

SF507

**English Channel Towed
Gear Discard Study
1997/98
ICES Areas
VIIId and VIIe**

1 Introduction

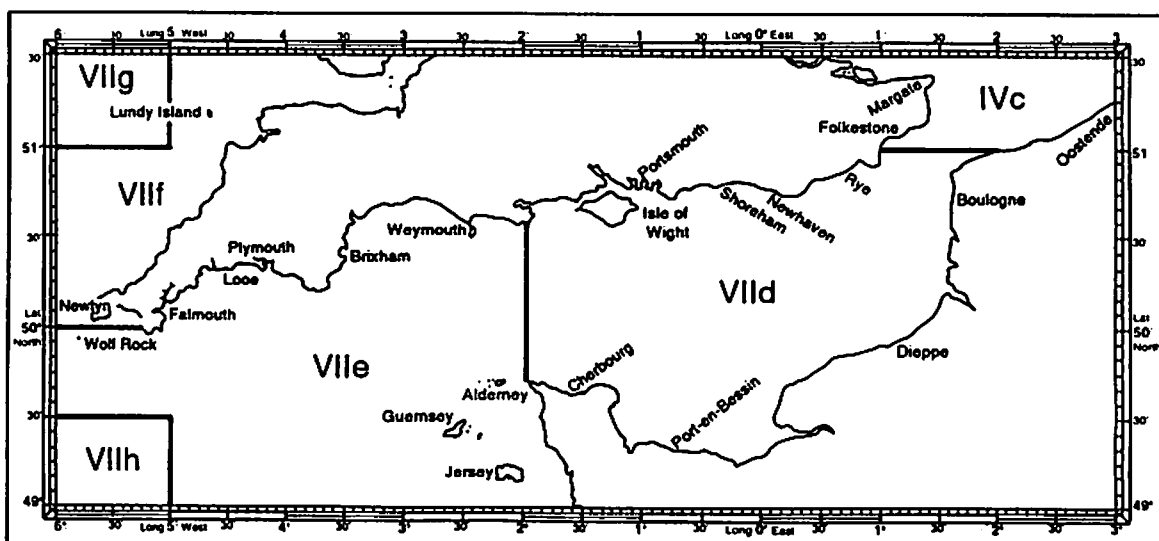
Seafish have been funded by MAFF to carry out a pilot study to determine the feasibility of establishing a discard sampling regime in the English Channel, ICES (International Commission for the Exploitation of the Sea) Areas VIIId and VIIe (see Figure 1). This report sets out to explain what a discard survey is, why it is necessary, how it is carried out and the potential benefits of such a survey to the industry. An important part of this study will also be to assess the feasibility of a self-sampling programme carried out by fishermen themselves.

2 What is a discard survey?

For the last 5 years, Seafish and others have been involved in a long term study of the UK fisheries, examining the different gear types and their respective catches. A major part of this study has involved the sorting and recording of samples of discarded and 'trash' fish taken from hauls before their disposal back into the sea, by Seafish Discard Officers (Dos). This provides information on stock levels, species caught and the effects of technical measures impossible to obtain using landing dockets or logbooks.

Previous studies have been carried out in the Irish Sea and the NE coast of England. In Scotland the Scottish Office of Agriculture, Environment and Fisheries Department (SOAEFD) have carried out a discard sampling programme for 17 years. This current survey is a continuation of a previous Channel study, covering vessels operating from ports in areas VIIId & VIIe.

Figure 1: Area covered by the 1997-98 Channel Discard Survey



Essential to the success of this, and all the previous discard surveys, is the goodwill, trust and support of skippers, crews, vessel owners and their representative organisations. Discard sampling trips represent unique opportunities for scientists to live and work with fishermen, and observe the problems encountered as they try to earn a living from the sea. Participants in the 1995 Eastern Channel survey included skippers, owners and their POs from Brixham, Plymouth, Newhaven, Looe and Shoreham.

All the vessels involved in the survey are guaranteed anonymity, the actual vessels taking part being known only by the relevant DO who assigns each boat with a coded reference. None of the information gathered by the survey can be used by any enforcement agency in any legal action against skippers, crews or owners. The DOs carrying out the onboard sampling are both ex-fishermen and would not participate in this survey if this were not the case.

3 Why is it necessary to survey discard levels?

The requirement to assess levels of discarded fish in commercial fisheries has been recognised by ICES since 1975. Discard data has a valuable role in:

- **Improving the accuracy of stock assessments.** Survey data provides information on the *total* catch, not just the *landed* catch, and therefore allows evaluation of total fishing mortality.
- **Understanding the life cycle of exploited species.** Analysis of total catch may enable some aspects of the life cycle of exploited species to be more fully understood, i.e. the mapping of small fish distribution.
- **The assessment of gear selectivity.** Both the actual performance of existing measures and the potential benefits of new measures.
- **The assessment of the ecological impacts of fishing.** For instance, the variation in catch composition over time can reflect the decline or increase of interacting species.
- **Identifying the factors which influence the discarding of a species.** These include, among others, minimum landing size (MLS) and market forces.

