

The Seafish Guide To **Discards**



This is one of a series of guides in which Seafish explores topical issues affecting the UK seafood industry. Here we consider why discarding occurs, the size of the problem and the measures being adopted by industry and Government to reduce discard levels.

A Definition

Discards are those parts of the catch that are returned to the sea. Bycatch are species in the catch that are not the main target of the fishery, but may be discarded.

It is important to emphasise that discarding is not a universal problem affecting all fisheries, and that the level of discarding varies widely between fisheries, and within fisheries. Some fisheries are almost completely 'clean', others may discard more than they retain, and in some fisheries discarding can be a good thing. Assessing how much of a problem discarding poses, and to whom, can be complex.

When assessing discard levels it is important to be aware that when counting discards 'counting' can cover: only commercial fish species; all fish species; all animal species, including invertebrates; or all species, including plant life.

Discard rates can also be described in terms of numbers of fish, or their weight. Using numbers and size give a better idea of the waste of growth potential. Discarding many small dead commercial species fish clearly removes any prospect of catching them later, when they would have grown bigger, and had a chance to breed.

Why Discards Happen

There are many different reasons for discarding but the two major reasons are market conditions and management regulations. Both these sets of conditions can change by season or by fishing area, even within one fishery.

Market conditions

Market conditions may result in fish being discarded because they are completely non-commercial and therefore have no economic value; they are a marketable species but of low value and not worth keeping; or the fish are mechanically damaged and are of such reduced value that they are not worth keeping.

Management regulations

Fish may also be discarded because of management regulations – so called 'regulatory discards'. Regulations restrict the retention of fish that are a commercial species but below the legal minimum landing size (MLS); restricted by quota so that there's no entitlement to land them; or non-marketable because of catch composition restrictions (there are rules controlling the relative proportion of species that may be held or landed in some fisheries).

There is no doubt that the discarding of fish wastes resources and there is an urgent need to implement measures to reduce the level of discards wherever possible.

Key Facts

The seriousness of the impacts related to bycatch and discards has been recognised by the international community and endorsed through the FAO International Guidelines on Bycatch Management and Reduction of Discards

Discards are those parts of the catch that are returned to the sea

A combination of market forces and regulations may result in the discarding of fish that are valuable but not as valuable as (usually) larger fish of the same species. This discarding of lower value commercial catch to maximise the value of quota is referred to as 'high grading'. Discarding is less harmful for species that survive when returned to the sea. Undersized or 'soft' shellfish like crabs and lobsters survive well and fish like sole, plaice and dogfish also have high survival rates.

It is not only fish that are discarded. Many fishermen working demersal towed gear often haul marine rubbish up with their catch which would be tossed back overboard. A 'Fishing for Litter' scheme now encourages them to retain this litter onboard, for safe disposal in port.

The Size Of The Issue

Discarding is fishery-specific so global totals are of limited value but there are estimated figures available. The FAO in their most recent publication (May 2012) International Guidelines on Bycatch Management and Reduction of Discards^{1,2} still refer to their 2004 figure where they estimate that discarded global catch was approximately 7 million tonnes. Estimating the total amount of global bycatch and discards has proven difficult for a variety of reasons. Depending on the definition used, bycatch and discards could be estimated to be in the region of 20 million tonnes³.

It has been estimated that in European fisheries 1.7 million tonnes (of all species) are discarded annually, corresponding to 23% of total catches⁴.

It is more important to know how much discarding is occurring in each fishery and which species are affected. The level of waste may be biologically significant or it may not be significant. Sometimes very low levels of discarding can be highly significant. This will be the case if a species is endangered in some way, is highly valued or raises animal welfare issues.

This is not a new issue. The Food and Agriculture Organisation of the United Nations (FAO) Code of Conduct for Responsible Fisheries⁵, first adopted in 1995 recognises 'States should take appropriate measures to minimise waste, discards, catch by lost or abandoned gear, catch of non-target species, both fish and non-fish species, and negative impacts on associated or dependent species, in particular endangered species. Where appropriate, such measures may include technical measures related to fish size, mesh size or gear, discards, closed seasons and areas and zones reserved for selected fisheries, particularly artisanal fisheries.'

