

## Cocaine Hippos Investigation

### Introduction

Pablo Emilio Escobar Gaviria was a Colombian drug lord and narcoterrorist who was the founder and sole leader of the Medellín Cartel. His estate, Hacienda Nápoles (named after Naples, Italy) in Colombia, reportedly cost \$63 million. It featured a soccer field, dinosaur statues, artificial lakes, a bullfighting arena, an airstrip, and a tennis court. The property also had a zoo that housed giraffes, hippos, and camels, among other animals (Wikipedia).

The hippos have spread out from their original home, some 100 miles east of the city of Medellín, in the Antioquia department, dispersing around the Magdalena river basin as their population continues to grow steadily (CNN).

In this investigation we will look at the growth of the hippo population and the impact it is having on the region.

### Instructions

Read the article "[Colombia's 'cocaine hippos' must be culled, scientists say -- but not everyone agrees](#)", watch the video [Pablo Escobar's Hippos | National Geographic](#), and answer the following questions.

1. What is the gestation period for a female hippo?
2. How long does it take for a hippo to become an adult?
3. How many calves can a female hippo have at a time?
4. How often do female hippos give birth?
5. What ecological impacts (positive or negative) have Pablo's hippos caused in the region?

### **Part I:**

Let's assume that Escobar started with 1 male hippo and 3 female hippos in 1989. The following table gives the population of hippos that was recorded during certain years.

Year	Number of Hippos
1989	4
1993 (Year of Pablo's death)	4
2007	16
2014	40
2018	60
2021	80

1. The population of hippos didn't increase from 1989 - 1993. Why do you think that happened?
2. Using the research information you found above, predict the hippo population for the year 2000. Explain how you arrived at your prediction.
3. Using your method from number 2, predict what the population will be in the year 2023.
4. Make a scatter plot using the data from the table.
5. Choose two points, and without the aid of technology, find an exponential function that you believe models the data.
6. Graph your model against the data. Do you think it is a good fit? Why or why not?