue greens can include the formation of surface scums and water chemistry changes, which may also affect fish populations. Phytoplakton blooms have occurred in the preserve (during the winter months), but as to whether or what degree these increased numbers have affected the aquatic community is unclear (FGWFC, 1989). Reid and Wood (1975) state, "Although not necessarily "indicators" of pollution, blue-greens often thrive under such conditions, Lynqbya and Oscillatoria being notable examples".

The predominant macroalga found within the preserve is muskgrass (Chara spp.)*. Muskgrass, an algae which superficially resembles seed plants, has been identified concurrent with Illinois pondweed in vegetation surveys (FGFWFC, 1989). Although

this species may become dense and impede waterfowl or fishing, it is an important habitat for fish-food organisms and waterfowl (Tarver et al., 1986).

(*Note: The macroalga Stonewort (Nitella sp.) was dropped from the FGFWFC 1987-1989 vegetative list, due to its' noticable absence in their field surveys. This species was also absent from the FDNR Aquatic Plant, Lake Weir Survey and Management Report, 1988).

TABLE 1

AQUATIC VEGETATION SPECIES LIST FOR LAKE WEIR

COMMON NAME	SCIENTIFIC NAME
EMERGENT SPECIES	
Alligator Weed	Alternanthera philoyeroides
Arrowhead	Sagittaria lancifolia
Banana lily	Nymphoides aquatica
Bog moss	Mayaca fluriatillis
Cat-tails	Typha spp.
Floating ferns	Ceratopteris
Fragrant water lily	Nymphea odorata
Pennywort	Hydrocytle
Pickerelweed	Pontederia cordata
Spatterdock	Nuphar luteum
Spikerushes	Eleocharis spp.
Water hyssop	Bacupa curoliniana
Water-milfoils	Myrophillium spp.
SUBMERGENT SPECIES	
Bladderwort	Utricularia floridana
Bladderwort	Utricularia foliosca
Bladderwort	Utricularia purpurea
Dwarf arrowhead	Sagittaria subulata
Fanwort	Cabomba caroliniana
Hornwort/Coontail	Ceratophyllum demersum
Hydrilla	Hydrilla verticillata
Illinois pondweed	Potamogeton illinoinsis
Southern naijad	Najas guadalupensis
Tapegrass	Vallisneria americana
Websteria	Websteria conferroides

TABLE 1 continued

COMMON NAME	SCIENTIFIC NAME
SHORELINE AND DITCHBANK SPECIES	
Bulrush	Scripus cubensis
Burheads	Echiniodorus conditollus
Bur marigold	Bidens spp.
Egyptian paspalidium	Paspaldium geminatum
Elephant ear	Colocasia esculenta
Pennywort	Hydrochloa caroliniensis
Rush	Fuirena scirpoidea
Smartweeds	Polygonum spp.
Water primroses	Ludwigia octoralis/peruriana
SEDGES, GRASSES AND RUSHES	
Indiacane	Phramites australis
Maidencane	Panicum hemitomon
Napier grass	Pennisetem purpuem
Saw-grass	Cladium jamaicense
Sedge	Cyperus spp.
Torpedo grass	Panicum repens
FLOATING	
Duckweed	Lemna spp.
Water lettuce	Pista stratiotes
Water hyacinth	Eichhornia crassipes
Water spangle	Salvinia minima
ALGAE	
Musk-grass	Chara spp.

Sources: Compiled from the Florida Game and Freshwater Fish Commission, Central Region. 1989. Lake Weir Investigations: Completion Report, Ocala, Fl., and the Florida Department of Natural Resources, Bureau of Aquatic Plants, SW Aquatic Plant Region Office, Survey and Management Report, Floral City, Fl., 1988.

H. FISHERIES RESOURCES

Historically, the fishery on Lake Weir has included populations of sportfish including: largemouth bass (Micropterus salimodes), bluegill (Lepomis macrochirus), readear sunfish (Lepomis microlophus) and black crappie (Pomoxis nigromaculatus). Very little is known as to the abundance of these species prior to 1983, due to a lack of routine monitoring (FGFWFC, 1983-1989). Recent surveys however, have resulted in a limited data base concerning species diversity and abundance.

1. Diversity and Abundance

Recent electrofishing surveys carried out by the Florida Game and Freshwater Fish Commission (FGFWFC) have resulted in the identification of twenty-three various species within the preserve (Table 2). Of these, the sport fishery population included: bluegill, largemouth bass, redear sunfish and chain pickerel. Forage fish populations included: seminole killifish, golden shiners, threadfin shad and brook silversides (FGFWFC, 1989).

Of those sportfish surveyed, the bass population during 1989 was significantly lower than for all other years surveyed. Researchers have partially attributed this decline to fish kills which have been documented on the preserve in recent years, and to an increase in sportfishing pressure. Population estimates for bluegill, indicate that 1989 estimates are double the first estimates of 1985 while estimates for redear sunfish were also higher than earlier estimates (FGFWFC, 1989).

2. Crappie Loss

The initial recorded data of the crappie population on Lake Weir began in 1984 with the FGFWFC Central Region Fish Management Study (including the Lake Weir Investigations: Completion Report, (1984-1989). The report, although comprehensive in design (constructed to obtain long term baseline data on water quality, fish population structure, vegetative communities and invertebrate populations) was not originally structured to investigate solely the crappie loss. The results of this study were inconclusive concerning this phenomenon.

The Crissman study also examined the crappie loss phenomenon on the lake. An excerpt from the Final Report of Phases I and II of the Lake Weir Eutrophication Study (1988) states, "After examining the possible causes for the dramatic loss of the black crappie fishery, no obvious explanation exists. Extreme fishing pressure, inappropriate use of herbicides or other factors can contribute to fish population changes. But even these suggestions can be ruled out for Lake Weir since neither has occurred (FDNR and FGFWFC, personal communication). Perhaps a combination of factors led to the loss. If crappie can be re-established by stocking, the problem will be solved although an explanation for their current demise may be

lacking. If not, further efforts to identify the factor or factors that killed the crappie will probably continue."

3. Disease and Fish Kills

As part of the Lake Weir Investigations Project, the FGFWFC investigated other phenomenon, which have plagued the fish population in the preserve since they were recorded in 1985. These include fishkills and disease. The following is an excerpt from that report:

> "Events which coincided with the loss of the crappie were unexplained fish kills. Adult redear sunfish were involved in a limited fish kill during the summer of 1985. Since no cause could be identified and mainly large fish were killed, it was assumed that an old age class was dying. However, another kill occurred from May to September 1986 affecting several species. The majority of fish killed were adult bass and bluegill. Approximately 20 to 30 dead fish, primarily bass, could be observed on any given day. Upon closer examination, struggling and recently-dead fish were found to have white or pinkish gills suggesting anemia.
>
> Fish with pale gills were collected during June 1986 and sent to the Department of Fisheries and Allied Aquaculture at Auburn University for pathological analyses. Additional fish samples were sent to the Florida Department of Environmental Regulation (DER) for pesticide analyses. Personnel from Auburn indicated Aeromonas sp. was present in liver tissue and gill parasite concentrations were high. However, their opinion was that these infections were secondary to stress produced by anemia. Results of the DER pesticide investigation concluded that the only definitive statement that could be made after four years of fish kill investigations was that some sportfish were anemic and kills were continuing." (FGFWFC, 1989).

TABLE 2

FISH SPECIES LIST FOR LAKE WEIR

COMMON NAME	SCIENTIFIC NAME
Largemouth bass	Micropterus salmoides
Bluegill	Lepomis macrochirus
Redear sunfish	Lepomis microlophus
Spotted sunfish	Lepomis punctatus
Warmouth	Lepomis gulosus
Black crappie	Pomoxis nigromaculatus

TABLE 2 continued

COMMON NAME	SCIENTIFIC NAME
Chain pickerel	Esox niger
Brown bullhead	Ictalurus nebulosus
Yellow bullhead	Ictalurus natalis
White catfish	Ictalurus catus
Florida gar	Lepisosteus platyrhincus
Lake chubsucker	Erimyzon sucetta
Bowfin	Amia calva
Golden shiner	Notemigonus crysoleucas
Coastal shiner	Notropis petersoni
Tadpole madtom	Noturus gyrinus
Dollar sunfish	Lepomis marginatus
Bluespotted sunfish	Enneacanthus gloriosus
Swamp darter	Etheostoma fusiforme
Seminole killifish	Fundulus seminolis
Brook silverside	Labidesthes sicculus
Threadfin shad	Dorosoma petenense
Mosquitofish	Gambusia affinis

Source: FGFWFC, 1989

I. VERTEBRATE WILDLIFE RESOURCES

Note: This section is taken from a draft report prepared by Henry Smith, Biological Scientist III, with the Florida Department of Natural Resources.

Wetland ecosystems and associated wetland-upland terrestrial ecotones comprise extremely valuable wildlife range in terms of their combined foraging and breeding habitat benefits. Many animals live their entire life cycle in lakes and wetlands. Other species occupy temporal breeding/nursery ground niches in these habitats. Furthermore, a high percentage of the wildlife species listed as endangered or threatened by the U.S. Fish and Wildlife Service Endangered Species Act are fully dependent on, or seasonally utilize, freshwater wetland habitats.

Less well publicized, more cryptic wetland values are also accrued. For example, some wetlands provide great wildlife wintering habitat while only exhibiting limited spring/summer breeding habitat usage. As a summary testimonial to the wildlife values provided by wetlands it should be noted that "one third of all bird species, 190 species of amphibians and 5,000 species of plants are thought to occur" in wetlands throughout the United States.

Several factors affect wildlife usage of lakes, wetlands and wetlands-uplands transitional zones. Among the most important of these factors are: (a) naturally occurring and artificially induced water level fluctuations which can accelerate or retard plant community successional patterns. Shallow water plant communities are particularly influenced by this factor; (b) influences of point source wastewater and non-point source stormwater discharges; (c) agricultural activities within the watershed; and (d) construction activities such as dredge and fill actions which directly impact aquatic environments, as well as construction activities occurring anywhere within the surrounding watershed which may have primary or secondary impacts on the system.

Construction activities which occur in floodplains and on shorelines can result in a broad spectrum of impacts to wildlife resources. Adverse effects can range from local, temporary displacement of commonly occurring wildlife to catastrophic losses of endangered species or irretrievable loss of significant habitat(s). Some of the construction activities which can have significant impacts on wetland environments include: building construction, construction of drainage structures, construction of impervious surfaces (resulting in increased non-point source runoff discharges to surface waters), line construction, and mineral extraction operations. Cumulative effects of the aforementioned activities may result in additive or synergistic negative impacts to wildlife resources.

1. Birds

The Florida Game and Freshwater Fish Commissions' (FGFWFC) Non-Game Wildlife Program has recently completed surveys designed to document the existence of those species of wildlife known to occur on Lake Weir. The resultant data from these surveys indicate that there are at least two documented wading bird nesting sites, located within the preserve area (FGFWFC, 1989).

This first colony is located on the Carney Island peninsula, and provides nesting habitat for three primary species including: the cattle egret (Bubulcus ibis), great blue heron (Ardea herodias) and anhingas (Anhinga anhinga). The FGFWFC estimates that there are approximately 10-25 pair of breeding cattle egrets, 2-5 pair of breeding great blue heron and 5-10 pair of breeding anhinga which use this site. Reproduction estimates were unavailable due to the completion of nesting prior to survey execution (FGFWFC, 1989).

The second documented colony site(s) is a combination of two sites which are in close proximity to one another. One of these sites is located on the southern end of Bird Island. Great blue herons as well as cattle egrets are known to use this site for nesting. The second site is on a small willow island located in Sunset Harbor. This site has also been documented as breeding habit for the great blue heron and cattle egret (FGFWFC, 1989).

Other small wading or shorebird colonies may occur within the mix of habits found within the preserve and the adjacent uplands, however their existence and numbers have yet to be documented.

2. Mammals, Reptiles and Amphibians

A definitive listing of mammalian, reptilian and amphibian faunal assemblages within the Lake Weir watershed, was unavailable at this time. However, an incomplete listing of those animals species likely to occur within the mix of habitats found in and around the freshwater lake areas is presented below.

a. Mammals

Common Name	Scientific Name
Virginia Opossum	Didelphis virginiana
Least Shrew	Cryptotis parva
Shorttail Shrew	Blarina brevicauda
Eastern Mole	Scalopus aquaticus
Raccoon	Procyon lotor
Long-tailed Weasel	Mustela frenata
River Otter	Lutra canadensis
Spotted Skunk	Spilogale putorius
Striped Skunk	Mephitis mephitis
Red Fox	Vulpes vulpes
Gray Fox	Urocyon cinereoargenteus
Bobcat	Felis rufus
Eastern Gray Squirrel	Sciurus carolinensis
Eastern Fox Squirrel	Sciurus niger
Southern Flying Squirrel	Glaucomys volans
Round-tailed Muskrat	Neofiber alleni
Beaver	Castor canadensis
Eastern Cottontail	Sylvilagus floridanus
Marsh Rabbit	Sylvilagus palustris
White-tailed Deer	Odocoileus virginianus
Nine-banded Armadillo	Dasypus novemcinctus

b. Reptiles

Common Name	Scientific Name
American Alligator	Alligator mississippiensis
Stinkpot	Sternotherus odoratus
Eastern Mud Turtle	Kinosternon subrubrum
Florida Cooter	Pseudemys floridana
Yellow-Bellied Slider	Trachemys scripta
Eastern Chicken Turtle	Deirochelys reticularia
Florida Softshell	Trionyx ferox
Snapping Turtle	Chelydra serpentina

b. Reptiles (cont'd)

Common Name	Scientific Name
Water Snake species	Nerodia spp.
Black Swamp Snake	Seminatrix pygaea
Mud Snake	Farancia abacura
Ribbon Snake	Thamnophis sauritus

c. Amphibians

Common Name	Scientific Name
Greater Siren	Siren lacertina
Eastern Lesser Siren	Siren intermedia
Two Toed Amphiuma	Amphiuma means
Green Frog	Rana clamitans
Pig Frog	Rana grylio
Bullfrog	Rana utricularia

Source: FDNR, 1990

3. Designated Species - Rare, Endangered or Threatened

Found in Table 3 and Table 4 are lists of floral and faunal species which may be found at or in the vicinity of Lake Weir. These species have been given legal protection pursuant to the U.S. Fish and Wildlife Service (USFWS) Endangered Species Act of 1973, and/or Florida Game and Fresh Water Fish Commission (FGFWFC) regulations.

Designated species may be classified as endangered, threatened or of special concern. Endangered species are those threatened with extinction if the deleterious factors affecting their populations continue. These are species whose numbers have already declined to such a critically low level, or whose habitats have been so seriously reduced or degraded that without active assistance, survival is questionable. Threatened species are those likely to become endangered in the foreseeable future if current trends continue. Species of special concern are those that warrant special attention even though they do not fit the other categories. These species, although perhaps not rare, may be especially vulnerable to certain types of exploitation or environmental changes and have experienced long term population declines. Species of this designation may also have potential impact on endangered or threatened populations of other species.

TABLE 3

DESIGNATED FLORA LIKELY TO OCCUR IN THE LAKE WEIR AQUATIC PRESERVE AREA

SPECIES	DESIGNATION	
	FGFWFC	USFWS
Curtiss' Milkweed (Asclepias curtissii)	E	
Florida Bonami (Bonamia grandiflora)	E	
Ashe's Savory (Calamintha ashei)	T	
Longspurred Mint (Dicerandra cornutissima)	E	E
Scrub Buckwheat (Eriogonum longifolium van gnaphalifolium)	T	
Scrub Holly (Ilex opaca var arenicola)	T	
Florida Bear-Grass (Nolina atopocarpa)	E	
Large-Flowered Grass-of-Parnassus (Parnassia grandifolia)	E	
Lewton's Polygala (Polygala lewtonii)	E	

FGFWFC = Florida Game & Fresh Water Fish Commission
USFWS = United States Fish & Wildlife Service
E = Endangered
T = Threatened
T(S/A) = Threatened Due to Similarity of Appearance
S = Species of Special Concern

Source: Modified from the Florida Natural Areas Inventory. August 1, 1990. Distribution of Rare/Endangered Species in Marion County, Florida.

TABLE 4

DESIGNATED FUANA LIKELY TO OCCUR IN THE LAKE WEIR AQUATIC PRESERVE AREA

SPECIES	DESIGNATION	
	FGFWFC	USFWS
Lake Eustis Pupfish (Cyprinodon variegatus hubbsi)	S	
Gopher Frog (Rana aerolata)	S	
American Alligator (Alligator mississippiensis)	S	*T(S/A)
Eastern Indigo Snake (Drymarchon corais couperi)	T	T
Gopher Tortoise (Gopherus polyphemus)	S	
Sand Skink (Neoseps reynoldsi)	T	T
Florida Pine Snake (Pituophis melanoleucus mugitus)	S	
Short-Tailed Snake (Stilosoma extenuatum)	T	

FGFWFC = Florida Game & Fresh Water Fish Commission
USFWS = United States Fish & Wildlife Service
E = Endangered
T = Threatened
T(S/A) = Threatened Due to Similarity of Appearance
S = Species of Special Concern

Source: Modified from the Florida Natural Areas Inventory. August 1, 1990. Distribution of Rare/Endangered Species in Marion County, Florida.

J. REGIONAL LAND USE, DEVELOPMENT AND ASSOCIATED IMPACTS

1. ADJACENT UPLAND USES

Based upon existing development conditions the adjacent upland uses of the preserve can be classified as follows: low density-rural or agricultural, medium density residential, high density residential, public recreation-preservation and commercial. These divisions do not necessarily reflect municipal or county zoning terminology.

A. Residential Uses

a. Low Density, Rural or Agricultural: This designation is characterized by areas that exhibit rural or agricultural characteristics (i.e. farmland, ranchland, open space or pastureland). This pattern is exhibited in the upland areas of the preserve on the southern shoreline of Lake Weir proper, from the southern boundary of the private beach of Sunrise Beach Villas, west to the eastern boundary of the Hope Park Recreation Area, and those uplands surrounding the southern shoreline of Little Lake Weir.

In general, the land-use pattern of these upland areas of the preserve are dominated by large lot single-family residences abutting or adjoining open-space, pasture or agricultural property. Much of the agricultural property is either phased out or currently replanted citrus groves, while the remaining property is either currently unused open space or pastureland for livestock. There are parcels of land along both shorelines which sustain uses other than the overall rural, agricultural/open space or low density land-use pattern (e.g. Big Lake Village Mobile Home Park and Eatons Beach). These uses however, are viewed as exceptions to the general development pattern.

b. Medium Density: There is one area of the preserve upland considered medium density. This area begins at Roberts Drive and extends south, along the eastern shoreline of Lake Weir to the southern boundary of the Sunrise Beach Villas and Condominium property.

The eastern shoreline and adjacent uplands of Lake Weir are absorbing much of the newer growth on the preserve. Examples of this growth include the subdivisions of "The Sanctuary" and "Woodmar". These subdivisions are typically composed of lot single-family homes with private single family docks appurtenant to the shorefront properties. Other major residential developments found here include: Weirview Bluff, Orangewood Shores, and Sunrise Beach Villas.

Farther upland, and interspered throughout the uses just described are tracts and parcels of wooded or forrest land, wetlands, open space or pasture land and ponds

or lakes. Remnant or replanted citrus grove sites can also be found scattered throughout the vicinity.

c. High Density: Those areas of the preserve uplands considered to be high density include: 1) that area between the northern boundary of the county lands on Carney Island and Roberts Drive, on the northern shoreline of Lake Weir (including the Town of Oklawaha) 2) the uplands surrounding the northern shoreline of Little Lake Weir and 3) the southern and western uplands within Sunset Harbor (exclusive of the adjacent Carney properties).

The northern shoreline of Lake Weir (including those uplands lying in and around the Town of Oklawaha) are well developed with various sized single and multi-family residences some of which reveal Queen Anne Revival, Colonial Revival or Folk Victorian Architectural Styling, indicative that these homes have existed on the lake for many years.

Other upland uses include numerous commercial establishments, public infrastructure and recreational uses, while shorefront development includes a myriad of water dependent structures and uses ranging from private beaches and private residential docks to covered boat slips, boathouses and commercial structures.

The northern shoreline and uplands of Little Lake Weir are also highly developed, however the uses are not as varied as that found in Oklawaha. Large lot single-family homes and private single family docks line the shoreline. Farther upland, are two communities containing small lot single family residential dwellings, these are the communities of Bliss Haven and Lake Haven. Two other more expansive subdivisions located within the immediate uplands include Lake Weir Heights and Lake Weir Shores. These developments do not abut the lake at any particular point.

The last area to be described here is the Sunset Harbor area or more specifically that area from the eastern boundary of the Hope Park Recreation area west and north to the Lake Weir-Little Lake Weir connector canal (including Bird Island).

The shoreline of this section of the preserve is representative of the other well developed areas of the preserve, consisting primarily of single and multi-family residential docks and private swim access areas. Immediate shorefront lots are primarily small lot single-family residences. Farther upland, development becomes more dense with five subdivisions or communities located within the immediate upland vicinity. Major developments include: Sunset Harbor Subdivision, Lake Weir Harbor Estates, Lake Weir Shores, Southwood Shores Community and Loch Harbor Condominiums. The type of residence found throughout the area can generally be considered to be small lot single-family residential housing, either in the form of mobile, modular or conventional style or multi-family complexes. Other

land uses which are scattered throughout the vicinity include: gas stations, schools, convenience stores, and other forms of public infrastructure.

B. Public Uses

a. Public Recreation and Preservation: Public recreation in the forms of fishing, swimming, picnicking, etc., have been major uses of the preserve for many years. Preservation has also recently become more important due to increasing residential development within the vicinity. In an effort to increase outdoor recreational opportunities and maintain the natural integrity of various uplands, Marion County has purchased the Carney Island property. In conjunction with the Florida Game and Freshwater Fish Commission (FGFWFC), the county also provides or maintains five public recreation areas. Each site provides for access to the preserve and sustains varying forms and amounts of infrastructure. The following list furnishes a description of the infrastructure and a general location for those public recreation-preservation sites appurtenant to the preserve.

1) **Hope Park:** This recreation area has facilities for boating access including (2) single lane and (1) double lane boating access ramps and (2) access or loading piers. Improved parking, restroom and picnicking facilities (tables) are also provided. The site is located along the southern shoreline of Sunset Harbor.

2) **Hamptons Beach:** The facilities located at this site provide for boating access with (1) double lane boating access ramp, picnic tables, restroom facilities, improved parking facilities and a designated swim area. It is located approximately mid-point (north to south) along the eastern shoreline of Lake Weir proper.

3) **Johnsons Beach Boat Ramp:** The facilities at this site include (1) single lane boating access ramp. Swimming frequently occurs here, however there is no designated swim area. The site is located along the northern shoreline of Lake Weir, in the Town of Oklawaha.

4) **Oxners Beach ("Florida Power Beach"):** This recreation area is small in size (compared to those sites previously referenced). It provides for picnicking (tables provided) and is used occasionally for swimming, though not a designated swim area. The nickname "Florida Power Beach" has been given due to the location of the utilities office which is often used as a directional reference point. This recreation site is located along the northern shoreline of Lake Weir proper, in the eastern half of the Town of Oklawaha.

5) **Little Lake Weir Boat Ramp:** The facilities at this site consist of (1) single lane boating access ramp. It is located on the western shoreline of Little Lake Weir.

6) **Lake Weir Seaplane Base:** Located along the northern shoreline of Lake Weir is a designated seaplane landing area. No infrastructure facilities are located within the area, however the site is used for taxiing, landing and take-off of seaplane type aircraft.

7) **Carney Island:** Much of this peninsula has recently been purchased by the county and is in the form of abandoned citrus groves. Derelict maintenance sheds and buildings can also be found on the property. There are privately owned outparcels on the northern and southern parts of the peninsula itself. These properties currently sustain private single family residential dwellings, utility sheds and replanted or active citrus groves. There is little public infrastructure found throughout the peninsula.

