Status of the Aquatic Plant Maintenance Program in Florida Public Waters

Annual Report Fiscal Year 2001-2002

AUTHORITY

This report was prepared in accordance with §369.22 (7), Florida Statutes, to provide an annual assessment of the control achieved and funding necessary to manage nonindigenous aquatic plants in intercounty waters. The authority of the Department of Environmental Protection (department) as addressed in §369.20 (5), Florida Statutes, extends to the management of nuisance populations of all aquatic plants, both indigenous and nonindigenous, and in all waters accessible to the general public. The aquatic plant management program in Florida's public waters involves complex operational and financial interactions between state, federal, and local governments as well as private sector companies. Therefore, a summary of the entire management program in sovereignty public waters and associated funding contracted or monitored by the department during Fiscal Year 2001-2002 is included in this report.

Reporting Agency: DEP Bureau of Invasive Plant Management (BIPM)
Recipient Agency: Governor, Cabinet Members, Senate President, and House Speaker
Program for: FY 2001-2002
Report Due Date: January 1, 2003
Statutory Requirement: § 369.22 (7), F.S.

Florida's aquatic plant management program mission is to reduce negative impacts of invasive non-indigenous plants like floating water hyacinth, submersed hydrilla, and emergent torpedograss. **Invasive, non-native plants were reported in 96% of the 426 public lakes and rivers** inventoried in 2002 that comprise 1.26 million acres of fresh water where fishing alone is valued at over $1.5 billion annually. Once they establish, eradicating invasive plants is difficult or impossible; therefore, continuous maintenance of invasive non-native plants is critical to sustaining navigation, flood control, and recreation while preserving native plant habitat on sovereignty state lands.

The floating, non-native plants **water hyacinth** and **water lettuce** are two of the world's fastest growing plants. These plants, that once covered more than 125,000 acres of Florida's public waters, are the BIPM's highest management priority. Floating plants covered 7,680 acres statewide during 2002 and are under **maintenance control in 95% of the 244 public water bodies that they infest**. About $3.1 million were spent controlling 23,200 acres of floating plants in FY 01-02 to maintain control.

Hydrilla is a submersed invasive species, introduced as an aquarium plant from Southeast Asia in the early 1950s. Following the classic pattern of invasive organisms, hydrilla dispersed widely and rapidly evolving from local nuisances in the 1980s to statewide water management and habitat crises by the early 1990s, impacting nearly 140,000 acres. Dense mats form at the water surface blocking navigation, jamming against bridges, starving fish of oxygen, and hampering flood control. Increased funding since FY 95-96 allowed the BIPM's contractors to reduce the hydrilla standing crop to as low as 40,000 acres. However, underground tubers, that have the potential to sprout and blanket waters within one year, still infest an estimated 110,000 acres. About 48,715 acres of hydrilla were reported standing in public water bodies in 2002. Hydrilla was recorded in as many as 257 of Florida's public water bodies during the previous seven years. **Hydrilla is under maintenance control in 96% of the 175 public water bodies** in which it was reported in 2002. Approximately $17.3 million were spent managing hydrilla in public water bodies in FY 01-02. 63% of the hydrilla standing crop is in the four pools of the 64,500-acre Kissimmee Chain of Lakes. These lakes are also part of the Kissimmee Federal Navigation and Flood Control Projects; therefore, hydrilla maintenance control in this system is the BIPM's highest management priority.

The Florida Exotic Pest Plant Council lists 11 of the 21 non-native plants found in Florida public water bodies as Category I pest plants capable of completely disrupting aquatic ecosystems. Three of these species are listed above. Three others are newly introduced and are under intensive eradication programs to prevent them from becoming environmental and economic liabilities. The remaining five collectively infested 90% of Florida's public water bodies in 2002 covering about 22,280 acres. Until FY 00-01, funding was insufficient to address all of the higher priority hydrilla problems; therefore, plants like torpedograss and wild taro were virtually unmanaged for decades. Consequently they have spread throughout lake and river marshes and will represent a substantial management challenge for many years to come.

Approximately **$25 million are needed for FY 03-04** to adequately manage invasive exotic plants in Florida's public water bodies; **$18.5 million to achieve hydrilla** maintenance control, **$2.0 million to preserve floating plant** maintenance control, **$3.5 million to begin managing other invasive plants and floating islands, and $1.0 million to control melaleuca** as mandated in § 206.606, F.S. Funding for identified aquatic plant control needs in Florida's public water bodies will be adequate through the *Florida Forever Act* provided there is no concurrent reduction in traditional aquatic plant management revenue sources, such as motorboat-generated gasoline taxes and registration fees, or federal contributions to aquatic plant management.

- **Invasive non-native plants** pollute 96% of Florida's public lakes and rivers that comprise 1.26 million acres where fishing has been valued at $1.5 billion annually. (pp. 1-3)
- The DEP aquatic plant control program mission is to reduce negative impacts from invasive non-indigenous plants and their control in public waters. (pp. 2-28)
- Continuous maintenance of invasive aquatic plants is needed to sustain navigation, flood control, and recreation while preserving native plant habitat. (pp. 25, 26)
- **Floating water hyacinth and water lettuce** are two of the world's fastest growing plants and therefore are the BIPM's highest management priorities. (pp. 10, 11, 25, 29)
- Floating plants covered 7,680 acres of public water bodies in FY 01-02 and are under maintenance control in 95% of 244 waters infested. (p. 36)
- Managers spent about $3.1 million controlling 23,200 acres of floating plants during FY 01-02 to keep them under maintenance control. (pp. 36, 39)
- **Submersed hydrilla**, imported in the 1950s as an aquarium plant, evolved into a statewide water and habitat management crisis covering 140,000 acres by the mid 1990s. (pp. 6, 32)
- Insufficient management funding allowed hydrilla to expand from 50,000 to 140,000 acres during the middle 1990s. (p. 32)
- Increased funding allowed managers to reduce hydrilla standing crop to 48,715 acres reported in FY 01-02. (pp. 6, 32, 37)
- Hydrilla infested 175 public waters in FY 01-02; tubers infest about 110,000 acres of these waters and represent the potential for immediate reinfestation. (pp. 6, 37)
- The four lakes of the Kissimmee Federal Navigation and Flood Control Projects contain 63% of the state's hydrilla standing crop and are the top management priorities for FY 01-02. (p. 37, Appendix)
- Hydrilla is under maintenance control in 96% of the 175 public water bodies infested in FY 01-02. (p. 37)
- Managers spent $17.3 million treating 24,850 acres of hydrilla in FY 01-02. (pp. 37, 39)
- The Florida Exotic Pest Plant Council lists 11 **Category I Plants**, capable of disrupting aquatic ecosystems and causing economic harm, in Florida public waters. (pp. 3-14)
- Management techniques are available for effective Category I species management (pp. 4-24); insufficient funding has limited their control. (pp. 29, 32, 38-39)
- When funding was insufficient for higher priority hydrilla control, other Category I species management was minimal allowing these plants to expand. (pp. 32, 38-40)
- About $25 million is needed in FY 03-04 to control invasive plants in public lakes and rivers:
  - $18.5 million to achieve and sustain maintenance control of hydrilla,
  - $ 2.0 million to preserve maintenance control of floating plants,
  - $ 3.5 million to expand maintenance control of other Category I invasive plants and floating islands generated during the recent drought / flood cycles,
  - $ 1.0 million for melaleuca control as mandated in § 206.606, F.S.

Contents

Florida Fresh Waters

- 1.5 million acres of lakes and rivers
- 7,700 lakes and ponds
- 1,400 rivers and streams
- 454 public* lakes and rivers total 1.27 million acres
- thousands of miles of canals

* sovereignty lands with public boat ramp

note: 26 lakes were not inventoried in 2002 - no access due to extreme drought

Recreation

Uses of Florida's Public Waters

- recreation,
- commerce,
- navigation,
- habitat,
- ecotourism,
- potable water,
- flood control,
- irrigation.

Navigation

Potable water intakes on lake Washington

Habitat

Benefits of Aquatic Plant Management

- **$1.5 billion** in annual revenues to Florida from freshwater fishing and wildlife observation. (1985 U.S. Fish and Wildlife Services Report)
- Orange and Lochloosa Lakes (18,400 acres) generated **$10 million** each year to local economies. A ten-fold reduction in annual revenues was identified when water hyacinth and hydrilla covered the water surfaces. (1986 Uiversity of Florida Study)
- **$13 million** annual value for 4,000-acre Lake Jackson (Leon County). (1996 FSU Economic Report)
- **$50 million** annual value for 2,500-acre Lake Tarpon (Pinellas County). More than 700 jobs generating $9 million in wages. (1997 FSU Economic Report).

Intuitively, if invasive plants are not imported into Florida waters, then environmental damage and expensive management programs would not be necessary. If invasive plants are present but detected early, then damage and expenses can be minimized. Florida's multi-agency prevention program and the BIPM's annual inventory of public waters are steps toward reducing impacts caused by invasive aquatic plants.

Prevention

Three agencies cooperate to reduce invasive aquatic plant introductions into Florida:

- the US Department of Agriculture (USDA) inspects import shipments of aquarium plants,
- the FL Department of Agriculture and Consumer Services (FDACS) inspects wholesale aquatic plant nurseries, and
- the BIPM inspects retail aquatic plant sales outlets.

Inspecting for prohibited plants

Various federal, state and local governments regulate activities and inform the public about invasive aquatic plant problems via:

- articles,
- books,
- brochures,
- laws, ordinances, codes,
- multi media advertising,
- public speaking engagements,
- reports,
- research publications,
- school curricula, and
- web sites.

Assessment

Each year, BIPM field staff inventory invasive plants in Florida's 454 public waters that comprise 1.26 million acres of fresh water. Surveys are conducted to:

- detect new invasive plant introductions and alert managers for rapid control,
- establish needs-based management budgets,
- develop management priorities to distribute available funds,
- evaluate impacts from invasive plants and management programs.

Plant inventory in Lake Okeechobee

The Florida Exotic Pest Plant Council (FLEPPC) lists 11 of the 21 exotic aquatic plants found in Florida's public waters among the 65 Category I invasive plants reported in Florida. Category I plants invade or disrupt native plant communities.

Category I invasive plants were reported in 96% of the public waters inventoried during 2002 and impacted 139,028 acres (includes estimated 108,980 acres impacted by hydrilla tubers).

- 26 public lakes (9,600 acres) were inaccessible during 2002 due to drought conditions.

Invasive aquatic plants are characterized by:

- rapid growth,
- multiple reproductive methods,
- wide dispersal and survival,
- broad environmental tolerance,
- resistance to management.

Hydrilla mat covering the surface of Lake Okeechobee

Problems caused by invasive aquatic plants include:

- loss of recreation,
- severe oxygen depletion,
- stunted fish populations, fish kills,
- water flow restrictions, flooding,
- navigation restrictions,
- accelerated sedimentation,
- reduction in diversity,
- reduction in property values.

Water hyacinth has plagued Florida waters since the late 1800s as shown in the 1898 post card (above) of the St Johns River

FLEPPC Category I Aquatic Plants Found in Florida Public Waters

Aquatic nightshade
Giant salvinia
Hydrilla
Hygrophila
Paragrass
Torpedograss
Water hyacinth
Water lettuce
Water spinach
West Indian marsh grass
Wild taro

Aquatic Nightshade

Scientific name: *Solanum tampicense*
Origin: Mexico, West Indies
Introduction: 1970s, natural colonization
Aquatic community: Emergent
Habitat: Shorelines, wet soils
Distribution: Central Florida
Management effort: Eradication
2002 public waters / plant acres: 6 / 86

Aquatic nightshade flower and fruit (box), spines on leaf (circle)

Environmental and Economic Concerns

- Sprawling, prickly shrubs up to 15 feet form dense tangled monocultures.
- Invades disturbed areas and grows over established native vegetation.
- Difficult to selectively remove from intertwined native vegetation.
- Seeds disseminated by birds increasing potential for wide and rapid dispersal.

Aquatic nightshade invading understory of Fisheating Creek

Management Options:

Biological: none available

Chemical: 2,4-D, triclopyr

Mechanical: impractical - plants in shallow water, marshes

Physical: none available

Scientific name: *Salvinia molesta*
Origin: South America
Introduction: 1990s, horticulturists
Aquatic community: Floating
Habitat: Water surfaces, quiescent waters
Distribution: Canal in SW Florida, private ponds
Management effort: Eradication
2002 public waters / plant acres: 0 / 0

Environmental and Economic Concerns

- Grows rapidly and reproduces by vegetative fragments.
- Dense infestations block navigation, cover native plants, and clog irrigation pipes.
- Reduces oxygen content in water and causes fish kills.
- Considered as one of the world's worst weeds.

Magnification of hairs on leaf surface

Giant salvinia covering a portion of the Toledo Bend Reservoir (Texas - Louisiana)

Management Options:

Biological: unknown, accidentally released foreign weevil may feed; under evaluation in Texas

Chemical: copper, diquat, fluridone

Mechanical: not feasible in current infestations

Physical: dewatering

Hydrilla

Dense hydrilla growth at water surface

Scientific name: *Hydrilla verticillata*
Origin: Southeast Asia
Introduction: Ear1y 1950s, aquarium trade
Aquatic community: Submersed, surface mats
Habitat: Inches to 35 feet deep
Distribution: Statewide
Management effort: Maintenance control
2002 public waters / plant acres: 175 / 48,715
(tubers cover estimated 108,980 acres)

Environmental and Economic Concerns

- Grows an inch or more per day in deepest Florida waters.
- Can cover water bodies 1-2 years after introduction.
- 80% of plant mass is in the upper two feet of water column;
  - blocks sunlight and kills native plants,
  - blocks air exchange and consumes oxygen - fish kills,
  - virtually stops access, navigation, and recreation,
  - breaks loose and jams against bridges and dams.
- Reduces water activity-based incomes and property values.
- Doubles sedimentation rate from scenesing leaves and stems.
- Disperses by fragments, buds, and runners (no seeds).
- Resists control via underground propagules (tubers);
  - millions produced per acre,
  - no effective tuber control method,
  - lie dormant as long as 7 years.

Hydrilla sprouting from tuber

Hydrilla mat covering the surface of a Florida lake

Hydrilla jam on bridge

Management Options:

Biological: sterile grass carp, host specific insects (little insect success)

Chemical: large scale fluridone; copper, diquat, endothall for smaller infestations

Mechanical: harvest from spring runs, harvest/shred mats against structures

Physical: hand pull / diver dredge new infestations, or in fast flowing water

Scientific name: *Hygrophila polysperma*
Origin: India, Malaysia
Introduction: Mid 1940s, aquarium trade
Aquatic community: Submersed, emergent
Habitat: Wet soils to water 15 feet deep
Distribution: Central / South Florida, many canals
Management effort: Complaint management
2002 public waters / plant acres: 27 / 284

Stem rooting at leaf nodes

Environmental and Economic Concerns

- Forms dense surface mats especially in quiescent waters;
  - excludes light and oxygen penetration from native plants and animals,
  - hinders navigation and diminishes flood control capacity.
- Fragile stems root at each leaf node allowing rapid dispersal and establishment.
- Expensive and extremely difficult to control.

Hygrophila clogging a South Florida flood control canal

Management Options:

Biological: extremely high rates of sterile grass carp (in canal systems)

Chemical: frequent applications of various formulations / rates of copper, diquat, endothall, fluridone and 2,4-D provide marginal control

Mechanical: harvest floating mats

Physical: hand pulling, raking

Paragrass

Scientific name: *Urochloa mutica*
Origin: Africa
Introduction: Late 1800s, forage grass
Aquatic community: Emergent grass
Habitat: Wet soils, shorelines, floating mats
Distribution: Central and South Florida
Management effort: Complaint management
2002 public waters / plant acres: 205 / 2,338

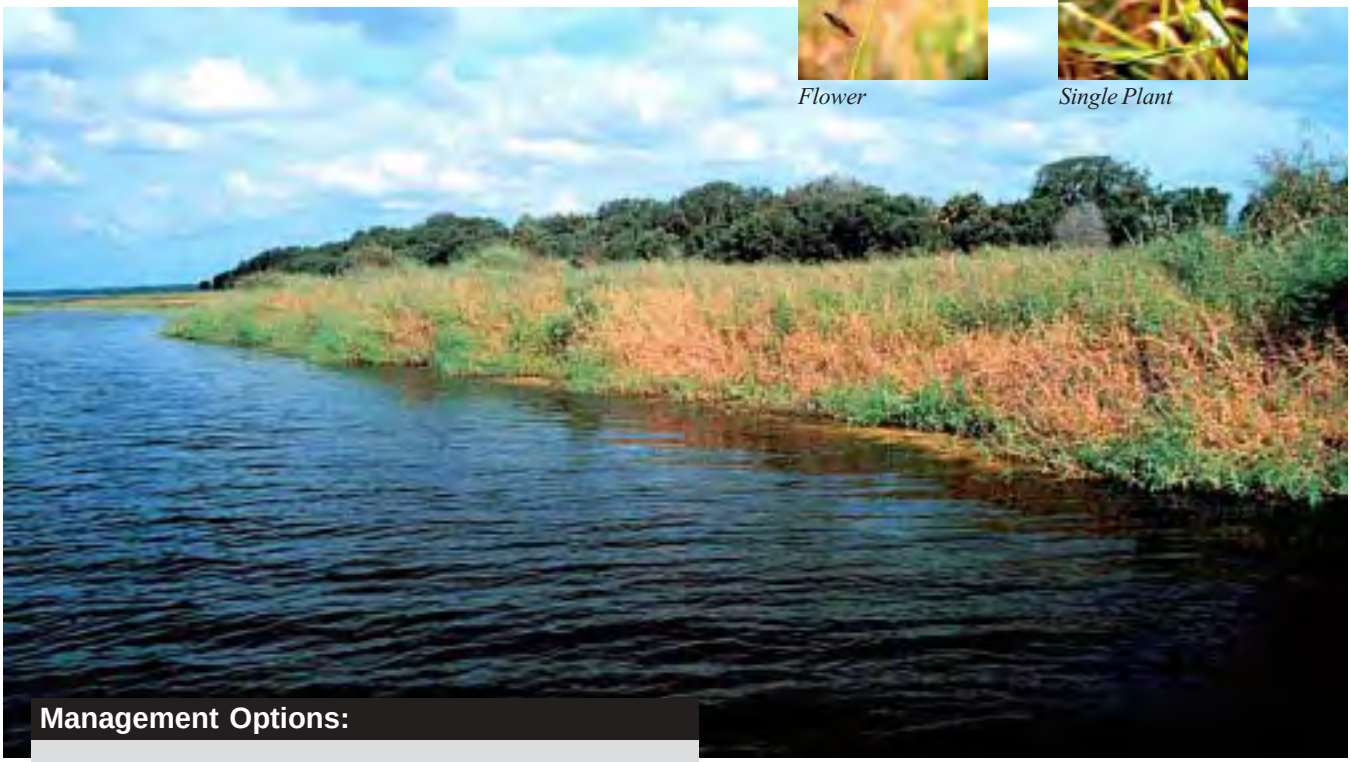
Dense tangle of paragrass

Environmental and Economic Concerns

- Sprawling grass up to 15 feet long that forms dense tufts on shorelines.
- Provides little wildlife value and crowds out native plants.
- Mats can break loose forming floating islands.
- Considered one of the world's worst weeds.

Flower

Single Plant



Paragrass covering Lake Kissimmee shoreline

Management Options:

Biological: none available
Chemical: glyphosate
Mechanical: mowing, harvest or shred floating mats
Physical: drawdown, desiccation, and burning

Torpedograss

Scientific name: *Panicum repens*
Origin: Old World
Introduction: Late 1800s, forage grass
Aquatic community: Emergent
Habitat: Dry land to water six feet deep
Distribution: Statewide
Management effort: Complaint management
2002 public waters / plant acres: 353 / 18,908

Torpedograss in Lake Okeechobee

Environmental and Economic Concerns

- Thick mats stop navigation and water movement.
- Displaces native plants in wet soils and shallow waters.
- Most widely dispersed exotic plant in Florida public waters.
- Resists control via extensive starch-laden rhizomes.

Torpedo-like root tip (in circle)

Inspecting part of the 14,000-acre torpedograss infestation on Lake Okeechobee.

Management Options:

Biological: none available, fungus species under review

Chemical: glyphosate, imazapyr (in dry areas)

Mechanical: harvest or shred floating islands

Physical: drawdown and burn prior to treating with herbicides; flood after treatments

Water Hyacinth

Scientific name: *Eichhornia crassipes*
Origin: South America
Introduction: 1880s, horticulturists
Aquatic community: Floating
Habitat: Water surfaces
Distribution: Statewide, especially peninsula
Management effort: Maintenance control
2002 public waters / plant acres: 218 / 4,295

Environmental and Economic Concerns

- Populations double in as little as two weeks.
- Disperses by seeds and stolons.
- Harbors mosquitoes.
- Speeds sedimentation by shedding roots and shoots.
- Dense mats prevent air and light diffusion into water;
  - killing native plants, fish and wildlife, and
  - preventing decomposition of detritus.
- Mats dam against bridges and flood control structures.
- Reduces property values and local tax revenues.

Water hyacinth roots and shoots

Water hyacinth in Ortega River, northeastern Florida

Management Options:

Biological: two weevils and a moth larvae stress plants and reduce seed production

Chemical: 2,4-D, diquat, occasionally glyphosate, copper

Mechanical: harvesters or shredders at bridges or flood control structures

Physical: occasional hand picking pioneer populations

Scientific name: *Pistia stratiotes*
Origin: South America
Introduction: Colonial period, ship ballast(?)
Aquatic community: Floating
Habitat: Water surfaces
Distribution: Peninsula, rare in panhandle
Management effort: Maintenance control
2002 public waters / plant acres: 152 / 3,386

Environmental and Economic Concerns

- Growth rate similar to water hyacinth.
- Harbors mosquitoes.
- Mats prevent air and light diffusion into water;
  - killing native plants, fish and wildlife, and
  - preventing decomposition of detritus.
- Speeds sedimentation by shedding roots and shoots.
- Dense mats dam against bridges and reduce water flow at flood control structures.

