Is science demonstrating leadership for conservation?

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ABSTRACT

World Wide Fund for Nature asks the question, "Is science demonstrating leadership for conservation?" It is our view that science is not, and that is unfortunate since scientists, especially naturalists, were vital to the development of the very concept of conservation. We are concerned that the role of Australian scientists in conservation has dwindled to the point that the community is demanding answers and information and few scientists take the challenge of finding the solutions. In fact the community is now teaming up with government and finding answers, answers that aren't necessarily the most appropriate solutions.

The Royal Zoological Society of New South Wales is well placed to show leadership for conservation and to encourage its members to ensure that their work is relevant to conservation and is not passed over or ignored in the decision making process.

Key words: scientists, conservation, World Wide Fund for Nature

Introduction

This paper touches on the experience of World Wide Fund for Nature in several conservation projects and some aspects of scientific involvement in recent decision making processes we believe could be improved.

World Wide Fund for Nature (WWF) aims to conserve nature and ecological processes by:

- preserving genetic, species and ecosystem diversity;
- ensuring that the use of renewable natural resources is sustainable, both now and in the longer term, for the benefit of all life on earth; and
- promoting actions to reduce, to a minimum, pollution and the wasteful exploitation and consumption of resources and energy.

World Wide Fund for Nature is an advocacy organisation focussed on producing conservation outcomes, based on sound information. We provide high quality conservation services by using the best scientific information available, seeking dialogue to build bridges, and taking a responsible, long-term view. For World Wide Fund for Nature, building partnerships with the community (which includes individuals, community groups, other conservation organisations, research institutions, corporations and governments) is essential to achieving lasting conservation results.

The title "Community and research-based conservation: a clash of paradigms" is rather disturbing, particularly as it seems to be a statement rather than a question. Researchers and the broader community are two of the essential sectors that World Wide Fund for Nature seeks to link for effective conservation. It concerns us that many scientific researchers regard the community as alien, rather than integral to conservation.

How World Wide Fund for Nature works

Since we became active in Australia we have used three main methods to achieve conservation outcomes:

- research and analysis,
- policy development and advocacy, and
- community outreach and education.

Pp 48 - 53 in *A clash of paradigms: Community and research-based conservation*, edited by Daniel Lunney, Chris Dickman and Shelley Burgin 2002. Royal Zoological Society of New South Wales, Mosman.

It is our view that conservation doesn't occur simply through research. Research is the initial, and perhaps the most important, base from which conservation evolves. Policy development and analysis, followed by community outreach and advocacy, are required to ensure that scientific findings are used.

Initially WWF focussed most of our Australian capacity on the provision of support for research, especially research to assist the conservation of threatened and endangered species as the basis for policy formation and action. We saw our role as that of selecting projects that would provide information critically needed to conserve species. However, we soon realised our focus would have to move towards advocacy and community outreach and education if there was to be any practical change on the ground.

The reasons for this become clear if we consider the reality that a number of individual threatened species are studied extensively, for example the koala, while their conservation status remains static or gets worse. Their genetics, morphology, reproductive strategies and food preferences have been studied in some detail. In most cases the main threats to the animal in the wild can be easily identified, but projects continue to focus on research to find answers to, no doubt academically-stimulating questions, but answers that aren't necessarily targeted to the key issues of the conservation of the species.

World Wide Fund for Nature has had to seriously question the conservation value of many projects submitted to WWF for endorsement or funding. For example, one proposal requested funding of over $150,000 to determine the amount of dietary overlap between rock wallabies and goats. The pertinent question asked by a member of the WWF Scientific Advisory Committee was "Why don't we just shoot the goats?"

World Wide Fund for Nature involvement with the numbat is a similar example. The numbat was the subject of a multitude of research projects looking at aspects of physiology, reproduction and diet. A number of these projects were funded in part or whole by WWF. After some years it became obvious that no positive change in the population was effected by this research. With the population seriously in peril, an increase in numbers finally occurred, not through further research, but when the Western Australian Department of Conservation and Land Management shot or poisoned the foxes that had been the major threat to the population.