C. Commercial Uses

There are (5) five commercial uses of the preserve that are either totally water dependent or that include the use of the preserve as an element of their commercial enterprise. The following is a list of these establishments and their general location:

a) **Johnsons Restaurant and Beach:** This enterprise consists of an over-the-water restaurant and private (fee access) beach. It is located along Lake Weirs' northern shoreline in the Town of Oklawaha.

b) **Eatons Beach:** This establishment is a second private (fee access) beach, located on the southern shoreline of Lake Weir proper. The facilities here include (1) single lane boating access ramp and (1) swimming or boat mooring pier.

c) **Sunset Harbor Grocery:** A convenience style grocery store, Sunset Harbor Grocery also has fueling facilities for boating activities held on the preserve. Its location is along the western shoreline of Sunset Harbor.*

d) **Lock Weir Marina:** This facility rents covered boat slips and is located at the mouth of the unnamed canal, in Oklawaha.

e) **Lake Weir Fish Camp:** This camp has several access (mooring piers), bait and tackle shop and fueling facilities. Accessibility to the camp is periodically obstructed, due to low water levels and heavy vegetation growth in the attendant canal. The camp is situated at the north end of the unnamed canal and C.R. 25, in the Town of Oklawaha.*

(***Note:** These uses are located adjacent to or are on canals title to which may be privately held).

2. CURRENT USES OF THE PRESERVE

The uses of the Lake Weir Aquatic Preserve can be divided into four general categories including: private, commercial, public recreation and open water.

A. **Private:** Private uses are reflected in the many docks, piers, ramps and beaches associated with the single and multi-family residences (or communities) abutting the preserves shoreline.

B. **Commercial:** Commercial uses of the preserve have varied throughout the years from providing water (necessary for the irrigation of citrus), the dredging of sand (during the mid 1900's used in the construction industry), to sport-fishing and recreational boating. Although the dredging of sand has ceased and the volume of commercial irrigation reduced, sport-fishing, swimming and recreational boating remain as viable commercial uses of the aquatic resources.

C. **Public Recreation:** The preserve is currently used, for a variety of active water dependent activities including: fishing, swimming, canoeing, water skiing, pleasure boating, sailing and increasing amounts of jet ski traffic.

D. **Open Water:** There are two open water areas which are buoyed and used for water ski coursing at various times of the year. Both of these areas are located on Lake Weir proper. One course is located in the southeastern corner, the other in the southwestern corner.The water depths in these areas range from seventeen to twenty-eight feet.

A second open water use of the preserve includes those areas preempted by the Florida Game and Freshwater Fish Commissions', fish attractors. Developed as artificial habitat, these structures average 1/4 acre in size and are constructed of citrus, hardwood brush or other non-polluting materials. They are marked with regulatory signs and have been located at various points throughout the preserve.

3. PLANNED USE

In referencing the current residential development pattern of the county, planners have noted current land-use trends stating, "The 116,933 acres of residential land in unincorporated Marion County is concentrated in three areas: the Ocala urban area, the State Road 200 corridor and the Belleview/Lake Weir area, in the southeastern portion of the county". Recognition of further potential residential development has led the county to predict further expansion into the above referenced areas stating, "The State Road 200 corridor is likewise expected to continue to be a high growth area as is the Belleview area, Marion Oaks development and the Dunnellon area" (Marion County Comprehensive Plan, Future Land Use Element Draft, 1991).

The major influence behind the increase in residential development is the expansion of the county's population base. The population of Marion County in 1980 was 122,488 and 1989 estimates adjust this figure to 190,742 (BEBR 1989). The majority of this increase is due to immigration of new residents (93% during the 1980's) from the midwest, northeast and south Florida (Marion County Comprehensive Plan, Future Land Use Element Draft, 1991). In addition, population estimates for the year 2,000 indicate a potential county-wide increase to 263,798 an increase of approximately 73,000 persons. Of the 1989 county-wide estimates 139,233 persons are estimated to be residing in unincorporated Marion County (BEBR, 1989).

These indicators are important, as population growth and concomitant development can have the potential to impact water resources, wildlife habitat and generally increase the potential for environmental degradation.

4. ASSOCIATED IMPACTS

Land-use alterations in the preserves' watershed has impacted the preserves' overall water quality. Historically, early land clearance, the installation of the weir structure, post WWII population increases and the development of citrus agriculture have all contributed to the cultural eutrophication of the preserve (Crissman et al., 1991).

As to the primary source or sources of present day nutrient loading and cultural eutrophication, Crissman et al. (1991) have attributed this phenomenon to an increasing human population level and the fact that the residential population within the watershed is currently serviced solely by septic tanks. Those sections of the preserve most clearly impacted, are those areas adjacent to the uplands sustaining the highest density residential land-uses (e.g. Sunset Harbor, Oklawaha and Little Lake Weir) (Crissman et al., 1991).

Other sources of nutrient loading, identified by researchers at the St. Johns River Water Management District include those existing residential developments which do not currently have or which do not currently maintain existing stormwater treatment facilities. Identified as important nutrient sources, these developments, along with existing septic tanks were not identified as the primary nutrient loading agent of the lake. The agricultural, pasture or open lands currently surrounding the preserve, have been identified by the SJRWMD, as the primary nutrient source for the lake (Memo, St. Johns River Water Management District, 1991).

This lake is currently experiencing events which range from fish kills and disease, to fish species disappearances and phytoplankton (algal) blooms (FGFWFC, 1989) (Crissman et al., 1988). Increased nutrient loading is a result of historical and contemporary land-use alterations and activities. To summarize Crissman et al. (1991) states, "Since land clearance, the lake system has become progressively eutrophic so that today it is at the mesotrophic/eutrophic transition".

CHAPTER IV

MANAGEMENT AREAS

A. INTRODUCTION

This chapter divides the Lake Weir Aquatic Preserve into separate management areas where general or special rule criteria and allowable uses are defined for each area. The management areas are classified and delineated based on the types and locations of existing and planned uses of the adjacent uplands (Figure 6), as well as on the types, occurrence and characteristics of the natural cultural resources on submerged lands. The various management areas delineated may be classified similarly or differently as these factors vary in the preserve.

The purpose of this chapter is four-fold: (1) to provide a better understanding of the general and special rule criteria designed to preserve and protect resources and habitat, (2) to identify the types of allowable uses on state-owned submerged lands within a preserve, (3) to provide local planners with a guide for land use decisions, and (4) to provide both the staff of the Bureau of Submerged Lands and Preserves and other agencies a continuity of direction in the management of this preserve. As such, this intent will afford habitat protection while lending some measure of predictability for allowable public and private uses in the aquatic preserve.

Prior to providing the criteria for specific resource management areas, it is important that the intent, jurisdiction, and limitations of Florida's Aquatic Preserve Program be reiterated. Section 258.36, F.S., states that "It is the intent of the Legislature that the state-owned submerged lands in areas which have exceptional biological, aesthetic, and scientific value...be set aside forever as aquatic preserves or sanctuaries for the benefit of future generations." The program has jurisdiction over the use of state-owned submerged lands within the boundaries of a given preserve. Activities which occur outside the boundaries of an aquatic preserve or which do not directly affect state-owned submerged lands are not within the jurisdiction of the Aquatic Preserve Program (e.g., water quality, regulation of recreational fishing).

There are a number of differences between the rules governing uses of state-owned submerged lands within an aquatic preserve relative to those not within an aquatic preserve. The principal difference is that uses of the submerged lands within an aquatic preserve must be shown to be "in the public interest" before they can be authorized, as opposed to "not contrary to the public interest" for non-aquatic preserve areas.

B. MANAGEMENT AREA CLASSIFICATIONS

A key component of the management program for any aquatic preserve is the division of the preserve into management areas. The classification of management areas in an aquatic preserve is based upon the resource value of submerged lands within the preserve associated with existing and future land uses on the adjacent uplands as designated in the local government comprehensive plan(s). As in the delineation of upland uses through zoning, the delineation of a preserve into management areas is two-fold: (1) to identify areas of public and private uses, and (2) to provide standards with which proposed uses and activities must comply. The intent of these management area classifications is to make potential development activities compatible with resource protection goals.

Designated land uses are incorporated into the classification of management areas because use of the adjacent uplands has a direct bearing on the intensity of demand for uses of state-owned submerged lands. As mentioned earlier, the Aquatic Preserve Program has no jurisdiction over the designated use of the adjacent uplands. The incorporation of a designated land use into the management area classification is simply an acknowledgement of a local government's decision as to how a specific upland area can be developed. Specific land uses to be incorporated in the classification of management areas include:

Agriculture (AG): This category represents state-owned submerged lands adjacent to land designated on a future land use map for a county and/or municipality as agriculture. It is intended to include sparsely populated areas used primarily for agricultural and/or forestry purposes.

Single-Family (SF): This category represents state-owned submerged lands adjacent to land designated on a future land use map for a county and/or municipality as single-family residential. It is intended to include areas using the adjacent portion of the preserve solely for private recreational activities.

Multi-Family (MF): This category represents state-owned submerged lands adjacent to land designated on a future land use map for a county and/or municipality as multi-family residential. It is intended to include areas where more than one private residence are using the adjacent portion of the preserve solely for private recreational activities. The associated residences include townhouses, trailer parks, condominiums, apartments, and any other group of multi-family dwellings. This category also includes a group of single-family property owners (i.e., homeowners association) that proposes to use state-owned submerged lands for the mutual benefit of the group.

Commercial-Industrial (CI): This category represents state-owned submerged lands adjacent to land designated on a future land use map for a county and/or municipality as commercial or industrial. The category is

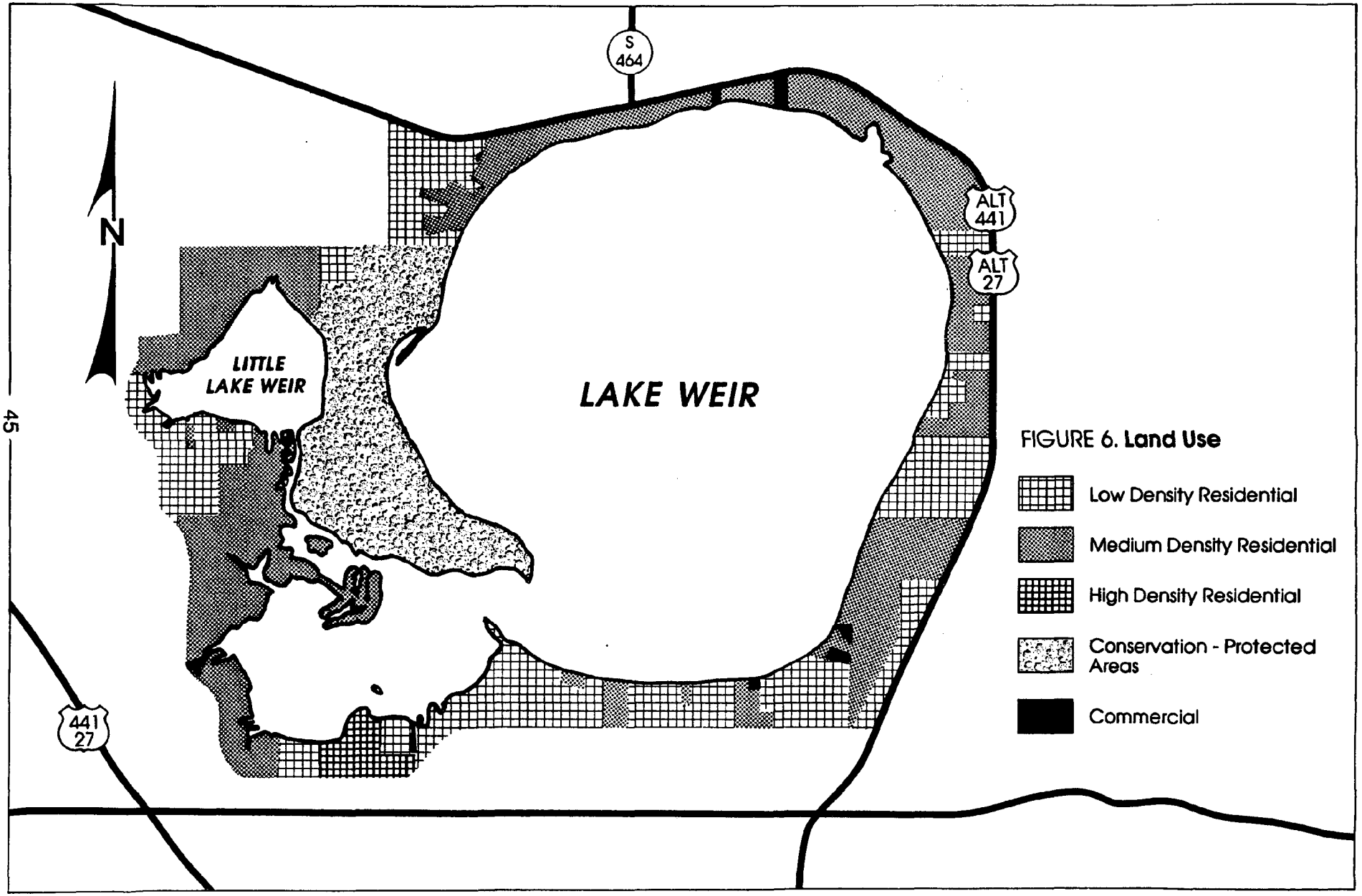


FIGURE 6. **Land Use**

also intended to incorporate uses associated with structures that charge fees or generate revenue.

Public Recreation (PR): This category represents state-owned submerged lands adjacent to land designated on a future land use map for a county and/or municipality as public recreation/preservation and is utilized for the purposes of public recreation. It is intended to include (1) areas where structures are used by the general public at no charge and (2) federal, state, and municipal parks that charge a nominal fee.

Preservation (P): This category represents state-owned submerged lands adjacent to land designated on a future land use map for a county and/or municipality as preservation. Upland ownership can be either public or private.

Open-water (OW): This category represents state-owned submerged lands within an aquatic preserve which are of a distance of greater than 500 feet from land.

Classifications of management areas are also derived from the resource value of the state-owned submerged lands lying adjacent to upland property. Each of the land use classifications listed above is assigned an appropriate number to identify the resource value of the adjacent submerged lands. The methodology used to determine this resource value shall be consistent with the latest methodology approved by the Bureau of Submerged Lands and Preserves.

If an area within the preserve is identified as a **Primary Resource Protection Area (PRPA)**, then it will be assigned a resource value of "**1**". A PRPA essentially combines Resource Protection Areas 1 and 2, as defined in Sections 18-20.003(31), and 18-20.003(32), F.A.C.

Submerged areas that are characterized by the absence of resource attributes will be designated as a **Secondary Resource Protection Area (SRPA)**, and will be assigned a resource value of "**2**". A SRPA is a Resource Protection Area 3 as defined by Section 18-20.003(33), F.A.C.

As stated previously, resource values are to be incorporated into the classification of management areas. For example, if an area within the preserve is determined to have a primary resource protection area, and if the adjacent land is zoned as a single-family residential neighborhood, the adjacent management area would be classified as **SF/1.**

C. MINIMUM CRITERIA FOR ALLOWABLE USES

Except where specified below, chapter 18-20, F.A.C., provides the minimum standards with regards to utilization of state-owned submerged lands within an aquatic preserve, as authorized by the Board of Trustees. It should be noted that other regulatory agencies' rules and jurisdictions over activities may apply within aquatic preserves. The minimum standards for each allowable use are detailed below.

All Dock Structures: Section 18-20.004(5)(a), F.A.C., states that all docking facilities within an aquatic preserve shall meet the following standards and criteria:

1. no dock shall extend waterward of the mean or ordinary high water line more than 500 feet or 20% of the width of the waterbody at that particular location, whichever is less;

2. areas of significant biological, scientific, historic, and/or aesthetic value require special management considerations. Modifications to docks in these areas may be more restrictive and shall be determined on a case-by-case basis;

3. the number, lengths, drafts, and types of vessels allowed to utilize the proposed facility may be stipulated;

4. where local governments have more stringent standards and criteria for docking facilities, the more stringent standards for the protection and enhancement of the aquatic preserve shall prevail.

Private Residential Single Docks: Section 18-20.004 (5)(e) allows for exceptions to the standards and criteria listed in Chapter 18-20.004 (5), F.A.C. Due to the dependent nature of the lakes overall water level, on precipitation, and the concurrent affect of this variability on the littoral area water column depths, private single family residential docks and covered boat slips shall conform to the following standards and criteria:

- The width of the main access dock shall not exceed five feet;

- The dock may not extend to a water depth greater than minus four (-4) feet mean or ordinary low water unless such would result in the terminal platform or mooring area being located in a PRPA, in which case the dock may be extended out the minimum distance necessary to avoid the PRPA;

- If the water depth is (-4) feet mean or ordinary low water at an existing seawall or bulkhead, the maximum distance that the dock may extend out from the seawall shall be no more than twenty-five (25) feet;

- The size of a terminal platform shall not exceed 160 square feet;

- A covered boatslip if constructed;

- Must have a roof with a slope of at lease 2:1;

- The total covered area shall not exceed 160 square feet if located in a PRPA or 330 square feet if outside a PRPA;

- Shall not include a catwalk inside the covered area that is more than three feet wide;

- If a dock is to have both a terminal platform and a covered slip, the total area covered by both shall not exceed 160 square feet in a PRPA, or 330 square feet outside of a PRPA;

- A covered boatslip and terminal platform not exceeding 490 square feet may be authorized outside a PRPA if located within an area designated in an approved management plan as being substantially developed with similar facilities.

Private Residential Multi-Slip Docks: Section 18-20.004(5)(c), F.A.C., states that private residential multi-slip docks, as defined by Section 18-20.003(24), F.A.C., shall conform to the following design standards and criteria:

1. the area of sovereignty submerged land preempted by the docking facility shall not exceed the square footage amounting to ten times the riparian waterfront footage of the affected waterbody of the applicant, or the square footage attendant to providing a single dock in accordance with the criteria for private residential single docks, whichever is greater. A conservation easement or other such restriction acceptable to the Board must be placed on the riparian shoreline, used for the calculation of the 10:1 threshold, to conserve and protect shoreline resources and subordinate/waive any further riparian rights of ingress and egress for additional docking facilities;

2. docking facilities and access channels shall be prohibited in Resource Protection Areas 1 and 2 (= PRPA), except as allowed pursuant to Section

258.42(3)(e)1, F.S., while dredging in Resource Protection Area 3 (= SRPA) shall be strongly discouraged;

3. water depths adjacent to and within the proposed mooring area shall have a minimum clearance of one foot between the deepest draft vessel and the submerged bottom at MLW;

4. main access piers and connecting walks shall not exceed six feet in width;

5. terminal platforms shall not exceed eight feet in width;

6. finger piers shall not exceed three feet in width and 25 feet in length;

7. pilings may be utilized as required to provide adequate mooring capabilities;

8. specific provisions of Section 18-20.004(5)(d), F.A.C., for commercial, industrial, and other revenue generating/income related docking facilities shall also apply to private residential multi-slip docks.

Commercial-Industrial Docking Facilities and Marinas: Section 18-20.004(5)(d), F.A.C., states that commercial, industrial, and other revenue generating/income related docking facilities, as defined by Section 18-20.003(10), F.A.C., shall conform to the following specific design criteria and standards:

1. docking facilities shall only be located in or near areas with good circulation, flushing, and adequate water depths;

2. docking facilities and access channels shall not be located in Resource Protection Areas 1 and 2; however, main access docks may be allowed to pass through Resource Protection Area 1 or 2 that are located along the shoreline, to reach an acceptable Resource Protection 3, provided that such crossing will generate minimal environmental impact;

3. the siting of docking facilities shall take into account the access of boat traffic to avoid marine grassbeds or other aquatic resources in the surrounding area;

4. marina siting will be coordinated with local governments to insure consistency with all local plans and ordinances;

5. the siting of new facilities within the aquatic preserve shall be secondary to the expansion of existing facilities when such expansion is consistent with other standards;

6. the location of new facilities and expansion of existing facilities shall consider the use of upland dry storage as an alternative to multiple wet slip docking;

Piers: Piers shall be constructed in accordance with the minimum criteria provided by Section 18-20.004(5)(b), F.A.C. In addition, the following conditions apply to all piers: (1) hand rails will be installed around the perimeter of the structure, (2) at least one "Docking Prohibited" sign will be posted and maintained on each side of the pier, (3) no temporary or permanent mooring of vessels will be permitted, and (4) dredging is prohibited when associated with pier construction and maintenance.

Ramps: Boat ramps will be reviewed on a case-by-case basis. Determining factors to be reviewed include: (1) the elimination or alteration of natural resources or habitat (e.g., shoreline vegetation, nesting areas), (2) the amount of dredging and/or filling of submerged lands, and (3) accessibility to the ramp from water and land routes.

Exceptions to the standards and criteria for any docking facility may be considered, but only upon demonstration by the applicant that such exceptions are necessary to ensure reasonable riparian ingress and egress as provided for in Chapter 18-20, F.A.C.

Lease, or Transfer of Lands: Section 18-20.004 (1)(b), F.A.C., states that there shall be no further lease, or transfer of sovereignty lands within an aquatic preserve unless such transaction is in the public interest. Section 18-20.004(2), F.A.C., specifically defines the public interest test (see Appendix A for a copy of Chapter 18-20, F.A.C.). Section 18-20.004(1)(e), F.A.C., states that a lease, easement, or consent of use may be authorized only for the following activities: (1) a public navigation project; (2) maintenance of an existing navigation channel; (3) installation or maintenance of approved navigational aids; (4) creation or maintenance of a commercial/industrial dock, pier, or marina; (5) creation or maintenance of private docks; (6) minimum dredging of navigation channels attendant to docking facilities; (7) creation or maintenance of shore protection structures; (8) installation or maintenance of oil and gas transportation facilities; (9) creation, maintenance, replacement, or expansion of facilities required for the provision of public utilities; and (10) other activities which are a public necessity or which are necessary to enhance the quality and utility of the preserve and which are consistent with the Florida Aquatic Preserves Act (Sections 258.35 - 258.46, F.S.). Section 18-20.004(1)(f), F.A.C., states that structures to be built in, on, or over sovereignty lands are limited to those necessary to conduct water-dependent activities.

Utility Easements: Section 18-20.004(3)(c), F.A.C., provides that utility cables, pipes, and other such structures shall be constructed and located in a manner that will cause minimal disturbance to submerged land resources such as fisheries spawning habitat and submerged grassbeds and do not interfere with traditional

uses. It will be the policy within the aquatic preserve to locate the placement of utilities in designated corridors, or existing easements.

Spoil Disposal: Section 18-20.004(3)(d), F.A.C., states that spoil disposal within an aquatic preserve shall be strongly discouraged and may be approved only where the applicant has demonstrated that there is no other reasonable alternative and that the spoiling activity may be beneficial to, or at a minimum, not harmful to the quality or utility of the preserve.

Cumulative Impacts: Section 18-20.006(1-7), F.A.C., sites the Departments responsibility to evaluate particular sites for which activities are proposed, in light of the cumulative impact on the preserve's natural system. The department shall include as part of its evaluation of an activity:

1. the number and extent of similar human actions within the preserve which have previously affected or are likely to affect the preserve, whether considered by the department under its current authority or which existed prior to or since the enactment of the Act;

2. the similar activities within the preserve which are currently under consideration by the department;

3. direct and indirect effects upon the preserve and adjacent preserves, if applicable, which may reasonably be expected to result from the activity;

4. the extent to which the activity is consistent with management plans for the preserve, when developed;

5. the extent to which the activity is permissible within the preserve in accordance with comprehensive plans adopted by affected local governments, pursuant to section 163.3161, F.S., and other applicable plans adopted by local, state, and federal governmental agencies;

6. the extent to which the loss of beneficial hydrologic and biologic functions would adversely impact the quality or utility of the preserve; and

7. the extent to which mitigation measures may compensate for adverse impacts.

Special criteria other than that listed in Chapter 18-20, F.A.C., may be required if the physical conditions warrant it. Those areas requiring special management will be referred to as special management areas and will be labeled with an additional letter. For example if an SF/2 area requires supplemental criteria it then becomes a special management area and would be classified as an SF/2a. Special management area criteria includes:

- A covered boatslip and terminal platform not exceeding 490 square feet may be authorized outside a PRPA if located within an area designated in an approved management plan as being substantially developed with similar facilities.

Upon approval of this management plan by the Board of Trustees, the Lake Weir Aquatic Preserve Management Plan will be incorporated into Chapter 18-20, F.A.C., rule by reference; therefore, new criteria in this plan will have the force and effect of rule upon adoption of this plan into rule.

D. MANAGEMENT AREAS

In this section, management areas have been delineated for the Lake Weir Aquatic Preserve (Figure 7). Boundaries, descriptions, and allowable uses are listed for each area. Due to changes that will occur from rezonings of adjacent uplands, in addition to the biological conditions on submerged lands, final decisions on approving, modifying or denying uses within the preserve will be made based on field surveys and assessments of prospective sites.

In addition to what is listed for allowable uses, certain activities are generally permissible in all management areas, in accordance with general rules. These include shoreline stabilization structures and maintenance dredging.

