



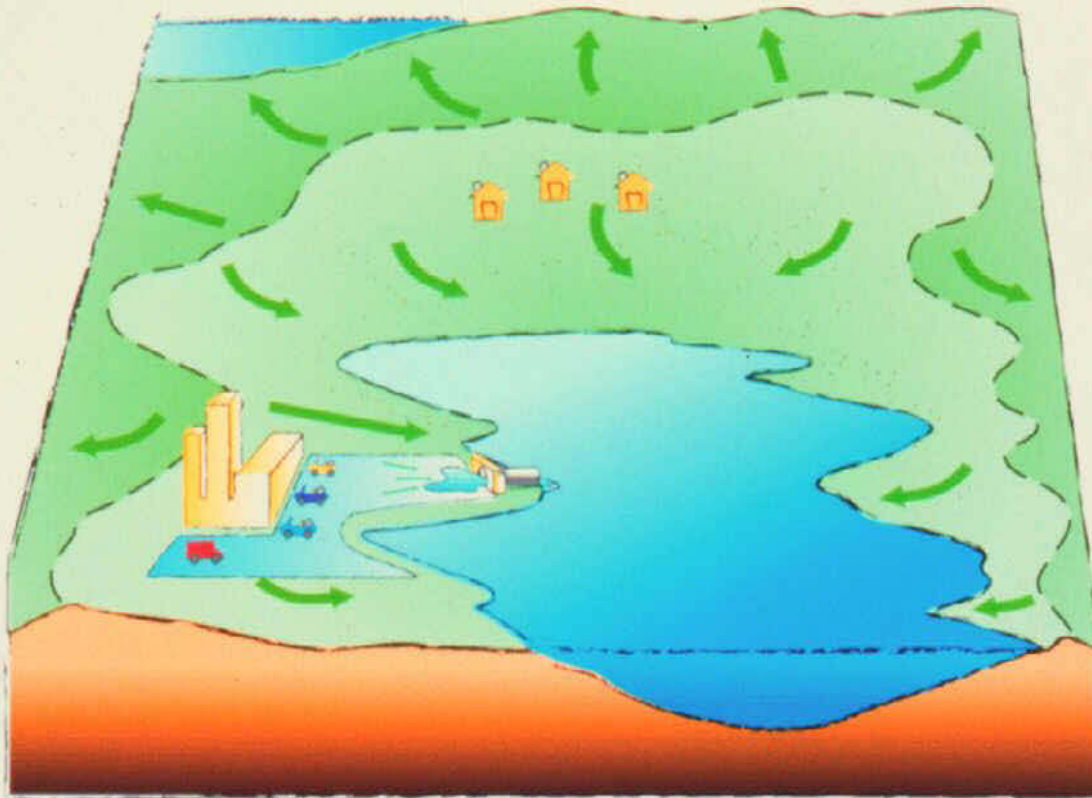
Vegetation Management and Limnology

Brian Nelson
Southwest Florida Water Management District

Desired Pond/Lake Attributes

1. Clear water, no plants
2. Clear water, abundant plants
3. Green water, no plants
4. Moderate water clarity,
moderate amount of plants

