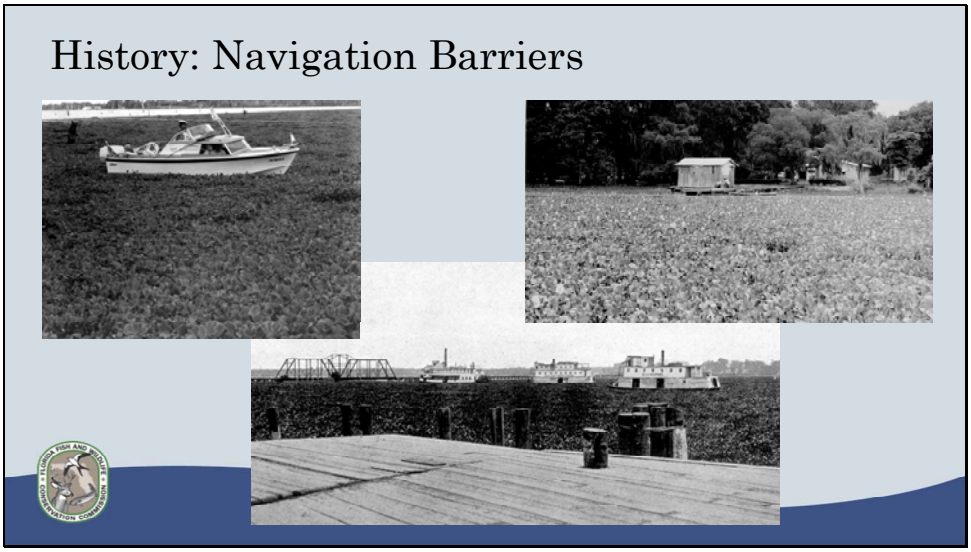
Presentation by Matt Phillips

All Photos are MyFWC unless otherwise noted.

The FWC has overarching habitat management goals that are common among it's programs. Invasive plant management is a major focus area and FWC tries to minimize the negative impacts caused by invasive plants on our native habitats.

Invasive plants are defined a those not native to Florida and are known to cause environmental and economic harm. Because they grow much faster than our native plants when they get into a system they require some type of management action to prevent these negative impacts.



Conserving navigation on public waterways was the driving force behind Congress authorizing the US Army Corps of Engineers to control water hyacinth in Florida beginning in 1899. (Rivers and Harbors Act)

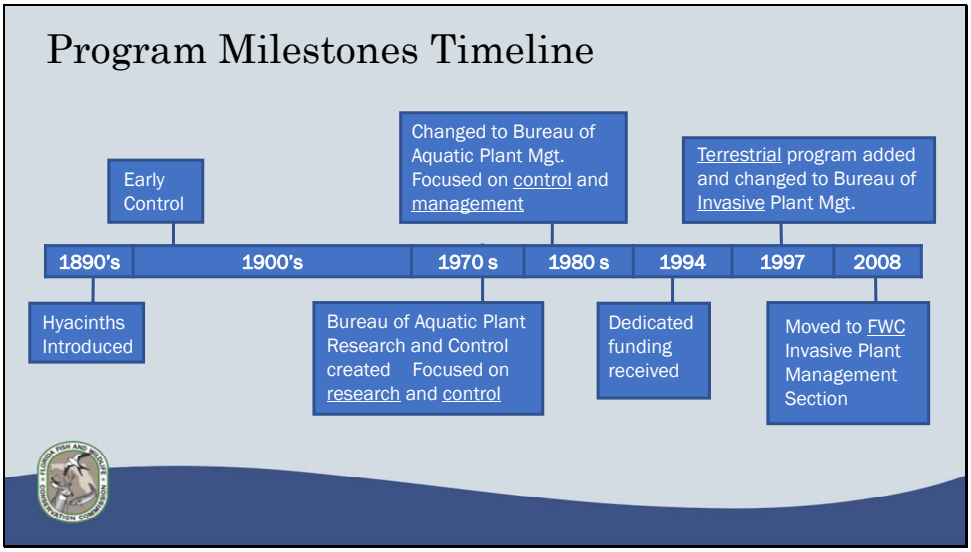
Clockwise from bottom - three steam boats struggle through water hyacinth at the public dock on the St. Johns River at Palatka ca. 1900. Water hyacinth and water lettuce impeding boat traffic on Lake Rousseau in the 1960s and on the St. Johns River in the 1950s.

