

## Aquatic Communities –Ecology I: Characterizing the Lake Ecosystem

Spring 2020 – All samples and data from Lake Raleigh, NC

### Lake Lab Assignment (10 pts):

- 1- Students analyze plankton at assigned depth for each table & takes pictures of most frequent organisms.
- 2- Student groups help fill out table on the board for each depth.
- 3- Make a bar graph of all the plankton data of Autotrophs (A)/Heterotrophs (H) (one bar for each H & A) for each depth (x-axis). On the y-axis, they would plot frequency of organism type. Follow the guidelines for best practices in graphing.

NOTE: Indicate the **compensation depth** on this graph as a dotted line, for example. All tables make their own graph to present (see next step). Below this graph, students **add pictures** (taken with a microscope digital camera) of at least 2-3 of the most common organisms at their assigned depth, corresponding to H and/or A.

- 4- Presentation of data. What to include:
  - a. Graph to demonstrate A to H frequency ratio at the assigned depth and show biodiversity through their pictures, including characteristics that would make them H or A.
  - b. The overall trend of organisms found and how it correlates with the expected organisms (frequency of H and/or A) for that particular depth of the lake ecosystem.
  - c. The relevance of various physical parameters to the plankton data. NOTE: these physical parameters are listed below and are based on the introductory background material and data presented during lab and in the lab manual:
    - i. compensation depth (calculated from average Secchi depth) and dissolved oxygen
    - ii. possible pH changes related to photosynthesis/respiration and time of the day
    - iii. impact of weather
- 5- Each table will create a group document to email to their TAs that includes a copy of their complete graph and written relevance of the physical parameters mentioned above into their TA before leaving lab. Each student should also retain a digital copy of the completed assignment.
- 6- Each student answers all the end of unit questions in the lab manual pages 83. The group will answer **ONE** of these questions during their group presentation (but this is not pre-assigned).