Watershed









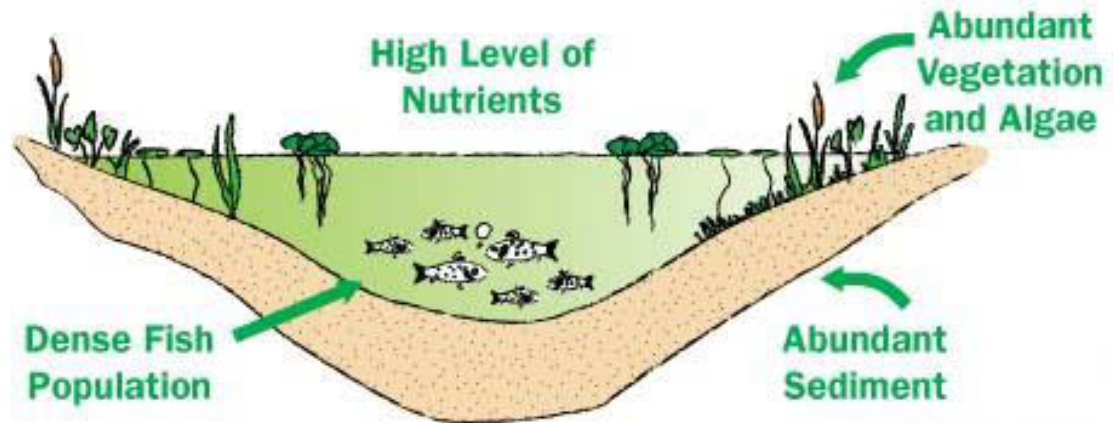


AQUATIC PLANT ABUNDANCE AFFECTED BY

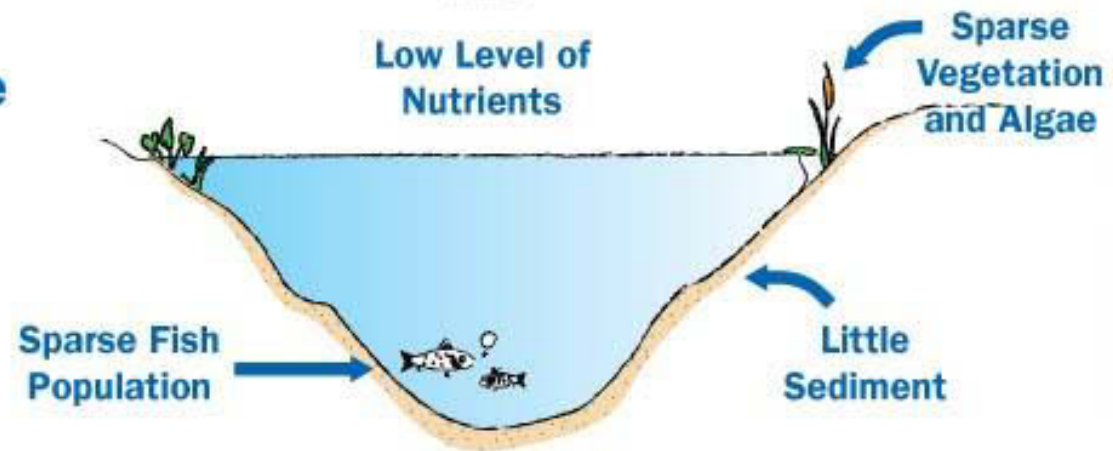
- Lake Morphology (depth)
- Water clarity (dark, turbid, planktonic algae)
- Lake productivity (nutrient levels)
- Water levels (drought, flood)
- Invasive species (hydrilla, waterhyacinth)

