JRC Scientific and Technical Reports

Scientific, Technical and Economic Committee for Fisheries (STECF)

REVIEW OF SCIENTIFIC ADVICE FOR 2010 Part I

Advice on Stocks of Interest to the European Community in the North Sea Celtic and Irish Seas, West of Scotland, West of Ireland, south western waters, Icelandic and East Greenland, Barents Sea and the Norwegian Sea, Faeroe plateau ecosystem, Black sea and widely distributed and migratory stocks, deep sea stocks and Elasmobranch Resources in the North East Atlantic.

PREPARED IN DRAFT BY THE STECF-SGRST-09-02, Brest, France 29 June – 3 July 2009.

Edited by John Casey, Willy Vanhee & Hendrik Dörner

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SCIENTIFIC, TECHNICAL AND ECONOMIC COMMITTEE FOR FISHERIES (STECF)

STECF COMMENTS ON THE REPORT OF THE SGRST-09—02 WORKING GROUP

Brest, France 29 June – 3 July 2009

STECF UNDERTOOK THE REVIEW DURING THE PLENARY MEETING

HELD IN COPENHAGEN 13-17 JULY 2009

Review of scientific advice on stocks of Community interest – part 1

STECF is requested to review the report of the SGRST-09-02 of June 29 – July 3, 2009 (Brest) meeting, evaluate the findings and make any appropriate comments and recommendations.

SGRST- 09-02 WORKING GROUP REPORT

REVIEW OF SCIENTIFIC ADVICE FOR 2010 – part 1

Brest, France 29 June – 3 July 2009

This report was reviewed and endorsed by the STECF at its 31st plenary session in July 2009.

This report does not necessarily reflect the view of the European Commission and in no way anticipates the Commission's future policy in this area

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REVIEW OF SCIENTIFIC ADVICE FOR 2010

General request to STECF

STECF is requested to review the most recent advice on stocks of interest to the European Community and provide and appropriate comments and recommendations. STECF is requested, in particular, to highlight any inconsistencies in assessments and advice taking into account any additional information available. STECF is also requested to take account of data and information in the reports of any relevant assessment WGs.

In undertaking its review and providing advice, STECF is additionslly requested to take into account the Harvest Control Rules adopted in recovery plans, management plans and long-term plans or Harvest Control Rules suggested in the Communication from the Commission (COM (2009) 224) on a Consultation on fishing opportunities for 2010.

Introduction to the STECF Review of Advice for 2010

Background

This report represents the STECF review of advice for stocks in the North Sea Celtic and Irish Seas, West of Scotland, West of Ireland, south western waters, Icelandic and East Greenland, Barents Sea and the Norwegian Sea, Faeroe plateau ecosystem, Black sea and widely distributed and migratory stocks, deep sea stocks and Elasmobranch Resources in the North East Atlantic and was endorsed by the STECF at its 29th Plenary meeting held in Copenhagen from 13-17 July 2009. For some stocks the advice will be updated in October 2009 and published in the STECF Consolidated review of advice for 2010, which will be available in November 2009.

In undertaking the review, STECF has consulted the most recent reports on stock assessments and advice from appropriate scientific advisory bodies or other readily available literature, and has attempted to summarise it in a common format. For some stocks the review remains unchanged from the Review of advice for 2008 (STECF, 2009, EUR 23630 EN), since no new information on the status of or advice for such stocks was available at the time the present review took place.

STECF notes that the term 'stock' in some cases, may not reflect a likely biological unit, but rather a convenient management unit. In specific cases STECF has drawn attention to this fact. STECF also is of the opinion that, as far as possible, management areas should coincide with stock assessment areas.

For the first time STECF was requested by the Commission to estimate the the TACs corresponding to the decision rules contained in the Commission's Communication on Fishing Opportunities for 2010 (COM (2009) 224.

For each stock, a summary of the following information is provided:

STOCK: [Species name, scientific name], [management area]

FISHERIES: fleets prosecuting the stock, management body in charge, economic importance in relation to other fisheries, historical development of the fishery, potential of the stock in relation to reference points or historical catches, current catch (EU fleets' total), any other pertinent information.

SOURCE OF MANAGEMENT ADVICE: reference to the management advisory body.

MANAGEMENT AGREEMENT: where these exist.

PRECAUTIONARY REFERENCE POINTS: where these have been proposed.

STOCK STATUS: Reference points, current stock status in relation to these. STECF has included precautionary reference point wherever these are available.

