

Analysis of self reporting of recreational catch in New Zealand

by the New Zealand Sport Fishing Council

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Introduction

There have been a number of individuals and organisations promoting the value of electronic self reporting of recreational catch in New Zealand. Presumably the main reason for this is to get harvest information given the use of the phrase “you can’t manage what you don’t measure”.

New Zealand Sport Fishing Council (NZSFC) representatives were involved with all the Working Group review meetings of the 2000 and 2001 Telephone Dairy Survey harvest estimates and subsequent meetings which led to the development of the Large Scale Multi Species (LSMS) surveys of 2011-12.

The LSMS included:

- A well designed year-long phone survey of people recruited onto a National Panel using door to door surveys of 30,000 households;
- A NIWA aerial overflight survey in FMA 1 on random days for a year with interviewers counting and measuring fish accurately at the ramps; and
- A survey for 2 years of almost all boat access points in the western Bay of Plenty to measure rock lobster, scallop, kahawai and gurnard recreational harvest.

The results were worked up as independent harvest estimates, before being compared.

Outcome of surveys

The important element of all these surveys is they had a defined sample frame and within that a person or day could be selected at random. With a random sample from a known population there are straightforward methods to determine the sample size needed to give a good estimate, and once the sample is collected scaling up to a total harvest with confidence intervals. The estimates for the main fish species were remarkably similar and the coefficient of variation was low (c.v.s of 6 to 9%).¹

These surveys are expensive but provide very plausible harvest estimates for the main species.

Concerns

The New Zealand Sport Fishing Council is concerned that electronic self reporting will deliver poorer harvest estimates and divert resources and funding from high quality research.

One of the problems using self reporting is you do not know how many fishers there are (sample frame) and you get a bias in those who report (non-random). Usually it is the keen fishers who report and they fish more often and are probably more successful. Even if all fishers were registered (ie. licenced) there would be no way to scale-up biased data from those who reported for those that did not.

¹ Edwards and Hartill 2013. Calibration between offsite and onsite amateur harvest estimates.

With the best will in the world the New Zealand Sport Fishing Council cannot imagine more than 50% of trips would be reported. There could be some analysis on fishing effort and catch rate or location with what could be a huge messy database, but the harvest estimates would be worse than the 2000 and 2001 telephone diary estimates, which were largely unusable. The snapper harvest estimates in SNA1 were 6,200 t in 2000 and 6,700 t in 2001, over double the previous and subsequent estimates.²

In part, the problems with those surveys was avid or experienced fishers were over-represented in the survey, they used recall of past fishing events which was not accurate, and some thought that reporting the catch by other people on the same fishing trip.

The National Panel Survey in 2011-12 has largely resolved these issues.

Existing reporting schemes

Examples of good quality self reporting in fisheries in New Zealand are hard to find.

To date, reporting by customary fishers against customary permits is generally poor despite years of trying. Commercial fishers reporting logbook data under the terms of the Adaptive Management Programmes was very poor, in most cases. Probably the best example is the reporting of marlin capture weight, date caught, vessel name and angler name in NZSFC club records. These records have been published in club year books, in some cases since 1925. These records are no longer as complete as they used to be as the fishery is more dispersed, many more trailer boats are geared up for marlin fishing, and catch and release has increased. There is also charter boat logbook data on striped marlin catch for 38 years which cannot generate a harvest estimate but tracks individual vessels over several years and provides catch per unit of effort (CPUE) which give trends in availability and abundance of striped marlin in New Zealand. Catch recorded by charter boats can be checked against club records for that vessel.

Charter boats that take out recreational fishers are required to register and report all fishing activity while under charter. Some of the main species are reported as the number landed and released. Many fishers have voluntarily reported snapper catch and it will probably be introduced as a species that must be reported in 2016.

The quality of data in the Amateur Fishing Charter Reporting database is patchy because of data recording and data entry errors. It relies on the co-operation and self reporting by charter operators. That reporting is too inconsistent, with little or no validation of what is recorded.

In Fisheries Management Area 1, on the northeast coast from North Cape to Cape Runaway, East Cape, there is now a 10-year time series of traffic counts on indicator boat ramps. The data is not self reported, but collected by web cameras 24/7. The data these cameras capture correlates well with the NIWA aerial overflight counts of boats fishing. Combining relative fishing effort with boat ramp interviews collecting the observed number and measured size of fish retained, enables catch estimates which span the large scale surveys every 5 years.

Solution

The 2011-12 National Panel Survey delivered the best estimates of recreational harvest in New Zealand. The New Zealand Sport Fishing Council does not support scarce resources being used on

² Ministry for Primary Industries (2015). Fisheries Assessment Plenary Report, May 2015

the development and promotion of a large scale self reporting programme in the hope that it will provide something better than we have at present.

Before resources are committed to a self reporting system for recreational fishers there needs to be:

- A detailed proposal with objectives and description of how such a system may work and what it would cost.
- Evidential case studies of where self reporting systems have been successfully deployed in overseas jurisdictions as we have not been able to find any examples during our research.
- A repeat of the National Panel Survey to provide another form of validation of the 2011-12 results.