Florida Archives

Early water hyacinth control efforts / FWC began controlling aquatic plants in FL in the early 1950s.

Counterclockwise from bottom- removing water hyacinth from Lake Okeechobee in the late 1930s. Removing hyacinth using a conveyor in the Caloosahatchee River in 1939. FWC (then Game and Freshwater Fish Commission) crew applying herbicides to control water hyacinth in the 1960s.

Florida Archives



By the late 1960s the Florida Legislature realized they needed to make a concerted effort to address the issue and enacted legislation that created the Bureau of Aquatic Plant Research and Control which was housed in the Department of Natural Resources (DNR).

The name was changed to the Bureau of Aquatic Plant Management in the late 1980s and became part of the Department of Environmental Protection when DNR and the Department of Environmental Regulation (DER) were merged.

1994 brought dedicated funding from the Legislature, and 1997 saw legislative action that added an upland program and changed the name to the Bureau of Invasive Plant Management.

Finally, in 2008, the program was moved to the Florida Fish and Wildlife Conservation Commission (FWC) as Invasive Plant Management Section.

When we speak of management of both upland and aquatic systems in Florida there are several management tools that can be utilized.

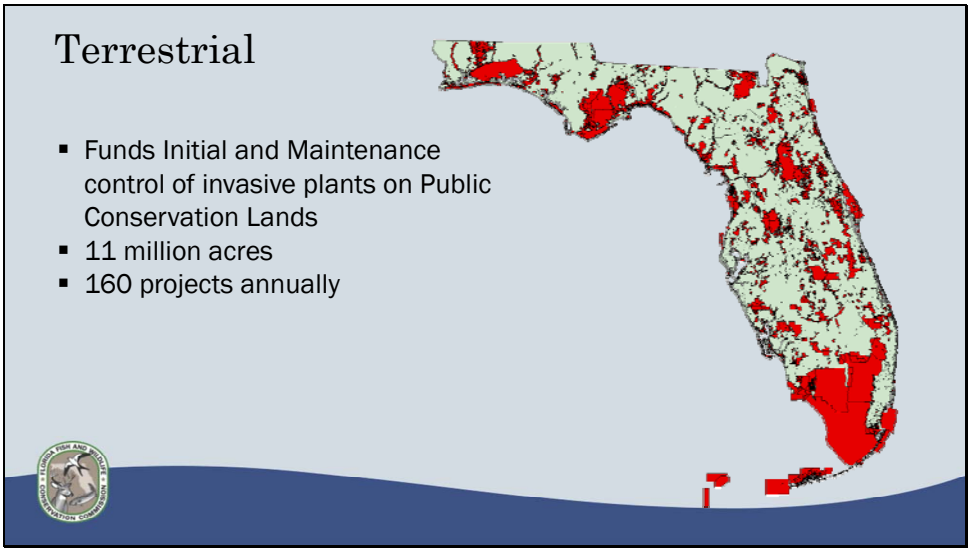
- **Biological control** is the use of natural biological enemies of the host plant to help control it's population.
- **Chemical control** is the use of herbicides to control target plants.
- **Mechanical control** encompasses many different pieces of equipment used to harvest or shred target vegetation.
- **Physical control** includes things like prescribed fire and lake drawdowns.

An example of an initial control project of Lygodium (old world climbing fern) removal at Jonathan Dickenson State Park. Note pioneer species already beginning to recolonize following treatment.

