June 2011 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)**	**Figures** ICES estimates total removals (2010) at around 69,000 t, with 39,000 t estimated landings (64% demersal trawls and seines >100 mm, 12% Nephrops trawls 70–99 mm, 12% gillnets, and 8% beam trawls) and 14,400 t estimated discards. Unaccounted removals are estimated at around 30% (between 6% and 59%) of the catch in 2010. Proportion of total numbers caught that are discarded in total and at age. In 2010, 91% of 1-year-old, 57% of 2-year-old, 21% of 3-year-old, and 3% of 4-year-old cod were discarded. **Considerations** Mixed-fisheries considerations are of primary importance for the management of North Sea cod. Single-stock management is a cause of discarding in mixed fisheries, because individual management objectives may not be consistent with each other. As such, the TAC of one species may be exhausted before the TAC of another, leading to catches of valuable fish that cannot be landed legally. It was estimated that the single-species management targets for North Sea cod cannot be achieved unless substantial reductions in TACs of all other stocks and corresponding effort reductions are applied (Ulrich et al., 2011). 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 notes that from the initial year of operation (2008) cod discarding rates in Scotland have decreased from 62% to 36% in 2010. In 2010 there were 165 closures, and from July 2010 the area of each closure increased (from 50 square nautical miles to 225 square nautical miles). 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 (Needle and Catarino, 2011). The expansion of the Closed Circuit TV (CCTV)/ fully documented fisheries programmes in 2010 (and subsequently in 2011) in Scotland, Denmark, and England is expected to have reduced cod mortality; vessels carrying CCTV systems are not permitted to discard cod. http://www.ices.dk/committe/acom/comwork/report/2011/2011/cod-347.pdf

ECOREGION: Celtic Sea and West of Scotland **STOCK: Cod in Division VIIa (Irish Sea)**	**Figures** Available data indicates that until 2009 discarding was mainly a function of minimum landing size (MLS) and largely restricted to catches of 0 and 1 years old cod. In 2010 there appears to be a shift towards also discarding 2 years old fish. **Considerations** The Irish Sea cod fishery has traditionally been carried out by otter trawlers targeting spawning cod in spring and juvenile cod in autumn and winter, and cod are also taken as a bycatch in fisheries for *Nephrops*, plaice, sole and rays. ICES estimates of the landing in 2010 were the lowest on record and ~30% below the TAC. http://www.ices.dk/committe/acom/comwork/report/2011/2011/cod-iris.pdf
ECOREGION: Celtic Sea and West of Scotland **STOCK: Cod in Divisions VIIe-k (Celtic Sea Cod)**	**Figures** It is known that discard rates have increased in some fleets in 2010, but discard estimates are >500 t in 2010. Recent sampling programmes in countries exploiting this stock indicate that discarding is high and variable. They may account for 40–60% by number of all fish caught. These discards were mainly under the MLS until recently, when highgrading became more prominent in the fishery. **Considerations** Technical measures applied to this stock are a minimum mesh size for beam and otter trawlers in Subarea VII and a minimum landing size (MLS) of 35 cm. For Belgian trawlers that land in Belgium the MLS has been 50 cm since 2008. Minimum landing sizes do not prevent cod from being discarded, but might prevent the targeting of juvenile cod. The most pertinent changes to the fishing pattern for cod have been the increased highgrading and discarding in response to restrictive quotas since 2002. Highgrading has occurred in French fisheries since 2003 and has also been apparent in UK fisheries since 2007. Highgrading has decreased in the major fleets catching cod since 2008. http://www.ices.dk/committe/acom/comwork/report/2011/2011/cod-7e-k.pdf