Below: water lettuce covering Kissimmee River (Pool B)

Management Options:

Biological: 2 host-specific insects (ineffective to date)

Chemical: diquat - occasionally copper near drinking water intakes

Mechanical: harvest around bridges and flood control structures

Physical: occasional winter drawdowns

Water Spinach

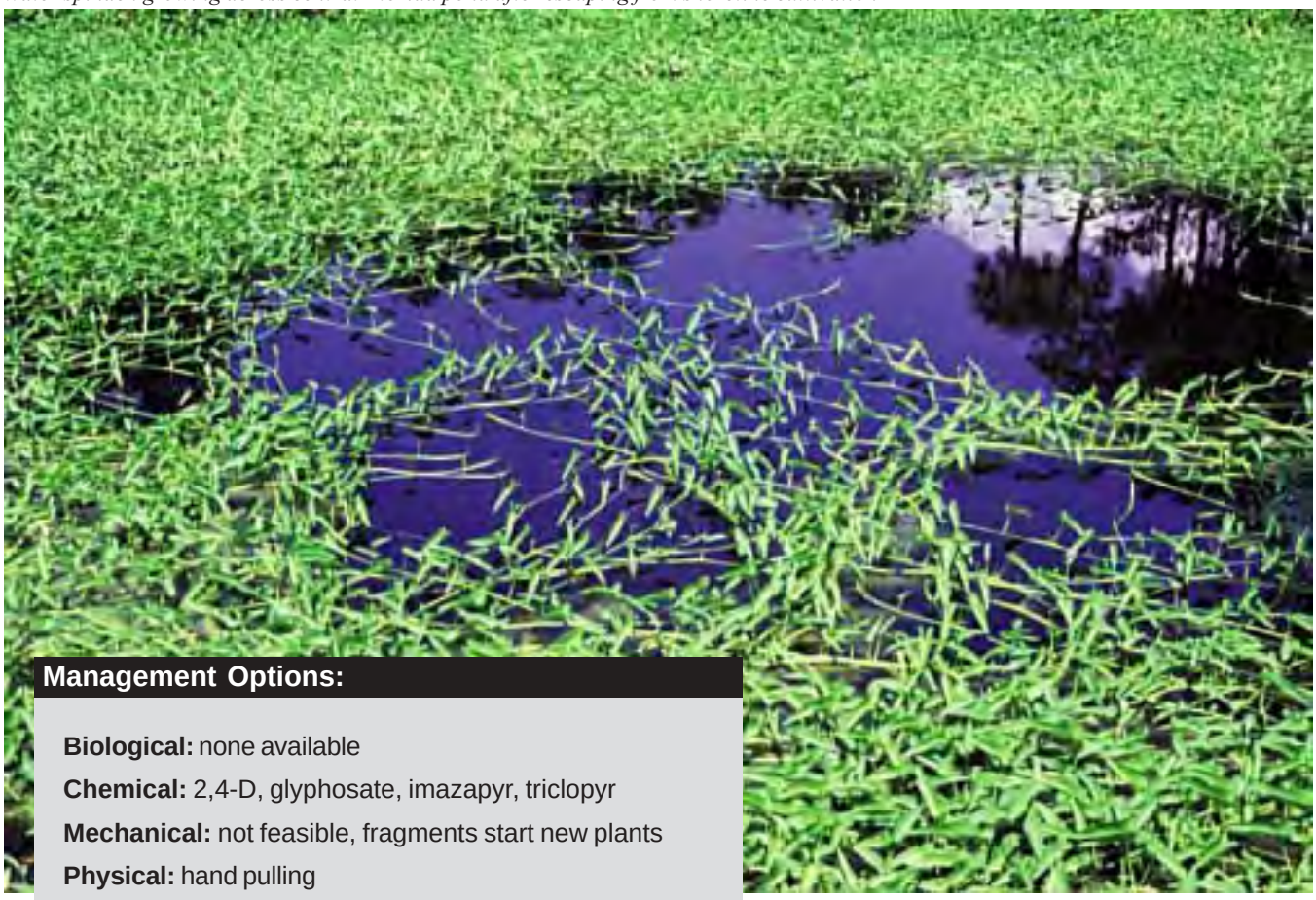
Scientific name: *Ipomoea aquatica*
Origin: China
Introduction: Mid 1900s, vegetable crop
Aquatic community: Emergent
Habitat: Dry land, shorelines, floating mats
Distribution: Isolated sites, statewide
Management effort: Eradication
2002 public waters / plant acres: 2 / 0.6

Water spinach stem and flower

Environmental and Economic Concerns

- Grows several inches per day.
- Forms dense canopies over emergent plants, floating mats on water surfaces.
- Common weed throughout the tropics, especially in rice fields.
- Potential for rapid dispersal by persons planting as a vegetable crop.

Water spinach growing across central Florida pond after escaping from shoreline cultivation



Management Options:

Biological: none available

Chemical: 2,4-D, glyphosate, imazapyr, triclopyr

Mechanical: not feasible, fragments start new plants

Physical: hand pulling

Scientific name: *Hymenachne amplexicaulis*
Origin: Central, South America, West Indies
Introduction: 1970s, natural colonization
Aquatic community: Emergent
Habitat: Wet soils to shallow water
Distribution: Isolated sites in South Florida
Management effort: Maintenance control
2002 public waters / plant acres: 12 / 80

Flower stalks

Environmental and Economic Concerns

- Forms dense monocultures in marshes and along shorelines.
- Displaces native grasses because of its broader tolerance to wet and dry periods.
- Difficult to control when growing among native grasses because they are susceptible to the same control methods.

West Indian marsh grass blocking Fisheating Creek

Management Options:

Biological: none available
Chemical: glyphosate
Mechanical: impractical - plants in shallow marshes
Physical: fire + glyphosate to control regrowth

Scientific name: *Colocasia esculenta*
Origin: India, Southeast Asia
Introduction: Early 1900s, food crop
Aquatic community: Emergent
Habitat: Wet soils, shallow water, floating islands
Distribution: Statewide
Management effort: Eradicate new colonies
2002 public waters / plant acres: 264 / 671

Environmental and Economic Concerns

- Displaces native plants, especially along shaded shorelines and in wetlands.
- Expanded from 35-62% of Florida's public water bodies between 1983-2002.
- Shoreline populations break loose forming floating islands that block access, cover native plant habitat, and root in new areas, spreading the infestation.

Wild taro growing along shoreline

Management Options:

Biological: none available

Chemical: 2,4-D + diquat + Kinetic most effective

Mechanical: harvest floating mats - roots fragment into new plant

Physical: hand pulling - use caution, oxalic acid irritant in plant

General

Biological controls rarely eradicate invasive plants. Their use in Florida's aquatic plant control program is to lessen invasive plant competitive advantages below some ecological or economic threshold. Biological control success is often measured in terms of control achieved by individual agents. However, fewer than one-third of biological controls released world-wide have proven effective when judged under this criterion. The goal of biological control is to continue to evaluate and release enough insects or pathogens to, if not eliminate, at least reduce the need for, or amount of, other management options.

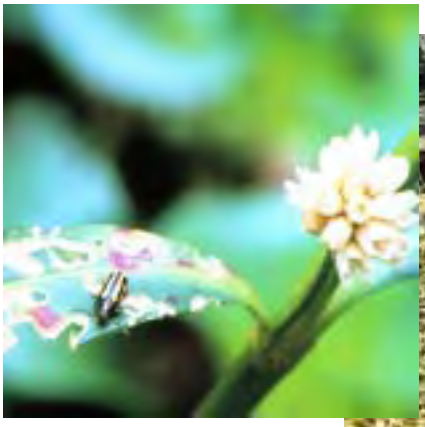
The biological control component of the aquatic plant management program has strained under unrealistic expectations. Research and development funding has been minimal, piecemeal, and non-recurring. There is pressure on researchers from managers and policy makers to transfer limited funding to other control options if each evaluated potential control does not immediately reduce target invasive plants. Consequently, there is pressure on researchers to declare management success before sufficient stress or control is realized. While the intent is to demonstrate cost-effectiveness of already released biological controls, the effect can be that research funding for additional controls (additional stress on a target invasive plant) is terminated before a solution is found and researchers move on to other problems.

The BIPM and USACE provide funding, review, and dispersal of approved controls. The USDA conducts and regulates classical biological control research through overseas exploration for insects and pathogens;

- to control established invasive plants,
- with host-specific controls (will not damage non-target plants).

Fourteen biological controls have been evaluated overseas and released in Florida to control the following invasive plants:

Plant	# Biocontrols
• alligatorweed	3
• hydrilla	4
• water hyacinth	3
• water lettuce	2
• melaleuca	2



Flea beetle feeding on alligatorweed leaf

Insect defoliation of alligatorweed

Biological Control Efforts in Florida

Three insects were released in the late 1960s to control invasive alligatorweed. Although alligatorweed remains one of the most widely dispersed aquatic plants in Florida (found in about 75% of public waters), mechanical or herbicide management is rarely necessary. Insects usually defoliate leaves and collapse stems by early summer (previous page).

Insects, principally two weevils that feed on the leaves, reduce water hyacinth vigor and seed production, but have not controlled the plant in Florida regardless of the amount of time (10 or more years in some cases without herbicide use, as in the photographs below), or the amount of concomitant mechanical or herbicide control.

Water hyacinth on Fisheating Creek

Insect feeding scars on water hyacinth leaves

Four insects have been released to attack hydrilla leaves (2), stems (1), and tubers (1), however, none have shown signs of controlling or stressing hydrilla in public waters. Only the sterile Asian grass carp has shown hydrilla control capability, but it is not selective and is difficult to contain in Florida's interconnected surface waters. Removing significant quantities of grass carp when overstocked in public water bodies has proven nearly impossible. Hydrilla is being managed by triploid grass carp in 61 of Florida's public water bodies

Sterile grass carp in hydrilla

Leaf-mining fly on hydrilla

Two South American weevils released to manage water lettuce have dispersed and feed on the plant, but have shown few signs of controlling or stressing water lettuce despite several intensive establishment attempts.

Chemicals used to control aquatic plants in Florida public waters fall into two broad categories; herbicides and adjuvants.

Herbicides
Herbicides are applied directly to target invasive plants or are dispersed within the water column to kill plants.

- Advantages:
  - selective control,
  - relatively inexpensive,
  - quickly control broad area,
  - use to eradicate pioneer infestations.

- Disadvantages:
  - temporary,
  - inconsistent public opinion/acceptance,
  - plants may develop tolerance,
  - various water use restrictions,
  - plants decompose insitu.

The US Environmental Protection Agency (USEPA) evaluates herbicides for potential human and environmental impacts, and registers compounds for use in Florida waters if the benefits far exceed identified risks. Evaluations include:

- residue in water, fish, shellfish and crops,
- environmental fate (dispersal in the environment),
- how compounds breakdown and breakdown products,
- routes of entry into test animals,
- short term (acute) toxicity in test animals,
- long term impacts including tumors, birth defects and other abnormalities,
- toxicity to aquatic life such as fish, waterfowl, and invertebrates.

The FDACS registers USEPA-approved herbicides for use in Florida after consulting with state and federal environmental and health agencies through the Pesticide Review Council.

Research to determine lowest 2,4-D rate for water hyacinth control

The BIPM funds and evaluates research to identify weaknesses in invasive plant lifecycles and to apply herbicides to selectively control invasive plants. Selectivity is attained through understanding physical and biological parameters including:

- developing methods to place herbicides only on target plants,
- determining the lowest herbicide rates that will affect target plants,
- applying the most appropriate herbicide formulation and additives,
- understanding physiology and susceptibility of target and non-target organisms,
- timing control as target plants are most (and non-target plants least) vulnerable.

Approximately 200 herbicide active ingredients are registered in the United States. Registration criteria are much more rigid for aquatic use herbicides vs. their terrestrial use counterparts, consequently only seven herbicide classes are fully registered with the USEPA and the FDACS for use in Florida waters. The most recently registered compound, triclopyr (registered in December 2002) took 18 years for safety studies to be conducted and evaluated. Safety studies have been completed for an eighth compound, imazapyr, which is now available for limited use in Florida waters under a USEPA experimental use permit.

Four of these compounds are available in liquid and dry formulations:

Herbicide class	Formulation
copper	liquid / granular
diquat	liquid
endothall	liquid / granular
fluridone	liquid / pellet
imazapyr	liquid
glyphosate	liquid
triclopyr	liquid
2,4-D	liquid / granular

Herbicides are classified as contact or systemic, based upon mode of action.

- Contact herbicides kill, relatively quickly, the plant or portion of plant, on which they come into contact. (copper, diquat, and endothall)
- Systemic herbicides are absorbed into, and translocated within, the plant. (fluridone, imazapyr, glyphosate, triclopyr, and 2,4-D)

Adjuvants

Adjuvants are inert materials added to pesticide formulations to increase the effectiveness of the active ingredient. Adjuvants:

- reduce foaming (clogging),
- reduce drift in the air,
- spread herbicides across leaf surfaces,
- increase herbicide contact by sticking,
- increase herbicide penetration.

Loading fluridone pellets to control hydrilla in Lake Tohopekaliga

Airboat equipped for liquid and pellet herbicide applications

Mechanical devices have been used since the early 1900s to sheer, shred, slurry, press, pull, lift, and convey aquatic plants from problem areas in Florida public waters.

- Advantages:
  - few water use restrictions,
  - remove vegetation,
  - remove nutrients and organics,
  - no oxygen sag (if plants removed).
- Disadvantages:
  - limited access in shallow water,
  - high operating costs,
  - spread plants via fragments,
  - kill non-target plants and animals,
  - slow (control 2-3 acres / day).

Water hyacinth control on the Caloosahatchee River, 1939

High operational expenses and slow rate of control combined with the rapid growth rate of water hyacinth and hydrilla, and propensity for removing all plant and animal life, limit harvesting these plants to small areas (i.e. around bridges) or where other control methods have not been effective (i.e. intertidal waters or fast flowing waters in spring runs).

Harvesting hydrilla from the fast moving waters of Wakulla Springs

As Florida's four-year drought eases and water bodies begin to refill, terrestrial plants that grew on the exposed sediments often pull up peat and other organic deposits as much as three feet thick. These floating islands, or tussocks, can inflict the same kinds of damage to native plants, bridges, and flood control structures as floating mats of water hyacinth if allowed to drift freely. Shredders (right) or harvesters (below) provide the most effective means of removing floating tussocks.

Part of 100-acre floating tussock on Lake Runnymeade

Harvesting floating tussocks from Lake Tohopekaliga

Shredding floating tussocks on Lake Runnymeade

Harvesting shredded tussocks from Lake Runnymeade

In efforts to offset management costs, research has been conducted to find economical uses for harvested materials. However, since aquatic plants are comprised of about 95% water, costs of harvesting, drying, or otherwise preparing aquatic vegetation for commercial products far exceed the costs of deriving similar products from terrestrial vegetation.

Products include:

- potting soil and mulch,
- animal feed supplements,
- paper,
- furniture, and
- methane gas.

Water hyacinth spoil pile

Physical controls include managing aquatic plants by hand, desiccation (drawdowns), flooding, prescribed fire, suction dredging, barriers, and light attenuation. High cost, selectivity concerns, and logistics limit applications to only a few methods and a few sites in Florida public waters each year.

Hand removing aquatic plants, including raking, pulling, and diver dredging is:

- labor intensive,
- used to manage new infestations,
  - when other methods are ineffective (fast flowing springs),
  - when immediate removal is needed (pioneering infestations or removing plants from water pump intakes).

Drawdowns are used to retard or turn back the lake aging process by;

- aerating sediments and accelerating organic decay,
- compacting and stabilizing sediments,
- controlling emergent aquatic plants.

Drawdowns must be conducted frequently if used to control water hyacinth, water lettuce, and hydrilla because;

- drying stimulates seed germination in water hyacinth and lettuce,
- hydrilla tubers are resistant to drying.

Drawdowns are usually reserved for emergent plant control, especially when;

- conducted in dry winter months, and
- combined with prescribed fire to reduce thatch and other organics, and
  - stimulate regrowth to facilitate herbicide control.

Prescribed fire during drawdown, Lake Jackson (Leon County)

Winter drawdown on Rodman Reservoir to kill 1,500 acres of water lettuce by desiccation and freezing

Prescribed flooding (water level increase) is available in a few locations to:

- strand floating plants on upland sites immediately prior to drawdowns,
- retard torpedograss regrowth after drawdown, fire, and herbicide applications, and
- reduce light penetration further stressing hydrilla after herbicide applications.

Two types of material barriers are available that have limited application including:

- benthic barriers that are anchored to substrates to kill plants through;
  - light attenuation and
  - physical disturbance
- silt curtains that are installed to isolate stands of submersed invasive plants
  - from wind and water currents, and
  - to prolong herbicide contact time.

Diver assisted dredge being tested at Wakulla Springs. Above, diver operating suction dredge; right, hydrilla filling catch basket on barge; below, two dredge units in operation to increase efficiency.

Diver assisted dredges are used in other states and are under development in Florida to:

- control small infestations of submersed invasive plants (including hydrilla tubers) from;
  - fast flowing waters in spring runs and rivers, and
  - boat ramps or other areas where immediate removal of pioneer infestations is needed.

Colored dyes can be applied to attenuate light on a larger scale than with barriers.

- Commercial blue dyes are currently available but are:
  - cost-prohibitive to apply to large public water bodies,
  - difficult to sustain appropriate concentrations in natural, flow-through systems,
  - not selective especially for controlling hydrilla that requires less light to grow than native plants.
- Natural tannins can be concentrated and applied to shade invasive submersed plants, but:
  - impart aesthetically unacceptable dark brown or black color to the water,
  - are nonselective and not available commercially,
  - are difficult to sustain in appropriate concentrations.

Applying endothall herbicide behind silt barrier in Sanlando Springs (above)

There are nearly as many definitions of integrated pest management (IPM) as there are invasive species management programs. Most definitions acknowledge several basic components when developing an IPM plan including:

- multiple management options,
- biology and life cycles of invasive species,
- ecosystem sensitivity to invasion by introduced organisms,
- management impacts on ecosystems,
- reducing invasive species impacts below an economic / ecological threshold,
- flexibility to adapt management techniques to changing conditions,
- continuing development of additional management options.

Few definitions address the importance of integrating management programs among the many shared and often competing uses of parcels of land or water bodies. For example; hydrilla control in the Kissimmee Chain of Lakes must incorporate the above issues as well as a thorough understanding of annual flood control regulations and irrigation requirements.

If the dams that regulate water levels within these reservoirs are opened appreciably during herbicide treatments, not only is application cost and control jeopardized, but also additional risks are imposed upon downstream non-target plants. Likewise, the release of herbicide treated waters for irrigation can have negative impacts on commercially important plants, for example in sod and citrus operations.

IPM Examples

Florida's aquatic plant management program has incorporated IPM strategies since its inception more than 100 years ago when physical, mechanical, and chemical control methods were applied in unison to combat water hyacinth growing in the St. Johns River. Examples of current IPM strategies include:

Chemical + chemical

- 2,4-D is applied to control water hyacinth when it commingles with grasses because 2,4-D has little impact on aquatic grass species. However diquat, that burns (but does not kill) aquatic grasses, is used when water hyacinth is mixed with bulrush that is susceptible to 2,4-D (below).

- Fluridone affords the most cost-effective reduction of large-scale hydrilla infestations, while endothall is used to stress fluridone-tolerant hydrilla prior to treatment and to touch up remaining hydrilla left after fluridone applications.

Water hyacinth growing among bulrush

Biological + chemical

• Water hyacinth weevils reduce plant vigor and seed production allowing managers to use much less herbicide to sustain maintenance control.

• Reducing hydrilla standing crop with endothall or fluridone prior to sterile carp release reduces the number of fish required and subsequent carp feeding on non-target plants.

Physical + Chemical

• Torpedograss is most readily controlled by dewatering and burning to remove dense thatch, reduce starch, and stimulate growth and susceptibility to imazapyr herbicide.

• Hydrilla control is enhanced by drawing down water levels to reduce the amount of fluridone needed to achieve lethal conentrations, then flooding weeks later to limit light penetration (light stimulates hydrilla growth and breaks down fluridone).

Prescribed fire preceeding torpedograss control on Lake Okeechobee

Mechanical + chemical

• Harvesters and shredders remove floating vegetation islands overgrowing navigation channels while regrowth is maintained with glyphosate herbicide.

Shredding floating islands overgrowing Snake Creek

Physical + mechanical

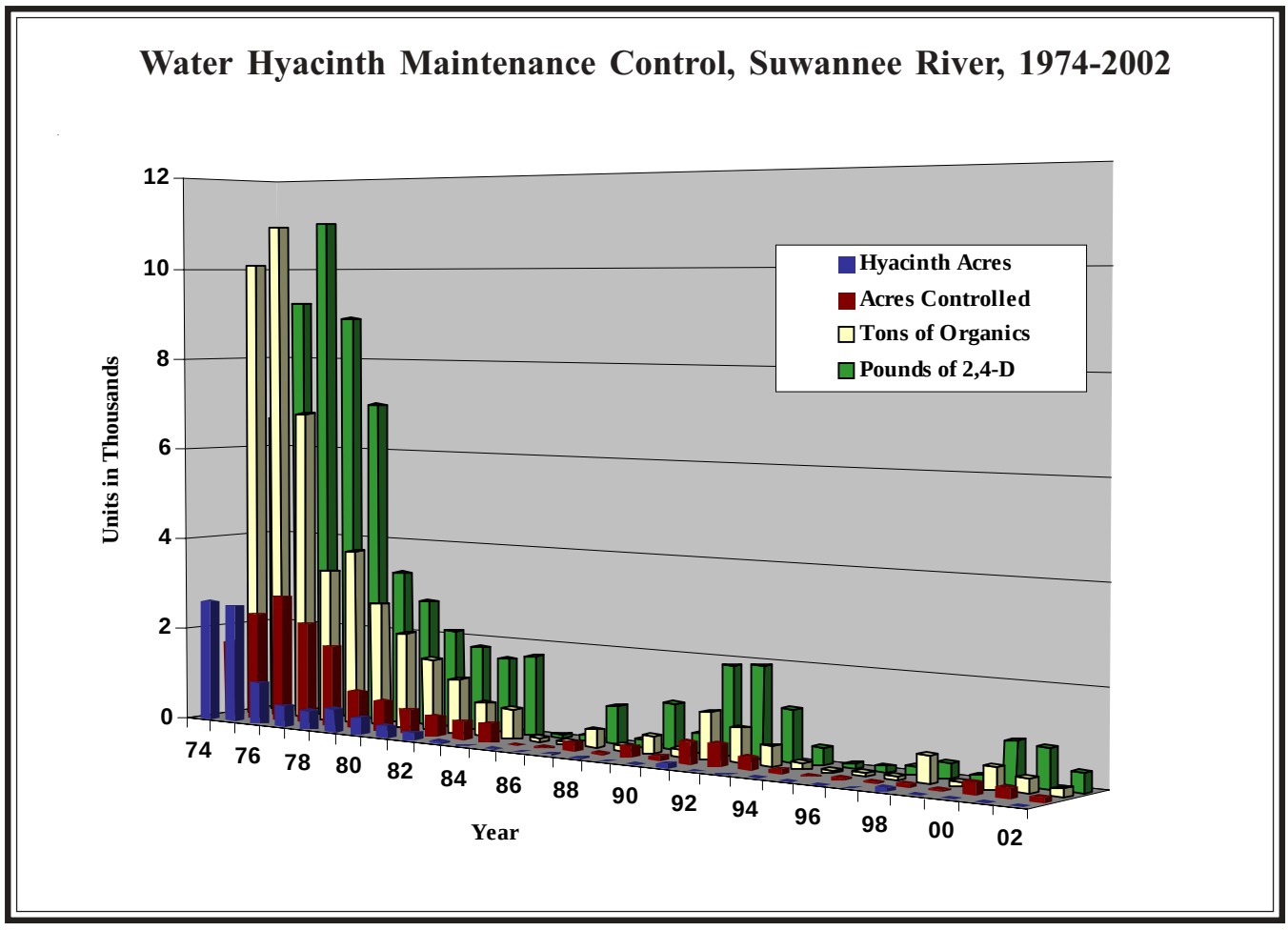
• Drawdowns incorporating freezes and prescribed fire control emergent aquatic plants, but mats of upland plants that colonize exposed soils must be harvested or shredded before or upon reflooding to prevent them from floating and blocking navigation or structures.