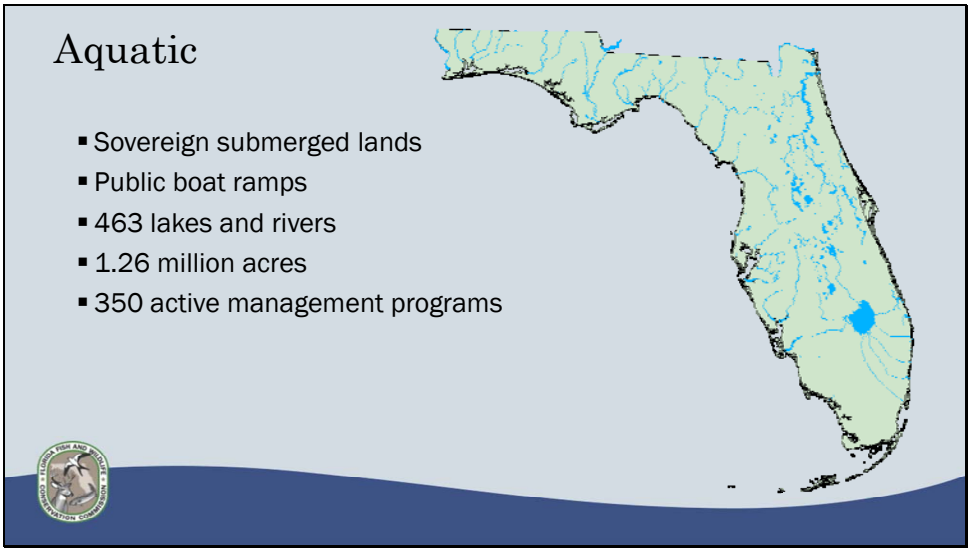
Maintenance control has been developed from many years of research and experience. When we can keep invasive plants a very low levels and spot treat as needed, we have less of an environmental impact, use less herbicides, and save taxpayer dollars.

For plants that are not established in the state, we continuously survey and if plants are detected we respond rapidly to control the plant before it can gain a foothold. Giant salvinia and azolla are two examples of plants that we intend to eradicate statewide. These plants are treated wherever they are found to prevent establishment and long-term management costs.

There are two main management programs in the Section, a terrestrial or upland section and an aquatic program.



There are 11 million acres of public conservation lands that are eligible for invasive plant management dollars – the actual acreage in need of treatment is constantly changing as treatments are conducted and new infestations found.



In the aquatics program, waters eligible for program dollars must be state owned with a public boat ramp or a designated fish management area or on a wildlife management area parcel. There are currently about 1.26 million acres of water in the program and in any given year there are around 350 active management plans being executed.

Invasive Plant Management Programs

Terrestrial	Aquatic
Control priorities developed by Regional working groups of professional land managers	Control priorities are codified in rule
Relatively new program with lots of initial control and continuing maintenance	Predominantly maintenance operations
External stakeholder input usually gathered by site/property manager	Workplans developed with direct stakeholder input

Because the aquatic program has a much longer history than the terrestrial program there are inherent differences in how they operate. This slide highlights three major differences in the programs.

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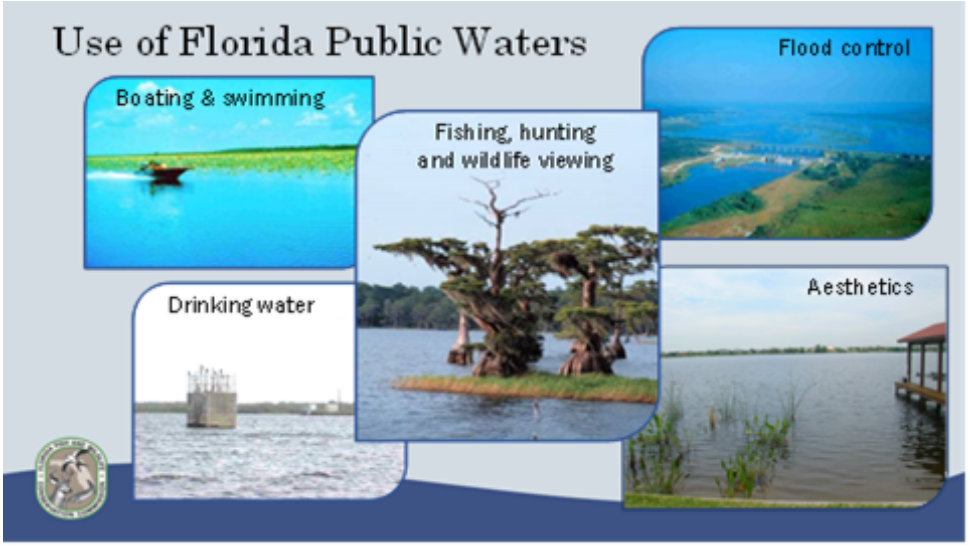
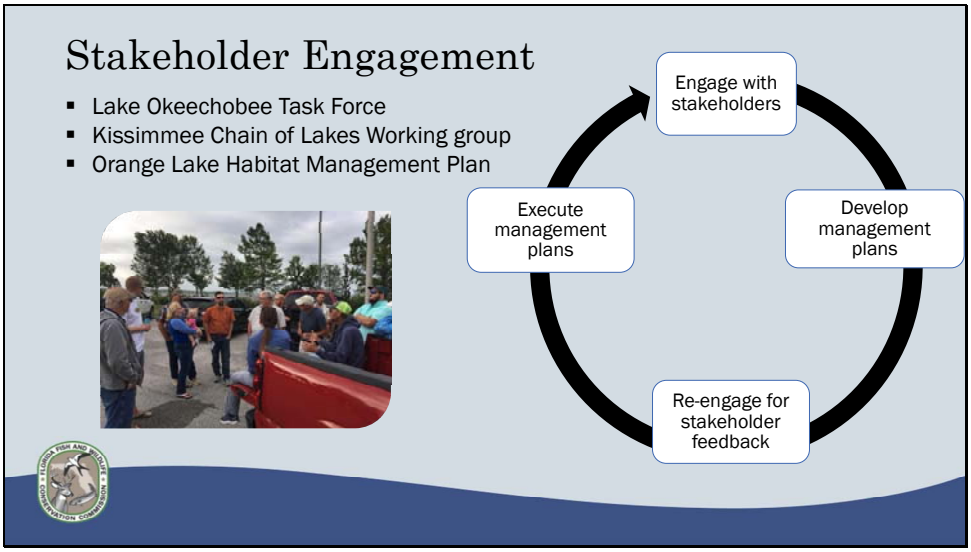


