

POPULATION MODELS

Density Dependence



Scenario: Roc Density Dependence

You've now completed several modeling exercises dealing with the ROC population - so far the Caliph of Baghdad has been very happy with your work.

The year is now 2000. Roc flu has been eradicated and silver has been completely mined from the earth. So, silver bullets and roc flu are no longer threats to roc survival.

The number of rocs surveyed by Sinbad's great, great, great, great grand-son is 2000. The rocs still threaten sailors world-wide. The clutch size has remained stable at 1.06. However, oil has been discovered in this area of the world and new extraction operations have reduced the number of nesting sites by 25% -- from 4000 to 3000 sites.

Remember, these nests can be used only once per century. While the new Caliph is pleased with the new riches brought forth by the oil, he wants to ensure that the roc population persists lest he lose his kingdom. Once again, he's calling on you and your consulting firm to make a projection for the roc population to the year 3000.

Your challenge is to build a model that projects population size to the year 3000. But keep in mind the number of nesting sites is limited to 3,000.

How will you model this?