§369.22 (3), Florida Statutes requires that nonindigenous aquatic plants be managed at the lowest feasible levels, a concept known as maintenance control, in order to reduce:

- sedimentation (lake aging),
- native plant damage,
- management costs,
- navigation problems,
- transportation problems,
- flood control problems,
- loss of habitat,
- loss of recreation,
- loss of property values,
- use of herbicides.

The Suwannee River Example

Water hyacinth covered 2,300 acres of the Suwannee River in the early 1970's. Thousands of tons of sediments were produced by shedding root and shoot material and from controlled plants. Hundreds of acres required control using thousands of pounds of herbicide. Crisis management was replaced by maintenance control efforts in the late 1970s. Since achieving maintenance control in 1985, relatively little management has been necessary, reducing environmental and economic impacts. Native plants have returned to the shores and marshes of the Suwannee River, restoring fish and wildlife habitat.



The goals of Florida's invasive aquatic plant management program include:

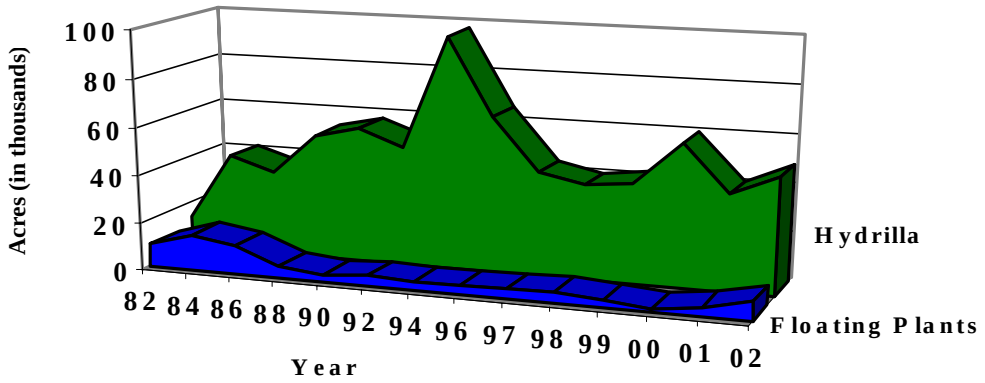
- Reducing abundance of invasive exotic aquatic plants polluting Florida public water bodies.
  - emphasis on water hyacinth, water lettuce, and hydrilla
  - eradicate new infestations of FLEPPC Category I invasive aquatic plants
  - begin managing established stands of other FLEPPC Category I aquatic plants

- Managing established invasive exotic aquatic plants through maintenance programs to sustain attributes such as navigation, flood control, and recreation while preserving or enhancing diverse native vegetation communities for fish and wildlife habitat.

- Integrating biological, chemical, mechanical, and physical control techniques into cost-effective and environmentally compatible invasive plant management programs.

- Assessing and incorporating, where appropriate, new technologies and techniques that enhance invasive exotic aquatic plant management objectives (see photos at page bottom).

Hydrilla and Floating Plant Coverage in Florida Public Water Bodies, 1982-2002



Metering endothall herbicide into the headwaters of the Wakulla River for downstream hydrilla control

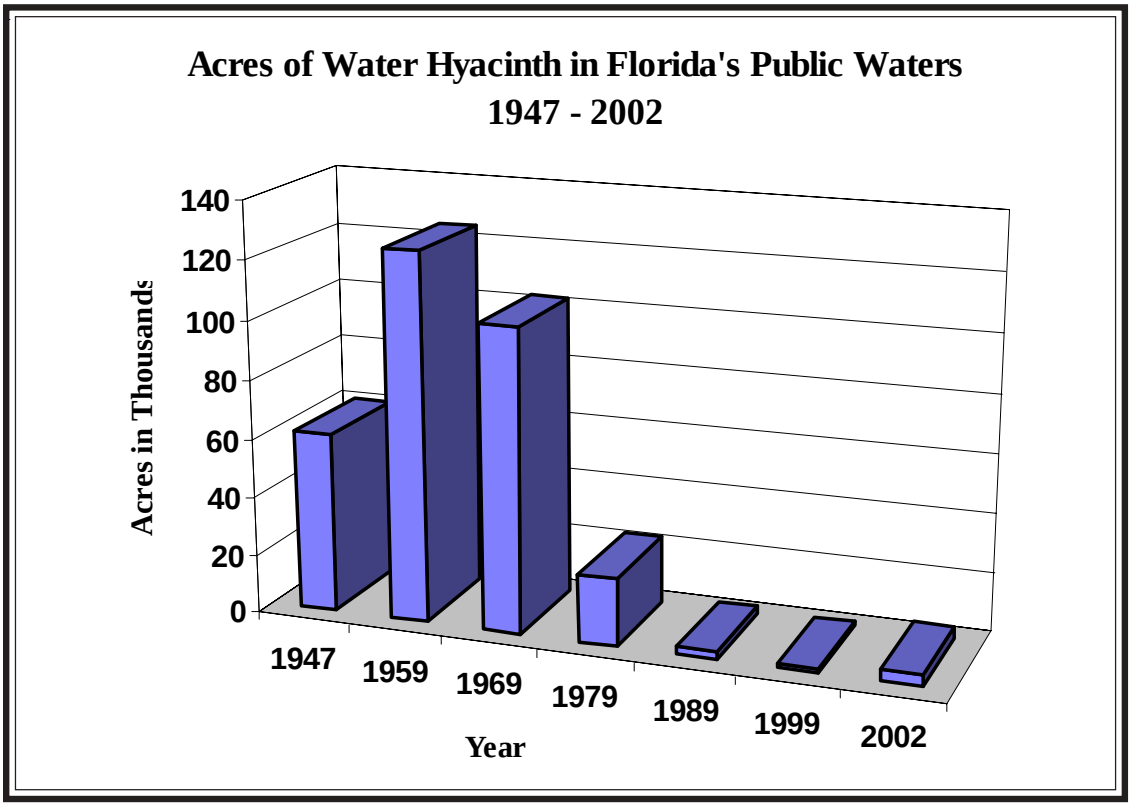
The Department of Environmental Protection (then DNR) was designated by the Florida Legislature in 1971 as the lead agency for aquatic plant control because of the agency's broad range of environmental preservation and conservation goals.

The department created the Bureau of Aquatic Plant Research and Control (now Bureau of Invasive Plant Management - BIPM) to coordinate the aquatic plant management activities of more than 200 government agencies and commercial companies in Florida. The centralized approach has proven effective for various reasons:

- establishes a statewide management and resource protection plan,
- ensures statewide priority distribution of available funds,
- reduces administration; one agency distributes funds to areas of greatest need,
- coordinates management operations with water managers and users,
- avoids duplication as well as neglect,
- ensures consistency in policy, goals, administration, and control methods.

The Water Hyacinth Control Example

Water hyacinth was uncontrolled in some waters, or in other instances, managed by many agencies with differing or narrowly focused goals. There was no statewide management plan, funding was inconsistent, and plant populations were out of control as recently as the 1970s. Water hyacinth has been reduced from 125,000 acres to about 4,300 acres reported in public waters during 2002, since the program was centralized under the BIPM.



Authorities / Responsibilities

The Florida Legislature designated the Department of Environmental Protection as the lead agency for coordinating aquatic plant control activities in 1971 (§ 369.20 (2), Florida Statutes). The department responded by creating the Bureau of Aquatic Plant Research and Control now the Bureau of Invasive Plant Management (BIPM) to oversee and coordinate these duties.

Funding has never been sufficient for the BIPM to control all aquatic plant problems. Additionally, many aquatic plant problems are not considered to be State responsibilities. Eligibility criteria were established by policy in 1989, and later by rule in 1997 (§ 62C-54.0035 (1), Florida Administrative Code), to identify waters for which the BIPM distributes aquatic plant management funding.

Water bodies must meet the following criteria to receive State aquatic plant control funds:

- the water body must be sovereignty lands,
- the water body must have public boat ramp access,
- a sign must be posted at the ramp stating the water body is open to public use,
- there must be signs directing the public from roadways to the public ramp, and
- the public ramp area must be sufficiently large to launch boats and park vehicles.

Public boat ramp on Lake Okeechobee

Water management, water control (§ 298, Florida Statutes), and other special districts have authorities to raise money and responsibilities to control aquatic plants in canals constructed for flood control and water transport (below). Even sovereignty lakes that do not have public boat ramps benefit small special interest groups, and thus are not eligible for State aquatic plant control funding. Aquatic plant management in these systems is the responsibility of adjacent property owners or some other unit of government.

Residential canals in Cape Coral

The Governor established the following criteria to determine which of the department's budget issues would be vetoed and which would receive funding. These criteria fit well with policies already established in the BIPM aquatic plant management program:

- statewide benefit vs. a few localities,
- public benefit vs. special interests,
- objective, competitive review process,
- appropriateness of the funding source (if another entity has fiscal responsibility in an area then department funds should not be used in that area).

Aquatic plant management funding was insufficient to address even high priority hydrilla problems in public water bodies for more than a decade. The following priority list was developed (§ 62C-54.005 (2) (a-g), F.A.C.) to distribute available funds to areas of greatest need and to programs that will achieve the most positive impacts.

Increased funding under the *Florida Forever Act* beginning in FY 01-02 will allow managers to initiate aquatic plant control programs into Priority Level 6.

Aquatic Plant Management Priorities in Florida Public Waters

1. Floating vegetation
   - water hyacinth and water lettuce
   - can impact all areas of public waters
   - also floating plants in canals that could contaminate public lakes and rivers

2. New hydrilla infestations
   - if controlled prior to establishing tubers, then low cost eradication is possible
   - usually at boat ramps
   - also hydrilla in canals that could contaminate public lakes and rivers

3. Boat ramps, navigation trails, and flood control structures
   - native and invasive exotic plants are equally problematic if blocking these areas or structures
   - includes floating mud or plant islands

4. Create open areas in extensive hydrilla mats
   - recreation
   - preserve fisheries
   - additional navigation

5. Whole-lake hydrilla management
   - large-scale control projects of 100-25,000 acres

6. Other plants
   - remaining FLEPPC Category I invasive aquatic plant species
   - more than 100 other exotic and native aquatic plant species

7. Residential canals or boat trails servicing private homes or clubs except for:
   - water hyacinth or water lettuce
   - hydrilla, if a connecting public water has little to no hydrilla

Setting management priorities

Hydrilla Control Considerations

Aquatic plant management funds were insufficient for more than a decade to conduct all necessary hydrilla control. The BIPM and its government agency contractors developed the following list of considerations to select the most appropriate waters in which to commit large-scale hydrilla management funds each year.

Water uses

- navigation
- flood control
- potable water, irrigation, livestock
- recreation potential
  - boating
  - fishing (commercial/recreational), hunting
  - water sports (swimming, skiing, etc.)
  - wildlife observation
- wildlife management
  - habitat
  - endangered species concerns
  - nesting sites
  - foraging habitat
  - presence (plants and animals)

Control feasibility

- potential for control
  - available methods
  - environmental conditions
  - water depth and volume
  - water movement (waves, flow)
  - chemistry (oxygen, nutrients, pH)
  - sediment type (clay, sand, organic composition and depth)
  - temperature
  - plant growth stage (hydrilla and non-target species)
  - water clarity (tannin, turbidity, algal content)
- history of control success in that water or in waters with similar conditions
- potential for native / invasive plant regrowth

Other considerations

- cost
- local government and public support level (verbal, financial)
- alternative water body proximity

Hydrilla covering north end of Lake Toho, 1997

After hydrilla control on north end of Lake Toho, 1998

Plant management programs are developed each year for public waterbodies. Government contractors and the BIPM's field biologists prepare requests that are reviewed by local, state, and federal agency field personnel that have authorities in public waters. Reviewers then meet to establish management plans and priorities for the ensuing year. In this way, the program maintains statewide standards while allowing for regional flexibility.

- (February 1 – March 15) Develop plant management requests for public waters
- (March 15 – April 15) Distribute management requests to reviewing agencies with jurisdictional authorities.
- (April 15 – May 1) Compile written comments from reviewing agencies.
- (May 1-15) Incorporate comments into management plans for each water body and set priorities within current budget during meetings with agency staffs and other interested persons.
- (May 15 – June 30) Incorporate approved plans into contracts with government and private contractors.
- (July 1 – June 30) Manage aquatic plants pursuant to contracts (revise and reallocate funds as conditions change).
- (April 1 – November 15) Inventory aquatic plants in public waters to monitor control impact and revise management priorities.
- (November 15 - 30) Compile and verify data from inventories and management invoices.
- (December 1 – 31) Prepare annual report and budget requests after analyzing plant inventory and management information.

Developing floating plant control plan for the Kissimmee River

In addition to plant management problems, administrative constraints further challenge managers. Government budget cycles do not match up nor do they coincide with the peak of the growing season. Inspecions to assess management effectiveness are most valid at the end of the growing season, well into the current budget cycles and months before the next. Regardless, funds must be dispersed as soon as they become available in June so contractors can acquire and allocate their financial and personnel resources.

Problems generated by these mismatched cycles include: 1) planning long-term projects that cross fiscal years, not knowing if enough funds will be available to complete programs; 2) frequent reallocations of funds to respond to changing plant and weather conditions, and funding availability; 3) convincing budget authorities that funds will be used although only about 25% are typically spent by the beginning of the third quarter of the State fiscal year (January – the onset of optimum large-scale hydrilla management conditions).

Aquatic plant management is a craft that blends predictable sciences of chemistry and hydrology with the highly variable parameters of biology and meteorology, for application in venues with boundaries defined by human behavior and economics.

Successful aquatic plant managers:

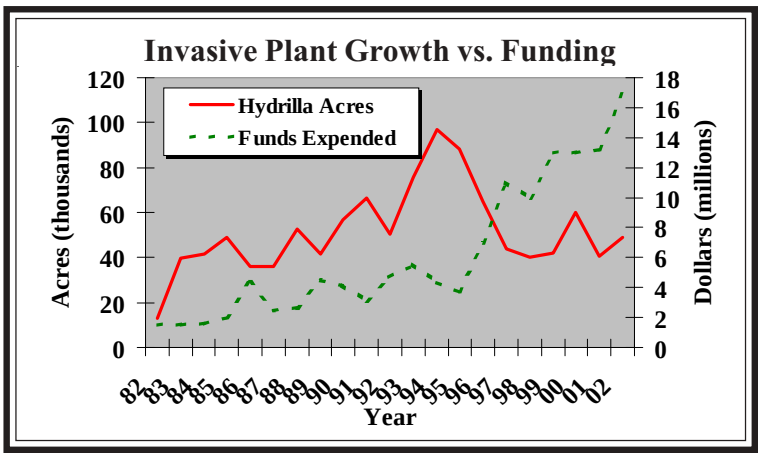
- apply the most appropriate control methods,
- preserve, restore, and enhance natural processes and/or human uses of public water bodies,
- assess and revise priorities based on ever-changing;
  - biological conditions,
  - funding availability,
  - public perceptions / demands,
  - control technologies,
  - contractor availability, and
  - weather conditions.

The greatest challenges facing Florida aquatic plant managers include:

- sufficient, recurring funding,
- a documented hydrilla tolerance to fluridone herbicide,
- availability of a sufficient and adequately trained labor force, and
- controlling plants in alternating flood and drought conditions.

Sufficient, recurring funding

With sufficient funding, hydrilla can be reduced to and sustained at a lower level (Fig. 1). Conversely, when funds are insufficient, hydrilla expands within infested waters and is transported to additional waters. When hydrilla expands, a higher level of funding is required to regain and maintain control. This principle applies to managing most invasive species. Because of their high management priorities, floating plants and most (but not all) hydrilla populations have been contained. Of the 175



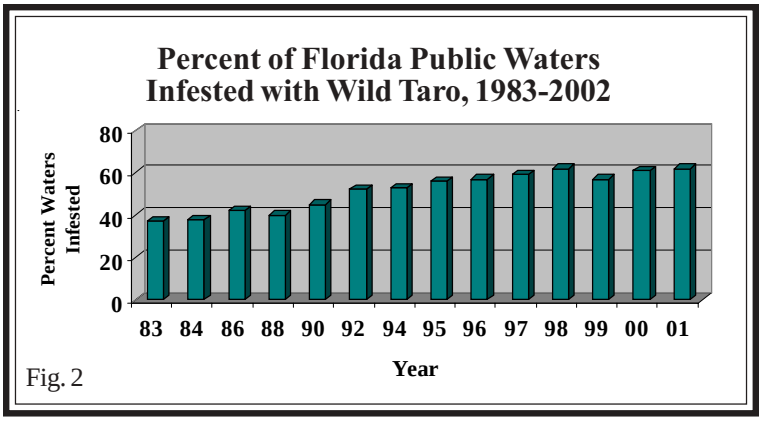


Fig. 2

hydrilla populations recorded in 2002, only six were considered not under maintenance control. However, little has been done to suppress other Category I plants invading marshes connected to Florida's public waters (Fig. 2). Consequently, these plants now present significant challenges.

Additional funding for invasive plant control became available through the *Florida Forever Act* in FY 01-02. When this funding is combined with traditional BIPM revenue sources

there will be sufficient funding to manage all FLEPPC Category I invasive aquatic plants as well as to expand invasive upland plant control programs.

Hydrilla tolerance to fluridone herbicide

Since its registration by the USEPA and FDACS for use in Florida waters in 1986, fluridone has provided the cheif means for large-scale hydrilla control. It is slow acting and relatively selective at low doses allowing managers to weed hydrilla out of native plant populations without appreciable oxygen reductions prevalent when using contact-type herbicides on a large scale.

Scientists from several research facilities began reporting in 2000 that hydrilla has developed a tolerance to fluridone herbicide in some Florida water bodies. This confirms field observations of declining hydrilla control efficacy even after closely following procedures from previously successful fluridone treatments.

This tolerance surprised managers since hydrilla reproduces asexually in Florida (only female plants are present) leaving no avenue for gene recombination. Further, fluridone attacks only one gene location in hydrilla leaving a remote chance for mutations. As many as 18 different hydrilla clones are now thought possible. Five have been identified in Florida with fluridone tolerance ranges from 3-24ppb. It is thought that the mutations occurr randomly among the billions of growing points in a hydrilla infested water. Repeated low dose fluridone treatments have removed the highly susceptible plants, leaving the more tolerant clones behind.

Implications of hydrilla's tollerance to fluridone are great, but hydrilla remains manageable using relatively low doses of fluridone. Failure to control hydrilla not only perhaps millions, of dollars in applied management funds, but also the potential for many means the loss of hundreds of thousands, or millions of dollars in damage from flooding, loss of recreational opportunities, and native plant habitat destruction. While no methods are available to replace fluridone for large-scale hydrilla control, more diligent applications of fluridone combined with other control options can keep hydrilla suppressed. Future large-scale fluridone applications must include the following steps:

- determine hydrilla susceptibility to fluridone to the nearest ppb,
- determine waterbody volume to calculate fluridone needed to achieve the required ppb,
- monitor fluridone concentration in water and sustain the required ppb,
- analyze treated hydrilla to determine its physiological response to fluridone,
- draft control plans with thorough understanding of the tolerance issue as well as physical, biological, chemical and social/economic variables.

Labor force

A critical component of successful invasive plant control programs is the availability of sufficient and adequately trained managers. This includes supervisory personnel with historical perspectives identifying potential invasive plant problems and practical solutions, as well as field technicians with real world experience distinguishing between target and non-target plants with the ability to respond quickly to potential problems before they occur.

The BIPM contracts all aquatic plant control with governments or private companies.

- The BIPM contracts about 70% of plant control in public waters with government agencies. Benefits include:
  - extensive local knowledge of conditions and public demands,

- incentive to ensure that invasive plants are under control (local economy, flood control),
- provide field supervisors to develop plans and direct management crews (reduces need for additional BIPM staff),
- provide funding and in-kind services to control plants in sovereignty waters,
- on call to quickly respond to even small jobs (imperative for eradication, maintenance control).

• Private companies control plants exclusively in about 30% of Florida's public waters;
  - where government contractors are not available or interested.
  - are available to augment government crews in all public waters to provide;
    - specialized services (harvesting, shredding, aerial herbicide applications),
    - temporary assistance for large treatments or during government contractor equipment breakdowns or personnel shortages.

Example of private sector contracting

Recent directives have frozen or reduced the number of personnel dedicated to aquatic plant management within the BIPM and its government contractors. When government contractors lose aquatic plant management staff there is a corresponding increase in duties within the BIPM to supervise private sector replacements.

These staffing challenges come at a time when the aquatic plant control budget and associated supervisory duties increased by 40% with the initiation of the *Florida Forever Act* funding, and as planning and monitoring associated with the hydrilla/fluridone tolerance is expected to require at least two additional full-time BIPM positions. In response, the BIPM is developing a contract strategy for a company to provide fluridone herbicide as well as technical support and related essential services including: water volume and vegetation cover estimates, plant and water sample collection and analysis, and preparation of draft management plans.

Alternating flooding and drought

Florida's four-year drought began easing in the central and southern regions during 2002, however, many lakes remain dry especially in the northeastern part of the state.

19,000-acre Lake Tohopekaliga containing more than 15,000 acres of fluridone-tolerant hydrilla presents challenges to Florida's shrinking labor force with large-scale hydrilla management experience. Airboat and alligator trails chris-cross the hydrilla mat covering the south end of Lake Toho. The flood control and navigation structures are highlighted inside the circle above.

Lakes across the state that spilled over their banks during El Nino in 1997 fell 2-6 feet or more. Examples of the drought's effects upon Florida's public waters include:

- sink holes draining 4,000-acre Lake Jackson (Leon Co.) to a few hundred acres,
- extensive sections of the 80-mile Withlacoochee River running dry,
- a record low level of less than 9 feet NVGD in 450,000-acre Lake Okeechobee,
- 46 public waters inaccessible for plant inventories in 2001 (26 in 2002), and
- 12,000 Orange Lake reduced to about 1,000 acres.