ECOREGION: Celtic Sea and West of Scotland **STOCK: Cod in Division VIa (West of Scotland)**	**Figures** The >100 mm otter trawl gear vessels targeting finfish (TR1) take roughly 80% of the cod catch and the 70–99 mm Nephrops fleet (TR2) takes 15–20% of the catch. A proportion of the landings come from vessels using TR1 gear, fishing west of the line defined in the cod long-term management plan. Discards reported to ICES (all fleets combined) are five times greater than landings, making catch (landings + discards) six times greater than landings. **Considerations** In 2008, Scotland introduced a voluntary programme known as "Conservation Credits", which involved seasonal closures, real-time closures (RTCs), and various selective gear options. This was designed to reduce mortality and discarding of cod. The number of RTCs west of Scotland were 4 in 2008, 20 in 2009, and 19 in 2010, representing 27%, 14%, and 12% of the total RTCs in each year. RTCs are determined by lpue, based on fine-scale VMS data and daily logbook records, and also by on-board inspections. The low number of RTCs west of Scotland result from few instances of high lpue in the area. Early indications are that the scheme has not so far been as effective as in the North Sea, with discard rates remaining high in Division VIa. http://www.ices.dk/committe/acom/comwork/report/2011/2011/cod-scow.pdf

ECOREGION: Baltic Sea **STOCK: Cod in Subdivisions 25-32 and 22-24**	**Figures** Discards estimated at 6.6%. **Considerations** The stock is managed through TAC, effort, and seasonal fisheries restrictions. The EC Council Regulation for the Baltic in 2009 and 2010 involved reductions in the effort in terms of number of fishing days per year, resulting in a maximum 160 days of fishing in 2009. No further reduction in fishing days was required in 2011. The cod fisheries in the eastern Baltic are also regulated by a seasonal closure during 1 July to 31 August to protect spawning fish. Since 2006, area closures have been implemented from 1 May to 31 October. High-grading has been prohibited since 1st January 2010 in all Baltic fisheries. All of these measures have contributed to the marked decline in the fishing mortality on this stock. To decrease discards, a 'Bacoma' codend with a 120 mm mesh was introduced in 2001 in parallel with an increase in diamond mesh size to 130 mm in traditional codends. In October 2003, the regulation was changed to a 110 mm Bacoma window. 1 March 2010 the Bacoma 120 mm was re-introduced along with an extended Bacoma window (5.5 m) to further decrease discarding. The minimum landing size was kept at 38 cm. http://www.ices.dk/committe/acom/comwork/report/2011/2011/cod-2532.pdf
HADDOCK	
ECOREGION: Celtic Sea and West of Scotland **STOCK: Haddock in Division VIb (Rockall)**	**Figures** 8% discards. Haddock are caught in a directed fishery and as a bycatch in demersal and gillnet fisheries. Haddock are mostly taken in fisheries deploying otter trawls, but also by pair trawlers and gillnetters. Last years the discards are significantly reduced as a result of the small number of young haddock in the population. The discard ratio was 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. **Considerations** An improved time-series of landings and discard is needed for this assessment. The survey area coverage has been reviewed and will be extended into deeper waters in 2011. The survey used in the assessment was not carried out in 2010 and therefore the only additional data used this year compared to last year are catch-at-age data for 2010. This makes this year's assessment more uncertain than in the past years. It would be beneficial to develop and introduce into fisheries practices measures aimed at preventing discards of haddock. Elaboration of such measures comply with recommendations under the UNGA Resolution 61/105 that urge states to take action to reduce or eliminate fish discards. http://www.ices.dk/committe/acom/comwork/report/2011/2011/had-rock.pdf
ECOREGION: Celtic Sea and West of Scotland **STOCK: Haddock in Division VIa (West of Scotland)**	**Figures** The total catch for haddock is estimated to be 5,830 tonnes; 51% of these are discards. Splitting discards by fleet shows that Nephrops vessels (TR2) are responsible for ~88% of all discards while landing only 21 tonnes, less than 1% of the total landings (2,882 tonnes). 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. One-year-olds comprised the largest proportion

