Standard: Biology 6c
Academic Target:

Birds of Prey

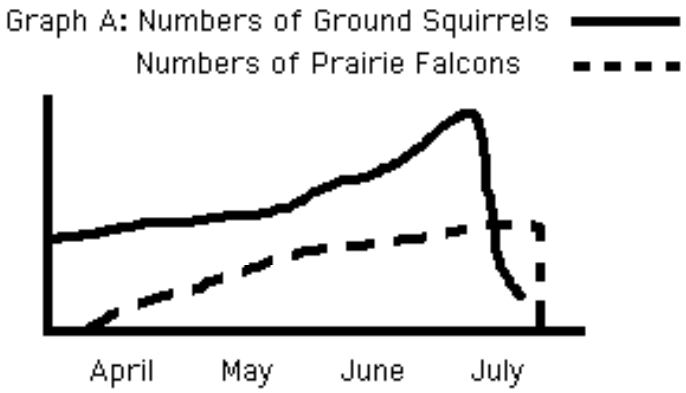
Background

In the Birds of Prey Natural Area in southwestern Idaho, a large number of prairie falcons nest in late spring and early summer each year. The falcons mainly live off a large population of Townsend ground squirrels that live in the surrounding flatlands. Throughout the breeding season, the population of falcons increases as more and more birds move into the area to nest, until all available nesting sites are taken. Because the Townsend ground squirrels serve as the food base for the falcons, continued activity and availability of this prey base is crucial for the support of the nesting falcons. As the summer progresses, the daytime temperatures in the area increase to a point (around July 4) where it is too hot for the ground squirrels, and they go underground and undergo a form of summer sleep called "aestivation" or summer hibernation. Without available prey, the falcons and their new offspring must either leave or die. Within a day of the ground squirrels' aestivation, nearly all falcons capable of flight move out of the area in search of other food (other ground squirrel species and rodents). Most move to higher, cooler elevations where other species of ground squirrels (such as Columbian ground squirrels) remain active. This sudden seeming "loss" of falcons from the Birds of Prey natural area is directly tied to the important environmental factor of temperature.

The major purpose of this activity is for students to recognize that life forms and environmental factors interact in natural ecosystems to keep wildlife populations in long-term dynamic equilibrium with each other and their habitats.

Procedure

A. Look at Graph A.
B. **Answer questions 1-8**.
C. Now turn the page and look at Graphs B-E.
D. Answer questions 9-10.
E. Ask your teacher what your next step is.



Questions

1. What general observations can you make?
2. What do you notice about the Townsend ground squirrel population in April, May and June?
3. What happens to the ground squirrel population in July?
4. What do you think might have caused this drop in population? (In other words: What happened to the squirrels?)
5. What do you notice about the falcon population in April and May?

6. What do you notice happening to the falcon population in July?
7. What do you think caused the falcon population to decline?
8. How do these two populations seem to be related?
9. Which graph provides you the most valuable information? Why?
10. If the information in all five graphs is taken together, what is the best explanation for the shape of the lines in Graph A?

More information on the Ground Squirrel/Falcon Area