

Name _____

Group Number _____

LAB #2

PLANT CLASSIFICATION: IDENTIFYING PLANT ASSOCIATIONS

Purpose:

To examine a plant association guide that is representative of classification systems used by resource managers. To understand strengths and weaknesses of classification guides and when and how to use them.

Introduction:

Resource managers need to understand the biological and physical resources they manage and how these resources respond to manipulation. The USDA Forest Service has developed a set of Plant Association and Management Guides for each National Forest in the Pacific Northwest. This guide provides information about plant communities including: productivity, recommended species to plant for regeneration, preferred associations for development of recreation activities, and associated wildlife species. It provides regional information about disturbance types, rainfall patterns, and other factors influencing plant community development. We'll use the Olympic National Forest Plant Association Guide to examine several sites in the Capitol Forest.

On-Site Activity:

We'll visit two sites in the Capitol Forest

At each site we'll break into groups and key out the plant community:

- (1) Select a plot that is representative of the forest around you (do not use exceptionally dense or sparsely vegetated sites unless this truly represents your forest site). **Sample plants using a 500 m² plot** (12.6 m). Measure and **MARK** your plot. Estimate percent cover to the nearest 1% up to 10% (*e.g.* 1, 2, 3, ...) and to the nearest 10% from 11% to 100%. (*e.g.* 10, 20, 30...) for tree, shrub, and herb species.
- (2) To train your eye to estimate percent cover, create 2 circles of smaller diameter inside the 500 m² plot. Using the same center point, lay out a circle with a radius of 1.29 meters (4.1 feet), which represents 1% coverage. Lay out another circle with a radius of 2.82 meters (9.2 feet) to represent 5% coverage. These plots are only to help you visualize 1% and 5% cover.
- (3) Re-check to be sure your site is a good representation of the surrounding stand in terms of species representation and cover estimation. Work through the key to a preliminary classification. Review the classification description and see if it matches what you have found on this site.
- (4) If regeneration is not present on your plot, observe areas outside your plot but within the stand for regeneration presence.
- (5) Compare total overstory cover that you calculate from summing up estimates using your eyes (ocular) for all of the tree species with the estimate of cover taken using the spherical convex densiometer at the center of your plot (calculate number of cross-hairs intersecting cover and divide by the total number of cross-hairs to estimate percent cover).

Assignment:

In addition to keying out the plant associations in the field, also key out the sample plant association attached to this assignment. Write up a technical laboratory report summarizing the activities, sampling, and results of this laboratory exercise. Please write so that someone who was not along on the laboratory would understand where you went, what you did, why you were there, and what you learned or found. Your report should be typed, double-spaced (12 point font), and 2-3 pages in length. The report is due at the beginning of your lab period next week (August 12). Included in your report should be:

Introduction:

Describe the purpose of this laboratory and the sites we visited (why were we there?).

Site Description:

Describe the sites that we visited and sampled. Address the following questions adding additional information as appropriate: Where is the study site? What is the dominant vegetation form? What types of over and understory vegetation did you observe? What are the major topographic characteristics of the sample sites?

Methods:

Succinctly state the objectives of the lab. Describe what information you collected and how you collected it.

Summary:

What were your results? Be sure and answer the following questions within the body of your summary:

Questions for Summary:

1. How applicable is the plant association system for sites which are managed or frequently disturbed?
2. Was there any variability among classifications other groups keyed out for each site? What reasons can you suggest for variability within a site?
3. The Olympic National Forest Plant Association and Management Guide considers management characteristics for wildlife habitat. Which species of wildlife are considered? Which species are not considered? How do you think an understanding of plant species abundance and composition assists wildlife biologists with management objectives?
4. Did you observe any similarities in the overstory species composition among the sites we visited? Among the understory species? What environmental factors could cause differences in plant species composition on a fine scale (within each site) and on a broad scale (among the sites we visited)?
5. What types of disturbances have occurred in the past in each of the forest stands you visited, what evidence did you see? What types of disturbance might you anticipate in the future in each site, and what response to disturbance might occur - in terms of structural or compositional change of forest vegetation?
6. How do estimates of overstory cover compare when using ocular estimates vs. when you use the spherical densiometer?

SITE: _____

NAME: _____

Site Description:

Elevation: _____

Aspect: _____

Slope: _____

Topography: _____

Horizontal Configuration: _____

(Ridge, Upper-slope, Mid-slope,
Lower slope, Bench, Stream bottom)

(Convex, Straight, Concave, Undulating)

Trees

Name	% canopy coverage

DENSIOMETER ESTIMATE OF OVERSTORY COVER _____

Shrubs

Name	% coverage

Herbs

Name	% coverage

Classification: _____

Does it match the description in the guide?, what are the differences? similarities?

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Association Comparisons Within Sites

ASSOCIATION

	Site 1	Site 2
Group 1		
Group 2		
Group 3		
FINAL*		

* What is your group's FINAL conclusion about the plant association for each site, based on the data other groups have provided?

PLANT ASSOCIATION LAB: Sample Association to Include in Your Report

Vegetation:

Overstory:

Large, old Douglas-firs dominate; western hemlock sparse

Understory:

Trees: western hemlock seedlings 10% cover

Shrubs: salal 20% cover, dwarf Oregon grape 10%, vine maple 10%, red huckleberry present, but minor

Herbs: swordfern 20%

Questions:

Association Name: _____

Vegetation:

1. What other trees might you expect to find on other sites within this association?

2. What shrubs might you expect to find? Is the shrub layer likely to be dense, moderate, or sparse?

Site Characteristics:

1. Briefly describe the environmental characteristics likely to be found on this site.

2. Assuming we are on the Olympic National Forest, where is a likely location of this site?

Productivity/Management:

1. Briefly describe this stand's potential for wildlife.