Invasive Aquatic Plants

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Other Exotic Aquatic Plants
Sea Grant, Univ. Florida
- Egeria densa – Brazilian elodea
- Ipomea aquatica – Swamp cabbage
- Lythrum salicaria – Purple loosestrife
- Melaleuca quinquenervia – Melaleuca
- Myriophyllum spicatum – Eurasian milfoil
- Nympohoides peltata – Yellow floating heart
- Pistia stratiotes – Water lettuce
- Potamogeton crispus – Curlyleaf pondweed
- Urochloa mutica – Para grass
- At least eight others targeted by committee

Alligatorweed Ecology
- Native to South America
- Introduced 1890’s
- Emersed, perennial
- Adapts structurally to the environment
- Vegetative reproduction
- Stem node buds take root with soil contact
- Flea beetle, Agasicles hygrophila

Georgia Invasive Aquatic Plants
Georgia Exotic Pest Control Council (www.gaeppc.org)
- Alligatorweed
- Hydrilla
- Parrotfeather
- Phragmites
- Giant Salvinia
- Torpedograss
- Water Hyacinth

Alligatorweed
Alternanthera philoxerioides

Hydrilla
Hydrilla verticillata
Hydrilla Ecology
- Invaded Florida, 1959
- Found worldwide
- Submersed, rooted
- Whorls of 3-10 leaves with toothed margins
- Fast growing, reproduces from pieces of broken stems and underground propagule. Seed rare.

Hydrilla Control
- Costs up to $5 million/yr in Florida, $2.5 million/yr in South Carolina
- Contact herbicides followed by grass carp
  - Diquat or endothal
- Tuber weevil, *Bagous affinis*
- Stem borer, *Bagous hydrillae*
- Leaf mining fly, *Hydrellia balciunasi* or *Hydrellia pakistanae*, *Hydrellia bilbifera*
- Impact mature plants and destroy reproductive structures

Parrotfeather
*Myriophyllum aquaticum*
- Native to S. America
- Aquarium plant
- Perennial rooted, with rhizomes
- Deep water to mudflat
- Yellow-green, graceful foliage above water
- 2,4-D or other systemic herbicide
- Contact herbicide then grass carp
- Cover after drawdown

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Phragmites
*Phragmites australis*
- European introduction
- Aggressive genotype, 1800's
- Erect along waterways in several feet of water to moist soil, perennial
- Dense hedge-like stands
- Systemic herbicides
  - Glyphosate, Imazapyr
- Mechanical removal
- After removal plant native plants quickly

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Biological Control of Phragmites

- Phragmites damages natural areas and reduces biological diversity
- Biological control work is rather recent, late 1990's
- Native herbivores:
  - Yuma skipper – Ochlodes yuma
  - Dolichopodid fly – Thrypticus sp.
  - Gall midge – Calamomyia phragmites
- At least 21 species of exotic herbivores have been unintentionally introduced (Tewksbury et al.)

Giant Salvinia Ecology

- Recent invader, probably from aquarium release
- Spreads very fast
- Biological control:
  - Wide use in Texas
- Contact herbicides:
  - Diquat, Diquat & Cutrine-Plus
- Report all sightings

Torpedograss Ecology

- S. America and West Indies and widely distributed
- Marginal and forming mats
- Rhizomes and seeds
- Displaces Maidencane
- Control with systemic herbicides:
  - Imazapyr, glyphosate

Water Hyacinth

Eichhornia crassipes
Water Hyacinth Ecology

- One of first exotic invasives, 1884
- Federal control efforts for more than 100 yrs
- Floating or rooted
- Spread by stolon
- Seeds germinate after reflooding
- Systemic (2,4-D) or contact (diquat) herbicides

Biological Control of Water Hyacinth

- Mottled waterhyacinth weevil - 1972
  - *Neochetina eichorniae*
- Chevroned waterhyacinth weevil - 1974
  - *Neochetina bruchi*
- Waterhyacinth moth larvae - 1977
  - *Smeodes albiguttalis*

Water Lettuce

*Pistia stratiotes*

- S. America in 1700’s
- Floating mats or roots
- Buds in still water
- Not cold tolerant
- Mosquito habitat, navigation impact, clogs water intakes
- Water lettuce weevil
  - *Neohydronomous affinis*
- Water lettuce moth
  - *Spodoptera pectinicornis*

Information Sources

- Florida Sea Grant
  - aquat1.ifas.ufl.edu/seagrant/aquinv.html
- U.S. Army Corps of Engineers
  - www.saj.usace.army.mil/conops/apc/