



In sudden disgust, the three lionesses realized they had killed a tofudebeest—one of the Serengeti's obnoxious health antelopes.

Exploitation

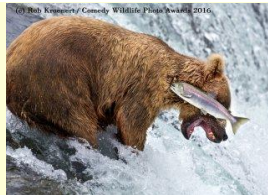
Lecture outline

- 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

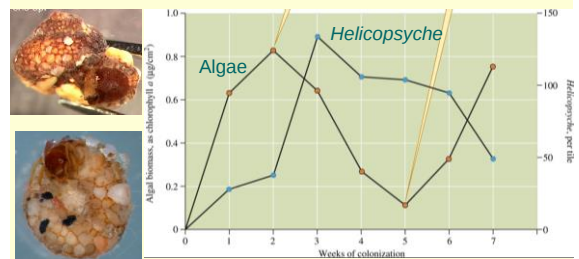


Fig. 14.2

How do you figure out if a consumer is important?

Beginning



Fig. 14.3a

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

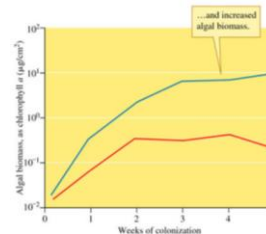


Fig. 14.4

Fig. 14.3b

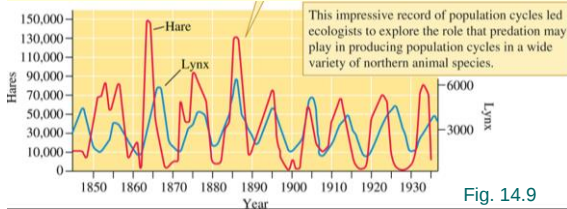
5 weeks later



Courtesy, Dr. Gary A. Lambert

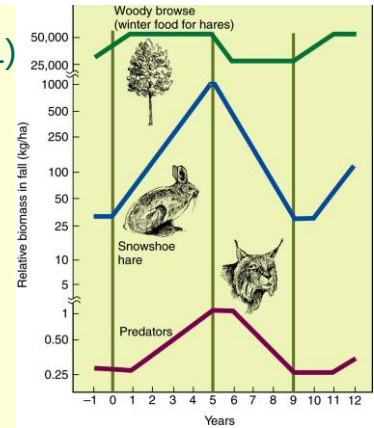
Predator-prey cycles

- 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

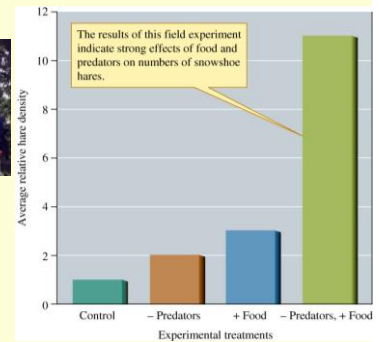


Hare-lynx (2)

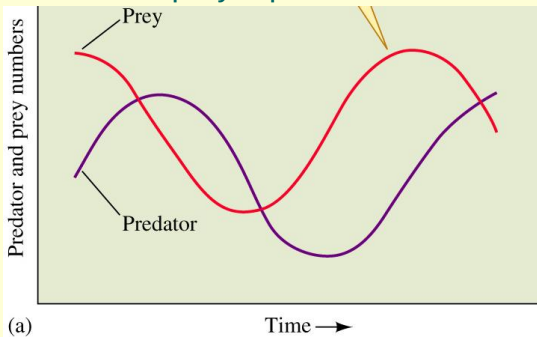
- 8-yr experiment



2000 field crew with Charles Krebs



Results for Lotka-Volterra predator-prey equations



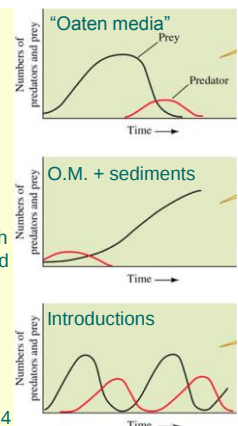
Theory meets reality

Chapter VI
THE DESTRUCTION OF ONE SPECIES BY ANOTHER



Fig. 27. *Didinium naustum* devouring *Paramecium caudatum*

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

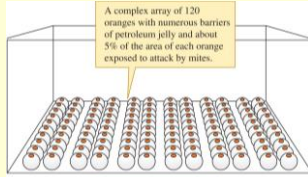


Huffaker's oranges (1958)

Prey: six-spotted mite



Predatory mite



Within this complex array herbivorous mites and their predators produced three full population oscillations.

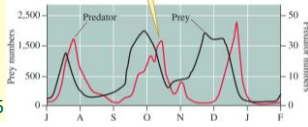
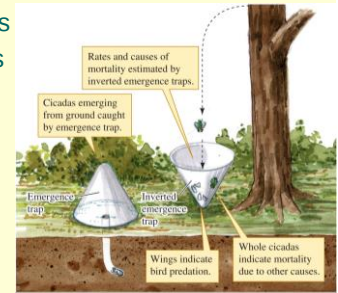


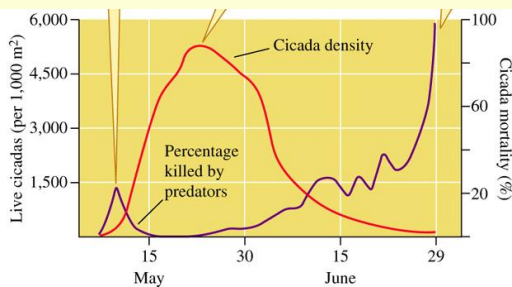
Fig. 14.15

Predation on cicadas

- Periodical cicadas
- 13 or 17 yr cycles



What's the refuge?



Why effective?

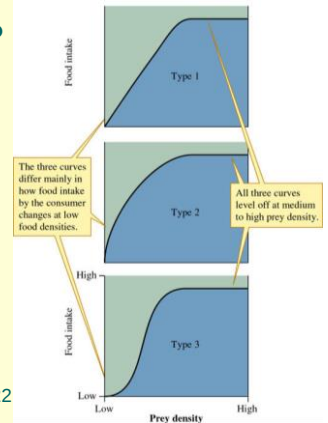
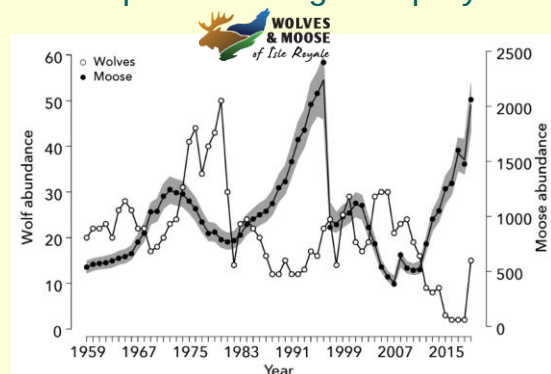


Fig. 7.22

One last refuge



Do predators regulate prey?

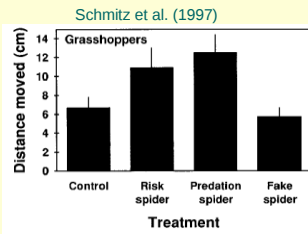


Landscape of fear

- Trait-mediated indirect interactions (TMII)



Photo: Bob Handelman



Predator-prey adaptations



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