These examples show why research is not, and must not, be the only tool we use for conservation. Scientists need to reassess their role in conservation. Animals and plants are not going to wait around while scientists research all aspects of their ecology. They are threatened now by a number of processes. In many cases these process threaten many species, not just one.

It is vital that we act together to focus on lessening the impact of major threatening processes on the environment. It is obvious that the community has a huge role to play in mitigating and preventing threats including land clearing, grazing pressure, feral animals and introduced plant invasion, erosion, siltation and release of toxins. These are not issues that can be tackled by research alone, although research can and should lead the community towards solutions and alternatives to current practices.

World Wide Fund for Nature is committed to using sound science to underpin our conservation program, but it is increasingly obvious that actions need to be taken now. It is also obvious that WWF and other non government organisations cannot, and must not, be the only voice calling for action and devising solutions. There is a role for scientists to structure their research to answer the right questions and to assist both the advocacy effort and the design and delivery of education outreach programs leading to real conservation outcomes.

There is no doubt that there are scientific groups in the country that are doing just that. The Commonwealth Scientific and Industrial Research Organisation's Sustainable Ecosystems Division has been foremost in demonstrating some real leadership in terms of integrating the hard science with community involvement, education and outreach required to effect real change.

The need for science in advocacy

For WWF advocacy means influencing decision-making in the interests of conservation. We believe that science is central to advocacy and that you, as scientists, have a moral and ethical responsibility to participate to ensure the results of your research work are known to, and applied, by decision makers. There is also a financial imperative that sooner or later science will become irrelevant and unsupported if you don't assist in a much more practical way in translating the results of your field work and providing scientific advice for specific decisions, policy commitments or legislation which benefit wildlife and wild places.

There are some outstanding examples of Australian scientists who do act vigorously for conservation. World Wide Fund for Nature accepts that many in the scientific field are directly or indirectly funded by industry and government and that this may cause some reticence in speaking publicly. What we are concerned about is that the climate of fear appears to actually engulf those who are able to have a say and discourage scientists from recognising what we regard as a social responsibility to inform good decision making.

New South Wales is a classic case in point. In recent years we have seen the State government legislate for a plethora of parallel overlapping community and regional processes, that deal with environment and natural resource management: catchment management committees, regional vegetation management plans, river management committees, the list goes on. We view this as government abdicating its responsibility to lead in some areas of natural resource conservation, to committees of well-meaning community-based representatives. Committees often without the skills and almost always without the resources needed to come up with good responses.

The New South Wales Government has moved to establish regional vegetation management committees. Although they include a token scientist, those committees are busy planning management of vegetation without some of the basic building blocks, such as competent vegetation maps. It is hard to believe that they are planning to manage vegetation without competent vegetation maps, monitoring systems, or knowing where threatened ecosystems are.

It is our view the scientific community is, in part, responsible because they were not heard when the key decisions were being made. The New South Wales scientific community failed to ensure that at a state-wide level there was some basic rigour behind the legislative knee-jerk political response that we now see enshrined in legislation in New South Wales.

When data are uncertain or not definitive, it is fair to make the uncertainty clear, but it is equally important to explain to decision makers what precautionary measures or partial solutions are available and what the long term consequences are of ignoring them. Scientists interact with their peers and can present views based on sound interaction and advice from the leaders in the conservation field. Organisations such as the Royal Zoological Society can play a pivotal role in converting knowledge to advocacy and action, and fostering a stronger sense of the necessity for scientific involvement.

The point is, if you as zoologists want to see your profession respected, if you want to see it incorporated into funding guidelines, if you want to see the rightful role that you have in terms of setting the direction of government programs, you need to be there where the decisions are being made, you need to be advocates. You need people who are there, talking to ministerial advisers, bureaucrats and the ministers. People who are actually taking the ministers out to the field and pointing out the consequences of the different policy options.

What are scientists doing now?

From our perspective it appears that scientists have not only become increasingly reticent to have their say in regard to conservation but, in many cases, seem to have a poor understanding of what constitutes a conservation outcome.

