

DECISION ANALYSIS

Saving the Endangered Species of Erewhon, Part 2 (Plants At Last)

A. News Flash!!

A botanist has discovered that the steep slopes of the valley in Erewhon are home to an entirely new suite of species - in fact 300 new species! The species-area curve has a slope of approximately 4 species per hectare, and the price of the land is 350 pickles per hectare (this is a popular area for building houses that overlook the valley). The minimum reserve size is thought to be about 20 hectares.

The valley and highland tribal groups both agree to a rule that says no single reserve in any of the three areas will be more than twice as large as the other two reserves combined. The sociologists arrive at a social cost for the slopes of 1 SUI per hectare. They will now accept a maximum score of 450 SUI.

The Nature Conservancy has used the discovery of the new species to raise funds and now have a maximum budget of 40,000 pickles.

What are your recommendations?

B. Running Costs

The Nature Conservancy was about to follow your recommendations when a Conservancy manager meeting pointed out they had not considered running costs. They suggest the following guidelines:

valley: needs an intensive alien control program so the costs will be high, approximately 150 pickles per hectare per year.

slope: costs only 30 pickles per hectare per year.

highland: the bleak conditions require managers to be well paid, so costs are 90 pickles per hectare per year.

The Conservancy can set aside up to 6000 pickles a year for running costs. They urgently need to know, if and how you would modify the purchase plan in the light of this information.

C. Trade-Offs

The Conservancy is considering whether to set aside some of the purchasing funds to put in an interest-bearing account to generate extra money each year for running costs.

- ▷ 100 pickles of purchase money, invested in government bonds, will yield 20 pickles a year.
- ▷ There is no inflation in Erewhon.

Your task is to advise the Conservancy on the advantages of using some of their purchase funds to generate an additional annual income for running costs.