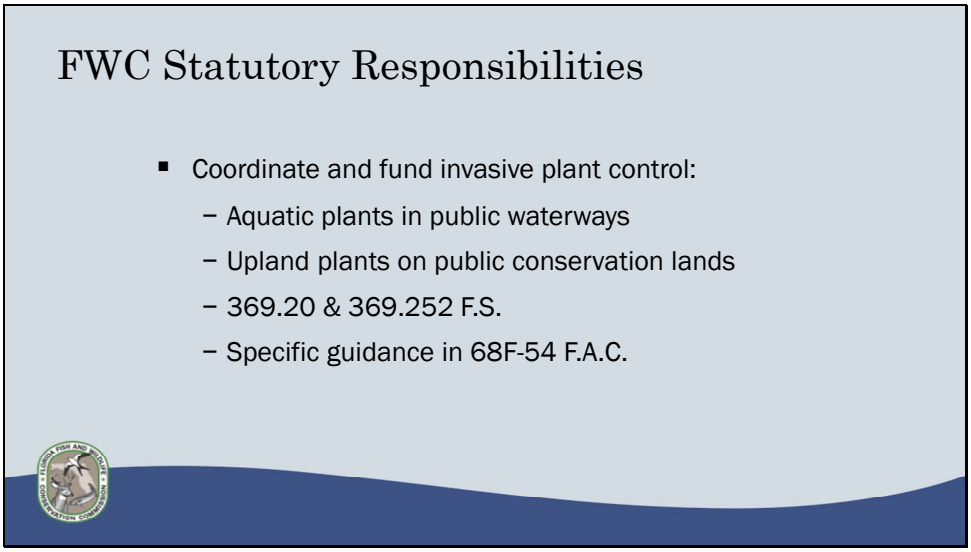
Diverse groups of stakeholders that utilize our aquatic resources often have very different visions of how the lake should look and how it should be managed. Therefore treatment plans are developed on a lake by lake basis giving careful consideration of stakeholder input and an understanding of their desired future condition of the lake.



Stakeholders are a very important component of the management program and an engagement process has been developed to stay engaged with our stakeholder groups. This has been an adaptive and iterative process that we continue to improve upon as we continue to engage. Some examples of resources where this has been implemented are the Lake Okeechobee Task Force, Kissimmee Chain of Lakes Working group and Orange Lake Habitat Management Plan engagement.

