

Freshwater Ecology (BIOE 155) Assignment #1

Lake Washington's recent history; W.T. Edmondson

The objective of this homework is to get you thinking about the dynamics of eutrophication and Lake Washington by reading the work of W.T. Edmondson. Dr. Edmondson was a professor at the University of Washington, and his science had quite an influence on the management of Lake Washington. The material in this homework is likely to be on the mid-term exam.

I. Please read the following paper. The PDF is on the class website.
(<http://bio.research.ucsc.edu/people/moore/BIOE155.html>)

Edmondson, W.T. 1994. Sixty years of Lake Washington: a curriculum vitae. *Lake and Reserv. Manage.* 10 (2): 75-84.

II. Please answer the following questions:

1. List 3 anthropogenic alterations and their dates which have profoundly influenced the biology of Lake Washington (between 1900 and 1994), according to W.T. Edmondson.
2. Daphnia have appeared and disappeared in the last century in Lake Washington. They are a center piece of the lake's food web.
 - a. Describe Daphnia's role in the food chain (i.e. what eats them and what do they eat)?
 - b. What factors did Edmonson propose that regulate Daphnia in Lake Washington?
 - c. What factors did not have an effect on low levels of Daphnia?
 - d. What data are not shown in figure 2 (Edmondson 1994, p.78) or in the text but that may help further convince you of Edmonson's explanation of Daphnia population changes?
3. What characteristics of Lake Washington may have contributed to its rapid recovery from eutrophication?
4. Write a question you have about the work presented in the papers.

WHEN AND HOW TO SUBMIT YOUR ANSWERS

When: Tuesday, Oct. 20, at the beginning of class.

Where: At the classroom

How: Bring a hard copy of your answers. Please don't forget to write your name at the top the first page.

This assignment is worth 3% of final grade.

Let us know if you have any questions.

jwmoore@biology.ucsc.edu; osterbac@biology.ucsc.edu