

June 2010 ICES advice – Commentary on discards (taken verbatim from ICES text)

Covers: North Sea, Celtic Sea and West of Scotland

REGION	ICES COMMENT
	COD
ECOREGION: North Sea STOCK: Cod in Subarea IV (North Sea), Division VIId (Eastern Channel), and IIIa West (Skagerrak)	Discards account for 30-50% of the total catch (2007-2009). Discards are estimated from relatively few numbers compared to landings. Raised discard information was not available for Dutch, French and Belgian fleets, respectively accounting for 10%, 6% and 4% of cod landings in 2009. These are sources of added uncertainty in the assessment. ICES has observed that there have been considerable problems with the effectiveness of the cod recovery plans. Despite the objective to reduce fishing mortality and to increase the SSB by combined TAC control and effort management, estimated total catches have been much higher than intended. Fishing mortality has been reduced but has remained well above the implied targets. Discarding contributes about half of the total fishing mortality. Under the present implementation and enforcement approach, large reduction in F and the recovery of the stock are unlikely. It is therefore urgent to pursue and improve the actions towards implementation and enforcement in order to achieve reduction in F by effective control of cod catches. ICES notes that there have been considerable efforts to reduce discards by some countries, which have had an impact in reducing their discard rates, the impact these have had on the stock dynamics is difficult to evaluate yet. Scotland implemented in February 2008 a national scheme known as the Conservation Credits Scheme. The principle of this two-part scheme involves additional time at sea in return for the adoption of measures which aim to reduce mortality on cod and lead to a reduction in discard numbers. ICES has not yet been able to evaluate the consequences of these measures. ICES notes that during the initial year of operation (2008) cod discarding rates increased substantially to 62%. However, only 15 real-time closures were implemented in 2008 and involvement was voluntary. In 2009 there were 144 closures and involvement was mandatory for relevant Scottish vessels, and cod discarding rates have declined to 43%. Recent work tracking Scottish vessels in 2009 has concluded that vessels did indeed move from areas of higher to lower cod concentration following real-time closures during the first and third quarters (there was no significant effect during the second and fourth quarters). However, this is still a work in progress and further evaluation is required.
ECOREGION: Celtic Sea and West of Scotland STOCK: Cod in Division VIIa (Irish Sea)	Recent discard estimates available for some fleets indicate a variable, but high discard rate for 1-year-olds. Some 0-group cod are also caught, and all are discarded. Estimates of discarding are not used in the assessment due to the short time-series and variable quality of the data.