The Vineforest Plant Atlas for Southeast Queensland (Forster *et al.* 1991) illustrates this. In the early 1980s WWF was approached by a group of vineforest specialists who wanted to conserve the dry vineforest in southeast Queensland. A project was funded to research and map the location of vineforest. When it was completed the vineforest atlas identified priority sites and was regarded as the definitive source of information on this ecosystem. A cause for celebration that the vineforests could now be securely managed? Regrettably, despite the atlas being published in 1991, it was discovered when we went back in 1996 that the conservation status had not improved at any of the identified sites. There had been no translation of the document identifying the key sites into any conservation action on the ground.

World Wide Fund for Nature then funded an extension officer to take the information from the atlas and make it more widely known. Within a year, land managers were contacted for 12 high priority sites and proposals developed to further the conservation management at each site. Further sites have been protected in subsequent years. Additionally, the project has improved the conservation of nine of Queensland's critically endangered plants.

Another key outcome has been the establishment of a demonstration site at a water supply weir, near Maryborough. This has promoted vineforest conservation to local communities and has changed the attitudes of a number of local governments and key statutory authorities that were previously degrading the site.

This example demonstrates the fate of much of the research being done. Research ends up on library shelves in learned journals and is not actually taken to the people who can influence the outcome. Peer reviewed scientific papers and conference proceedings are an excellent output, and certainly the Royal Zoological Society has been a leader in that process in New South Wales, but at some stage more action is required to ensure that those results are picked up. We believe it is vital that scientists do more to engage the people whom they are working with, the communities that they are working with, and take their results to the decision-makers and see that those results are picked up and translated into real action.

The Royal Zoological Society's publication 'The Future of Fauna in Western New South Wales' (Lunney *et al*. 1994) is a very good example of a publication that has much to offer conservation, but has suffered from far too little follow-up. The publication itself is excellent. The papers contained give a stark and clear picture of what has happened to fauna in western New South Wales since European settlement and the need for urgent action to redress both the problems caused by past actions and by continuing threats. However, the seminar was held in 1991, the papers published in 1994. What, if any, have been the outcomes in terms of improvement in fauna numbers and status in the west of the state in the years since?

It is disappointing that the scientific community has come to measure the mark of a good scientist by the number of peer reviewed scientific papers that they publish. While that is certainly an important output, the scientists who are making the greatest difference to conservation today are doing so, not only through peer reviewed scientific papers, but through their participation in setting directions for public policy and research; through their participation in advisory committees and through their efforts to make public processes work. These people should be recognised as brilliant scientists.

From research to community outreach

The southeastern Australian grasslands illustrate the changes in WWF thinking from species-based research to a broader program.

World Wide Fund for Nature has developed the longest and broadest experience of grassland conservation projects in Australia. This work commenced in the 1980s with studies of the ecology and prospects for translocation, and other conservation measures for individual threatened grassland plant species. As work proceeded the researchers concluded that the entire habitat was threatened. We then commissioned, and funded, an extensive survey of remnants in South Australia, Victoria, Tasmania, and southern New South Wales. World Wide Fund for Nature took those results and lobbied for the establishment of a Commonwealth grassland ecology program in 1992, which resulted in the first funding for temperate grassland conservation in Australia. New grassland ecosystems were located in South Australia and a renewed survey program was completed in 1995. World Wide Fund for Nature published three books and reports highlighting the conservation requirements of temperate grasslands.

In 1996, WWF instigated and continues an on-ground extension program in cooperation with rural communities in the Monaro region of New South Wales and in the mid-north of South Australia. We coordinate our work with similar non-government programs in Victoria, to develop agreements and implement conservation of 166 identified significant temperate grassland remnants. These projects have been very challenging as they involve approaching landholders on the basis of their land's attributes, rather than waiting for more motivated landholders to volunteer to participate.

Many initial assumptions about these projects have not been realised, while other elements have been surprisingly successful (Ross 1999). We are now looking to replicate those extension programs in other areas. For WWF the project represents some of the most successful melding of scientific work that we have undertaken. It started from pure research and has moved right through to on-ground extension, resulting in real changes and real conservation on the ground.

