Name of Method: Multi Criteria Analysis (MCA)

Summary of Method: The method analyses and compares how different alternatives can achieve different objectives. It is therefore used for a number of purposes, including assisting in identifying the preferred method, for ranking options, to short-list a limited number of options for subsequent detailed appraisal, or simply to distinguish acceptable from unacceptable possibilities. MCA involves:

- For each type of impact/indicator, choosing relevant assessment criteria.
- Identifying alternatives for consideration, for instance different approaches to managing a habitat or different development scenarios.
- Scoring how each alternative affects each indicator.
- Assigning a weight (value of importance) to the indicator.
- Aggregating the score and weight of each alternative.

MCA can be seen as a 2 stage procedure. The first stage identifies goals or objectives, subsequently seeking to identify the trade off between those objectives for different approaches. The second stage seeks to identify the best approach by applying a weighting system to the various objectives. In essence, it weighs up the relative degree of impact from individual criteria, enabling the significance of impact and mitigation required to be more accurately targeted.

There are a number of different approaches to MCA, however all have the same key aspects. Each approach makes the different options and their contribution to the different criteria explicit, and all require the exercise of judgement. The main difference tends to be in how the approaches combine the data, for example some approaches may apply a weighting system to the different criteria. A standard feature of multi-criteria analysis is a matrix or table, where each row describes an option and each column the performance of the options. Depending on the level of detail required by the assessment, the matrix may represent the full analysis, or further assessment may be applied to its content.

Advantages of Method: Provides a method to enable large amounts of complex information to be handled in a consistent manner. The technique is adaptable and can be used for a wide variety of circumstances and where the time, data and skill of the assessor vary. The approach is open, explicit and auditable, the choice of objectives and criteria are open to analysis and hence change if inappropriate and any weighting applied is similarly explicit and can be developed as required.

Limitations of Method: The approach relies on relative impact only.

References:
DETR, 1999. Review of Technical Guidance on Environmental Appraisal.
National Economic Research Associates, 2000. Multi-Criteria Analysis Manual. Report for ODPM.
South West Ecological Surveys, Levett-Therivel sustainability consultants and Oxford Brookes University, 2004. Strategic Environmental Assessment and Biodiversity: Guidance for Practitioners. Report to CCW, EN, EA and RSPB.