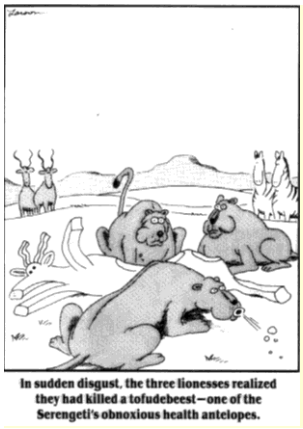
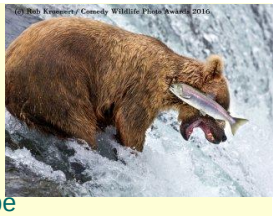


Exploitation

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

Spit?

Herbivory in streams

- A persuasive pattern

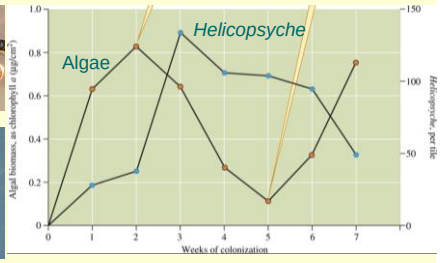


Fig. 14.2

How do you figure out if a consumer is important?

Fig. 14.3a

A picture is worth a thousand words (or at least one graph)

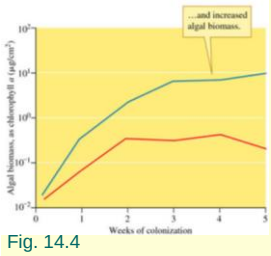


Fig. 14.4

Fig. 14.3b

Predator-prey cycles

- 9-10 yr snowshoe hare and lynx cycles
- Are they linked?

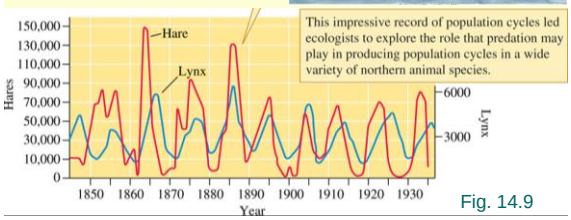
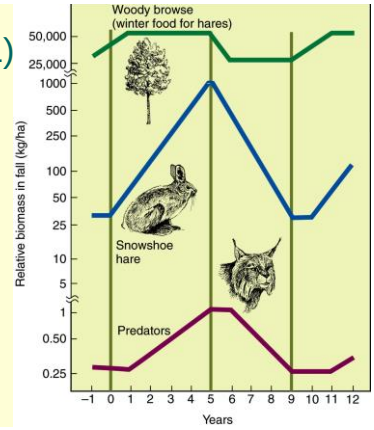


Fig. 14.9

Hare-lynx (1)

- A closer look
- But, still just a pattern



One BIG experiment

- Fence around 1 km^2 plot in the Yukon

Hare-lynx (2)

- 8-yr experiment

2000 field crew with Charles Krebs

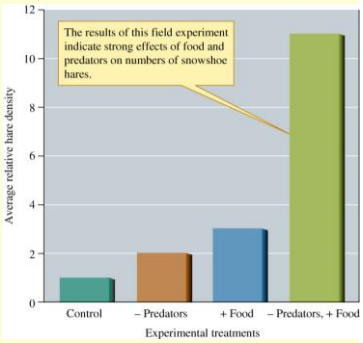


Fig. 14.10

Results for Lotka-Volterra predator-prey equations

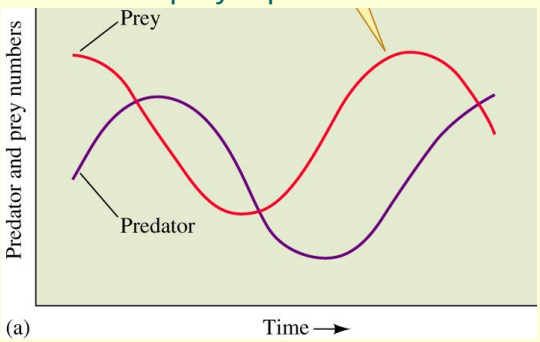
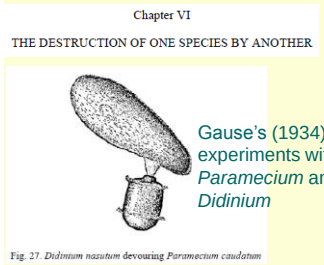


