

GENERAL DISCUSSION—DAY 1

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Stan Moberly began the discussion with the comment that although we don't know as much about the environment as we would like, we probably don't appreciate how important our knowledge of its complexities is. He stressed the importance of a proactive approach to getting the information across to the relevant people, rather than simply reacting through, for example, the Environmental Impact Statement (EIS) process. He commented that not very much discussion has taken place on how we get the information across to those who impact upon the environment.

Chairperson Bryan Pierce called for comments on the key issue of communication. Barbara Richardson argued that there was an initial step before disseminating information: the need for a structure of where we are going with research and its application. There needs to be some statement on what are now thought to be the critical driving mechanisms in fish habitat. This, together with statements by managers on what they consider the major threats, could form a structure to enable priority setting. It would also allow assessment year by year on progress.

Stan Moberly thought the time was right now and wondered whether the Society was going to take a lead approach in dealing with this issue. Barbara Richardson responded by saying that she was not proposing delaying this, but hoped that an outcome of this workshop would be a "state of our understanding". This might

provide a tool for getting the message across but it would also act as a guiding framework for looking at how we are going in a year, five years or ten years time. She agreed with Stan Moberly that it is extremely important to get the message out there, to create the awareness and profile, and to get the involvement and participation of the wider community.

Gary Jackson agreed with both speakers. He said that Phil Cadwallader had written what was wrong with native fish populations 20 years ago, yet nothing had really eventuated, except that more populations were under threat and more habitat had been lost. He was concerned that in ten years time we should not be in the same situation. Information must be in a form that can be used by fisheries managers and also to educate the public.

Rob Lewis, speaking from a manager's perspective, mentioned his reverse chair technique. When, for example, industry complains or asks for action on a particular issue, he puts them in his chair and moves to the other side of the table and asks them what they would do. He suggested that this might be applicable here. He discussed the need to find compatibility and agreement on our preferred approach, i.e. getting our own house in order first. He posed the question as to how he, as a fisheries manager, can start to influence the decision makers.

In the light of earlier comments about the Society's role, John Glaister proposed a small group to meet at the end of the day to develop a

Society position that could be discussed on the final day. Barbara Richardson agreed to chair the group and several others were "volunteered".

John Koehn agreed with earlier speakers arguing that it is important that we are involved in the decision-making process, because if we are not, the best information will not be utilised. His second point was that we always assume that people in other fields know more than us. From his experience that just isn't true.

John Koehn went on to describe his own involvement with foresters and the positive outcomes that such interactions can give. Initially they were uncooperative, and didn't want to hear that, for example, sedimentation was a problem even though they realised it was, but eventually they asked for advice on how to stop the sediments hitting the stream. It was a daunting task, because there really aren't the 3 star scientifically replicated 10 year experiments to give exact answers. But from the knowledge and principles already available, the important points are there. We came up with all sorts of things and now there's even a suggestion that we will get another code of forest practice revised. The foresters have now come to accept that we are the water experts, they are the tree experts and so we are in there. It has taken up a huge amount of time but you can have an effect and you can change the thinking. However, it is a long hard education process. We have gone some way to getting aquatic fauna, as opposed to just water, included into forestry studies.

Peter Young reiterated that it comes down to "how to influence the decision makers?". He mentioned that the Society has a high profile with the fisheries decision makers and is recognised, for example, by the Standing Committee on Fisheries and Aquaculture. The Society is consulted on many issues but could probably be further consulted if it chose to be. Where we have a low profile, however, is with other groups. He posed the questions: How many University courses in forestry or agriculture include the impact of their activities on the aquatic environment? Have we considered approaching Vice

Chancellors and suggesting that they might perhaps change some of their courses? To what extent can the Directors of Fisheries influence, say, the Directors of Forestry? He commented that increasing our profile in this area could be very difficult particularly given Australia's federal system. Another approach the Society hasn't really considered is through the media. It can be a risky business but it certainly is going directly to the people. He mentioned that CSIRO are commencing training for selected staff in dealing with the media, recognising that this is the way of the future. Bryan Pierce supported the need to "sell" our fisheries better.

