



# The environmental science/decision-making interface

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11 March 2010

# Conservation biology

- Conservation as a 'crisis discipline'
- 'Conservation biology is an applied discipline that aims to inform practitioners about how best to understand and manage species and habitats.'
  - Also applies to conservation of natural resources

# Literature abounds with frustrations on both sides

- The deficit model
  - ‘Surely if...’
- ‘Your decisions are based on anecdote and myth!’  
Sutherland et al. (2004)
- ‘Your research is irrelevant!’  
Fazey et al. (2005)
- ‘You aren’t telling us what you need to know!’  
Briggs (2006)
- ‘The implications are unclear and aren’t applicable to the local situation and context!’  
Lawton (2007)
- And many more...

# Integration issues

- Complexity/uncertainty
  - Decisions still need to be made
- Other knowledges and broader context
  - Many decisions based on experience
  - Science is but one consideration
- Incentive structures
- Information lag

# Moving forward

- Assessing information needs of decision-makers
  - Moving beyond simply publication
  - Systematic Reviews



## What is Evidence-Based Conservation?

The process of systematic review traditionally has its roots in the [medical sciences](#), but is now increasingly being employed by a range of applied disciplines in order to address the problems of accessing reliable scientific evidence to support practice and policy decision-making.

In contrast to a traditional review, which may be narrative, subjective and susceptible to bias, systematic review, as a consequence of its systematic nature, is a more powerful and robust approach to summarising the best available evidence. A systematic review follows a structured and transparent procedure, striving to obtain *all* relevant literature on the topic of interest: unpublished grey literature and research findings, as well as published peer-reviewed journal articles. The process of study inclusion into the review is clear, open and meticulously documented meaning that this process should be entirely repeatable in its conclusions. [Meta-analysis](#) may be used to integrate and summarise the results from individual studies within the review, to provide a single summary estimate for the effect of a given intervention on a subject.

Systematic review therefore is an important tool in allowing critical appraisal, summary and dissemination of results from a large volume of research and one which can support decision making by providing an objective, independent, and unbiased assessment of the best available evidence. Where evidence is unavailable, the systematic review process will highlight areas requiring further original research.

For more detailed information on systematic review, please see the following:

- [Guidelines for Systematic Review in Conservation and Environmental Management \(CEBC\)](#)
- [Systematic Review Workshop Presentations - the Centre for Evidence-Based Conservation](#)
- [Systematic Review Terminology](#)

There are currently a number of organisations involved in evidence-based conservation: a summary of their work is provided in the table below with a link to their homepage, please

**Quick links**

- [Guidelines for conducting a systematic review](#)
- [Information for...](#)
- [Information for Authors](#)
- [Information for Readers](#)

# Moving forward

- Assessing information needs of decision-makers
  - Moving beyond simply publication
  - Systematic Reviews
- Incentive structures that encourage collaboration
  - Implications for ARC
- Effectively spanning the boundary
  - Implications for BMWHI

# Potential case studies

- Climate change adaptation policy in Hawkesbury-Nepean CMA
  - Primarily off-park, potentially action research
  - Requirement for use of ‘best available knowledge’
- Plans of Management in the GBMWHA
  - On-park, observing with qualitative analysis
- The ARC Linkage Project ‘Managing Ecosystem Change in the GBMWHA’
  - Learning from partnerships aimed at producing scientific information to inform decision-making