

WaterShed

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Delivering Ecological Knowledge to the Water Industry

by Professor Peter Cullen

This article is a summary of the opening address for the 2001 Congress of the International Society of Limnology, given by Professor Peter Cullen. The Congress was held in February 2001 at Monash University.

The CRC exists to generate new knowledge from its research programs, and to deliver that knowledge to the water industry to help them manage our precious water resources. The industry provides significant financial resources to help the CRC meet this aim.

Doing good science and getting it published in the scientific literature is not enough to inform water resource managers. They rarely read the scientific literature, and while this avenue for communicating our findings is critical to quality control and scientific feed-

back, it is ineffective in delivering new knowledge to the industry.

The CRC and the National Rivers Consortium last year held a workshop to explore how professionals actually find the knowledge they need to do their jobs.

Resource managers describe their problems when seeking knowledge:

- They are very busy with many messages bombarding them;
- All messages are peddling something, and the manager assumes that the knowledge providers' main concern is self-interest – selling something;
- Many of the messages are conflicting;

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- Is the message based on quality science?
- Do I have the opportunity for dialogue to test my understanding?

Professionals use a variety of strategies in their seeking of knowledge, but some common characteristics are:

- They tend to seek knowledge from someone who is easily accessible and trusted, rather than from a recognised authority in the field;
- They seek until they find the first acceptable answer;
- Often because of time constraints, they give up searching for knowledge relatively quickly and rarely keep searching for the “best” answer;
- They are likely to accept an idea if the sources are consistent - regardless of the authority of source.

Resource managers have indicated that they seek up to date, concise overviews of current understanding of a particular area. This might be in the form of regular updates on issues of concern. The material might be informed and expanded by the findings of current research projects, but the new knowledge must be embedded with the old knowledge in an easily assimilated form. They have indicated they are less interested in plain English summaries of the findings of particular research projects and did not see the individual research project as the appropriate unit of knowledge to transfer to them.

The knowledge exchange function is so important to our survival as a research organisation, and to the management of Australia’s water resources that it needs professional attention rather than expecting research scientists to do it as an add on extra. We employ knowledge brokers to do this task.

Knowledge brokers are people with a strong technical base and strong communication skills. They are synthesisers and packagers of knowledge rather than creators of new knowledge. They are motivated by focussing existing knowledge to solve a problem rather than selling their favourite research tool, model or their next set of experiments. They need good people skills, and good project management skills.

Knowledge brokers may be located in the offices of our industry partners where their everyday presence allows trust to develop and where they are readily accessible for discussions. Knowledge brokers may prepare overview materials on emerging or important issues, and these reflect the most up to date scientific understanding of the issue.

Knowledge brokers provide “Joint Problem Solving Workshops” when the industry partner has an issue, but the actual question or the boundaries of the issue are not clear. We put together 2–3 day workshops of 8–15 people, roughly half from industry partners and half from the CRC. These workshops are discussion sessions with few structured presentations. The idea is to develop trust and allow all participants to develop their personal conceptual models of the system of concern. Through this process much richer conceptual models are developed by all participants and real learning takes place. This might lead to the development of a research project or a change in management strategies.

The water industry in Australia invests in our Centre expecting a number of benefits:

- They expect the research projects to focus on relevant issues and to deliver useful knowledge to the industry.
- They need postgraduate and undergraduate training and professional education provided.
- They seek a core of specialists who operate at the cutting edge of their disciplines to be available when needed to advise the industry.
- They seek credibility and validity for their management actions from their partnership in the Centre.

These benefits are not delivered by just publishing our science in the learned journals of the world. That is important and we expect it of our staff. But it is not enough. We must provide relevant knowledge to managers in ways that are easily accessed, understood and synthesised, while taking into account their time constraints and work context. The knowledge exchange model being developed within the CRC is just one approach to dealing with this issue.