

**HOUSE OF REPRESENTATIVES STAFF ANALYSIS**

**BILL #:** CS/HB 579 Aquatic Plant Management  
**SPONSOR(S):** Environment, Agriculture & Flooding Subcommittee, Melo and others  
**TIED BILLS:** IDEN./SIM. **BILLS:** SB 1128

<b>REFERENCE</b>	<b>ACTION</b>	<b>ANALYST</b>	<b>STAFF DIRECTOR or BUDGET/POLICY CHIEF</b>
1) Environment, Agriculture & Flooding Subcommittee	17 Y, 0 N, As CS	Gawin	Moore
2) Agriculture & Natural Resources Appropriations Subcommittee			
3) State Affairs Committee			

**SUMMARY ANALYSIS**

Aquatic plants play an integral role in sustaining Florida’s healthy aquatic ecosystems, but occasionally some of the vegetation, especially invasive, non-native plants, interferes with the use and function of these natural resources. Invasive plants degrade and diminish Florida's conservation lands and waterways. Some invasive aquatic plants pose a significant threat to human welfare by impeding flood control and affecting recreational use of waterways and its associated surrounding economy.

A variety of federal, state, local, and private entities manage aquatic plants in Florida. The Florida Fish and Wildlife Conservation Commission (FWC) follows the regulatory guidelines set by the Environmental Protection Agency, and coordinates with the U.S. Army Corps of Engineers, the Florida Department of Environmental Protection and the Florida Department of Agriculture and Consumer Services. FWC is the lead agency responsible for managing invasive plants in Florida. Through its Invasive Plant Management Section, FWC coordinates and funds two statewide programs aimed at controlling invasive aquatic and upland plants on public conservation lands and waterways throughout the state. Aquatic plants are primarily managed through the application of herbicides, but in certain instances mechanical controls are used to quickly remove aquatic plants from the waterway or flood control structures.

The bill requires FWC, in partnership with the University of Florida Institute of Food and Agricultural Sciences and the Water School at Florida Gulf Coast University, to study the strategic use of innovative biomass nutrient removal technologies and mechanical aquatic plant management techniques where ecologically and technically feasible within the Lake Okeechobee watershed.

By February 1, 2023, the bill requires FWC to submit a report to the Governor and the Legislature regarding the study, including recommendations for statutory changes.

The bill provides a nonrecurring appropriation of \$1.5 million from the General Revenue Fund to FWC, of which \$1 million must be used for mechanical harvesting in Lake Okeechobee and \$500,000 must be used to conduct the study.

# FULL ANALYSIS

## I. SUBSTANTIVE ANALYSIS

### A. EFFECT OF PROPOSED CHANGES:

#### Background

##### Aquatic Plants and Invasive Species

Aquatic plants play an integral role in sustaining Florida's healthy aquatic ecosystems, but occasionally some of the vegetation, especially invasive, non-native plants, interferes with the use and function of these natural resources.<sup>1</sup> Invasive plants degrade and diminish Florida's conservation lands and waterways.<sup>2</sup> Some invasive aquatic plants pose a significant threat to human welfare by impeding flood control and affecting recreational use of waterways and its associated surrounding economy.<sup>3</sup>

Invasive aquatic plants have been introduced into Florida waters dating back to the late 1800s. For example, South American floating water hyacinths were introduced into the St. Johns River near Palatka in the late 1880s and soon after made navigation on the river for steamboat traffic almost impossible.<sup>4</sup> Later, a 1950s plant invader, hydrilla, native to Southeast Asia, began to infest and degrade Florida's lakes and rivers when it produced dense canopies at the surface.<sup>5</sup> By producing a dense canopy at the water surface, invasive aquatic plants shade out native submersed plant species and can uproot native emergent species that are important to wildlife.<sup>6</sup> These nonnative invasive plants, along with others, now impact approximately 1.5 million acres of Florida.<sup>7</sup> Ninety-six percent of the Florida public waters inventoried in 2017 contained one or more non-native plants.<sup>8</sup> The Florida Fish and Wildlife Conservation Commission (FWC) considers 18 of the 26 non-native aquatic plants found in Florida's public waters to be invasive.<sup>9</sup>

