Plenary Session 1 on the value of protected areas for fauna conservation

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MARTIN DENNY: (Biological Monitoring Services). This is to Mat Vanderklift. Your graph showed a decline over the years of fish biomass. Also between years there were ups and downs and variations within it. If you had a look at a graph like that in terms of sanctuary and non-sanctuary, it is basically a treatment and a control. Both are varying and both are declining, and it looks to me that there is some external factor which has nothing to do with the idea of sanctuaries.

MAT VANDERKLIFT (CSIRO): So first, the concept of bouncing up and down in between years, there's a little bit of it. If we want to talk mathematically, we can break it down into various components. We can look at what's due to the overall trend versus what's due to the inter-annual trend. The overall trend dominates. In these particular two species, the overall trend is outbound. "Why?" is the next question. There are a couple of plausible hypotheses. One is that there's some sort of long-term overall trend in the ups and downs of fish. Some species do that. They have decadal changes where sometimes they increase, sometimes they decrease. Looking at recruitment of juveniles doesn't tend to support that particular hypothesis.

The other hypothesis is that it's something to do with fishing. If we look at what fishers tend to catch at Ningaloo, those two species are right up there. People go to Ningaloo to specifically catch those species. Then if we can recall the movie that I played, which had the colours which were the individual fish, what they were doing? You'll recall that they were moving in and out. Most individuals at some point spend a considerable amount of time outside the sanctuary area. When they are outside, they are not protected. So, Occam's razor: what's the most plausible of the hypotheses in this context?

STEPHEN AMBROSE: (ecological consultant). I have a comment for Bill Gladstone. I've been involved in work at Port Stephens over the last 12 months, looking at the potential impacts of dredging a channel through a sandbar that is at the entrance of the Myall River and its impacts upon migratory shorebirds that roost and feed on that sandbar. You mentioned in your talk that there is a mistrust of scientists generally and the information that they provide.

I would agree with that statement, and based on my experiences at Port Stephens, I think that community advocates go one step further than that. Not only do they mistrust the science, but they actually engage other people to do their own often unscientific monitoring to come to incorrect scientific conclusions. As a consequence, they try to denigrate the scientific findings that are more valid, and once they come up with those nonscientific conclusions they then disseminate that information widely through all media facilities that they can find. I think that's a real challenge for us as scientists because we have to respond to that propaganda, which is what essentially it is.

BILL GLADSTONE (UTS): There's a couple of observations about that. One of the reasons that I believe the mistrust in science began in New South Wales around this issue is that some of the science was initially poorly represented because the science underlying planning decisions I think was poorly presented. I gave an example of where there was some use of overseas studies that the public didn't trust could be reasonably applied to New South Wales. That then further fuelled public scepticism about the science that was being used to make these decisions. It just happened to coincide with a similar scepticism around the world about the role that science and scientists in the whole marine parks debate, and some quite well-known fishery scientists, have been labelling it faith-based science. That got its way into the public debate here in New South Wales.

Scientists were becoming advocates. We were accused of being advocates rather than being objective scientists, and again, that further fuelled people's issues with it. I think one of the other challenges is how we as scientists respond to those you raised about opinions being made in a public forum and then being taken as truth. That brings back to us the role of scientists needing to be excellent communicators, and as engaged in the process as these other people are. I think I showed you that graph where, as scientists, we had very little public involvement in the debate about marine parks in New South Wales relative to other spokespeople. Partly I think that's because of the way we're trained as scientists.

We're not trained to battle in those public forums so common in marine parks issues. We're a bit reticent, introverted and a bit more cautious, so therefore it makes it a bit uncomfortable for us in these very large battlegrounds where these issues tend to be fought out and opinions form. I don't know whether we have to change our personality or we actually become better communicators to do that.

RICHARD KENCHINGTON (Australian National Centre for Ocean Resources and Security, and University of Wollongong) **:** I'm just finishing a study with a number of universities and social scientists looking at barriers to the application of science in coastal site management, and there are two or three issues we learned from that. One is that we all know, secretly, that nobody reads scientific papers except scientists. As a decision maker, and a scientist, I used to have my former colleagues coming and dumping a pile of papers on me and say, "You really need to know about that," and I would say, "I've got two hours reading a week. What's the important thing? Why is it important?" "You've got to work that out." It's called the loading dock approach of science.

Scientists are paid and awarded for producing papers and preferably publishing in really flash journals. That's not communication. There's another thing, that many scientists are anally retentive. They don't like to engage with communities in terms of sharing knowledge, which is a two-way process: "This is what I found out. How does that gel with what you said?" and that's an absolute fundamental problem a lot of us engage in. And the third thing is that science has become a propaganda thing. Bob Kearney, who's one of the fishery scientists, happily talks about behaviours of fish which are pelagics, using that to totally override any consideration of species which are sedentary and settled, and that again goes back to a problem that had been an issue in the past, as to which species are doing what.