Note: Several management area classifications have been combined (e.g. PR-SF/1 and SF-MF/1) due to the general diversity of uses and densities intermixed throughout the upland area.

In addition, some management areas which abut more homologous uplands, may contain specific activities occurring within, which are not reflective of the overall upland land use pattern. In such cases, these specific activities will be recognized as "non-conforming uses".

MANAGEMENT AREA SF/1

(Single Family/Primary Resource Protection Area)

There are two major areas within this classification.

Boundaries: This area includes those submerged lands adjacent to those uplands along the southern shoreline of Lake Weir beginning at the southern boundary of the Sunrise Beach Villa property and extending westward to the eastern boundary of the Hope Park Recreation Area.

Description: This management area is characterized by a limited number of private residential docks and a limited number of boathouses constructed among various species of aquatic vegetation such as: maidencane, spikerush, arrowhead and cattail. Non-conforming use features include: a private (pay access) beach and boating access ramp and a community swim pier and swim area.

Boundaries: The second area within this designation includes those state-owned submerged lands abutting the western and southern shorelines of Little Lake Weir. More specifically, this area extends westward from the Lake Weir-Little Lake Weir connector canal to the southwestern boundary of the Little Lake Weir boat ramp facility (excluding any privately held canals).

Description: Those submerged lands lying within this area support aquatic vegetation such as illinois pondweed, bladderworts and water hyssops. Interspersed among these aquatics are private residential single docks, cleared swim areas and shoreline stabilization structures.

Allowable Uses: Private residential single docks and piers, utility easements (in designated corridors).

MANAGEMENT AREA SF-MF/1
(Single-Family-Multi-Family/Primary Resource Protection Area)

This classification contains three areas.

Boundaries: The first area includes those state-owned submerged lands lying along the eastern shoreline of Lake Weir, beginning at a point due west of Roberts Drive and extending south to the southern boundary of the Sunrise Beach Villa property.

Description: The submerged lands within this management area primarily support private single docks with attendant boat hoists, and an occasional boathouse. Non-conforming use features are limited to that infrastructure associated with the Hampton Beach County Park (floating tire breakwater, boating access ramp and swim area floats, buoys and ropes) and the public recreation dock at Stanton Beach. There are substantial amounts of the emergent plants specifically spikerush and maidencane found in the littoral areas, except where this vegetation has been cleared for private swim access.

Boundaries: The second area includes those state-owned submerged lands lying adjacent to an area beginning at the eastern boundary of the Hope Park Recreation area and extending west and north (including all of Sunset Harbor, Bird Island and

the attendant causeway island and the Lake Weir-Little Lake Weir connector canal, but excluding any privately held canals and the adjacent Carney Island properties).

Description: The submerged lands in this area of the preserve support a variety of aquatic plant species including water lilies, spikerush, arrowhead, cattail and websteria. The majority of structures and activities found here include private single family docks, shore protection structures and cleared swim areas. Isolated non-conforming use features include: fueling facilities and that infrastructure associated with the Hope Park County Recreation Area (Boating access ramps and mooring docks).

Boundaries: The final area under this classification includes those state-owned submerged lands beginning at the southwestern boundary of the Little Lake Weir boat ramp and extending northeast and then southeast to the Carney Island property.

Description: The submerged lands lying adjacent to the northern shoreline of Little Lake Weir largely support single family docks and private swim areas interspersed throughout the existing stands of maidencane, water hyssop, illinois pondweed and other aquatic plant species.

Allowable Uses: Private residential docks (a single two slip dock built in accordance with standards and criteria for private residential single docks); piers, utility easements (in designated corridors).

MANAGEMENT AREA SF/2a-MF-CI/2
(Single Family/Special Management Area-Multi-Family/Secondary Resource Protection Area)

Boundaries: This management area includes those state-owned submerged lands lying from a point east of Luffman Road and extending northeast and east to Roberts Drive (including the Town of Oklawaha).

Description: The submerged lands in this area support aquatic vegetation such as maidencane and spikerush however a great deal of this vegetation has been removed for personal swim access. This area is more densely developed with a variety of structures (e.g. large docks, covered boat slips and boat houses) than is found elsewhere on the preserve.

Allowable Uses: Private residential single docks and private residential multi-slip docks and piers, commercial docks and piers, covered slips, marinas, ramps, utility easements.

MANAGEMENT AREA PR-SF/1
(Public Recreation-Single Family/Primary Resource Protection Area)

Boundaries: Included in this management area are those state-owned submerged lands surrounding Carney Island (Peninsula).

Description: This area is characterized by minimal, shoreline development along the eastern (Lake Weir), southern (Sunset Harbor) and northwestern (Little Lake Weir) boundaries. These areas support an abundance of submergent, emergent and floating leaf aquatic plant species. The western and southwestern boundaries abut wetland hardwood forrest and freshwater marsh respectively.

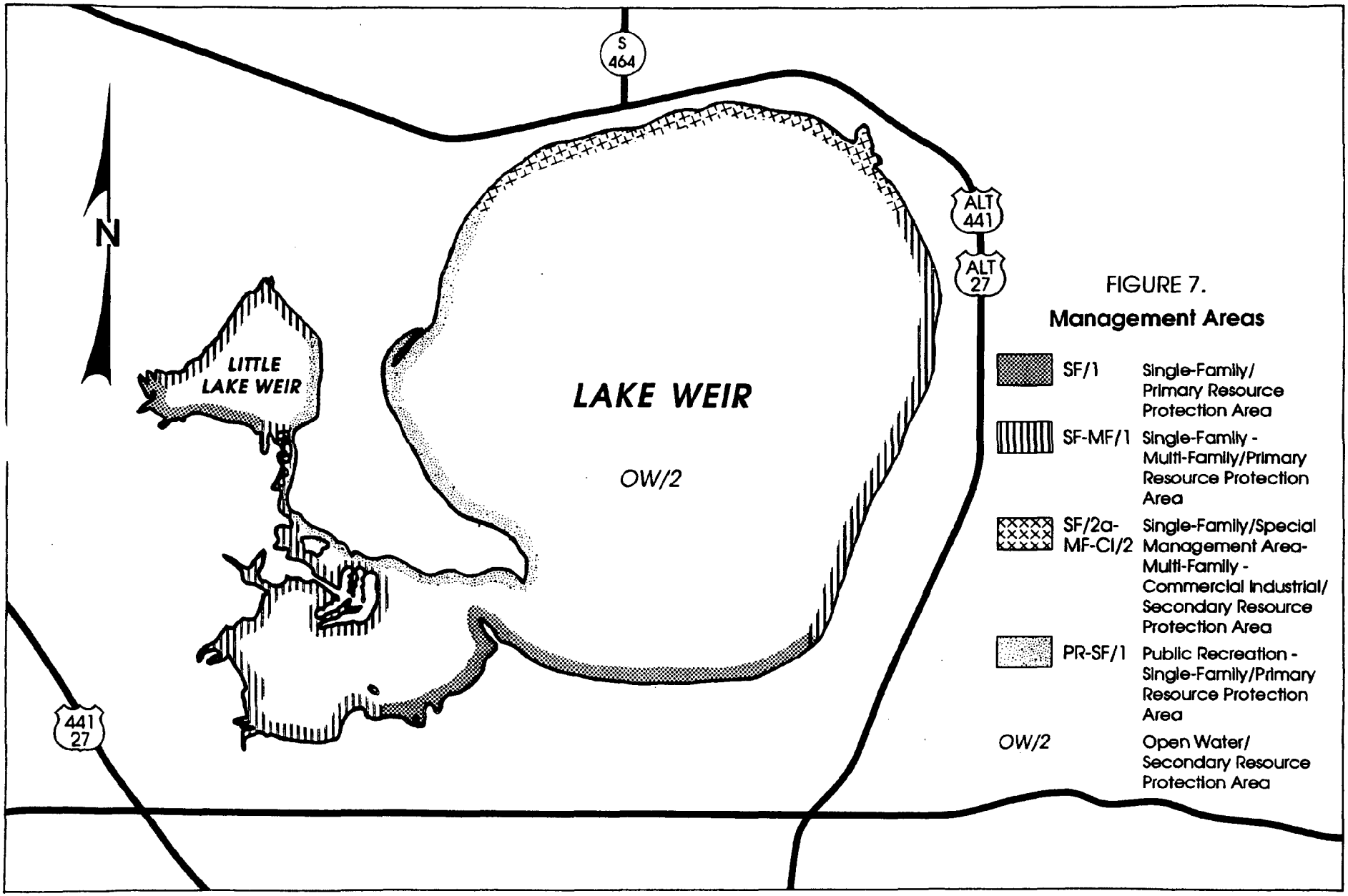
Allowable Uses: Public docks (a single two-slip dock built in accordance with standards and criteria for private residential single docks), piers and ramps. Private residential single docks and piers, utility easements (in designated corridors).

MANAGEMENT AREA OW/2
(Open Water/Secondary Resource Protection Area)

Boundaries: This designation is comprised of all state-owned submerged portions of the preserve 500 ft. waterward of the Ordinary High Water Line (OHWL).

Description: This area is characterized by such aquatic vegetation species as bacopa and illinois pondweed. In those deeper segments which sustain minimal macrophytic growth, the substrate composition varies from fine to coarse sand, found in Sunset Harbor and Lake Weir to organic muck, prevalent in Little Lake Weir and at the center of Lake Weir proper.

Allowable Uses: Utility easements, artificial fish habitat structures (and attendant regulatory signs), temporary water ski buoy markers.


S
464
N
LITTLE
LAKE WEIR
LAKE WEIR
OW/2
ALT
441
ALT
27
441
27
FIGURE 7.
Management Areas
SF/1
Single-Family/
Primary Resource
Protection Area
SF-MF/1
Single-Family -
Multi-Family/Primary
Resource Protection
Area
SF/2a-
MF-CI/2
Single-Family/Special
Management Area-
Multi-Family -
Commercial Industrial/
Secondary Resource
Protection Area
PR-SF/1
Public Recreation -
Single-Family/Primary
Resource Protection
Area
OW/2
Open Water/
Secondary Resource
Protection Area

CHAPTER V

SITE SPECIFIC MANAGEMENT ISSUES AND NEEDS

This chapter identifies issues and develops policy guidelines in regards to specific activities (other than the regulation of structures) which directly impact the aquatic preserve. The issues that are specific to this area include, but are not limited to: 1) excessive nutrification and stormwater runoff 2) nearshore vegetation management 3) boating and associated activities.

1. EXCESSIVE NUTRIFICATION AND STORMWATER RUNOFF

As discussed previously in Chapter III, studies and analyses of the preserves water quality indicate a variety of sources of pollutants. The highly developed Sunset Harbor, Oklawaha and Little Lake Weir areas continue to load the lake with excessive nutrients via septic tanks. Simultaneously, existing residential developments (without operating storm water treatment systems) and the surrounding agricultural properties (particularly the open space or pasture land continue to load the lake with nutrients and other pollutants via stormwater runoff. These sources have been confirmed by scientific studies referenced earlier, as the greatest threat to the water quality of the preserve.

MANAGEMENT INITIATIVES:

1. Support the construction of sewer treatment facilities in those areas which have presently been identified as the most highly populated segments of the Lake Weir watershed.

2. Coordinate with state, regional and local agencies (in particular the St. Johns River Water Management District and Marion County) in identifying methods for treating or preventing stormwater runoff. This includes those existing residential areas where existing infrastructure is found to be inoperative, inadequate or non-existent and those agricultural (open space or pasture) properties determined to be in need of treatment facilities.

2. NEARSHORE VEGETATION MANAGEMENT

Presently, the narrow littoral zone surrounding the preserve supports freshwater aquatic plant species which are beneficial to the water quality. The species in this

area allow for nutrient uptake from upland runoff and provide habitat for wildlife and fish reproduction.

As a viable resource for human oriented recreational activities (i.e. fishing) as well as valued wildlife habitat, the preservation of the aquatic vegetation found here, in conjunction with other watershed and lake management practices, should prove beneficial by helping control nutrient over-enrichment and by providing needed fish and wildlife habitat.

MANAGEMENT INITIATIVES:

1. Promote through enforcement and education the elimination of use of non-permitted aquatic herbicides or other chemicals used by adjacent property owners to control vegetation in the preserve.

2. Encourage local government and private (fee access) beach owners to cordon off existing and planned designated swim areas to help reduce/limit resource impacts outside these areas.

3. Coordinate with state, regional and local agencies (particularly the local FDNR Bureau of Aquatic Plant Management Field Office) in the aquatic plant control permit process to eliminate the non-permitted removal of indigenous aquatic vegetation and to educate riparian owners as to the impacts of vegetation removal.

4. Encourage through education and enforcement the proper methods for docking boats to avoid negatively impacting nearshore vegetation.

5. Support and encourage riparian owners to replant native wetland species, such as maidencane or spikerush, in areas currently devoid of such vegetation along the shoreline.

3. BOATING AND ASSOCIATED ACTIVITIES

Major boating activities on the preserve include: fishing, skiing and pleasure boating and as the population of Marion County has increased so have the number of boaters. This trend should only intensify with the continuing influx of new residents. Additionally, jet skis have become widely used throughout the preserve, and an increase in this activity is also anticipated.

Concurrent with these types of water related uses is an increase in possible damage to the existing aquatic resources. Such damage could include: destruction

of shallow water aquatic vegetation, petro-chemical pollution (gasoline spills) and increased disturbance to fish, wildlife and their habitats.

MANAGEMENT INITIATIVES:

1. Cooperate with the Florida Game and Freshwater Fish Commission, Marion County Sheriffs Department and Coast Guard Auxiliary in identifying and removing possible safety and navigational hazards caused by non-permitted fixed or temporary structures.

2. Encourage studies on the types of boating and associated activities believed to be potentially harmful to the aquatic resources, and cooperate with the respective law enforcement agencies to assess future needs to impose rules for boating activity.

3. Encourage and enforce the placement of private jet ski "mounts" (structures constructed of PVC material which are elevated to water level so as to allow the operator to ride onto the mount and park the equipment) within areas previously approved for vegetation removal.

CHAPTER VI

MANAGEMENT ACTION PLAN

The objective of this chapter is to establish guidelines for the on-site management and protection of the natural resources within the Lake Weir Aquatic Preserve.

Before an effective action plan can be designed to manage and protect natural resources of the preserve, it is necessary to recognize the type of resources present, their location, function, and importance. Additional efforts should concentrate on identifying those activities or parameters that impact these resources, either positively or negatively. This information will form the foundation from which action will be initiated to manage and protect these resources. The strategies used in managing an aquatic preserve must consist of a variety of components such as: **resource management, resource protection, research, and environmental education.**

In general, the role of the management program for Lake Weir includes: (1) providing information on the ecological functions of the natural resources within the preserve, (2) overseeing those activities that impact the natural resources within the preserve, (3) ensuring that accurate resource information is considered in permit-related issues and planning decisions, (4) ensuring that agency statutes and rules are followed and that violations are enforced by the appropriate authorities, (5) conducting site surveys for specific activities, (6) coordinating with other resource management and enforcement agencies, (7) educating the public on the inherent values associated with natural resources, (8) conducting or cooperating with other entities to conduct pertinent research projects, and (9) developing a comprehensive management program that can be periodically updated.

A. RESOURCE MANAGEMENT

The overall goals of resource management within aquatic preserves are: (1) conducting and maintaining current, detailed resource inventories, (2) assessing the impact of human activities on the resources, (3) establishing habitat restoration programs, and (4) cooperating with other agencies in water quality improvement.

GOAL A.1: DEVELOP AND MAINTAIN A FULL RESOURCE INVENTORY

Objective A.1.1: To develop, maintain and update a resource inventory of submergent and emergent vegetation.

Task A.1.1.1: Conduct an inventory of submergent, emergent and shoreline vegetation using LANDSAT imagery, aerial photography and groundtruthing efforts every three years.

Task A.1.1.2: Develop and maintain biological resource maps utilizing data from this inventory (e.g. exotic plant control areas, wildlife areas, restoration sites, special protection zones) to be consulted when assessing proposed activities, restoration projects or other activities that may impact the natural resources.

Objective A.1.2: To update the inventory of native wildlife species and their habitats, including designated species.

Task A.1.2.1: Conduct a specific inventory of designated species and their habitats by using data from available research studies and existing literature every two years.

Task A.1.2.2: Conduct an expanded inventory of all native wildlife habitat using available research studies and existing literature, every two years.

Task A.1.2.3: Use biological resource maps, native and designated wildlife species inventories, on-site inspection surveys, and structure and cumulative assessment surveys to provide for management area specific resource inventories.

GOAL A.2: ASSESS THE EFFECT OF HUMAN ACTIVITIES

Objective A.2.1: To inventory and assess the impacts of human activities on the natural resources.

Task A.2.1.1: Survey and document all docks piers and other waterward structures (private, public and commercial) to determine if a structure and associated activity is or has previously impacted native vegetation. This survey shall contain at a minimum the following information:

a) the physical dimensions of the structures surveyed (e.g. length, width, total square footage and height above the current lake level);

b) the water depth at the waterward terminus of the structure(s);

c) the type of structure(s) (e.g. dock, pier, boathouse, etc.) and composite materials;

d) the current functional condition and use (e.g. number, size and draft of boats, diving, swimming, fishing) of the facility;

e) an inventory of the biological resources within a 25 foot radius of the facility, and

f) other functions or impacts under the jurisdiction of Aquatic Preserve-Submerged Lands rules.

Objective A.2.2: To inventory and assess cumulative impacts on natural resources.

Task A.2.2.1: Survey and record all boat launchings (access points), shoreline stabilization structures, jet ski mounts, and altered or unvegetated areas to document the following:

a) the type and intensity of the current use;

b) a description of the biological resources currently found onsite;

c) notable indicators of pollution;

d) length of altered shoreline;

e) structural dimensions (e.g. height, length, width) and composite materials) of stabilization structures, and

f) the type and number of jet ski mounts.

Task A.2.2.2: Survey boating/jet skiing activity to assess any negative impacts to the preserve through the intensified use of this and related activities with an emphasis on incompatible uses.

GOAL A.3: RESTORE, ENHANCE OR MAINTAIN WATER QUALITY

Objective A.3.1: To coordinate with the Department of Environmental Regulation, St. Johns River Water Management District and Marion County on improving water quality within the preserve.

Task A.3.1.1: Acquire, maintain and review past, current and future records of water quality data of the preserve.

Task A.3.1.2: Assist in the implementation of applicable management programs or projects designed to maintain or upgrade the water quality of the preserve, as sponsored by the St. Johns River Water Management District SWIM program and Marion County.

Task A.3.1.3: Provide assistance to the Department of Environmental Regulation in an effort to further the OFW designation process of the preserve.

GOAL A.4: HABITAT RESTORATION

Objective A.4.1: To identify unvegetated and disturbed shoreline areas as suitable restoration sites.

Task A.4.1.1: Serve as liaison between the bureau and St. Johns River Water Management District SWIM personnel and the Florida Game and Freshwater Fish Commission on restoration projects proposed for the lake.

Task A.4.1.2: Provide biological assessments for those areas of the preserve slated for restoration and monitor methods, techniques or procedures for executing restoration projects.

Task A.4.1.3: Recommend, through the use of biological assessments and other supporting documentation, sites which should be considered for restoration work.

GOAL A.5: COORDINATE WITH LOCAL GOVERNMENTS ON LAND USE PLANNING

Objective A.5.1: To coordinate with local planning departments, regional planning councils, and the Department of Community Affairs to develop/revise/evaluate local government comprehensive plans and amendments.

Task A.5.1.1: Establish role as field representative for DNR Aquatic Preserves and local government.

Task A.5.1.2: Assist local planners in the development of policies and ordinances that regulate activities impacting sovereign submerged lands.

B. RESOURCE PROTECTION

In order to maintain the biological integrity of the aquatic preserve, it is imperative to protect the resources that comprise the system. Since it is not feasible to target all of the organisms adequately, the primary thrust of the resource protection element is the protection of the various habitats that make up the preserve. The goals of the aquatic preserve program with regard to resource protection therefore include (1) protection of the existing submergent vegetation, (2) protection of emergent vegetation, and (3) protection of habitat of designated species.

GOAL B.1: PROTECTION OF SUBMERGENT AND EMERGENT VEGETATION

Objective B.1.1: To minimize potential damage to submergent and emergent vegetation through the review of applications for use of state-owned submerged lands within the aquatic preserve.

Task B.1.1.1: Field staff will coordinate with other units and the central office in the development of a written policy describing a scientifically based, standardized method to inventory the submergent and emergent biological resources at proposed project sites. At a minimum this policy should include the following information:

a) The area to be surveyed will be described:
   1) as a polygon, and
   2) it will include a buffer zone surrounding the project of sufficient size so as to include a majority of the potentially affected area.

b) How the survey is to be performed:
   1) Two areas within the survey area will be assessed:

      i. the submerged bottom including:
         * a description of all communities/habitats,
         * a description of the bottom type,
         * depth profiles,
         * a physical description of the surrounding waterbody, and
         * current lake level.

      ii. the shoreline (where appropriate) including:
         * a description of the vegetation,
         * a description of any existing structures,
         * notation of any nesting birds, and
         * notation of any designated species.

c) a definition of a Resource Protection Area. This definition will be used to determine if significant resources exist within the expected area of impact. It will consider, but is not limited to:

1) floating and emergent plants,
2) submergent and floating leaved plants,
3) general bottom substrate condition,
4) fish nesting sites,
5) designated species, and
6) nesting sites for solitary or colonial birds.

Task B.1.1.2: If at the time of adoption of this plan the Department's **"Methods Manual for Field Inspections within Aquatic Preserves"** has been adopted, it will be used to assess resources within the preserve.

Task B.1.1.3: Coordinate with the appropriate regional DNR planner in order to process the field staff comments in a timely manner.

Task B.1.1.4: Coordinate when possible with other appropriate agencies that have regulatory authority for these projects.

Objective B.1.2: To ensure that structures and projects that have been authorized are in compliance with agency specified conditions.

Task B.1.2.1: Coordinate with the appropriate regional DNR planner to receive copies of all letters of consent, easement agreements, lease agreements, and other forms of authorizations.

Task B.1.2.2: Report variations from the authorized conditions to the DNR Investigations Section.

Task B.1.2.3: Coordinate, when possible, with other appropriate agencies which have regulatory authority for these projects.

Objective B.1.3: To ensure that structures and projects that have been built or are occurring have been authorized.

Task B.1.3.1: Report activities that do not appear to have been authorized to the DNR Investigations Section.

Task B.1.3.2: Coordinate when possible with other appropriate agencies that have regulatory authority for these projects.

Objective B.1.4: To ensure that human use of the preserve does not degrade the submergent vegetation through turbidity.

Task B.1.4.1: Require that all projects such as dredge and fill or shoreline stabilization projects use current turbidity controls.

GOAL B.2: PROTECTION OF SPECIES OF SPECIAL SIGNIFICANCE

Objective B.2.1: Ensure that these habitats are given maximum protection.

Task B.2.1.1: Discourage projects in areas known to be species of special significance habitat areas.

Task B.2.1.2: Recommend the appropriate modifications to projects proposed to impact designated species habitat.

C. RESEARCH

The effective management of any biological system relies almost entirely on information relating to how a system functions. Research is the foundation upon which this information is based. The goal of the research program for the Aquatic Preserve Program is primarily geared towards applied research, rather than toward basic or theoretical research. The goal of the research program is to gain a better understanding of biological integrity of all resources within the aquatic preserve.

GOAL C.1: INTEGRITY OF THE RESOURCE

Objective C.1.1: To continue compiling research data relevant to the protection of the resource.

Task C.1.1.1: Continue to accumulate data, research and management studies to be used in assessing the status of the existing resources, to update management area classifications, to supplement biological and other surveys and to aid in the general management of the preserve.

Task C.1.1.2: Continue coordination efforts between and among those managing agencies to ensure that pertinent research information is obtained.

Objective C.1.2: Develop a comprehensive data base of those aquatic resources which currently exist within the boundaries of the preserve.

Task C.1.2.1: Pursue at the bureau level and through grant proposals, funding to secure the most up-to-date computerized technology (including a GIS system) available to store, retrieve and view resource related data.

Task C.1.2.2: Continue to compile data, studies etc., as referenced in Tasks C.1.1.1: and C.1.1.2.

Task C.1.2.3: Supplement existing resource maps and photographs, with additional available historical and current materials.

Objective C.1.3: Coordinate the use of research findings into both management decisions and resource education programs.

Task C.1.3.1: Keep abreast of current and historical research and monitoring activities making scientific information available to decision-makers.