THE NORTH EAST ATLANTIC

Fisheries in the North East Atlantic, including the North Sea, have disproportionately higher discard levels compared to many other sea areas. Discard rates in European fisheries vary widely, from negligible in some small-scale coastal fisheries to up to 70-90% of the catches in some trawl fisheries. An EU discards impact assessment in March 2011⁶ concluded beam trawlers have the highest levels of discards in all locations, regardless of whether they are targeting invertebrates or flatfish and that other types of bottom trawlers also have high rates of discarding, but that these are more variable.

Key Facts

Encouraging fishers to use more selective gear is a critical part of addressing the discards problem

Addressing The Issue

In 2009 the Commission launched a wide-ranging debate on the way that EU fisheries are managed. How to stop the discarding of unwanted fish at sea through the introduction of a landings obligation is one of the most controversial issues facing Common Fisheries Policy (CFP) reform. The current CFP regulation obliges fishermen to discard fish that they have caught in excess of their quota allocations or that are below the minimum landing size. These 'regulatory discards' are particularly a problem in mixed fisheries if the allocation of quota does not match the proportion of species in the catch.

The reform of the Common Fisheries Policy⁷ is underway and was due to take effect from January 2013. Whilst this has been delayed reform is intended to take better account of the huge differences across European fleets and fisheries. Discards are a huge part of this debate, and should help pave the way to minimise or ban discards.

Discard Action Group

In the UK the Seafish-facilitated Discard Action Group⁸ is an integrated, interdisciplinary, co-operative approach to the discards issue, and is the only UK cross-industry group addressing the discards issue from all perspectives.

The group is representative of the whole seafood supply chain with representatives from the catching sector, environmental non-governmental organisations, legislators, regulators, technologists, scientists, retailers, foodservice and, where appropriate, the media. It is a key forum to allow individual interests to have a voice in the debate and to explore means by which discarding can be reduced to the minimum level practicable.

The Discard Action Group is monitoring activity and reporting on progress in four key areas which are explored in this guide:

- Selective gear technology
- Regulatory controls and the management of fishing effort
- Increasing market demand for under-utilised species
- Data collection

DAG has a clear remit to provide factual information on discards that is both accessible and understandable. It is helping each sector to understand the perspectives of others and build consensus on issues relating to discarding; it is helping define and promote best practice in discard reduction; it has been, and continues to be, instrumental in looking for novel ways of incentivising the adoption of best practice; it informs its members and the wider community of new developments on a national basis, and to the highest level in Europe.

Key Facts

FAO estimates that discarded global catch is approximately 7 million tonnes

Project 50% was a resounding success, with average discards reductions of 52%

Gear Selectivity

Much discarding occurs because fishing gears are not selective enough. Selectivity work is ongoing to make fishing gear more selective so that bycatch and discards are reduced. Many fisheries are based on a mixture of species and fish that are not wanted can be caught inadvertently. Some selectivity problems can be solved relatively easily. If the unwanted creatures – such as dolphins – are very different from the target species, then a sorting grid can be used. However it is more difficult when there is a mix of species in the same place such as cod, haddock, whiting, plaice, monkfish and sole, and each species has a different minimum permitted size – no single mesh size will retain all legal fish and release the rest.

