

Summing up

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Before providing my assessment of the conclusions of this Workshop, I would like to take this opportunity to thank Dave Smith for having organised and run a very successful conference. Dave named those most responsible in yesterday's introduction and I believe they all deserve our heartfelt thanks. I have only one complaint, and it is in the opinion of many a serious one; why would anybody convene a meeting of anglers and biologists in Canberra when the trout season is closed?

I have been impressed with the enthusiasm and diligence of a very diverse audience. There has been active participation in the debate by a very large percentage of the participants representing many professions, biologists, other scientists, economists, anglers, commercial fishers, fisheries managers, the fishing tackle industry, the press and more. This diversity of backgrounds has given rise to many and varied, and sometimes conflicting, opinions. It is difficult to distil these into a summary that can be accepted as being agreed conclusions of the Workshop. Nonetheless I cannot shirk my responsibility to attempt to do so.

In the last two days we have learnt a lot from our international guests and from many excellent local presentations. I believe

it is not appropriate for me to review individual talks, for indeed Richard Tilzey already did this for us late yesterday. Rather I would like to concentrate on summarising what I believe was agreed from the numerous discussions which followed the talks and panel presentations. To a large degree this has already been done by the panel session of Chairmen which has just concluded. I must admit I am somewhat apprehensive about trying to add to this panel's comments, particularly those of Peter Rogers, who very effectively summarised how he saw the proceedings to date.

We started yesterday morning to address the question 'What's the catch?'. I believe we did so aware that none of us knew the answer and that many of us did not know why we did not know. There was also no pre-conference agreement on what we would do differently if we did know. I was bold enough, or silly enough, to suggest a national, annual recreational catch figure of 50 000 tonnes. I did so with very questionable confidence. I also provided the figure with no estimates of statistical confidence. Immediately following my talk yesterday I was asked what confidence intervals I thought should surround the 50 000 tonne estimate. I declined to answer at the time but agreed to think about it. I suggested last

night to Dave Smith, out of session, that it should be 50 000 tonnes plus or minus zero. This is not intended to apply precision of the estimate but rather a matter of whether you add or take away a zero.

I have been heartened by the comments made at the conference that most people agree that the 50 000 tonnes is of the right order. Nobody has suggested to me that it is closer to 5000 tonnes or 500 000 tonnes.

Some aspects of the magnitude of the recreational catch that are agreed are: it is of the order of tens of thousands of tonnes, it is significant, it is less than commercial catches in some areas, it is comparable to commercial catches in some areas, and it is greater than commercial catches in some areas. There are few dissenters to the conclusion that the recreational catch must be taken into account in future management practices.

But how do we take account of recreational catches, particularly if we don't really know what they are? All we really have in the way of national data are a few bits and pieces and maybe a guess or two.

The deficiencies in the quantity and quality of recreational fisheries data need to be addressed: nobody has been seen to argue against this. There appeared to be unanimous agreement that more resources were required to address the general question 'what is the catch?' Much more work is needed in many areas but a few national priorities were identified. There was general agreement, but not unanimous, that a national survey of at least how many anglers there were, what they do and maybe what they spend would be an asset, particularly if done in such a way that it could be repeated to provide indices of

change on approximately a five year cycle. It was noted that such a survey would be of only limited value for catch estimation. It was agreed that more national consultation on what data are most useful and how they are best collected would improve efficiency. There was support, even if not unanimous, for common data formats and computerised processing procedures.

The problem of funding any action to improve data on recreational fisheries arose repeatedly. There was agreement that funding was a huge problem but no agreement on how to solve it. There was majority opinion that recreational fishing licences were inevitable, but a national fishing licence was currently not the way to go.

The lack of information on recreational fisheries was not restricted to catch data. The scarcity of published papers on recreational catches and the almost complete lack of internationally peer reviewed assessments of the impacts of recreational fishing, or of resource assessments based on recreational catch, are indicative of inappropriate input from the country's leading researchers. The paucity of recreational data compared with those available on commercial catches has been a major contributor to the perception that the recreational catch is a minor part of the whole. The lack of data on recreational catches has also often led to the over-use of data on commercial catches. Because the commercial data are often all we have, they are too frequently assumed to accurately represent the status of the resource. The lack of an alternative greatly restricts the debate.