RECENT MANAGEMENT ADVICE: summary of advice.

STECF COMMENTS: Any comments STECF thinks worthy of mention, including errors, omissions or disagreement with assessments or advice.

FISHING OPPORTUNITIES FOR 2010 according to COM (2009) 224: The TACs corresponding the to TAC decision rules contained in COM (2009) 224.

Application of the rules for calculating TACs according to the Commission's Communication on Fishing opportunities for 2010 (COM (2009) 224)

STECF has adopted the following procedure in providing options for fishing opportunities for 2010 according to COM (2009) 224..

Options when a management plan is in place or proposed.

1. If the management plan has been evaluated and has been deemed to consistent with the precautionary approach, STECF has advised on the level of TAC corresponding to the relevant harvest control rule contained in the plan.
2. If the management plan has not yet been evaluated or the evaluation was inconclusive with respect to the precautionary approach, STECF has noted the level of TAC corresponding to the relevant harvest control rule contained in the plan.
3. If the management plan has been evaluated and has been deemed not to be consistent with the precautionary approach, STECF has noted the level of TAC corresponding to the relevant harvest control rule contained in the plan. In this case, STECF also provides options for TACs according to the Communication from the Commission (COM (2009) 224) on a consultation on fishing opportunities for 2010.

Options when there is no management plan in place or proposed.

4. In such circumstances STECF provides options for TACs according to the Communication from the Commission (COM (2009) 224) on a consultation on fishing opportunities for 2010

While recognising that some stocks are shared resources and the EU may only obtain a share of the overall TAC, the values for 2010 TACs provided in the report according to COM (2009) 224 apply to the overall TAC and not the any anticipated EU share. This is because STECF has no advance information on what share is likely to be negotiated. Note also that the TAC values provided by STECF in accordance with COM (2009) 224 should not be considered as STECF-advice, unless it is explicitly stated as such in the report sections.

The STECF review of scientific advice for 2009 was drafted by the STECF Sub-groups on Resource Status (SGRST 09-02) held in Brest, France from 29 June to 3 July 2009.

STECF acknowledges the extensive contribution made by the following participants:

Participants SGRST 09-02 meeting in Brest, France, 29 June – 30July 2008:

STECF members
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1. Resources of the North Sea

1.1. Norway lobster (*Nephrops norvegicus*) - IIa (EU zone), IIIa and North Sea (EU zone)

Changes to the basis for advice on Nephrops assessed using Underwater TV (UWTV) surveys.

Since the 1990s there have been important developments in the methodology to assess the status of Nephrops stocks. The use of Underwater TV surveys (UWTV) has enabled the development of fishery independent indicators of abundance. STECF (2005) suggested that a combination of an absolute abundance estimate from an UWTV survey, in combination with a harvest rate (HR) based on F0.1 from a combined sex length cohort analysis (LCA) and the mean weight and selection pattern from the commercial fishery could be used to calculate appropriate landings. Since then, ICES workshops on the UWTV technique have provided more detail on the assumptions and uncertainties associated with the approach. At the ICES ACOM meeting in June 2008 it was argued that the use of UWTV surveys for absolute abundance estimates could lead to an overestimation bias due to misidentification of burrows, habitat estimation and occupancy rate although it is possible that in some areas, these factors could lead to underestimation. A proposal that, as a precautionary measure, the estimated absolute abundance estimates be reduced by 25%, before being used for estimation of HR was made but ultimately rejected, as being more or less arbitrarily chosen. Because of these uncertainties, ICES did not (in 2008) base its advice for 2009 on estimates of absolute stock size in 2009. Instead, the general ICES advice for these Nephrops stocks is based on the UWTV surveys as relative indices, which in most cases suggest stability of the stocks.

However at the ICES Benchmark Workshop on Nephrops in 2009 major sources of bias were quantified for each survey and an overall bias correction factor derived which, when applied to the estimates of abundance from the UWTV survey, allows them to be treated as absolute abundance levels. The ICES workshop also concluded that the UWTV surveys detect burrows of Nephrops considerably smaller than the sizes of those taken by the fishery. Accordingly, for each FU, ICES has recalculated the harvest rates required to achieve the target fishing mortality on the fishable portion of the stock. For example if the target HR is 20% of the fishable stock but only 50% of the UWTV total stock size estimate is fishable, ICES has reduced the recommended HR by 50% so that the target rate remains at 20% of the fishable stock.