Most large-scale hydrilla treatments are conducted with the systemic herbicide, fluridone that needs approximately 45-60 days of contact time at sufficient concentrations in the water column for optimum effectiveness. Selective hydrilla control using fluridone is most successful when conducted in January-May because:

- hydrilla is actively growing while many native plants are dormant,
- hydrilla has not formed surface mats which slow growth (and herbicide uptake),
- rainfall is typically low, requiring less herbicide, reducing herbicide flushing,
- summer rains reduce light penetration into water via tannins, turbidity, algae blooms, and increased water levels – all of which further stress hydrilla.

Nearly all Florida surface waters are connected by flood control structures and canals. Large doses of rainfall over short periods can play havoc with sustaining adequate herbicide levels for appropriate periods. Droughts also can impact hydrilla treatments.

El Niño (flood) effects on hydrilla control:

- heavy winter/spring rains postpone treatments into tropical storm season when,
  - hydrilla mats form at water surface
  - hydrilla growth rate is reduced
  - native plants are more susceptible
- waterbodies are at full pool capacity
  - requiring additional herbicide
  - flushing existing herbicide with added rainfall

La Niña (drought) effects on hydrilla control:

- shallow, clear water spawns robust hydrilla growth
  - more resistant to control
  - short distance from lake bottom to surface
  - usually requires multiple annual control efforts
- increased light penetration breaks down fluridone more rapidly,
- more active tropical storm season (number and intensity of storms).

Orange Lake drought, 2002 - tussocks covering the Marion County boat ramp and adjacent fish camp

Tropical Storm Gabrielle, 9/14/01

As droughts end,and waters re-flood, dried water hyacinth and water lettuce seeds germinate resulting in an explosion of new growth. At the height of the drought in 2000, managers reduced floating plants to their lowest levels in public water bodies (1,500 acres) since records have been kept (a high of 125,000 acres was recorded in the early 1960s).

About 23,201 acres of floating plants were treated in public waters in FY 01-02;

- approximately 60% water hyacinth and 40% water lettuce,
- 12,000 more acres than in FY 00-01
- 3,300 more acres than the previous, five-year average.

Managers spent about $3.1 million controlling floating plants during FY 01-02;

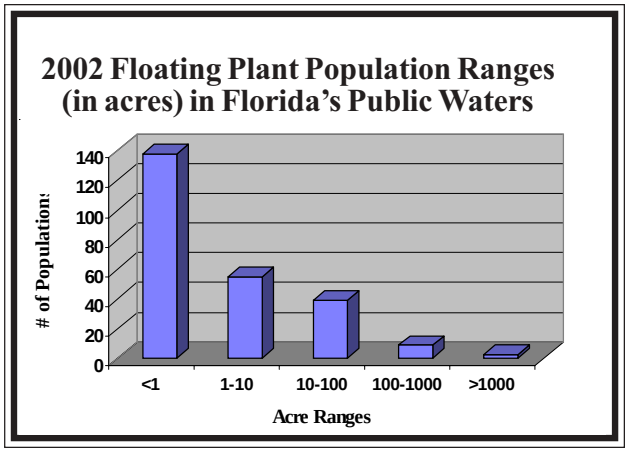
- $1.6 million more than in FY 00-01,
- $0.6 million more than the previous five-year average,
- about 50% spent by the USACE on Lake Okeechobee and the St Johns River.

2002 inventories recorded 7,680 acres of floating plants - more than double the 2002 total:

- found in 244 (57%) of public waters inventoried,
- floating plants are under maintenance control in 95% of Florida's waters,
- 4,295 acres of water hyacinth were reported in 218 water bodies,
  - 95% under maintenance control,
  - 37 water bodies contained more than 10 acres of water hyacinth,
- 3,386 acres of water lettuce were reported in 152 water bodies,
  - 95% under maintenance control,
  - 34 water bodies contained more than 10 acres of water lettuce.

The largest floating plant population (1,800 acres) was recorded on Lake Okeechobee in 2002 where drought had reduced the floating plant level below 500 acres. Although water hyacinth and water lettuce can be controlled selectively when growing among native vegetation, public concern of damaging native plants compelled the USACE to curtail floating plant management on Lake Okeechobee during the re-flood. Other waters in which floating plants were not considered to be under maintenance control include; Rodman Reservoir (1,140 acres), The St. Johns River (1,050 acres) and several tributaries of the St Johns River.

There are numerous examples, including one from Lake Okeechobee during the mid 1980s, demonstrating that, if not properly managed, water hyacinth and water lettuce will displace beneficial native plants (and associated animals) reducing diversity and increasing environmental damage, control costs, and herbicide use.



Water hyacinth seedlings germinating among recently re-flooded bulrush in Lake Okeechobee

Florida's hydrilla control program focuses on containing or eradicating pioneer colonies, before they become large-scale maintenance projects, and reducing established populations to sustain the various uses of Florida's public waters. Hydrilla once infested 257 public lakes and rivers. That number was reduced to 175 in 2002; 2/3 of which covered 10 acres or less. Most of the hydrilla control budget is spent on 25-30 waters; however these are some of the largest and most important in the state.

About 24,850 acres of hydrilla were treated in 103 public water bodies in FY 01-02;

- 6,000 more acres than in FY 00-01.

Managers spent about $ 17.2 million treating hydrilla during FY 01-02;

- about $4 million more than in FY 00-01.

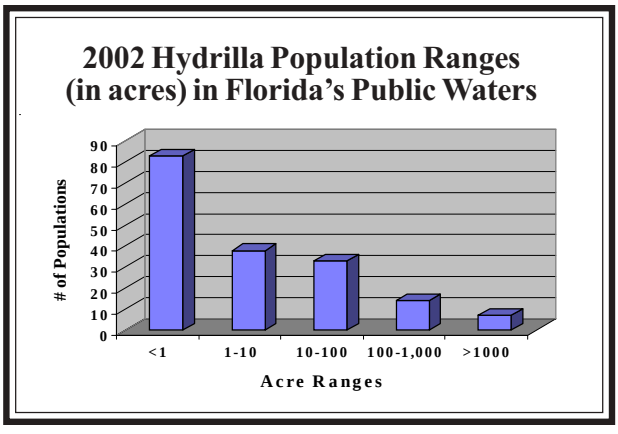
2002 inventories found 48,715 acres of hydrilla standing in 175 public water bodies:

- an 8,160 acre increase from 2001,
  - hydrilla infested 257 public waters during the past 7 years,
  - therefore, tubers are likely present in as many as 257 public waters,
  - tubers cover an estimated 110,000 acres of public water bodies,
  - tubers represent the potential for immediate regrowth,
- hydrilla is under maintenance control in 96% of Florida's public water bodies,
  - waters of the Kissimmee Federal Navigation and Flood Control Projects contain 63% of the state's hydrilla standing crop.

Although a net increase of nearly 8,200 acres of hydrilla was reported in public waters in 2002, several important successes were achieved. Hydrilla was controlled in 4,000-acre Lake Rousseau by treating with endothal and metering fluridone over a 10-week period into the Withlacoochee River channel that cuts through the lake. Endothal was metered for 48 hours into the spring boil that gives rise to the Wakulla River. Both projects resulted in near total, although temporary, hydrilla control and represent important steps toward resolving one of the most difficult tasks facing aquatic plant managers - selective, cost-effective hydrilla control in flowing waters.

Fluridone-tolerant hydrilla was controlled in several lakes including Pierce and Hatchineha in which dismal results had been reported in past management attempts. These successes are attributable to closely following prescribed treatment and monitoring programs.

Disappointing results were recorded in Lakes Toho and Cypress in which a 20+ inch rainfall flushed fluridone before it achieved its affect. A follow-up summer fluridone treatment was postponed in 8,000-acre Lake Walk-in-Water after the fluridone half-life fell from an anticipated 30 days to only five. Causes are being explored, but focus on accelerated microbial decomposition in August-warmed waters.



Aerial fluridone herbicide application to Lake Toho, March, 2002

Prior to 1994, about $150,000-$350,000 were spent annually controlling plants other than water hyacinth, water lettuce, and hydrilla:

- funds were insufficient to control higher priority hydrilla problems, so
- little was affordable for other FLEPPC Category I invasive plants.

Alternating periods of severe drought and flooding during the 1990s have created floating vegetation and organic sediment islands, or tussocks, in many lakes. During droughts, sediments often dry sufficiently to support terrestrial plants on the exposed soils. When lakes re-flood, this vegetation becomes buoyant pulling muck and peat deposits from the bottom. Also marsh plants grow across wet exposed lake bottoms during periods of low water. When water levels increase, these plant mats float and break loose from wind and wave action. Regardless of their origin, floating tussocks block access, navigation, and flood control, and smother beneficial native plants.

2002 inventories found 22,368 acres of other EPPC Category I invasive plants in Florida public waters.

$1.9 were spent controlling 5,025 acres of other plants in public waters during FY 01-02:

- 37% for Category I invasive plants,
  - $687,262/3,404 acres of torpedograss
  - $6,444/40 acres of wild taro
  - $17,835/21 acres of aquatic nightshade
  - $101/1 acre of water spinach
  - $212/1 acre of West Indian marsh grass

- 24% for removing or preventing the formation of floating tussocks especially in: the marshes that connect the pools of the Tsala Apopka Chian of Lakes, Lake Runnymeade, Upper Lake Myakka and in tributaries of the St. Johns River,

- 22% for harvesting the exotic Eurasian watermilfoil and lyngbya, an exotic filamentous alga, from the endangered manatee sanctuary in Crystal River,

- 14% for controlling cattail in support of drawdowns to restore fishery habitat.

Clockwise from above left; exclosures protecting planted eelgrass from turtle predation in Lake Walk-in-Water after hydrilla control and muck removal; shredding floating tussocks that covered 85% of Lake Davis in the Tsala Apopka Chain of Lakes after water levels returned to normal; controlling torpedograss in Lake Okeechobee marsh.

Acres of Aquatic Plants Treated and Treatment Expenditures in Florida Public Waters During Fiscal Year 2001 - 2002

- 2002(Data represents compilation of all contractor activities within each water management district)

Acres Trtd.	Northwest	Suwannee	St. Johns	Southwest	S. Florida	TOTAL
Floating	388.4	333.4	7,594	4,128.2	10,757.0	23,201.0
Hydrilla	113.0	221.0	1,664.4	2,039.8	20,813.4	24,851.6
Other Plants	20	96.0	798.0	492.4	3,618.8	5,025.2
TOTAL	521.4	650.4	10,056.4	6,660.4	35,189.2	53,077.8
Expenditures	**Northwest**	**Suwannee**	**St. Johns**	**Southwest**	**S. Florida**	**TOTAL**
Floating	$ 30,888.9	$ 34,896.6	$1,047,919.0	$ 610.578.9	$ 1,425,632.0	$ 3,149,915.4
Hydrilla	96,132.0	141,289.6	962,034.8	1,441,711.1	14,618.936.0	17,260,103.5
Other Plants	26,971.9	15,918.1	293,191.9	683,598.5	892,067.7	1,911,748.1
TOTAL	$153,992.8	$192.104.3	$2,303,145.7	$2,735,888.5	$16,936,635.7	$22,321,767.0

Federal, State and Local Funds Expended during Fiscal Year 2001 - 2002 Managing Aquatic Plants in Florida Public Water Bodies

Government / Plant	Intercounty	Intracounty	TOTAL
Federal			
Floating Plants	$ 1,582,997.9	0	**$ 1,582,997.9**
Hydrilla	9,028.9	0	**9,028.9**
Other Plants	0	0	**0**
Subtotal	***$ 1,592,026.8***	***0***	***$ 1,592,026.8***
State			
Floating Plants	$ 1,540,877.3	$ 13,020.2	**$ 1,553,897.5**
Hydrilla	17,069,056.2	91,009.2	**17,160,065.4**
Other Plants	1,901,672.0	5,038.1	**1,906,710.1**
Subtotal	***$ 20,511,605.5***	***$ 109,067.4***	***$ 20,620,672.9***
Local			
Floating Plants	0	$ 13,020.2	**$ 13,020.2**
Hydrilla	0	91,009.2	**91,009.2**
Other Plants	0	5,038.1	**5,038.1**
Subtotal	***0***	***$ 109.067.4***	***$ 109,067.4***
TOTAL			
Floating Plants	**$ 3,,123,875.2**	**$ 26,040.3**	**$ 3,149,915.5**
Hydrilla	**17,078,085.1**	**182,018.4**	**17,260,103.5**
Other Plants	**1,901,672.0**	**10,076.1**	**1,911,748.1**
GRAND TOTAL	***$ 22,103,632.3***	***$ 218,134.8***	***$ 22,321,767.1***

The following table lists acres of invasive plants inventoried during 2002 in Florida's 1.26 million acres of public lakes and rivers. The table also includes acres of these plants treated and associated management costs for FY 01-02 along with estimated acres of plants that will need treating in FY 02-03 and respective cost allocations from the FY 02-03 Legislative Spending Authority for this control.

FY 02-03 funding available for aquatic plant control is sufficient to meet priority management objectives. The FY 02-03 funding level will allow managers to:

- sustain floating plant maintenance,
- achieve or sustain maintenance control of existing large-scale hydrilla problems,
- control new infestations of other Category I invasive plants,
- begin reducing established Category I invasive plant populations.

Thank You From Ecosystem Managers
Ecosystem managers express their sincere appreciation to the Governor, lawmakers, agency personnel, and citizens of Florida who have demonstrated economic and environmental vision by providing sufficient funding for invasive plant management in Florida's public water bodies.

Florida plant managers have the tools and infrastructure to control aquatic plants, as well as the motivation to continually improve upon their craft. Consequently, Florida's aquatic plant management program has long served as a model for other states and countries interested in building comprehensive invasive species control programs.

Providing sufficient funding to apply their crafts acknowledges the confidence of Floridians in their managers, and ensures that Florida's public water bodies will remain unobstructed from invasive aquatic plant problems.

Plant	2002 Acres Present	FY 01-02 Acres Treated	FY 01-02 Dollars Spent	FY 02-03 Acres Approved	FY 02-03 Dollars Allocated
Hydrilla	*110,000	24,851	$ 7,260,104	25,089	$ 19,369,239
Floating plants	7,681	23,201	3,149,916	17,228	2,573,037
Torpedograss	18,908	3,403	687,262	5,879	446,175
Wild taro	671	40	6,444	171	32,319
Paragrass	2,338	0	0	77	13,065
Hygrophila	284	0	0	25	28,750
West Indian marsh grass	80	1	212	52	6,700
Aquatic nightshade	86	21	17,835	100	13,750
Water spinach	1	1	101	5	1,750
Giant salvinia	0	0	0	0	0
Other plants	**300,000	1,560	1,199,893	8,805	3,272,933
TOTAL ESTIMATE	**440,049**	**53,078**	**$ 22,321,767**	**57,431**	**$ 25,757,718**

*Estimated area infested by tubers

**Other plant acres last quantified in 1995

APPENDIX I

Aquatic Plant Operations in Florida Public Waters for FY 01-02 and Projected Aquatic Plant Management Needs for FY 02-03

FY 01-02 Annual Report, Appendix I - Key

Aquatic Plant Operations in Florida Public Waters for FY 01-02 and Projected Aquatic Plant Management Needs for FY02-03

Water Body	Name of public lake or river
Water Acres	Acres of lake or river
County	County in which the water body lies (note: many water bodies lie in more than one County, for example: the St. Johns River lies in 11 counties, but for convenience it has been assigned to St. Johns County)
WMD	Water Management District in which the water body lies
Contractor	Agency or private company that conducts aquatic plant management in the water body listed
Brevard	Brevard County
Citrus	Citrus County
FWC	Florida Fish & Wildlife Conservation Commission
Highlands	Highlands County
Hillsborough	Hillsborough County
Lake	Lake County
Orange	Orange County
Palm Beach	Palm Beach County
Polk	Polk County
Private	Private companies supervised by the Florida Department of Environmental Protection
SFWMD	South Florida Water Management District
SJRWMD	St. Johns River Water Management District
SWFWMD	South West Florida Water Management District
USACE	US Army Corps of Engineers
Volusia	Volusia County
Plant Type	"Floating Plants" = water hyacinth and/or water lettuce
01-02 Acres Treated	Acres of plants managed during fiscal year 01-02
01-02 Dollars Spent	Dollars spent controlling plants during fiscal year 01-02
02-03 Acres Approved	Acres of plants permitted to be controlled during fiscal year 02-03 under DEP's Cooperative Program.
"R"	FWC revegetation project.
02-03 Dollars Allocated	Dollars allocated to manage plants in fiscal year 02-03. This amount does not include approximately $15,300,000 of herbicide (primarily fluridone) to be purchased by DEP.

Water Body	Water Acres	Contractor	County	WMD	Plant Type	FY 01-02 Acres Treated	FY 01-02 Dollars Spent	FY 02-03 Acres Approved	FY 02-03 Dollars Allocated
Adalaide, Lake	96	Highlands	Highlands	SW	Hydrilla			1.0	720
Adalaide, Lake	96	Highlands	Highlands	SW	S. Cubensis			1.0	95
Adalaide, Lake	96	Highlands	Highlands	SW	Torpedograss			3.0	420
Agnes, Lake	386	Polk	Polk	SW	Floating plants	2.8	216	10.0	600
Alafia River	371	Hillsborough	Hillsborough	SW	Cattail			1.0	213
Alafia River	371	Hillsborough	Hillsborough	SW	Floating plants	64.8	11,957	30.0	7,725
Alafia River	371	Hillsborough	Hillsborough	SW	Pennywort			6.0	1,177
Alafia River	371	Hillsborough	Hillsborough	SW	Primrose			1.0	222
Alfred, Lake	736	Polk	Polk	SW	Floating plants	0.5	39	20.0	1,200
Alfred, Lake	736	Polk	Polk	SW	Hydrilla			5.0	1,750
Alligator Lake	3,406	FWC	Osceola	SF	Cattail			20.0	1,600
Alligator Lake	3,406	FWC	Osceola	SF	Pickerelweed			20.0	0
Alligator Lake	3,406	SFWMD	Osceola	SF	Floating plants	2.0	334	10.0	1,700
Alligator Lake	3,406	SFWMD	Osceola	SF	Hydrilla			10.0	7,000
Alligator Lake	3,406	SFWMD	Osceola	SF	S. Cubensis			5.0	750
Alligator Lake	338	FWC	Columbia	SR	Cypress trees			R	3,000
Alligator Lake	338	Private	Columbia	SR	Brush/vines			2.0	0
Alligator Lake	338	Private	Columbia	SR	Floating plants	55.3	5,782	15.0	1,500
Alligator Lake	338	Private	Columbia	SR	Hydrilla	20.0	12,789	5.0	3,250
Alligator Lake	338	Private	Columbia	SR	Pennywort	5.4	838	1.0	200
Alligator Lake	338	Private	Columbia	SR	Wild Taro	12.8	1,996	1.0	200
Alligator Lake	338	Private	Columbia	SR	Willows	20.0	3,118	10.0	2,000
Alto, Lake	540	Private	Alachua	SR	Floating plants	0.5	52	5.0	500
Alto, Lake	540	Private	Alachua	SR	Hydrilla			0.3	195
Alto, Lake	540	Private	Alachua	SR	Salvinia			1.0	200
Alto, Lake	540	Private	Alachua	SR	Spatterdock			2.0	400
Anclote River	200	SWFWMD	Pasco	SW	Floating plants			16.0	3,200
Annie, Lake	539	Polk	Polk	SW	Floating plants			2.0	120
Apopka, Lake	30,671	SJRWMD	Orange	SJ	Cattail	40.5	7,502	53.0	7,950
Apopka, Lake	30,671	SJRWMD	Orange	SJ	Floating plants	18.0	3,579	20.0	1,600
Apopka, Lake	30,671	SJRWMD	Orange	SJ	Hydrilla	11.5	7,326	20.0	12,000
Apopka-Beauclair	49	Lake	Lake	SJ	Cattail			0.5	50
Apopka-Beauclair	49	Lake	Lake	SJ	Floating plants	11.6	2,455	5.0	400
Apopka-Beauclair	49	Lake	Lake	SJ	Paragrass			3.0	300
Apopka-Beauclair	49	Lake	Lake	SJ	Torpedograss			0.5	50
Apthorpe, Lake	219	Highlands	Highlands	SW	Hydrilla	1.0	615	1.0	720
Apthorpe, Lake	219	Highlands	Highlands	SW	S. Cubensis	0.5	103	1.0	95
Apthorpe, Lake	219	Highlands	Highlands	SW	Torpedograss			7.0	700
Arbuckle Creek	120	Highlands	Highlands	SW	Alligatorweed	10.0	2,060	30.0	2,850
Arbuckle Creek	120	Highlands	Highlands	SW	Floating plants	216.0	18,966	150.0	14,250
Arbuckle Creek	120	Highlands	Highlands	SW	Hydrilla			5.0	3,600
Arbuckle Creek	120	Highlands	Highlands	SW	Pennywort	10.0	2,060	30.0	2,850
Arbuckle Creek	120	Highlands	Highlands	SW	Tree snagging			0.0	5,000
Arbuckle, Lake	3,828	FWC	Polk	SF	Cattail			130.0	13,000
Arbuckle, Lake	3,828	FWC	Polk	SF	S. Cubensis			20.0	2,000
Arbuckle, Lake	3,828	FWC	Polk	SF	Spatterdock			25.0	2,500
Arbuckle, Lake	3,828	Polk	Polk	SF	Floating plants	433.5	34,084	300.0	36,000
Arbuckle, Lake	3,828	Polk	Polk	SF	Hydrilla			20.0	14,000

