

Non-Native Invasion: Goats vs Finches

Directions

Background Information:

Galapagos goats were introduced to the island of Isabella by humans. As the goats roam the island in search of food, they cause many problems. For starters, they are able to out-compete the tortoises for food. This has been causing a decline in the tortoise numbers on the islands. The finch population is currently being affected. The grazing goats trample the finch nests that are located on the ground. This, in turn, causes the finch species to lose their shelter. During all of this, the goats are meeting their own needs and their population is growing exponentially.

Codes:

- = trees and bushes with nests – can hold 2 finches each
- ◇ = ground finch nests – can hold 1 finch each

The Starting Data:

1. Obtain an island map from your teacher.
2. Record the number of ground and tree/bush finch nests found on the island onto your data table (in the beginning).
3. Using the codes above, determine the finch carrying capacity of the island based ONLY on the limiting factor of **shelter**.
4. Record this number of finches onto your data table (in the beginning).

Goat Time!

Round 1:

1. Assign one group member the role of the goat. Have this student choose a color (pencil, crayon, or marker) to use for round 1.
2. The goat must CLOSE HIS/HER EYES and makes one path through the island by drawing a line.
3. Open your eyes. All group members observe how many nests were "trampled" along the path.
4. Record your data for the end of round 1 on your data table. (HINTS: 1. use the code above to determine the # of finches; 2. the goat has met its needs and doubled in #!)

Rounds 2 – 4:

- Repeat the same process as above **with a different color each round**. Remember: the number of goats you END with in a round is the number you must BEGIN with in the next round! You may need to include more group members as the goat population increases (at some point, you may need to use both hands or make a path twice!)
 - Goats close eyes
 - Goats make a path through the island
 - All group members analyze nests that have been trampled
 - All group members calculate the number of finches that survive by finding shelter
 - All group members record data
- Be sure to record your data at the end of each round
- Create the graph and answer the conclusion questions!