##### Aquatic Plant Management

A variety of federal, state, local, and private entities manage aquatic plants in Florida. FWC follows the regulatory guidelines set by the Environmental Protection Agency (EPA),<sup>10</sup> and coordinates with the U.S. Army Corps of Engineers, the Florida Department of Environmental Protection and the Florida Department of Agriculture and Consumer Services. FWC<sup>11</sup> is the lead agency responsible for managing invasive plants in Florida. Through its Invasive Plant Management Section (section), FWC coordinates and funds two statewide programs aimed at controlling invasive aquatic and upland plants on public conservation lands and waterways throughout the state.<sup>12</sup> The section also ensures that beneficial native aquatic plants in Florida's ponds, lakes and rivers are protected through its permitting programs and through funding research to find more cost-effective management techniques.<sup>13</sup> A person or

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<sup>1</sup> University of Florida Institute of Food and Agricultural Sciences (UF/IFAS), *Plant Management in Florida Waters*, <https://plants.ifas.ufl.edu/manage/> (last visited Jan. 15, 2022).

<sup>2</sup> Fish and Wildlife Conservation Commission (FWC), *Invasive Plant Management*, <https://myfwc.com/wildlifehabitats/habitat/invasive-plants/> (last visited Jan. 15, 2022).

<sup>3</sup> *Id.*

<sup>4</sup> *Id.*

<sup>5</sup> *Id.*

<sup>6</sup> FWC, *Water Hyacinth*, <https://myfwc.com/wildlifehabitats/habitat/invasive-plants/weed-alerts/water-hyacinth/#:~:text=Water%2Dhyacinth%20blocks%20waterways%20and,that%20are%20important%20to%20wildlife> (last visited Jan. 15, 2022).

<sup>7</sup> FWC, *Invasive Plant Management*, <https://myfwc.com/wildlifehabitats/habitat/invasive-plants/> (last visited Jan. 15, 2022).

<sup>8</sup> UF/IFAS, *Plant Management in Florida Waters*, <https://plants.ifas.ufl.edu/manage/why-manage-plants/floridas-most-invasive-plants/> (last visited Jan. 15, 2022).

<sup>9</sup> *Id.*

<sup>10</sup> FWC provides a report of all pesticides applied to Florida waters in accordance with aquatic plant management. FWC, *Annual Report of Pollutant Discharges to the Surface Waters of the State from the Application of Pesticides*, available at <https://myfwc.com/media/26168/npdes-2020.pdf> (last visited Jan. 15, 2022).

<sup>11</sup> Section 369.20(2), F.S., established FWC as the lead agency charged with controlling, eradicating, and regulating noxious aquatic weeds.

<sup>12</sup> FWC, *Invasive Plant Management*, <https://myfwc.com/wildlifehabitats/habitat/invasive-plants/> (last visited Jan. 15, 2022).

<sup>13</sup> *Id.*

agency may not attempt to control, eradicate, remove, or otherwise alter any aquatic plants in waters of the state until such person or agency has applied for, and received, a permit from FWC to do so.<sup>14</sup>

### *Herbicides*

The primary way invasive aquatic plants are managed is through the application of aquatic herbicides. Depending on the specific plant species being treated, the location, time of year, weather, water-oxygen levels, and a host of other variables, aquatic herbicides may be applied directly to the plant, directly to the water, or to the plant and water at the same time.<sup>15</sup> On some occasions, environmental conditions may dictate that certain herbicides are not permissible.<sup>16</sup> It is up to the user to follow the herbicide use label that accompanies the herbicide container and to follow it exactly.<sup>17</sup> A registered pesticide is one that has been researched and approved by the EPA for uses that are specified on the label and labeling.

### *Mechanical Controls*

Mechanical control refers to the use of machinery designed to cut, shear, shred, crush, press, lift, convey, transport, and remove aquatic plants and associated organic material from waterbodies.<sup>18</sup> Mechanical controls range from small cutting boats to 90-foot long harvesters, and from shredders that slurry plants to track hoes and draglines stationed on shorelines or mounted on barges that lift plants and debris out of the water.<sup>19</sup> If physical or mechanical controls are used, all the cut or harvested aquatic vegetation must be deposited as prescribed in the permit the person or agency received from FWC.<sup>20</sup>

Historically, mechanical controls could not keep pace with the exponential growth of invasive aquatic plants.<sup>21</sup> Although mechanical controls have largely been replaced by the application of herbicides in Florida, there are occasions when mechanical control is the only option.<sup>22</sup> For example, vegetation sometimes needs to be removed quickly from flood control structures, bridges, or navigation channels, and when managing freely drifting floating islands of peat or muck on which herbicides and biological controls have no immediate effect.<sup>23</sup>