Task C.1.3.2: Review historical and ongoing research and monitoring studies to enable staff to update resource oriented education programs.

D. ENVIRONMENTAL EDUCATION/INFORMATION PROGRAM

The role of the Aquatic Preserve Program in environmental education is largely to coordinate and augment existing programs conducted out of the local school system(s), the Florida Department of Education, or other state agencies. Education programs are conducted in an effort to meet the overall program goal of maintaining aquatic preserves at their current level of environmental quality for future generations. The target population of education programs at the Lake Weir Aquatic Preserve includes: adjacent upland landowners, developers, commercial and recreational resource users, students and government agencies.
The involvement of aquatic preserve staff in public education will focus on the development of both programs in the school system and to the public at large. Specific areas of involvement may include: developing informational pamphlets, brochures, or booklets; conducting lectures or classes; development of public service announcements for television and radio; and, development of video programs and other teaching aids that can be used by public school systems in their daily instruction to students.

Two DNR publications, Environmental Education in Florida: Needs and Goals, and A Guide for Environmental Education, serve as important resource documents for environmental education programs in aquatic preserves.

GOAL D.1: PUBLIC EDUCATION OF WISE RESOURCE USE

Objective D.1.1: Upgrade present staff and equipment level to provide for expanded educational activities.

Task D.1.1.1: Pursue at the bureau level, funding to provide for (1) full-time education specialist position.

Task D.1.1.2: Upgrade present educational information and equipment to allow for further development of educational program.

Objective D.1.2: To formulate programs using visual aids and literature that provide or assist in environmental education to the community at large.

Task D.1.2.1: Develop brochures, pamphlets and/or booklets in conjunction with other interested agencies/organizations.

Task D.1.2.2: Disseminate the material developed in Task D.1.1.1. to local schools, interested environmental organizations, libraries and other governmental agencies.

Task D.1.2.3: Develop a network of outdoor displays to be constructed in conjunction with Marion County at public access points to the aquatic preserve.

Task D.1.2.4: Periodically prepare newspaper articles or radio announcements designed to inform/educate the general public as to the importance of making informed resource-use decisions.

Objective D.1.3: To provide assistance to environmentally oriented education programs at public and private schools and local educational centers.

Task D.1.3.1: Conduct or assist in informal seminars, classes, workshops for public discussion of current resource management issues and resource utilization.

Task D.1.3.2: Coordinate with other resource management agency personnel to co-sponsor exhibits, programs or other educationally oriented activities.

Task D.1.3.3: Periodically lead or assist in field trips into the aquatic preserve.

Task D.1.3.4: Develop a reference library of material relevant to the natural resources of the Lake Weir Aquatic Preserve and make the contents available for loan to educators.

CHAPTER VII

MANAGEMENT COORDINATION NETWORK

This chapter presents a general overview of those federal, state, regional, or local agencies, and private entities, which currently have regulatory or resource management interests in the Lake Weir Aquatic Preserve. A quick reference matrix of the specific agencies and their applicable jurisdictions is presented in TABLE 5. One of the goals of the Aquatic Preserves Program is to coordinate with these various entities in an effort to achieve common goals, pertinent to resource management.

It should be noted that many of the following federal, state and local agencies with jurisdictions in the preserve may impose additional permit requirements on activities previously outlined in Chapter IV of this plan.

A. FEDERAL AGENCIES

A number of federal agencies have property interests, land and wildlife management programs, research activities, construction activities, and regulatory programs that deal either directly or indirectly with aquatic preserves.
In accordance with the federal consistency review process the Bureau of Submerged Lands and Preserves Program reviews activities proposed by federal agencies to determine how they will affect aquatic preserves. This review is coordinated through the Florida Department of Environmental Regulations' Office of Coastal Management, so as to comply with the provisions of the Federal Coastal Zone Management Act of 1972, as amended.

The **U.S. Army Corps of Engineers (COE)** has jurisdiction over inland navigable waters under the Rivers and Harbors Act of 1899. A revision of the Rivers and Harbors Act in 1968 extended the Corps' jurisdiction allowing them to consider the fish and wildlife, conservation, pollution, aesthetics, ecology, and other relevant factors of a project. The Corps' Regulatory Program was expanded in 1972 to include the Federal Water Pollution Control Act Amendments, now known as the Clean Water Act (CWA). Section 404 of this act requires the Corps to control dredge and fill activities by the Corps and has since been extended to wetlands from amendments to the CWA in 1977.

The **U.S. Department of Agriculture (DOA)** is involved in resource management through its Soil Conservation and Agriculture Stabilization and Conservation

Services. Major Soil Service concerns center on furthering conservation methods to help reduce water runoff and concomitant soil losses. The Stabilization Service exists to help solve pollution, water and woodland problems, associated with farm and ranchlands.

The **U.S. Department of the Interior (DOI)** performs a variety of services affecting wildlife and resource management through its Fish and Wildlife Service and Geological Survey. The U.S. Fish and Wildlife Service (USFWS) has responsibility for fish and wildlife as authorized in the Coastal Resources Barrier Act, National Environmental Protection Act, Migratory Bird Act, Endangered Species Act, and Fish and Wildlife Coordination Act. "Under provisions of the Fish and Wildlife Coordination Act, the Fish and Wildlife Service must be consulted before the Corps of Engineers can submit a plan for congressional approval. The USFWS comments on the impact of proposed projects on endangered species, migratory birds and other fish and wildlife and their habitats" (Barile et al., 1987). They are directed to prepare environmental impacts assessments or statements for proposed projects by the Corps, and are authorized to issue "Jeopardy Opinion" against any proposed project which will negatively effect an endangered species (Barile et al., 1984). The U.S. Geological Survey (USGS) performs a variety of functions including: topographical and mineralogical surveys, stream flow, river flow and general water quality monitoring, lake level and water use monitoring and the periodic publication of resource data.

The **U.S. Environmental Protection Agency (EPA)** has jurisdiction over surface waters in the state. Enforcement authority was given under the Clean Water Act of 1972 and broadened under the 1977 revision. In general, EPA is responsible for pollution control and abatement, including: air, water, noise, solid waste, toxic waste, and radiation. They review permits issued by DER for the treatment, disposal, and storage of hazardous wastes. Authority is divided between EPA and USCG regarding the discharge of oil or hazardous substances into surface water.

B. STATE AGENCIES

Many state agencies have property interests, land and wildlife management programs, research activities, regulatory authority and construction activities within the preserve. Additionally, DNR administers other programs which may affect the resources and watersheds of the preserve.

The **Florida Department of Agriculture and Consumer Services (ACS)** provides services to the agricultural interests of Florida such as the state's farmer's markets,

while simultaneously regulating the purchase and use of restricted pesticides. This department also serves to manage soil drainage and control problems through its network of Soil and Water Conservation District offices located throughout the state.

The **Florida Department of Community Affairs (DCA)** and the Regional Planning Councils (RPC) are authorized under Section 380.06, F.S., for administering the Development of Regional Impact (DRI) program. The DRI process was established to provide a review and monitoring procedure for development projects potentially affecting the health, safety or welfare of citizens of more than one county.

The Department of Community Affairs also oversees the development of Local Government Comprehensive Plans (LGCP) for both counties and municipalities, as required by the Local Government Comprehensive and Land Development Regulation Act, Chapter 163, Part II, F.S. Subsection 163.3202(5), F.S., provides that DCA shall adopt rules for the review of local government land development regulations. Local governments are required to adopt land development regulations which are consistent with the adopted local comprehensive plan for one year after submission of the local comprehensive plan for review by the department pursuant to subsection 163.3167(2), F.S.

The **Florida Department of Environmental Regulation (DER)** is responsible for regulating air, water, noise, wastewater, stormwater, and hazardous waste pollution through a permitting and certification process. DER also serves as the state contact for the initiation of dredge and fill applications in conjunction with the COE and DNR. The permitting process is a key management tool for the protection of the preserve.

The DER's rules significant to the Lake Weir Aquatic Preserve are Chapters 17-4 and 17-312, F.A.C. Authority for these rules is based in Chapter 403, F.S. Chapter 17-4, F.A.C. addresses permit requirements, and Chapter 17-312, F.A.C. covers dredge and fill activities.

Section 253.77, F.S., as amended by the Warren S. Henderson Wetlands Protection Act of 1984, requires that any person requesting use of state-owned lands shall have prior approval of the Board of Trustees. An interagency agreement between DNR and DER provides for DNR staff comments into the DER permitting process for environmental impacts in the aquatic preserve.

The **Florida Department of Health and Rehabilitative Services (HRS)** has responsibilities to protect the public's health by overseeing functions that involve water supplies, on-site sewage disposal, septic tank cleaning, and solid waste control. Authority for these responsibilities are found in Chapter 154, 381, and 386,

F.S., and in the 10D Series of F.A.C., known as the "Sanitary Code". The local county HRS office (County Health Department), has jurisdiction overseeing these responsibilities.

The **Florida Department of Natural Resources (DNR)** is responsible for administering a large and varied number of management and regulatory activities regarding the state's natural resources. Of particular importance to the aquatic preserve system are the Division of State Lands and the Division of Resource Management.

Division of State Lands (DSL) - Under Chapter 18-20, F.A.C., the "Florida Aquatic Preserves Act", and Chapter 18-21, F.A.C., the "Sovereignty Submerged Lands Act", the DNR has been authorized to regulate commercial and residential docks (and other structures and activities) conducted on state-owned submerged lands. The DSL has been delegated the authority to carry out this charge and has accordingly delegated this authority to the Bureau of Submerged Lands and Preserves (BSLAP) and its' thirteen field offices.

Division of Resource Management (DRM) - Pursuant to Chapter 16-20, F.A.C., "Aquatic Plant Control Permits", DNR has been authorized to control aquatic vegetation. The responsibility for overseeing the mechanical, biological or chemical control of aquatic plants has been delegated to the DRM and its' Bureau of Aquatic Plant Management. The local BAP office currently processes individual vegetation control applications on Lake Weir, while the management of exotic species, on the preserve, has been contracted to the St. Johns River Water Management District.

The **Florida Department of State (DOS) Division of Historical Resources (DHR)** has the responsibility granted under Chapter 267, F.S., regarding the preservation and management of Florida's archaeological and historical resources. This responsibility includes those cultural resources located on state-owned lands, including aquatic preserves.

The **Florida Department of Transportation (DOT)** is involved with aquatic preserves in that they maintain many of the highways, bridges, and causeways that abut and span the preserves.

The **Florida Game and Freshwater Fish Commission (FGFWFC)** authority is provided in the rules and regulations of Chapters 39.101 and 39.102, F.A.C. This authority involves the implementation of specific regulations and their enforcement,

for all wildlife. The office of Environmental Services reviews projects which may affect local fish and wildlife habitat. FGFWFC is the state coordinator of the Non-game Wildlife and Endangered Species Program in Florida. The Division of Wildlife is also responsible for designating species. They also oversee habitat restoration and fish restocking of freshwater rivers and lakes. The FGFWFC also has law enforcement officers that patrol the aquatic preserve.

The **Executive Office of the Governors'** Office of Planning and Budgeting in conjunction with the FDER's Coastal Zone Management Section, is responsible for administering project reviews applicable to Florida's Coastal Management Program Federal Consistency evaluation process. This process includes all projects in the state that involve federal permitting, federal assistance or direct federal activities. Each project must undergo this additional review to determine if the project is consistent with established programs, policies and rules of the state. This includes projects affecting resources in aquatic preserves.

C. REGIONAL AGENCIES

In addition to state and federal agencies, two regional agencies play a major role in the use and management of this preserve. These organizations conduct or regulate activities that are on a broader scale than those of local governments, but smaller in scale than the state level. These two agencies are the St. Johns River Water Management District and the Withlacoochee Regional Planning Council.

The **St. Johns River Water Management District (SJRWMD)** administers permitting programs for consumptive water use, management and storage of surface waters, well drilling and the operation and regulation of artificial recharge facilities. The District's concerns also include flood prevention, excessive drainage, soil erosion, the issuance of agricultural discharge and stormwater permits and wetland conservation. The District is currently involved in various studies of the preserve, and other waterbodies in the area, in an effort to identify excessive levels of nutrients, potentially hazardous pollutants and wetland habitat loss and restoration feasibility. Also, the District is currently responsible for controlling the exotic plant species population (through its herbicide application program) on the Lake Weir Preserve.

The **Withlacoochee Regional Planning Council (WRPC)** serves as a regional planning body for numerous central Florida counties including Marion County. Among its duties are: aid local government with planning expertise, review DRI's (Development of Regional Impact) at the regional level, serve as a clearinghouse

for federal and state projects and programs, relay information from the local to the state and federal levels, assist local governments in obtaining grants and prepare and administer the Regional Policy Plan.

D. LOCAL GOVERNMENT

Local governments are the incorporated cities and counties that border the preserve, or in which the preserve is located.

The Lake Weir Aquatic Preserve is located entirely within the boundaries of Marion County, and as such, the aquatic resources are impacted by those activities regulated by the county's comprehensive plan, and its local ordinances and regulations.

Relationship to Local Management Plans

Local (municipal and county) governments are required by the Local Government Compreshensive Planning Act of 1975 (Section 163.3161, F.S.), (as amended by Chapter 85-55, Laws of Florida, to the Local Government Comprehensive Planning and Land Development Regulation Act) to have a comprehensive management plan with elements relating to different governmental functions (i.e., housing, physical facilities, conservation, land use, coastal zone protection, etc.). These plans, in effect, are intended to guide the future development of the city or county. Recent statutory amendments require that these plans be updated and that cities and counties adopt land development regulations. The land use and conservation elements establish long range plans for orderly, and balanced development, with particular attention to the identification and protection of environmental resources in the planning area. Conformance with the criteria, policies, and practices of a local government compreshensive plan is required for all development within the local government jurisdiction.

The intent of the aquatic preserve management program, and this plan, is to help provide guidance for county governments during their planning process, towards developing local plan criteria and standards that will be consistent with the objectives of the aquatic preserve program. A review, by DNR staff of the pertinent resource protection elements of Marion County's plan, has yet to be performed.

Local Development Codes

The local development and zoning codes (e.g., building codes) provide the major local regulation that defines what an owner can do on a particular parcel of

property. The zoning prescribes the allowable uses and the intensity of those uses. Certain land uses and land use intensities adjacent to an aquatic preserve can lead to profound impacts on the resources of the preserve.

Within one year after the approval of their Local Government Comprehensive Plan, local governments are required to amend their land development regulations to be consistent with the provisions of the plan.

Parks and Environmental Land Acquisition Programs

Various counties throughout the state have developed land purchase programs with the goal of protecting environmentally sensitive properties from development, and promoting outdoor recreational use. In 1988, Marion County bonded $20,000,000 to fund its newly founded land acquisition program entitled Pennies for Parks.

Carney Island

Instrumental to the continued public utilization of the aquatic resources within the preserve, is the protection or regulation of those environmentally sensitive resources found on the adjacent uplands. Of similar concern is the actual use to which these upland resources may be employed. In an effort to protect some of these resources, funds from the Pennies for Parks program have been used to purchase a 453 acre parcel of lakefront property known as Carney Island.

Carney Island (or peninsula) a remnant citrus grove, currently exhibits a habitat mix of sandhills, mesic hammock, lakeshore and freshwater marsh. Included in this mix of habitats are over 24 species of terrestrial and aquatic plants, and a variety of wildlife which use the area for food and nesting habitat. It has also been suggested that the sandhill areas in this tract act as recharge areas for both Little Lake Weir and Lake Weir proper.

In consideration of protecting these environmental resources, while simultaneously providing for the outdoor recreational needs of the county, the Marion County Planning Department is currently developing a recreational/preservation site development plan. Some of the potential activities proposed for the site include: hiking trails, swimming area, increased boating access, fishing/mooring facilities, and an interpretive/meeting center.

The development and management of the Carney Island site will allow visitors to utilize and enjoy those natural resources which the county has sought to protect. Concomitantly, this added protection of, and increased access to the aquatic preserve will allow visitors to utilize and enjoy the preserve itself, an integral recreational component of the parks outdoor opportunities.

E. PRIVATE AND NON-REGULATORY INTERESTS

This section applies to the private and non-regulatory organizations that have an interest in the Lake Weir Aquatic Preserve. This includes, but is not limited to, environmental interest groups (i.e., Save Lake Weir Association) scientific organizations, fishing and sports interests groups, universities which may have programs or research projects in the preserve (i.e., University of Florida, IFAS - Lake Watch Program) and any other interest group.

Effective management of the preserve will be enhanced by continued support from organized groups, associations, and individuals. Citizen support organizations are particularly valuable through the provision of technical, non-technical, and financial assistance.

The Save Lake Weir Association (SLWA) has been deeply involved in the resource management efforts of the Lake Weir Aquatic Preserve. Not only was the Association involved in the initial designation of Lake Weir as an Aquatic Preserve, they are also responsible for increased public awareness of lake management practices through the distribution of brochures, and the sponsorship of environmental workshops. They also played an integral role in the acquisition process which has secured Carney Island for the Marion County Parks program. Continued cooperation with the SLWA will receive high priority in the resource management efforts of this preserve.

TABLE 5: MANAGEMENT COORDINATION NETWORK

LOCAL AGENCIES

LGT	Local Governments (Cities, Towns, Municipalities)
CGT	County Governments
LDD	Local Drainage Districts
MCD	Mosquito Control Districts
ICD	Inlet Commissions/Districts
SWC	Soil and Water Conservation Districts

STATE AGENCIES

DCA	Florida Department of Community Affairs
DER	Florida Department of Environmental Regulation
DNR	Florida Department of Natural Resources
GFC	Florida Game and Freshwater Fish Commission
HRS	Florida Department of Health and Rehabilitative Services
DOS	Florida Department of State
DOT	Florida Department of Transportation
FMP	Florida Marine Patrol
FSG	Florida Sea Grant
MFC	Marine Fisheries Commission
DAC	Florida Department of Agriculture and Consumer Services

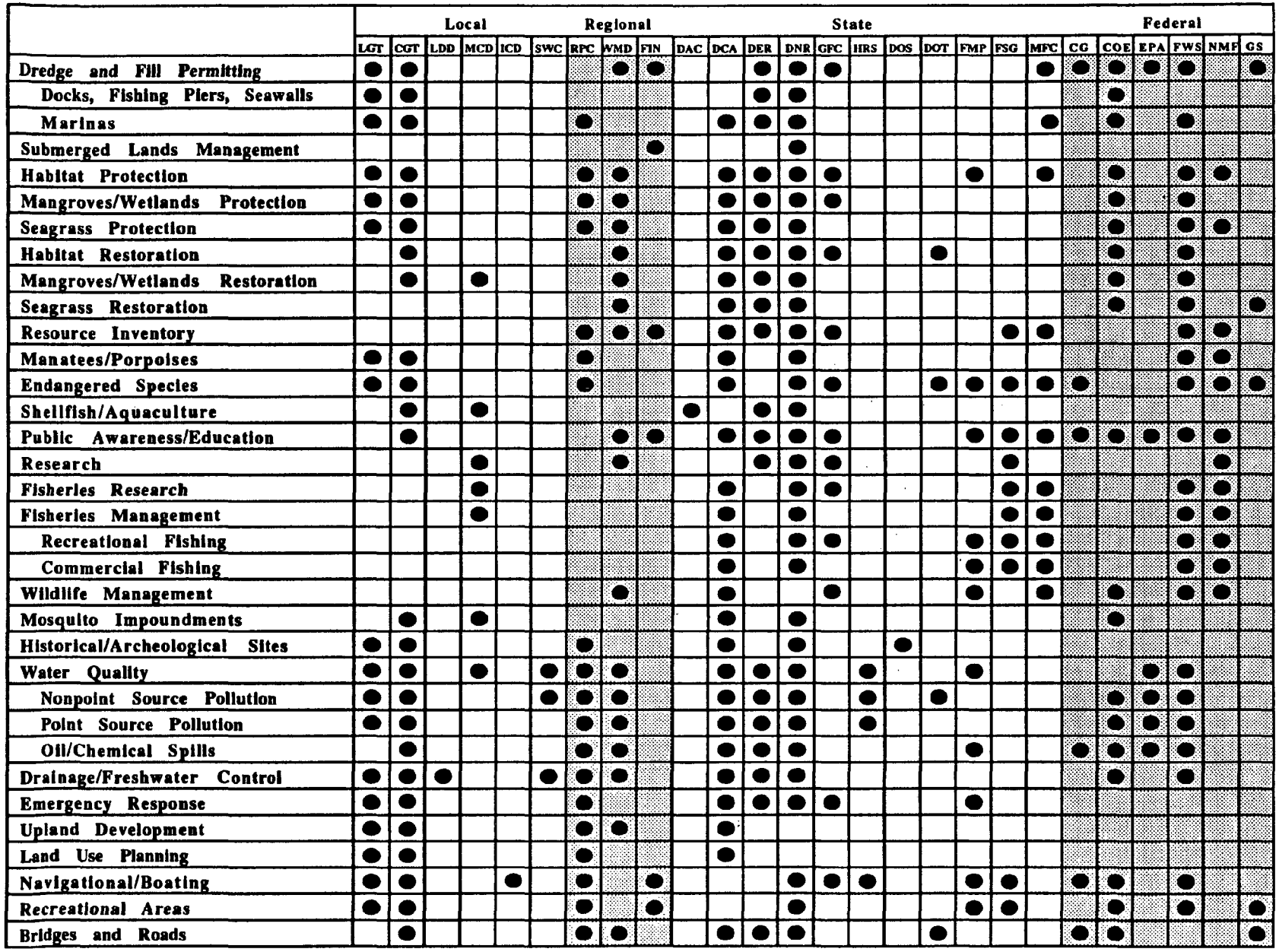
REGIONAL AGENCIES

RPC	Regional Planning Council
WMD	Water Management Districts
FIN	Florida Inland Navigation District

FEDERAL AGENCIES

CG	United States Coast Guard
COE	United States Army Corps of Engineers
EPA	United States Environmental Protection Agency
FWS	United States Fish and Wildlife Service
NMF	National Marine Fisheries Service
GS	United States Geological Survey

Source: modified from the Indian River Lagoon Joint Reconnaissance Report, 1987


Local
Regional
State
Federal
LGT CGT LDD MCD ICD SWC RPC WMD FIN DAC DCA DER DNR GFC HRS DOS DOT FMP FSG MFC CG COE EPA FWS NMF GS
Dredge and Fill Permitting
Docks, Fishing Piers, Seawalls
Marinas
Submerged Lands Management
Habitat Protection
Mangroves/Wetlands Protection
Seagrass Protection
Habitat Restoration
Mangroves/Wetlands Restoration
Seagrass Restoration
Resource Inventory
Manatees/Porpoises
Endangered Species
Shellfish/Aquaculture
Public Awareness/Education
Research
Fisheries Research
Fisheries Management
Recreational Fishing
Commercial Fishing
Wildlife Management
Mosquito Impoundments
Historical/Archeological Sites
Water Quality
Nonpoint Source Pollution
Point Source Pollution
Oil/Chemical Spills
Drainage/Freshwater Control
Emergency Response
Upland Development
Land Use Planning
Navigational/Boating
Recreational Areas
Bridges and Roads

CHAPTER VIII

STAFFING AND FISCAL NEEDS

The present Aquatic Preserve management program has been implemented and funded from a variety of sources. The writing of this management plan was funded through a grant from the U.S. Office of Coastal Zone Management, National Oceanic and Atmospheric Administration, and through the "Coastal Zone Management Act of 1972", as amended.

Funding for the initial start-up and continued operation of the Lake Weir Aquatic Preserve field office, has been provided by the Florida Legislature. As of the writing of this plan, staff have been limited to two full-time Career Service personnel. One additional OPS position, a grants writer has been requested for the '91-'92 fiscal year. This position is viewed as necessary, so that funds may be secured to increase the research efforts at this preserve.

Proposed increases in the equipment/expense categories have been requested, to help expedite inner and inter-office communications and tasks related to paperwork processing. Requested increases in the field equipment category would be used to modify/update existing equipment.

Continued funding and staffing of the Aquatic Preserve Program are essential if the goals and objectives of the program are to be realized. The additional revenues requested represent an increased effort to facilitate those individual preserve-oriented strategies which are representative of the program goals, on the whole.

An operational budget for field office staff indicating current and anticipated spending levels, is listed in Table 6.

