

Wild Side Wrap Up

Population Biologist

In this episode of The Wild Side of STEAM, we met Kate, a population biologist at the Smithsonian's National Zoo and Conservation Biology Institute. We learned how Kate plays "matchmaker" with the Zoo's animals to ensure genetically healthy populations.

ACTIVITY 1: What is a Population Biologist?

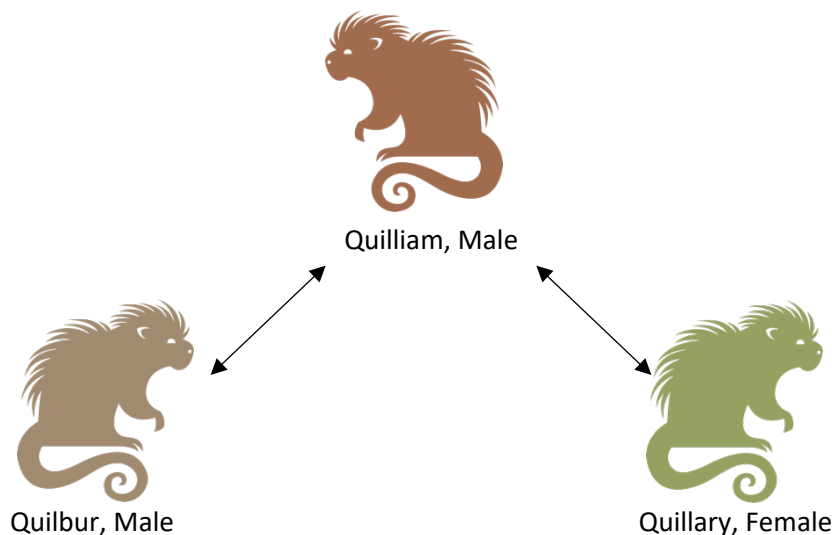
1. Watch the Wild Side of STEAM: Population Biologist webinar. If you missed the live event, the video recording is available on the Zoo's website: <https://nationalzoo.si.edu/education/wild-side-steam>.
2. Consider the following:
 - a. Why is it important to manage animal populations?
 - b. What are some examples of how population management has helped save species?
 - c. How do zoos work together to manage populations?

ACTIVITY 2: How do Population Biologists pair individual animals for reproduction?

There are many factors that determine whether two animals will be a good pair. Some of the factors that Kate must consider before pairing animals are sex, age, and how closely related the animals are. Let's explore each one and then add them all together!

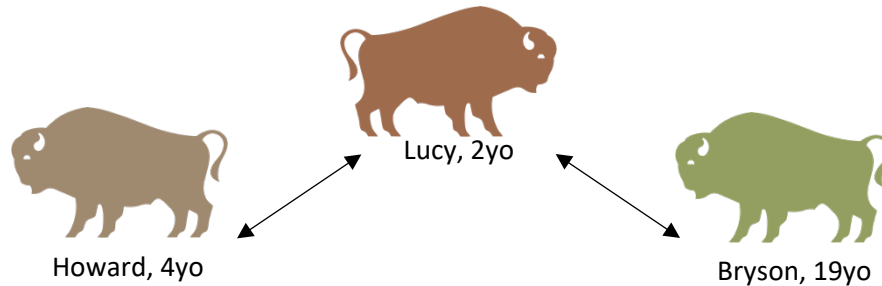
Directions: Circle which animal makes the best pair in each scenario.

1. When pairing most animals, population biologists must ensure they are pairing a male with a female if the goal is reproduction.
It's your turn to be a population biologist. Quilliam the porcupine is a male. Which porcupine should he be paired with?