ICES has based its advice for 2010 on the decision rules outlined in the table below, with the objective of achieving exploitation rates between F0.1 and F_{MAX}. To be able to evaluate the state of the stocks relative to the two reference points, ICES estimated for each of the stocks for which UWTV estimates were available, the HRs corresponding to F0.1 and F_{MAX}

F relative to $F_{0.1}$ and F_{MAX}	**SSB Stable or Increasing**	**SSB Decreasing**
$F > F_{MAX}$	Reduce F to F_{MAX}	Reduce F to $F_{0.1}$
$F_{MAX} > F > F_{0.1}$	Maintain current F	Reduce F to $F_{0.1}$
$F < F_{0.1}$	Increase F to $F_{0.1}$	Maintain current F

STECF comments on this approach are given in the section below and specific comments on the advice for each functional unit are given in the relevant section of this report.

STECF COMMENTS: STECF agrees with the findings of the recent TV survey workshops and the 2009 benchmark workshop that it is appropriate to treat the TV survey indices as estimates of absolute abundance of Nephrops.

The 2010 advice for the major Nephrops stocks (FUs) in the North Sea and other areas is now based on the harvest rate approach initially advocated by STECF. STECF also encourages establishing and developing UWTV surveys for other Nephrops functional units.

ICES has changed the basis for estimating HRs because there is a proportion of the stock that is observed by TV surveys that is not available to the gears that catch Nephrops. HRs are now based on the catch/fishable stock size ratio. STECF agrees with ICES that it is appropriate to estimate HRs on the catch/fishable size ratio.

However, using such an approach implies historical HR estimates for each FU that are greater than were previously estimated, since previous estimates were based on the catch/total stock size ratio.

However, the evaluation of the state of the exploitation of the stocks in relation to the F0.1 and F_{MAX} has for most of the stocks changed substantially and the harvest rate is now evaluated to be higher relative to the reference points than previously thought.

Regarding the TAC decision rule for Nephrops FUs advocated by ICES, STECF notes that this may lead to advice for radical changes to fishing opportunities simply as a consequence of the rule and the revised evaluation of the state of exploitation in relation to the reference points and not because of any significant change in stock size for that functional unit. This is particularly the case if the current harvest rate is assessed to be above F_{MAX}, and the stock is declining. In such cases, the decision rule stipulates that the TAC should be based on the fishing mortality rate corresponding to F0.1. In most cases this will imply an immediate substantial reduction in F and in most cases a substantial reduction in TAC even though the stock may be well within safe biological limits. STECF furthermore notes that the harvest rule has not been evaluated against precautionary criteria.

STECF also notes that the HR options proposed by ICES use both F0.1 and F_{MAX} as the basis for decision making on future fishing opportunities depending on the perceived trends in stock size. STECF considers that in the long-term, and to comply with the Johannesburg declaration the aim for management should be to exploit Nephrops at rates that will give rise to Maximum sustainable yield. However maximum sustainable yield reference points are not estimable for Nephrops and appropriate proxies need to be agreed. At present, STECF has no objective basis to determine the most appropriate proxy for Fmsy. However, until the use of candidate proxies for Fmsy have been fully evaluated, STECF **recommends** that as an interim measure F0.1 be adopted as the precautionary target fishing mortality rate for Nephrops. STECF also **recommends** that a study be undertaken to investigate the utility of alternative candidate proxies for Fmsy.

As a consequence of the above rationale and recommendation, STECF considers that it is premature to use the decision rules advocated by ICES as a basis for setting fishing opportunities without a proper evaluation of the likely outcome of such a rule. In view of this, STECF **recommends** that the decision rules advocated by ICES should not form the basis of setting fishing opportunities for 2010 for those Nephrops FUs to which it has been applied. STECF further **recommends** that management plans be developed with the objective of achieving high long-term yields and low risk to the stocks. Such plans should be applicable to separate FUs for Nephrops.

STECF notes that the estimated HRs for Nephrops FUs imply that in some cases, the most recent harvest rate is significantly higher than F0.1 (or even F_{MAX}) and that to set catch limits for 2010 in line with F0.1 would imply large reductions in harvest rate and similar large reductions in fishing opportunities and revenue to the fleets that exploit Nephrops. STECF does not have the appropriate data and information to quantify the potential economic effects of such reductions. In addition, given that for most Nephrops FUs for which UWTV survey estimates are available, there does not seem to be any immediate biological risk to the stocks even at recently observed harvest rates, incremental reductions in fishing mortality towards the F0.1 target would seem appropriate. STECF therefore suggests that fishing opportunities for each FU be set in line with successive annual adjustments in fishing mortality (HR) until F0.1 is realised.