## **Effect of the Bill**

The bill requires FWC, in partnership with the University of Florida Institute of Food and Agricultural Sciences and the Water School at Florida Gulf Coast University, to study the strategic use of innovative biomass nutrient removal technologies and mechanical aquatic plant management techniques where ecologically and technically feasible within the Lake Okeechobee watershed. The study, at a minimum, must:

- Determine the benefits and drawbacks of biomass nutrient removal technologies and mechanical aquatic plant management techniques;
- Document the reduction in nutrients for each aquatic plant acre mechanically harvested on an acre-for-acre basis;
- Analyze harvested hay<sup>24</sup> to provide data on nutrient content and soil nutrient content, if hay has been applied. Such data should provide metrics for nutrient removal and nutrient application to upland sites and the feasibility of both;
- Provide traceability and accountability for total nutrient removal; and

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<sup>14</sup> Rule 68F-20.002(1), F.A.C. Rule 68F-20.0035. F.A.C., exempts certain waters and activities from the permitting requirement.

<sup>15</sup> UF/IFAS, *Background on the Aquatic Herbicides Registered for Use in Florida*, <https://plants.ifas.ufl.edu/manage/control-methods/chemical-control/background-on-registered-aquatic-herbicides/> (last visited Jan. 15, 2022).

<sup>16</sup> *Id.*

<sup>17</sup> *Id.* See also r. 68F-20.0055(1)(a)1., F.A.C.

<sup>18</sup> UF/IFAS, *Mechanical Control*, <https://plants.ifas.ufl.edu/manage/control-methods/mechanical-control/> (last visited Jan. 15, 2022).

<sup>19</sup> *Id.*

<sup>20</sup> Rule 60F-20.0055(1)(b)1., F.A.C.

<sup>21</sup> UF/IFAS, *Mechanical Control*, <https://plants.ifas.ufl.edu/manage/control-methods/mechanical-control/> (last visited Jan. 15, 2022).

<sup>22</sup> *Id.*

<sup>23</sup> *Id.*

<sup>24</sup> Barley hay has been used as a way to prevent further growth of algae in lakes. Rutgers University, *Pond and Lake Management Part VI: Using Barley Straw to Control Algae*, <https://njaes.rutgers.edu/fs1171/> (last visited Jan. 15, 2022).

- Determine the feasibility and sustainability of increased scalability of biomass nutrient removal technologies and mechanical aquatic plant management techniques statewide.

By February 1, 2023, the bill requires FWC to submit a report to the Governor and Legislature on the study of the strategic use of innovative biomass nutrient removal technologies and mechanical aquatic plant management techniques, including recommendations for statutory changes.

**B. SECTION DIRECTORY:**

- Section 1. Creates an unnumbered section of law related to the study of aquatic plant management strategies.
- Section 2. Provides a nonrecurring appropriation from the General Revenue Fund to FWC.
- Section 3. Provides an effective date of July 1, 2022.

**II. FISCAL ANALYSIS & ECONOMIC IMPACT STATEMENT**

**A. FISCAL IMPACT ON STATE GOVERNMENT:**

1. Revenues:

None.

2. Expenditures:

The bill provides a nonrecurring appropriation of \$1.5 million from the General Revenue Fund to FWC, of which \$1 million must be used for mechanical harvesting in Lake Okeechobee and \$500,000 must be used to conduct the study.

**B. FISCAL IMPACT ON LOCAL GOVERNMENTS:**

1. Revenues:

None.

2. Expenditures:

None.

**C. DIRECT ECONOMIC IMPACT ON PRIVATE SECTOR:**

None.

**D. FISCAL COMMENTS:**

None.

**III. COMMENTS**

**A. CONSTITUTIONAL ISSUES:**

1. Applicability of Municipality/County Mandates Provision:

Not applicable. This bill does not appear to affect county or municipal governments.

2. Other:

None.

**B. RULE-MAKING AUTHORITY:**

None.

**C. DRAFTING ISSUES OR OTHER COMMENTS:**

None.

**IV. AMENDMENTS/COMMITTEE SUBSTITUTE CHANGES**

On February 3, 2022, the Environment, Agriculture & Flooding Subcommittee adopted a strike-all amendment and reported the bill favorably as a committee substitute. The amendment specified what must be included in the study; removed a provision authorizing FWC to consult and contract with entities to implement the study; and increased the appropriation of funds and specified how the appropriation must be used.

This analysis is drafted to the committee substitute as approved by the Environment, Agriculture & Flooding Subcommittee.