	(~82%) of total numbers of haddock caught in 2010 and the majority of these were discarded in the Nephrops fleet (TR2). **Considerations** Haddock in Division VIa is caught mainly by Scottish and Irish bottom trawlers, which target mixed demersal fish assemblages. Catches are widely distributed and are concentrated in several areas, e.g. Butt of Lewis and on the shelf west of the Outer Hebrides. 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. Any measure to reduce discarding and to improve the fishing pattern should be actively encouraged. Such measures should include the adoption of a sorting grid as well as appropriately located square-meshed panels. http://www.ices.dk/committe/acom/comwork/report/2011/2011/had-scow.pdf
ECOREGION: Celtic Sea and West of Scotland **STOCK: Haddock in Division VIIa (Irish Sea)**	**Figures** Discard estimates are very variables and estimates are large in some years. Discarding is a serious problem for this stock. The discard rates for all fleets in 2010 were 92-100% for one-year-olds; 22–96% for two-year-olds and 3–68% for three-year-olds by number. **Considerations** Discarding is high and additional technical measures should be introduced, for example the use of sorting grids or large square mesh (>120 mm) panels in Nephrops fisheries. 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 promote stock increase when strong year classes occur. Some fleets are using 80 mm mesh to target Nephrops, 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 or selectivity devices that achieve equivalent or better improvements. http://www.ices.dk/committe/acom/comwork/report/2011/2011/had-iris.pdf
ECOREGION: Celtic Sea and West of Scotland **STOCK: Haddock in Divisions VIIb-k**	**Figures** Discarding is a serious problem for this stock; over the last 10 years 70% of the catch has been discarded (45% by weight). An analysis of Irish landings and discards by metier (Anon., in prep.) indicates that although the Nephrops fleets have very high discarding rates of haddock (>70% by weight), in absolute terms these fleets only contribute 10% of the Irish haddock discards in the Celtic Sea. The demersal otter bottom trawl (OTB) and Scottish seine (SSC) fleets in Divisions VIIgj contribute 82% of the haddock discards. Management by TAC is inappropriate for this stock because landings, and not catches, are controlled. Haddock are caught in a mixed fishery, so TAC management can lead to discarding of over-quota fish in addition to the already considerable discarding of undersized fish. The TAC has not been restrictive in recent years, but since 2009 the national quotas of Ireland and Belgium appear to have become restrictive. The catches are increasing as the 2009 year class enters the fishery; and despite a moderate increase in TAC in 2011, the quota are likely to become restrictive for all countries, resulting in increased levels of

	discarding. Technical measures can reduce discarding and could increase the yield considerably. Improved selectivity on younger ages will reduce discarding and promote stock increase when strong year classes occur. ICES recommends that an escape panel and minimum mesh size for the demersal fleet should be increased substantially and an analysis should be performed to estimate appropriate mesh size. http://www.ices.dk/committe/acom/comwork/report/2011/2011/had-7b-k.pdf
NEPHROPS	
ECOREGION: North Sea **STOCK: Nephrops in Division IV North Sea**	**Considerations** Trawling for Nephrops results in bycatch and discards of other species, including cod, haddock, and whiting. 80 mm is the predominant mesh size used in Nephrops fisheries and the resulting proportion of discarded fish can be high. Initiatives are in place to reduce discarding. http://www.ices.dk/committe/acom/comwork/report/2011/2011/Neph-IV.pdf
ECOREGION: North Sea **STOCK: Nephrops in Division IIIa**	**Figures** As a consequence of the current minimum landing size of 40 mm carapace length, the amount of discards is large. Cod, sole, and plaice are bycatch species in these fisheries in Division IIIa. 39% undersized/discards. **Considerations** There are two types of fisheries: trawl fisheries and creel fisheries. Part of the trawl fisheries is operated with species-selective gears (sorting grids or SELTRA 300). Creel fisheries take place mainly on locations where trawling is impossible or difficult, along the Swedish and Norwegian coasts. http://www.ices.dk/committe/acom/comwork/report/2011/2011/Neph-IIIa.pdf