STECF notes that the TAC decision rules proposed in the Commission's Communication on fishing opportunities for 2010 (COM (2009) 224) are intended to deliver successive annual reductions in fishing mortality along the lines suggested above and that these could be used as a basis for setting FU-specific TACs for Nephrops.

Nephrops Functional Units in the North Sea

Norway lobster (Nephrops) in the North sea (IV) is assessed in a number of different stock functional units (FU) treated as separate stocks, see below. However, for management purposes the North Sea is partitioned into 2 units only: The EU EEZ and Norwegian EEZ, each of which is treated as a single unit.

FU 9:	Moray Firth	EU EEZ
FU 10:	Noup	"
FU 7	Fladen ground	"
FU 32	Norwegian Deep	Norwegian EEZ
FU 6	Farn Deep	EU EEZ

FU8 Firth of Forth “

FU 5 Botney Gut “

FU 33 Horn’s Reef “

The Norwegian EEZ comprises only one FU, but the situation is complicated in the EU EEZ, where it is not possible to implement the specific biological advice for the different FUs where the management operates for the (single) EU EEZ of the North Sea. In the EU EEZ catches can be taken anywhere, and this could imply inappropriate harvest rates (HRs) from some parts. More importantly, vessels are free to move between grounds, which allow effort to develop on some grounds in a largely uncontrolled way. Management at the FU level could provide the controls to ensure that catch opportunities and effort are compatible and in line with the scale of the resources in each of the stocks defined by the Functional Units. Notice, that advice for 2010 based on 2009 assessments is only provided for those four FUs which are covered by UWTV surveys. The 2010 advice for FUs 5, 10, 32 and 33 is the same as the 2009 advice (provided as biennial advice in 2008).

STECF notes that in the North Sea (which comprises eight Nephrops Functional Units (FUs)) the present aggregated management approach (overall TAC for all FUs) runs the risk of unbalanced effort distribution. Adoption of management initiatives to ensure that effort can be appropriately controlled in smaller areas within the overall TAC area is recommended. Furthermore, STECF notes that the current aggregated management of all Nephrops FUs in the North Sea as a single unit is a major obstacle for a management complying with the Commissions Communication on Fishing opportunities for 2010 (COM (2009) 224) (see below).

The ICES advice is presented separately for each Functional Unit in the North Sea in sections *** to ***. There are increasing and significant landings from some isolated patches outside the Functional Units, most notably the Devil’s Hole area. Overall landings in Subarea IV were around 22 000 t in 2008 (a decrease of 2500 t from2007) of which landings from other rectangles amounted to more than 1,600 t. STECF agrees with ICES that the use of average landings of no more than 1500 t (2007-2008) could be considered as an allowance for the fishery in the ‘other’ rectangles.

1.1.1. Norway lobster (*Nephrops norvegicus*) in Skagerrak, Kattegat, IIIa.

FISHERIES: There are two Functional Units in this Management Area: a) Skagerrak (FU 3) and b) Kattegat (FU 4). The majority of landings are made by Denmark and Sweden, with Norway contributing only small landings from the Skagerrak. In more recent years minor landings have been taken by Germany. During the last 15 years, landings from IIIa varied between 3,000 t and 5,000 t. Peak landings of 5044 were recorded in 1998. In 2008 landings amounted to 4,857 t

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES and the data available include fishery data such as LPUE and biological sampling data such as length compositions from which mean sizes can be derived. Danish and Swedish UWTV surveys are currently being established and preliminary data for reliable estimates of abundance in IIIa may be available in 2010.

PRECAUTIONARY REFERENCE POINTS: No precautionary reference points have been proposed for this stock.

STOCK STATUS: All the available assessment data indicate, that the stock(s) in this management area are exploited at sustainable levels. However, the available information is inadequate to evaluate spawning stock or fishing mortality relative to risk, so strictly speaking the state of the stock is unknown. Large amount of small *Nephrops* in the catches (discards) 2007 may indicate strong recruitment in that year.

RECENT MANAGEMENT ADVICE: Biennial advice (for 2009 and 2010) for these two FUs were provided in 2008:

Given the apparent stability of the stocks, current levels of exploitation appear to be sustainable. The most recent assessment data compiled in 2009 do not indicate any changes in the state of the stock.

