Red Root Floater (*Phyllanthus fluitans*): Another New Aquatic Invader for Florida
A Brief History

- **Scientific Name:** *Phyllanthus fluitans*
- **Common Name:** Red root floater; water spurge
- **Native to** swamps and rivers in Central and South America from Mexico to Peru, Paraguay, Bolivia, and Brazil
- **Genus** *Phyllanthus* contains 650-1,200 species worldwide, but only two are aquatic:
  - *P. fluitans* (floating)
  - *P. leonardianus* (submersed) from Zaire.
Description

- It is a **floating** aquatic.
- The foliage leaves are arranged in two vertical rows, as **leaves on opposite** sides of a stem, **light blue-green** in color, 1 to 2 cm long, and they typically lie on surface of the water.
- Each foliage leaf has **two large pockets**, these pockets being located to the left and right of the leaf median, respectively.
- Flowers are **minute** (ca. 2 to 4 mm wide) and **whitish**.
Chronology of Florida Occurrence

- Found August 27, 2010 in a ditch attached to the Peace River near Fort Ogden by Dr. George Wilder from the Naples Botanical Garden who reported it to FWC.

- In September/October 2010, after intense surveying, scattered populations were found over 26 river miles.

- In November 2010, SWFWMD staff treated all *P. fluitans* plants found in the entire 26 mile stretch of the river.

- In July 2016, found in Charlotte County for the first time.

  Note: Probably survived the salt/brackish water due to the above average rainfall in the central Florida region, causing the salt wedge to shift further down river, allowing freshwater to expand south.
Since 2010, approximately 62 acres of scattered plants to dense mats were found and treated from just north of Arcadia south into Charlotte County.

- Fewest acres treated was 2 acres in 2013 and 2015.
- Most acres treated was 16 acres in 2012 and 2016.

In November 2015, red root floater plants were found rooted and growing in damp soil in the Peace River flood plain.
Peace River Watershed
Northernmost location found

Southernmost location found

Original discovery location

Southernmost location found
Surveying

Conducted by:
- Boat
- Walking

P. fluitans with water lettuce
Control Measures

SWFWMD staff sprayed the aquatic herbicide Knockout (active ingredient diquat dibromide) to kill the plants.

Location just north of confluence with Horse Creek
Mis-identification

May be confused with:
- *Salvinia minima*
- Immature water lettuce
  (*Pistia stratiotes*)
Reproduction

Plants reproduce by:
- Seeds
- Runners/stem fragments
Growing Requirements

- pH 5.0 to 8.0 (slightly acidic)
- Water temperature 70-86 °F or 21-30 °C
- Soft to medium hard water
- Bright lighting (does poorly in shade)
- Needs iron and micronutrients to thrive
  - According to FDEP’s Lists Of Impaired Waters for Cycle 2 Group 3 Basins verified on 1/15/10 the Lower Peace River is impaired for iron
Challenge I

Red root location

Water Treatment Plant

CR 761
Challenge II

☆ = Solitary or small number of plants
● = Large infestation
Challenge II

Red root location
Challenge III
Getting the Word Out!

- Co-authored an article with Dr. Wilder for Wildland Weeds (Fall 2010, Volume 13, Number 4)

- Authored an article for Aquatics (Winter 2011, Volume 33, Number 3)

- Authored an update for Aquatics (Spring 2017, Volume 39, Number 1)

- FWC Weed Alert was made and distributed

- Visited nurseries, canoe rental businesses, and parks from Arcadia north to talk with property managers
Getting the Word Out!
Comments/Questions

- Are the seeds viable? Special conditions or pollinator?
- No longer eradication, but containment (maintain at the lowest possible levels)
- Aerial treatments to knock back the willows to gain access?
- Speak with private property owners to treat plants
- Specimens sent to UF to test other herbicides to prevent the development of resistance, etc.