

Reading Line Graphs

The graph shows how many people were living on farms in the United States during 1900-2000. You can see how dramatically the number has dropped!

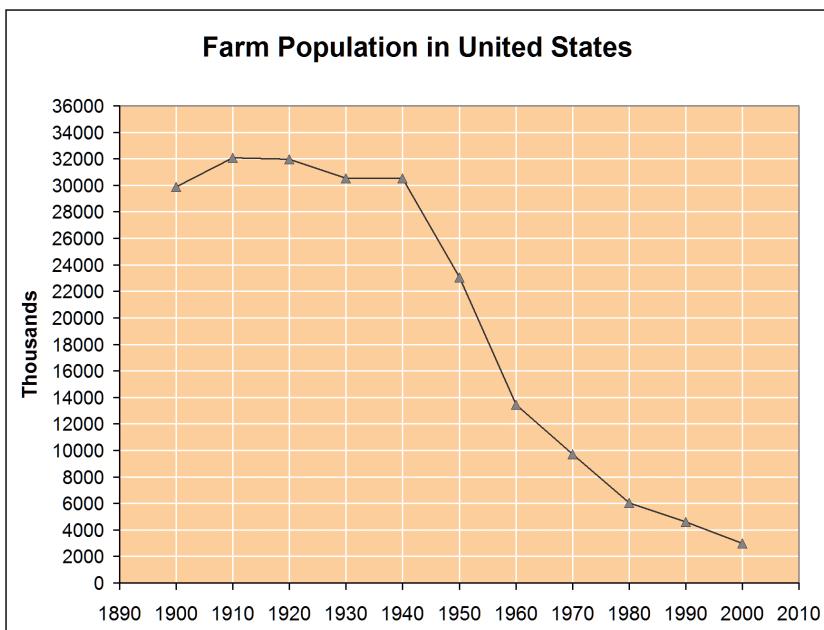
The question (a) in exercise 1 asks you to *estimate* the farm population in year 2010. Do it by tracing over the graph and continuing the graph in a natural way till the year 2010. The plain numbers listed in the table do not really help with estimation (without further mathematical tools).

Notice that the table lists the farm population in *thousands of people*. For example, in year 1970 there were 9712 thousand people—or 9,712,000 people—living on farms. In other words, you need to tag three zeros onto each of those numbers.

Note also that these numbers are actually *rounded* to the nearest thousand—no population remains an exact number of so many thousand people, year after year.

Year	Farm Population (thousands of people)
1900	29875
1910	32077
1920	31974
1930	30529
1940	30547
1950	23048
1960	13445
1970	9712
1980	6051
1990	4591
2000	2993

Source: Census of Agriculture



1. a. Consider the graph above. Estimate the U.S. farm population in the year 2010.
- b. In which two decades were the greatest drops in farm population?
- c. How many people did the farm population decrease during those two decades (separately)?
- d. What was the first year when the farm population dropped below 10 million?
- e. When approximately did the farm population drop below 5,000,000?

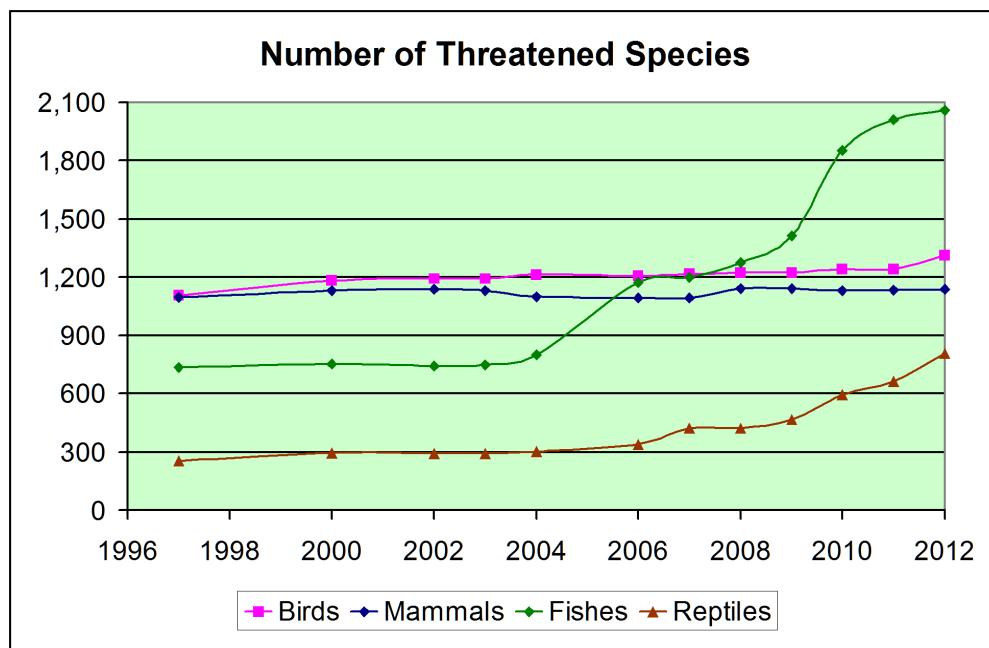
2. The International Union for Conservation of Nature (IUCN) produces a report every few years called *IUCN Red List of Threatened Species*. This report lists the number of animal and plant species that are considered endangered and extinct. The term “threatened” actually means the species can either be considered “Critically Endangered,” “Endangered,” or “Vulnerable.”

Study the data and the graph below, and answer the questions.

Numbers of threatened species by major groups of organisms (1996–2012)

Number of threatened species →	in 1996/98	in 2000	in 2002	in 2003	in 2004	in 2006	in 2007	in 2008	in 2009	in 2010	in 2011	in 2012
Mammals	1,096	1,130	1,137	1,130	1,101	1,093	1,094	1,141	1,142	1,131	1,134	1,139
Birds	1,107	1,183	1,192	1,194	1,213	1,206	1,217	1,222	1,223	1,240	1,240	1,313
Reptiles	253	296	293	293	304	341	422	423	469	594	664	807
Fishes	734	752	742	750	800	1,171	1,201	1,275	1,414	1,851	2,011	2,058

(Data from 2012 IUCN Red List)



- How many reptile species were considered “threatened” in 2003? In 2012?
- How many fish species were considered “threatened” in 2003? In 2012?
- In which major animal group has the number of threatened species stayed approximately the same between 2000 and 2012?
- In which major animal groups has the number of threatened species nearly tripled from 2000 to 2012?
- Find a period of time when the number of threatened species decreased in a certain species for several years. Which species was it, and when was it?