We've got a very complicated system. We try to have a simple answer and, as H L Mencken said, "For every human problem there's usually a simple solution and it's usually wrong."

JACQUI MARLOW: (Northern Beaches Road Kill Prevention). Basically we're having a similar problem and I wanted to bring it up in relation to bats as well. The media loves anything that's scary and, you know, one bat at the beginning of that movie *Contagion* dropping one virus and then the whole world dies, they just love it. So when we get to the second half of the plenary, could we please discuss how we get the media off this fear thing and get some serious science into the media, because we're having many problems with them in the Northern Beaches. It's extremely difficult to get something decent into publication without the local yokels screaming you down.

RICHARD KENCHINGTON: I was involved in an inquiry into bats a couple of years ago. One of the issues there was that there was no communication. The comparison was with the Brisbane Healthy Waterways where the scientific data was available. The way the report cards were presented and over three or four years that became trusted, and that worked well. Unfortunately, a change of government has changed the nature of the healthy waterways partnership. It has become much more unidirectional, but it is up to us as scientists to really share information and data and say, "There's the information. You analyse it." Yes, we may have to criticise their incompetent analyses, I have to stand up for that, but otherwise we're being mystical, dark, priestly figures who are passing on authoritative knowledge and not allowing other people to participate.

MAT VANDERKLIFT: In response to the comment about media, it's an issue. We need to do better. I've done my media training, for what it's worth, and I need to do more. I still prefer working with, if I can call it, "safe media". If we're working with the more opinionated media, if I can call it that, Sydney seems to have more than its fair share of that excitable charging and certainly a sort of an old view of science.

MARITA MACRAE: (I'm a bush regenerator and a petition signer). I've been supporting a campaign by a major conservation council against allowing recreational fishers in marine reserves and I'm wondering am I doing the right thing. Should I go on supporting that? I'd just like an opinion, please.

BILL GLADSTONE: Speaking as a scientist, I would say you would consider the evidence that recreational fishing is having an impact on marine biodiversity in New South Wales, or in a particular area that you might be concerned about. One of the issues we have with that science in New South Wales is we have very little understanding about that question. There's a lot of debate which says recreational fishing has a minimal impact. If you look at the fish stock assessments in New South Wales, only a relatively small percentage of the species that have been assessed are classified as over-fished, and for some of those, a major effort is made by recreational fishing. However, the other side of that is that about half the species have not even been assessed. So my approach would be to say, as a precautionary measure, we don't know. We really don't have a good understanding.

We have a little bit of insight from some of the work of the marine park scientists here in New South Wales. The results from the monitoring they've been doing in the sanctuary zones have shown improvements in some fish populations, once that fishing effort is taken out from those particular areas. However, we don't really know so much about what the flow-on effects have been to other areas where those fish have been pushed into. Has it led to a substantial decrease in those other areas? The evidence that's emerging is showing that when we do take that fishing out, the populations are increasing.

Now, whether they are increasing to a natural level or not we don't know because we don't really know what the baseline is, what the natural level is. We haven't got thousands of years of monitoring to be able to understand those areas that have been fished for many, many years. But I would say, as a scientist, well, look at all the evidence if you can find it and then say, "My personal view is -" or

your personal view might be, "I'll take a precautionary vote and say I think it should be." We should risk that in some way because either we don't have an understanding, or just in case.

PAT HUTCHINGS: Okay. I'd like to just ask, following on for Bill, really how reliable is our data on recreational fishing in New South Wales, please?

MAT VANDERKLIFT: In the recreational fishing effort?

PAT HUTCHINGS: Yes.

MAT VANDERKLIFT: It's good in some places where there have been comprehensive and detailed studies done, and done in a way that have been designed properly for a few areas.

PAT HUTCHINGS: But not for everywhere?

MAT VANDERKLIFT Not for everywhere, and not for every type of fishing activity. We don't have a good handle on recreational fishing effort, for example, off rocky headlands, rocky shores or beaches, because it's very difficult to do a scientific assessment. You can do it, but it's very labour intensive and requires a lot of personnel to do it, but we do have a good handle on it in certain lakes and estuaries.

HARRY RECHER: (Australian Museum). Just to pick up on that point about recreational fishing effort. I sit on the Lower Hawkesbury Management Committee and over the years we've gotten lots of information thrown at us about recreational fishing in the Hawkesbury, and quite frankly, it's crap. There are no data which would give you an accurate picture of any recreational fishing, with the exception maybe of a few very small areas along the New South Wales coast. The data are collected poorly. Fisheries is an incompetent research organisation. They wasted millions of dollars of fishing licence money trying to do this. They didn't design it properly. They didn't ask the right people.

