



Name _____

Native Species Restoration and its Impact on Local Populations

Background Information: In many parts of the country, native species have been driven out of their habitats by human activities leading some species to become endangered or even extinct. Today, several large animal species are being reintroduced to their native ecosystems. These include large predators such as gray wolves. Many people see the reintroduction of predator species as a threat to their livelihood. People are also afraid that large predators are a danger to other humans. Other groups of people see native species, including large predators, as part of the natural ecosystem and are working to reintroduce them to their native habitats.

Oh Deer, Here Come the Wolves

Imagine you are a wildlife manager working to restore the population of an endangered species of deer. Currently, the herd is small and your task is to find the best habitat and situation for the population to grow and develop into a healthy herd. Which of the following scenarios do you think would provide the best situation for your herd of deer?

Scenario 1: The herd is currently living in a 100 square mile range in the Bitterroot Mountains of Montana which has been continually inhabited by this species for centuries. Human settlers eradicated wolves (one of the deer's principle predators) over 100 years ago although other habitat changes caused by human development have continued to keep the deer's populations low. Now, the habitat is improving and the deer population is growing slowly but steadily. However, some wildlife managers are planning to reintroduce wolves to your region. They plan to bring in several families of wolves into the area. The deer population is just beginning to rebound and you are concerned about the effects of the wolf introduction on the continued growth of the herd.

Scenario 2: You have the opportunity to move the deer herd and reintroduce it to a new, more favorable habitat. The new area is a deserted island in the arctic region. There is a lot of food (no animal has filled the deer's niche for many years) and there are no natural predators. The island has 41 square miles of good habitat for the population.

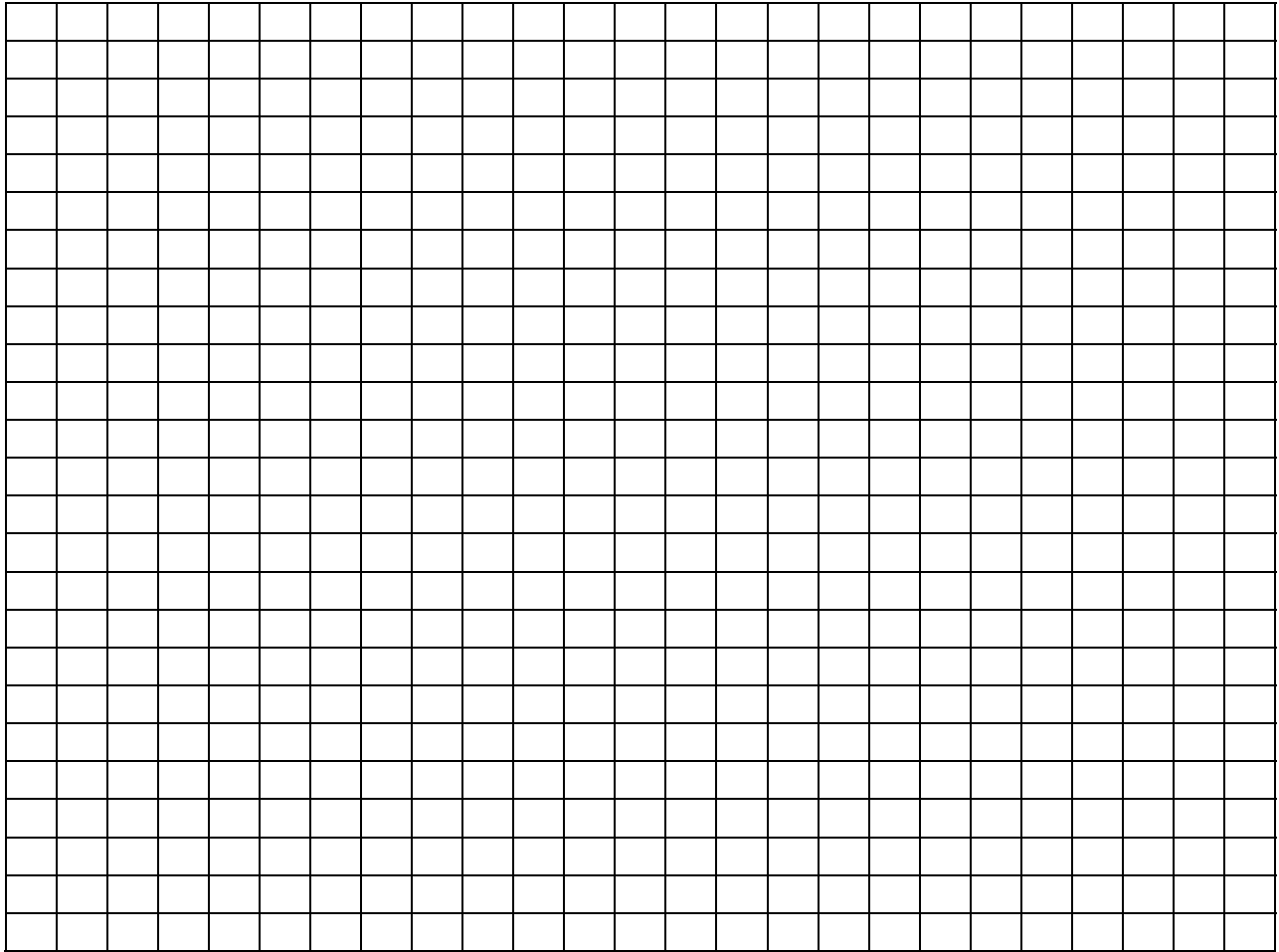
Predictions: Which of these scenarios would produce the fastest growth of the deer population?

Which would potentially provide the healthiest long-term situation for the deer?

Graphing: Graph the following data showing the changes in deer population over time for each of the two regions described above. You will make 2 line graphs. Remember title and labels.