ECOREGION: Celtic Sea and West of Scotland STOCK: Cod in Divisions VIIe-k (Celtic Sea Cod)	Recent sampling programmes in countries exploiting this stock indicate that discarding is high and variable. They may account for 40 to 60% by number of all fish caught. These discards were mainly under the MLS until recently when high grading became more prominent in the fishery. The most pertinent changes to the fishing pattern for cod have been the increased high-grading and discarding in response to restrictive quotas since 2002. High-grading has occurred in French fisheries since 2003 and was also apparent in UK fisheries since 2007.
ECOREGION: Celtic Sea and West of Scotland STOCK: Cod in Division VIa (West of Scotland)	Observer data, however, show an increase in discards starting in 2006. The amount of discards relative to landings has increased and the age pattern of discarding has changed. Currently discards of fish aged 3 and above are being recorded. <u>Cod avoidance measures</u> In 2008, Scotland introduced a voluntary programme known as Conservation Credits , which involved real-time closures (RTCs) combined with gear requirements. This was designed to reduce mortality and discarding of cod. The scheme was incentivised by rewarding participating skippers with additional days at sea.....The use of more species selective gears trialled by the Marine Laboratory in Aberdeen forms a further series of options within the scheme. Preliminary results so far suggest that cod discard rate in the North Sea fell in 2009 and that catches of cod were more in line with those forecast. In Division VIa, however, early indications are that the scheme has not been so effective so far with discard rates remaining high.
HADDOCK	
ECOREGION: Celtic Sea and West of Scotland STOCK: Haddock in Division VIb (Rockall)	The forecast predicts future catches disaggregated into landing and discard components. The discard ratio is around 47% in 1991-2009 and 34% in the recent period (1999-2009). Some countries land the whole catch while others discard part of the catch. For countries which discard part of the catch the discard rate in the past was as high as 52 - 87% by numbers by results of discards trips. It would be beneficial to develop and introduce into fisheries practice measures aimed at preventing discards of haddock.
ECOREGION: Celtic Sea and West of Scotland STOCK: Haddock in Division VIa (West of Scotland)	ICES recommends a management plan which would offer maximum protection to the haddock, recognizing that it is caught in a mixed fishery. Special attention needs to be given to the sporadic nature of the haddock recruitment and how to manage periods of low recruitment interspersed with large, occasional pulses. In recent years around 50% of the total catch in weight has been discarded, so restricting landings alone may not achieve the necessary increase in SSB. A large proportion (~66%) of the estimated total numbers of haddock caught in 2009 were discarded. Most of these were below age 2. Haddock are discarded mainly up to age 4, but there are also smaller numbers discarded at ages up to 7. For example, 18% of the estimated total numbers caught aged 7 in 2009 were discarded. Haddock reach full maturity at age 3. Therefore, it is clear that immature fish are subject to high fishing mortality and this increases the susceptibility of the stock to overexploitation.
ECOREGION: Celtic Sea and West of Scotland STOCK: Haddock in Division VIIa (Irish Sea)	Discarding is a serious problem for this stock. The discard rate by fleet was 100% for one-year-olds; 44 – 95% for two year-olds and 19 – 75% for three-year-olds by number. An increase in mesh size to reduce discarding will be beneficial to this stock and could increase future yield. Reduced selectivity on younger ages would reduce

	discarding and would promote stock increase when strong year classes occur. Some fleets are using 80 mm mesh to target <i>Nephrops</i> , 90 mm mesh in mixed fisheries and 100+ mm to target gadoids and other species. Recent gear trials have shown that square mesh panels can significantly reduce discards of undersized haddock (BIM, 2009). In order to minimise discards, a square mesh panel of at least 120 mm should be introduced for all fleets.
ECOREGION: Celtic Sea and West of Scotland STOCK: Haddock in Divisions VIIb-k	Recruitment in 2009 appears to be well above average and catches and SSB are likely to increase in 2011 if effort remains constant. Technical measures to minimise discards should be considered with urgency. ICES advises that the a square mesh panel of at least 120 mm should be introduced for the <i>Nephrops</i> fleet and a minimum mesh size of at least 100 mm with a square mesh panel of at least 110 mm for all other fleets. Management by TAC is inappropriate for this stock because landings but not catches are controlled. Discarding is a serious problem for this stock; over the last 10 years 66% of the catch has been discarded (41% by weight). The discard rate of one-year-olds was 88%; two-year-olds 49% and three-year-olds 16% by number. An increase in mesh size to reduce discarding will be beneficial to this stock and could increase the yield considerably. Reduced selectivity on younger ages would reduce discarding and would promote stock increase when strong year classes occur. In Celtic Sea fisheries, some fleets are using 80 mm mesh to target <i>Nephrops</i>, 90 mm mesh in mixed fisheries and 100 mm to target gadoids and other species. Recent gear trials have shown that square mesh panels can significantly reduce discards of undersized haddock when using <i>Nephrops</i> gear (BIM, 2009). ICES (2008) has pointed out that the selection L50 for 90 mm mesh for haddock in VIIg is 19 cm, which is well below the MLS of 30 cm. In order to minimise discards, a square mesh panel of at least 120 mm should be introduced for the <i>Nephrops</i> fleet and a minimum mesh size of at least 100 mm with a square mesh panel of at least 110 mm for all other fleets.
PLAICE	
ECOREGION: Celtic Seas and West of Scotland STOCK: Plaice in Division VIIa (Irish Sea)	The high level of discarding (typically up to 80% in number) in this fishery indicates a mismatch between the minimum landing size and the mesh size of the gear being used. Any measures that effect a reduction in discards will result in increased future yield.
ECOREGION: North Sea STOCK: Plaice in Division VIId (Eastern Channel)	Survey information indicates percentages of discards up to 50% in number, depending on the trip and on fishing practices. Due to the minimum mesh size (80 mm) in the mixed beam trawl fishery, a large number of undersized plaice are discarded. The 80 mm mesh size is not matched to the minimum landing size of plaice (27 cm). Management measures directed at sole fisheries will also impact the plaice fisheries.
SOLE	
ECOREGION: North Sea STOCK: Sole in Division VIId (Eastern Channel)	Due to the minimum mesh size (80 mm) for sole, a large number of (undersized) plaice are discarded. Mesh enlargement or increased minimum landing size for sole would reduce the catch of undersized plaice, but would also result in short-term loss of marketable sole. The 80 mm mesh size for sole is not matched to the minimum landing size of plaice. Measures to reduce discarding of plaice in the sole fishery would greatly benefit the plaice stock and future yields.