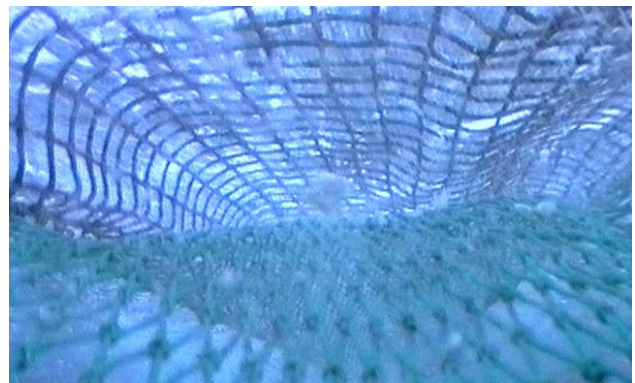
Options trialled by gear technologists have included using behavioural differences between species to guide them to different parts of the gear; using large mesh panels to allow unwanted species to escape; inserting 'windows' of 'square mesh' or other devices at strategic points in the gear; and taking advantage of the different body shapes or sizes between, for example, flat and round fish; fish and langoustine; or fish and sea mammals or turtles.

A whole host of measure were introduced under the Conservation Credits Scheme in Scotland including a 'one-net rule' so that vessels carry only one regulated gear mesh size per trip and special rules were introduced for twin-rig vessels and single trawl vessels. In 2012 the UK Government committed to introduce additional selectivity measures reflecting the circumstances of different areas and different fisheries.

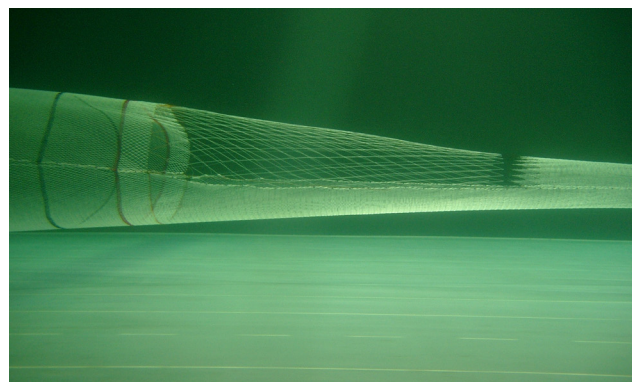
One of the participants commented: *"Project 50% opened up a different kind of discussion because we felt that our opinions were being valued."*

PROJECT 50%

Project 50%⁹ was funded by Defra and co-ordinated by Cefas. The project used social scientists' skills to understand the reasons behind the apparent resistance to adopting new gear modifications and to help guide a new approach to developing discard reduction techniques. Collaboration was at the heart of the project. Through Project 50% Devon beam trawler crews agreed to try to reduce their discards by an ambitious 50%. Working with local net-makers, the fishermen trialled their own new net designs alongside standard gear configurations. The research was supported by Cefas gear technologists and fishery liaison officers. The trials were a resounding success, with average discards reductions of 52%, and the most successful boat achieving a 69% reduction.



Close up of square mesh panel



Large mesh panel allows unwanted species to escape

Managing Fishing Effort And Regulatory Controls

Managing effort

There are a number of schemes which depend upon vessels reporting in when they start to encounter particular fish at levels over a given threshold. Once the nature and extent of the concentration of fish has been established, measures can be taken either to close the area for a given period or for specific selectivity devices to be mandated for the area. In the North Sea a Voluntary Real Time Closure (RTC) Scheme has been implemented throughout the cod recovery zone since early 2008. Initially this was to protect spawning cod but was later expanded to cover all cod. When a high abundance of cod is identified a limited area is closed for a fixed period of 21 days after which the area will automatically re-open. In Scottish waters there are a maximum of nine RTCs in place at any one time. There are also seasonal closures. Localised RTCs provide necessary protection for local aggregations of fish.

Regulatory controls

Regulatory discards can also be reduced. As examples, it is possible to have swapping or short-term leasing of quota entitlement. Minimum landing sizes can also be adjusted so that edible fish, that would only be discarded dead, can instead be landed legally. A possible disadvantage of this approach is that small fish might then become the subject of 'high grading'. Managers have also successfully introduced limits on non-target catches in many fisheries. An example of this approach is Total Allowable Bycatch in North America.