ECOREGION: Celtic Sea **STOCK: Nephrops in VIa**	**Figures** The minimum landing size for *Nephrops* is 20 mm carapace length (CL), and usually very few of the landed animals are under this size. The average discard rate of *Nephrops* by number over the last five years is 20%. In 2009 the mesh size was increased from 70 mm to 80 mm. **Considerations** Under the Scottish Conservation Credits Scheme and the west coast emergency measures, *Nephrops* trawlers are required to use more selective gears. However, these gears are designed to release fish and do not significantly improve selectivity of *Nephrops*. Under the EU Cod Recovery Plan, trawl effort in Division VIa has declined significantly. So far this has mainly affected effort in the larger mesh gears (>100 mm) and effort in the *Nephrops* fisheries has been relatively stable. In FU11 (North Minch) the discard rate has been highly variable in recent years and a large decline in discard rates in 2010 was observed. http://www.ices.dk/committe/acom/comwork/report/2011/2011/Neph-VIa.pdf
ECOREGION: Celtic Sea **STOCK: Nephrops in Division VIIa (Irish Sea)**	**Considerations** In FU15 (Irish Sea West) the *Nephrops* trawl fishery takes bycatches of other species, especially plaice, but also, whiting and cod. Selectivity of this fishery needs to be improved to reduce bycatches of cod, whiting and undersized plaice. The cod long-term plan was introduced in 2009 (EC 1342/2008). Annual effort baselines in Nephrops trawl fisheries (Effort group TR2 OTB 70–99 mm) in Division VIIa has been reduced by 25% in 2009 and a further 25% in 2010. Irish effort in 2010 decreased by 23% relative to 2008, UK-NI effort in 2010 is similar to 2008. Since 2009, four Irish vessels have been using “Swedish grids” in the

	fishery to reduced bycatches of cod, whiting and haddock. The minimum landing size for Nephrops is 20 mm carapace length (CL), and less than 5% of the animals landed are under sized. Highgrading of Nephrops from FU15 since 2009 has increased. http://www.ices.dk/committe/acom/comwork/report/2011/2011/Nep-VII.pdf
PLAICE	
ECOREGION: North Sea **STOCK: Plaice in Division IV (North Sea)**	**Figures** 43% discard rate. Recent discard estimates indicate fluctuations around 50% discards in catch by weight. **Considerations** Plaice is predominantly caught by beam trawlers in the central part of the North Sea and in a mixed fishery with sole in the southern North Sea. Technical measures applicable to the mixed flatfish beam-trawl fishery affect both sole and plaice. The minimum mesh size of 80 mm selects sole at the minimum landing size. However, this mesh size generates high discards of plaice with a larger minimum landing size than sole. Mesh enlargement would reduce the catch of undersized plaice, but would also result in loss of marketable sole. A self-sampling programme by the Dutch beam-trawl fleet has been in place since 2004. This sampling programme indicates spatial and temporal trends in discarding (higher discards are observed in coastal regions and late summer), but it was considered unreliable for overall estimates of discarding because of differences in the implementations of sampling methods. In 2009, a new self-sampling programme was launched to address this. For the 2009 and 2010 assessments, discarded numbers-at-age for the Netherlands have been estimated using data from both the self-sampling and the observer programmes. It is noted that estimates of discard numbers in 2010 differed considerably between the two programmes. http://www.ices.dk/committe/acom/comwork/report/2011/2011/ple-nsea.pdf
ECOREGION: Celtic Seas and West of Scotland **STOCK: Plaice in Division VIIa (Irish Sea)**	**Figures** Discarding rates very high – 87%. Discard sampling studies have indicated variable discarding rates up to 80% by number. **Considerations** Up to 2010 ICES carried out an assessment using landings-at-age data. This year, an assessment model that includes discard data since 2004, was used, and considered appropriate to assess SSB and fishing mortality trends. The discard data are noisy and the 2010 estimate will be revised when complete age data from observer trips become available. The high discard and catch estimates for 2007 and 2010 are downscaled by the assessment model. Estimation of partial fishing mortalities due to the landed and discarded component indicates that the fraction of F due to discarding has increased since 2004. 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. Measures, such as the introduction of grids to Nephrops trawlers, which reduce discardings will result in increased future yield potentials. Gear selectivity trials and monitoring from four Irish Nephrops trawlers using grids since 2009 indicate a potential 75% drop in fish bycatch (BIM, 2009). Technical measures in force are minimum mesh sizes and minimum landing size (27 cm). Considering the high level of discarding observed in this stock, gear