The future for science and conservation

World Wide Fund for Nature and other non-government organisations (NGOs) operate in the community. To be successful we will need to develop practical, achievable conservation solutions and market these effectively. Scientists also operate in the context of a broader community. In large part it will be people like you that must develop solutions and advise on their implementation, both through NGOs and through your institutions and governments.

The Royal Zoological Society has already identified the need for scientists to show leadership for conservation in the Preface to 'The Future of the Fauna of Western NSW'. Gordon Grigg eloquently argues that given the need for dramatic actions to prevent further species loss and land degradation in western New South Wales "I think that biologists have a clear responsibility to try and identify that dramatic something and to make it happen..."

This paper has been deliberately provocative, although we believe World Wide Fund for Nature shares similar values with the scientific community, WWF works through partnerships. We see the Royal Zoological Society and its members as major partners and we look forward to working with you in future to improve conservation outcomes for Australia.

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QUESTIONS & ANSWERS

LYN DAWSON: A very controversial little talk, Jamie. I think it's good to stir people up, but two things arise: scientists are outreaching to the community. A lot of them are university-based; a lot of them are teachers. This is surely one of their roles in communicating with the general public. I think that shouldn't be forgotten. The other thing is that you mentioned peer review publications. Most of the scientists that I know are struggling to keep their funding which is totally dependent on production of peer reviewed publications. So although I take your point in a lot of things that you have been commenting on, you have to be fair to the scientists.

JAMIE PITTOCK: I certainly take your point and I think that being a scientist in this day and age is hard work. I have no doubt that the expectations in terms of peer publications and the pressures that drive scientists are a major reason why the scientific community has been less active than it might have otherwise been.

I also take your point that there are a great many scientists in the community doing a great role in terms of advocacy, but I think there is a critical gap in terms of scientific outreach, or scientists' outreach. I think the scientific professional societies are missing the opportunity to influence the key decision-makers at crucial points: at the state and federal levels, where decisions are being made.

It is certainly true that there are a lot of scientists on the ground providing advice to community groups and to local councils. However, when things like the Department of Land and Water Conservation's state-wide criteria for establishing regional vegetation management plans were being decided in this State (apart from those people who had an opportunity to contribute through their employment by State government agencies), there was virtually no comment by any external scientific society. That is a key document. It will

influence how an enormous amount of research and data collection funds are spent in this State. It will influence the standard of conservation over vast areas of this State, and basically the scientific community was missing in action.

SUE BRIGGS: Can I comment on that? The agencies will not engage us. I have decided that the only way for agencies to engage us is for us to gee the community up to put the pressure on the agencies to engage us.

PITTOCK: Thank you. It is certainly the case, I know, that a great many scientists employed by government agencies are not in a position to get their professional advice taken on board at decision-making levels. That is why it is critical that professional bodies like the Royal Zoological Society have a system in place so that those people are being supported by scientists outside of the government agencies that can afford to make their comments known and make sure that that critical scientific element is injected into the decision-making.

LIZ DENNY: I think scientists are selling themselves short, and I think that your approach is completely wrong. Scientists don't involve themselves because they, unfortunately, are scientists. You can listen to all the scientists that have spoken today. Do you take the species approach? Do you take the community approach? Do we do this, do we do that? Do we look at the barnacles? Do we look at the koalas? The whole thing is, that is what science is.

Scientists shouldn't have to be out there selling themselves. Why they are doing it is because of legislation. It is because of politicians like Senator Hill, etcetera. I am beginning to believe that scientists should take the whole corporatisation thing to the nth degree, form themselves into a body, take up fundraising on a major scale and thereby fund research. Not race around trying to do the kind of research that is going to get them money, but do the research.

PITTOCK: I think it would be great if you did do the fundraising and have some independent science. That would be fantastic. I think the point is, though, that there is an awful lot of public money being directed at natural resource management and conservation at the moment. We all know that a lot of that funding is misdirected. We know that there will never be an end point when our knowledge will be complete and we can make the definitive answers, but I think the point is that we have to draw on the best of our scientific knowledge now to make sure that that limited public money is being well spent. That is not occurring.