TABLE 6

CURRENT AND ANTICIPATED BUDGET FOR LAKE WEIR AQUATIC PRESERVE

SALARY	1990-91	1991-92
Environmental Specialist II (with benefits)	$33,836	$34,851
Secretary Specialist (with benefits)	$17,255	$17,773
OPS (without benefits)	-0-	$12,000
Subtotal	$51,091	$64,624
OPERATING EXPENSES		
Office Equipment	-0-	$ 2,401
Field Equipment	-0-	$ 250
Office rent, gas, etc.	$17,930	$22,250
Subtotal	$17,930	$24,651
TOTAL ANNUAL COST	$69,021	$89,275

CHAPTER IX

RESOURCE AND ACTIVITY MONITORING PROGRAM

To ensure that this management plan is effectively implemented, it will be necessary to develop two programs that will: (1) monitor the natural changes or human induced alterations over time, and (2) record the progress and accomplishments that are directed at maintaining the integrity of the preserve. These monitoring programs will consist of the following:

A. RESOURCE MONITORING

To facilitate monitoring changes or alterations in the lake's natural resources, a geographic information system (GIS) will be required. A GIS is a computer-based system that is used to capture, edit, display, and analyze geographic information. The initial GIS programs were developed about 20 years ago to manage large collections of natural resource and environmental information. Since their development, they have been employed in other areas such as: utilities mapping, inventory management and land use planning; however, their most important function continues to be natural resource management.

It should be noted here that in addition to those studies referenced earlier in the plan, the St. Johns River Water Management District (SJRWMD) has developed a list of projects through the Surface Water Improvement and Management Program. Many of these projects are designed to investigate or address water quality or aquatic resource issues (including the Lake Weir Eutrophication Study) and should be of value as a resource data base for the aquatic preserve.

Inter-agency cooperation with the SJRWMD and the Florida Game and Freshwater Fish Commission (FGFWFC) (in regards to wildlife monitoring) should be helpful in monitoring changes in the natural resources within and adjacent to the preserve.

B. PROGRESS MONITORING

For this phase of the management plan to be effectively implemented, it is necessary to monitor the progress and accomplishments of the Lake Weir Aquatic Preserve Field Office on a regular basis. The purpose of this element is to detail the offices accomplishments in view of the objectives outlined in Chapter VI. This information, should be submitted in a report once every three years to the Bureau Chief and should include an update as to the status of the biological resources within the preserve and the identification of current human activities. This information will be used in the development of a state-wide status report regarding

the Aquatic Preserve Management Program which will focus on: resource deterioration, compatible and non-compatible use activities, and appropriate management strategies. The field office report will include information concerning the following topics:

1. The state of the natural environment of the aquatic preserve.

   a. Through the use of resource inventories and the GIS system, document the status of the preserves biological resource (e.g., vegetative loss or gain).

   b. Identify the number of current structures or activities which have been completed. These occurrences will then be categorized as follows:

      1) authorized projects - (consent from DNR has been obtained)
      2) unauthorized projects - (consent from DNR has not been obtained or has been denied)
      3) authorized projects not in compliance - (consent from DNR was obtained however the project is not in compliance as stipulated to in the original authorization)

2. A list of accomplishments related to the tasks outlined in Chapter VI.

   a. Each task will be listed, and the activities done toward that task will be detailed. If the task has not been done, an explanation will be given. If the explanation was due to insufficient funding/staff, then this fact will be detailed so that an update of Chapter VIII can be made.

3. Any new goals and/or objectives will be reflected in an update of Chapter VI.

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CHAPTER 18-20
FLORIDA AQUATIC PRESERVES

18-20.001	Intent.
18-20.002	Boundaries and Scope of the Preserves.
18-20.003	Definitions.
18-20.004	Management Policies, Standards and Criteria.
18-20.005	Uses, Sales, Leases, or Transfer of Interests in Lands, or Materials, Held by the Board. (Repealed)
18-20.006	Cumulative Impacts.
18-20.007	Protection of Riparian Rights. (Repealed)
18-20.008	Inclusion of Lands, Title to Which Is Not Vested in the Board, in a Preserve.
18-20.009	Establishment or Expansion of Aquatic Preserves.
18-20.010	Exchange of Lands.
18-20.011	Gifts of Lands.
18-20.012	Protection of Indigenous Life Forms.
18-20.013	Development of Resource Inventories and Management Plans for Preserves.
18-20.014	Enforcement.
18-20.015	Application Form. (Repealed)
18-20.016	Coordination with Other Governmental Agencies.
18-20.017	Lake Jackson Aquatic Preserve.

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18-20.001 Intent.

(1) All sovereignty lands within a preserve shall be managed primarily for the maintenance of essentially natural conditions, the propagation of fish and wildlife, and public recreation, including hunting and fishing where deemed appropriate by the board, and the managing agency.

(2) The aquatic preserves which are described in 73-534, Laws of Florida, Sections 258.39, 258.391, 258.392 and 258.393, Florida Statutes, future aquatic preserves established pursuant to general or special acts of the legislature, and in Rule 18-20.002, Florida Administrative Code, were established for the purpose of being preserved in an essentially natural or existing condition so that their aesthetic, biological and scientific values may endure for the enjoyment of future generations.

(3) The preserves shall be administered and managed in accordance with the following goals:

(a) To preserve, protect, and enhance these exceptional areas of sovereignty submerged lands by reasonable regulation of human activity within the preserves through the development and implementation of a comprehensive management program;

(b) To protect and enhance the waters of the preserves so that the public may continue to enjoy the traditional recreational uses of those waters such as swimming, boating, and fishing;

(c) To coordinate with federal, state, and local agencies to aid in carrying out the intent of the Legislature in creating the preserves;

(d) To use applicable federal, state, and local management programs, which are compatible with the intent and provisions of the act and these rules, and to assist in managing the preserves;

(e) To encourage the protection, enhancement or restoration of the biological, aesthetic, or scientific values of the preserves, including but not limited to the modification of existing manmade conditions toward their natural condition, and discourage activities which would degrade the aesthetic, biological, or scientific values, or the quality, or utility of a preserve, when reviewing applications, or when developing and implementing management plans for the preserves;

(f) To preserve, promote, and utilize indigenous life forms and habitats, including but not limited to: sponges, soft coral, hard corals, submerged grasses, mangroves, salt water marshes, fresh water marshes, mud flats, estuarine, aquatic, and marine reptiles, game and non-game fish species, estuarine, aquatic and marine invertebrates, estuarine, aquatic and marine mammals, birds, shellfish and molluskes;

(g) To acquire additional title interests in lands wherever such acquisitions would serve to protect or enhance the biological, aesthetic, or scientific values of the preserves;

(h) To maintain those beneficial hydrologic and biologic functions, the benefits of which accrue to the public at large.

(4) Nothing in these rules shall serve to eliminate or alter the requirements or authority of other governmental agencies, including counties and municipalities, to protect or enhance the preserves provided that such requirements or authority are not inconsistent with the act and this chapter.

Specific Authority 120.53, 258.43(1) FS. Law Implemented 258.35, 258.36, 258.37, 258.39, 258.393 FS. Chapter 80-280 Laws of Florida. History—New 2-23-81, Amended 8-7-85, Formerly 16Q-20.01, Transferred from 16Q-20.001.

18-20.002 Boundaries and Scope of the Preserves.

(1) These rules shall only apply to those sovereignty lands within a preserve, title to which is vested in the board, and those other lands for which the board has an appropriate instrument in writing, executed by the owner, authorizing the inclusion of specific lands in an aquatic preserve pursuant to Section 2(2) of Chapter 73-534, Laws of Florida, Sections 258.40(1) and 258.41(5), Florida Statutes, future aquatic preserves established through general or special acts of the legislature, and pursuant to Rule 18-20.008, Florida Administrative Code. Any publicly owned and maintained navigation channel authorized by the United States Congress, or other public works project authorized by the United States Congress, designed to improve or maintain commerce and navigation shall be deemed to be excluded from the

provisions of this chapter, pursuant to Subsection 258.40(2), Florida Statutes. Furthermore, all lands lost by avulsion or by artificially induced erosion shall be deemed excluded from the provisions of this chapter pursuant to Subsection 258.40(3), Florida Statutes.

(2) These rules do not apply to Boca Ciega Bay, Pinellas County or Biscayne Bay Aquatic Preserves.

(3) These rules are promulgated to clarify the responsibilities of the board in carrying out its land management functions as those functions apply within the preserves. Implementation and responsibility for environmental permitting of activities and water quality protection within the preserves are vested in the Department of Environmental Regulation. Since these rules are considered cumulative with other rules, a person planning an activity within the preserves should also consult the other applicable department rules (Chapter 18-21, Florida Administrative Code, for example) as well as the rules of the Department of Environmental Regulation.

(4) These rules shall not affect previous actions of the board concerning the issuance of any easement or lease; or any disclaimer concerning sovereignty lands.

(5) The intent and specific provisions expressed in 18-20.001(e) and (f) apply generally to all existing or future aquatic preserves within the scope of this chapter. Upon completion of a resource inventory and approval of a management plan for a preserve, pursuant to 18-20.013, the type designation and the resource sought to be preserved may be readdressed by the Board.

(6) For the purpose of clarification and interpretation, the legal description set forth as follows do not include any land which is expressly recognized as privately owned upland in a pre-existing recorded mean high water line settlement agreement between the board and a private owner or owners. Provided, however, in those instances wherein a settlement agreement was executed subsequent to the passage of the Florida Coastal Mapping Act, the determination of the mean high water line shall be in accordance with the provisions of such act.

(7) Persons interested in obtaining details of particular preserves should contact the Bureau of State Lands Management, Department of Natural Resources, 3900 Commonwealth Blvd., Tallahassee, FL 32303 (telephone 904-488-2297).

(a) The preserves are described as follows:

1. Fort Clinch State Park Aquatic Preserve, as described in the Official Records of Nassau County in Book 108, pages 343-346, and in Book 111, page 409.

2. Nassau River — St. Johns River Marshes Aquatic Preserve, as described in the Official Records of Duval County in Volume 3183, pages 547-552, and in the Official Records of Nassau County in Book 108, pages 232-237.

3. Pellicer Creek Aquatic Preserve, as described in the Official Records of St. Johns County in Book 181, pages 363-366, and in the Official Records of Flagler County in Book 33, pages 131-134.

4. Tomoka Marsh Aquatic Preserve, as described in the Official Records of Flagler County in Book 33, pages 135-138, and in the Official Records of Volusia County in Book 1244, pages 615-618.

5. Wekiva River Aquatic Preserve, as described in Section 258.39(30), F.S.

6. Mosquito Lagoon Aquatic Preserve, as described in the Official Records of Volusia County in Book 1244, pages 619-623, and in the Official Records of Brevard County in Book 1143, pages 190-194.

7. Banana River Aquatic Preserve, as described in the Official Records of Brevard County in Book 1143, pages 195-198, less those lands dedicated to the U. S. A. prior to the enactment of the act, until such time as the U. S. A. no longer wishes to maintain such lands for the purpose for which they were dedicated, at which time such lands would revert to the board, and be managed as part of the preserve.

8. Indian River — Malabar to Sebastian Aquatic Preserve, as described in the Official Records of Brevard County in Book 1143, pages 199-202, and in the Official Records of Indian River County in Book 368, pages 5-8.

9. Indian River — Vero Beach to Fort Pierce Aquatic Preserve, as described in the Official Records of Indian River County in Book 368, pages 9-12, and in the Official Records of St. Lucie County in Book 187, pages 1083-1086.

10. Jensen Beach to Jupiter Inlet Aquatic Preserve, as described in the Official Records of St. Lucie County in Book 218, pages 2865-2869.

11. North Fork, St. Lucie Aquatic Preserve, as described in the Official Records of Martin County in Book 337, pages 2159-2162, and in the Official Records of St. Lucie County in Book 201, pages 1676-1679.

12. Loxahatchee River — Lake Worth Creek Aquatic Preserve, as described in the Official Records of Martin County in Book 320, pages 193-196, and in the Official Records of Palm Beach County in Volume 1860, pages 806-809.

13. Biscayne Bay — Cape Florida to Monroe County Line Aquatic Preserve, as described in the Official Records of Dade County in Book 7055, pages 852-856, less, however, those lands and waters as described in Section 258.165, F. S., (Biscayne Bay Aquatic Preserve Act of 1974), and those lands and waters within the Biscayne National Park.

14. Lignumvitae Key Aquatic Preserve, as described in the Official Records of Monroe County in Book 502, pages 139-142.

15. Coupon Bight Aquatic Preserve, as described in the Official Records of Monroe County in Book 502, pages 143-146.

16. Cape Romano — Ten Thousand Islands Aquatic Preserve, as described in the Official Records of Collier County in Book 381, pages 298-301.

17. Rookery Bay Aquatic Preserve, as described in Section 258.39(31), FS.

18. Estero Bay Aquatic Preserve as described in Section 258.39(28), Florida Statutes.

19. Pine Island Sound Aquatic Preserve, as described in the Official Records of Lee County in Book 648, pages 732-736.

20. Matlacha Pass Aquatic Preserve, as described in the Official Records of Lee County in Book 800, pages 725-728.

21. Gasparilla Sound — Charlotte Harbor Aquatic Preserve, as described in Section 258.392, F.S.

22. Cape Haze Aquatic Preserve, as described in Section 258.39(29), F.S.

23. Cockroach Bay Aquatic Preserve, as described in Section 258.391, F.S.

24. St. Martins Marsh Aquatic Preserve, as described in the Official Records of Citrus County in Book 276, pages 238-241.

25. Alligator Harbor Aquatic Preserve, as described in the Official Records of Franklin County in Volume 98, pages 82-85.

26. Apalachicola Bay Aquatic Preserve, as described in the Official Records of Gulf County in Book 46, pages 77-81, and in the Official Records of Franklin County in Volume 98, pages 102-106.

27. St. Joseph Bay Aquatic Preserve, as described in the Official Records of Gulf County in Book 46, pages 73-76.

28. St. Andrews State Park Aquatic Preserve, as described in the Official Records of Bay County in Book 379, pages 547-550.

29. Rocky Bayou State Park Aquatic Preserve, as described in the Official Records of Okaloosa County in Book 593, pages 742-745.

30. Yellow River Marsh Aquatic Preserve, as described in the Official Records of Santa Rosa County in Book 206, pages 568-571.

31. Fort Pickens State Park Aquatic Preserve, as described in the Official Records of Santa Rosa County in Book 220, pages 60-63, in the Official Records of Escambia County in Book 518, pages 659-662, less the lands dedicated to the U. S. A. for the establishment of the Gulf Islands National Seashore prior to the enactment of the act, until such time as the U. S. A. no longer wishes to maintain such lands for the purpose for which they were dedicated, at which time such lands would revert to the board and be managed as part of the preserve.

32. For the purpose of this section the boundaries of the Lake Jackson Aquatic Preserve, shall be the body of water in Leon County known as Lake Jackson in Sections 1, 2, 3, 5, 10, 11 and 14, Township 1 North, Range 1 West and Sections 11, 12, 13, 14, 15, 21, 22, 23, 26, 27, 28, 29, 32, 33, 34, and 35, Township 2 North, Range 1 West lying below the ordinary high water line. Such lands shall include the submerged bottom lands and the water column upon such lands, as well as all publicly owned islands, within the boundaries of the preserve. Any privately held upland within the boundaries of the preserve shall be deemed to be excluded therefrom; provided that the Board may negotiate an arrangement with any such private upland owner by which such land may be included in the preserve.

33. Terra Ceia Aquatic Preserve, as described in Section 258.393, Florida Statutes.

34. Future aquatic preserves established pursuant to general or special acts of the legislature.

Specific Authority 120.53, 258.43(1) FS. Law Implemented 258.39, 258.391, 258.392, 258.393, 258.40, 258.41, 258.42, 258.43, 258.44, 258.45 FS. History—New 2-23-81, Amended 8-7-85, Formerly 16Q-20.02, Transferred from 16Q-20.002.

18-20.003 Definitions. When used in these rules, the following words shall have the indicated meaning unless the context clearly indicates otherwise:

(1) "Act" means the provisions of Section 258.35 through 258.46, F.S., the Florida Aquatic Preserve Act.

(2) "Activity" means any project and such other human action within the preserve requiring board approval for the use, sale, lease or transfer of interest in sovereignty lands or materials, or which may require a license from the Department of Environmental Regulation.

(3) "Aesthetic values" means scenic characteristics or amenities of the preserve in its essentially natural state or condition, and the maintenance thereof.

(4) "Applicant" means any person making application for a permit, license, conveyance of an interest in state owned lands or any other necessary form of governmental approval in order to perform an activity within the preserve.

(5) "Beneficial biological functions" means interactions between flora, fauna and physical or chemical attributes of the environment, which provide benefits that accrue to the public at large, including, but not limited to: nutrient, pesticide and heavy metal uptake; sediment retention; nutrient conversion to biomass; nutrient recycling and oxygenation.

(6) "Beneficial hydrological functions" means interactions between flora, fauna and physical geological or geographical attributes of the environment, which provide benefits that accrue to the public at large, including, but not limited to: retardation of storm water flow; storm water retention; and water storage, and periodical release;

(7) "Biological values" means the preservation and promotion of indigenous life forms and habitats including, but not limited to: sponges, soft corals, hard corals, submerged grasses, mangroves, saltwater marshes, fresh water marshes, mud flats, marine, estuarine, and aquatic reptiles, games and non-games fish species, marine, estuarine, and aquatic mammals, marine, estuarine, and aquatic invertebrates, birds and shellfish.

(8) "Board" means the Governor and Cabinet sitting as the Board of Trustees of the Internal Improvement Trust Fund.

(9) "Channel" means a trench, the bottom of which is normally covered entirely by water, with the upper edges of its sides normally below water.

(10) "Commercial, industrial and other revenue generating/income related docks" means docking facilities for an activity which produces income, through rental or any other means, or which serves as an accessory facility to other rental, commercial or industrial operations. It shall include, but not be limited to docking for: marinas, restaurants, hotels, motels, commercial fishing, shipping, boat or ship construction, repair, and sales.

(11) "Department" means the State of Florida Department of Natural Resources, as administrator for the board.

(12) "Division" means the Division of State Lands, which performs all staff duties and functions related to the administration of lands title to which is, or will be, vested in the board, pursuant to section 253.002, F.S.

(13) "Dock" means a fixed or floating structure, including moorings, used for the purpose of berthing buoyant vessels either temporarily or indefinitely.

(14) "Essentially natural condition" means those functions which support the continued existence or encourage the restoration of the diverse population of indigenous life forms and habitats to the extent they existed prior to the significant development adjacent to and within the preserve.

(15) "Extreme hardship" means a significant burden, unique to the applicant and not shared by property owners in the area. Self-imposed circumstances caused to any degree by actions of any person subsequent to the enactment of the Act shall not be construed as an extreme hardship. Extreme hardship under this act shall not be construed to include any hardship which arises in whole or in part from the effect of other federal, state or local laws, ordinances, rules or regulations. The term may be inherent in public projects which are shown to be a public necessity.

(16) "Fill" means materials from any source, deposited by any means onto sovereignty lands, either for the purpose of creating new uplands or for any other purpose, including spoiling of dredged materials. For the purpose of this rule, the placement of pilings or riprap shall not be considered to be filling.

(17) "Lease" means a conveyance of interest in lands, title to which is vested in the board, granted in accordance with specific terms set forth in writing.

(18) "Marina" means a small craft harbor complex used primarily for recreation.

(19) "Oil and gas transportation facilities" means those structures necessary for the movement of oil and gas from the production site to the consumer.

(20) "Person" means individuals, minors, partnerships, corporations, joint ventures, estates, trusts, syndicates, fiduciaries, firms, and all other associations and combinations, whether public or private, including governmental entities.

(21) "Pier" means a structure in, on, or over sovereignty lands, which is used by the public primarily for fishing, swimming, or viewing the preserve. A pier shall not include a dock.

(22) "Preserve" means any and all of those areas which are exceptional areas of sovereignty lands and the associated water body so designated in Section 258.39, 258.391, and 258.392, F.S., including all sovereignty lands, title to which is vested in the board, and such other lands as the board may acquire or approve for inclusion, and the water column over such lands, which have been set aside to be maintained in an essentially natural or existing condition of indigenous flora and fauna and their supporting habitat and the natural scenic qualities and amenities thereof.

(23) "Private residential single dock" means a dock which is used for private, recreational or leisure purposes for a single family residence, cottage or other such single dwelling unit and which is designed to moor no more than two boats.

(24) "Private residential multi-slip dock" means a docking facility which is used for private recreational or leisure purposes for multi-unit residential dwellings which shall include but is not limited to condominiums, townhouses, subdivisions and other such dwellings or residential areas and which is designed to moor three or more boats. Yacht clubs associated with residential developments, whose memberships or utilization of the docking facility requires some real property interest in the residential area, shall also be included.

(25) "Public interest" means demonstrable environmental, social, and economic benefits which would accrue to the public at large as a result of a proposed action, and which would clearly exceed all demonstrable environmental, social, and economic costs of the proposed action. In determining the public interest in a request for use, sale, lease, or transfer of interest in sovereignty lands or severance of materials from sovereignty lands, the board shall consider the ultimate project and purpose to be served by said use, sale, lease, or transfer of lands or materials.

(26) "Public navigation project" means a project primarily for the purpose of navigation which is authorized and funded by the United States Congress or by port authorities as defined by Section 315.02(2), F.S.

(27) "Public necessity" means the works or improvements required for the protection of the health and safety of the public, consistent with the Act and these rules, for which no other reasonable alternative exists.

(28) "Public utilities" means those services, provided by persons regulated by the Public Service Commission, or which are provided by rural cooperatives, municipalities, or other governmental agencies, including electricity, telephone, public water and wastewater services, and structures necessary for the provision of these services.

(29) "Quality of the preserve" means the degree of the biological, aesthetic and scientific values of the preserve necessary for present and future enjoyment of it in an essentially natural condition.

(30) "Resource management agreement" means a contractual agreement between the board and one

or more parties which does not create an interest in real property but merely authorizes conduct of certain management activities on lands held by the board.

(31) "Resource Protection Area (RPA) 1" — Areas within the aquatic preserves which have resources of the highest quality and condition for that area. These resources may include, but are not limited to corals; marine grassbeds; mangrove swamps; salt-water marsh; oyster bars; archaeological and historical sites; endangered or threatened species habitat; and, colonial water bird nesting sites.

(32) "Resource Protection Area 2" — Areas within the aquatic preserves which are in transition with either declining resource protection area 1 resources or new pioneering resources within resource protection area 3.

(33) "Resource Protection Area 3" — Areas within the aquatic preserve that are characterized by the absence of any significant natural resource attributes.

(34) "Riparian rights" means those rights incident to lands bordering upon navigable waters, as recognized by the courts of this state and common law.

(35) "Sale" means a conveyance of interest in lands, by the board, for consideration.

(36) "Scientific values" means the preservation and promotion of certain qualities or features which have scientific significance.

(37) "Shore protection structure" means a type of coastal construction designed to minimize the rate of erosion. Coastal construction includes any work or activity which is likely to have a material physical effect on existing coastal conditions or natural shore processes.

(38) "Sovereignty lands" means those lands including, but not limited to: tidal lands, islands, sandbars, shallow banks, and lands waterward of the ordinary or mean highwater line, to which the State of Florida acquired title on March 3, 1845, by virtue of statehood, and of which it has not since divested its title interest. For the purposes of this rule sovereignty lands shall include all submerged lands within the boundaries of the preserve, title to which is held by the board.

(39) "Spoil" means materials dredged from sovereignty lands which are redeposited or discarded by any means, onto either sovereignty lands or uplands.

(40) "Transfer" means the act of the board by which any interest in lands, including easements, other than sale or lease, is conveyed.

(41) "Utility of the preserve" means fitness of the preserve for the present and future enjoyment of its biological, aesthetic and scientific values, in an essentially natural condition.

(42) "Water dependent activity" means an activity which can only be conducted on, in, over, or adjacent to, water areas because the activity requires direct access to the water body or sovereignty lands for transportation, recreation, energy production or transmission, or source of water and where the use of the water or sovereignty lands is an integral part of the activity.

Specific Authority 258.43(1) FS. Law Implemented 258.37, 258.43(1) FS. History—New 2-25-81. Amended 8-7-85. Formerly 16Q-20.03. Transferred from 16Q-20.003.

18-20.004 Management Policies, Standards and Criteria. The following management policies, standards and criteria are supplemental to Chapter 18-21, Florida Administrative Code (Sovereignty Submerged Lands Management) and shall be utilized in determining whether to approve, approve with conditions or modifications or deny all requests for activities on sovereignty lands in aquatic preserves.

(1) GENERAL PROPRIETARY

(a) In determining whether to approve or deny any request the Board will evaluate each on a case-by-case basis and weigh any factors relevant under Chapter 253 and/or 258, Florida Statutes. The Board, acting as Trustees for all state-owned lands, reserves the right to approve, modify or reject any proposal.