Nutrient Levels

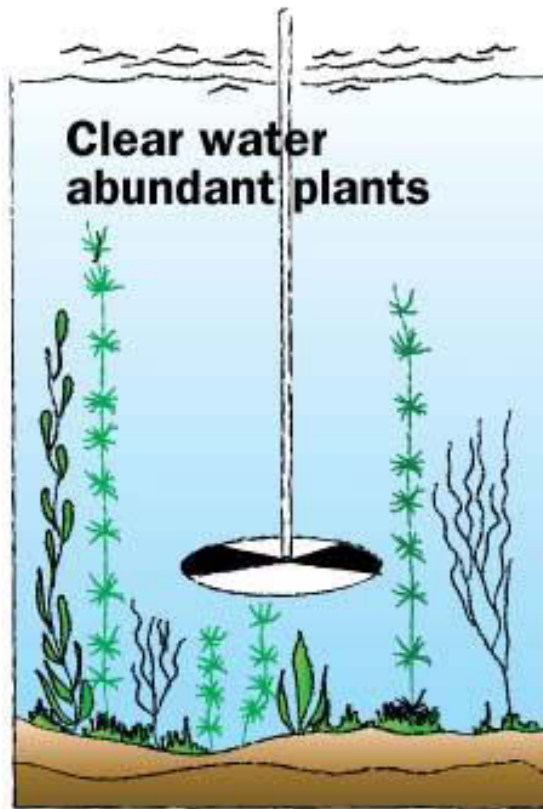
**Productive
Lake**



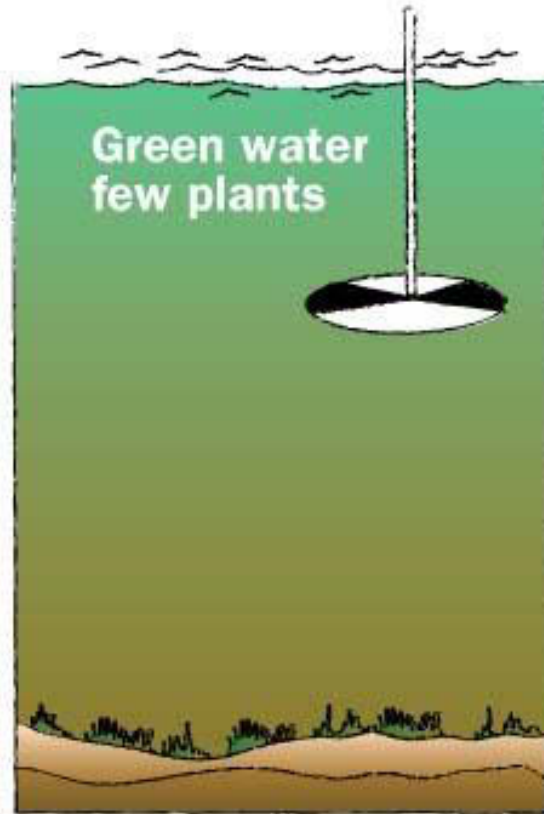
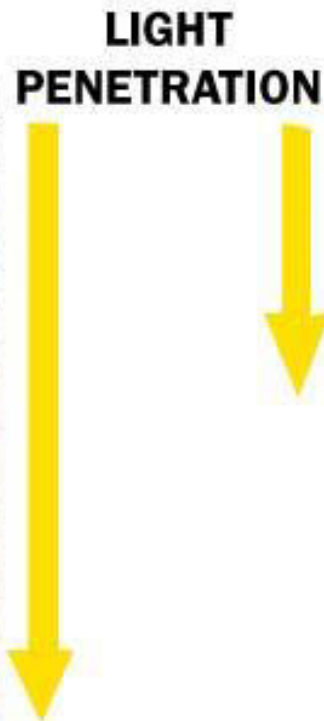
**Unproductive
Lake**