4 How is the discard data collected?

Once it has been decided which type of gear is to be sampled and from which port, skippers engaged in that fishery are contacted by letter or telephone and, if the skipper agrees to take part, the DO arranges to join a trip for the duration.

During the trip a number of hauls are sampled by the DO.

The chosen haul has its start, duration and end point recorded. Once the catch is emptied from the codend, a sample is shovelled into 1 or 2 baskets by the DO and put to one side, while the

crew check the gear prior to shooting back. After the crew have sorted the catch, discarding as normal, the amount of marketable fish retained is recorded.

The sample collected by the DO is then sorted into landings and discarded/trash fish by a crew member. The 'landable' fish are measured and given back to the crew, while the remaining discards and trash are sorted and measured by the DO himself. Some of the discarded sample (exempt from MLS restrictions) will be kept to be examined ashore, and some otoliths ('ear bones') will be removed from fish to enable the DO to accurately age them. (see Appendix I)

The method for sampling on scallopers is similar, the discard sample being taken from a previously selected area of the side deck.

At the end of the trip the DO records the total amount of fish landed from the boat. Landing docketts and logbooks are not used to establish this. The DO has no knowledge or interest in the quota status of any of the species aboard the vessel.

The DO aboard the vessel has his own comprehensive insurance and survival gear; and will endeavour to cause as little disruption to the normal running of the vessel as possible. He may even do the washing up occasionally!

5 What use is the survey to the Industry?

This survey could be very useful for refining technical measures and defining areas where they could be successful. The collection of discard data is necessary if an accurate assessment of the effectiveness of technical measures is to be made i.e. what works and what doesn't.

It is possible that whole crews, or a proportion of a boats crew, may be routinely discarding marketable species which are slightly larger than the MLS without realising, or 'to be on the safe side'. This unnecessary loss of income would be immediately identified by the discard survey. A reduction of discards would help reduce non-profit, time consuming activities aboard the vessel, for example, less time would be spent sorting marketable from non-marketable fish.

The quality of high value species may also be enhanced with improved selectivity, such as square meshes and separator panels (see Appendix II for separator trawl trial results). Costly damage to high value species, caused by mixing with trash and unmarketable species in the cod end, could be reduced with improved selectivity.

If the total weight and grade of discards are known it may be possible to assess the viability of developing markets for currently discarded species. The potential economic advantages of selling otherwise discarded species should not be over estimated, even where the value of such species is low. When profit margins are squeezed, small marginal increases in overall landings can make a significant difference to a vessel's annual grossing..

6 The previous Channel survey

The 1997-98 Channel discard survey is a continuation of an earlier study which began in 1995. Interesting findings from the previous survey included;

- The discard rate of fishing vessels working in areas VIIId and VIIe are low compared with other Seafish discard surveys.
- Low discard rates for lemon soles throughout the year in the Western Channel suggested good separation between adult and juvenile fish.
- Variation in the market conditions between different ports appeared to affect discarding practice. For example both gurnards and pout fetched a higher price in Brixham than in other ports and as a result the discard rates for both species was lowest for vessels landing in Brixham.
- It seems apparent from the survey that different skippers and mates have different policies on discarding fish and that the morale, comfort and level of supervision of the crew may have an influence. It was found that the factors affecting discarding practices onboard a vessel could be grouped into natural, technological, human, economic and legal influences, see Table 1 below.

Table 1 Factors which may affect discarding practise onboard a vessel

NATURAL	TECHNO-LOGICAL	HUMAN	ECONOMIC	LEGAL
weather (working conditions on deck) unsorted catch size, composition and quality storage life of species condition of species	equipment (deck and fishroom) capacity	manpower organisation and efficiency duration of trip comfort/fatigue morale influence of skipper and/or mate crew changes between hauls and /or trips	demand prices relative value of species within catch	MLS quotas and other restrictions potential for prosecution and penalties

adapted from Emberton et al. 1995.

7 The 1997-98 survey.

Further work on studying discarding practice in the English Channel is necessary to fully describe discarding patterns, as the 1995 survey was unable to adequately sample the full range of fishing methods in all areas. Consequently, the current survey will concentrate on the following areas and gears: the ports of Newlyn and Rye, beamers, inshore beamers and scallopers (including french dredges). Previously sampled areas and methods will be covered again although possibly to a lesser extent. It is also hoped to include Channel ports not targeted in the previous survey.

8 Self-sampling: feasibility study.

During this current survey, the DOs will also examine the feasibility of training selected crews to sample their own discards, enabling the project to continue into the long term. This will involve developing a method of sampling discards which is efficient and causes minimum disruption to the normal sorting procedure. This will reduce the costs of such surveys and will eventually allow a greater area to be sampled, improving the accuracy of stock estimates, small fish distribution, etc.

The DOs will select vessels (from those who are willing) to train in the method, supply the equipment needed and collect the bagged, preserved, samples at the end of a trip. The measuring of fish and the removal of the otoliths will be done ashore by the DO responsible. The same levels of confidentiality will apply to self-sampled data as to the DO collected data.

