

# Integrated Weed Management

A wide-angle photograph of a vast pond filled with yellow lotus flowers. The water is dark, and the lotus leaves are large and green, floating on the surface. The sky is bright blue with scattered white clouds. The horizon is flat and distant.

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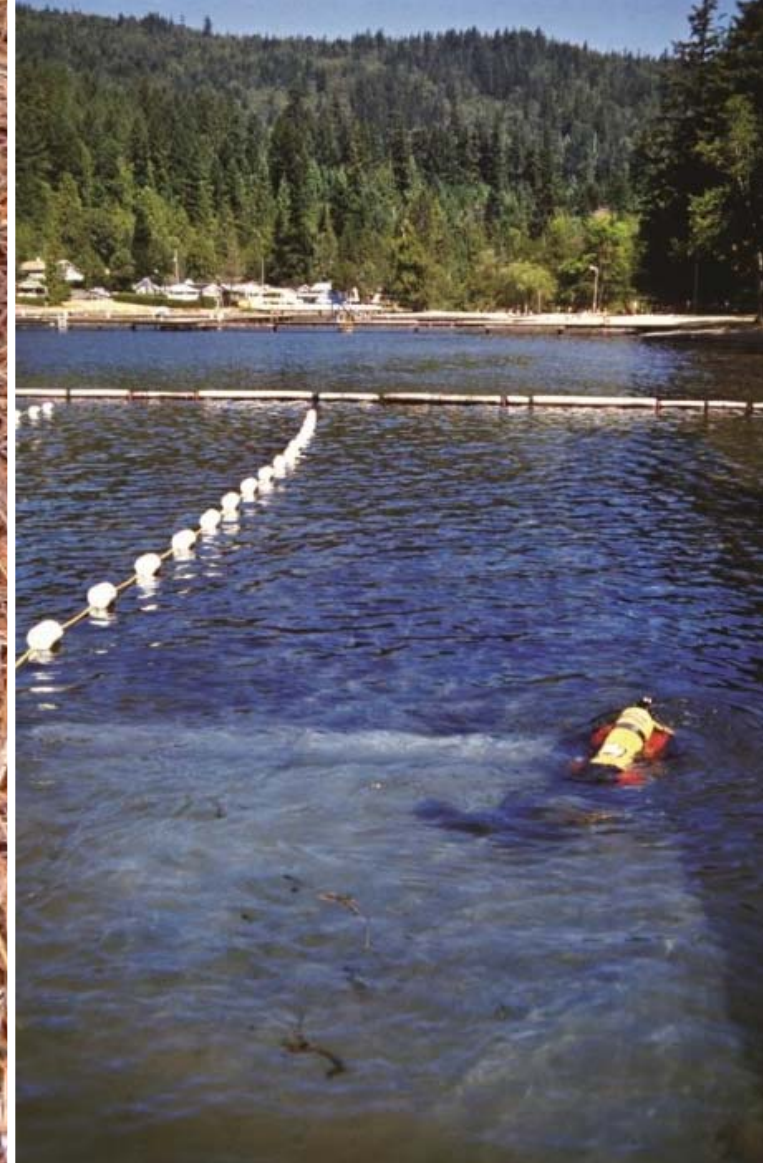
**Ft. Lauderdale Research and Education Center**

# What is IPM?

- Integrated Pest Management
- All the tools in the toolbox
  - Cultural
  - Mechanical
  - Biological
  - Chemical



# Cultural control



# Cultural control



# Mechanical control



# Mechanical control

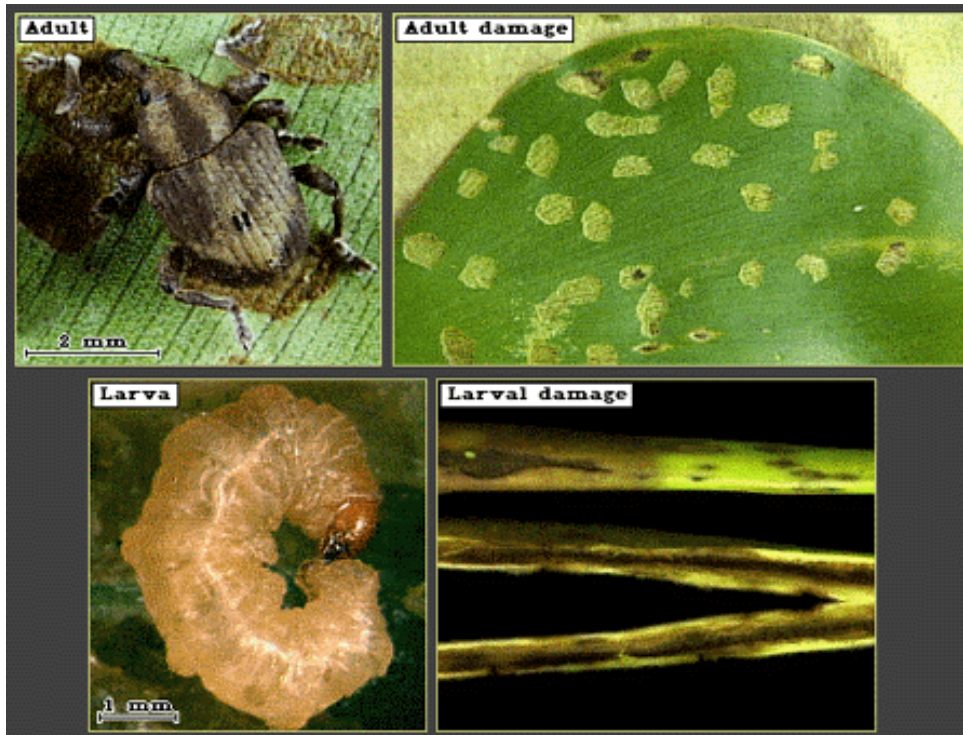


Aquatic plant chopping machine



# Biological control

- Natural enemies



# Chemical control

- Herbicides
  - Contact/systemic
  - Foliar/water column
- Act on plant processes
  - Photosynthesis
  - AA/protein production
  - Respiration
  - Hormones/growth processes





# IPM toolbox

- Cultural
- Mechanical
- Biological
- Chemical



# IPM in practice



# Alligatorweed

- *Alternanthera philoxeroides*
- S. America late 1800s
- Cultural, mechanical: limited
- Chemical: Ipyr, Imox (ALS), EPSPS, triclopyr
- Bio: *Agasicles hygrophila*, *Arcola malloi*



# Waterhyacinth

- *Eichhornia crassipes*
- Brazil 1880s
- Cultural, mechanical: limited
- Chemical: auxins, diquat, ALS
- Bio: *Neochetina* sp., *Megamelus scutellaris*



# Melaleuca

- *Melaleuca quinquenervia*
- Australia late 1800s
- Cultural, mechanical: limited
- Chemical: tri, gly, ipyr (IPM: cut)
- Bio: *Oxyops vitiosa*, *Boreioglycaspis melaleucae*



# Other species with IPM strategies

Tropical soda apple – beetle



# Other species with IPM strategies

Brazilian pepper – wasp (adv)



Brazilian pepper-tree

# Other species with IPM strategies

Waterlettuce – weevil





# Other species with IPM strategies

Salvinia – weevil

Salvinia molesta



UGA1317057

THM...



A wide-angle photograph of a vast pond filled with yellow lotus flowers. The water is dark, and the lotus leaves are large and green. The sky is bright blue with scattered white clouds. The text "Thanks! Questions?" is overlaid in the upper left quadrant.

# Thanks! Questions?

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