



Comments on discards of whiting and other species where there may be mismatch between scientific assessments and fish abundance

1. Introduction

- 1.1 This paper stemmed from a discussion of discard initiatives by the NSRAC Demersal Working Group at its meeting in Ostend in February 2010. Fishers drew attention to the high abundance of sizeable whiting in northern and western part of the North Sea despite the low TACs set for this species. Low whiting quotas for the fishing fleets operating in this region means that when heavy catches of whiting are taken they cannot be landed and must therefore be discarded. It is illegal to retain fish onboard for which there is no entitlement – that is what promotes discarding. Such discards represent unwanted fishing mortality and lost revenue. They are detrimental to fish stocks and disruptive to marine ecosystems. The apparent mismatch between the scientific assessments and reality on the fishing grounds also undermines industry confidence in the ICES stock assessment process and the results it produces. Discards undermine the industry's reputation with the general public. Moreover, discards may go unrecorded, exacerbating the problems for scientific stock assessments.
- 1.2 A NSRAC Focus Group was set up to look at the roots of this problem and to seek solutions, not just for whiting but for other stocks affected in the same way. A preliminary report was discussed at a further meeting of the Demersal Working Group in May and resulted in the preparation of this paper for consideration by the ExCom.

2. State of North Sea whiting

- 2.1 ICES scientists have said that contradictory trends have been observed for North Sea whiting from research vessel surveys and commercial catch data. Surveys show that whiting are abundant in some areas but not others. Overall the commercial landings remain low, but there is an incomplete record of current discard levels in the North Sea whiting fisheries. There is no management plan for North Sea whiting and there are no explicit management objectives. In the absence of defined reference

points, the state of the stock cannot be evaluated. An analytical assessment estimates spawning stock biomass in 2009 as being near the lowest level since the beginning of the time-series in 1990. Fishing mortality has declined and the current level of fishing mortality is appropriate, but there may be advantages in reducing it further in the longer-term if recruitment remains low. Recruitment has been very low since 2002, with an indication of a modest improvement in the 2007 year class. Because of declining abundance and poor recruitment ICES has recommended a strong reduction in fishing mortality (F). In 2009 ICES advised on the basis of precautionary considerations that a significant reduction of the TAC was required to remedy the decline in spawning stock biomass. An immediate TAC reduction was recommended to stabilise the stock. However, the human consumption TAC for whiting has not been taken for at least 20 years.

- 2.2 ICES noted that the localised distribution of whiting was known to be resulting in substantial differences in the quota uptake rate. This was likely to result in localised discarding problems. This has proved to be the case. Currently, whiting are concentrated in the western and northern parts of the North Sea and catch rates along the eastern coasts of England and Scotland are high although catches elsewhere are generally low. The background is either one of a stock which is declining but redistributing itself, or of separate stocks which are behaving in different ways. It is this distribution pattern which has led to a situation where the total North Sea TAC is not taken. Part of the problem is that quotas are not allocated to the fleets which are catching whiting. Some countries are therefore discarding whiting while other countries are not catching their quota. The overall underutilisation of the TAC conceals substantial regional differences in abundance. One solution might be to trade quota between areas where there are few whiting and areas where there are many. However, as quotas for a number of demersal species are now very restricted, there is a limit to the exchange possible by trading quota for other species.
- .2.3 In the 120 mm demersal roundfish fishery in the northern North Sea there have been large reductions in the catches of small whiting and the discarding of under-sized whiting has largely been eliminated. In that fishery it is the discarding of marketable size whiting which is the problem. The fish are being discarded simply because of lack of quota. In the *Nephrops* fleet and other smaller mesh fisheries in the southern North Sea (which have been favoured with more days at sea under the current effort regime) there is discarding of under-sized whiting but even in this case a significant proportion of the discards include good-sized marketable fish of high quality. In that fishery there are essentially two problems. One is the discarding of marketable fish caused by insufficient quota; the other is the inadvertent capture of young under-sized whiting from emerging year classes.
- 2.4 The North Sea Fishers' Survey shows that the industry perception of whiting abundance since 2001 has been at odds with the scientific assessment. The main source of information for the survey is a questionnaire based on fish abundance, eg. 'has the abundance of this stock changed since last year?'. For whiting the answers from fishers have been only "no change" or "more" (Figure 1). In contrast the scientific assessments indicate a continuously declining stock. The perception of an increasing stock around the eastern English coast and to the east of Shetland is

reflected in survey distribution plots (Figure 2). Because fishers are catching large quantities of whiting in these areas they have lost faith in the scientific assessments for this species. Tensions have developed between fishermen on the one hand and scientists and fisheries managers on the other. This friction underlines the importance of aligning economic incentives with management objectives.

