

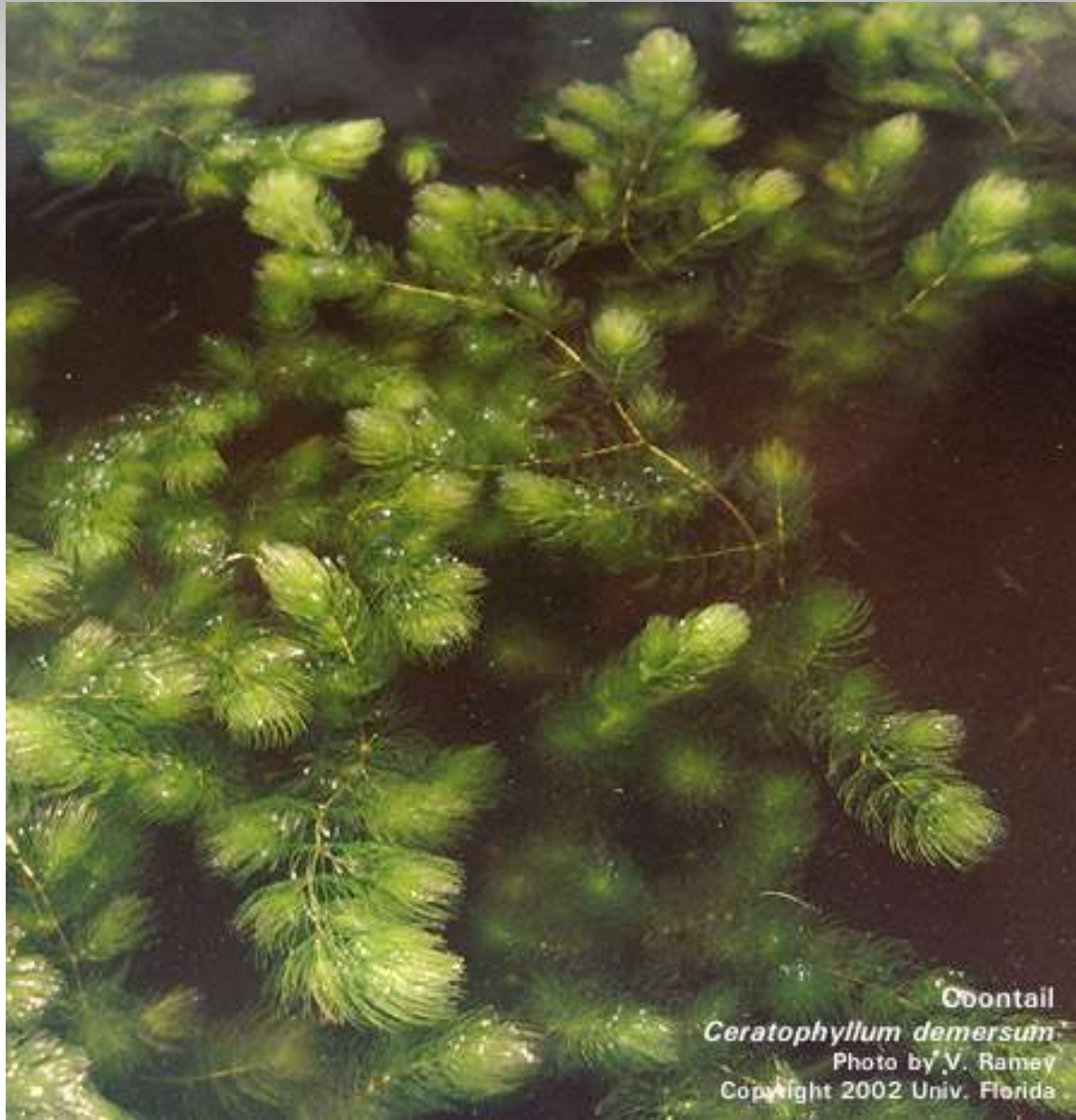
Aquatic Plant Management

Marley Beem

Department of Natural Resource Ecology & Management
Oklahoma State University



Weedbeds Have Benefits




Coontail

Ceratophyllum demersum

Photo by V. Ramey

Copyright 2002 Univ. Florida

Excess Aquatic Weed Problems

- Appearance
 - Casting / Boat propellers
 - Water Intakes
 - Fish Kills
- 
- The background of the slide features several thick, light gray wavy lines that flow from the bottom left towards the right side, creating a sense of movement and depth.