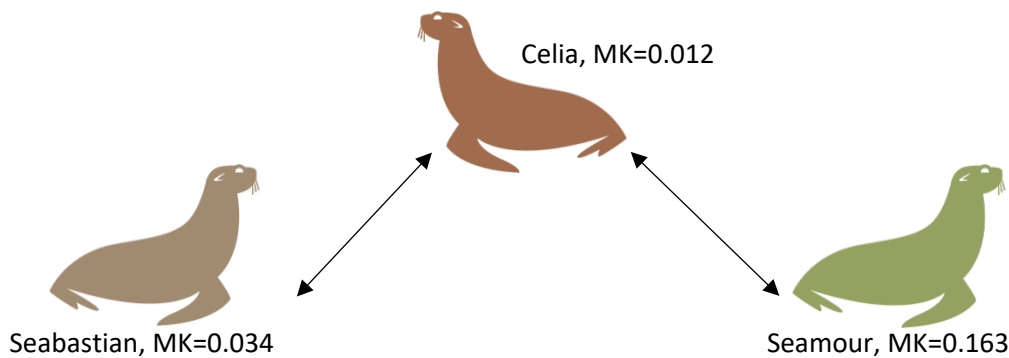
2. Some animals are too different in age from each other to make a good pair. Mammals typically reproduce better when they are younger. Population biologists need to choose animals that are appropriate ages for one another.

It's your turn to be a population biologist! The life expectancy of an American bison is about 20 years. If Lucy the bison is two years old, who should she be paired with? Note that "yo" stands for years old.

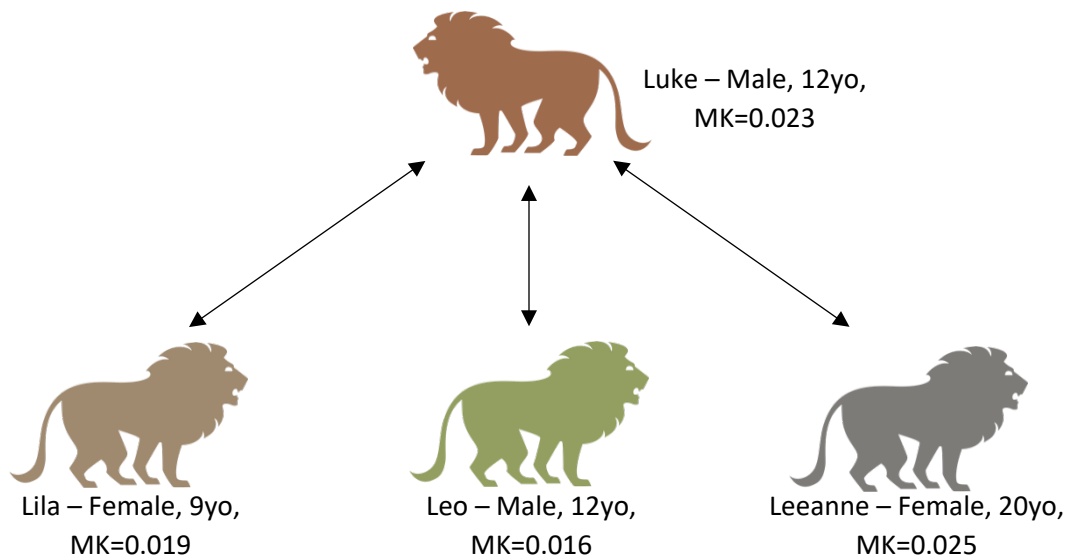


3. To maintain a healthy genetic population, population biologists pair individuals that are not closely related. How related individuals are to everyone else in the population is called the mean kinship. Mean kinship is scaled from 0 to 1. A mean kinship closer to 1 means they are more closely related. A mean kinship closer to 0 means they are less related.

Give it a try! Look at the mean kinship (MK) of Celia the sea lion and her potential partners. Which sea lion is the best match for Celia, based on MK?



4. Now let's put all the factors together! Check the sex, age (yo), and mean kinship (MK) of each lion and determine which individual is the best match for Luke the lion.



Answer Key: 1. Quillary 2. Howard 3. Sebastian 4. Lila