

Chairperson's Introduction

N. Caputi

*Bernard Bowen Fisheries Research Institute
WA Marine Research Laboratories
PO Box 20
North Beach WA 6020*

The task of measuring catch and effort for commercial fisheries is 'relatively' straightforward. It usually involves asking fishers and/or processors to complete compulsory returns. For nearly all commercial fisheries the vessels (or fishers) are licensed and their numbers are restricted. In many cases, the season and location of fishing and the number of effort units are also restricted. On the other hand, the estimation of catch and effort for recreational fisheries is an order of magnitude more difficult and hence more expensive. Few recreational fisheries are licensed and they usually involve a large number of fishers with a large variation in fishing ability. This means that researchers have to be more creative in the approach used to obtain total catch and effort, and catch rate data for these fisheries.

This Session will explore some of the options which are possible and their advantages and disadvantages. These approaches may vary depending on the main characteristics of the fishery, e.g. whether the recreational fishing activity is licensed (e.g. charter licence, recreational fishing licence, boat licence), the level of illegal activity occurring, the nature of the location (e.g. marine park, river, beach), the seasonality of the fishery, time of day of fishing.

Some approaches which have been used or are being attempted in assessing Western Australian recreational fisheries include:

- Australian Bureau of Statistics (ABS) population surveys
- creel surveys
- boat counts by aeroplane
- mail or phone surveys
- fisheries officer 'surveys' of legal and illegal catch
- abalone surveys by temporary inspectors
- fishing club competitions
- voluntary fisheries liaison officers (honorary)
- logbooks.

As creel surveys and some of the other techniques will receive more attention from the panellists, I would like to comment on two approaches, population surveys and fisheries officer 'surveys', which have proved useful in providing ongoing information on recreational fisheries.

The ABS survey on recreational fishing activities was part of the Market Labour Force survey of the general population conducted in July 1987 (Anon. 1989). This survey was undertaken by personally interviewing a responsible adult who was able

to answer questions on behalf of all household members. This approach enabled a large number of randomly selected households (4675) to be surveyed. The cost would have been prohibitive if it were undertaken as a separate survey. The survey was aimed at identifying the main species being targeted by recreational fishers, and their fishing methods, approximate days of fishing (e.g. 1–5, 6–10 days) and general fishing location (e.g. metropolitan area, south-west region). Interviewees were asked to recall the fishing activities in the past twelve months of household members. No information on catch was sought.

An alternative approach to the above survey would be to utilise the Population Survey Monitor, set up by the ABS to conduct surveys for a number of organisations quarterly, though the sample sizes are much smaller. However the sample sizes may be built up by repeating surveys over a number of quarters. Users pay on the basis of the number of questions they wish to ask in the survey.

The above two survey approaches may be utilised to obtain regular catch and effort information on recreational fisheries as undertaken by New Zealand (Teirney this volume). The random surveys would identify the households with recreational fishers and these could be asked to complete a diary of fishing activities for 3–12 months. This would provide an overall assessment of catch and effort for the main recreational fisheries. Creel surveys provide detailed catch and effort information for a region for a period, usually 1–2 years, and may be necessary when detailed assessments of fisheries are required or the management of the fisheries is being reviewed. However they are generally too expensive to provide ongoing monitoring of all recreational fisheries.

One common criticism of survey methods for obtaining catch information is that they do not take into account any illegal activities. One approach to obtain information on such activities would be to utilise information collected by Fisheries Officers. They are regularly in the field 'interviewing' recreational fishers and can provide useful information not only on illegal activities but also an ongoing monitoring of the number of fishers operating, their methods, catch rates, etc.

With greater emphasis being placed on performance indicators in all aspects of Government services, recording of information by Fisheries Officers would also enable an objective assessment of the success of the management methods being used. Information such as the proportion of fishers who are aware of the fishing rules, and the level of compliance, could be used as indicators of the success of management.

A criticism of this approach is that the Fisheries Officers are often targeting suspected illegal activities and hence a biased result is obtained. The methods used by Fisheries Officers, and indeed most policing officers, may be regarded as a two-stage sampling process. That is, some recreational fishers are approached in a 'random' or systematic manner as spot checks for illegal activities while others may be targeted because they are suspected of undertaking illegal activities. If this is so then Fisheries Officers would have to clearly identify the approach being adopted on any particular occasion. The former group could then be used to provide population estimates of recreational fishers' activity while the second group would provide some supplementary data on the nature of illegal activities.

Because of the difficulties in monitoring catch and effort information from recrea-

tional fishers, a number of approaches need to be explored as no one approach is going to provide all the information requirements for the proper management of recreational fisheries.

References

- Anon. (1989). Recreational fishing Western Australia July 1987. Australian Bureau of Statistics, Catalogue No. 7602.5.
- Teirney, L. (this volume). Determining the recreational share of New Zealand's marine harvest: it's in the bag. In: Hancock, D.A. (Ed.). Recreational Fishing—What's the Catch? Australian Society for Fish Biology Workshop Proceedings, Canberra, 30–31 August 1994. Australian Society for Fish Biology.