Water Clarity

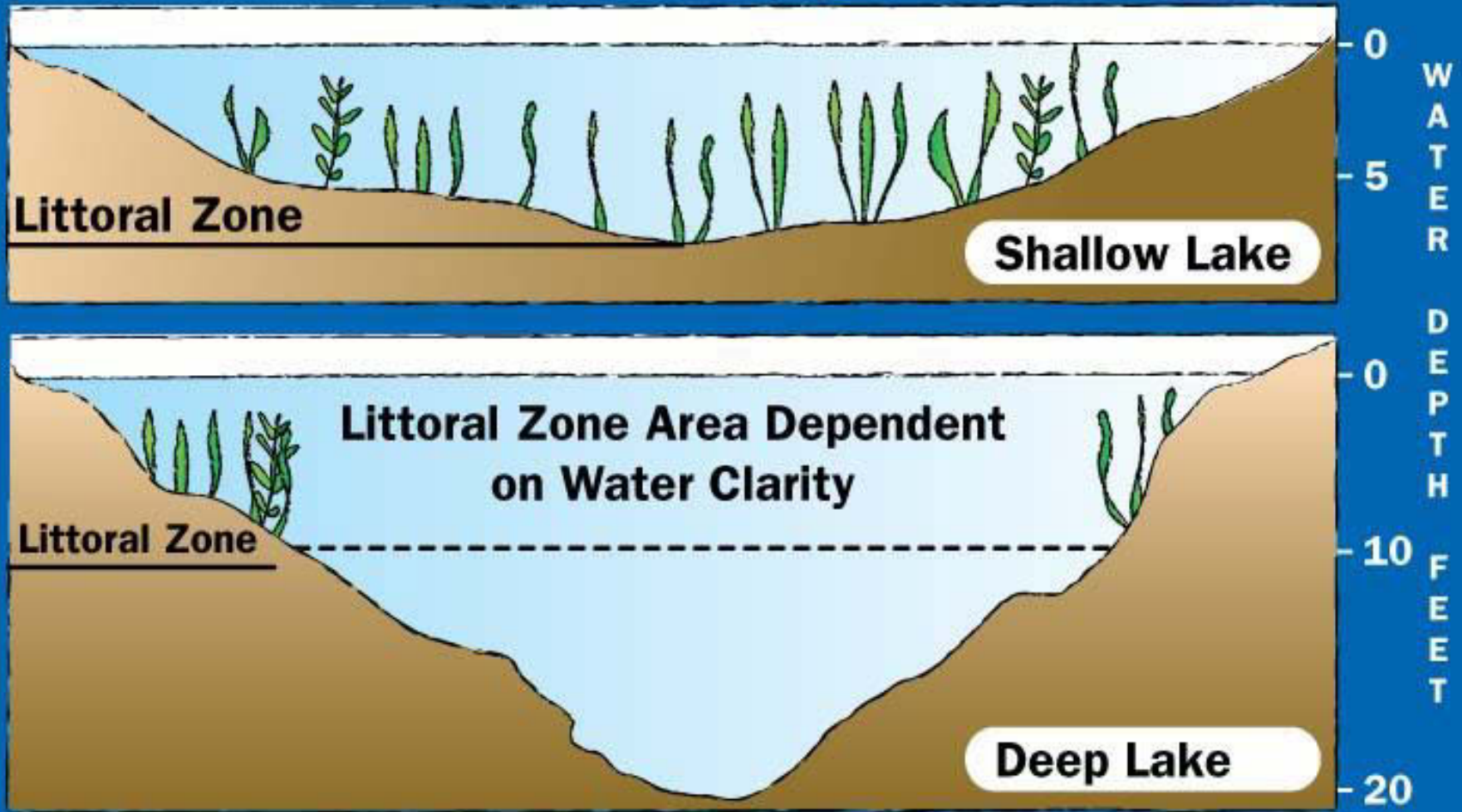


PLANT BASED LAKE



ALGAE BASED LAKE

Water Depth



AQUATIC PLANT BENEFITS

- Water quality
 - Nutrient uptake
 - Reduce turbidity
 - Produce dissolved oxygen
- Shoreline stabilization
- Fish and wildlife habitat
 - Food
 - Shelter
- Aesthetics

Lake Uses

- Fishing
- Swimming/skiing
- Boating/sailing
- Aesthetics/waterfront property value
- Wildlife habitat/hunting
- Irrigation
- Storm water treatment



Multi-Use Considerations

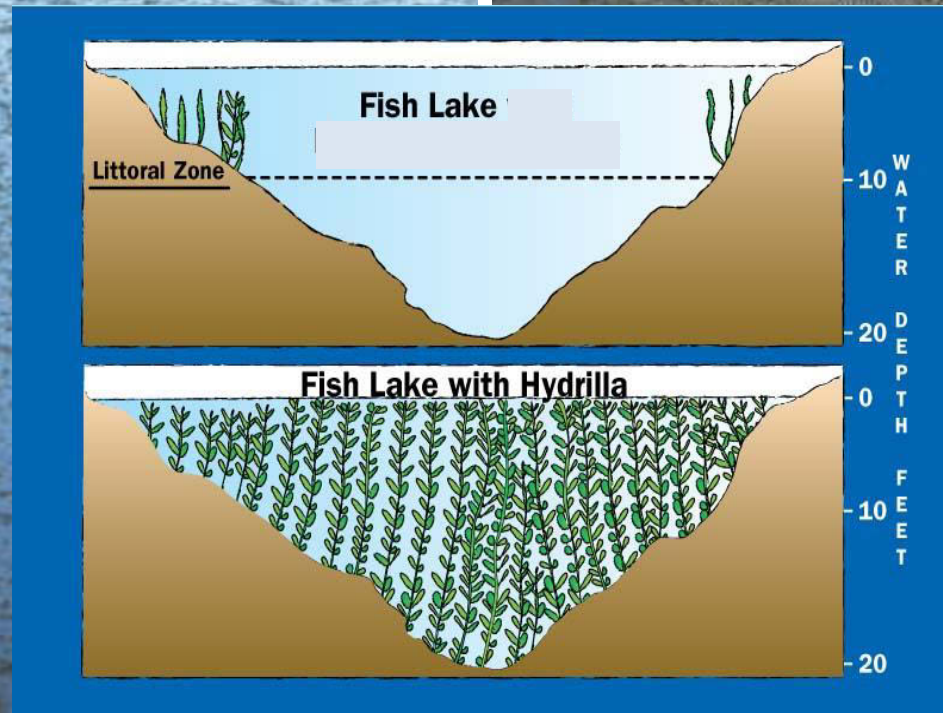
User Group

Duck Hunter
Bass Fisherman
Crappie Fisherman
Swimmers, Skiers
Some Homeowners

Preferred Submerged Vegetation Coverage

The More the Better
20-40%
10-20%
The Less the Better
0% White Sand Beach











Aquatic Plant Control Options

- Mechanical/physical removal
- Environmental manipulation
- Biological control
- Herbicides
- Aeration/Nutrient Deactivation (Algae)
- Dyes/colorants
- Do nothing
- Integrated pest management













VEGETATION MANAGEMENT CONSIDERATIONS

- Are all aquatic plants weeds?
- Realistic expectations
- How/why was the pond constructed?
- Primary uses of the lake/pond
- Cost, length of control, selectivity, predictability of plant management options
- Prevention (nutrients & invasive species)



