

Develop Spatial Databases



Gather spatially-explicit information on the targets, threats and human use factors. Photo © Mark Godfrey/TNC

A database represents one of the most important products from a planning effort and is central to a decision support system.

The communication plan for an assessment should include development and delivery of the database to partners. A common source of information is a key towards partner engagement, and data must be made available to others to make significant progress towards global biodiversity conservation.

Data Collection

The development of spatially-explicit databases is usually the most time consuming aspect of planning and management efforts. Although it is important to conduct a thorough review of available data, look for spatial information that covers most of the study region or at least an identified stratification unit or subregion (see Establish Analysis Units). It is often unproductive to spend time collecting small-scale data sets because they often are not comparable when planning across a large area.

Data Management

Data management is just as important as the data itself. Information learned and data created throughout the project may remain underutilized without good data management. If data is collected but not managed well or easily accessible, the “final plan” becomes the only means of delivering the results to partners and stakeholders. Documentation and metadata should be standards; they should describe tabular and spatial data (products and source data) that includes projections, scale accuracy, data types, confidence levels, sources and contacts.

Geodatabases

Many planning teams have been using the Environmental Systems Research Institute's (ESRI) database format called the geodatabase and found it useful. The geodatabase is capable of organizing large amounts of tabular and spatial information. The tabular data are formatted to database standards and are available through Microsoft Access (version 2000 or higher) or ArcGIS (version 8.3 or higher) software. The spatial data are also organized in database format and are available through ArcGIS.

The personal geodatabase, which is capable of storing upwards of two gigabytes of information, allows the user to take advantage of both software programs in designing a database for conservation planning and other purposes. The Relational Database Management System of the geodatabase data model allows users to explicitly link tabular data and targets, goals, geography and Marxan input files with the spatial data representing them in one repository. By dynamically linking the geodatabase to decision support tools such as Marxan, planners can easily and efficiently change parameters and explore alternate scenarios.

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