Water Body	Water Acres	Contractor	County	WMD	Plant Type	FY 01-02 Acres Treated	FY 01-02 Dollars Spent	FY 02-03 Acres Approved	FY 02-03 Dollars Allocated
Ariana, Lake	1,026	Polk	Polk	SW	Floating plants			10.0	1,200
Ariana, Lake	1,026	Polk	Polk	SW	Hydrilla	4.0	2,500	10.0	7,000
Ashby, Lake	1,030	FWC	Volusia	SJ	Bulrush			R	10,000
Ashby, Lake	1,030	FWC	Volusia	SJ	Cattail			49.0	22,000
Ashby, Lake	1,030	FWC	Volusia	SJ	Eelgrass			R	20,000
Ashby, Lake	1,030	FWC	Volusia	SJ	Softstem bulrush			R	5,000
Ashby, Lake	1,030	Volusia	Volusia	SJ	Alligatorweed			6.0	1,080
Ashby, Lake	1,030	Volusia	Volusia	SJ	Floating plants	8.3	1,331	14.0	2,520
Ashby, Lake	1,030	Volusia	Volusia	SJ	Hydrilla			0.5	500
Ashby, Lake	1,030	Volusia	Volusia	SJ	Torpedograss	0.6	114	10.0	1,600
Ashby, Lake	1,030	Volusia	Volusia	SJ	Wild Taro	1.4	267	10.0	1,250
Aucilla River	250	Private	Jefferson	NW	Floating plants	8.5	676		
Banana Lake	342	Polk	Polk	SW	Floating plants	37.5	2,948	50.0	6,000
Banana Lake	342	Polk	Polk	SW	Hydrilla			10.0	7,000
Beauclair, Lake	1,111	FWC	Lake	SJ	Cattail			36.0	3,600
Beauclair, Lake	1,111	Lake	Lake	SJ	Cattail			5.0	500
Beauclair, Lake	1,111	Lake	Lake	SJ	Floating plants			4.0	360
Blanche, Lake	121	Orange	Orange	SJ	Hydrilla			6.0	2,799
Blue Cypress Lake	6,555	SJRWMD	Indian River	SJ	Floating plants	71.5	14,217	100.0	10,600
Blue Cypress Lake	6,555	SJRWMD	Indian River	SJ	Hydrilla			1.0	600
Blue Lake	118	Polk	Polk	SW	Floating plants			2.0	240
Blue Lake	118	Polk	Polk	SW	Hydrilla	0.7	412	1.0	700
Blue Lake	55	Volusia	Volusia	SJ	Alligatorweed			1.0	90
Blue Lake	55	Volusia	Volusia	SJ	Floating plants	1.5	241	4.0	360
Blue Lake	55	Volusia	Volusia	SJ	Hydrilla			2.0	750
Blue Lake	55	Volusia	Volusia	SJ	Torpedograss	1.0	191	4.0	320
Blue Lake	55	Volusia	Volusia	SJ	Wild Taro			1.0	90
Bonnet, Lake	260	Highlands	Highlands	SW	Floating plants	1.5	132	4.0	380
Bonnet, Lake	260	Highlands	Highlands	SW	Hydrilla	0.5	307		
Bonnet, Lake	260	Highlands	Highlands	SW	S. Cubensis	1.0	206	1.0	95
Bonnet, Lake	260	Highlands	Highlands	SW	Spatterdock	2.0	412	3.0	420
Bonny, Lake	354	Polk	Polk	SW	Floating plants	0.5	39	15.0	1,800
Bonny, Lake	354	Polk	Polk	SW	Hydrilla	0.5	312	1.0	700
Braden River	220	SWFWMD	Manatee	SW	Floating plants	80.0	10,353	100.0	15,000
Braden River	220	SWFWMD	Manatee	SW	Hydrilla			10.0	8,000
Braden River	220	SWFWMD	Manatee	SW	I. fistulosa			1.0	200
Braden River	220	SWFWMD	Manatee	SW	Paspalum			2.0	400
Braden River	220	SWFWMD	Manatee	SW	W. Indian grass	0.3	212	0.0	0
Brick Lake	616	SFWMD	Osceola	SF	Floating plants			5.0	850
Bryant, Lake	767	Private	Marion	SJ	Floating plants			5.0	500
Bryant, Lake	767	Private	Marion	SJ	Hydrilla			0.3	210
Buckeye Lake	71	Polk	Polk	SW	Floating plants	7.5	590	2.0	120
Buffum, Lake	1,543	Polk	Polk	SW	Floating plants	8.0	629	25.0	1,500
Buffum, Lake	1,543	Polk	Polk	SW	Hydrilla			1.0	350
Bugg Springs	7	Lake	Lake	SJ	Alligatorweed			1.0	100
Bugg Springs	7	Lake	Lake	SJ	Floating plants	2.0	423	11.0	1,080
Bugg Springs	7	Lake	Lake	SJ	Pennywort	2.5	314	5.0	400
Butler, Lake	1,665	Orange	Orange	SF	Floating plants			2.0	70
Butler, Lake	1,665	Orange	Orange	SF	Hydrilla			50.0	2,388

Water Body	Water Acres	Contractor	County	WMD	Plant Type	FY 01-02 Acres Treated	FY 01-02 Dollars Spent	FY 02-03 Acres Approved	FY 02-03 Dollars Allocated
Butler, Lake	420	Private	Union	SR	Floating plants	0.5	52	3.0	300
Butler, Lake	420	Private	Union	SR	Hydrilla	0.4	256	0.1	65
Butler, Lake	420	Private	Union	SR	Torpedograss			6.0	1,200
Cannon Lake	336	Polk	Polk	SW	Floating plants			5.0	600
Cannon Lake	336	Polk	Polk	SW	Hydrilla	48.5	30,307	200.0	15,000
Carlton, Lake	382	FWC	Lake	SJ	Cattail			15.0	1,500
Carlton, Lake	382	Lake	Lake	SJ	Cattail			5.0	500
Carlton, Lake	382	Lake	Lake	SJ	Floating plants			2.0	160
Carr Lake	400	Private	Leon	NW	Floating plants			10.0	1,000
Carr Lake	400	Private	Leon	NW	Hydrilla			3.0	0
Carrie, Lake	65	Highlands	Highlands	SW	Floating plants	1.0	88	2.0	190
Carrie, Lake	65	Highlands	Highlands	SW	Wild Taro			2.0	190
Carter Road Park	151	Polk	Polk	SW	Floating plants			25.0	0
Carter Road Park	150	Polk	Polk	SW	Hydrilla			2.0	0
Catfish Creek	30	Highlands	Highlands	SW	Floating plants			4.0	380
Catfish Creek	30	Highlands	Highlands	SW	Spatterdock			4.0	560
Center, Lake	410	FWC	Osceola	SF	Cattail			10.0	800
Center, Lake	410	FWC	Osceola	SF	Pickerelweed			10.0	800
Center, Lake	410	SFWMD	Osceola	SF	Floating plants	38.0	6,351	15.0	2,550
Center, Lake	410	SFWMD	Osceola	SF	Hydrilla	3.0	2,261		
Center, Lake	411	SFWMD	Osceola	SF	S. Cubensis			5.0	850
Chase, Lake	135	Orange	Orange	SF	Hydrilla			14.0	5,613
Chassohowitzka R.	1,000	Citrus	Citrus	SW	Cattail	0.5	922	6.0	2,100
Chassohowitzka R.	1,000	Citrus	Citrus	SW	Floating plants	4.0	2,216	15.0	3,875
Chassohowitzka R.	1,000	Citrus	Citrus	SW	Hydrilla			5.0	2,000
Chassohowitzka R.	1,000	Citrus	Citrus	SW	Lyngbya			15.0	12,000
Cherry Lake	479	Private	Madison	SR	Floating plants			4.0	400
Cherry Lake	479	Private	Madison	SR	Wild Taro			1.0	200
Cherry, Lake	396	Lake	Lake	SJ	Floating plants			3.0	240
Cherry, Lake	396	Lake	Lake	SJ	Hydrilla			5.0	3,500
Clark Lake	320	Brevard	Brevard	SJ	Cattail	5.0	391	5.0	909
Clark Lake	320	Brevard	Brevard	SJ	Floating plants			5.0	894
Clark Lake	33	Palm Beach	Palm Beach	SF	Floating plants	2.0	533	24.0	6,003
Clark Lake	33	Palm Beach	Palm Beach	SF	Hydrilla	52.0	29,106	45.0	31,530
Clay Lake	467	Highlands	Highlands	SW	Floating plants			4.0	380
Clay Lake	467	Highlands	Highlands	SW	Hydrilla	49.0	30,128	50.0	36,000
Clay Lake	467	Highlands	Highlands	SW	S. Cubensis			2.0	190
Clinch, Lake	1,207	Polk	Polk	SW	Floating plants	1.0	79	5.0	300
Colby, Lake	103	Volusia	Volusia	SJ	Floating plants			4.0	360
Colby, Lake	103	Volusia	Volusia	SJ	Torpedograss			6.0	480
Conine, Lake	236	Polk	Polk	SW	Floating plants			5.0	600
Conine, Lake	236	Polk	Polk	SW	Hydrilla	43.5	27,183	75.0	20,000
Conway, Lake	1,767	FWC	Orange	SF	Arrowhead			R	88
Conway, Lake	1,767	FWC	Orange	SF	Pickerelweed			R	88
Conway, Lake	1,767	FWC	Orange	SF	Softstem bulrush			R	300
Conway, Lake	1,767	FWC	Orange	SF	Spikerush			R	300
Conway, Lake	1,767	Orange	Orange	SF	Floating plants			16.0	570
Conway, Lake	1,767	Orange	Orange	SF	Hydrilla			100.0	1,460

Water Body	Water Acres	Contractor	County	WMD	Plant Type	FY 01-02 Acres Treated	FY 01-02 Dollars Spent	FY 02-03 Acres Approved	FY 02-03 Dollars Allocated
Cook, Lake	20	Lake	Lake	SJ	Floating plants			1.0	80
Cook, Lake	20	Lake	Lake	SJ	Hydrilla			1.0	700
Coon Lake	148	FWC	Osceola	SF	Pickerelweed			10.0	800
Coon Lake	148	SFWMD	Osceola	SF	Floating plants	3.0	501	10.0	1,700
Coon Lake	410	SFWMD	Osceola	SF	Hydrilla			2.0	2,000
Coon Lake	148	SFWMD	Osceola	SF	S. Cubensis			10.0	1,700
Corrine, Lake	194	FWC	Orange	SJ	Fence			R	5,500
Crescent Lake	143	Lake	Lake	SJ	Floating plants			1.0	80
Crescent Lake	143	Lake	Lake	SJ	Hydrilla			10.0	7,000
Crooked Lake	5,538	FWC	Polk	SW	Tussock			20.0	0
Crooked Lake	5,538	Polk	Polk	SW	Floating plants			40.0	2,400
Crooked Lake	5,538	Polk	Polk	SW	Hydrilla	1.0	625	1.0	350
Crystal River	1,650	Citrus	Citrus	SW	Eurasian milfoil	136.2	251,085	150.0	60,000
Crystal River	1,650	Citrus	Citrus	SW	Floating plants	7.5	4,155	45.0	11,625
Crystal River	1,650	Citrus	Citrus	SW	Hydrilla	16.4	11,330	60.0	0
Crystal River	1,650	Citrus	Citrus	SW	Lyngbya	84.4	155,545	425.0	300,000
Crystal, Lake	32	Polk	Polk	SW	Floating plants			2.0	120
Cypress Lake	4,097	FWC	Osceola	SF	Cattail			20.0	1,600
Cypress Lake	4,097	FWC	Osceola	SF	Pickerelweed			80.0	2,400
Cypress Lake	4,097	SFWMD	Osceola	SF	Floating plants	129.0	21,561	200.0	34,000
Cypress Lake	4,097	SFWMD	Osceola	SF	Hydrilla	1,302.0	981,372	600.0	231,080
Daisy, Lake	133	Polk	Polk	SW	Floating plants			5.0	300
Dal Housie, Lake	243	Lake	Lake	SJ	Floating plants			0.5	20
Damon, Lake	300	Highlands	Highlands	SW	Floating plants			3.0	143
Damon, Lake	300	Highlands	Highlands	SW	Hydrilla			1.0	360
Damon, Lake	300	Highlands	Highlands	SW	S. Cubensis			1.0	48
David, Lake	49	Lake	Lake	SJ	Floating plants			1.0	40
David, Lake	49	Lake	Lake	SJ	Hydrilla			0.5	175
Davis, Lake		Private	Citrus	SW	Tussock	23.4	31,557		
Dead Lakes	3,655	Private	Leon	NW	Floating plants			10.0	1,000
Dead River	148	Lake	Lake	SJ	Alligatorweed			1.0	100
Dead River	148	Lake	Lake	SJ	Cattail			1.0	100
Dead River	148	Lake	Lake	SJ	Floating plants	1.6	342	3.0	240
Dead River	148	Lake	Lake	SJ	Hydrilla	2.1	1,580	5.0	3,500
Dead River	148	Lake	Lake	SJ	Pennywort	0.3	31	3.0	240
Deaton, Lake	778	SWFWMD	Sumpter	SW	Hydrilla			10.0	3,000
Deer Lake	125	Polk	Polk	SW	Floating plants			2.0	120
Deer Lake	125	Polk	Polk	SW	Hydrilla	1.5	937	3.0	1,050
Deer Point Lake	5,000	Private	Leon	NW	Eurasian milfoil			0.0	0
Deeson, Lake	117	Polk	Polk	SW	Floating plants			2.0	120
Deeson, Lake	117	Polk	Polk	SW	Hydrilla			1.0	350
Delancy, Lake	342	Private	Marion	SJ	Floating plants	0.3	20	5.0	500
Delancy, Lake	342	Private	Marion	SJ	Hydrilla			1.0	30
Denham, Lake	269	Lake	Lake	SJ	Floating plants	11.0	2,324	16.0	1,320
Denham, Lake	269	Lake	Lake	SJ	Pennywort	3.0	376	10.0	800
Dias, Lake	711	Volusia	Volusia	SJ	Floating plants	1.5	241	4.0	400
Dias, Lake	711	Volusia	Volusia	SJ	Torpedograss			6.0	480
Dinner Lake	379	Highlands	Highlands	SW	Floating plants			2.0	190
Dinner Lake	379	Highlands	Highlands	SW	Hydrilla	1.0	615	1.0	720

Water Body	Water Acres	Contractor	County	WMD	Plant Type	FY 01-02 Acres Treated	FY 01-02 Dollars Spent	FY 02-03 Acres Approved	FY 02-03 Dollars Allocated
Disston, Lake	1,884	Private	Flagler	SJ	Floating plants	8.7	677	5.0	625
Disston, Lake	1,884	Private	Flagler	SJ	Torpedograss	0.8	128	2.0	400
Dora Canal	10	Lake	Lake	SJ	Alligatorweed			1.0	100
Dora Canal	10	Lake	Lake	SJ	Floating plants	0.5	114	2.0	160
Dora Canal	10	Lake	Lake	SJ	Hydrilla			3.0	2,100
Dora Canal	10	Lake	Lake	SJ	Pennywort			2.0	160
Dora, Lake	4,475	FWC	Lake	SJ	Bulrush			R	4,000
Dora, Lake	4,475	FWC	Lake	SJ	Cattail			43.0	4,700
Dora, Lake	4,475	FWC	Lake	SJ	Softstem bulrush			R	2,000
Dora, Lake	4,475	Lake	Lake	SJ	Cattail	4.0	502	14.0	1,400
Dora, Lake	4,475	Lake	Lake	SJ	Floating plants			2.0	160
Dora, Lake	4,475	Lake	Lake	SJ	Hydrilla			0.5	350
Dorr, Lake	1,533	Lake	Lake	SJ	Floating plants	0.3	53	2.0	80
Dorr, Lake	1,533	Lake	Lake	SJ	Hydrilla			1.0	350
Dorr, Lake	1,533	Lake	Lake	SJ	S. Cubensis			3.0	150
Down, Lake	872	Orange	Orange	SF	Floating plants			2.0	70
Down, Lake	872	Orange	Orange	SF	Hydrilla			90.0	810
Eagle Lake	651	Polk	Polk	SW	Floating plants			5.0	300
Eagle Lake	651	Polk	Polk	SW	Hydrilla			5.0	1,750
East Lk Toho.	12,546	SFWMD	Osceola	SF	Floating plants	82.3	13,747	300.0	51,000
East Lk Toho.	12,546	SFWMD	Osceola	SF	Hydrilla	293.0	220,846	300.0	7,500
East Lk Toho.	12,546	SFWMD	Osceola	SF	Hygrophilla			15.0	21,000
East Lk Toho.	12,546	SFWMD	Osceola	SF	Limnophilla			50.0	0
Eaton, Lake	307	Private	Marion	SJ	Floating plants	4.0	309	34.0	4,250
Eaton, Lake	307	Private	Marion	SJ	Hydrilla	30.0	19,759	30.0	500
Echo, Lake	69	Polk	Polk	SW	Floating plants			2.0	120
Echo, Lake	69	Polk	Polk	SW	Hydrilla			1.0	350
Econfina River	270	Private	Taylor	SR	Wild Taro			0.1	20
Econlockhatchee R.	120	SJRWMD	Seminole	SJ	Floating plants			4.0	500
Elbert, Lake	173	Polk	Polk	SW	Floating plants			2.0	120
Elbert, Lake	173	Polk	Polk	SW	Hydrilla	1.0	625	10.0	3,500
Elbow Creek	5	Brevard	Brevard	SJ	Floating plants	2.0	215	1.0	197
Elbow Creek	5	Brevard	Brevard	SJ	S. Cubensis	2.0	156	1.0	185
Ella, Lake	467	Lake	Lake	SJ	Floating plants			0.5	40
Ella, Lake	467	Lake	Lake	SJ	Hydrilla			5.0	3,500
Eloise, Lake	1,160	Polk	Polk	SW	Floating plants	0.5	39	15.0	1,800
Eloise, Lake	1,160	Polk	Polk	SW	Hydrilla	0.1	75	5.0	3,500
Emma, Lake	175	Lake	Lake	SJ	Floating plants			0.8	65
Emma, Lake	175	Lake	Lake	SJ	Hydrilla			2.0	1,400
Eustis, Lake	7,806	Lake	Lake	SJ	Cattail			1.0	100
Eustis, Lake	7,806	Lake	Lake	SJ	Floating plants	11.1	2,343	16.0	1,480
Eustis, Lake	7,806	Lake	Lake	SJ	Hydrilla	5.1	3,871	10.0	7,000
Eva Lake	176	Polk	Polk	SW	Floating plants			5.0	300
Eva Lake	176	Polk	Polk	SW	Hydrilla			2.0	3,500
Fairview, Lake	401	Orange	Orange	SJ	Floating plants			5.0	150
Fairview, Lake	401	Orange	Orange	SJ	Hydrilla			20.0	400
Fairview, Lake	401	Orange	Orange	SJ	Nypoides sp			10.0	2,500
Fannie, Lake	829	Polk	Polk	SW	Floating plants	99.5	7,823	50.0	6,000
Fannie, Lake	829	Polk	Polk	SW	Hydrilla			30.0	21,000

Water Body	Water Acres	Contractor	County	WMD	Plant Type	FY 01-02 Acres Treated	FY 01-02 Dollars Spent	FY 02-03 Acres Approved	FY 02-03 Dollars Allocated
Fish Lake	221	SFWMD	Osceola	SF	Cattail			1.0	130
Fish Lake	221	SFWMD	Osceola	SF	Floating plants			10.0	1,700
Fish Lake	221	SFWMD	Osceola	SF	Hydrilla			1.0	1,000
Fish Lake	221	SFWMD	Osceola	SF	Paragrass			1.0	130
Fish Lake	221	SFWMD	Osceola	SF	Pickerelweed			1.0	130
Fisheating Creek	150	SFWMD	Glades	SF	Floating plants	41.0	6,853	100.0	17,000
Fisheating Creek	150	SFWMD	Glades	SF	Nightshade			25.0	2,500
Fisheating Creek	150	SFWMD	Glades	SF	Paragrass			25.0	4,250
Fisheating Creek	150	SFWMD	Glades	SF	W. Indian grass			50.0	6,500
Fox Lake	165	Brevard	Brevard	SJ	Cattail	141.0	11,018	75.0	6,130
Fox Lake	165	Brevard	Brevard	SJ	Floating plants	129.0	13,872	75.0	5,909
Fox Lake	165	Brevard	Brevard	SJ	Frog's bit	1.0	78	2.0	169
Fox Lake	165	Brevard	Brevard	SJ	Hydrilla	1.0	266	2.0	729
Francis, Lake	539	Highlands	Highlands	SW	Cattail	0.5	103	0.5	70
Francis, Lake	539	Highlands	Highlands	SW	Dwarf papyrus	1.5	309	2.0	190
Francis, Lake	539	Highlands	Highlands	SW	Floating plants	2.0	176	3.0	285
Francis, Lake	539	Highlands	Highlands	SW	Hydrilla			1.0	720
Francis, Lake	539	Highlands	Highlands	SW	S. Cubensis	0.5	103	2.0	190
Francis, Lake	26	Private	Madison	SR	Cattail			6.0	1,200
Francis, Lake	26	Private	Madison	SR	Floating plants			10.0	1,000
Ft. Meade Pits	28	Polk	Polk	SW	Floating plants	1.0	79	5.0	300
Ft. Meade Pits	28	Polk	Polk	SW	Hydrilla			3.0	1,050
Gant, Lake	150	SWFWMD	Sumter	SW	Cattail			2.0	0
Gant, Lake	150	SWFWMD	Sumter	SW	Floating plants	11.1	1,436	35.0	5,250
Gant, Lake	150	SWFWMD	Sumter	SW	Hydrilla	0.6	499	1.0	300
Gant, Lake	150	SWFWMD	Sumter	SW	Spatterdock	0.5	425	3.0	1,200
Garfield, Lake	655	Polk	Polk	SW	Floating plants	35.0	2,752	50.0	6,000
Garfield, Lake	655	Polk	Polk	SW	Hydrilla			2.0	1,400
Gatlin, Lake	63	FWC	Orange	SJ	Arrowhead			R	175
Gatlin, Lake	63	FWC	Orange	SJ	Pickerelweed			R	175
Gatlin, Lake	63	FWC	Orange	SJ	Softstem bulrush			R	300
Gatlin, Lake	63	FWC	Orange	SJ	Spikerush			R	300
Gator Lake	114	Polk	Polk	SW	Floating plants	1.5	118	10.0	600
Gemini Springs	20	Volusia	Volusia	SJ	Cattail			4.0	640
Gemini Springs	20	Volusia	Volusia	SJ	Floating plants			3.0	540
Gemini Springs	20	Volusia	Volusia	SJ	Hydrilla			2.0	1,500
Gentry, Lake	1,791	SFWMD	Osceola	SF	Floating plants	18.0	3,008	20.0	3,400
Gentry, Lake	1,791	SFWMD	Osceola	SF	Hydrilla	15.0	11,306	30.0	32,500
Gentry, Lake	1,791	SFWMD	Osceola	SF	S. Cubensis			5.0	650
Georges Lake	816	Private	Putnam	SJ	Floating plants	2.0	156	10.0	1,000
Georges Lake	816	Private	Putnam	SJ	Wild Taro			0.1	20
Gibson, Lake	474	Polk	Polk	SW	Floating plants	35.5	2,791	50.0	6,000
Gibson, Lake	474	Polk	Polk	SW	Hydrilla	4.0	2,500	5.0	3,500
Gleason Lake	91	Volusia	Volusia	SJ	Cattail	0.8	153	6.0	540
Gleason Lake	91	Volusia	Volusia	SJ	Floating plants			2.5	225
Gleason Lake	91	Volusia	Volusia	SJ	Hydrilla	24.0	7,389	20.0	4,000
Gleason Lake	91	Volusia	Volusia	SJ	Old World Lotus			1.0	80
Gleason Lake	91	Volusia	Volusia	SJ	Primrose			2.0	0
Gleason Lake	91	Volusia	Volusia	SJ	Spatterdock	0.7	133	2.0	0