Although on the surface this may appear to be increasing the deck workload, (however slightly) for no real reward, there are several reasons why vessels may agree to participate. For the crew, a nominal sum paid on delivery of a completed discard sample will compensate for the hassle and provide for a round or two on landing day. For the skipper, an increased awareness among the deckhands of what is being thrown over the side may well improve the sorting and eventually increase the value of the landed catch. For the industry as a whole, self-sampling provides a stake in the management of the fisheries they are involved in, and shows the general public that the industry is involved in the stewardship of its resources as well as its exploitation.

9 Who will be carrying out the survey?

The two DOs who will be carrying out the onboard sampling for the '97 Discard Survey are Jon Lansley and Allen 'Spike' Searle. Both men fished out of Newlyn for many years, trawling, netting, beaming and driftnetting, and have gained degrees in Fisheries Science from the University of Plymouth. Since graduating in 1996, Jon has worked as a NAFO observer on the Grand Banks and Spike has worked as a fisheries consultant for several marine consultancies. Jon will be based in Plymouth, at the Seafish office on Sutton Jetty and Spike will be based in Newlyn.

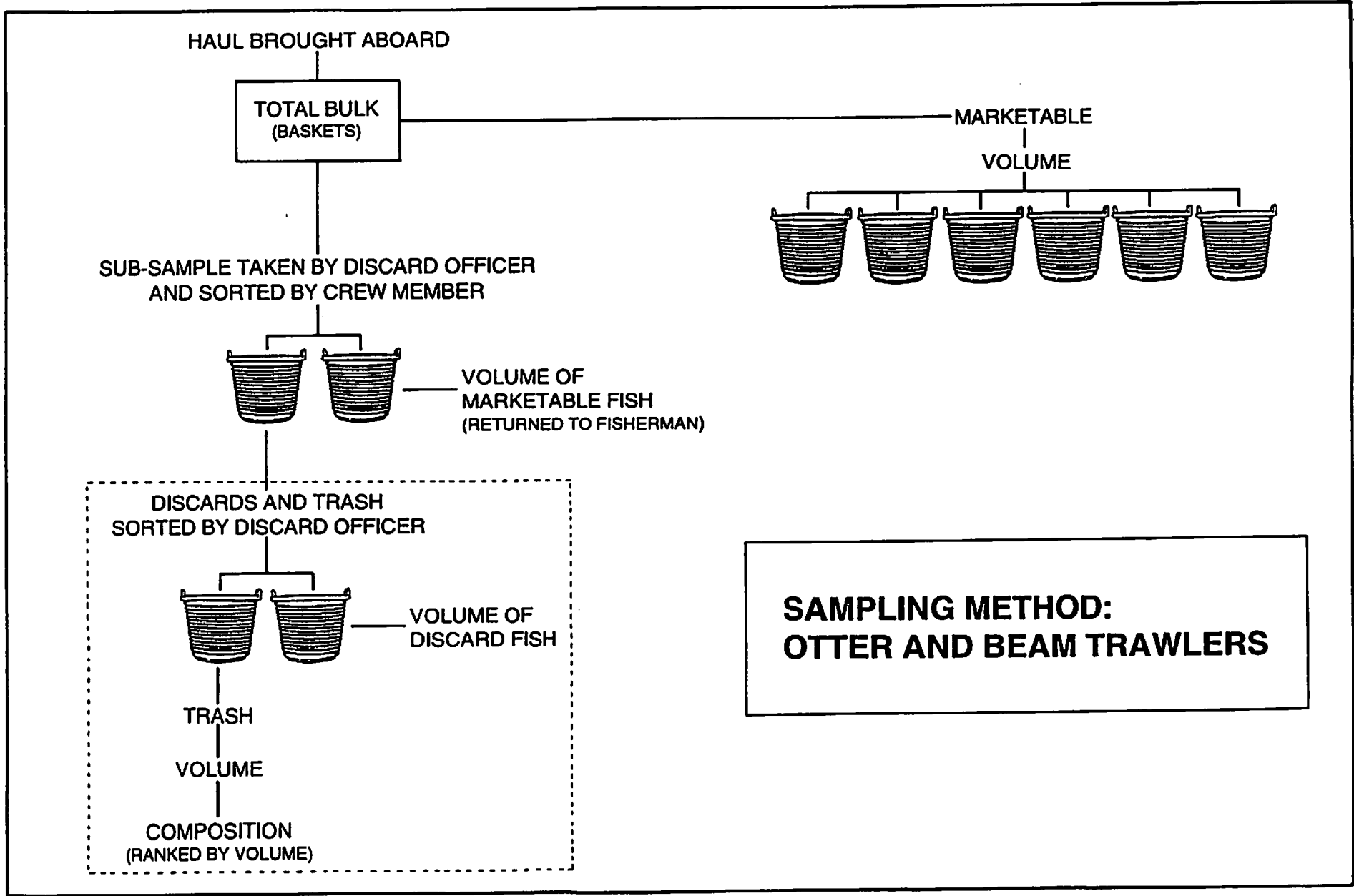
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MAFF Commissioned Separator Trawl Trials 1995

