Monitoring supports fisherman’s estimates

The technique of using video for monitoring fish catches and the accuracy of on-board catch estimates is a tested method, proved on longliners in Canada and the UK on otter trawls in the North Sea, and inshore fisheries in the Celtic and Norwegian seas.

Now, Kelvin Boot reports on a pilot project which has installed equipment on inshore crabbers and potters as well as an inshore scallop dredger, for the first time producing useful data.

The research project is one of seven brought forward by Marine Scotland and is being carried out through the Marine Alliance for Science and Technology for Scotland (MASTS), by Seascope Fisheries Research Ltd., and has been funded as part of the £1.4 million project through the Scottish Government and European Fisheries Fund.

Using this technology fishing activities can be monitored constantly with the data being collected for analysis at monthly intervals, or even more frequently if necessary.

The advantage of this technology, produced by Archipelago Marine Research, is that it enables the fishermen to self-sample catches and report back where necessary, now and in the future, with the confidence that their estimating methods on sex ratios and discard rates, for example, have been verified. Previously such estimates have been regarded as anecdotal and while fishermen accepted them as accurate, the rigours of the scientific community could not.

MAJOR INCREASE IN QUALITY AND QUANTITY OF DATA

11 vessels are taking part in this initial pilot study: nine are targeting crab, lobster and lobsters with pots; one vessel is an inshore scallop dredger and there is also an inshore Nephrops trawler. Amongst the data being collected are details of the number of strings of pots and the baird being used. Soak time is recorded as well as actual catches being brought on board, so an accurate estimate of catch per unit effort can be assessed. The software allows on screen measurement of individual animals as they are brought on board allowing length frequency to be captured at the same time. Of great importance to the fisherman is bycatch, often predators that enter pots and destroy the catch before it is landed, the cameras record this too. All of this amounts to a major increase in the amount and quality of data that can now be obtained.

Cameras are positioned so that crews don’t have to do anything extra to their normal activities. Skippers are asked to jot done some notes as to the catch being brought in, which takes only seconds for each haul, and crew are asked to collect data on sea conditions from box counts, achieved by turning each camera towards the camera in the case of lobsters and crabs.

Already the advantages are being seen. Whereas on board observers might, at best and weather depending, manage to average between six and eight trips each year on one boat, this technology could allow for a full 365 days of monitoring if needed with all information being collected at active fishing times, adding an extra data dimension of crucial information on life-cycles and habitat changes throughout the year.

The project, which draws to a close in July, has already proved that the technology performs beyond expectation providing detailed data that exonerates the skippers’ own catch estimates as well as a mass of other data on stocks and their future management. And for once the skippers are in at the start, helping to get the systems up and working to provide quick and accurate verified information so that the can manage their own local stocks based on accurate data and before any additional regulations may be suggested.

“This equipment proves we’re not making the catch figures up, the scientists and conservationists don’t always get it right,” said Kenneth MacKinnon, one of the fishermen taking part in the study.

“For us it’s always handy to know what’s there and what’s about, and it helps if our fishing grounds are threatened, we can show what’s there and how much it means to us in money terms. We’re in it for the long term we want the fishery to be sustainable and this can only help. If there was another project, I would definitely encourage others to take part.”