- 2.5 The problem is not only with whiting. ICES scientists have acknowledged that discarding of megrim above the minimum landing size is substantial in some areas.

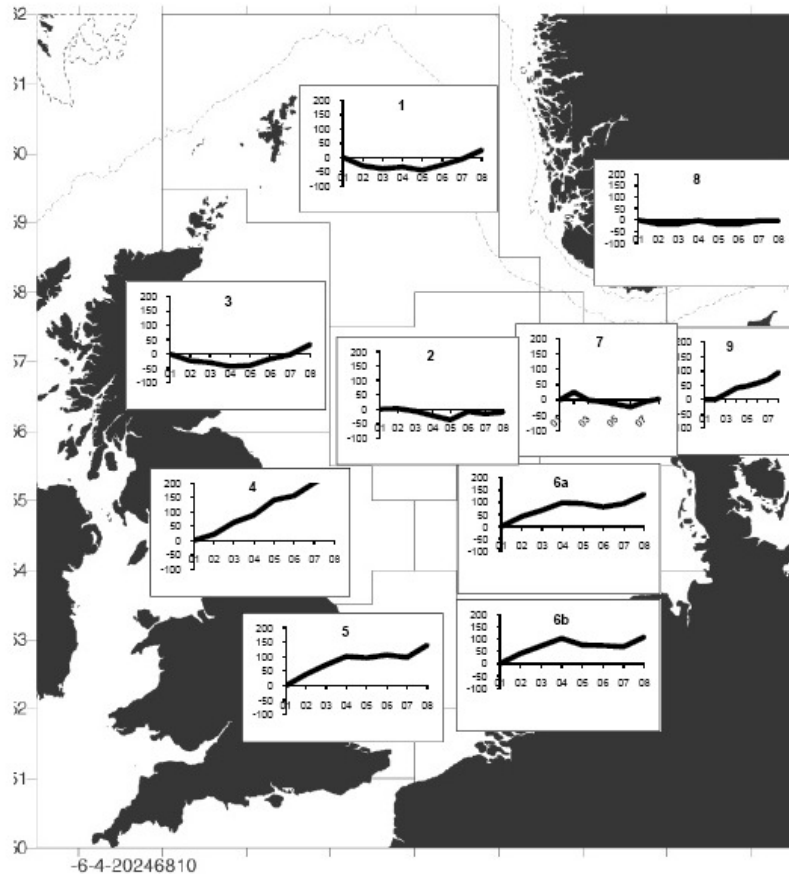


Figure 1: Whiting in Subarea IV and Division VIId. Results of the North Sea Fishers' Survey for 2008.

3. Finding solutions

- 3.1 There is some evidence that discarding is decreasing in the North Sea. Levels of discards by the UK fleet decreased year on year between 2002 and 2008. Gear developments have already been aimed at reducing the capture of under-sized whiting and other roundfish. Some Scottish vessels are moving to 160-mm and even 200-mm square mesh panels to reduce the capture of whiting, and 300-mm and 600-mm belly mesh to reduce catches of cod and other species where quotas are restrictive. Vessels in the *Nephrops* fishery are deploying square mesh panels and

larger meshes to reduce fish discards and there is evidence - from observer trips - that 120mm mesh panels have largely eliminated discards of immature whiting by these vessels,. Such panels do work. A substantial amount of work has been done in Scotland which indicates that a 120mm mesh is the optimum mesh size in the northern North Sea mixed fishery. There may not be much more that can realistically be done through technical measures in terms of reducing discards of mature whiting in the TR1 fishery. Whiting is largely a by-catch component of a wider mixed fishery, there is very little directed fishery for whiting. The outcome of attempting to limit mortality on whiting by systematically reducing the TAC is an inevitable increase in discards and waste in those areas where the species is abundant.

