

Vegetation Profile- Fire dependant community

Teacher's Guide

Subject: Integrated Science (Life; Earth-Space; Physical)

Topic(s): Succession; Fire; Prescribed Burn; Adaptations

Summary: Students will examine fire dependent ecosystems and the concepts of succession and adaptation. They will measure and compare the vertical profile of vegetation in a recently burned area with that of an area free of fire for several years. Special attention will be given to differences in species dominance and diversity and the adaptations to fire and post-fire stages of succession.

After completing the field lab, students will be able to:

Objective(s):

1. Explain the effects that fire has on an ecosystem and vegetation
2. Compare recent and older burn sites

Ecosystem(s): Hammocks; Pinelands; Uplands

Equipment:

- Vertical Profile Board
- Digital Camera
- GPS
- Tape Measure (optional)
- Example cover-board estimates
- Data sheet & clipboard

Background:

- **Vocabulary:** fire dependant, succession, adaptations,

Reference Material: Pine Flatwoods: <http://www.sfrc.ufl.edu/Extension/ffws/ecopf.htm>

American Field Guide: http://www.pbs.org/americanfieldguide/teachers/fires/fires_sum.html

Fire Adaptations <http://www.windowsintowonderland.org/fire/teachers/fireadaptations.htm>

Florida's Fabulous Forests: http://4h.ifas.ufl.edu/curriculum/projects/EnvironmentalEducation/FO_pdfs/4HFOM13.pdf

Project Learning Tree #81: *Living With Fire* (page 311-315)

Project Learning Tree #80: *Nothing Succeeds Like Succession*

- **Equipment Training:** Cover Board

Procedure (Engage; Explore; Explain)

1. Ask students if they have ever seen a recently burned forest and have them explain what it looked like? Ask students to imagine the same place 10 years later without fire. Explain that they will measure one aspect of the series of changes that takes place after a fire.
2. Explain to students that the return of undergrowth after a fire is one of the most obvious and measurable changes. Demonstrate the use of the use of the profile board to the whole group. Use example sheet for cover estimates.
3. Divide the students into 2 groups. Assign one group to the recently burned area, and the other to the not so recently burned area.
4. From the road edge, calculate the percent of the area on each square that is covered by vegetation.
5. Describe the predominant vegetation type (grass, herbaceous, palm-like, shrubs, needle leaved trees, broad-leaved trees).
6. After completing your measurements, switch sites and repeat the exercise.
7. Discuss as a group, fire survival strategies for various plants (i.e., re-seeding vs. re-sprouting).

Note: Staff will flag location for coverboard placement to assure easy access and consistent measurements.

Sunshine State Standards:

Science: SC.D.1.3.1,3,4; SC.D.2.3.2; SC.F.1.3.7; SC.G.1.3.2,3,4; SC.G.2.3.4; SC.H.1.3.7; SC.H.2.3.1; SC.H.3.3.6,7

Language Arts: LA.A.1.3.3; LA.B.2.3.1; LA.C.1.3.1

Mathematics: MA.A.1.3.1 **Social Studies:** SS.A.6.3.2; SS.B.2.3.6; SS.B.2.3.9

Vegetation Profile

Student Data Sheet

General Information

Full Name:		Date:	
School (teacher):		Time:	
Latitude:		Longitude:	

Hypothesis

I expect to find (Choose one: more/less) vegetation percent cover at the (Choose one: recently burned site, or the not so recently burned site) because..._____

Field Observations/Measurements/Data

Recently Burned Site			Not so Recently Burned Site		
Coverboard Section	% Cover		Coverboard Section	% Cover	
1			1		
2			2		
3			3		
4			4		
5			5		
6			6		
Overall dominant undergrowth type:			Overall dominant undergrowth type:		

Other Observations:

Vegetation Profile

Assessment

1. Which site had a greater percentage of the entire vertical profile board covered by vegetation?

2. Which site had a greater density of woody shrubs? Why?

3. What advantages to surviving a fire do mature pine trees have over ground level shrubs during a fire?

4. What advantages do grasses have over shrubs after a fire?

5. What happens if fires are suppressed by people?

Portfolio Journal Prompt

Fifty years ago, fire was viewed as an unnecessary evil and was stamped out whenever possible. Now we have realized that many ecosystems need to be burned regularly. Before you begin writing think about the differences in the two locations in the field. Describe the differences would you see in this area if it were never allowed to burn.