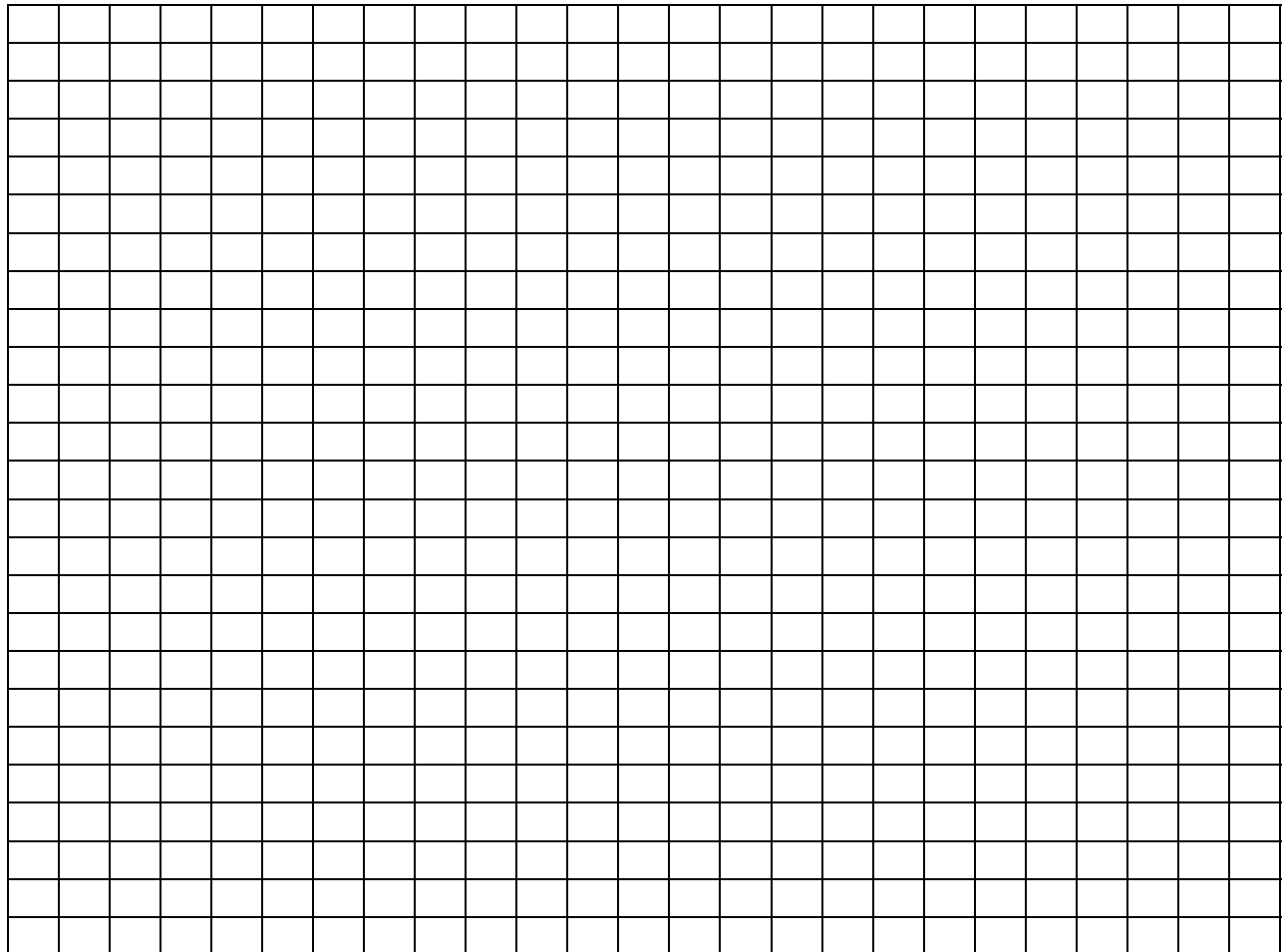
Data Set A:

Year	Deer Population
1975	2000
1976	2100
1977	2060
1978	2010
1979	1980
1980	2000
1981	1840
1982	1710
1983	1590
1984	1440
1985	1400
1986	1290
1987	1300
1988	1260
1989	1310
1990	1360
1991	1290
1992	1330



Data Set B:

Year	Deer Population
1910	25
1915	78
1920	180
1925	100
1930	500
1935	800
1940	2000
1945	700
1950	8
1955	25



Data Analysis:

1. What do you see happening to the two deer populations over time?

2. What similarities do you see in the two graphs? What differences?

3. Why do you think the population changes that you see have occurred?

4. At some point, wolves were reintroduced; explain when you think this happened (which graph and what year) and why you think it happened at that point.

Part 2 –

Background Information: the wolves were reintroduced to the population illustrated in graph A between the 1980 and 1981 population counts.

Answer the following questions on a sheet of notebook paper. Answer in complete sentences.

1. Look at graph B. If there were no predators, why couldn't the deer population continue to increase indefinitely?
2. Limiting resources are factors that limit the growth of a population. What are some limiting factors that might control the population of deer?
3. Carrying capacity is the maximum number of individuals an environment can support for an extended period of time. Explain what happened in each of the graphs in terms of carrying capacity.
4. What shape do you think the local ecosystem of graph B was in when the deer population crashed?
5. Did the wolves have the effect that you expected?
6. Do you think the carrying capacity of a region can change?
7. Did the wolves have an effect on the region's carrying capacity?
8. Is reintroducing a native predator species harmful to the local ecosystem?
9. According to wildlife biologist Daniel Pletscher, after wolves were reintroduced, they may have depleted the deer population from between 3% and 12% each year. Why do you think this rate may have varied?

