

**APES ACTIVITY ~ The Moose and Wolves of Isle Royale**  
A Study of Population Change

*Read these directions completely before starting this exercise.*

Below is a data table that shows the estimated population numbers of moose, wolves, and balsam fir trees and Isle Royale from 1960 to 2001. You will need to use the chart below to create a *line graph* that shows the relationship between these organisms. You must chart the *moose* and *wolf* data, using a different color for each group.

When you are finished graphing the moose and wolf data, graph the balsam fir data as a bar graph (estimating the scale of “low, below average, average, above average, high, very high”) using the bottom inch or so of the graph.

Make sure your graph has a title and the axes are clearly labeled. Use a ruler and graph paper.

After you finish the graph, answer the questions on the back of this sheet.

<b>YEAR</b>	<b>MOOSE</b>	<b>WOLVES</b>	<b>BALSAM FIR GROWTH RATES (estimates)</b>
1960	637	22	average
1965	773	28	above average
1970	1522	18	low
1975	1462	41	low
1980	861	50	average
1985	968	22	very high
1990	1216	15	average
1991	1313	12	high
1992	1590	12	below average
1993	1879	13	average
1994	1770	17	average
1995	2422	17	below average
1996	1163	22	below average
1997	500	24	average
1998	699	14	average
1999	750	25	average
2000	850	29	average
2001	900	19	average

## QUESTIONS

- 1) In what year did the wolf population peak?
- 2) In what year did the moose population peak?
- 3) What do you think could have happened to the wolf population in the early 1980's?
- 4) What could have happened to the moose population in 1996 and 1997?  
(It is a different reason than #3.)
- 5) Why wasn't the wolf population also affected in 1996 and 1997?
- 6) What long-term effects could a large moose die-off have on the wolf population?
- 7) What will happen to the ecosystem if the wolf population numbers rose drastically?
- 8) How many wolves do you think will be living on Isle Royals five years from now? Explain.
- 9) Consider that the wolf numbers continue to decline so that they eventually become extinct on the island. If this occurs, do you think wolves should be reintroduced into the Isle Royale ecosystem? Explain your reasoning.
- 10) Is there any relationship between the moose population and balsam fir growth rates? Explain.