I do not believe it is being unkind to suggest that the standard of assessments based on recreational catch carried out in Australia to date has been poor compared

with those employing data derived from commercial fisheries. There has been a lack of rigour in the scientific approach to the assessment of recreational fishing. The very good news is that in the last few years the quality of recreational fisheries assessments has begun to improve markedly. I was personally particularly pleased with the growing use of pilot studies and the often drastic alteration of experimental designs which followed the gathering of preliminary data. Hypotheses testing is becoming the preferred alternative to merely providing a description of the fishery. However there is a long way to go before catch rates and catch trends in recreational fisheries are accepted as a primary tool for resource assessments and for monitoring the effectiveness of management action.

I have already mentioned the problems of funding and that there was much discussion but no real conclusions. At least the dialogue has been rekindled at the national level and most who have attended the Workshop will leave accepting that more funding is essential.

Funding is not the only issue that needs to be addressed. It was agreed that to improve quantity and quality of data on recreational fisheries, anglers need to become more involved in not only the data collection process but also more involved in the management process. To facilitate this a greater sense of ownership of the data collection and management process must be engendered in the angling community. I suggest that increased ownership of the data and awareness of its implications will greatly increase acceptance by the angling community that they are a significant player in the total resource conservation and management process. Increased awareness of

the part that anglers play in resource use and conservation will lead to increased awareness by the angling community of the other problems that the resource faces, such as pollution, habitat degradation and commercial fishing. The quality of the debate is sure to be improved as a result.

Increased quality of data and increased awareness of the true requirements of recreational fishing and, of course of their implications, will lead to greatly increased use of recreational data in fisheries management programmes. As the quality of data, and analyses based on these data, improve, the potential uses of information on recreational fisheries will increase. I am confident that recreational fisheries statistics will be able to be used not only as indicators of the status of the fish resources but also of the status of the underlying ecosystems themselves. In the short term this is most likely to occur in our freshwater rivers and impoundments where recreational fisheries often represent the only economically feasible method of routinely sampling the end product of the ecosystem. Several projects have already commenced in different parts of Australia to have anglers actively involved in the collection of detailed recreational catch and effort and size composition data on a regular basis. One such data collection system with which I am familiar is that started by John Harris with bass anglers in New South Wales. While I was initially sceptical of the value of these data for resource assessment purposes fortunately I was not so sceptical as to prevent the project progressing. I am most impressed with the results to date and the possibilities for their use as indicators of the wellbeing of river systems.

Yesterday I suggested that many anglers were concerned that when more detailed figures on their catches were available the information would be used against them. While the debate of the last two days has confirmed that this fear occurs, it has also strengthened my belief that it should be easy to overcome. There is no reason why the average angler should fear the truth. Even if catches are high there is nothing inherently wrong with catching a lot of fish. The issue is whether those catches are sustainable. The goal of good fisheries management is to catch the maximum sustainable yield, or some approximation thereof, not just to know what this yield is and catch some fraction of it. Sustainable use of the resource remains a pipedream in the absence of knowledge of what the use is. The absence of data makes it impossible to accurately describe the problem, let alone suggest a solution. Management actions taken in ignorance will not often lead to long-term solutions.

In the last two days there has been considerable discussion on how to approach the current lack of data on recreational fishers. Many methods such as creel, diary and log-book surveys and boat-ramp and roadside interviews and fisheries independent surveys have all been acknowledged to have merit. It has also been stressed that we need long time series of quality data to truly address the issues of long-term sustainability and appropriate resource use. All of the methods discussed have their merits. There seems little alternative to a case by case assessment of what is required to best help the management process.

It was also acknowledged that it is not just a lack of research that has held back the management of recreational fisheries. It is

only in the last few years that most States had appointed dedicated managers for recreational fisheries and that while the numbers of these managers were increasing they were still fewer than for commercial fisheries. At the Commonwealth level recreational fisheries receive insignificant acknowledgement in the total fisheries management process.

I greatly enjoyed the panel discussion on the problems of allocation of resources between commercial and recreational users. However I did feel that there might have been more discussion of allocation within user groups.

Differences of opinion on allocation priorities between competing resource users can be expected to resurrect the debate on just how much of the fish resource could be allocated to commercial fisheries in the form of property rights. Are the country's fish resources common property or even no property? Particularly relevant to this debate was the statement yesterday by one of our water resource managers of how much easier it becomes to allocate water rights when estimates of the sustainable yield are reliable. In most Australian fisheries not only don't we know what the sustainable yield is but we don't even know what is the current yield (catch). We certainly have a long way to go.