(b) There shall be no further sale, lease or transfer of sovereignty lands except when such sale, lease or transfer is in the public interest (see Section 18-20.004(2) Public Interest Assessment Criteria).

(c) There shall be no construction of seawalls waterward of the mean or ordinary high water line, or filling waterward of the mean or ordinary high water line except in the case of public road and bridge projects where no reasonable alternative exists.

(d) There shall, in no case, be any dredging waterward of the mean or ordinary high water line for the sole or primary purpose of providing fill for any area landward of the mean or ordinary high water line.

(e) A lease, easement or consent of use may be authorized only for the following activities:

1. a public navigation project;

2. maintenance of an existing navigational channel;

3. installation or maintenance of approved navigational aids;

4. creation or maintenance of a commercial/industrial dock, pier or a marina;

5. creation or maintenance of private docks for reasonable ingress and egress of riparian owners;

6. minimum dredging for navigation channels attendant to docking facilities;

7. creation or maintenance of a shore protection structure;

8. installation or maintenance of oil and gas transportation facilities;

9. creation, maintenance, replacement or expansion of facilities required for the provision of public utilities; and

10. other activities which are a public necessity or which are necessary to enhance the quality or utility of the preserve and which are consistent with the act and this chapter.

(f) For activities listed in paragraphs 18-20.004(1)(e)1.—10. above, the activity shall be

designed so that the structure or structures to be built in, on or over sovereignty lands are limited to structures necessary to conduct water dependent activities.

(g) For activities listed in paragraphs 18-20.004(1)(e)7., 8., 9. and 10. above, it must be demonstrated that no other reasonable alternative exists which would allow the proposed activity to be constructed or undertaken outside the preserve.

(h) The use of state-owned lands for the purpose of providing private or public road access to islands where such access did not previously exist shall be prohibited. The use of state-owned lands for the purpose of providing private or public water supply to islands where such water supply did not previously exist shall be prohibited.

(i) Except for public navigation projects and maintenance dredging for existing channels and basins, any areas dredged to improve or create navigational access shall be incorporated into the preempted area of any required lease or be subject to the payment of a negotiated private easement fee.

(j) Private residential multi-slip docking facilities shall require a lease.

(k) Aquaculture and beach renourishment activities which comply with the standards of this rule chapter and Chapter 18-21, Florida Administrative Code, may be approved by the board, but only subsequent to a formal finding of compatibility with the purposes of Chapter 258, Florida Statutes, and this rule chapter.

(l) Other uses of the preserve, or human activity within the preserve, although not originally contemplated, may be approved by the board, but only subsequent to a formal finding of compatibility with the purposes of Chapter 258, Florida Statutes, and this rule chapter.

(2) PUBLIC INTEREST ASSESSMENT CRITERIA

In evaluating requests for the sale, lease or transfer of interest, a balancing test will be utilized to determine whether the social, economic and/or environmental benefits clearly exceed the costs.

(a) GENERAL BENEFIT/COST CRITERIA:

1. any benefits that are balanced against the costs of a particular project shall be related to the affected aquatic preserve;

2. in evaluating the benefits and costs of each request, specific consideration and weight shall be given to the quality and nature of the specific aquatic preserve. Projects in the less developed, more pristine aquatic preserves such as Apalachicola Bay shall be subject to a higher standard than the more developed urban aquatic preserves such as Boca Ciega Bay; and,

3. for projects in aquatic preserves with adopted management plans, consistency with the management plan will be weighed heavily when determining whether the project is in the public interest.

(b) BENEFIT CATEGORIES:

1. public access (public boat ramps, boatslips, etc.);

2. provide boating and marina services (repair, pumpout, etc.);

3. improve and enhance public health, safety, welfare, and law enforcement;

4. improved public land management;

5. improve and enhance public navigation;

6. improve and enhance water quality;

7. enhancement/restoration of natural habitat and functions; and

8. improve/protect endangered/threatened/unique species.

(c) COSTS:

1. reduced/degraded water quality;

2. reduced/degraded natural habitat and function;

3. destruction, harm or harassment of endangered or threatened species and habitat;

4. preemption of public use;

5. increasing navigational . hazards and congestion;

6. reduced/degraded aesthetics; and

7. adverse cumulative impacts.

(d) EXAMPLES OF SPECIFIC BENEFITS:

1. donation of land, conservation easements, restrictive covenants or other title interests in or contiguous to the aquatic preserve which will protect or enhance the aquatic preserve;

2. providing access or facilities for public land management activities;

3. providing public access easements and/or facilities, such as beach access, boat ramps, etc.;

4. restoration/enhancement of altered habitat or natural functions, such as conversion of vertical bulkheads to riprap and/or vegetation for shoreline stabilization or re-establishment of shoreline or submerged vegetation;

5. improving fishery habitat through the establishment of artificial reefs or other such projects, where appropriate;

6. providing sewage pumpout facilities where normally not required, in particular, facilities open to the general public;

7. improvements to water quality such as removal of toxic sediments, increased flushing and circulation, etc.;

8. providing upland dry storage as an alternative to wetslip; and

9. marking navigation channels to avoid disruption of shallow water habitats.

(3) RESOURCE MANAGEMENT

(a) All proposed activities in aquatic preserves having management plans adopted by the Board must demonstrate that such activities are consistent with the management plan.

(b) No drilling of oil, gas or other such wells shall be allowed.

(c) Utility cables, pipes and other such structures shall be constructed and located in a manner that will cause minimal disturbance to submerged land resources such as oyster bars and submerged grass beds and do not interfere with traditional public uses.

(d) Spoil disposal within the preserves shall be strongly discouraged and may be approved only

structures shall be constructed and located in a manner that will cause minimal disturbance to submerged land resources such as oyster bars and submerged grass beds and do not interfere with traditional public uses.

(d) Spoil disposal within the preserves shall be strongly discouraged and may be approved only where the applicant has demonstrated that there is no other reasonable alternative and that activity may be beneficial to, or at a minimum, not harmful to the quality and utility of the preserve.

(4) RIPARIAN RIGHTS

(a) None of the provisions of this rule shall be implemented in a manner that would unreasonably infringe upon the traditional, common law and statutory riparian rights of upland riparian property owners adjacent to sovereignty lands.

(b) The evaluation and determination of the reasonable riparian rights of ingress and egress for private, residential multi-slip docks shall be based upon the number of linear feet of riparian shoreline.

(c) For the purposes of this rule, a private, residential, single docking facility which meets all the requirements of Rule 18-20.004(5) shall be deemed to meet the public interest requirements of Rule 18-20.004(1)(b), Florida Administrative Code. However, the applicants for such docking facilities must apply for such consent and must meet all of the requirements and standards of this rule chapter.

(5) STANDARDS AND CRITERIA FOR DOCKING FACILITIES

(a) All docking facilities, whether for a single or multi-slip residential or commercial, shall be subject to the following standards and criteria:

1. no dock shall extend waterward of the mean or ordinary high water line more than 500 feet or 20 percent of the width of the waterbody at that particular location whichever is less;

2. certain docks may fall within areas of special or unique importance. These areas may be of significant biological, scientific, historic and/or aesthetic value and require special management considerations. Modifications may be more restrictive than the normally accepted criteria. Such modifications shall be determined on a case-by-case analysis, and may include, but shall not be limited to changes in location, configuration, length, width and height;

3. the number, lengths, drafts and types of vessels allowed to utilize the proposed facility may also be stipulated; and

4. where local governments have more stringent standards and criteria for docking facilities, the more stringent standards for the protection and enhancement of the aquatic preserve shall prevail.

(b) Private residential single docks shall conform to the following specific design standards and criteria:

1. any main access dock shall be limited to a maximum width of four (4) feet;

2. the dock decking design and construction will insure maximum light penetration, with full consideration of safety and practicality;

3. the dock will extend out from the shoreline no further than to a maximum depth of minus four (− 4) feet (mean low water);

4. when the water depth is minus four (− 4) feet (mean low water) at an existing bulkhead the maximum dock length from the bulkhead shall be 25 feet, subject to modifications accommodating shoreline vegetation overhang;

5. wave break devices, when necessary, shall be designed to allow for maximum water circulation and shall be built in such a manner as to be part of the dock structure;

6. terminal platform size shall be no more than 160 square feet; and

7. dredging to obtain navigable water depths in conjunction with private residential, single dock applications is strongly discouraged.

(c) Private residential multi-slip docks shall conform to the following specific design standards and criteria:

1. the area of sovereignty, submerged land preempted by the docking facility shall not exceed the square footage amounting to ten times the riparian waterfront footage of the affected waterbody of the applicant, or the square footage attendant to providing a single dock in accordance with the criteria for private residential single docks, whichever is greater. A conservation easement or other such use restriction acceptable to the Board must be placed on the riparian shoreline, used for the calculation of the 10:1 threshold, to conserve and protect shoreline resources and subordinate/waive any further riparian rights of ingress and egress for additional docking facilities;

2. docking facilities and access channels shall be prohibited in Resource Protection Area 1 or 2, except as allowed pursuant to Section 258.42(3)(e)1., Florida Statutes, while dredging in Resource Protection Area 3 shall be strongly discouraged;

3. docking facilities shall only be approved in locations having adequate existing water depths in the boat mooring, turning basin, access channels, and other such areas which will accommodate the proposed boat use in order to insure that a minimum of one foot clearance is provided between the deepest draft of a vessel and the bottom at mean low water;

4. main access docks and connecting or cross walks shall not exceed six (6) feet in width;

5. terminal platforms shall not exceed eight (8) feet in width;

6. finger piers shall not exceed three (3) feet in width, and 25 feet in length;

7. pilings may be utilized as required to provide adequate mooring capabilities; and

8. the following provisions of Rule 18-20.004(5)(d) shall also apply to private residential multi-slip docks.

(d) Commercial, industrial and other revenue generating/income related docking facilities shall conform to the following specific design standards and criteria:

1. docking facilities shall only be located in or near areas with good circulation, flushing and adequate water depths;

2. docking facilities and access channels shall be prohibited in Resource Protection Area 1 or 2, except as allowed pursuant to Sections 258.42(3)(e)1., Florida Statutes; while dredging in Resource Protection Area 3 shall be strongly discouraged;

3. the docking facilities shall not be located in Resource Protection Area 1 or 2; however, main access docks may be allowed to pass through Resource Protection Area 1 or 2, that are located along the shoreline, to reach an acceptable Resource Protection Area 3, provided that such crossing will generate minimal environmental impact;

4. beginning July 1, 1986 new docking facilities may obtain a lease only where the local governments have an adopted marina plan and/or policies dealing with the siting of commercial/industrial and private, residential, multi-slip docking facilities in their local government comprehensive plan;

5. the siting of the docking facilities shall also take into account the access of the boat traffic to avoid marine grassbeds or other aquatic resources in the surrounding areas;

6. the siting of new facilities within the preserve shall be secondary to the expansions of existing facilities within the preserve when such expansion is consistent with the other standards;

7. the location of new facilities and expansion of existing facilities shall consider the use of upland dry storage as an alternative to multiple wet-slip docking;

8. marina siting will be coordinated with local governments to insure consistency with all local plans and ordinances;

9. marinas shall not be sited within state designated manatee sanctuaries; and

10. in any areas with known manatee concentrations, manatee warning/notice and/or speed limit signs shall be erected at the marina and/or ingress and egress channels, according to Florida Marine Patrol specifications.

(e) Exceptions to the standards and criteria listed in Rule 18-20.004(5), Florida Administrative Code, may be considered, but only upon demonstration by the applicant that such exceptions are necessary to insure reasonable riparian ingress and egress.

(6) MANAGEMENT AGREEMENTS

The board may enter into management agreements with local agencies for the administration and enforcement of standards and criteria for private residential single docks.

(7) In addition to the policies, standards and criteria delineated in subsections (1) through (6), the provisions of the following management plans apply to specific aquatic preserves and are incorporated herein by reference. Where regulatory criteria in 18-20, F. A. C., may differ with specific policies in the management plans listed herein, the general rule criteria shall prevail.

	Date Adopted
Alligator Harbor	September 23, 1986
Banana River	September 17, 1985
Cockroach Bay	April 21, 1987
Estero Bay	September 6, 1983
Charlotte Harbor (Cape Haze, Gasparilla Sound-Charlotte Harbor, Matlacha Pass and Pine Island Sound)	May 18, 1983
Indian River-Malabar to Vero Beach	January 21, 1986
Indian River Lagoon (Vero Beach to Fort Pierce and Jensen Beach to Jupiter Inlet)	January 22, 1985
Loxahatchee River-Lake Worth Creek	June 12, 1984
Nassau River-St. Johns River Marshes and Fort Clinch State Park	April 22, 1986
North Fork of the St. Lucie River	May 22, 1984
St. Joseph Bay	June 2, 1987
St. Martins Marsh	September 9, 1987
Terra Ceia	April 21, 1987
Wekiva River	August 25, 1987

Specific Authority 258.43(1) FS. Law Implemented 258.41, 258.42, 258.43(1), 258.44 FS. History—New 2-25-81, Amended 6-7-85, Formerly 16Q-20.004, Transferred from 16Q-20.004, Amended 9-4-88.

18-20.005 Uses, Sales, Leases, or Transfer of Interests in Lands, or Materials, Held by the Board.

Specific Authority 258.43(1) FS. Law Implemented 253.02, 253.12, 258.42 FS. History—New 2-25-81, Repealed 8-7-85, Formerly 16Q-20.05, Transferred from 16Q-20.005.

18-20.006 Cumulative Impacts. In evaluating applications for activities within the preserves or which may impact the preserves, the department recognizes that, while a particular alteration of the preserve may constitute a minor change, the cumulative effect of numerous such changes often results in major impairments to the resources of the preserve. Therefore, the department shall evaluate a particular site for which the activity is proposed with the recognition that the activity may, in conjunction with other activities adversely affect the preserve which is part of a complete and interrelated system. The impact of a proposed activity shall be considered in light of its cumulative impact on the preserve's natural system. The department shall include as a part of its evaluation of an activity:

(1) The number and extent of similar human actions within the preserve which have previously affected or are likely to affect the preserve, whether considered by the department under its current authority or which existed prior to or since the enactment of the Act; and

(2) The similar activities within the preserve

which are currently under consideration by the department; and

(3) Direct and indirect effects upon the preserve and adjacent preserves, if applicable, which may reasonably be expected to result from the activity; and

(4) The extent to which the activity is consistent with management plans for the preserve, when developed; and

(5) The extent to which the activity is permissible within the preserve in accordance with comprehensive plans adopted by affected local governments, pursuant to section 163.3161, F.S., and other applicable plans adopted by local, state, and federal governmental agencies;

(6) The extent to which the loss of beneficial hydrologic and biologic functions would adversely impact the quality or utility of the preserve; and

(7) The extent to which mitigation measures may compensate for adverse impacts.

Specific Authority 258.43(1) FS. Law Implemented 258.36, 258.43, 258.44 FS. History—New 2-25-81, Formerly 16Q-20.06, Transferred from 16Q-20.006.

18-20.007 Protection of Riparian Rights.

Specific Authority 258.43(1) FS. Law Implemented 258.123, 258.124(8), 258.44 FS. History—New 2-25-81, Repealed 8-7-85, Formerly 16Q-20.07, Transferred from 16Q-20.007.

18-20.008 Inclusion of Lands, Title to Which Is Not Vested in the Board, in a Preserve.

(1) Lands and water bottoms which are within designated aquatic preserve boundaries, or adjacent thereto and which are owned by other governmental agencies, may be included in an aquatic preserve upon specific authorization for inclusion by an appropriate instrument in writing executed by the agency.

(2) Lands and water bottoms which are within designated aquatic preserve boundaries or adjacent thereto, and which are in private ownership, may be included in an aquatic preserve upon specific authorization for inclusion by an appropriate instrument in writing executed by the owner.

(3) The appropriate instrument shall be either a dedication in perpetuity, or a lease. Such lease shall contain the following conditions:

(a) The term of the lease shall be for a minimum period of ten years.

(b) The board shall have the power and duty to enforce the provisions of each lease agreement, and shall additionally have the power to terminate any lease if the termination is in the best interest of the aquatic preserve system, and shall have the power to include such lands in any agreement for management of such lands.

(c) The board shall pay no more than $1 per year for any such lease.

Specific Authority 258.43(1) FS. Law Implemented 258.40, 258.41 FS. History—New 2-25-81, Formerly 16Q-20.08, Transferred from 16Q-20.008.

18-20.009 Establishment or Expansion of Aquatic Preserves.

(1) The board may expand existing preserves or establish additional areas to be included in the aquatic preserve system, subject to confirmation by the legislature.

(2) The board may, after public notice and public hearing in the county or counties in which the proposed expanded or new preserve is to be located, adopt a resolution formally setting aside such areas to be included in the system.

(3) The resolution setting aside an aquatic preserve area shall include:

(a) A legal description of the area to be included. A map depicting the legal description shall also be attached.

(b) The designation of the type of aquatic preserve.

(c) A general statement of what is sought to be preserved.

(d) A statement that the area established as a preserve shall be subject to the management criteria and directives of this chapter.

(e) A directive to develop a natural resource inventory and a management plan for the area being established as an aquatic preserve.

(4) Within 30 days of the designation and establishment of an aquatic preserve, the board shall record in the public records of the county or counties in which the preserve is located a legal description of the preserve.

Specific Authority 258.43(1) FS. Law Implemented 258.41 FS. History—New 2-25-81, Formerly 16Q-20.09, Transferred from 16Q-20.009.

18-20.010 Exchange of Lands. The board in its discretion may exchange lands for the benefit of the preserve, provided that:

(1) In no case shall an exchange result in any land or water area being withdrawn from the preserve; and

(2) Exchanges shall be in the public interest and shall maintain or enhance the quality or utility of the preserve.

Specific Authority 258.43(1) FS. Law Implemented 258.41(5), 258.42(1) FS. History—New 2-25-81, Formerly 16A-20.10, Transferred from 16Q-20.010.

18-20.011 Gifts of Lands. The board in its discretion may accept any gifts of lands or interests in lands within or contiguous to the preserve to maintain or enhance the quality and utility of the preserve.

Specific Authority 258.43(1) FS. Law Implemented 258.42(5) FS. History—New 2-25-81, Formerly 16Q-20.11, Transferred from 16Q-20.011.

18-20.012 Protection of Indigenous Life Forms. The taking of indigenous life forms for sale or commercial use is prohibited, except that this prohibition shall not extend to the commercial taking of fin fish, crustacea or mollusks, except as prohibited under applicable laws, rules or regulations. Members of the public may exercise their rights to fish, so long as not contrary to other statutory and regulatory provisions controlling such activities.

Specific Authority 258.43(1) FS. Law Implemented 258.43(1) FS. History—New 2-25-81, Formerly 16Q-20.12, Transferred from 16Q-20.012.

18-20.013 Development of Resource Inventories and Management Plans for Preserves.

(1) The board authorizes and directs the division to develop a resource inventory and management plan for each preserve.

(2) The division may perform the work to develop the inventories and plans, or may enter into agreements with other persons to perform the work. In either case, all work performed shall be subject to board approval.

Specific Authority 258.43(1) FS. Law Implemented 253.03(7), 253.03(8) FS. History—New 2-25-81, Amended 6-7-85, Formerly 16Q-20.13, Transferred from 16Q-20.013.

18-20.014 Enforcement. The rules shall be enforced as provided in Section 258.46.

Specific Authority 258.43(1) FS. Law Implemented 258.46 FS. History—New 2-25-81, Formerly 16Q-20.14, Transferred from 16Q-20.014.

18-20.015 Application Form.

Specific Authority 253.43(1) FS. Law Implemented 258.43 FS. History—New 2-25-81, Repealed 6-7-85, Formerly 16Q-20.15, Transferred from 16Q-20.015.

18-20.016 Coordination with Other Governmental Agencies. Where a Department of Environmental Regulation permit is required for activities on sovereignty lands the department will coordinate with the Department of Environmental Regulation to obtain a copy of the joint Department of Army/Florida Department of Environmental Regulation permit application and the biological survey. The information contained in the joint permit application and biological assessment shall be considered by the department in preparing its staff recommendations to the board. The board may also consider the reports of other governmental agencies that have related management or permitting responsibilities regarding the proposed activity.

Specific Authority 253.43(1) FS. Law Implemented 258.43 FS. History—New 2-25-81, Formerly 16Q-20.16, Transferred from 16Q-20.016.

18-20.017 Lake Jackson Aquatic Preserve. In addition to the provisions of Rules 18-20.001 through 18-20.016, the following requirements shall also apply to all proposed activities within the Lake Jackson Aquatic Preserve. If any provisions of this Rule are in conflict with any provisions of Rules 18-20.001 through 18-20.016 or Chapter 73-534, Laws of Florida, the stronger provision for the protection or enhancement of the aquatic preserve shall prevail.

(1) No further sale, transfer or lease of sovereignty lands in the preserve shall be approved or consummated by the Board, except upon a showing of extreme hardship on the part of the applicant or when the board shall determine such sale, transfer or lease to be in the public interest.

(2) No further dredging or filling of sovereignty lands of the preserve shall be approved or tolerated by the Board of Trustees except:

(a) Such minimum dredging and spoiling as may be authorized for public navigation projects or for preservation of the lake according to the expressed intent of Chapter 73-534, Laws of Florida; and

(b) Such other alteration of physical conditions as may be necessary to enhance the quality or utility of the preserve.

(3) There shall be no drilling of wells, excavation for shell or minerals, and no erection of structures (other than docks), within the preserve, unless such activity is associated with activity authorized by Chapter 73-534, Laws of Florida.

(4) The Board shall not approve the relocations of bulkhead lines within the preserve.

(5) Notwithstanding other provisions of this act, the board may, respecting lands lying within the Lake Jackson basin:

(a) Enter into agreements for and establish lines delineating sovereignty and privately owned lands;

(b) Enter into agreements for the exchange and exchange sovereignty lands for privately owned lands;

(c) Accept gifts of land within or contiguous to the preserve.

Specific Authority 258.39(26) FS. Law Implemented 258.39(26), 258.43 FS. History—New 6-7-85, Formerly 16Q-20.017, Transferred from 16Q-20.017.

