**Carrying Capacity Activity**

White Tail is a fictional state in the Midwest with a once thriving deer population. Here are some significant facts about the history of White Tail.

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| **White Tail Fact Sheet** |
| 1800: | Pioneers first encounter White Tail as they begin to expand to the west. The area is rich with forests, grassland, and waterways. There is an abundant deer population (about 700,000 deer), leading to the new settlement’s name.  |
| 1825: | Settlers now have a few small towns established in White Tail that include general stores, mills, inns, and other small businesses. There is a steady influx of new families. |
| 1845:  | White Tail becomes the nation’s leading trader of deer skins and meat. The human population continues to expand. |
| 1890:  | The population of White Tail has reached 2 million people. As the deer population nears extinction, the territory has to find new industries to sustain the population. |
| 1915: | White Tail establishes its first wild life preserve areas. As the deer population becomes protected it begins to slowly increase once again.  |
| 1940: | As the deer population thrives, White Tail enacts its first deer hunting season with limited licenses available. |
| 1960: | White Tail creates the state’s first Department of Natural Resources. |
| 1970: | White Tail expands its deer hunting season and increases the number of annual licenses. |
| 1980: |  |
| 2010: |  |

Based on the information above, sketch a line graph predicting the deer population of “White Tail” from 1800-1975

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Deer** **Population** |  |  |  |  |  |  |  |  |
| 700,000 |  |  |  |  |  |  |  |  |
| 600,000 |  |  |  |  |  |  |  |  |
| 500,000 |  |  |  |  |  |  |  |  |
| 400,000 |  |  |  |  |  |  |  |  |
| 300,000 |  |  |  |  |  |  |  |  |
| 200,000 |  |  |  |  |  |  |  |  |
| 100,000 |  |  |  |  |  |  |  |  |
| 0 |  |  |  |  |  |  |  |  |
|  | 1800 | 1825 | 1850 | 1875 | 1900 | 1925 | 1950 | 1975 |

Actual Data from “White Tail”

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Year** | 1800 | 1825 | 1850 | 1875 | 1900 | 1925 | 1950 | 1975 | 2000 | 2025 |
| Deer | 700,000 | 550,000 | 250,000 | 75,000 | 0 | 25,000 | 150,000 | 350,00 | 250,000 | ? |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Deer** **Population** |  |  |  |  |  |  |  |  |  |  |
| 700,000 |  |  |  |  |  |  |  |  |  |  |
| 600,000 |  |  |  |  |  |  |  |  |  |  |
| 500,000 |  |  |  |  |  |  |  |  |  |  |
| 400,000 |  |  |  |  |  |  |  |  |  |  |
| 300,000 |  |  |  |  |  |  |  |  |  |  |
| 200,000 |  |  |  |  |  |  |  |  |  |  |
| 100,000 |  |  |  |  |  |  |  |  |  |  |
| 0 |  |  |  |  |  |  |  |  |  |  |
|  | 1800 | 1825 | 1850 | 1875 | 1900 | 1925 | 1950 | 1975 | 2000 | 2025 |

Analyze the data in the table and on the graph to answer the following questions:

1. How does the graph above compare to the graph that you constructed?
2. The deer population decreased a little from 1975-2000, add an event to the year 1980 on the White Tail Fact Sheet that could explain the reason for the decrease.
3. Based on the trends,

a. what do you think the deer population will be in 2025?

b. Add an event to the year 2010 on the White Tail Fact Sheet that could explain your prediction.