

C-Plan Demonstration SCB 2005 Brazil

Day 1 - Introduction and Overview of C-Plan (approximately 1 hour)

History of C-Plan

Development of C-Plan began in 1995.

1) Irreplaceability is a central concept of C-Plan. It was realised that Irreplaceability is a dynamic thing, whose pattern changes as sites are added or removed from a reserve network.

2) This led to an idea for a dynamic decision support system to be developed.

3) In 1995, a new Labor government was elected in NSW, a state of Australia. It brought in a new forest policy, giving resources to develop C-Plan for use as an aid in implementing forest policy.

4) In September 1995, Matt Watts began writing a decision support system for this purpose. By April 1996, a working Decision Support System had been developed, and it was used to aid negotiations over land use for the Regional Forest Agreement's Interim Assessment Process.

(See Attachment 1, photos of negotiations with C-Plan)

(See Attachment 2, summary of C-Plan applications)

5) C-Plan projects in NSW included Interim Assessment Processes over the eastern seaboard of NSW, and Regional Forest Agreements in 14 different areas of NSW (map). Future applications of C-Plan in NSW may include catchment action plans, property vegetation planning, incentive delivery, and urban development scenarios.

present summary of C-Plan applications

6) Completed or current C-Plan projects outside NSW and Internationally include, Guyana, Brazil, USA, Canada, British Columbia, South Africa, China and a recent global analysis for Conservation International. There are C-Plan users in many countries, including Brazil, Canada, China, Columbia, Cuba, Denmark, Guyana, Japan, Netherlands, New Zealand, Portugal, Seychelles, South Africa, Uganda, UK, USA and Venezeula.

C-Plan Introduction

1) Show a map of Irreplaceability calculated by C-Plan.

2) Reserve some sites, recalculate C-Plan, then display a new map of Irreplaceability.

3) Exclude some sites from reservation, recalculate C-Plan, then display a new map of Irreplaceability.

This demonstrates changing patterns of Irreplaceability as sites are added or removed from the reserve network, or are added or removed from being considered as potentially part of the reserve network.

4) Show features to target, presenting a summary of the representation level of each feature in the landscape.

5) Search for sites containing features that are under target, bring one or more of these features up to target by selecting some sites, then display a new features to target summary.

6) Show resource summary form for a resource field, showing what extent of the resource has been reserved by sites that have been reserved, and what extent of the resource has been excluded from consideration as a reserve site.

Day 2 - Interactive C-Plan Software Demonstration (approximately 1 and a half hours)

C-Plan Minimum Set Algorithm builder

- 0) Before running minset, reduce ITARGET by 50 to 75%. This is useful to develop a range of options to target biodiversity loss as opposed to reserving everything in the dataset, which is not realistic.
- 1) Add 2 or more rules to a minimum set rule list. The top X% operator can 'feed' sites down the list from 1 rule to the next.
- 2) Run a minset algorithm until all features satisfied. Display the result in the GIS to demonstrate 1 possible solution that satisfies all targets.
- 3) The minset options include redundancy check, reports, starting and stopping conditions for the minset run.
- 4) The Hotspots land use simulator is an application of minset functions. It has its own options pages; complementarity, destruction and vulnerability. The destruction option allows alternative futures with reservation and destruction processes in the landscape to be simulated.

Building C-Plan Datasets

- 1) The 3 input files are site table, feature table and site by feature matrix.
- 2) Create a database from these 3 input files with the C-Plan database tool.
- 3) Import feature name and itarget and extra marxan feature fields (PATCHCON, SPF, TARGET2, SEPDIST, SEPNUM, TARGETOCC).
- 4) Import site XLOC, YLOC, COST (marxan fields) and RESOURCE.

Marxan Interactivity

- 1) Building a marxan dataset is simple with C-Plan. The BLF file must be generated manually and linked to the marxan dataset manually.
- 2) Run Marxan with no BLM and fetch results
- 3) Display best solution and summed solution in the GIS, talk about 'shotgun' effect.
- 4) Run Marxan with BLM of 1 and fetch results
- 5) Display best solution and summed solution in the GIS, talk about boundary length in relation to reserve design and clumping. Briefly mention other Marxan spatial functions, patch size, patch dispersal, number of patches.
- 6) There is a bug in the Marxan program in_edit.exe that relates to foreign language computer systems (including Portugese and Spanish languages). English uses "." as a decimal seperator while Portugese and Spanish uses ",". The in_edit.exe application needs to be re-coded with the region safe string conversion routine used by C-Plan. At the moment, input.dat needs to be edited manually to aviod this bug.