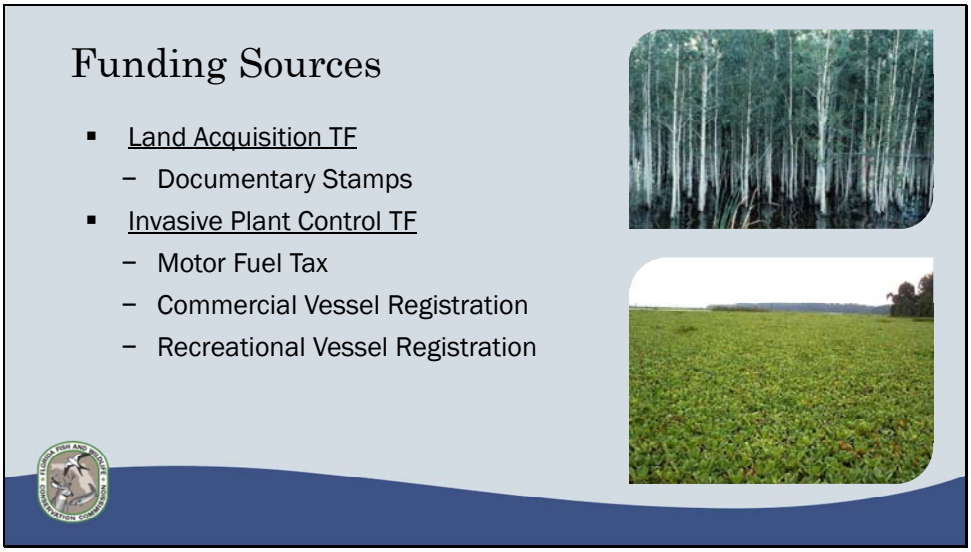
Research helps inform our plant management program and we invest annually in applied research that provides for improved management strategies. The program would not run as efficiently as it does without the long list of partners that collaborate to make this the best invasive plant management program in the country.

The following slides are considered backup material and are not anticipated to be part of the actual presentation



FWC is responsible for 2 statewide programs controlling invasive plants:

- **Aquatic plants in public waterways**
  - 369.20, FS – FWC direct the control, and regulation of noxious aquatic weeds and direct research and planning, so as to protect human health, safety, and recreation and, to prevent injury to plant and animal life and property.
  - 369.22, FS – When state funds are involved, or when waters of state responsibility are involved, FWC to guide, review, approve, and coordinate the activities of all public bodies, authorities, state agencies, units of local or county government, commissions, districts, and special districts engaged in operations to manage or eradicate aquatic plants
- **Upland plants on public conservation lands** (program established in 1997)
  - 369.252, FS – Achieve eradication or maintenance control of invasive exotic plants on public lands when data indicates they are detrimental to the natural environment or when Commissioner of Agriculture finds that they are a threat to the agricultural productivity of the state.
  - **Permitting** (includes chemical, mechanical, physical control and triploid grass carp)
    - 369.20, FS – No person or public agency shall control any aquatic weeds or plants in waters of the state unless a permit has been issued by FWC, unless the activity or waters are exempted by FWC rule.
  - **Research**
    - 369.20, FS – FWC shall promote, develop, and support research activities directed toward the more effective and efficient control of aquatic plants.
    - 369.252, FS – Contract or enter into agreements, with the State University System or other governmental or private sector entities for research concerning control agents; production and growth of biological control agents; and development of methods for the eradication or maintenance control of invasive exotic plants on public lands.
- DACS responsibility related to invasive plants
  - Govern the importation, transportation, nonnursery cultivation, collection, and possession of aquatic plants as may be necessary for the eradication, control, or prevention of the dissemination of noxious aquatic plants that are not inconsistent with rules of FWC.
  - Establish by rule lists of aquatic plant species regulated provided FWC approves such lists prior to the lists becoming effective.



The program is funded through the Invasive Plant Control Trust Fund, funds are received from:

- Doc stamps – a cap has been established at $34.1 million
    - At least 20% to be spent on upland invasive plant control
- Motor fuel tax – receive $6.3 million annually
    - At least $1 million to be spent on melaleuca control in the uplands program
- Commercial vessel registration, approximately $300K
- Recreational vessel registration, approximately $1.9 million

As part of our outreach program and in coordination with our partners, FWC has an extensive library of information related to Upland and Aquatic vegetation.

FY 17-18 Research and Education Projects

Category	Funds
Biocontrol (8)	$ 622,334
Ecological (2)	$ 126,686
Education (6)	$ 397,584.49
Herbicide (13)	$ 488,252.14
Prevention (1)	$ 35,995
TOTAL 30	**$1,381,530.53**