Due to uncertainty in the available data ICES is not able to reliably forecast catch. LPUE has shown an increasing trend but this is not necessarily an indication of increase in stock abundance, but may be a consequence of the current management system. There are no signs of overexploitation of *Nephrops* in IIIa.

ICES does not advise any specific catch options for this stock for 2009. ICES currently advises no catches for cod in IIIa, which is a significant by-catch species in the *Nephrops* fisheries. The current effort regulation (limiting days at sea for gears not using selective sorting grids) may increase the incentives to use sorting grids. This may reduce by-catch of cod.

STECF COMMENTS: STECF agrees with the ICES comments on the assessment and notes that no management advice has been provided. STECF notes that the mismatch between minimum landing size (40 mm CL in Division IIIa) and the selectivity of the many of the trawls in use results in large quantities of *Nephrops* being discarded. There are also important considerations concerning the by-catch of gadoids and the need to reduce these through appropriate selectivity measures in this fishery. STECF also notes that the use of two different minimum landing sizes for *Nephrops* in Divisions IIIa and IV potentially causes an enforcement and policy problem in countries where *Nephrops* from the two areas are being landed.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission (COM (2009) 224) on a consultation on fishing opportunities for 2010, STECF notes that *Nephrops* FU in IIIa can be classified under Category 11 on the basis that STECF has not advised on an appropriate catch level.

Accordingly STECF notes that the rule for category 11 implies the following option for TAC in 2010.

	2010 TAC	Basis for Category classification
Category 11	4,400 t*	No STECF advice

* assuming 3-year average of recent catches

1.1.2. Norway lobster (*Nephrops norvegicus*) in Moray Firth (FU 9)

FISHERIES: Landings from this fishery are predominantly reported from Scotland, with very small contributions from England in the mid-1990s, but not recently. About three quarters of the landings are made by single-rig trawlers, a high proportion of which use a 70-mm mesh. In 1999, twin-rig vessels predominantly used a 100 mm mesh, with 90% of the twin-rig landings made using this mesh size. Legislative changes in 2000 permitted the use of an 80 mm mesh. Total estimated landings in 2008 were 1443 t.

Discarding rates averaged over the period 2006 to 2008 for this stock were about 6% by number. This represents a marked reduction in discarding rate compared to the average for the period 2003 to 2005.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The assessment is based UWTV surveys of absolute abundance.Previous years' estimates of absolute estimate of abundance from UWTV were considered uncertain because of too high levels of unquantifiable bias. However at the ICES Benchmark Workshop on Nephrops in 2009 major sources of bias were quantified for each survey and an overall bias correction factor derived which, when applied to the estimates of abundance from the UWTV survey, allows them to be treated as absolute abundance levels.

PRECAUTIONARY REFERENCE POINTS: No No biological reference points have been determined for this stock of *Nephrops*, instead, as mentioned in the introduction, F_{MAX} and $F_{0.1}$ are used as reference points

Reference points

F reference point	***Harvest ratio***
$F_{0.1}$	8.9%
F_{MAX}	16.6%

STOCK STATUS: The evidence from UWTV surveys suggests that the population is stable, but at a lower level than that in the period 2003-2005. The UWTV survey information, taken together with information showing stable mean sizes, suggest that the stock is being exploited sustainably.

RECENT MANAGEMENT ADVICE: The current fishery appears sustainable. ICES advises on the basis of exploitation boundaries in relation to high long-term yield and low risk of depletion of production potential that the Harvest Rate for Nephrops fisheries should not exceed F(2008). This corresponds to landings of no more than 1 372 tonnes for the Moray Firth stock.

STECF COMMENTS: STECF disagrees with the ICES advice since it is based on the TAC decision rule adopted by ICES. STECF considers that a harvest rate corresponding to $F_{0.1}$ as a proxy for F_{MSY} should be the long-term target and that the short term aim should be to adjust the harvest rate towards that target.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

STECF notes that in order to to comply with the objectives of the precautionary approach as interpreted by ICES, then in accordance with the Commissions Communication on Fishing opportunities for 2010 (COM (2009) 224), the *Nephrops* in Moray of Firth (FU 9) should be classified as a category 6 stock.

Accordingly STECF notes that the rules for each of the above categories imply the following options for TACs in 2010.

	2010 TAC	Basis
Category 6	NE*	No TAC set for separate functional units.

*** NE- not estimable**

STECF notes that the TAC corresponding to the rule for category 6 stocks cannot be estimated for Nephrops in FU 9 since there is no separate TAC set for this functional unit.

