

Predator -Prey Lab
Follow-Up Questions -HONORS

1. Research the graph shapes of linear, exponential and logistic. Define (and sketch) each. Which best describes the predator population growth in this lab? Why do populations grow that way?
2. Define limiting factors and distinguish between density-dependent and density-independent. Which of the two types of limiting factors was demonstrated in this lab? Defend.
3. This lab was designed to model the types of population growth, the types of limiting factors and the concept of carrying capacity. What were the strengths and weaknesses of this activity in modeling some of these concepts?
4. In the past half-century, there has been a widespread eradication of many predatory animals in various parts of the world. For each of the three cases below, write a claim statement defining the lesson learned about the role of a predator. Defend with reasoning.

A. Timber Wolves and White-tailed Deer

After timber wolves, the natural predator of white-tailed deer, were deliberately eliminated from northern Wisconsin by unrestricted hunting, the deer population rose to unprecedented levels. Shortly after WWII, the vegetation was no longer adequate to support such large numbers and many deer starved to death.

B. The Dingo

This wild dog was introduced to Australia 8000-10000 years ago by immigrants from Asia. Research revealed that dingos subsist mostly on small animals such as rabbits. However, in times of drought, the usually solitary dingos band together in packs to hunt cattle, primarily killing calves. Some ranchers noted that the killing of calves during a long drought improves the herds chance at survival until the drought is over.

C. Seastars, Barnacles and Mussels

Seastars are predators of both barnacles and mussels. When seastars were removed from an intertidal ecosystem, the numbers of both increased. As they competed for space on the rocks one species of mussels was much more successful than the others. The effect was to reduce the number of species from 15 to 8.