Marxan Database Design

Database design and management are extremely important aspects of spatial planning but often there is either a lack of forethought or an inadequate amount of time devoted to these. Planning processes produce large amounts of information that must be organized. There are many ways to compile and represent these data, and we recommend that this component of any decision support system be well designed and implemented.

From Database to Tool

A number of software programs esist to help build and update Marxan input files from spatial databases. While these programs focus on the creation of files necessary to run the decision support tool, there should be an equal focus on the management of core information that fuels this tool. The ESRI geodatabase allows users to design a database that contains all spatial and tabular data in one repository. This set of information can then be queried through database software such as Microsoft Access in order to build Marxan input files. By developing a suite of structured queries, planners can easily and efficiently managed what targets, impacts, threats and human uses are included in these files. This management system also allows new or updated information to be readily incorporated and queried.

The Importance of Database Design

Geodatabase design allows planners to archive spatial data; maintain relationships between conservation targets, current impacts and human uses; and readily distribute information to partners.

With well designed data management schemes, planners can maintain a dynamic link between the spatial data and the decision support tool. It is therefore important that these decision support systems be transparent, flexible and adaptive as they grow to accommodate multiple objectives.