Dianne Hughes argued that communication between Societies is important. She also suggested that an outcome of the workshop could be a report or review that could be disseminated widely to all groups, including engineers, foresters, government and parliamentary committees, Universities etc. She stressed the importance of the Society setting down its goals and objectives and stating how these might be achieved. This point was also taken up by Bob O'Boyle who supported the need for the Society to put out a "state of the habitat" report. This was a positive approach, considering that all he had heard so far were comments about how bad things were. He suggested that a group could start working towards it over the next year.

Stan Moberly discussed the American Fisheries Society's experience with the Forestry Service and the benefits of an integrated approach. Members of the Society together with fisheries people in the Forestry Service and some foresters convinced the Service that current practices had a considerable impact on the aquatic environment. This has seen, over the last 6-7 years, the fish and wildlife budget of the Forestry Service increase about four times, and their staff of fisheries and wildlife personnel also increase dramatically. Although not all the answers are known, this was a start in the right direction. Trees will still be cut down, but if they can be cut in a way that has less impact on aquatic resources, that is progress.

John Koehn mentioned Victorian reports which included state of rivers. He remarked that representing fish has an advantage. People, including foresters, are interested in fish, they fish for them, eat them etc. But foresters know about trees and we know about fish, but conversely we don't know about trees and they don't know about fish. He stressed the need to bridge this gap in knowledge. He also suggested that there was a general interest in popular stories in the media, mentioning Stuart Rowland on the ABC National program "Australia All Over" talking about cod, and the videos put out by the Murray-Darling Basin Commission. Information on key species can also be put in a form that managers can use easily. People are receptive to this. Fish scientists have to get involved with all groups, especially in freshwater where you have foresters, engineers and water managers.

Mick Olsen endorsed John Koehn's multi-disciplinary approach but cautioned that fisheries managers often do not like to see other disciplines coming into their area of responsibility, yet everybody is aiming at sustaining the habitat and wildlife. A further advantage of having a multi-disciplinary thrust at maintaining habitat is that you may be able to get extra funds.

Duncan Leadbitter talked about the role of the fishing industry in habitat protection. He argued that 10 years ago fishermen were castigated for not being involved in habitat and now they were zealots. He put forward a word of caution, however, in terms of education, on the top down approach that science is the fountain of all knowledge. He argued that he had wasted 6 months when starting his job of trying to convince fishermen of the importance of habitat because they already knew this. What they needed to know was how to approach Government. Fishermen need training in how the planning system works, how environmental impact assessment works, how they can have their say and how they can get habitats protected. So different sectors will need different

information. For example, it will be technical information for the foresters, and information on the planning process for commercial fishermen (and presumably the same for recreational fishers).

Peter Gehrke's view of the day's proceedings was that everybody believes that habitat is important but there are no definitions on how to delineate where we are going. If our goals are not well delineated, how are we going to identify the problems we are going to encounter in achieving those goals? Scientists have vested interests in learning more and more details about the systems they are addressing and, from professional and numerous other perspectives, that is the correct approach. However, from the point of view of managing the habitats that support the fishery, we have got to be prepared to take a more reductionist view to the systems we are looking at. We will never understand all the variables but at least in the conceptual models that we use we can summarise the state of knowledge. Even flow charts of some sort would be of use in providing guide-lines for what we have to do. We have to define the key processes driving the habitats that we are looking at. In many of the fields we are dealing with, and from a modelling perspective, answers to within an order of magnitude are adequate. As many of our processes operate on a logarithmic or exponential scale, to try and reach 5% or 10% resolution is not practicable. We know a lot more and we can give a lot more advice than we have been doing to date. In summary, a more reductionist view is needed in the way we approach research for management as we get down to defining what is the important scale of sustaining habitats for specific fisheries issues.

Bryan Pierce concluded the discussion by agreeing that we have got to set some goals and that in the past we haven't. This is, perhaps, why we aren't talking within the same framework all the time. Key factors - clearly we do not have them - and a reductionist view would certainly get us there as long as they are critically tested. Picking up Stan Moberly's point,

he thought that probably the most critical factor that wasn't dealt with in the organisation of today was the issue of communicating whatever we decide, to the public, to make something actually happen. This should be dealt with on the second day of the workshop.