

Lakeshore Vegetation

Teacher's Guide

Subject (Body of Knowledge): Science (Life Science)

Big Idea (topics): Ecotone (invasive/native plants); Storm water Runoff; Human Impacts on the Environment

Summary: Students will measure and document the lakeshore vegetation around Alligator Lake Park

Objective(s): After completing the field lab, students will be able to:

1. Classify lakeshore edge
2. Identify two non-native exotic plants
3. List three practices to reduce rapid storm water runoff
4. Describe three nonpoint sources of pollution affecting the lake

Ecosystem(s): Lake (Littoral)

Equipment:

- Measuring wheel
- GPS units
- Plant identification guide
- Tape Measure
- Soil thermometer

Background (Pre-field Classroom Activity):

- **Vocabulary:** Littoral, non-native invasive
- **Other:** Secure permission to access private property prior to the field lab

Procedures (Engage; Explore; Explain; Elaborate; Evaluate):

1. **Engage.** Ask students how land uses can affect water quality. Ask them to complete their lab hypothesis
2. **Explore.**
 - a. Review the student data sheet and use of equipment
 - b. Instruct students on starting point and end point
 - c. Safety precaution. Facilitators should scan the area for hazards prior to conducting the lab
 - d. Check with property owners prior to crossing land.
3. **Explain.** Complete the assessment questions

Sunshine State Standards:

Science: Mathematics: Language Arts: Social Studies:

Lakeshore Vegetation General Information

Student Data Sheet

| | | | |
|-------------------|--|-------|--|
| Full Name: | | Date: | |
| School (teacher): | | Time: | |

Student Hypothesis and Rationale

If private homeowners prefer access to the water's edge more than public lands or farmlands, then I would expect to find (choose one: more or less) natural buffer vegetation on private land, because. . . .

Field Observations/Measurements

| | Public or Private or Other | Lat/Long (start) | Length (m) | Buffer Vegetation and width (m) (natural, mixed, none) | Water inlet (natural or man-made) | Slope (L, M, H) | Exotic Invasive Plants |
|------------|----------------------------|------------------|------------|--|-----------------------------------|-----------------|------------------------|
| Segment 1 | | | | | | | |
| Segment 2 | | | | | | | |
| Segment 3 | | | | | | | |
| Segment 4 | | | | | | | |
| Segment 5 | | | | | | | |
| Segment 6 | | | | | | | |
| Segment 7 | | | | | | | |
| Segment 8 | | | | | | | |
| Segment 9 | | | | | | | |
| Segment 10 | | | | | | | |

Lakeshore Vegetation

Assessment

1. What type of land owner (public, private home, other) had the greatest length of waterfront?

2. What was the average width of buffer vegetation for each land use category (public, private, other)?

3. Did your data support your hypothesis? If not, why?

4. How might the vegetation on the lakes edge be different if the homeowners had small yards?

5. How can the rights of landowners be balanced with the protection of the lakes water quality?

6. Write a new question based on your experience with the topics in this lab.

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Reference

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|  <p><i>Eichhornia crassipes</i> water hyacinth Photo by Ian Richard Copyright 2006, Univ. of Florida</p> |  <p>Water pennywort <i>Hydrocotyle umbellata</i> Photo by Vic Ramey Copyright 2001 Univ. Florida</p> |
|  <p>Torpedograss <i>Panicum repens</i> Photo by Vic Ramey © 2003 University of Florida</p> |  <p><i>Colocasia esculenta</i> 1996 Kerry Dressler</p> |
|  <p><i>Myriophyllum spicatum</i> Eurasian water milfoil Photo by Vic Ramey Copyright 2000 Univ. Florida</p> |  <p>East Indian hygrophila <i>Hygrophila polysperma</i> Photo by Ann Murray Copyright 1999 Univ. Florida</p> |