

Ecology Report Recipe Exercise

Let's bake a delicious aquatic insect cake!! We will build the basic structure of our report following the guides below.

***Develop a succinct definition of each report section under the General Outline. Then provide specific key points that will be included in our report for each section.**

You will complete this as a group. But, you must upload an individual copy to the D2L assignment folder for participation marks. You should refer to journal articles found on <https://esajournals.onlinelibrary.wiley.com/>. Pick any article as reference. There is also a complete breakdown of a journal article in the 'Rules for Writing a Formal Report' located on D2L.

Introduction:

General outline for a typical intro (remember to start broad and narrow to more specifics):

- Include general information about the territory of research
- Generate hypothesis and theory
- the purpose for which the research was conducted
- The importance of carrying out a study

Key points for OUR study. This should include the background info required for the report. Be specific here and include all major concepts that may be looked at:

1. Classification of lotic and lentic ecosystems.
2. Organisms found in a specific habitat, including their species and families.

Study Area and Methods:

General outline for a typical methods section:

- Map and location of areas of research
- What equipment was used for data acquisition?
- Where, when, and how the data were collected?
- The significance of the types of equipment used?

Specific details needed for OUR report:

1. Wednesday, October 5th at 9:00 am for the lotic system, (Mcintyre River)
2. Wednesday, October 5th at 10:30 am for the lentic system (Lake Tamblyn)
3. Equipment: D-net, Square net, Ekman bottom grab, Dissolved oxygen indicator, pH indicator, Meter stick, Measuring tape, Flow probe, Thermometer

Results:

General outline for a typical results section:

- All of the biotic and abiotic data gathered during the study
- Data reporting through figures and graphs
- Summary of findings

Specific results/figures needed for OUR report (you may want to revisit this question at the end):

1. Biodiversity in the river and in the lake
2. Adaptations of different organisms to a particular habitat over a period of time
3. Graph of the diversity of species at edge and center

Discussion:

General outline for a typical discussion section:

- Review and explain the findings
- Describe the significance of the research in ecology and society.
- Explain how it relates or does not connect to the objective, hypothesis, and theory in the introduction.

Specific details for OUR report:

1. State specifically what was discovered.
2. Show the variations in species depending on geographical locations
3. Conclude observations from graphs and figures

Abstract:

General outline for a typical abstract:

- Explain the reason why the research was done.
- Summary of the paper
- Major conclusions after the research

Specific details for OUR report:

1. Diversity of species in both lotic and lentic habitats
2. Interpretation of data to present an appropriate hypothesis.
3. Include main ideas (purpose, methods, equipment used)

References:

Provide examples of appropriate reference sources. Are they primary sources?

1. Resources from Lakehead library

2. Google Scholar

Each group member must provide at least one reference that is appropriate for OUR study (in APA format):

1. Ricklefs, R.E., R. Relyea, and C. Richter. 2015. Ecology: The Economy of Nature (Canadian Edition), Seventh Edition. W.H. Freeman and Company, New York, New York, USA
2. Macroinvertebrates.org Atlas of Common Freshwater Macroinvertebrates of Eastern North America by Macroinvertebrates.org (n.d.).

What are some examples of plagiarism?

1. Using someone else's words without citing sources or acknowledging them for their contributions
2. Not referencing in the right manner.
3. Copying information from a resource and not giving them credit for it.

Developing a Research Question:

Refer to our data file for information

What abiotic factors are available for our study?

1. Flow
2. Dissolved oxygen
3. Depth
4. Description of the substrate
5. Water level
6. Temperature
7. Transparency

What biotic information do we have available for your study (be specific)?

1. Macroinvertebrates that were collected

How can our insect data be interpreted to create different categories of insect abundance?

1. Insects can be classified into different orders and families based on their physical morphology.
2. Different trophic levels
3. Whether they belong to lentic or lotic systems.

Combine the factors above to create research objectives for your report. Many studies have several objectives, asking subsequently more detailed questions. Create at least four questions. Questions should include both biotic and abiotic factors. *Complete this task individually.****

Start by writing the objective(s) out by hand.

- 1. The objective of this study is how to work in groups and compile data.**
- 2. The objective of this study is to identify the aquatic invertebrate species.**
- 3. The objective of this study is to list out the trophic level organization of macroinvertebrates in different lotic and lentic ecosystems.**
- 4. The objective of this study is describe the adaptations of organisms in their habitats.**