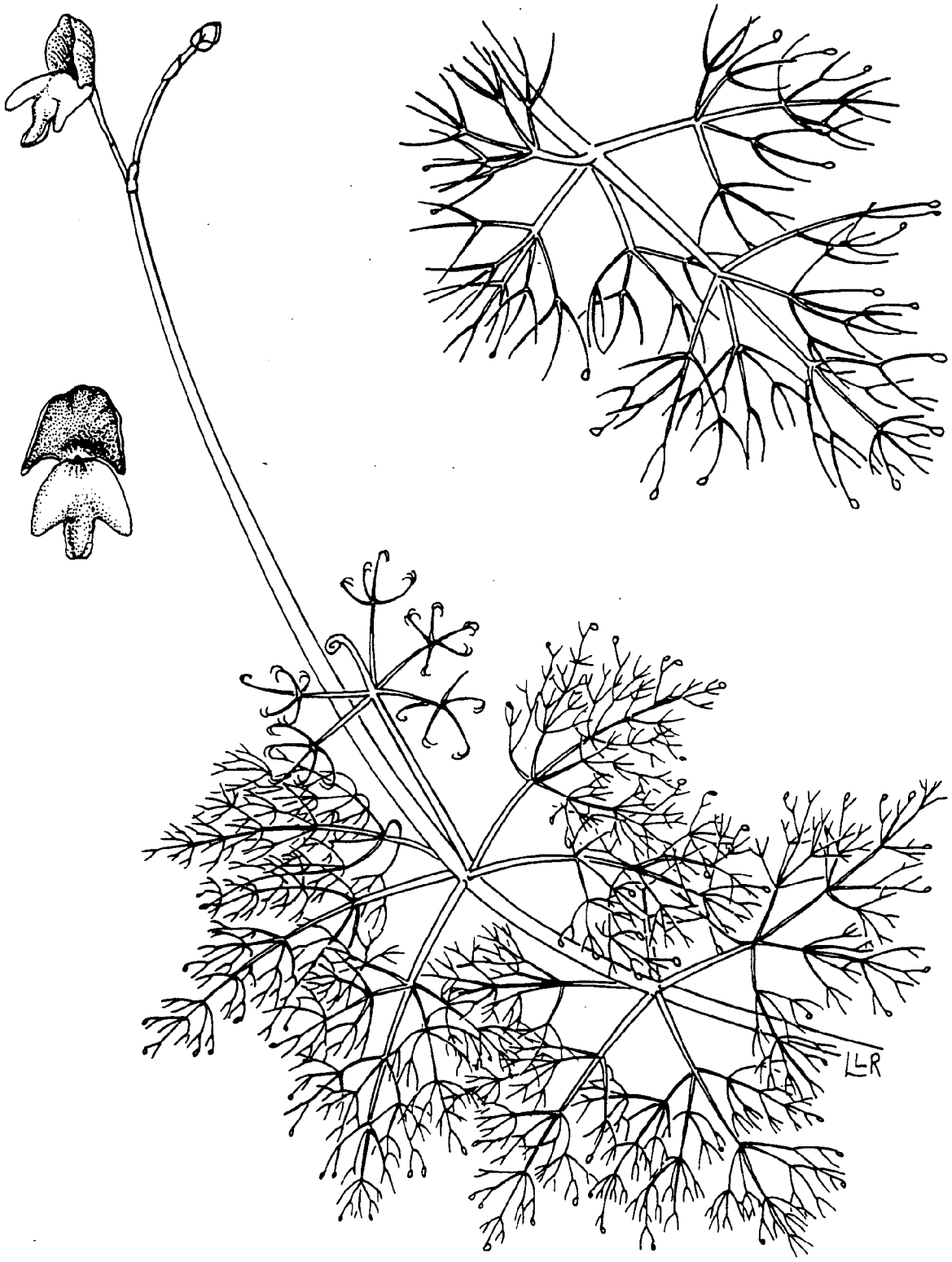
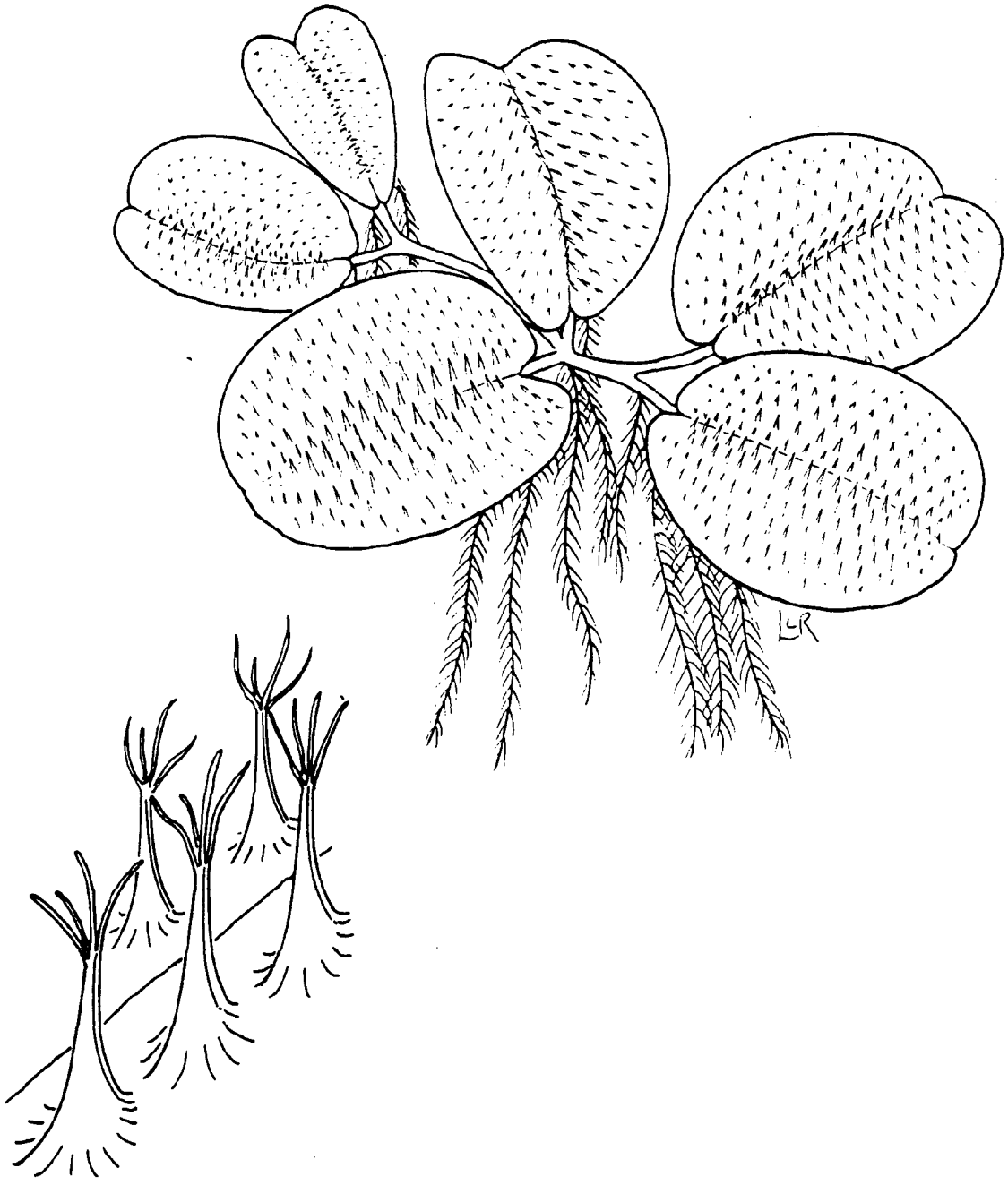


illustration provided by:
IFAS, Center for Aquatic Plants
University of Florida, Gainesville, 1990

Vallisneria americana
Tapegrass

illustration provided by:
IFAS, Center for Aquatic Plants
University of Florida, Gainesville, 1990

Salvinia rotundifolia (minima)



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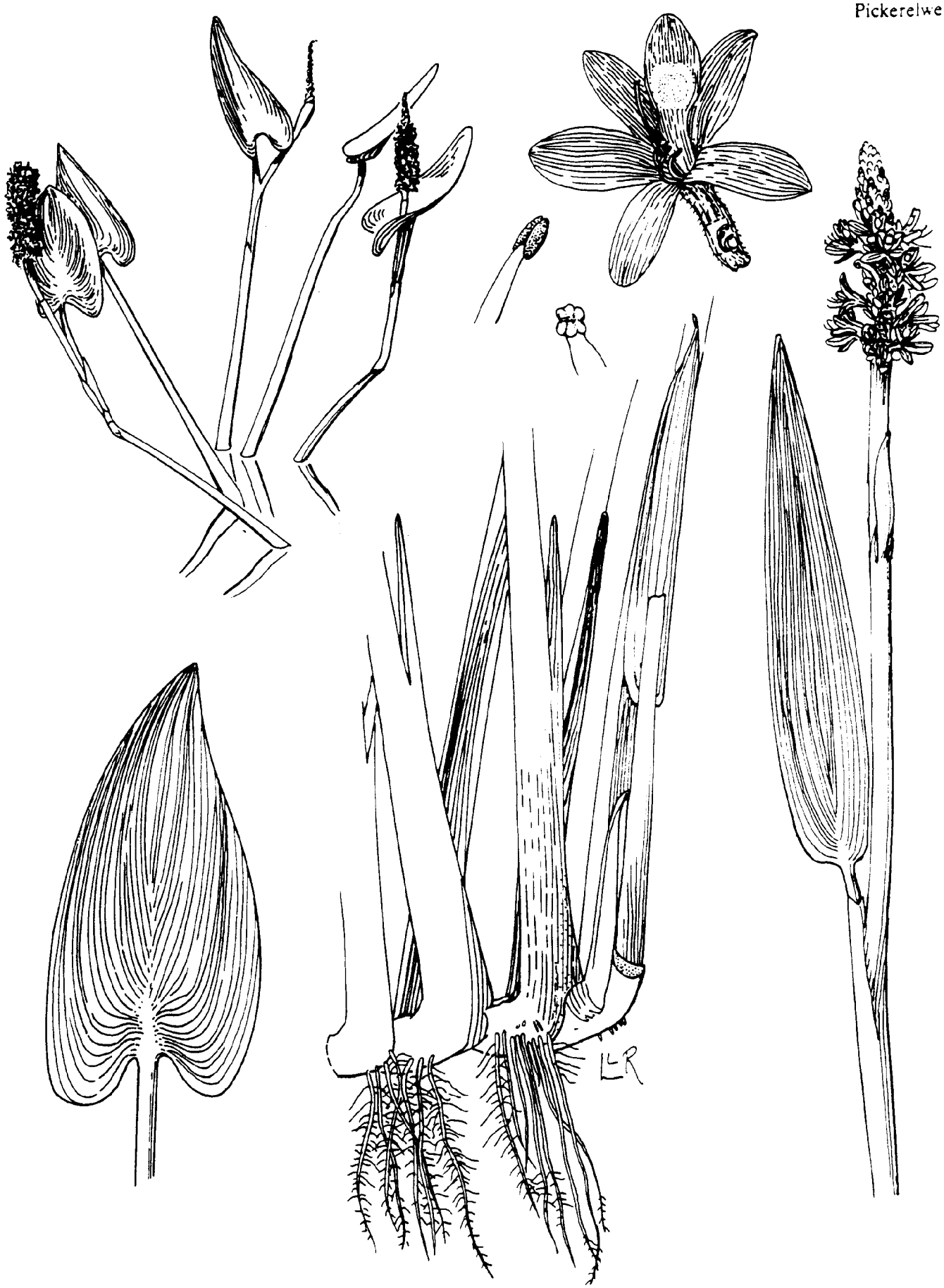
Pontederia cordata
Pickerelwe



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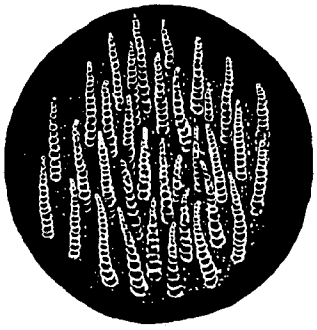
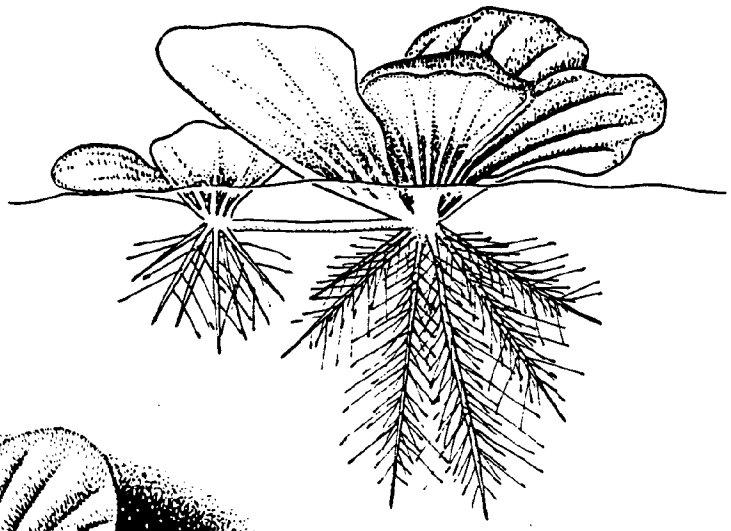
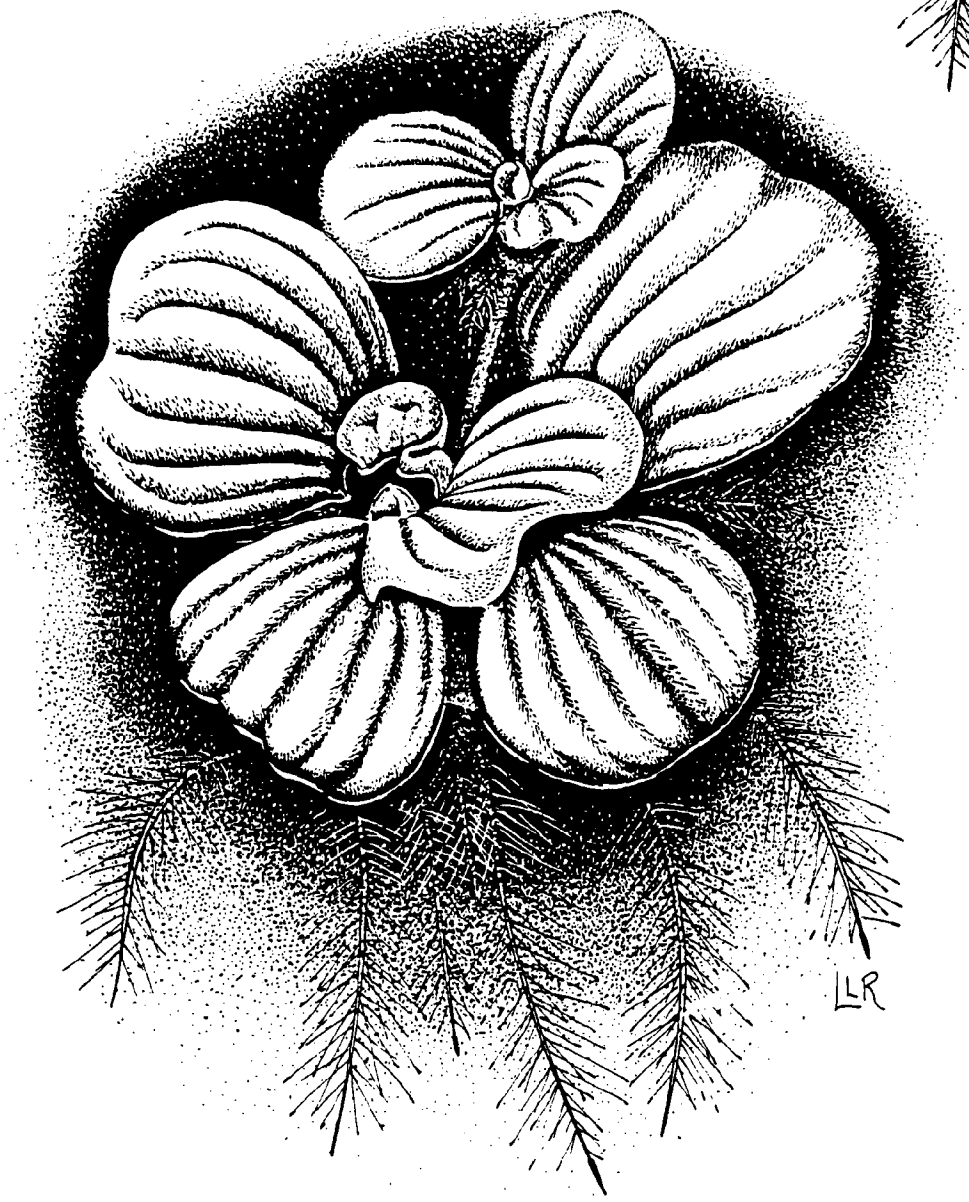
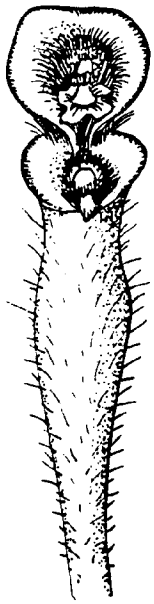
Pistia stratiotes
Water lettuce



surface hairs







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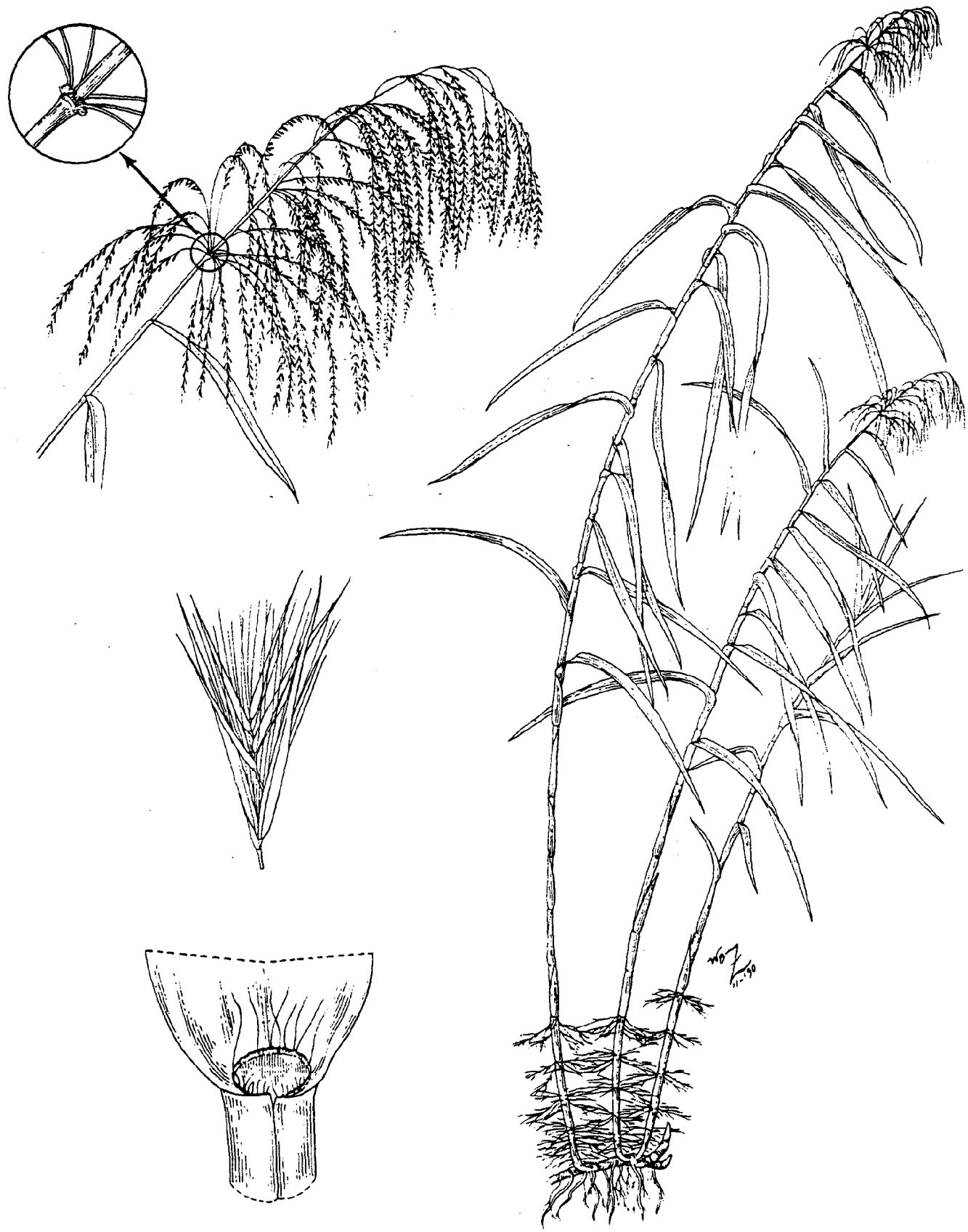

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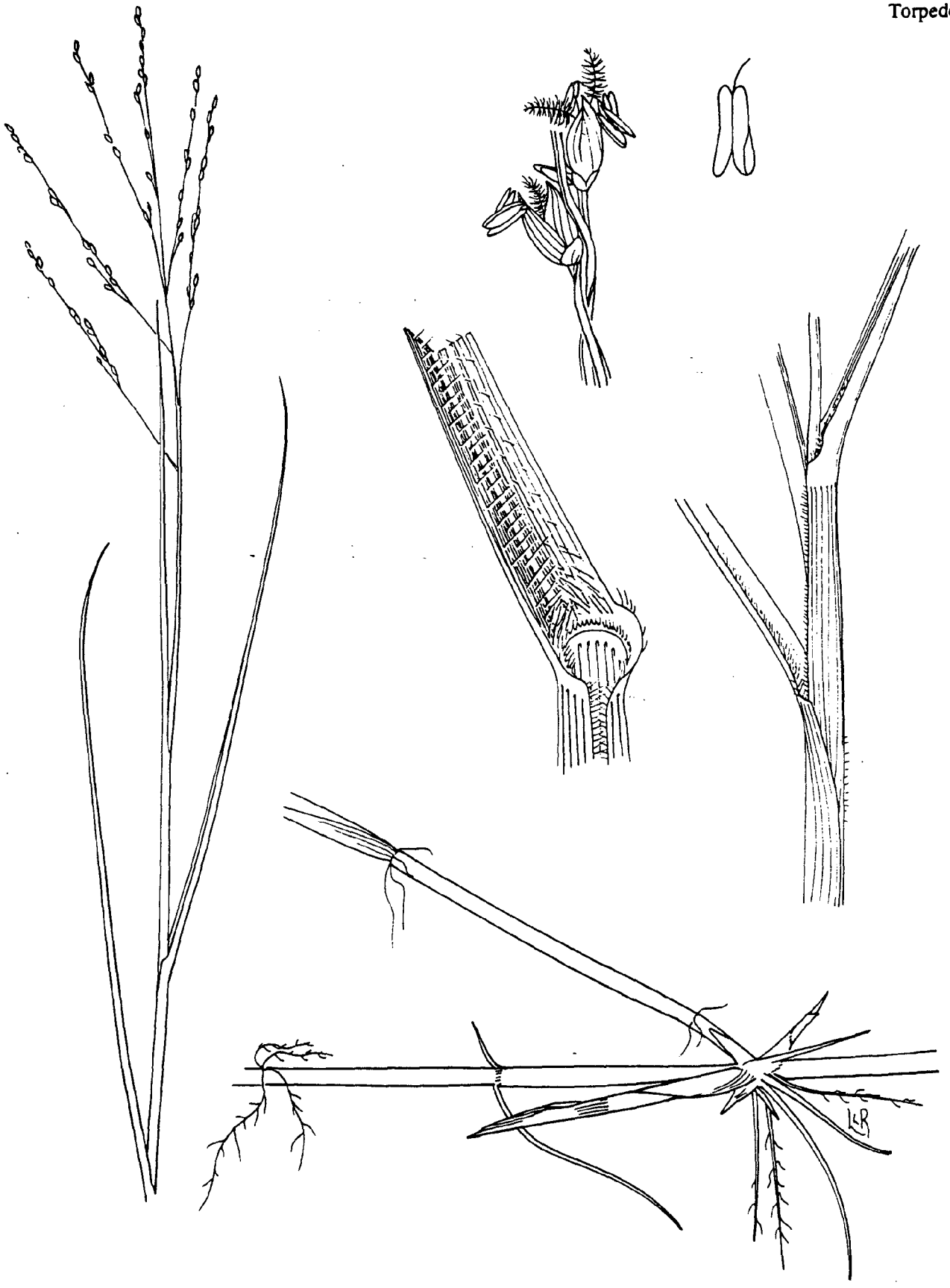
Panicum repens
Torpedograss



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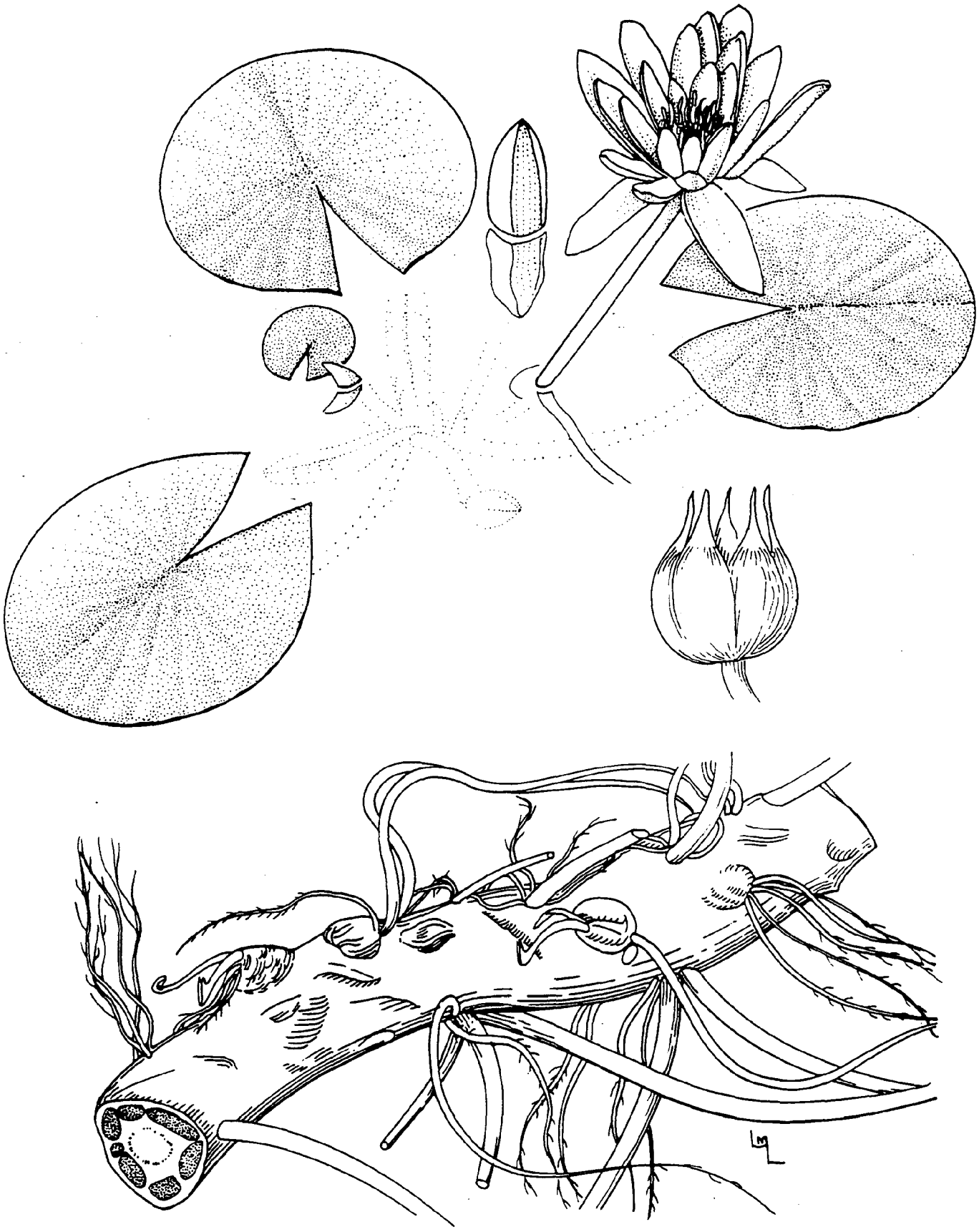
University of Florida, Gainesville, 1990