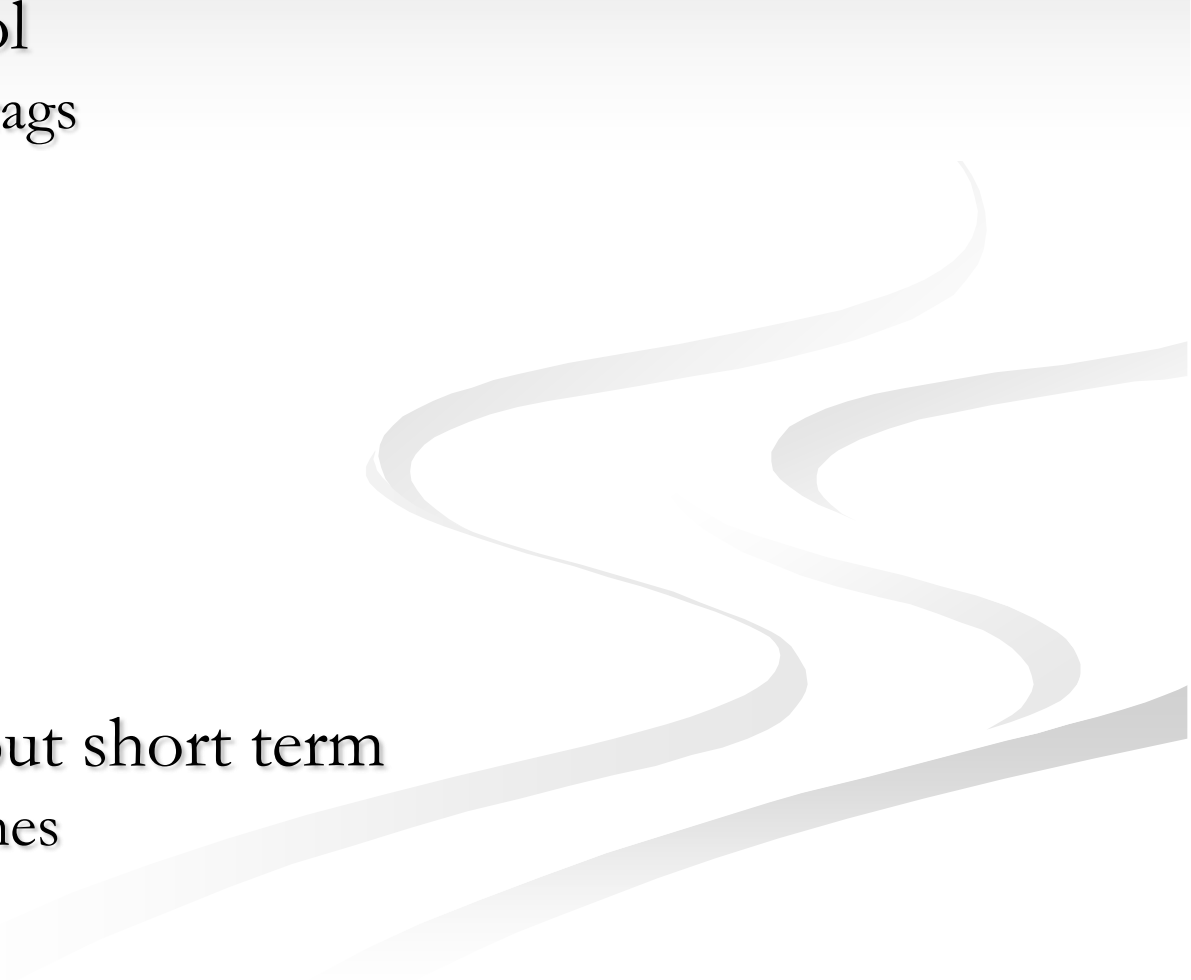
Don't Spread Weeds




Causes of Excessive Plant Growth

- Shallow water
- High nutrients
 - Phosphorous

1. Know Your Tools

- Mechanical Control
 - Cutters and Drags
 - Weed Barriers
 - Drawdown
 - Dyes
 - Biological Control
 - Grass Carp
 - Herbicides – fast but short term
 - Withdrawal times
- 