For example, I was never asked what I catch because I don't bring up my boat at a boat ramp, I'm one of those people who is in that 98% category of catching 98% of the fish. So if you don't know what I'm catching, you don't know what everybody else is catching either. So to make decisions about whether to ban recreational fishing or control recreational fishing from different areas, you have to start by getting a decent database. You also have to have objectives. If the objective of a marine reserve is to prevent the extinction of species, then recreational fishing is not a problem.

If your concern is whether or not recreational fishing is going to result in the extinction of species, it's not. It's not because recreational anglers quit long before then. If, on the other hand, you want areas along the coast where people can go swimming and diving and snorkelling and see something resembling a near natural, relatively undisturbed environment, then, yes, you ban all fishing so that people can go down and see groper and other things. You have to define your objectives. I have a huge concern with this entire approach to marine national parks. It appears to me that you're in the process of repeating all the mistakes that were made in setting up a national park system on the coast.

There is a huge difference between the land environment and the ocean. We need conservation reserves on the land because we destroy the land. We remove all the vegetation. If you want to keep it, you put a fence around it. Until we change our attitude, that's the only way we can proceed, though I'm going to say something quite different in an hour so. As far as marine protected areas go, I don't see the biological surveys being done that would allow you to sample. I don't see anything being achieved by marine protected areas, despite all the very good evidence from North America showing that they do recover fish stocks. I don't see any evidence that you can achieve the same thing with better fisheries management.

Fisheries management in New South Wales is garbage. It doesn't exist. You go to Western Australia you begin to see some real efforts at managing fisheries. New South Wales Fisheries has resisted that for as long as I've been in the State, which is 1967. Long answer to a short question.

PAT HUTCHINGS: I don't think, actually, we have anybody from Fisheries here. No.

HARRY RECHER: That's because they never talk to anybody.

PAT HUTCHINGS: I'd like to address a question to Robin and discuss what sort of data we have to support some of these vast open ocean areas. How the hell are they going to manage some of those areas? You talked about three systems.

ROBIN WARNER (ANCORS and University of Wollongong)**:** Yes. There has been a process going on re documenting biological diversity and designating ecologically and biologically significant areas for different oceanic regions of the world. That's been a science-based process. So I guess that's a collection of evidence of the ecological and biological significance of particular areas. There is also a food and agricultural organisation. There have been vulnerable marine ecosystems measures introduced under deep-sea fishing guidelines, the fish stocks agreement, and that's also providing us with some evidence of what areas of the open ocean might be vulnerable and where conservation measures might be warranted in a particular area or actions to protect particular fisheries.

Move-on measures is one thing that's used, for instance, with vulnerable marine ecosystems through the regional

fisheries management organisations. Within our region, you'd be looking at the Western and Central Pacific Fisheries Commission, which is tuna in the Pacific. You'd also be looking at the South Pacific Regional Fisheries Management Organisation, and those are high-seas fishing organisations. So the flag vessels of member states are bound by conservation measures, which are introduced through the regional fisheries management organisation. It's very difficult still to enforce these measures, but we are making some progress. There are many other measures that need to be taken, and environmental impact assessments, strategic environmental assessments. I think I put up in one of the slides a list of conservation measures and MPAs is really only one of those measures.

DEBBIE ANDREW: (Office of Environment & Heritage NSW). We cannot be assured that marine protected areas are going to protect biodiversity. But marine protected areas are also more about determining the land uses that are applied within the area, such as excluding damaging land uses, potentially such as oil drilling or intensive commercial fishing or longline fishing? Is that a benefit of a marine protected area?

RICHARD KENCHINGTON: Okay, this is one of the big problems of the IUCN definitions. Category 6 is for managed multiple use subject to biodiversity conservation primary objectives. The issue has been a problem because people managing fisheries have primary objectives. We had a couple of years ago and discovered that 60% of the objectives were common, 20% were mutually irrelevant, and there were only 20% that actually required negotiated solutions that might be delivered by spatial solutions, i.e., by zoning for inclusion or exclusion of particular uses or fisheries regulations. This is the problem of that third and fourth dimension in that the areas have porous boundaries.

BILL GLADSTONE: One of the things that emerged from our study of people's perceptions about marine parks was that there was a general acceptance that conservation zones, or no-take sanctuary zones, were important and relevant for providing reference areas for science and education where we can understand what goes on in undisturbed systems to improve our ecological understanding and to monitor what goes on in nearby used areas and to protect areas that may be important for threatened species. There may be important critical habitats that may be used by species and for providing wilderness experience for people.

PLENARY 1 CONCLUDED

PHOTOGRAPHS

Mat Vanderklift (all photos by Dan Lunney)

Bill Gladstone

Robin Warner

Pat Hutchings

Panel (from left to right) Mat Vanderklift, Richard Kenchington, Robin Warner and Bill Gladstone

Audience participation: Harry Recher with microphone

Debbie Andrew with microphone