Key Facts

Catch quota trials in England have drastically cut discards of both cod and sole to just 0.2%

Catch Quota Management

The UK has been piloting an alternative quota management system. The Catch Quota Management Scheme (CQMS) or fully documented fishery (FDF) as it is often now referred to, is being seen as an important element in enabling managers and industry to reduce discards. Coupled with the use of highly selective gears, and other measures it is seen as a valuable tool to address discards and improve the stock recovery for cod.

The trials started in 2009 in Scotland and 2010 in England. Currently there are 23 vessels taking part in Scotland and 19 in England (seven in the Western Channel and 12 in the North Sea, with four of the West Channel are participating in trials involving sole, plaice, angler and megrim). The participating fishermen have been obliged to count all catches of cod against their quotas, including those fish that were below Minimum Landing Size (MLS) and which could not therefore be sold. The participating vessels have been given access to an additional quota of cod

The 2011 trials in England show the trial had been successful in reducing discards of both cod and sole to just 0.2%. In 2010, the average discard rates were 38% for North Sea cod trawlers and 28% for Western Channel sole beam trawlers. Participating fishermen have also drastically reduced discards of undersized fish of all species to between 0 and 3% of their total catch¹⁰.

In Scotland the trials are clearly providing the incentives for skippers to optimise their gear selectivity to maximise economic return. Participation in the 2010 catch quota trial appears to have increased the volume of landings of all species in comparison to a control group. Overall, this led to an estimated increase in net fishing revenues of approximately £114,000 per participating vessel¹¹.

“I want to continue to work with industry to develop innovative solutions, such as the Catch Quota scheme, which reduce unwanted catches and work towards the elimination of discards.”

RICHARD BENYON.



Fishermen and scientists at work

Increasing Market Demand For Under-utilised Species

The fishing industry is potentially losing significant value by failing to develop markets for edible or otherwise usable species, and by not capitalising on the possible value of sustainably or locally caught species. This failure to develop markets contributes to the potential for discarded fish, with effort being focussed on a small number of species.

The retail sector is actively working towards bringing under-utilised species to the market and chefs have an important role to play in creating new dining experiences. Defra has been working with industry to influence the market, remove barriers and create new incentives to improve sustainability for edible, under-utilised species through the Fishing for the Markets initiative.

Data Collection

A key problem caused by discards is that unrecorded discarding prevents accurate estimation of fish mortality, and so hampers the scientific assessment of stocks. For management measures to be effective there must be accurate measurements of the amount of fish discarded, identified by species, size and sex composition. The fishing fleet is the natural sampling platform for discard monitoring.

The Centre for Environment, Fisheries and Aquaculture (Cefas) and Marine Scotland Science send scientific observers to sea with fishermen to sample the quantity of fish discarded and retained by fishing vessels. This sampling is intended to provide estimates of discards of the main commercial species, but at present is not fully representative of all UK fisheries. It is only possible to sample a proportion of the vessels participating in any fishery.

This is a key part of the CFP reform process and new FAO guidelines will help in this. Although voluntary the FAO International Guidelines on Bycatch Management and Reduction of Discards¹³ constitute an instrument of reference to help Member States and fisheries management bodies formulate and implement appropriate measures for the management of bycatch and reduction of discards in all fisheries and regions of the world.

Key Facts

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References

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Other Seafish guides

There are a number of other Seafish Guides in this series, covering different aspects of responsible fisheries and sustainability. For more details and the most up to date information consult our website at www.seafish.co.uk/media/sustainability

There is also a series of Responsible Sourcing Guides¹⁴ outlining the individual stock status of the 38 main species of fish consumed in the UK (about 300 stocks).

About Seafish

Seafish was founded in 1981 by an Act of Parliament and aims to support all sectors of the seafood industry for a sustainable, profitable future. It is the only pan-industry body offering services to all parts of the industry, from the start of the supply chain at catching and aquaculture; through processing, importers, exporters and distributors of seafood right through to restaurants and retailers.

Contact Seafish at:

Seafish, Origin Way, Europarc, Grimsby DN37 9TZ
t: 01472 252300 | f: 01472 268792
e: seafish@seafish.co.uk | w: www.seafish.org