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Gleason Lake	91	Volusia	Volusia	SJ	Torpedograss	2.3	439	4.0	320
Glenada, Lake	150	Highlands	Highlands	SW	Floating plants	1.5	132	5.0	475
Glenada, Lake	150	Highlands	Highlands	SW	Hydrilla	4.0	2,460	4.0	2,880
Grasshopper Lake	213	Lake	Lake	SJ	Floating plants			0.5	20
Grasshopper Lake	213	Lake	Lake	SJ	Hydrilla			0.5	175
Griffin, Lake	9,281	FWC	Lake	SJ	Bulrush			R	18,000
Griffin, Lake	9,281	FWC	Lake	SJ	Cattail			43.0	19,000
Griffin, Lake	9,281	FWC	Lake	SJ	Fragrant lily			R	15,000
Griffin, Lake	9,281	FWC	Lake	SJ	Softstem bulrush			R	6,000
Griffin, Lake	9,281	FWC	Lake	SJ	Spatterdock			R	15,000
Griffin, Lake	16,505	Lake	Lake	SJ	Cattail	0.8	104	2.0	200
Griffin, Lake	16,505	Lake	Lake	SJ	Floating plants	53.6	11,327	45.0	4,200
Griffin, Lake	16,505	Lake	Lake	SJ	Hydrilla	3.6	2,771	7.0	4,900
Griffin, Lake	16,505	Lake	Lake	SJ	Torpedograss			2.0	200
Guano Lake	1,800	Private	St. Johns	SJ	Floating plants			10.0	1,000
Haines Creek	780	Lake	Lake	SJ	Cattail			0.5	50
Haines Creek	780	Lake	Lake	SJ	Floating plants	7.3	1,532	17.0	1,660
Haines Creek	780	Lake	Lake	SJ	Hydrilla	0.1	53	3.0	2,100
Haines, Lake	716	Polk	Polk	SW	Floating plants			20.0	2,400
Haines, Lake	716	Polk	Polk	SW	Hydrilla	15.0	9,373	50.0	35,000
Half Moon, Lake	340	Private	Marion	SJ	Floating plants			2.0	200
Half Moon, Lake	340	Private	Marion	SJ	Hydrilla			0.1	70
Hall, Lake	172	Private	Leon	NW	Floating plants	6.0	477	5.0	500
Hall, Lake	172	Private	Leon	NW	Hydrilla	37.0	31,477	0.5	0
Halls River	100	Citrus	Citrus	SW	Cattail	3.0	5,532	15.0	5,250
Halls River	100	Citrus	Citrus	SW	Floating plants			20.0	5,500
Halls River	100	Citrus	Citrus	SW	Giant reed	1.5	2,766	10.0	3,500
Halls River	100	Citrus	Citrus	SW	Hydrilla			10.0	4,000
Halls River	100	Citrus	Citrus	SW	Lyngbya	0.7	1,291	30.0	24,000
Halls River	100	Citrus	Citrus	SW	Marine naiad			15.0	6,750
Hamilton, Lake	2,126	Polk	Polk	SW	Floating plants	68.5	5,386	50.0	6,000
Hamilton, Lake	2,126	Polk	Polk	SW	Hydrilla			2.0	1,400
Hancock, Lake	4,519	Polk	Polk	SW	Floating plants	52.0	4,088	100.0	12,000
Hancock, Lake	4,519	Polk	Polk	SW	Hydrilla			1.0	700
Harris, Lake	13,788	Lake	Lake	SJ	Cattail			1.0	100
Harris, Lake	13,788	Lake	Lake	SJ	Floating plants	9.5	2,009	16.0	1,420
Harris, Lake	13,788	Lake	Lake	SJ	Hydrilla			12.0	8,400
Hart, Lake	1,850	SFWMD	Orange	SF	Floating plants			20.0	3,400
Hart, Lake	1,850	SFWMD	Orange	SF	Hydrilla			1.0	1,100
Hart, Lake	1,850	SFWMD	Orange	SF	S. Cubensis			5.0	650
Hartridge, Lake	434	Polk	Polk	SW	Floating plants	0.5	39	5.0	600
Hartridge, Lake	434	Polk	Polk	SW	Hydrilla	0.5	312	10.0	7,000
Hatchineha, Lake	6,665	FWC	Osceola	SF	Cattail			75.0	6,000
Hatchineha, Lake	6,665	FWC	Osceola	SF	Pickerelweed			25.0	2,000
Hatchineha, Lake	6,665	SFWMD	Osceola	SF	Floating plants	277.5	46,381	300.0	51,000
Hatchineha, Lake	6,665	SFWMD	Osceola	SF	Frog's bit			15.0	2,250
Hatchineha, Lake	6,665	SFWMD	Osceola	SF	Hydrilla	1,520.0	1,145,688	800.0	244,800
Hatchineha, Lake	6,665	SFWMD	Osceola	SF	S. Cubensis			5.0	850
Hatchineha, Lake	6,665	Polk	Polk	SF	Floating plants	28.5	2,241	50.0	6,000

Water Body	Water Acres	Contractor	County	WMD	Plant Type	FY 01-02 Acres Treated	FY 01-02 Dollars Spent	FY 02-03 Acres Approved	FY 02-03 Dollars Allocated
Hatchineha, Lake	6,665	Polk	Polk	SF	Hydrilla			10.0	7,000
Helen, Lake	25	Volusia	Volusia	SJ	Hydrilla			0.5	250
Helen, Lake	26	Volusia	Volusia	SJ	Primrose			1.0	0
Helen, Lake	25	Volusia	Volusia	SJ	Torpedograss			2.0	180
Helena Run	38	Lake	Lake	SJ	Floating plants	1.8	370	7.0	660
Helena Run	38	Lake	Lake	SJ	Hydrilla			3.0	2,100
Hellen-Blazes, Lk.	381	SJRWMD	Brevard	SJ	Floating plants	21.0	4,175	40.0	4,240
Hellen-Blazes, Lk.	381	SJRWMD	Brevard	SJ	Frog's bit			10.0	1,500
Hellen-Blazes, Lk.	382	SJRWMD	Brevard	SJ	Hydrilla	70.0	44,595		
Henry, Lake	64	Highlands	Highlands	SW	Floating plants			1.0	95
Henry, Lake	64	Highlands	Highlands	SW	Hydrilla			1.0	720
Henry, Lake	64	Highlands	Highlands	SW	S. Cubensis			1.0	95
Hiawatha, Lake	48	Lake	Lake	SJ	Cattail			1.0	100
Hiawatha, Lake	48	Lake	Lake	SJ	Floating plants			8.0	740
Hiawatha, Lake	48	Lake	Lake	SJ	Hydrilla			2.0	1,400
Hillsborough River	443	Hillsborough	Hillsborough	SW	Cattail			1.0	213
Hillsborough River	443	Hillsborough	Hillsborough	SW	Floating plants	56.6	10,435	96.0	34,914
Hillsborough River	443	Hillsborough	Hillsborough	SW	Hydrilla			2.0	1,089
Hillsborough River	443	Hillsborough	Hillsborough	SW	Paspalum	8.4	1,590	5.0	1,066
Hillsborough River	443	Hillsborough	Hillsborough	SW	Pennywort			10.0	1,962
Hillsborough River	443	Hillsborough	Hillsborough	SW	Primrose	2.0	381	5.0	1,111
Holden's Pond	80	Private	Alachua	SJ	Floating plants	5.0	391	3.0	300
Holden's Pond	80	Private	Alachua	SJ	Hydrilla			0.5	350
Holden's Pond	80	Private	Alachua	SJ	Torpedograss			0.5	100
Holden's Pond	80	Private	Alachua	SJ	Wild Taro			0.5	100
Hollingsworth, Lk.	356	FWC	Polk	SW	Bulrush			R	1,250
Hollingsworth, Lk.	356	FWC	Polk	SW	Knotgrass			R	1,250
Hollingsworth, Lk.	356	Polk	Polk	SW	Floating plants	0.5	39	2.0	240
Hollingsworth, Lk.	356	Polk	Polk	SW	Hydrilla			5.0	3,500
Holly Lake	98	Lake	Lake	SJ	Floating plants			0.5	40
Holly Lake	98	Lake	Lake	SJ	Hydrilla			1.0	700
Homosassa River	800	Citrus	Citrus	SW	Cattail			5.0	1,750
Homosassa River	800	Citrus	Citrus	SW	Eurasian milfoil			75.0	30,000
Homosassa River	800	Citrus	Citrus	SW	Floating plants	2.5	1,385	20.0	5,500
Homosassa River	800	Citrus	Citrus	SW	Hydrilla			5.0	2,000
Homosassa River	800	Citrus	Citrus	SW	Lyngbya	11.5	21,243	150.0	100,000
Homosassa River	800	Citrus	Citrus	SW	Water Spinach			5.0	1,750
Howard, Lake	628	Polk	Polk	SW	Floating plants			5.0	600
Howard, Lake	628	Polk	Polk	SW	Hydrilla	12.0	7,499	300.0	25,000
Hunter, Lake	100	Polk	Polk	SW	Floating plants			2.0	120
Hunter, Lake	100	Polk	Polk	SW	Hydrilla			1.0	350
Hunter, Lake	302	SWFWMD	Polk	SW	Hydrilla			4.0	1,500
Hunter, Lake	302	SWFWMD	Polk	SW	Spatterdock			2.0	150
Huntley, Lake	500	FWC	Highlands	SW	Cattail			2.0	0
Huntley, Lake	500	Highlands	Highlands	SW	Dwarf papyrus	2.0	412	4.0	380
Huntley, Lake	500	Highlands	Highlands	SW	Floating plants	2.0	176	8.0	760
Huntley, Lake	500	Highlands	Highlands	SW	Hydrilla			1.0	720
Huntley, Lake	500	Highlands	Highlands	SW	S. Cubensis	5.0	1,030	2.0	190

Water Body	Water Acres	Contractor	County	WMD	Plant Type	FY 01-02 Acres Treated	FY 01-02 Dollars Spent	FY 02-03 Acres Approved	FY 02-03 Dollars Allocated
Iamonia, Lake	5,757	Private	Leon	NW	Fanwort			126.0	0
Iamonia, Lake	5,757	Private	Leon	NW	Floating plants	57.9	4,601	20.0	2,000
Iamonia, Lake	5,757	Private	Leon	NW	Hydrilla			3.0	0
Iamonia, Lake	5,757	Private	Leon	NW	Tussock	10.2	13,756	12.0	0
Ichetucknee River	100	Private	Columbia	SR	Floating plants			5.0	625
Ida, Lake	159	Palm Beach	Palm Beach	SF	Floating plants	25.5	6,790	24.0	6,003
Ida, Lake	159	Palm Beach	Palm Beach	SF	Hydrilla	97.0	54,293	130.0	11,815
Ida, Lake	159	Palm Beach	Palm Beach	SF	Wild Taro			2.0	1,564
Idylwild, Lake	102	Polk	Polk	SW	Floating plants			3.0	360
Idylwild, Lake	102	Polk	Polk	SW	Hydrilla	9.0	5,624	10.0	7,000
Isabell, Lake	95	Highlands	Highlands	SW	Floating plants	35.0	3,073	15.0	713
Isabell, Lake	95	Highlands	Highlands	SW	S. Cubensis			2.0	95
Isleworth, Lake	56	Orange	Orange	SF	Hydrilla			2.0	1,000
Istokpoga, Lake	27,692	FWC	Highlands	SF	Bulrush			R	4,500
Istokpoga, Lake	27,692	FWC	Highlands	SF	Cattail			1,000.0	100,000
Istokpoga, Lake	27,692	FWC	Highlands	SF	Knotgrass			R	4,500
Istokpoga, Lake	27,692	FWC	Highlands	SF	Tussock			50.0	0
Istokpoga, Lake	27,692	Highlands	Highlands	SF	Cattail			15.0	2,100
Istokpoga, Lake	27,692	Highlands	Highlands	SF	Floating plants	1,707.0	149,887	1,600.0	152,000
Istokpoga, Lake	27,692	Highlands	Highlands	SF	Hydrilla	300.0	184,456	3,000.0	350,000
Istokpoga, Lake	27,692	Highlands	Highlands	SF	S. Cubensis	50.0	10,302	75.0	7,125
Istokpoga, Lake	27,692	Highlands	Highlands	SF	Spatterdock	2.0	412	20.0	2,800
Istokpoga, Lake	27,692	Highlands	Highlands	SF	Wild Taro			30.0	2,850
Jacks Creek	50	Highlands	Highlands	SW	Floating plants			2.0	190
Jackson Creek	50	Highlands	Highlands	SW	Floating plants	20.0	1,756	20.0	1,900
Jackson Creek	50	Highlands	Highlands	SW	Spatterdock	9.0	1,854	20.0	2,800
Jackson, Lake	3,400	Highlands	Highlands	SW	Floating plants	5.0	439	5.0	475
Jackson, Lake	3,400	Highlands	Highlands	SW	S. Cubensis			5.0	475
Jackson, Lake	1,020	FWC	Osceola	SF	Cattail			30.0	2,400
Jackson, Lake	1,020	FWC	Osceola	SF	Pickerelweed			50.0	4,000
Jackson, Lake	1,020	FWC	Osceola	SF	Smartweed			20.0	1,600
Jackson, Lake	1,020	SFWMD	Osceola	SF	Floating plants	210.0	35,099	200.0	34,000
Jackson, Lake	1,020	SFWMD	Osceola	SF	Hydrilla	250.0	188,436	250.0	6,250
Jackson, Lake	4,000	Private	Leon	NW	Floating plants	10.0	795	20.0	2,000
Jackson, Lake	4,000	Private	Leon	NW	Hydrilla	40.0	34,029	200.0	2,500
Jessamine, Lake	306	FWC	Orange	SJ	Arrowhead			R	88
Jessamine, Lake	306	FWC	Orange	SJ	Bulrush			R	900
Jessamine, Lake	306	FWC	Orange	SJ	Pickerelweed			R	88
Jessamine, Lake	306	FWC	Orange	SJ	Softstem bulrush			R	900
Jessamine, Lake	306	FWC	Orange	SJ	Spikerush			R	300
Jessamine, Lake	306	Orange	Orange	SJ	Floating plants			4.0	140
Jessamine, Lake	306	Orange	Orange	SJ	Hydrilla			30.0	11,418
Jessie, Lake	190	Polk	Polk	SW	Floating plants			5.0	600
Jessie, Lake	190	Polk	Polk	SW	Hydrilla	23.0	14,372	50.0	10,000
Johns Lake	2,417	FWC	Lake	SJ	Cattail			90.0	9,000
Johns Lake	2,417	Lake	Lake	SJ	Cattail			2.0	200
Johns Lake	2,417	Lake	Lake	SJ	Floating plants	9.0	1,901	55.0	4,700
Johns Lake	2,417	Lake	Lake	SJ	Hydrilla			1.0	700

Water Body	Water Acres	Contractor	County	WMD	Plant Type	FY 01-02 Acres Treated	FY 01-02 Dollars Spent	FY 02-03 Acres Approved	FY 02-03 Dollars Allocated
Johnson Lake	52	Private	Alachua	SJ	Floating plants	0.3	20	5.0	550
Johnson Lake	52	Private	Alachua	SJ	Hydrilla	0.1	33	0.3	175
Johnson Lake	52	Private	Alachua	SJ	Wild Taro			0.1	20
Josephine Creek	20	Highlands	Highlands	SW	Floating plants			10.0	950
Josephine Creek	20	Highlands	Highlands	SW	Hydrilla			2.0	1,440
Josephine Creek	20	Highlands	Highlands	SW	S. Cubensis			2.0	190
Josephine, Lake	1,236	FWC	Highlands	SW	Bulrush			R	4,500
Josephine, Lake	1,236	FWC	Highlands	SW	Tussock			10.0	36,000
Josephine, Lake	1,236	Highlands	Highlands	SW	Cattail			2.0	280
Josephine, Lake	1,236	Highlands	Highlands	SW	Floating plants	44.0	3,864	30.0	2,850
Josephine, Lake	1,236	Highlands	Highlands	SW	Hydrilla			1.0	720
Josephine, Lake	1,236	Highlands	Highlands	SW	S. Cubensis	10.0	2,060	10.0	950
Josephine, Lake	1,236	Highlands	Highlands	SW	Spatterdock			2.0	280
Juliana, Lake	926	Polk	Polk	SW	Floating plants			5.0	300
Juliana, Lake	926	Polk	Polk	SW	Hydrilla			2.0	700
Jumper, Lake	305	Private	Alachua	SJ	Floating plants			24.0	3,000
Jumper, Lake	305	Private	Alachua	SJ	Hydrilla			0.1	70
June-In-Winter, Lk.	3,504	Highlands	Highlands	SW	Floating plants	1.0	88	5.0	475
June-In-Winter, Lk.	3,504	Highlands	Highlands	SW	Hydrilla			1.0	720
June-In-Winter, Lk.	3,504	Highlands	Highlands	SW	S. Cubensis			4.0	380
June-In-Winter, Lk.	3,504	Highlands	Highlands	SW	Wild Taro			5.0	475
Kerr, Lake(s)	2,830	Private	Marion	SJ	Floating plants	10.6	828	25.0	2,500
Kerr, Lake(s)	2,830	Private	Marion	SJ	Hydrilla			5.0	150
Kissimmee River	2,340	SFWMD	Osceola	SF	Cattail			5.0	750
Kissimmee River	2,340	SFWMD	Osceola	SF	Cattail	4.0	807	15.0	2,550
Kissimmee River	2,340	SFWMD	Osceola	SF	Floating plants	980.5	163,878.8	2,155.0	366,350
Kissimmee River	2,340	SFWMD	Osceola	SF	Grasses			3.0	510
Kissimmee River	2,340	SFWMD	Osceola	SF	Hydrilla			10.0	10,854
Kissimmee River	2,340	SFWMD	Osceola	SF	S. Cubensis			15.0	2,550
Kissimmee River	2,340	SFWMD	Osceola	SF	Smartweed	5.5	1,110	17.0	2,890.0
Kissimmee River	2,340	SFWMD	Osceola	SF	Spatterdock	6.0	1,211	10.0	1,700
Kissimmee River	2,340	SFWMD	Osceola	SF	Tussock	4.0	807	30.0	4,500.0
Kissimmee, Lake	34,948	FWC	Osceola	SF	Cattail			70.0	5,600
Kissimmee, Lake	34,948	FWC	Osceola	SF	Pickerelweed			300.0	24,000
Kissimmee, Lake	34,948	FWC	Osceola	SF	Spatterdock			30.0	2,400
Kissimmee, Lake	34,948	FWC	Osceola	SF	Tussock			20.0	76,000
Kissimmee, Lake	34,948	SFWMD	Osceola	SF	Floating plants	265.0	44,292	1,500.0	255,000
Kissimmee, Lake	34,948	SFWMD	Osceola	SF	Hydrilla	2,126.0	1,602,456	2,500.0	309,500
Kissimmee, Lake	34,948	SFWMD	Osceola	SF	Tussock			10.0	12,000
Kissimmee, Lake	100	Polk	Polk	SF	Floating plants	23.5	1,848	50.0	6,000
Kissimmee, Lake	100	Polk	Polk	SF	Hydrilla	7.0	4,374	10.0	7,000
Lafayette, Lake	2,000	Private	Leon	NW	Floating plants			30.0	3,000
Lafayette, Lake	2,000	Private	Leon	NW	Tussock			250.0	0
Lawne, Lake	156	Orange	Orange	SJ	Floating plants			6.0	210
Lelia, Lake	165	Highlands	Highlands	SW	Floating plants			1.0	95
Lelia, Lake	165	Highlands	Highlands	SW	Hydrilla	1.0	615	1.0	720
Lena, Lake	207	Polk	Polk	SW	Floating plants			2.0	240
Letta Lake	478	Highlands	Highlands	SW	Cattail			1.0	140
Letta Lake	478	Highlands	Highlands	SW	Floating plants			2.0	190

Water Body	Water Acres	Contractor	County	WMD	Plant Type	FY 01-02 Acres Treated	FY 01-02 Dollars Spent	FY 02-03 Acres Approved	FY 02-03 Dollars Allocated
Letta Lake	478	Highlands	Highlands	SW	Hydrilla	1.0	615	1.0	720
Letta Lake	478	Highlands	Highlands	SW	S. Cubensis			1.0	95
Letta Lake	478	Highlands	Highlands	SW	Torpedograss			3.0	420
Lindsey, Lake	137	SWFWMD	Hernando	SW	Floating plants			20.0	1,500
Lindsey, Lake	137	SWFWMD	Hernando	SW	S. Cubensis			2.0	150
Lindsey, Lake	137	SWFWMD	Hernando	SW	Spatterdock			10.0	1,250
Lindsey, Lake	137	SWFWMD	Hernando	SW	Tussock			5.0	5,000
Little Fish Lake	23	Orange	Orange	SF	Hydrilla			1.0	500
Little Orange Lake	818	Private	Alachua	SJ	Floating plants	11.5	898	7.0	750
Little Orange Lake	818	Private	Alachua	SJ	Hydrilla			0.5	350
Little Orange Lake	818	Private	Alachua	SJ	Wild Taro	1.0	170	1.0	200
Little Red Water Lk.	66	Highlands	Highlands	SW	Cattail			1.0	140
Little Red Water Lk.	66	Highlands	Highlands	SW	S. Cubensis	2.0	412	5.0	475
Livingston, Lake	1,203	Polk	Polk	SW	Floating plants	228.5	17,966	75.0	9,000
Lizzie, Lake	792	FWC	Osceola	SF	Pickerelweed			20.0	0
Lizzie, Lake	792	SFWMD	Osceola	SF	Floating plants			5.0	850
Lizzie, Lake	792	SFWMD	Osceola	SF	Hydrilla			2.0	1,400
Lizzie, Lake	792	SFWMD	Osceola	SF	S. Cubensis			5.0	850
Lochloosa, Lake	5,705	Private	Alachua	SJ	Floating plants	1.0	78	15.0	1,625
Lochloosa, Lake	5,706	Private	Alachua	SJ	Hydrilla			1.0	700
Lochloosa, Lake	5,705	Private	Alachua	SJ	Pickerelweed	8.0	1,360		
Lochloosa, Lake		Private	Alachua	SJ	Torpedograss	0.3	43		
Lochloosa, Lake	5,705	Private	Alachua	SJ	Wild Taro	12.0	2,041	5.0	1,000
Lotela, Lake	802	Highlands	Highlands	SW	Floating plants			1.0	95
Lotela, Lake	802	Highlands	Highlands	SW	Hydrilla	2.0	1,230	2.0	1,440
Lotela, Lake	802	Highlands	Highlands	SW	S. Cubensis			4.0	380
Loughman, Lake	600	Brevard	Brevard	SJ	Cattail	5.0	391	2.0	735
Loughman, Lake	600	Brevard	Brevard	SJ	Floating plants			2.0	729
Louisa Lake	3,364	Lake	Lake	SJ	Floating plants			2.0	180
Louise, Lake	145	Orange	Orange	SF	Hydrilla			15.0	460
Lower Lake Louise	257	Volusia	Volusia	SJ	Cattail			2.0	180
Lower Lake Louise	257	Volusia	Volusia	SJ	Floating plants			10.0	900
Lower Lake Louise	257	Volusia	Volusia	SJ	Hydrilla			6.0	2,000
Loxahatchee River	200	SFWMD	Palm Beach	SF	Floating plants			22.0	2,340
Loxahatchee River	200	SFWMD	Palm Beach	SF	Grasses			2.0	260
Loxahatchee River	200	SFWMD	Palm Beach	SF	Hygrophilla			5.0	1,500
Loxahatchee River	200	SFWMD	Palm Beach	SF	Limnophilla			5.0	3,650
Ltl. Manatee River	150	Hillsborough	Hillsborough	SW	Floating plants			5.0	1,273
Ltl. Manatee River	150	Hillsborough	Hillsborough	SW	Paspalum			2.0	426
Ltl. Manatee River	150	Hillsborough	Hillsborough	SW	Pennywort			10.0	1,962
Lucy, Lake	335	Lake	Lake	SJ	Floating plants			1.3	105
Lucy, Lake	335	Lake	Lake	SJ	Hydrilla			1.0	700
Lulu, Lake	301	Polk	Polk	SW	Floating plants	5.0	393	5.0	600
Lulu, Lake	301	Polk	Polk	SW	Hydrilla	85.5	53,428	120.0	16,000
Macy, Lake	17	Volusia	Volusia	SJ	Floating plants			1.0	90
Macy, Lake	17	Volusia	Volusia	SJ	Torpedograss			2.0	180
Manatee River	30	SWFWMD	Manatee	SW	Paragrass			5.0	1,000
Manatee River	30	SWFWMD	Manatee	SW	Floating plants	29.1	3,766	70.0	14,000

