

Biodiversity and Ecosystem Services

Lecture 7 Writing Exercise





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Writing Exercise

1) Develop your own Research Idea

- Build a team (2 people/team)
- Topic: Biodiversity and Ecosystem Services
- Define your own interest:
 - Pick a topic that we discussed in class or something you read on the web/news that YOU think needs more attention
- Review the literature:
 - Go to the ISI web of Knowledge or library and find out what is already known.
- Define your specific research question
- Think about a small experiment that could answer this question



Writing Exercise

2) Write an Outline

- Part A (2 Pages): Background
 - Describe the context of your question: What is the overall topic and why is this relevant?
 - What is known, what is unknown about your topic?
 - What is your specific question and why is it important to answer it?
- Part B (1 Page): Experiment
 - Describe a short Experiment/Study that could answer your question
- Part C (1 Page): Executive Literature Summary
 - Give an executive summary of the existing literature that is related to your question



Writing Exercise

3) Write a Proposal

- Use your outline to formulate your question
- Total of 4 Pages (A: 2 Pages, B: 1 Page, C: 1 Page)
 - 12 pt, Times New Roman
 - Line Spacing 1.5
 - Text Includes Title and References
- Cite Original Literature (min. of 5 original papers)





What is the bigger picture/problem?

→ e.g. global loss of biodiversity affects ecosystem services

Where is the specific problem?

→ e.g. loss of biodiversity is likely to affect nutritional value of mountain meadows

What is known about this problem and what is unknown?

→ e.g. studies in the US have shown this, we don't know if it is also a problem in EU/Switzerland

Your Question/Hypothesis:

→ Does the loss of plant species diversity affect the protein content of hay harvested from Swiss mountain meadows?



Important: Text should be like a funnel:

→ Start broad, become more specific with each paragraph

What is the overall problem?

Where is the specific problem?

What is known and what is unknown?

Your Question/Hypothesis:





Structure your text:

→ Each section should be a separate paragraph

What is the overall problem?

Where is the specific problem?

What is known and what is unknown?

Your Question/Hypothesis:





Common mistakes

- Question asked is too broad (don't try to explain the world)
- Background given is too detailed (no bigger picture)
- Unclear purpose (unclear why you want to do this study)
- Confusing structure



2) Your Question $\rightarrow \rightarrow \rightarrow$ Your Experiment

Explain and justify overall experimental setup

→ e.g. experimental grasslands, xx number of species, ...

Give information on the analyses you will do

→ e.g. total above ground biomass, C/N ratio, protein content, ...

Provide timeline

- → e.g. grasslands will be established in 4/2011, harvest in 6/2011
- → can be done in a table



3) Executive Literature Summary

Find the 5 most relevant papers that have addressed the question you are interested in.

Summarize the key findings of these papers

- → e.g. effects of plant BD on productivity and nutrient use have been widely observed in different grassland ecosystems
- → e.g. biomass nutrient/protein content increases with BD

Conclude with a summary statement that highlights why your research builds on existing knowledge, yet will provide new insight

➡ e.g. existing research stresses the relevance of plant BD for fodder quality and underlines the need to address this question in the contet of Swiss grasslands.



Structure your text: Paragraphs

- A paragraph should:
- start with a headlining sentence:
 e.g.: Biodiversity influences the functioning of ecosystems
- → have a body that explains the headline and prepares the reader for the message that you want to bring across:
 e.g.: Experimental studies have shown that Give examples
- → end with a take home message:
 - e.g.: The examples given above illustrate that the global loss of biodiversity is likely to have dramatic effects on the services provided by ecosystems ...
- → be concise and does not jump thoughts



Structure your text: Paragraphs

Test the quality of a paragraph:

- → What is it that I want to explain?
- → Why is this paragraph important for the main message of my proposal?
- Does it help to convince the reader that the question that I ask in the research proposal is important?
- → Is it clearly structured (headline, body, take home message)?
- → Is it connected to the previous paragraph in the text?



How to Write a Research Proposal

References

Cite you references properly!

→ Various styles exist, chose one you like and stick with it

• In text citations:

1 author: (Baldwin, 2009)

2 authors: (Baldwin & Miller, 2008)

3 authors: (Baldwin et al. 2005)

• Bibliography:

Journal Paper: Baldwin KA, Miller ST & Smith RT (2009) *Biodiversity affects ecosystem functioning in Grasslands*. Oecologia 98: 233 - 245.

Book chapter: Kahmen A and Buchmann N (2007) *Addressing the value of biodiversity for ecosystem functioning using stable isotopes*. In: Dawson TE and Siegwolf R (Editors) Isotopes as indicators of ecological change. Elsevier Academic Press, San Diego, USA, pp. 347-359.