

### *Study Questions—Week 3*

#### Forests Through Time and Space: Sept 14, 2004

Due October 18, when we will be discussing your answers in class. These do not need to be typed, and you will not be handing them in now (but they will go into your portfolio for us to assess at the end of the term). Don't forget to flip this page over to find the Quiz Questions for week 3.

1. Describe the three causes of amphibian declines in Latin America that you believe are the most important, and explain why.
2. List and explain five examples of how closely-related species can live in the same place (sympatry), yet be isolated from one another such that they do not mate.
3. Defend the following statement: If a trait is complex, variable in extent, and persistent, that trait is likely an adaptation. Be sure to defend all three claims inherent in the statement.
4. What would the likely effect of cutting the forest around Spoon Creek be on the three amphibian species that we were looking for? Be precise regarding why you answer the way that you do.

### Quiz Questions—week 3

#### Forests Through Time and Space: October 14, 2004

These questions are due in class on October 18. Type your answers. Do not discuss your answers with anyone once you have begun working on them.

1. Pick a species that we have seen, or is at least relatively common, in the Pacific Northwest, and invent plausible examples of mutation, genetic drift, gene flow, and selection acting on a population of that species.

2. To what do you attribute differences in amphibian densities between what we found at Spoon Creek, and what Adams and Bury report in their 2002 paper? Describe the three factors that you find most relevant, or make a comprehensive list of all the factors that you think contribute. Explain your reasoning.

3. Given the following tree data for the overstory of a 0.1 acre fixed plot, calculate the following summary data.
- Total basal area for each species ( $\text{ft}^2/\text{plot}$  and  $\text{ft}^2/\text{acre}$ ) (3 pts)
  - Percent of the total basal area for each species. (1 pt)
  - Average and standard deviation for the DBH of each species. (2 pts)
  - Total number of trees/acre for each species. (1 pt)
  - Which tree species shows the greatest variation in diameter? (1 pt)
  - Which tree species is the most dominant? Why? (2 pts)

Species	DBH (in)
Douglas fir	13.5
Western Hemlock	22.8
Douglas fir	19.3
Douglas fir	16.1
Western Hemlock	20.6
Western Red Cedar	20.3
Western Hemlock	20.9
Douglas fir	16.0
Western Hemlock	19.5
Western Red Cedar	17.4
Western Red Cedar	15.9
Douglas fir	10.6
Douglas fir	19.0