Water Body	Water Acres	Contractor	County	WMD	Plant Type	FY 01-02 Acres Treated	FY 01-02 Dollars Spent	FY 02-03 Acres Approved	FY 02-03 Dollars Allocated
Mann, Lake	244	FWC	Orange	SJ	Bulrush			R	750
Mann, Lake	244	FWC	Orange	SJ	Cattail			4.5	15,000
Mann, Lake	244	FWC	Orange	SJ	Eelgrass			R	1,875
Mann, Lake	244	FWC	Orange	SJ	Softstem bulrush			R	600
Mariam, Lake	199	Polk	Polk	SW	Floating plants	0.8	59	5.0	300
Marian, Lake	5,739	SFWMD	Osceola	SF	Floating plants	96.3	16,087	300.0	51,000
Marian, Lake	5,739	SFWMD	Osceola	SF	Hydrilla	19.0	14,321	25.0	625
Marion, Lake	2,990	Polk	Polk	SF	Floating plants	13.0	1,022	50.0	6,000
Marion, Lake	2,990	Polk	Polk	SF	Hydrilla			10.0	7,000
Martha, Lake	85	Polk	Polk	SF	Floating plants			2.0	120
Martha, Lake	85	Polk	Polk	SF	Hydrilla	0.7	412	5.0	1,750
Martin Bayou	240	Private	Bay	NW	Cattail			15.0	3,000
Martin Bayou	240	Private	Bay	NW	Floating plants			5.0	500
Mary Jane, Lake	1,158	SFWMD	Orange	SF	Floating plants	11.3	1,880	20.0	3,400
Mattie, Lake	1,078	Polk	Polk	SW	Floating plants	13.3	1,042	10.0	600
Maude, Lake	55	Polk	Polk	SW	Floating plants			2.0	120
Maude, Lake	55	Polk	Polk	SW	Hydrilla	0.5	312	2.0	700
May, Lake	44	Polk	Polk	SW	Floating plants	0.5	39	2.0	240
May, Lake	44	Polk	Polk	SW	Hydrilla	0.1	75	5.0	3,500
Mcgarrity, Lake	107	Volusia	Volusia	SJ	Alligatorweed			2.0	180
Mcgarrity, Lake	107	Volusia	Volusia	SJ	Cattail			3.0	0
Mcgarrity, Lake	107	Volusia	Volusia	SJ	Floating plants			4.0	360
Mcgarrity, Lake	107	Volusia	Volusia	SJ	Hydrilla			85.0	2,000
Mcgarrity, Lake	107	Volusia	Volusia	SJ	Naiad			2.0	300
Mcgarrity, Lake	107	Volusia	Volusia	SJ	Primrose			2.0	0
Mcgarrity, Lake	107	Volusia	Volusia	SJ	Torpedograss			6.0	540
McLeod, Lake	512	Polk	Polk	SW	Floating plants	2.3	177	10.0	600
McLeod, Lake	512	Polk	Polk	SW	Hydrilla			5.0	1,750
Medard Reservoir	647	SWFWMD	Hillsborough	SW	Hydrilla			3.0	1,500
Medard Reservoir	647	SWFWMD	Hillsborough	SW	Floating plants	50.0	6,471	85.0	12,000
Menzi, Lake	22	Polk	Polk	SW	Floating plants			2.0	120
Menzi, Lake	22	Polk	Polk	SW	Hydrilla			1.0	350
Merritt's Mill Pond	202	Private	Jackson	NW	Eelgrass			25.0	0
Merritt's Mill Pond	202	Private	Jackson	NW	Hydrilla			80.0	0
Miccosukee, Lake	6,276	Private	Leon	NW	Fanwort			58.0	0
Miccosukee, Lake	6,276	Private	Leon	NW	Floating plants			3.0	300
Miccosukee, Lake	6,276	Private	Leon	NW	Grasses			300.0	60,000
Miccosukee, Lake	6,276	Private	Leon	NW	Hydrilla			4.0	0
Miccosukee, Lake	6,276	Private	Leon	NW	Tussock	9.8	13,216	12.0	0
Middle Lake	215	SWFWMD	Pasco	SW	Floating plants			40.0	
Middle Lake	215	SWFWMD	Pasco	SW	S. Cubensis			10.0	
Middle Lake	216	FWC	Pasco	SW	Bulrush			R	2,250
Middle Lake	215	FWC	Pasco	SW	Tussock			25.0	37,500
Mill Dam, Lake	210	Private	Marion	SJ	Floating plants			3.0	300
Mill Dam, Lake	210	Private	Marion	SJ	Hydrilla			0.1	70
Miller Lake	7	Volusia	Volusia	SJ	Bulrush			4.0	360
Miller Lake	7	Volusia	Volusia	SJ	Floating plants			3.0	270
Miller Lake	7	Volusia	Volusia	SJ	Tree snagging			1.0	200

Water Body	Water Acres	Contractor	County	WMD	Plant Type	FY 01-02 Acres Treated	FY 01-02 Dollars Spent	FY 02-03 Acres Approved	FY 02-03 Dollars Allocated
Minnehaha, Lake	2,261	Lake	Lake	SJ	Floating plants			2.0	180
Minnehaha, Lake	2,261	Lake	Lake	SJ	Hydrilla			1.0	700
Minnehaha, Lake	2,261	Lake	Lake	SJ	S. Cubensis			0.5	50
Minneola, Lake	1,888	Lake	Lake	SJ	Floating plants			2.0	180
Minneola, Lake	1,888	Lake	Lake	SJ	Hydrilla			1.0	700
Miona, Lake	418	SWFWMD	Sumpter	SW	Hydrilla			2.0	800
Mirror, Lake	123	Polk	Polk	SW	Floating plants	0.5	39	2.0	240
Mirror, Lake	123	Polk	Polk	SW	Hydrilla	2.0	1,250	5.0	3,500
Monroe, Lake	9,406	Private	Volusia	SJ	Hydrilla			900.0	5,150
Monroe, Lake	9,406	Private	Volusia	SJ	N.capensis			3.0	600
Montgomery	36	Private	Columbia	SR	Floating plants			0.5	50
Montgomery	36	Private	Columbia	SR	Hydrilla			0.2	130
Montgomery	36	Private	Columbia	SR	Torpedograss			0.5	100
Montgomery	36	Private	Columbia	SR	Wild Taro	1.0	156	2.0	400
Moss Lee Lake	129	Private	Putnam	SJ	Cattail			1.0	200
Moss Lee Lake	129	Private	Putnam	SJ	Floating plants	0.3	20	2.0	200
Moss Lee Lake	129	Private	Putnam	SJ	Hydrilla			1.0	500
Mountain Lake	127	SWFWMD	Hernando	SW	Floating plants			15.0	938
Mountain Lake	127	SWFWMD	Hernando	SW	W. Indian grass			2.0	200
Mountain Lake	127	SWFWMD	Hernando	SW	Willows			1.0	63
Mud Lake	133	FWC	Polk	SW	Eelgrass			R	0
Mud Lake	133	Polk	Polk	SW	Floating plants	11.0	865	10.0	600
Munson, Lake	255	Private	Leon	NW	Floating plants			15.0	1,500
Munson, Lake	255	Private	Leon	NW	Willows			50.0	10,000
Myakka River	790	SWFWMD	Sarasota	SW	Floating plants	747.0	96,671	400.0	60,000
Myakka River	790	SWFWMD	Sarasota	SW	Frog's bit			10.0	1,500
Myakka River	791	SWFWMD	Sarasota	SW	Hydrilla	166.0	138,101		
Mystic Lake	47	Private	Madison	SR	Floating plants			1.0	100
Mystic Lake	47	Private	Madison	SR	Tussock	2.5	390	3.0	400
Mystic, Lake		Private	Madison	SR	Tussock	0.8	1,079		
N. Lake Talmadge	121	Volusia	Volusia	SJ	Cattail			2.0	180
N. Lake Talmadge	121	Volusia	Volusia	SJ	Floating plants			4.0	360
N. Lake Talmadge	121	Volusia	Volusia	SJ	Torpedograss			3.0	270
N. Lake Talmadge	121	Volusia	Volusia	SJ	Wild Taro			1.0	90
Nassau River	5,785	Private	Nassau	SJ	Floating plants			25.0	2,500
Nassau River	5,785	Private	Nassau	SJ	Wild Taro	4.5	765	5.0	1,000
Ned, Lake	74	Polk	Polk	SW	Floating plants	3.5	275	10.0	600
Ned, Lake	74	Polk	Polk	SW	Hydrilla	6.0	3,749	10.0	3,500
Newnans Lake	7,427	FWC	Alachua	SJ	Cattail			250.0	0
Newnans Lake	7,427	FWC	Alachua	SJ	Pickerelweed			100.0	0
Newnans Lake	7,427	FWC	Alachua	SJ	Primrose			150.0	0
Newnans Lake	7,427	Private	Alachua	SJ	Floating plants			10.0	1,000
Newnans Lake	7,427	Private	Alachua	SJ	Tussock			75.0	15,000
Norris, Lake	1,131	Lake	Lake	SJ	Floating plants	1.0	211	15.0	1,400
Ocklawaha River	297	SJRWMD	Marion	SJ	Spatterdock	1.5	278		
Okahumpka, Lake	670	SWFWMD	Sumpter	SW	Hydrilla	22.0	18,303	45.0	5,000
Okahumpka, Lake	670	SWFWMD	Sumpter	SW	Floating plants	4.0	518	20.0	1,500
Okahumpka, Lake	670	SWFWMD	Sumter	SW	Cattail			0.5	50

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Okeechobee, Lake	446,000	USACE	Okeechobee	SF	Floating plants	5,190.0	704,631		
Okeechobee, Lake	446,000	SFWMD	Okeechobee	SF	Floating plants	87.0	14,541	100.0	17,000
Okeechobee, Lake	446,000	SFWMD	Okeechobee	SF	Torpedograss	3,390.0	684,050	5,700.0	397,500
Olivia, Lake	86	Highlands	Highlands	SW	Hydrilla	1.0	615	1.0	360
Olivia, Lake	86	Highlands	Highlands	SW	Torpedograss			4.0	280
Orange Lake	12,706	Private	Alachua	SJ	Cattail			150.0	30,000
Orange Lake	12,706	Private	Alachua	SJ	Floating plants	90.8	7,089	165.0	16,875
Orange Lake	12,706	Private	Alachua	SJ	Hydrilla			10.0	7,000
Orange Lake	12,706	Private	Alachua	SJ	Tussock	6.0	1,020	300.0	20,000
Orange Lake	12,706	Private	Alachua	SJ	Wild Taro			20.0	4,000
Osborne, Lake	356	Palm Beach	Palm Beach	SF	Floating plants	18.0	4,793	48.0	12,005
Osborne, Lake	356	Palm Beach	Palm Beach	SF	Hydrilla	118.5	66,328	180.0	55,008
Osborne, Lake	356	Palm Beach	Palm Beach	SF	Wild Taro	1.0	140	3.0	2,325
Palatlakaha River	750	Lake	Lake	SJ	Alligatorweed	0.3	31	3.0	300
Palatlakaha River	750	Lake	Lake	SJ	Floating plants	5.2	1,090	9.5	840
Palatlakaha River	750	Lake	Lake	SJ	Hydrilla	6.5	4,940	9.0	6,300
Palatlakaha River	750	Lake	Lake	SJ	Pennywort	0.3	31	3.0	240
Palatlakaha, Lake	101	Lake	Lake	SJ	Floating plants	0.1	13	4.0	360
Palatlakaha, Lake	101	Lake	Lake	SJ	Paragrass			2.0	200
Palatlakaha, Lake	101	Lake	Lake	SJ	Pennywort			0.5	40
Palatlakaha, Lake	101	Lake	Lake	SJ	S. Cubensis			1.0	100
Palatlakaha, Lake	101	Lake	Lake	SJ	Torpedograss			1.0	100
Palestine Lake	911	Private	Union	SR	Floating plants			2.0	200
Panasoffkee, Lake	4,460	SWFWMD	Sumpter	SW	Floating plants	166.0	21,482	175.0	23,125
Panasoffkee, Lake	4,460	SWFWMD	Sumpter	SW	Hydrilla	2.9	2,413	10.0	5,000
Panasoffkee, Lake	4,460	SWFWMD	Sumpter	SW	Smartweed			6.0	1,200
Panasoffkee, Lake	4,460	SWFWMD	Sumpter	SW	Tussock			5.0	15,000
Pansy,Lake	50	Polk	Polk	SW	Floating plants	0.5	39	2.0	120
Pansy,Lake	50	Polk	Polk	SW	Hydrilla	0.7	412	2.0	700
Parker, Lake	2,272	FWC	Polk	SW	Cattail			5.0	500
Parker, Lake	2,272	FWC	Polk	SW	Invasive sp.			5.0	500
Parker, Lake	2,272	Polk	Polk	SW	Floating plants	81.5	6,408	50.0	6,000
Parker, Lake	2,272	Polk	Polk	SW	Hydrilla	40.0	24,996	75.0	52,500
Peace River	150	SWFWMD	Hardee	SW	Floating plants	25.0	3,235	80.0	12,000
Peace River	150	SWFWMD	Hardee	SW	Nightshade	21.0	17,835	75.0	11,250
Peace River	150	SWFWMD	Hardee	SW	Pennywort			4.0	800
Peacock Lake	148	Private	Suwannee	SR	Floating plants			5.0	500
Peacock Lake	148	Private	Suwannee	SR	Hydrilla			0.0	0
Peacock Lake	148	Private	Suwannee	SR	Torpedograss			1.5	300
Peacock Lake	148	Private	Suwannee	SR	Wild Taro			1.0	200
Pierce, Lake	3,729	FWC	Polk	SF	Tussock			100.0	0
Pierce, Lake	3,729	Polk	Polk	SF	Floating plants	88.0	6,919	75.0	9,000
Pierce, Lake	3,729	Polk	Polk	SF	Hydrilla	1,727.0	1,079,184	500.0	350,000
Pine Lake	35	Palm Beach	Palm Beach	SF	Floating plants	5.0	1,331	24.0	6,003
Pine Lake	35	Palm Beach	Palm Beach	SF	Hydrilla	21.0	11,754	40.0	28,445
Pioneer Lake	93	Highlands	Highlands	SW	Cattail			0.5	35
Pioneer Lake	93	Highlands	Highlands	SW	Hydrilla	1.0	615	1.0	360
Pioneer Lake	93	Highlands	Highlands	SW	Torpedograss			4.0	280

Water Body	Water Acres	Contractor	County	WMD	Plant Type	FY 01-02 Acres Treated	FY 01-02 Dollars Spent	FY 02-03 Acres Approved	FY 02-03 Dollars Allocated
Placid, Lake	3,320	FWC	Highlands	SW	Bulrush			R	4,500
Placid, Lake	3,320	Highlands	Highlands	SW	Floating plants	1.0	88	2.0	190
Placid, Lake	3,320	Highlands	Highlands	SW	S. Cubensis			2.0	190
Pocket Lake	126	Orange	Orange	SF	Hydrilla			15.0	5,750
Poinsett	4,334	Brevard	Brevard	SJ	Brazillian Pepper	14.0	1,094	10.0	1,487
Poinsett	4,334	Brevard	Brevard	SJ	Floating plants	69.3	7,447	55.0	6,739
Poinsett, Lake	4,334	Private	Brevard	SJ	Floating plants	39.0	3,888	300.0	60,000
Poinsett, Lake	4,334	Private	Brevard	SJ	Frog's bit			50.0	10,000
Poinsett, Lake	4,334	Private	Brevard	SJ	Hydrilla	550.0	288,398	155.0	19,825
Poinsett, Lake	4,334	Private	Brevard	SJ	Torpedograss			20.0	4,000
Rainbow River	150	SWFWMD	Marion	SW	Floating plants	8.0	1,035	25.0	3,750
Rainbow River	150	SWFWMD	Marion	SW	Hydrilla	18.7	15,558	40.0	32,000
Red Beach, Lake	335	Highlands	Highlands	SW	S. Cubensis			1.0	48
Red Beach, Lake	335	Highlands	Highlands	SW	Torpedograss			1.0	70
Reedy Creek	100	SFWMD	Osceola	SF	Floating plants	6.0	1,003	10.0	1,700
Reedy, Lake	3,486	Polk	Polk	SW	Floating plants			2.0	240
Reedy, Lake	3,486	Polk	Polk	SW	Hydrilla			2.0	1,400
Rochelle, Lake	578	FWC	Polk	SW	Cattail			9.0	900
Rochelle, Lake	578	Polk	Polk	SW	Floating plants	2.5	197	10.0	1,200
Rochelle, Lake	578	Polk	Polk	SW	Hydrilla	29.0	18,122	50.0	35,000
Rodman Res.	9,600	Private	Putnam	SJ	Cattail			5.0	1,000
Rodman Res.	9,600	Private	Putnam	SJ	Floating plants			84.0	10,000
Rodman Res.	9,600	Private	Putnam	SJ	Hydrilla			5.0	3,500
Rosalie, Lake	4,597	Polk	Polk	SF	Floating plants	124.5	9,789	150.0	18,000
Rosalie, Lake	4,597	Polk	Polk	SF	Hydrilla	6.0	3,749	500.0	12,000
Rousseau, Lake	4,000	Private	Citrus	SW	Cattail			2.0	400
Rousseau, Lake	4,000	Private	Citrus	SW	Coontail			10.0	7,000
Rousseau, Lake	4,000	Private	Citrus	SW	Floating plants	279.0	23,978	310.0	38,500
Rousseau, Lake	4,000	Private	Citrus	SW	Hydrilla	1,216.1	874,432	800.0	200,000
Rousseau, Lake	4,000	Private	Citrus	SW	Naiad			10.0	7,000
Rousseau, Lake	4,000	Private	Citrus	SW	Tussock	18.8	4,261	40.0	8,000
Rowell Lake	364	Private	Bradford	SR	Cattail			10.0	2,000
Rowell Lake	364	Private	Bradford	SR	Floating plants	3.0	314	30.0	3,000
Rowell Lake	364	Private	Bradford	SR	Hydrilla			80.0	12,400
Rowell Lake	364	Private	Bradford	SR	Wild Taro	0.8	117	2.0	400
Roy, Lake	78	Polk	Polk	SW	Floating plants			2.0	240
Roy, Lake	78	Polk	Polk	SW	Hydrilla	4.0	2,500	10.0	7,000
Runnymead, Lake	300	Private	Osceola	SF	Tussock	141.0	190,152		
Runnymead, Lake	300	SFWMD	Osceola	SF	Cattail			2.0	260
Runnymead, Lake	300	SFWMD	Osceola	SF	Floating plants	31.0	5,181	60.0	10,200
Runnymead, Lake	300	SFWMD	Osceola	SF	Paragrass			2.0	260
Runnymead, Lake	300	SFWMD	Osceola	SF	Tussock			100.0	100,000
Russell, Lake	300	SFWMD	Osceola	SF	Floating plants	16.0	2,674	10.0	1,700
Ruth Lake	312	Brevard	Brevard	SJ	Cattail	2.0	156	5.0	1,112
Ruth Lake	312	Brevard	Brevard	SJ	Floating plants			5.0	1,098
S. Lake Talmadge	60	Volusia	Volusia	SJ	Cattail			2.0	180
S. Lake Talmadge	60	Volusia	Volusia	SJ	Floating plants			2.0	180
S. Lake Talmadge	60	Volusia	Volusia	SJ	Melalueca			0.1	25
S. Lake Talmadge	60	Volusia	Volusia	SJ	Torpedograss			2.0	180