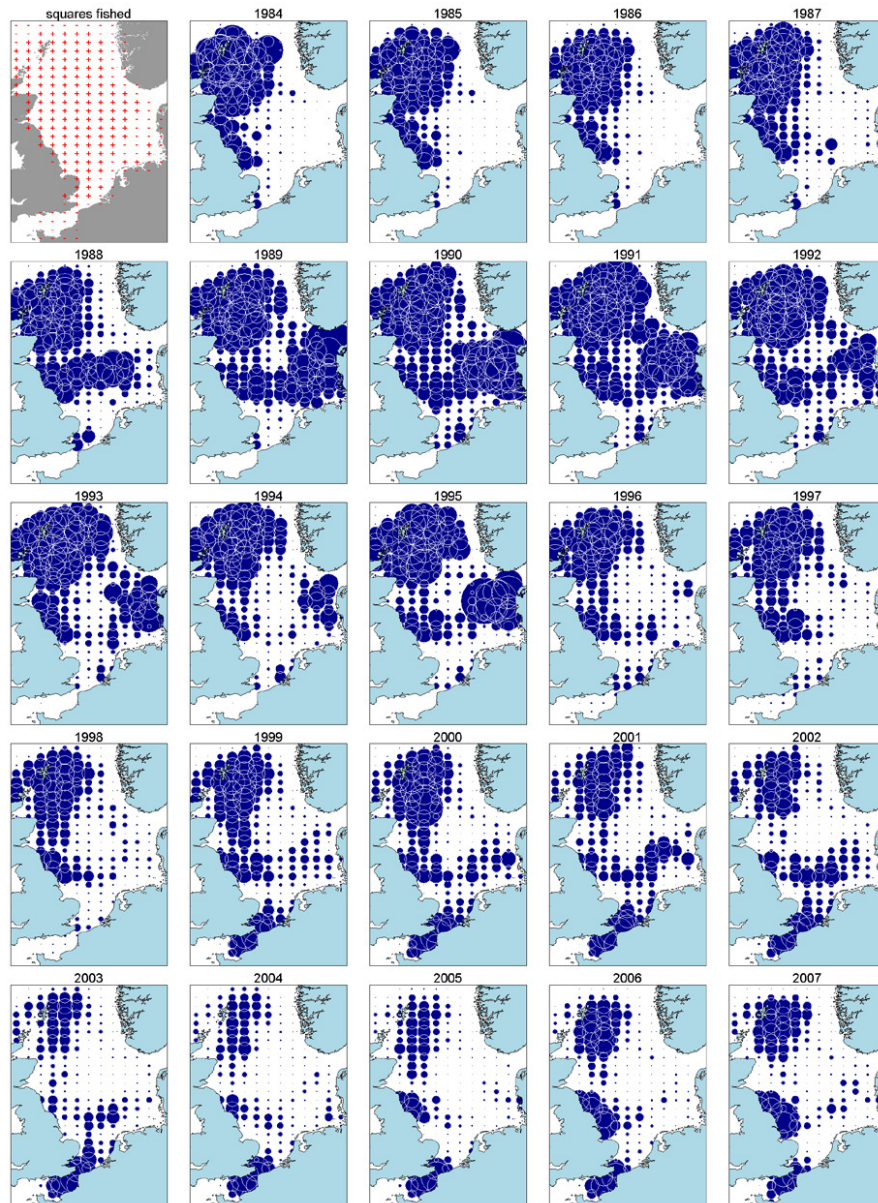


Figure 2: Whiting in Subarea IV and Division VIId. Commercial landings (human consumption and industrial fisheries in tonnes) by ICES statistical rectangle over the years 1984 to 2007.

