

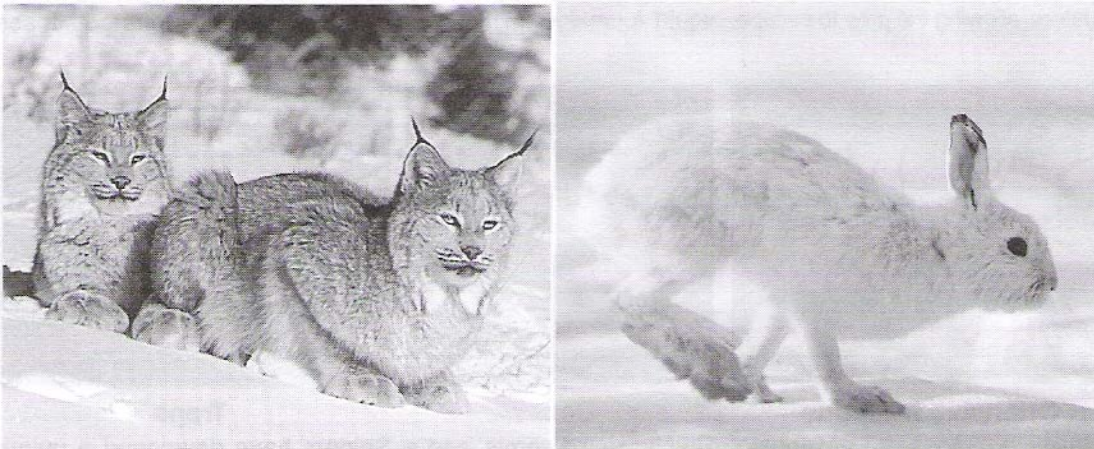
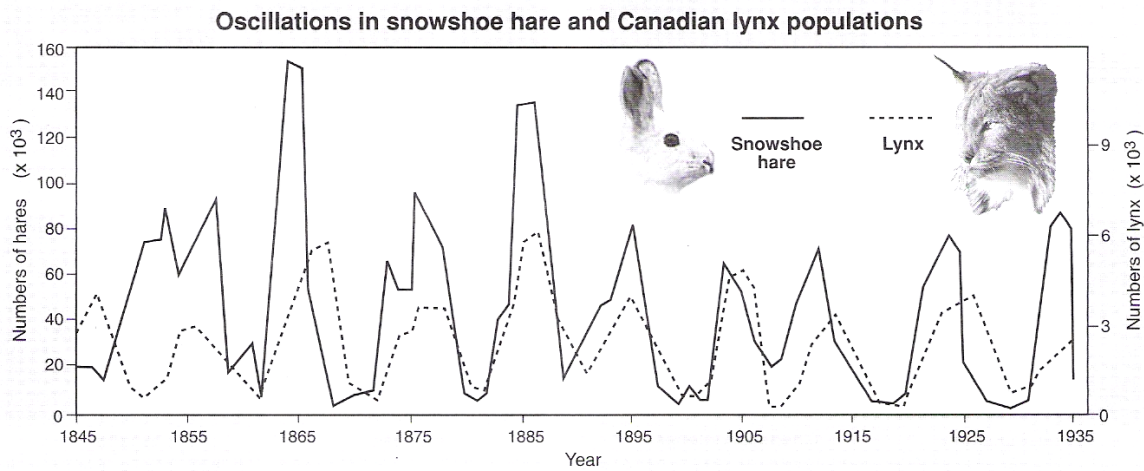
### Evolution – Don't do it Alone!

Organisms do not live in isolation. Often two or more living things will have some sort of relationship. This relationship can take on many forms – helping out each other, putting up with each other, competing with each other, even eating each other.

All of these factors can be described as a **selective pressure**: “an environmental pressure placed on individuals within a population that results in change of the genetic makeup of the next generation”

We will research these types of relationships and try to think of how they might lead to changes in a population of organisms – evolution.

**Predator-Prey relationships** – Study the following graph and information:



## **Canadian lynx and Snowshoe Hare**

Regular trapping records of Canadian lynx over a 90 year period revealed a cycle of population increase and decrease that was repeated every 10 years or so. The oscillations in lynx numbers closely matched those of the snowshoe hare, their principal prey item. There is little opportunity for prey switching in this system and the lynx are very dependent on the hares for food. Consequently, the oscillations in the two populations have a similar periodicity, with the lynx numbers lagging slightly behind those of the hare.

1. Why is there a lag time between the hare population and the response of the lynx population?
  
2. Suggest why the lynx populations appear so dependent on the fluctuations on the hare

## **Competition (Nelson Biology pages: 502-504, 519-520)**

### **1. Interspecific competition**

a. What is interspecific competition?

b. Describe Gause's principal of competitive exclusion.

c. If 2 species occupy the same niche, they often are seen to partition the niche (also called zonation). What do you think this means? (Hint: What options to species have other than completely eliminating another species?)

d. Describe ONE of the following examples of partitioning (zonation). See Inquiry into Life pages: 669 (barnacles) and pages: 672-673 (monkeys)

### **2. Intraspecific competition**

a. What is intraspecific competition?

b. What is a possible result of intraspecific competition?

c. The effects of intraspecific competition are population density dependent. Explain what this means.

d. Which type of competition, intra or interspecific competition has the most affect on an individual? Explain why.