Fig. 14.12a

Theory meets reality



Gause's (1934) experiments with *Paramecium* and *Didinium*

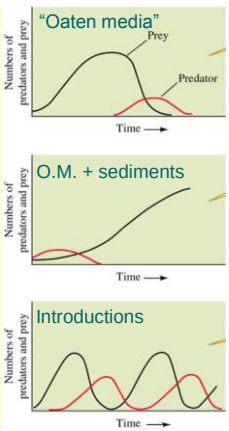


Fig. 14.14

Huffaker's oranges (1958)

Prey: six-spotted mite

Predatory mite

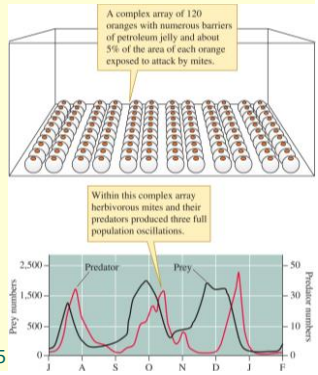
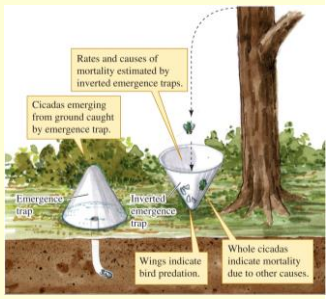


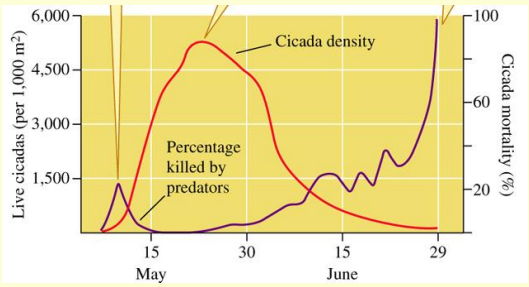
Fig. 14.15

Predation on cicadas

- Periodical cicadas
- 13 or 17 yr cycles



What's the refuge?



Why effective?

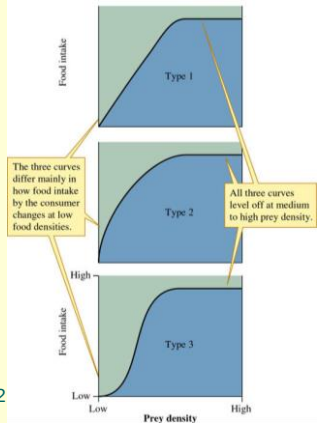
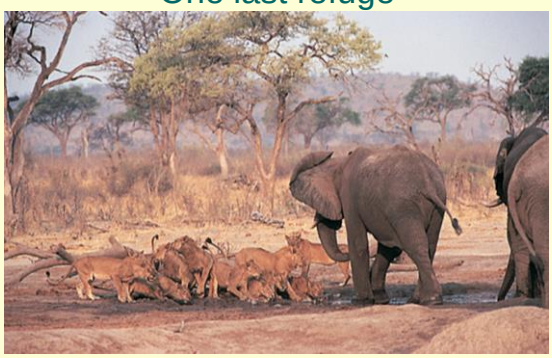
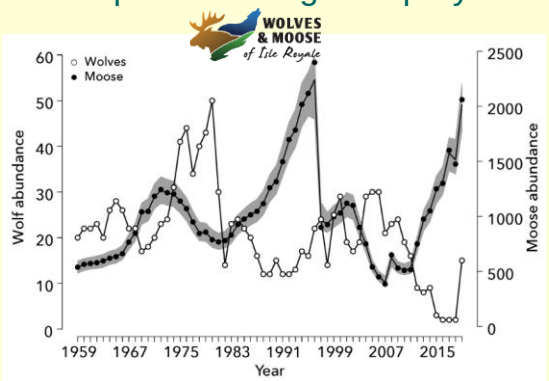


Fig. 7.22

One last refuge



Do predators regulate prey?

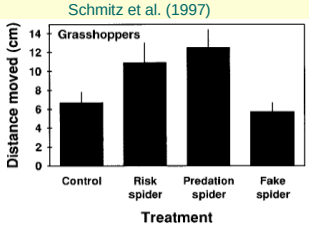


Landscape of fear

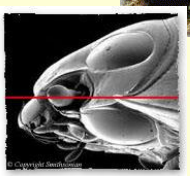
- Trait-mediated indirect interactions (TMII)

Photo: Bob Handelman

Schmitz et al. (1997)



Predator-prey adaptations



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