- 3.2 However, expert-led attempts to introduce square mesh panels have not been universally successful. In the English 80 mm mesh fleet there has been an attempt to introduce the Seafish cutaway cover-less trawl, but although initial trials were successful the industry have not been convinced of its efficacy. Demonstration projects and competitions to introduce more selective gears have been tried, but have not always worked. As well as tangible incentives and technical support, fishers need the time and opportunity to seek their own gear solutions. Initiatives to introduce more selective gears are best undertaken by fishers themselves.
- 3.3 The NSRAC is aware of many examples of further initiatives already under way by the industry, in cooperation with scientists, to reduce discards of under-sized whiting, and to reduce capture of cod and other species through technical adaptations to fishing gear:
1. The UK and France made a statement to the Council of Fisheries Ministers in December 2008 which made a commitment to carry out trials to reduce whiting discards by 30% in the North Sea with a view to identifying sustainable technical measures. Both countries have trialled a variety of gear modifications building on existing research.
 2. An English trial (Project 50%) has used social marketing techniques to encourage the uptake of selective fishing gears. The project resulted in discards being reduced by an average of 51%.
 3. The French SELECCAB project is aimed at improving the selectivity of artisanal trawlers working in the North Sea. A large mesh trawl is being tested, and selective grids are being trialled. The large mesh trawl is effective at reducing cod catches but it has reduced catches of other marketable species. Grids too give rise to problems but sea trials are continuing.
 4. Trials of more selective gears have been conducted by Denmark. Although they have not specifically reduced whiting discards they have demonstrated the potential to significantly reduce the by-catch of whiting in the Danish industrial fishery.
 5. In Scotland the Conservation Credits Scheme allows skippers to top up their days fishing at sea in return for adopting conservation measures including the use of more selective gear and square mesh panels.
 6. In the Netherlands an industry think-tank has been set up to consider technical, seasonal and spatial measures for reducing discards.
 7. Introduction of the OMEGA measuring device has led to an unplanned increase in mesh size of around 7% across all sectors
- 3.4 In addition, other measures for reducing the capture of juvenile fish have been adopted. The UK has implemented a number of Spawning and Real Time area Closures (RTC's) to protect under-sized/juvenile cod. This has been achieved

through the Scottish Conservation Credits Scheme and English/ Northern Irish equivalents. Under the EU/Norway agreement a system of real time closures has been set in place since August 2009 to protect juvenile cod, haddock, whiting and saithe. In addition; Norway continues to run, in parallel, its own measures to protect juveniles. Norway continues to routinely close large sea areas (1300 square miles) in the Norwegian zone of the North Sea.

- 3.5 Another approach which has been suggested is to move to a system of multi-species quotas. Where the price differential between species is not too great then quota for two or more species could be consolidated. Whiting might be coupled with haddock and monkfish with megrim. The least common species would need to be protected, which might have adverse implications for larger stocks. Moreover, whilst this measure might help, it will not address the fundamental issue of TACs being out of line with the actual abundance of fish on the ground.
- 3.6 A more radical but equally sensible solution is for fishers to be allowed to land all the fish that they catch. A catch-quota scheme is a different way to manage fishing. It is a quota that accounts for the mortality of all fish caught, rather than just fish landed at port. With such schemes fishers are given a larger quota, and are then expected to maximise the value of their catches by using their professional knowledge and skills. When transferring from traditional landings quota to a catch-quota, the quota is increased to include the estimated mortality in a fishery (e.g. landings mortality plus estimated discard mortality or all the fish removed). Fishers can land more fish while eliminating discards, but overall stock mortality does not increase.
- 3.7 With catch-quotas, fish above the minimum landing size which are currently being discarded are landed and may be sold. The *quid pro quo* would be the adoption of robust measures to monitor catches. The placing of observers on board the vessel or the introduction of remote electronic monitoring systems is necessary to demonstrate compliance.

Pilot studies which are implementing a 'catch quota' system are currently underway, primarily aimed at cod. The main elements are:

- A corresponding increase in quota for Member States (MS) and MS vessels complying with the strict monitoring criteria
- Species to which the scheme applies, and which would otherwise be discarded, are retained on-board.
- As a *quid pro quo* for the increased quota allocation the vessels involved in the pilot are required to cease fishing operations once quota ceilings are reached.
- Vessels involved in the pilot are obliged to demonstrate that all catches were recorded under a CCTV or observer programme
- As part of the arrangement, Member States committing to the provisions would receive a large proportion of the total removals. Member States may

choose to retain a percentage of the additional opportunities to provided a degree of flexibility between species.. The retained proportion acts as a buffer to be deployed to avoid the effort ceiling being exceeded. In a system where a fisher's activity is brought to an end when pre-set limits are reached it is fair that some element of additional flexibility is set in place to cater for unforeseen circumstances.

This arrangement can deliver the win-win-win of an increase in revenue for the vessels, a reduction in discards, and an overall reduction in fishing mortality, within a framework that provides confidence that the terms of the project were being followed.

