
Science, industry and policy

Alistar Robertson

Centre of Excellence in Natural Resource Management,
University of Western Australia

- For 25 years I worked as a research scientist on wetland structure and function. In the early days of my career I believed that if I did good science it would somehow magically have a positive influence on wetland management (I suppose we all started like that!).
- However, working on a number of government advisory committees, catchment management committees, consultancies for industry and as a member of research funding bodies I have learnt some of the frustrations about
 - scientists not asking the right questions in their research
 - how long it takes for science to influence policy
 - how industry development can be stifled when science does not properly inform resource management policy, and
 - the environmental problems associated with the poor management of economic development.

-
- I remember three particular instances that sharpened my awareness of the disjunct between science, policy and development;
 - Summarising 10 years of mangrove science in a book and realising that during the same period about 25% of the world's mangrove forests had been destroyed.
 - Representing researchers at a meeting to discuss the implementation of environmental flows policy for rivers in NSW and finding that confessing that there were great holes in our scientific knowledge did not endear me to policy makers but provided a truthful engagement with water users.
 - When asking the Chair of the Murrumbidgee River Management Committee how much science had been used to sign-off on the environmental flow rules and she answered 'None!'

-
- As members of the Australian community we are all in the same business of wealth maintenance and creation AND resource sustainability. The prosperity we enjoy enables us to have sophisticated engagement on environmental issues.
 - In the last 30 years we have had a revolution in attitudes and policy on environmental management in Australia. From Governments, the blossoming of Departments of Environment and resultant NRM policies; from industry, recognition of the importance of the triple bottom line in doing profitable business; from researchers, a better understanding of government and industry needs with regard to framing research questions and communicating the outcomes of research.

Industry and government spend billions of dollars in programs intended to protect and enhance the environment and natural resources. There are, however, still a range of problems with existing programs, including:

- keeping policy up to speed with advancements in industry development and scientific understanding of ecosystem dynamics;

e.g. Robertson, A.I. (2000). The gaps between ecosystem ecology and industrial agriculture. Ecosystems 5: 413-418.

- poor spatial targeting of policy;

e.g. Pannell, D.J. (2004b). Heathens in the chapel? Application of economics to biodiversity, Pacific Conservation Biology 10: 88-105.

- application of policy mechanisms in the wrong contexts.

e.g. King, D.M. and Kuch, P.J. (2003). Will nutrient credit trading ever work? An assessment of supply and demand problems and institutional obstacles, Environmental Law Reporter 33: 10352-10368

- Clearly there is still much to be done to ensure that there is a better relationship between science, NRM policy and the application of policy.

As a scientist who has been involved in, and watched the development of the discipline of, ecosystem management I would like to emphasise two important things I have learnt:

- there is a very high degree of natural variation in environmental properties and processes - when dealing with management issues scientists need to be careful that they are thorough in detailing time and space scale effects on ecological processes to determine the critical life history phases of organisms or components of ecosystems that are effected by management
- science can be imprecise and while new research constantly fine tunes scientific understanding there may often be a disjunct between the requirements for management of effects and scientists abilities to measure effects precisely

- I hope this workshop, with representation of policy makers, industry and scientists can help generate a better relationship between for the specific issue of the juxtaposition of industry and healthy coral reef communities in the NW of Australia.

e.g. Pannell, D.J. (2004b). Heathens in the chapel? Application of economics to biodiversity, *Pacific Conservation Biology* 10: 88-105.

e.g. King, D.M. and Kuch, P.J. (2003). Will nutrient credit trading ever work? An assessment of supply and demand problems and institutional obstacles, *Environmental Law Reporter* 33: 10352-10368

e.g. Christensen NL, Bartuska AM, Brown JH, Carpenter S, D'Antonio C, Francis R, Franklin JF, MacMahon JA, Noss RF, Parsons DJ, Peterson CH, Turner MG, Woodmansee RG. 1996. The report of the Ecological Society of America committee on the scientific basis for ecosystem management. *Ecological Applications* 6: 665-691.