Decaying Plants Use Oxygen

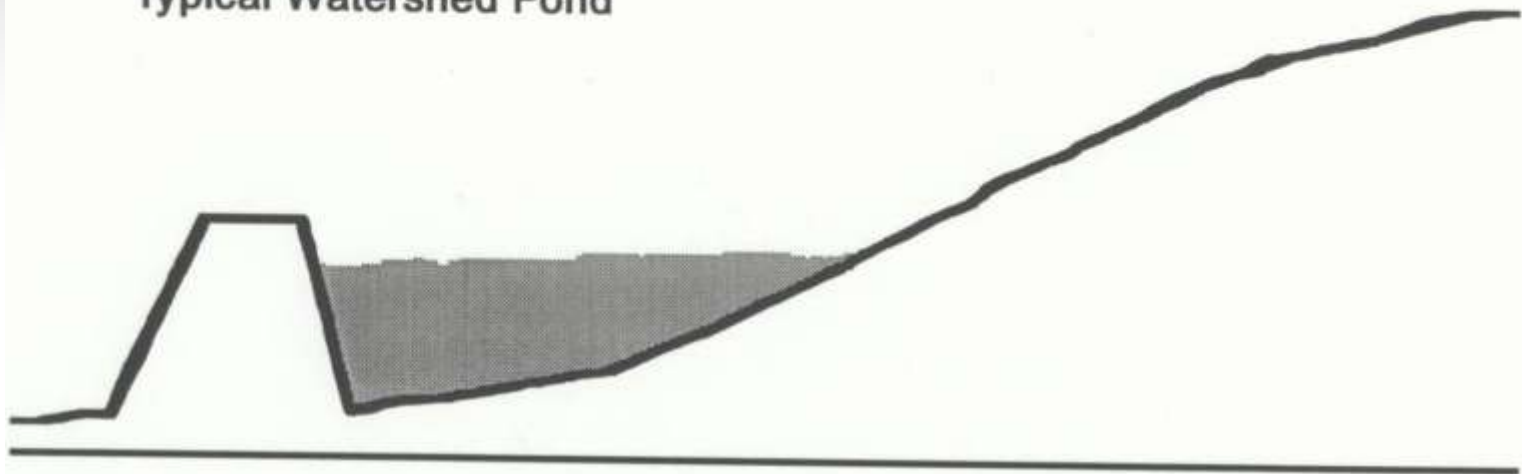
- Treat $\frac{1}{4}$ of problem area
 - Wait 2-3 weeks
 - Treat next section
- 
- A decorative graphic consisting of several overlapping, wavy, light gray lines that flow from the bottom right towards the top right, creating a sense of movement and depth.

2. Know Your Water

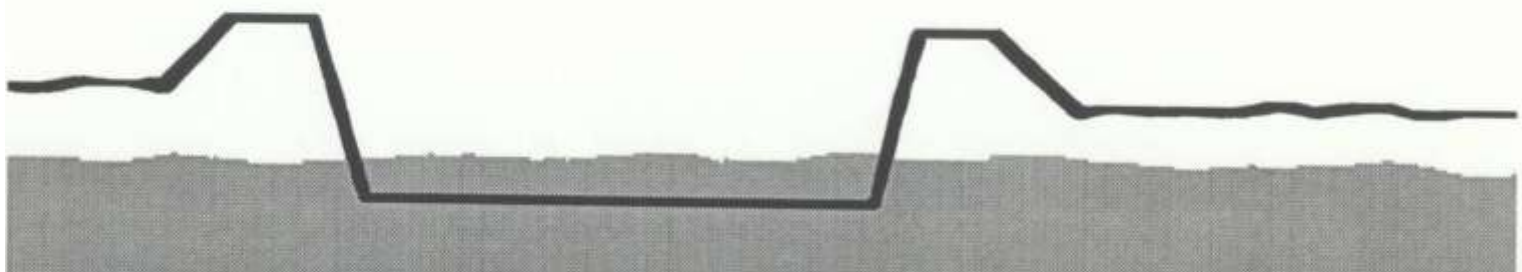
- How does it get to your pond?
 - Watershed problems
- Where does it go?



