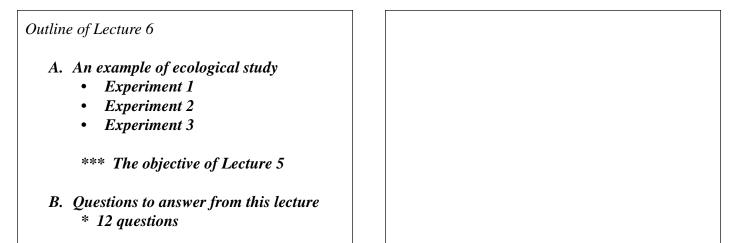
## **Ecological Studies**



\*\*\*The objective of this lecture is to discuss how the experimental method often works in practice (how observation leads to hypothesis testing) and how it often occurs in incremental steps.\*\*\*

A. An example of ecological study

Experiment 1
What is the effect on the aquatic insect (a caddisfly) *Helicopsyche borealis* on algae, and vice versa?
Experiment 2

Validation of experiment 1 and establish underlying cause of the observed effect.

• Experiment 3 Validation of experiments 1 and 2 at larger scales.

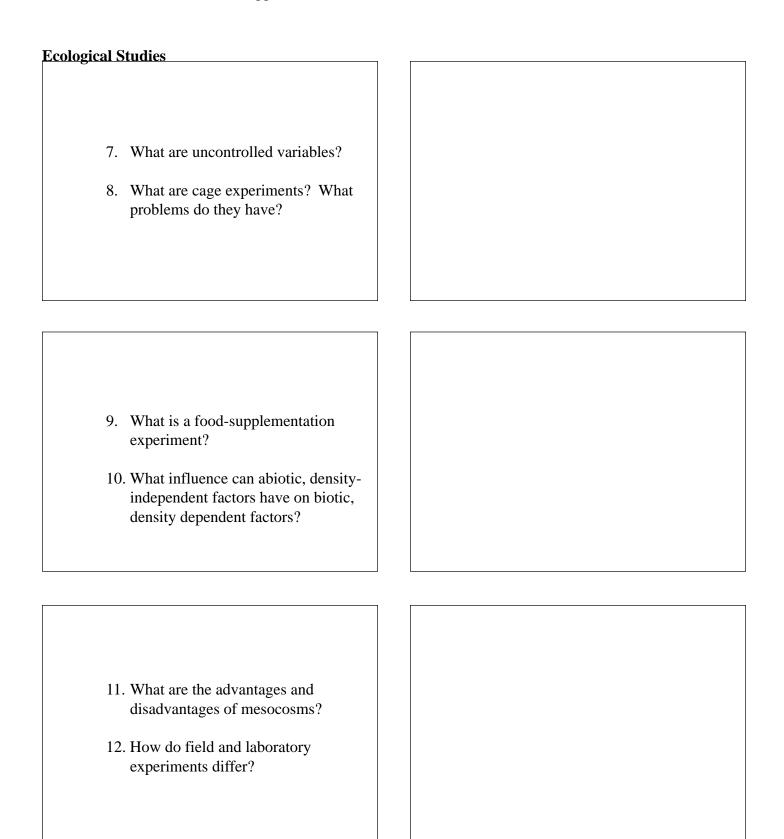
## **Ecological Studies**

- B. From this lecture, be able to answer the following questions:
  - 1. Who is *Helicopsyche*?
  - 2. What is benthos?

- 3. What is periphyton?
- 4. What are pilot or reconnaissance studies useful for? Why do we conduct them?

- 5. What are exclusion experiments?
- 6. How do we determine gross primary productivity / net primary productivity? Productivity is the rate of accumulation of biomass. What is the difference between gross and net?





13. What about interspecific interactions involving two or more species? What are the different types of effects on the species involved? ("+" = benefit, "-" = detriment, "0" = no effect)

Mutualism (+,+) (both organisms benefit)

Commensalism (+,0)

Neutralism (0,0)

Predation, Parasitism (-,+)

Competition (-,-)



