Chapter 8 – Conservation planning

QUESTIONS ASKED

- How do we express the suitability of habitat for different organisms and communities?
- How to make spatial planning of conservation networks that takes into account multiple ecological and social criteria?
- How to perform an economic analysis of the non-monetized conservation effects?

BACKGROUND INFORMATION

- Compendium: Santos (2015b)
- Wikipedia: Reserve design, Marine Protected Area
- YouTube: CSIRO, Multiple criteria decision making

COVERAGE

- Habitat suitability indices
- Optimization of area utilization in socio-ecological networks; minimum area and minimum conflict networks
- Multiple criteria decision making
- Cost-effectiveness analysis

INSPIRATION AND SOFTWARE

In 1990, Millsap et al performed a spatial analysis of the vulnerability of several taxa in Florida using very simple means. Even today, this is still a work of reference. In 2003, Williams et al developed this method, including socio-economic constraints and numerical optimization methods, and applied it to the enormous Guinean-Congolian forest. The present exercise, in its student version, requires manual optimization of the network, but facilitates the computation of suitability totals and costs.

- Ch8 Conservation Los Cayos Reserve short version JdS.xlsx
September
Good news. The government was very favourable to your proposal for monitoring funds but only allocated $1180 for that purpose.
Re-design reserve, maximising protection for those monitoring costs.

Mark the desired squares with a 1 for conservation

| Input | Output (automatic, re squares marked for conservation)
| Score in marked area | Costs |

Cost pr square
Cost pr score

Aquaiimages