Water Body	Water Acres	Contractor	County	WMD	Plant Type	FY 01-02 Acres Treated	FY 01-02 Dollars Spent	FY 02-03 Acres Approved	FY 02-03 Dollars Allocated
Saddle Creek Park	335	Polk	Polk	SW	Floating plants	50.5	3,971	50.0	6,000
Saddle Creek Park	335	Polk	Polk	SW	Hydrilla			1.0	700
Salt Lake	336	Brevard	Brevard	SJ	Cattail	2.0	156	2.0	735
Salt Lake	336	Brevard	Brevard	SJ	Floating plants			5.0	1,098
Salt Lake	336	Brevard	Brevard	SJ	Hydrilla			2.0	729
Sampson Lake	2,042	Private	Bradford	SR	Cattail	46.0	7,171	30.0	6,000
Sampson Lake	2,042	Private	Bradford	SR	Floating plants	15.0	1,570	25.0	2,500
Sampson Lake	2,042	Private	Bradford	SR	Hydrilla	200.0	127,893	10.0	6,500
Sampson Lake	2,042	Private	Bradford	SR	Torpedograss			8.0	1,600
Sampson Lake	2,042	Private	Bradford	SR	Wild Taro	0.8	117	2.0	400
Sanitary(Mariana)	500	Polk	Polk	SW	Floating plants			2.0	240
Santa Fe Lake	4,721	Private	Alachua	SR	Floating plants	19.3	2,020	20.0	2,000
Santa Fe Lake	4,721	Private	Alachua	SR	Torpedograss			1.0	200
Santa Fe Lake	4,721	Private	Alachua	SR	Wild Taro			0.5	100
Santa Fe River	5,000	Private	Columbia	SR	Alligatorweed			1.0	200
Santa Fe River	5,000	Private	Columbia	SR	Floating plants	126.9	13,283	160.0	18,750
Santa Fe River	5,000	Private	Columbia	SR	Hydrilla			150.0	0
Santa Fe River	5,000	Private	Columbia	SR	Paspalum	1.1	165		
Santa Fe River	5,000	Private	Columbia	SR	Pennywort	1.6	249		
Santa Fe River	5,000	Private	Columbia	SR	Torpedograss			0.5	100
Santa Fe River	5,000	Private	Columbia	SR	Wild Taro			0.1	20
Savannahs St Park	2,700	SFWMD	Martin	SF	Floating plants	21.0	3,510	20.0	3,400
Savannahs St Park	2,700	SFWMD	Martin	SF	Hydrilla			3.0	2,100
Sawgrass, Lake	407	SJRWMD	Brevard	SJ	Floating plants	72.5	14,415	170.0	18,500
Sawgrass, Lake	407	SJRWMD	Brevard	SJ	Frog's bit			20.0	3,000
Sawgrass, Lake	407	SJRWMD	Brevard	SJ	Hydrilla	25.0	15,927		
Sawgrass, Litle Lk.	74	SJRWMD	Brevard	SJ	Floating plants	20.0	3,977	25.0	2,100
Sawgrass, Litle Lk.	74	SJRWMD	Brevard	SJ	Frog's bit			4.0	600
Sears, Lake	82	Polk	Polk	SW	Floating plants			2.0	120
Sebring, Lake	468	Highlands	Highlands	SW	Floating plants	6.0	527	10.0	950
Sebring, Lake	468	Highlands	Highlands	SW	S. Cubensis	2.0	412	5.0	475
Sellers Lake (Pond)	1,050	Lake	Lake	SJ	Floating plants			0.5	40
Sellers Lake (Pond)	1,050	Lake	Lake	SJ	Hydrilla			0.5	350
Seminole, Lake	716	FWC	Pinellas	SW	Bulrush			R	1,500
Sheen, Lake	565	Orange	Orange	SF	Hydrilla	159.5	53,938	75.0	1,070
Shell Creek	48	SWFWMD	Charlotte	SW	Hydrilla			50.0	0
Shell Creek	48	SWFWMD	Charlotte	SW	Floating plants	429.5	55,582	225.0	33,750
Shingle Creek	10	SFWMD	Osceola	SF	Floating plants	2.5	418	10.0	1,700
Shingle Creek	10	SFWMD	Osceola	SF	Hydrilla			2.0	1,400
Shipp, Lake	283	Polk	Polk	SW	Floating plants	0.5	39	5.0	600
Shipp, Lake	283	Polk	Polk	SW	Hydrilla	20.0	12,498	10.0	7,000
Silver Lake	120	SWFWMD	Polk	SW	Hydrilla			20.0	15,000
Silver River (Run)	40	Private	Marion	SJ	Hydrilla			0.3	210
Silver, Lake	53	Polk	Polk	SW	Floating plants			2.0	120
Silver, Lake	53	Polk	Polk	SW	Hydrilla	0.5	312	2.0	700
Smart Lake	275	Polk	Polk	SW	Floating plants			2.0	240
Smart Lake	275	Polk	Polk	SW	Hydrilla	1.5	937	10.0	7,000
Sneads Smk	110	Private	Jefferson	NW	Floating plants	4.0	318	30.0	3,000
Sneads Smk	110	Private	Jefferson	NW	Frog's bit			10.0	2,000

Water Body	Water Acres	Contractor	County	WMD	Plant Type	FY 01-02 Acres Treated	FY 01-02 Dollars Spent	FY 02-03 Acres Approved	FY 02-03 Dollars Allocated
Sneads Smk	110	Private	Jefferson	NW	Hydrilla			3.0	0
South Lake	1,101	Brevard	Brevard	SJ	Cattail	354.0	27,661	150.0	14,744
South Lake	1,101	Brevard	Brevard	SJ	Floating plants	28.5	3,065	30.0	2,860
South Lake	1,101	Brevard	Brevard	SJ	Frog's bit	1.0	78		
South Lake	1,101	Brevard	Brevard	SJ	Hydrilla			2.0	729
Spring, Lake	25	Polk	Polk	SW	Floating plants			2.0	240
Spring, Lake	25	Polk	Polk	SW	Hydrilla	2.0	1,250	5.0	3,500
St Johns River	96,000	Brevard	St. Johns	SJ	Brazillian Pepper	8.0	625	8.0	1,190
St Johns River	96,000	Brevard	St. Johns	SJ	Floating plants	38.5	4,140	44.0	6,474
St Johns River	96,000	SJRWMD	St. Johns	SJ	Floating plants	104.5	20,778	200.0	24,000
St Johns River	96,000	SJRWMD	St. Johns	SJ	Frog's bit			50.0	7,500
St Johns River	96,000	SJRWMD	St. Johns	SJ	Hydrilla	302.5	192,715		
St Johns River	96,000	Private	St. Johns	SJ	Floating plants	62.0	6,181		
St Johns River	96,000	Private	St. Johns	SJ	Invasive sp.			60.0	0
St Johns River	96,000	Private	St. Johns	SJ	Tussock	31.6	42,616	140.0	12,000
St Johns River	96,000	Private	St. Johns	SJ	Amer. cupscale			5.0	1,000
St Johns River	96,000	Private	St. Johns	SJ	Pennywort			5.0	1,000
St Johns River	96,000	Private	St. Johns	SJ	Salvinia			10.0	2,000
St Johns River	96,000	USACE	St Johns	SJ	Floating plants	6,469.7	878,367		
St Johns River	96,000	USACE	St Johns	SJ	Hydrilla	13.0	9,029		
Starke Lake	203	FWC	Orange	SJ	Bulrush			R	1,000
Starke Lake	203	FWC	Orange	SJ	Cattail			6.3	0
Starke Lake	203	FWC	Orange	SJ	Maidencane			R	1,000
Starke Lake	203	FWC	Orange	SJ	Softstem bulrush			R	0
Starke Lake	203	FWC	Orange	SJ	Spikerush			R	0
Starke Lake	203	FWC	Orange	SJ	Torpedograss			7.4	19,900
Stearns Creek	45	Highlands	Highlands	SW	Floating plants	1.0	88	5.0	475
Stearns Creek	45	Highlands	Highlands	SW	S. Cubensis	1.0	206	1.0	95
Stearns Creek	45	Highlands	Highlands	SW	Wild Taro			1.0	95
Stella, Lake	308	Private	Putnam	SJ	Floating plants	8.0	625	12.0	1,300
Stella, Lake	308	Private	Putnam	SJ	Torpedograss	8.0	1,360	1.0	200
Stella, Lake	308	Private	Putnam	SJ	Wild Taro	1.0	170	1.0	200
Summit, Lake	67	Polk	Polk	SW	Floating plants			2.0	240
Summit, Lake	67	Polk	Polk	SW	Hydrilla	10.0	6,224	10.0	7,000
Surveyors, Lake	293	Polk	Polk	SW	Floating plants	7.0	550	15.0	900
Susan, Lake	81	Lake	Lake	SJ	Floating plants			2.0	180
Susan, Lake	81	Lake	Lake	SJ	Paragrass			0.3	25
Suwannee Lake	62	FWC	Suwannee	SR	Bulrush			R	1,500
Suwannee Lake	63	Private	Suwannee	SR	Floating plants	16.7	1,744	4.0	400
Suwannee River	12,000	Private	Dixie	SR	Floating plants	96.3	10,079	290.0	34,750
Suwannee River	12,000	Private	Dixie	SR	Hydrilla	0.3	160	30.0	19,500
Suwannee River	12,000	Private	Dixie	SR	Lygodium			5.0	1,000
Suwannee River	12,000	Private	Dixie	SR	Pennywort			5.0	1,000
Suwannee River	12,000	Private	Dixie	SR	Torpedograss			2.5	500
Suwannee River	12,000	Private	Dixie	SR	Wild Taro	3.0	468	10.0	2,000
Swoope Lake	112	Polk	Polk	SW	Floating plants			2.0	120
Swoope Lake	112	Polk	Polk	SW	Hydrilla	24.0	14,997	20.0	7,000
Talquin, Lake	8,850	Private	Gadsden	NW	Floating plants	187.2	14,891	150.0	16,250

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Tarpon, Lake	2,534	SWFWMD	Pinellas	SW	Hydrilla			350.0	50,000
Tarpon, Lake	2,534	SWFWMD	Pinellas	SW	Floating plants	62.0	8,024	125.0	18,750
Tennessee, Lake	112	Polk	Polk	SW	Floating plants			2.0	120
Tenoroc Pits	1,200	Polk	Polk	SW	Floating plants	76.5	6,015	75.0	4,500
Tenoroc Pits	1,200	Polk	Polk	SW	Hydrilla			2.0	700
Thomas, Lake	73	Polk	Polk	SW	Floating plants	0.5	39	10.0	600
Thonotosassa, Lk	819	Hillsborough	Hillsborough	SW	Cattail	4.0	762	2.0	426
Thonotosassa, Lk	819	Hillsborough	Hillsborough	SW	Floating plants	147.1	27,145	333.0	84,755
Thonotosassa, Lk	819	Hillsborough	Hillsborough	SW	Hydrilla			1.0	544
Tibet, Lake	1,198	Orange	Orange	SF	Floating plants			6.0	210
Tibet, Lake	1,198	Orange	Orange	SF	Hydrilla			250.0	5,000
Tiger, Lake	2,200	FWC	Polk	SF	Cattail			10.0	800
Tiger, Lake	2,200	FWC	Polk	SF	Pickerelweed			10.0	800
Tiger, Lake	2,200	Polk	Polk	SF	Floating plants	115.0	9,042	100.0	12,000
Tiger, Lake	2,200	Polk	Polk	SF	Hydrilla	1.0	625	5.0	3,500
Tohopekaliga, Lake	18,810	FWC	Osceola	SF	Cattail			25.0	2,000
Tohopekaliga, Lake	18,810	FWC	Osceola	SF	Knotgrass			R	300,000
Tohopekaliga, Lake	18,810	FWC	Osceola	SF	Pickerelweed			75.0	6,000
Tohopekaliga, Lake	18,810	FWC	Osceola	SF	Smartweed			25.0	2,000
Tohopekaliga, Lake	18,810	SFWMD	Osceola	SF	Floating plants	599.0	100,116	600.0	102,000
Tohopekaliga, Lake	18,810	SFWMD	Osceola	SF	Hydrilla	7,513.0	5,662,864.4	5,100.0	607,500
Tohopekaliga, Lake	18,810	SFWMD	Osceola	SF	Tussock	14.8	2,976	5.0	5,000
Tohopekaliga, Lake	18,810	SFWMD	Osceola	SF	Water Spinach	0.5	101		
Townsend Lake	110	Private	Lafayette	SR	Wild Taro			0.2	40
Tracy, Lake	136	Polk	Polk	SW	Floating plants			10.0	1,200
Tracy, Lake	136	Polk	Polk	SW	Hydrilla	2.0	1,250	5.0	3,500
Trafford, Lake	1,494	FWC	Osceola	SF	Tussock			100.0	5,000
Trafford, Lake	1,494	SFWMD	Collier	SF	Floating plants			20.0	1,700
Trout Lake	102	FWC	Lake	SJ	Bulrush			R	800
Trout Lake	102	FWC	Lake	SJ	Cattail			4.4	2,000
Trout Lake	102	FWC	Lake	SJ	Knotgrass			R	600
Trout Lake	102	FWC	Lake	SJ	Softstem bulrush			R	600
Trout Lake	102	Lake	Lake	SJ	Cattail			2.0	200
Trout Lake	102	Lake	Lake	SJ	Floating plants	10.3	2,167	18.0	1,780
Trout Lake	102	Lake	Lake	SJ	Hydrilla	3.6	2,726	10.0	7,000
Trout Lake	273	FWC	Osceola	SF	Pickerelweed			10.0	800
Trout, Lake	273	SFWMD	Osceola	SF	Hydrilla	0.3	188		
Tsala Apopka	19,111	Citrus	Citrus	SW	Alligatorweed			12.0	4,200
Tsala Apopka	19,111	Citrus	Citrus	SW	Bladderwort			21.0	7,350
Tsala Apopka	19,111	Citrus	Citrus	SW	Cattail	3.5	6,454	212.0	74,200
Tsala Apopka	19,111	Citrus	Citrus	SW	Coontail			70.5	28,200
Tsala Apopka	19,111	Citrus	Citrus	SW	Eurasian milfoil			10.0	4,000
Tsala Apopka	19,111	Citrus	Citrus	SW	Fanwort			47.0	21,150
Tsala Apopka	19,111	Citrus	Citrus	SW	Floating plants	301.0	166,748	465.5	151,288
Tsala Apopka	19,111	Citrus	Citrus	SW	Fragrant lily			47.3	16,538
Tsala Apopka	19,111	Citrus	Citrus	SW	Frog's bit			6.0	2,100
Tsala Apopka	19,111	Citrus	Citrus	SW	Hydrilla	129.5	89,469	593.0	434,868
Tsala Apopka	19,111	Citrus	Citrus	SW	Limnophilla			42.5	34,000
Tsala Apopka	19,111	Citrus	Citrus	SW	Lotus			5.0	1,125

Water Body	Water Acres	Contractor	County	WMD	Plant Type	FY 01-02 Acres Treated	FY 01-02 Dollars Spent	FY 02-03 Acres Approved	FY 02-03 Dollars Allocated
Tsala Apopka	19,111	Citrus	Citrus	SW	Maidencane			11.0	3,850
Tsala Apopka	19,111	Citrus	Citrus	SW	Naiad			82.0	36,900
Tsala Apopka	19,111	Citrus	Citrus	SW	Nitella			20.5	9,738
Tsala Apopka	19,111	Citrus	Citrus	SW	Paragrass			14.0	4,900
Tsala Apopka	19,111	Citrus	Citrus	SW	Paragrass			7.0	3,150
Tsala Apopka	19,111	Citrus	Citrus	SW	Paspalum	1.0	1,844	3.0	1,050
Tsala Apopka	19,111	Citrus	Citrus	SW	Pennywort			76.0	26,600
Tsala Apopka	19,111	Citrus	Citrus	SW	Pickerelweed			41.0	9,225
Tsala Apopka	19,111	Citrus	Citrus	SW	Pondweed			55.5	22,200
Tsala Apopka	19,111	Citrus	Citrus	SW	Sawgrass			7.5	2,025
Tsala Apopka	19,111	Citrus	Citrus	SW	Smartweed			5.0	1,750
Tsala Apopka	19,111	Citrus	Citrus	SW	Southern milfoil			20.0	9,000
Tsala Apopka	19,111	Citrus	Citrus	SW	Spatterdock	14.0	25,817	183.0	64,050
Tsala Apopka	19,111	Citrus	Citrus	SW	Torpedograss	0.5	922	16.5	5,775
Tsala Apopka	19,111	Citrus	Citrus	SW	Tussock	49.9	92,055	179.5	215,400
Tsala Apopka	19,111	Citrus	Citrus	SW	Watershield			26.0	11,700
Tsala Apopka	19,111	Citrus	Citrus	SW	Willows	6.5	11,986	66.0	23,100
Tulane, Lake	89	Highlands	Highlands	SW	Hydrilla			1.0	360
Tulane, Lake	89	Highlands	Highlands	SW	Torpedograss			5.0	350
Umatilla, Lake	161	Lake	Lake	SJ	Floating plants			0.5	20
Upper Myakka Lake	1,020	SWFWMD	Sarasota	SW	Hydrilla			125.0	10,000
Upper Myakka Lake	1,020	SWFWMD	Sarasota	SW	Tussock			5.0	2,500
Upper Myakka Lake	1,020	SWFWMD	Sarasota	SW	Floating plants	38.0	4,918	375.0	56,250
Upper Myakka Lake	1,020	SWFWMD	Sarasota	SW	Frog's bit	44.0	37,369	10.0	1,500
Viola, Lake	73	Highlands	Highlands	SW	Hydrilla			1.0	720
Viola, Lake	73	Highlands	Highlands	SW	Torpedograss			4.0	560
Wacissa River	250	Private	Jefferson	NW	Floating plants	114.8	9,130	100.0	12,500
Wacissa River	250	Private	Jefferson	NW	Hydrilla			58.0	35,000
Wakulla River	300	Private	Wakulla	NW	Hydrilla	36.0	30,626	144.5	0
Wales, Lake	326	Polk	Polk	SW	Floating plants			5.0	300
Wales, Lake	326	Polk	Polk	SW	Hydrilla			5.0	1,750
Washington	27	Brevard	Brevard	SJ	Floating plants	14.8	1,586	15.0	1,637
Washington, Lake	4,362	SJRWMD	Brevard	SJ	Floating plants	102.0	20,281	120.0	12,000
Washington, Lake	4,362	SJRWMD	Brevard	SJ	Frog's bit			5.0	750
Washington, Lake	4,362	SJRWMD	Brevard	SJ	Hydrilla	331.0	210,871	75.0	33,750
Washington, Lake	4,362	SJRWMD	Brevard	SJ	Wild Taro			0.0	0
Watermellon Pond	531	Private	Columbia	SR	Floating plants			1.0	100
Watermellon Pond	531	Private	Columbia	SR	Hydrilla			0.3	195
Watertown Lake	46	Private	Columbia	SR	Floating plants			0.2	20
Watertown Lake	46	Private	Columbia	SR	Hydrilla	0.3	192	0.2	130
Watertown Lake	46	Private	Columbia	SR	Torpedograss			0.1	20
Watertown Lake	46	Private	Columbia	SR	Wild Taro	0.3	39	0.1	20
Wauberg Lake	248	Private	Alachua	SJ	Floating plants			5.0	500
Wauberg Lake	248	Private	Alachua	SJ	Torpedograss	0.1	16	0.5	100
Wauseon Bay	138	Orange	Orange	SF	Floating plants			0.0	0
Wauseon Bay	138	Orange	Orange	SF	Hydrilla			5.0	670
Weeki Wachee R.	150	SWFWMD	Hernando	SW	Cattail			2.0	400
Weeki Wachee R.	150	SWFWMD	Hernando	SW	Floating plants			4.0	600
Weeki Wachee R.	150	SWFWMD	Hernando	SW	Hydrilla			85.0	40,000

Water Body	Water Acres	Contractor	County	WMD	Plant Type	FY 01-02 Acres Treated	FY 01-02 Dollars Spent	FY 02-03 Acres Approved	FY 02-03 Dollars Allocated
Weir, Lake	5,685	Private	Marion	SJ	Cattail			1.0	200
Weir, Lake	5,685	Private	Marion	SJ	Floating plants	10.0	781	20.0	2,000
Weir, Lake	5,685	Private	Marion	SJ	Hydrilla			5.0	150
Wekiva River	234	Private	Orange	SJ	Cattail			25.0	2,000
Wekiva River	234	Private	Orange	SJ	Cypress trees			2.0	10,000
Wekiva River	234	Private	Orange	SJ	Floating plants			10.0	1,125
Wekiva River	234	Private	Orange	SJ	Hydrilla			25.0	5,375
Wekiva River	234	Private	Orange	SJ	Hygrophilla			5.0	6,250
Wekiva River	234	Private	Orange	SJ	Paragrass	130.0	191,249	25.0	2,000
Wekiva River	234	Private	Orange	SJ	Torpedograss			15.0	3,000
Wekiva River	234	Private	Orange	SJ	Wild Taro			50.0	10,000
Weohyakapka, Lake	7,532	FWC	Polk	SF	Cattail			100.0	10,000
Weohyakapka, Lake	7,532	FWC	Polk	SF	Eelgrass			R	0
Weohyakapka, Lake	7,532	FWC	Polk	SF	Fence			R	0
Weohyakapka, Lake	7,532	FWC	Polk	SF	Pickerelweed			50.0	5,000
Weohyakapka, Lake	7,532	FWC	Polk	SF	Tussock			50.0	5,000
Weohyakapka, Lake	7,532	Polk	Polk	SF	Floating plants	119.5	9,396	100.0	12,000
Weohyakapka, Lake	7,532	Polk	Polk	SF	Hydrilla	5,289.5	3,305,351	4,000.0	125,000
Wildcat Lake	232	Lake	Lake	SJ	Floating plants			0.5	20
Wildcat Lake	232	Lake	Lake	SJ	Hydrilla			0.5	175
Wilson, Lake	32	Lake	Lake	SJ	Floating plants			1.0	80
Wilson, Lake	32	Lake	Lake	SJ	Hydrilla			0.5	350
Winder, Lake	26	Brevard	Brevard	SJ	Floating plants	14.0	1,505	15.0	1,637
Winder, Lake	1,496	Private	Brevard	SJ	Floating plants			250.0	50,000
Winder, Lake	1,496	Private	Brevard	SJ	Frog's bit			50.0	10,000
Winder, Lake	1,496	Private	Brevard	SJ	Hydrilla	285.0	149,443	100.0	19,000
Winder, Lake	1,496	Private	Brevard	SJ	Torpedograss			15.0	3,000
Winder, Lake	1,496	Private	Brevard	SJ	Wild Taro			8.0	1,600
Winona, Lake	75	Lake	Lake	SJ	Floating plants			2.0	180
Winona, Lake	75	Lake	Lake	SJ	Hydrilla			0.5	350
Winona, Lake	75	Lake	Lake	SJ	Tussock			4.0	400
Winterset, Lake	590	Polk	Polk	SW	Floating plants			2.0	240
Winterset, Lake	590	Polk	Polk	SW	Hydrilla	0.1	75	5.0	3,500
Withlacoochee R.	3,600	SWFWMD	Citrus	SW	Hydrilla			500.0	75,000
Withlacoochee R.	3,600	SWFWMD	Citrus	SW	S. Cubensis			30.0	6,000
Withlacoochee R.	3,600	SWFWMD	Citrus	SW	Wild Taro			5.0	1,250
Withlacoochee R.	3,600	SWFWMD	Citrus	SW	Floating plants	372.5	48,206	800.0	120,000
Withlacoochee R.	647	Private	Hamilton	SR	Floating plants			0.5	50
Wood Lake	150	Polk	Polk	SW	Floating plants	17.5	1,376	25.0	3,000
Wood Lake	150	Polk	Polk	SW	Hydrilla	7.0	4,374	20.0	14,000
Yale, Lake	4,042	FWC	Lake	SJ	Cattail			36.0	3,600
Yale, Lake	4,042	Lake	Lake	SJ	Cattail			5.0	500
Yale, Lake	4,042	Lake	Lake	SJ	Floating plants	18.3	3,855	11.0	1,000
Yale, Lake	4,042	Lake	Lake	SJ	Hydrilla	0.5	344	3.0	2,100