# Lab 6 Response: Ecosystems of Freshwater Ponds and Wetlands

## Part 1: The Plankton Community

### Table 6.1: Habitat description and phytoplankton data

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Observation Date | | Observer Name(s) | | |
| Study Site Name and Description of Pond or Wetland | | | | |
| Microhabitat Description | | | | |
| **Type of Phytoplankton** | **Number Observed** | | **Type of Zooplankton** | **Number Observed** |
|  |  | |  |  |

### Questions for Part 1

1. What types of phytoplankton were most abundant in samples? Were they present in all samples taken from that habitat? Explain.
2. What types of zooplankton were most abundant in samples? Were they present in all samples taken from that habitat? Explain.
3. How do you think plankton populations change with the seasons? What are environmental factors that largely direct changes in plankton populations?

*If more than one site was sampled, answer the following:*

1. Which type of habitat or source of water seemed to have the greatest biodiversity? Which had the least? What can explain differences or similarities in biodiversity? (Consider any chemical measurements taken.)

## Part 2: Invertebrates of the Benthic Community

### Table 6.2: Habitat description and macroinvertebrate data

|  |  |  |
| --- | --- | --- |
| Observation Date | Observer Name(s) | |
| Study Site Name and Description of Pond or Wetland | | |
| Microhabitat Description | | |
| Air temperature: | | Water temperature: |
| **Macroinvertebrate Taxa** | | **Number Observed** |
|  | |  |

### Table 6.3. Results of aquatic invertebrate sampling across all samples.

|  |  |  |  |
| --- | --- | --- | --- |
| **Macroinvertebrate Taxa** | **Number Observed** | **Tolerance to Pollution1** | **Habitat/Microhabitat Description2** |
|  |  |  |  |

**1***Suggested categories for Tolerance to Pollution: intolerant, moderately intolerant, tolerant, very tolerant.* **2***Examples of habitat differences are marsh, swamp, or retention pond. Microhabitat differences may relate to water depth, type of substrate, and presence of vegetation.*

### Questions for Part 2

1. Which habitats or microhabitats supported (a) the greatest number of invertebrate species (greatest species richness)? (b) the greatest number of invertebrates overall?
2. Were most of the organisms sampled typical of polluted or non-polluted systems? Explain in terms of habitat or microhabitat differences.
3. Describe the landscape surrounding the aquatic habitat you sampled. How might this affect the aquatic organisms, including invertebrates?
4. What other data may have been useful in evaluating habitat characteristics that could influence the composition and abundance of invertebrate species? Explain.

## Part 3: Water Quality Assessment

### Table 6.4. Results of water quality tests across all samples.

|  |  |  |
| --- | --- | --- |
| Observation Date | Observer Name(s) | |
| Study Site Name and Description of Pond or Wetland | | |
| **Test Chemical** | | **Amount (units)** |
|  | |  |

### Questions for Part 3

1. Compare the results of the chemical factors you tested between habitats. Describe similarities and differences.
2. Read about how these chemical factors affect aquatic life. Were the amounts of any of the factors enough to significantly impact life in the habitats you sampled? Explain and provide your source(s).
3. Compare your chemical testing results to your sampling results for aquatic organisms. Explain if these results match what you expected, according to your response to the previous question.
4. What human-made constructs are near the water source? What human activities are potentional sources of chemical or other types of water pollution in this area?