Graphing Population Change

How have bird populations changed over the years? To make sure that a population is sustainable, wildlife managers and sometimes citizens do surveys to find out if the population is in equilibrium, growing, or declining. In this activity, you will graph and analyze the results of surveys for three species.

Barrie, Ontario Bird Count: 1983 to 2007

Year	Downy Woodpecker	Mourning Dove	Ruffed Grouse
1983	26	14	13
1985	27	119	14
1987	37	124	11
1989	35	211	11
1991	40	247	5
1993	29	242	2
1995	29	325	4
1997	50	190	3
1999	29	264	6
2001	24	402	5
2003	16	182	4
2005	38	416	2
2007	36	226	9

Materials

- 3 pieces of graph paper
- ruler

Procedure

1. Plot the data for the survey results on three pieces of graph paper (one per species). Determine the proper scale for each graph.
2. Draw a line of best fit to estimate the pattern of the data.
3. Using the line of best fit, extrapolate to the year 2020.

Questions

1. Describe the population growth of each species using the terms "increasing," "decreasing," and "equilibrium."
2. Identify two factors that could affect the declining species in this area.
3. Identify two factors that could affect the increasing species in this area.
4. In the 2006 Canadian census, Barrie was found to be the fastest-growing city in Canada. Does this information change the answers you gave for questions 2 and 3? Explain.
5. Is extrapolation using a straight line likely to be reliable for many decades in the future? Why or why not?