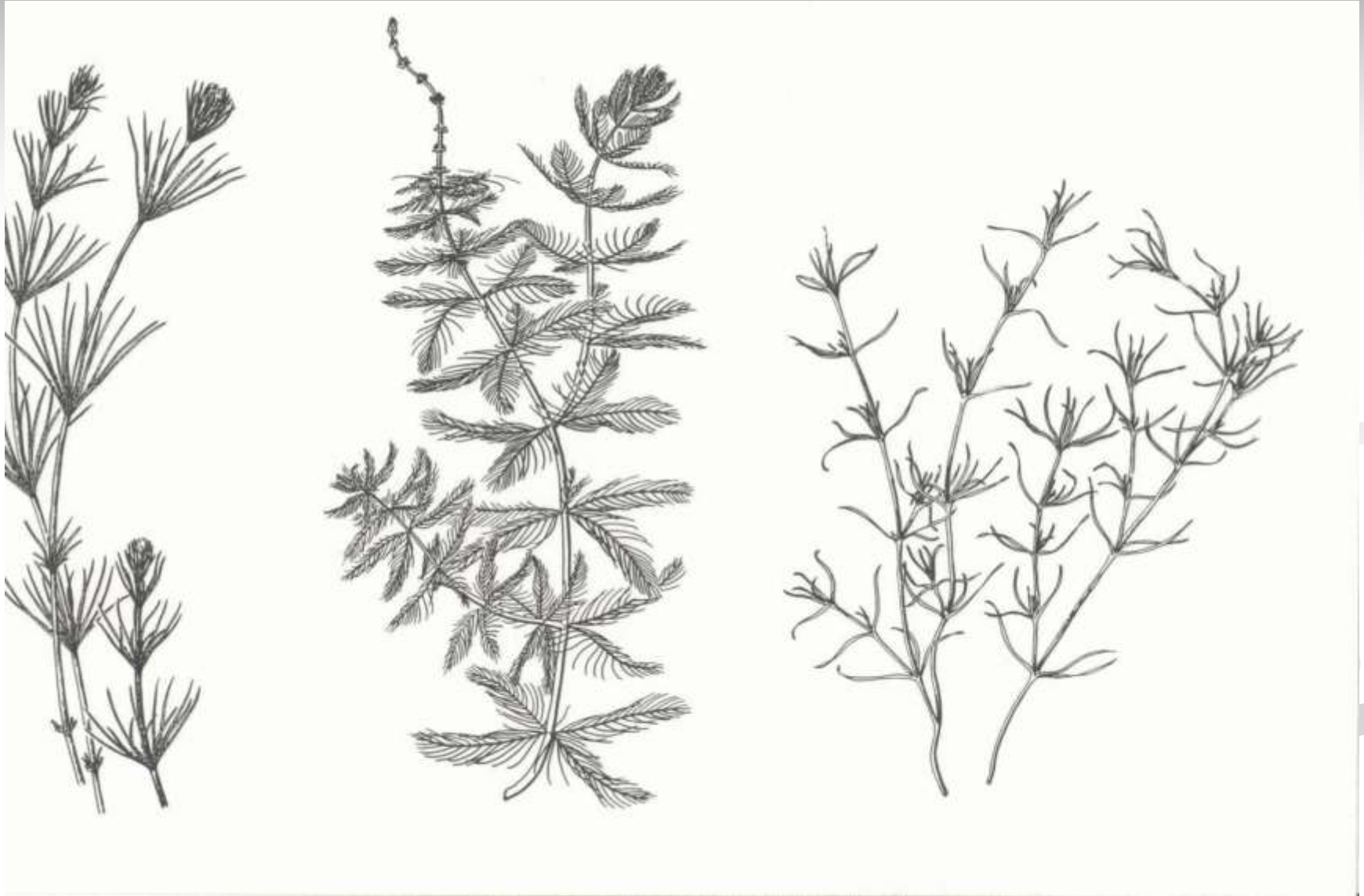
Typical Watershed Pond



Pond Excavated Below Water Table



3. Know Your Plant



Know Your Plant

- Cattails
 - Filamentous Algae
 - Planktonic Algae
 - Creeping Water Primrose
 - Coontail
 - Milfoil
 - American Lotus
 - Southern Naiad
 - Duckweed & Watermeal
- 
- A decorative graphic on the right side of the slide consisting of several overlapping, wavy, light gray lines that flow from the top right towards the bottom left, creating a sense of movement and depth.

A photograph of a dense field of cattails. The plants are tall with long, narrow green leaves and several brown, cylindrical seed heads (spikes) rising from the stems. The background is a blurred green forest.

CATTAILS

Shallow areas – livestock trampling

Rodeo // 2,4-D or Reward

Cut down and cut regrowth



FILAMENTOUS ALGAE

Nutrients – fertilizer,
manure, septic systems

Copper or dye
Nutrient reduction

Phytoplankton



**Nutrients – fertilizer, manure,
septic systems**

**Copper or dye
Nutrient reduction**



CREEPING WATER PRIMROSE

Floating, rooted at shore

White spongy air roots

Leaf shape varies

COPYRIGHT J.R. MANHART



CREEPING WATER PRIMROSE

Pond Edges

2,4-D or Rodeo

Drag pond edges

COONTAIL

Submerged

Reward or Aquathol K or Sonar



A photograph of a milfoil plant, showing its characteristic feathery, finely divided leaves and a central stem. The plant is set against a light, textured background. The text is overlaid on the image.

MILFOIL

2,4-D or Reward or Sonar
Spread by fragments

A photograph of an American Lotus pond. The scene is filled with large, vibrant green leaves and several bright yellow flowers. The background is a dense thicket of green foliage. The text is overlaid in white, bold, sans-serif font.