While the current share of the total catch that is attributable to recreational fisheries is not known with confidence, the assertion was often made in the last two days that this share will increase. Naturally this was disputed by some. How the share will be assessed and allocated was the subject of some of our livelier debates and led to the general, but not unanimous conclusion, that a cooperative approach between recre-

ational and commercial resource users was the most appropriate way to achieve an acceptable outcome for both groups.

Many more people are involved in activities which influence fisheries resources than merely recreational and commercial fishers. They include, but are not limited to: the legal custodians of the resource (mostly governments), traditional or Aboriginal users of the resource, observers, developers, polluters (we do sell licences to pollute in Australia), seafood wholesalers and retailers, restaurateurs, tourism organisers, tourists, consumers of seafood, aquaculturists and individual public figures and politicians, in addition to recreational and commercial fishers. Of these it appears to me that recreational and commercial fishers have much more in common than many of the other groups that impact the resource. They certainly share a common goal of more fish for the future, or at least no less than there are now.

Consultation must be the most profitable way to secure the future of the resource. But as soon as this consultation process begins, accusations by one group of excessive exploitation by the other will be resurrected. The debate will not be very old before the statement is made, 'where are the data to support your claim?'. Such a debate carried on in ignorance will not help to decrease the conflict.

Accurate data of what is the catch and whether the catch is changing are essential before we can identify whether we have a real problem and, if so, how bad it is and what needs to be done? There is no doubt that recreational anglers are a significant user of many of our fisheries resources and that they must become more involved in the management process. They must there-

fore become more involved in dialogue with commercial fishers and with managers. They cannot, and should not, be expected to contribute on an equal basis to this debate without equal data sets to support them. In the common interests of resource conservation and security of use, all parties must have access to accurate information on all of the significant factors, be they fisheries or otherwise, that impact the resource. Debate, or consultation, carried out in ignorance of the facts cannot provide solutions.

There were one or two suggestions in the last two days that confrontation between anglers and commercial fishers was inevitable. Unquestionably there will be some conflicts in the years ahead but in reality both groups are here to stay. The demand for fish for consumption and as a basis of many of our major industries such as restaurants and tourism is sure to increase. Moreover, there is a growing worldwide shortage of quality seafood. There is also a decline in the number of quality places to go angling. Australia will inevitably see a much greater demand for fish as both a source of food and recreation. Approximately 30% of Australia's fish consumers are anglers and a great majority of our anglers consume more fish than they themselves catch, or at least different varieties of seafood than they catch. While the number of anglers, at between 25% and 30% of the population, is indeed great, the number of consumers at close to 100% is much greater. The angling community is also dependent upon commercial fishing for much of its bait. Interdependence within the two groups is not going to diminish.

Much of the conflict that is currently topical results from wrong perceptions. Most of

the conflict can only be resolved with appropriate information on the real issues and education of all parties involved. Consultation and education are the ways of the future, not confrontation.

One subject that almost avoided the discussion in the last two days was aquaculture. There is increasing communication between commercial capture fisheries and aquaculture in Australia. The National Fishing Industry Council (NFIC) represents both groups. There are currently no formal links between angling bodies and aquaculturists. I would like to suggest that the relationship between anglers and aquaculture will grow for two primary reasons: Firstly aquaculture has already created many fisheries in Australia by providing fingerlings for stocking areas such as impoundments where no natural recruitment occurs. As the aquaculture industry continues to develop, commercial production of other species will open up opportunities for more successes and the creation of new fisheries, for example marine and estuarine fisheries for species such as mulloway and dive fisheries for shellfish such as scallops. When large scale aquaculture industries have developed, the cost of fingerlings which can be used for restocking, will decline. Secondly, if the percentage of Australia's total fish resources taken by recreational fishing does increase, then that available for consumption by the non-angling public must decrease, unless seafood is created from some external source. Aquaculture represents the only known alternative. Opposition to increased angling catches will be much greater if there is no alternative supply of quality product.

There was unanimous agreement of at least one issue, all of us have learnt something in

the last two days. I repeat my sincere thanks to Dave Smith personally and to the ASFB Executive for a most timely initiative and a very well-run workshop.

Summing up