MRS. H

Population Relationship Study
Deer/Wolf Predation
SNC

Name:_____

Date:_____

The story:

There is a large island in Lake Superior with a large farming community on its eastern half. The other half has too many rocks and large trees across its landscape, and as such cannot be used for farming. It remains a large natural forest. In the 1950's, farmers on the island had noticed that wolves were eating some of their livestock. The farmers came together one weekend in the summer and hunted the wolves to extinction on the island.

In the early 1990's, scientists studying forests in the area found the island had a larger than expected deer population. There were so many deer that they had eaten any shrub or leaf they could reach, and were now starving. This situation threatened the forest biome at all levels. The scientists spoke with the farmers and discovered that the natural wolves on the island had been massacred 40 years earlier. The scientists discussed the situation with the farmers, and explained that the forest on their island was in jeopardy. The farmers and their families all enjoyed having the forest so close by, and enjoyed living so close to all the creatures it gave life to. The scientists explained that wolves were necessary to keep the forest ecosystem in balance. It was agreed that the scientists would bring in 10 wolves and re-introduce them to the forest. They monitored both deer and wolf population for 10 years. Their data is shown below:

Table 1 - Island data for Wolf and Deer populations from 1996 - 2005

Year	Wolf Population	Deer Population	Deer Born this year	- Deaths: Predation	Deaths: Starvation	Deer Population Change
1996	10	2,000	800	400	100	300
1997	12	2,300	920	480	240	
1998	16	2,500	1,000	640	500	
1999	22	2,360	944	880	180	
2000	28	2,224	996	1,120	26	
2001	24	2,094	836	960	2	
2002	21	1,968	788	840	0	
2003	18	1,916	766	720	0	
2004	19	1,952	780	760	0	
2005	19	1,972	790	760	0	

Deer & Wolf Questions

1. Fill in the last column for deep population change using the births (adding deer) and deaths (removing deer).
2. Describe your graph of the deer population over the 10 years. Why do you think the different changes are happening?
3. Describe the wolf population over the 10 years. What do you notice about the last three years specifically? Why do you think this is happening?
4. Why do you think the scientists wanted to re-introduced the wolves to the island? Do you agree with their decision? Why or why not?

Inquiry	**/5**
B2.2 D1.2 Interpret data, communicate graphically Evaluate effectiveness of human initiative	

5. What do you think would have happened to the deer population on the island had the wolves NOT been introduced? (Think about consequences to other plants and animals in the ecosystem as well).
6. Do you believe that predation (species eating/consuming other species) is necessary in nature? Give evidence from this study to support your opinion.
7. How did agriculture & farmers impact the natural environment in this situation? Why is it important that humans examine their impact on natural ecosystems?
8. Describe the deer population in relation to its carrying capacity at the beginning and end of the study. You may need to look up 'carrying capacity' in the glossary at back of the text. What factors (biotic and abiotic) would you think influence carrying capacities of populations?

Application	**/5**
B3.5 B1 Identify factors related to human activity that have impact. Assess impact of human activity	