LILIES ?

AMERICAN LOTUS

No slit in leaf

AMERICAN LOTUS

A photograph of a vast field of American lotus plants. The plants are densely packed, with large, round, green leaves and numerous yellow flowers. The field extends to the horizon under a bright blue sky with scattered white clouds. In the distance, a line of trees and some buildings are visible.

Shallow Areas

2,4-D // Rodeo



FILAMENTOUS ALGAE ?

SOUTHERN NAIAD

Stems

Leaves – narrow & linear

A photograph of a southern naiad, a small aquatic insect, resting on a light-colored surface. The insect is surrounded by a dense network of thin, brown, fibrous material, likely dried plant matter. A US quarter coin is placed next to the insect for scale. The text "SOUTHERN NAIAD" is overlaid in large, bold, black letters at the top. Below it, the text "Reward or Aquathol K or Sonar" is overlaid in bold, black letters. At the bottom, the text "Grass Carp, Dye" is overlaid in bold, black letters.

SOUTHERN NAIAD

**Reward or Aquathol K or
Sonar**

Grass Carp, Dye

DUCKWEED




Sonar // Reward // 2,4-D
Treat damp shorelines

WATERMEAL

Sonar // Reward??



Big Mistakes with Aquatic Herbicides

- Pond Water in Spray Mix
 - No Surfactant
 - Beware of Off-Target Movement
 - Groundwater
 - Flowing Water
 - Water Intakes
- 

Big Mistakes with Aquatic Herbicides

- Illegal Pesticides
- Wrong Time
 - Too Dense
 - Late Fall



Conclusions

- 1. Know your “tool” – herbicide etc
- 2. Know your water – where it comes from and where it will go
- 3. Know your plant

■ Seek advice

- Cooperative Extension Service
- Pond sketch, plant sample or photo, time to discuss