WHITING	
ECOREGION: Celtic Sea and West of Scotland STOCK: Whiting in Divisions VIIe k	Celtic Sea whiting are taken in mixed species fisheries. Discard rates are very high due to the low market value of this species, particularly for smaller sizes. Otter trawlers are the primary gear associated with whiting landings from the Celtic Sea. Management by TAC is inappropriate for this stock because landings but not catches are controlled. Recruitment in 2008 appears to be above average and catches and SSB may increase in 2011 if effort remains constant. Technical measures to minimise discards should be considered with urgency. ICES advises that a square mesh panel of at least 120 mm should be introduced for the Nephrops fleet and a minimum mesh size of at least 100 mm with a square mesh panel of at least 110 mm for all other fleets. Discarding of this stock for different fleets is substantial (30 – 61% by weight and 54 – 78% by number). Any measure to reduce discarding and to improve the fishing pattern as advised for haddock in Divisions VIIb-k would be beneficial to the whiting stock. These might include spatial and temporal changes in fishing practises or technical measures such as increased cod-end mesh size, square mesh panels, separator trawls, and increased top sheet mesh in towed gears. These measures would also need to be evaluated in the context of other species caught in these mixed fisheries.
ECOREGION: Celtic Sea and West of Scotland STOCK: Whiting in Division VIa (West of Scotland)	There are strong indications that management control is not effective in limiting the catch. The proportion of fish discarded is very high and appears to have increased in recent years. Approximately half of the annual catch weight comprises undersized or low-value whiting which are discarded. Measures to reduce discards and to improve the exploitation pattern would be beneficial to the stock and to the fishery.
ECOREGION: Celtic Sea and West of Scotland STOCK: Whiting in Division VIIa (Irish Sea)	Catches of whiting have substantially reduced from the 1980s. Discarding remains a substantial problem for this stock, with almost all whiting caught being discarded. Of the onboard observer trips carried out in 2009 by the UK (E&W), UK (NI) and Ireland, negligible fish were retained on board while thousands of small fish were discarded. Raised discards from the main national fleets landing whiting show over 40 million whiting, 1500 t in weight, were discarded in 2009. Any measure to reduce discarding and to improve the fishing pattern should be actively encouraged. These might include spatial and temporal changes in fishing practises or technical measures such as increased codend mesh size, square mesh panels, separator trawls, and increased top sheet mesh in towed gears. These measures would also need to be evaluated in the context of other species caught in these mixed fisheries. In late 2009, a number of Irish vessels operating within the Irish Sea Nephrops fishery incorporated a Swedish grid into otter trawls, as part of the cod long term management plan. It is expected that this will reduce the whiting catches of these vessels by 60% in weight.

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