	selectivity regulations have had little effect. The closures of cod spawning-grounds that have been in force since 2000 are unlikely to have had a significant impact on catches by the plaice fishery. In 2000, the closure covered the western and eastern Irish Sea. Since then, the closure has been mainly in the western part, whereas the majority of the plaice fishery has taken place in the eastern part of the Irish Sea. http://www.ices.dk/committe/acom/comwork/report/2011/2011/ple-iris.pdf
ECOREGION: North Sea **STOCK: Plaice in Division VIId (Eastern Channel)**	**Figures** Discards up to 50% - since the 80 mm mesh size does not match the minimum landing size for plaice (27 cm), a large number of undersized plaice are discarded, but no discard time-series is available yet. http://www.ices.dk/committe/acom/comwork/report/2011/2011/ple-eche.pdf
ECOREGION: Celtic Sea and west of Scotland **STOCK: Plaice in Division VIIf and g (Celtic Sea)**	**Figures** Discards are substantial and have ranged from 30% to 70% in number (mainly below the minimum landing size). There is a high rate of discarding in both beam and otter trawl fisheries (62%). **Considerations** Discards exceed landings and technical measures should be introduced to reduce discard rates. In 2011 discards were been included in the assessment for the first time, although the time series of discard data available is short and consequently the revised assessment estimates are considered relative. Estimation of partial fishing mortalities due to the landed and discarded component indicates that the fraction of F due to discarding has increased since 2004. Discard rates are high for this stock in some seasons/fleets. The high level of discarding indicated in this mixed fishery would suggest a mismatch between the mesh size employed and the size of the fish landed. Increases in the mesh size of the gear will result in fewer discards and in increased yield from the fishery. The use of larger-mesh gear should be encouraged in this fishery in instances where mixed fishery issues allow for it. http://www.ices.dk/committe/acom/comwork/report/2011/2011/ple-celt.pdf
SOLE	
ECOREGION: North Sea **STOCK: Sole in Division VIId (Eastern Channel)**	**Considerations** 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 of plaice, but would also result in loss of marketable sole landings. http://www.ices.dk/committe/acom/comwork/report/2011/2011/sol-eche.pdf
ECOREGION: North Sea **STOCK: Sole in Division VIIe**	**Figures** Discarding in the towed gears using 80mm mesh sizes, which are responsible for the large majority of the landings, is very small (<5% by number) by number and small (5-10%) for the much smaller gillnet fishery. Other spatially or temporally restricted métiers show higher values of discarding (10-40% averaged over years) have very limited effort and hence contribute only a very small percentage to the landings (<5%). **Considerations** The gears used to target sole are highly selective for fish above the minimum landing size, and only a few sporadic cases of high-grading (included in the

	numbers above) have been observed. http://www.ices.dk/committe/acom/comwork/report/2011/2011/sol-echw.pdf
WHITING	
ECOREGION: Celtic Sea and West of Scotland **STOCK: Whiting in Divisions VIIe-k**	**Figures** Discard rates are very high due to the low market value of this species, particularly for smaller sizes. Discard estimates are high (8–82% by weight depending on metier). Discarding of this stock for different fleets is substantial and highly variable (9–82% by weight and 18–90% by number of total catch). **Considerations** Celtic Sea whiting are taken in mixed species fisheries. Otter trawlers are the primary gear associated with whiting landings from the Celtic Sea. 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. ICES suggest 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 or selectivity devices that achieve equivalent or better improvements. http://www.ices.dk/committe/acom/comwork/report/2011/2011/whg-7e-k.pdf