- 3.8 Not all fishers are able or willing to contemplate such initiatives and this solution is not appropriate to all circumstances. Catch-quotas cannot be applied to all species and will not work where there is a very large discrepancy between fish catches and quotas. Where quota is held and allocated communally then it is difficult for individual vessels or groups of vessels to adopt these arrangements. Some fishers may be reluctant or able to accept observers on board or be prepared to endure constant TV monitoring. Such initiatives have to be voluntary. Nevertheless there is sufficient interest for trials of such a catch-quota system to be underway both in the UK and Denmark.
- 3.9 At a different level, initiatives are also needed to improve the poor scientific assessments for species like the whiting. It is the lack of knowledge of the stocks, and the mismatch between abundance on the ground and the ICES advice, together with the inability to land over-quota fish, which is the root cause of discarding in this species. The NSRAC notes that the Commission and Norway have agreed to ask ICES for advice on how to deal with the regional imbalances in catches in the North Sea and to develop a management plan for whiting.

4. Problems with governance

- 4.1 There are problems with the management superstructure in the North Sea, hinging on the distribution of quotas. Norwegian fishers are not landing whiting although they have quota. Fishers in the eastern part of the North Sea are not catching their quotas, while others in the northern and western parts of the North Sea do not have sufficient quota. Relative stability stands in the way of redistributing quota. The system of governance requires stock to be shared out in a predetermined way, based on an earlier and very different distribution of fish stocks. The nub of the problem for whiting is that the distribution of the fish has changed markedly so that those who are catching it do not have sufficient quota to land them. The same problem may be encountered in the future if climatic change is accompanied by changes in the distribution of a variety of fish stocks.
- 4.2 Currently under the CFP these regional differences in abundance cannot readily be dealt with. Transferring quota for whiting and other species from one place to another within the existing arrangements for quota exchange is difficult. Fishers have no

currency in terms of other species of fish to exchange for whiting quota, and some countries simply do not trade.

4.3 This issue is essentially one of poor governance. The framework of the CFP is standing in the way of resolving a major issue. Any solution has to work at a number of levels for all the parties involved: fishermen, member states, the Commission, Norway and the scientific community. The construction of an approach that delivers to each of these parties the outcome that they desire is the challenge and goal for the group. The objectives for the different sectors are:

- **Fishing industry:** authority to land a higher proportion of the marketable whiting currently caught and discarded in order to generate revenue
- **Member states:** security for their national allocations under the principle of relative stability, a reduction of discards, reduced fishing mortality on whiting and other stocks
- **Commission:** a secure and safe way to ensure that a reduction in fishing mortality and discards is achieved
- **Norway:** the elimination of discards within the framework of the annual reciprocal fisheries agreement between EU and Norway
- **Scientists:** reduction of discards and fishing mortality in a way that provides verifiable data on the magnitudes of both

5. Conclusions

5.1 The NSRAC recognises that the Commission and Norway have a strong commitment to the reduction/elimination of discards. That commitment is shared by the NSRAC. What steps can be taken to improve the position and reduce discarding of whiting in the North Sea?

5.2 Firstly, industry needs the flexibility to allow industry-led discard initiatives and experiments to go ahead. There must be recognition that different solutions will have to be sought to these problems by different sectors of the fleet. One size does not fit all. Incentives are required to allow industry to develop its own solutions – within a framework which provides confidence in the results which are being achieved. The NSRAC urges the Commission to support and encourage incentivised pilot schemes aimed at reducing discarding.

5.3 Flexibility is also being sought over quota transfers between the EU and Norway with respect to whiting, bearing in mind that the major issue is whether anything can be achieved in terms of quota transfer within the CFP without de-stabilising key principles like relative stability.

5.4 The NSRAC has, on many occasions, expressed concern over the gap in perception between fishers and scientists over the state of some fish stocks. Whiting is the

classic examples of this gap, but it also exists for other species. It is important that experts giving advice within both ICES and STECF should be fully aware of circumstances in the fisheries and within particular fleets. Scientists are not currently making full use of the 'know-how' of fishers. The NWWRAC has already raised with the Commission the issue of data deficiencies. Many of the ICES assessments are poor because of a lack of data on catches. Member states, scientists and RAC members should join together to identify critical data deficiencies and decide how these might be dealt with. There is considerable scope for improving working relationships between fishers and scientists, and for making fuller use of the information on fish stocks held by fishers. Currently, scientists - and managers - are reluctant to acknowledge that the scientific advice on some fish stocks is extremely poor. There also seems to be a lack of will to solve this problem.