Exploitation

Lecture outline
- Types of exploitation
- Herbivory
- Predator-prey cycles
- Importance of immigration and refuges
- Overall importance

Some types of exploitation
- Living food
- National Geographic-type of predation
- Cannibalism
- Herbivory
- Parasitoidism

Herbivory in streams
- A persuasive pattern

How do you figure out if a consumer is important?

A picture is worth a thousand words (or at least one graph)
Predator-prey cycles
- 9-10 yr snowshoe hare and lynx cycles
- Are they linked?

Hare-lynx (1)
- A closer look
- But, still just a pattern

One BIG experiment
- Fence around 1 km² plot in the Yukon

Hare-lynx (2)
- 8-yr experiment
- 2000 field crew

Results for Lotka-Volterra predator-prey equations

Theory meets reality

Charles Krebs

Fig. 14.14

Fig. 14.15

Fig. 14.17a

Fig. 14.19
Refuges and immigration in action

- Huffaker’s oranges (1958)

Prey: six-spotted mite

Predatory mite

A complex array of 130 oranges with numerous barriers of thorny jujube and about 5% of the area of each orange exposed to attack by mites.

Fig. 14.20

Predation on cicadas

- Periodical cicadas
- 13 or 17 yr cycles

Fig. 14.22

What’s the refuge?

Percentage killed by predators

Fig. 14.23

Why effective?

Fig. 7.22

One last refuge

Fig. 14.24

Do predators regulate prey?

WOLVES & MOOSE of Idaho Region

Fig. 14.24
Landscape of fear

- What happens if you glue a spider's mouthparts shut? Are they still a predator?
- Trait-mediated indirect interactions (TMII)

Predator-prey adaptations

Batesian (+, -) or Müllerian (-, -) mimicry?