ECOREGION: Celtic Sea and West of Scotland **STOCK: Whiting in Division VIa (West of Scotland)**	**Figures** The proportion of fish discarded is very high and appears to have increased in recent years. More than half of the annual catch weight comprises undersized or low-value whiting which are discarded. 83% of these discards come from the TR2 (Nephrops) fishery. **Considerations** There are strong indications that management control is not effective in limiting the catch. Measures to reduce discards and to improve the exploitation pattern would be beneficial to the stock and to the fishery, particularly when there are indications that the 2009 year class is relatively strong. Such measures should include the adoption of a sorting grid as well as appropriately located square-meshed panels. http://www.ices.dk/committe/acom/comwork/report/2011/2011/whg-scow.pdf
ECOREGION: Celtic Sea and West of Scotland **STOCK: Whiting in Division VIIa (Irish Sea)**	**Figures** There is no targeted whiting fishery in the Irish Sea. Whiting are bycatch (and discarded) within in the main Irish Sea fisheries. Otter trawlers utilising 70–90 mm mesh sizes are the primary gear associated with whiting landings. This incorporates the Nephrops fishery, which shows high discard rates of whiting. Discard rates are very high likely due to the low market value of this species, particularly for smaller sizes. Discarding remains a substantial problem for this stock, with almost all whiting caught being discarded. Of the onboard observer trips carried out in 2010 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 22 million whiting, greater than 1000 t in weight, were discarded in 2010. This focused on the two youngest ages, and to a lesser extent age 2. In some years up to age 4 fish are discarded.

	Considerations Management by TAC is inappropriate for this stock because landings, not catches, are controlled. Catches of whiting have substantially reduced from the 1980s. 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. Further more, a small number of vessels began utilizing an inclined separator panel expected to reduce whiting catch by 76% in weight. Various technical measures have been introduced in the past to mitigate bycatch of whiting, particularly in the Nephrops fishery, which operates on the whiting nursery grounds. It has proven difficult to evaluate the success of measures, such as the mandatory use of square mesh panels in Nephrops trawls since 1994. A minimum landing size of ≥ 27 cm is applied to this stock, however, discard data shows that individuals in excess of that size are also discarded. In addition to area and species related minimum mesh size restrictions applicable to mixed demersal fisheries. http://www.ices.dk/committe/acom/comwork/report/2011/2011/whg-iris.pdf
ECOREGION: North Sea **STOCK: Whiting in Subarea IV (North Sea) and Division VIId (Eastern Channel)**	**Figures** The minimum mesh size was increased to 120 mm in the northern area in 2002 and this may have contributed to the substantial decrease in landings. Landing compositions from the northern area, in 2006 to 2009, indicate improved survival of older ages. In addition, the total number of fish discarded appears to have been reduced since 2003, from around 60% in 2003 to around 47% in 2009. However, because of the restrictive TACs discard rates have increased in 2010 and are expected to be high again in 2011. **Considerations** Discards were previously estimated based on data from Scotland, England, Denmark, and Germany and raised to the total international fleet in the North Sea. Since 2010, discard information for a major component of the catch from French fleets fishing in Subarea IV and Division VIId is incorporated into the assessment from 2003 onwards. Discard age compositions are available from France for 2003 to 2007 and 2009 to 2010 for Division VIId. To include these data, discards from Division VIId were estimated for 1990 to 2002 and 2008 using an estimated ogive based on the 2003 to 2007 data. This resulted in a minor increase in the whole stock through a minor increase in recruitment estimates. http://www.ices.dk/committe/acom/comwork/report/2011/2011/whg-47d.pdf

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