Nymphaea spp.
Water lily



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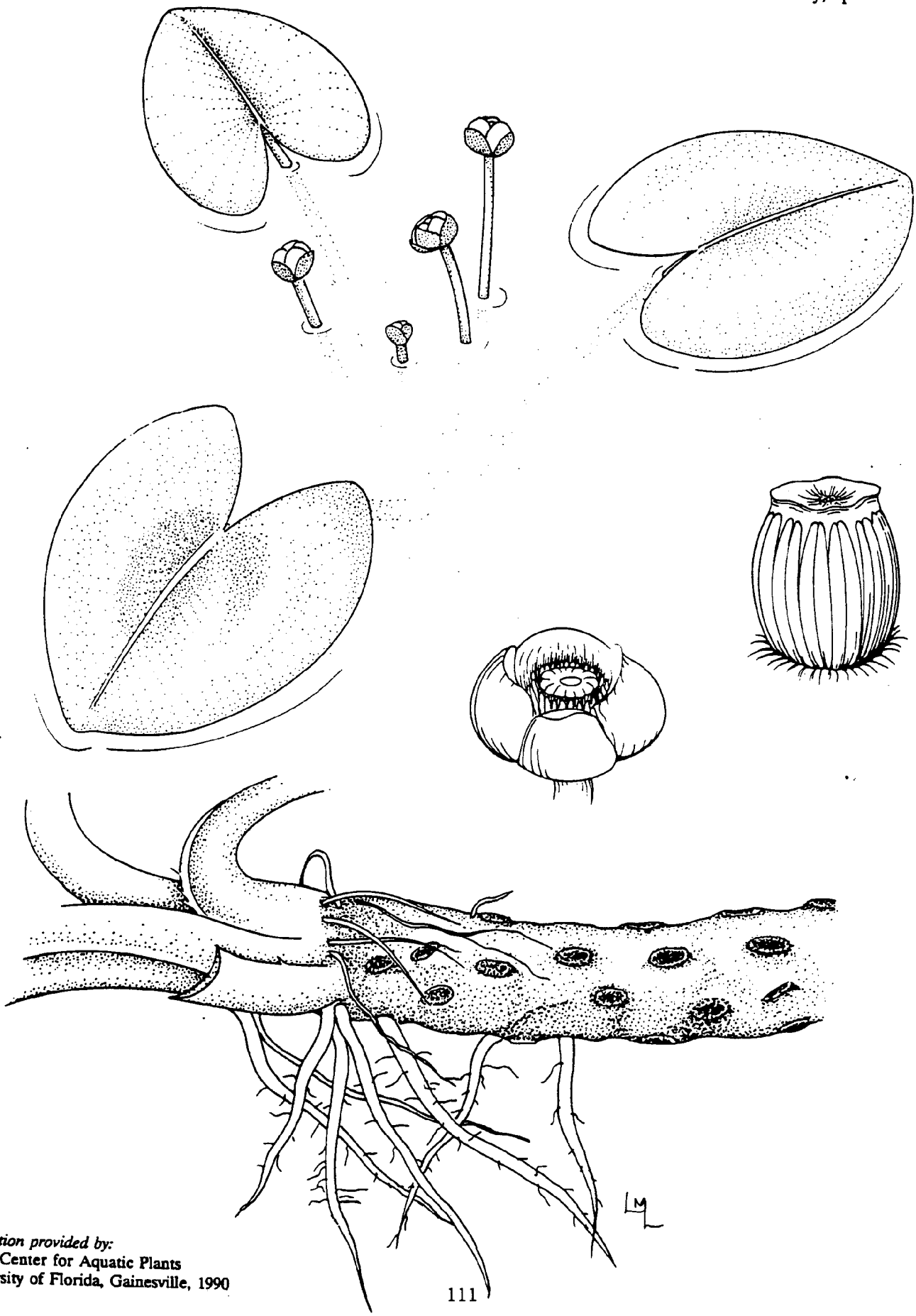
Nuphar spp.
Cow lily, Spatterdock



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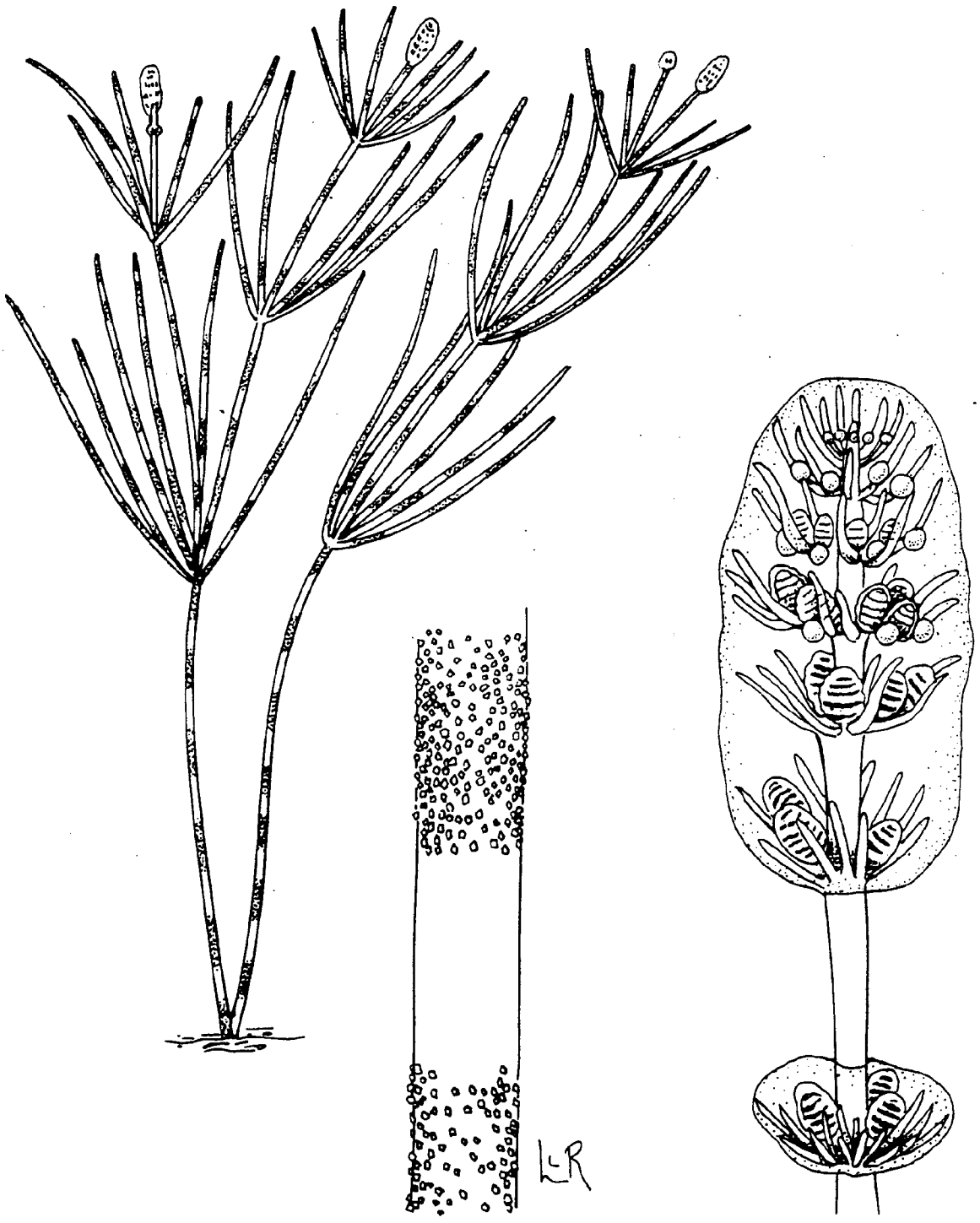
Nitella spp.
Stonewort



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Najas guadalupensis
Southern naiad

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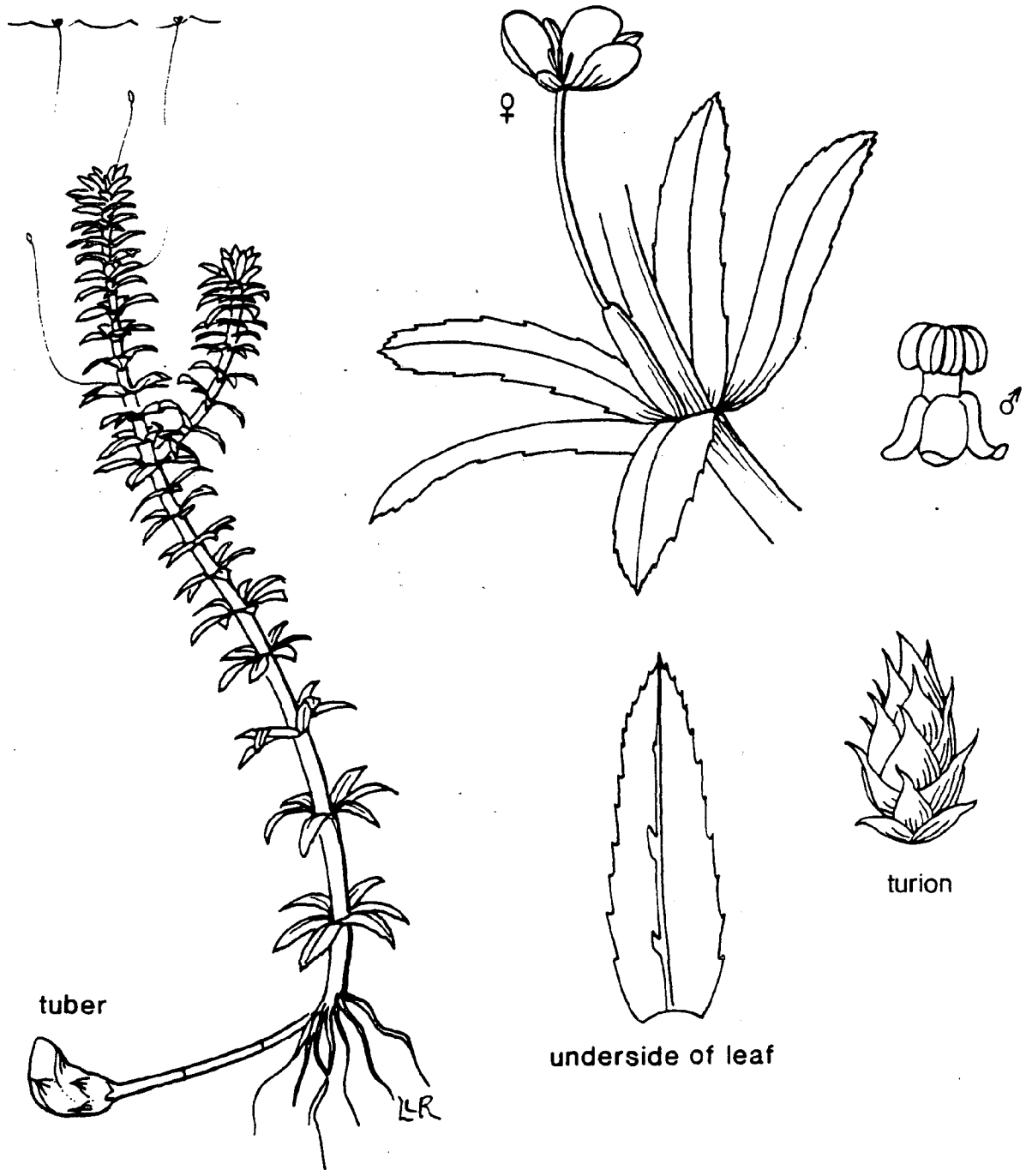

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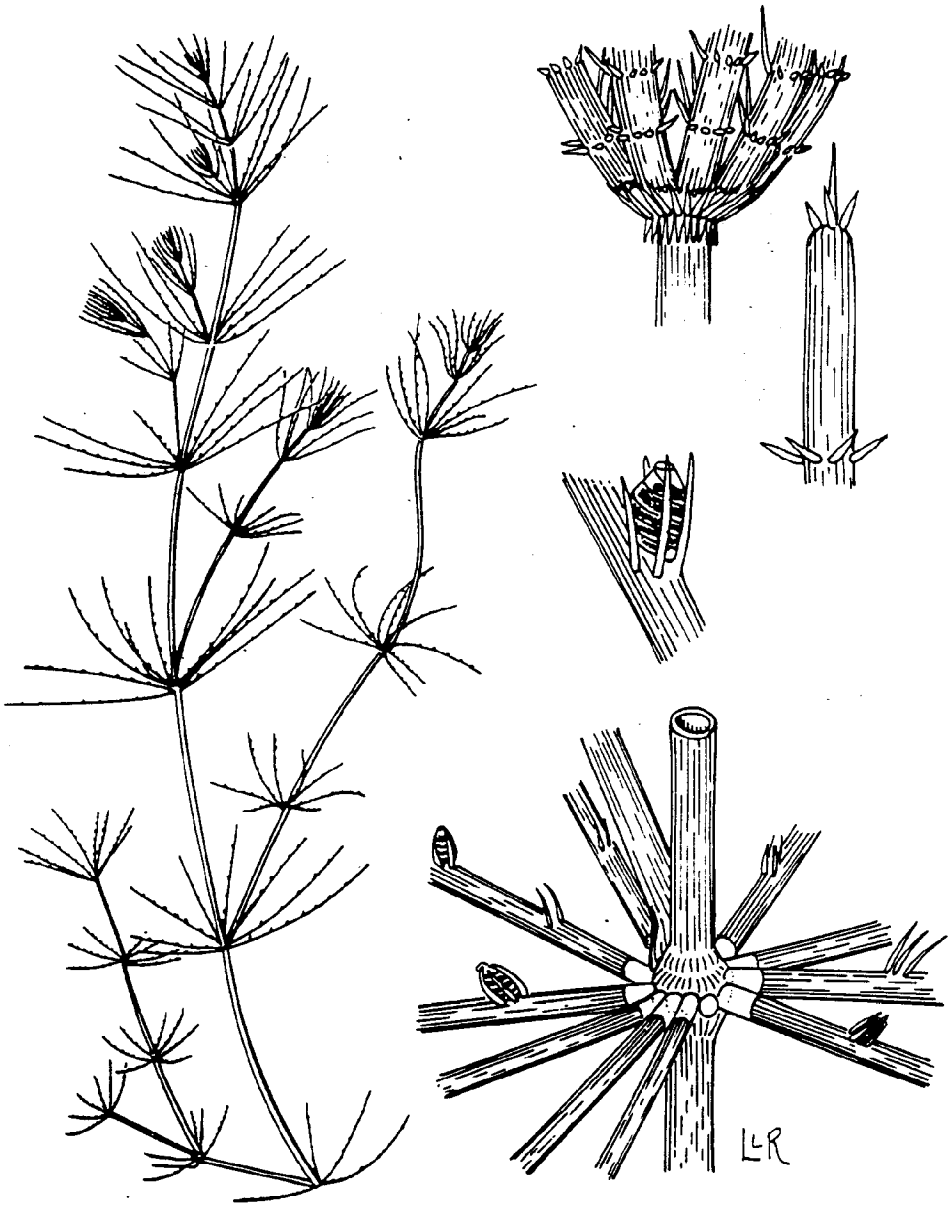

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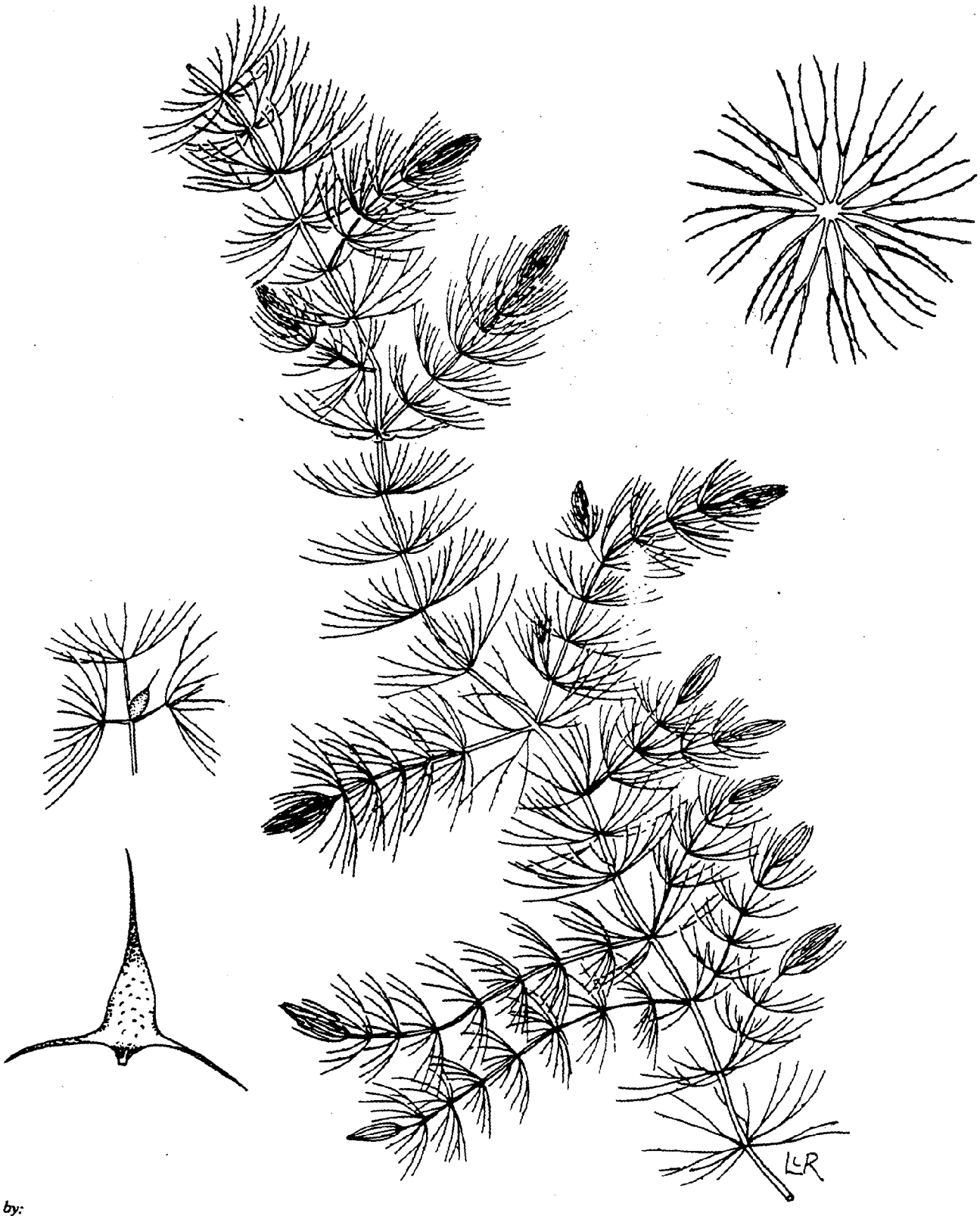

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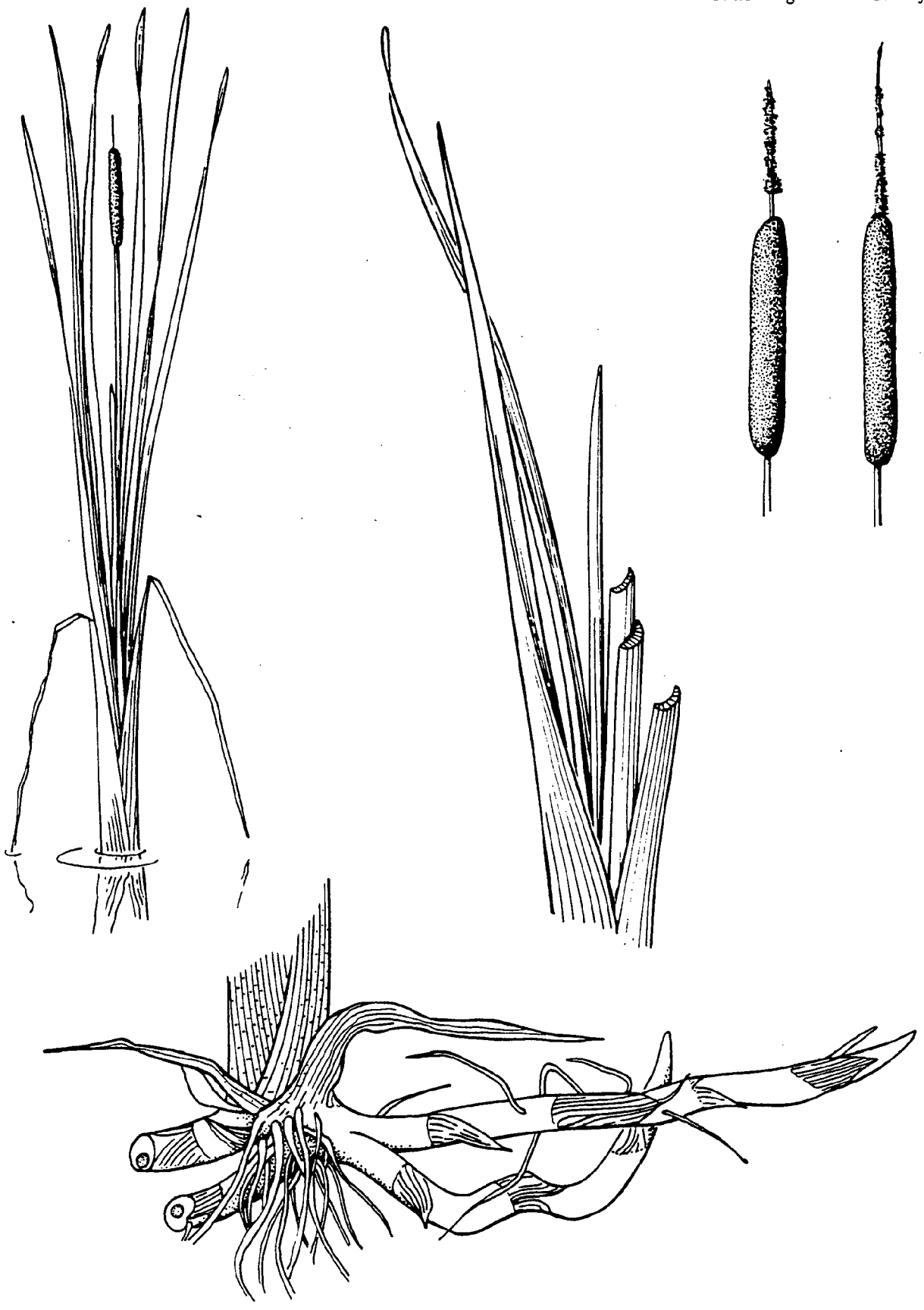
T. domingensis *T. latifolia)*



Typha Cattail

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