1.1.3. Norway lobster (*Nephrops norvegicus*) in the Noup (FU 10)

FISHERIES: Landings from this fishery are predominantly reported from Scotland. Total landings in 2008 amunted to 173 t.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The advice is based on LPUEs and size composition data. There is only limited UWTV survey data on abundance and there is no assessment based on UWTV survey data. Biennial advice (for 2009 and 2010) for for this FU was provided in 2008.

PRECAUTIONARY REFERENCE POINTS: No reference points are available for this stock.

STOCK STATUS: The LPUE indicator is increasing and mean length in the catches is stable. According to the 2008 assessment current levels of exploitation appear to be sustainable.

RECENT MANAGEMENT ADVICE: Given the apparent stability of the stock, current levels of exploitation and effort appear to be sustainable. ICES maintains the previous advice (based on the average landings 2003-2005) for the Noup fishery - that is less than 240 t in 2009 and 2010. This amount is almost identical to the long-term average for the time series.

STECF COMMENTS: STECF agrees with the advice.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

STECF notes that in order to to comply with the objectives of the precautionary approach as interpreted by ICES, then in accordance with the Commissions Communication on Fishing opportunities for 2010 (COM (2009) 224), the *Nephrops* in the Noup (FU 10) should be classified as a category 6 stock.

Accordingly STECF notes that the rules for each of the above categories imply the following options for TACs in 2010.

	2010 TAC	Basis
Category 6	NE*	No TAC set for separate functional units.

*** NE- not estimable**

STECF notes that the TAC corresponding to the rule for category 6 stocks cannot be estimated for Nephrops in FU 10 since there is no separate TAC set for this functional unit.

1.1.4. Norway lobster (*Nephrops norvegicus*) in Fladen Ground (FU 7) (Division IVa)

FISHERIES: There is only one Functional Unit in this area: FU 7 (Fladen Ground). Small quantities of landings are taken outside the main Fladen Ground Functional Unit.The fleet fishing the Fladen Ground for *Nephrops* comprises approximately 100 trawlers, which are predominantly Scottish (> 97%), based along the Scottish NE coast. Nearly three quarters of the landings are made by single-rig vessels and one-quarter by twin-rig vessels. 80mm mesh is the commonest mesh size. Nearly 40% of the *Nephrops* landings at Fladen are reported as by-catch, in fisheries which may be described as mixed. In 2008 total landings amounted to more than 12,000 t. of which U.K (Scotland) accounted for 99 %, the remaining part being Danish. Discarding rates averaged over the period 2005 to 2007 for this stock were 18% by number, or 11% by weight.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The assessment is based UWTV surveys of absolute abundance. Previous years' estimates of absolute estimate of abundance from UWTV were considered uncertain because of too high levels of unquantifiable bias. However at the ICES Benchmark Workshop on *Nephrops* in 2009 major sources of bias were quantified for each survey and an overall bias correction factor derived which, when applied to the estimates of abundance from the UWTV survey, allows them to be treated as absolute abundance levels.

PRECAUTIONARY REFERENCE POINTS: No biological reference points have been determined for this stock of *Nephrops*, instead, as mentioned in the introduction, F_{MAX} and $F_{0.1}$ are used as reference points

Reference points

F reference point	***Harvest ratio***
$F_{0.1}$	9.3%
F_{MAX}	15.8%

STOCK STATUS: UWTV observations indicate that the stock is fluctuating without obvious trend with estimates for the last 2 years increasing to the highest abundance in the series. Considering the UWTV result alongside the indications of stable or slightly increasing mean sizes in the length compositions of catches (of individuals >35mm carapace length) suggests that the stock is being exploited sustainably. The decline in mean length of smaller individuals in the catch may be indicative of recent good recruitment.
RECENT MANAGEMENT ADVICE: The current fishery appears sustainable. ICES advises on the basis of exploitation boundaries in relation to high long-term yield and low risk of depletion of production potential that the Harvest Rate for Nephrops fisheries should not exceed $F_{0.1}$. This corresponds to landings of no more than 16 ,419t for the Fladen Ground**STECF COMMENTS:** STECF agrees with the ICES advice, that effort should not increase relative as nto exceed $F_{0.1}$. **FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224**

STECF notes that in order to to comply with the objectives of the precautionary approach as interpreted by ICES, then in accordance with the Commissions Communication on Fishing opportunities for 2010 (COM (2009) 224), the *Nephrops* in Fladen Ground (FU 7) should be classified as a category 1 stock.

Accordingly STECF notes that the rules for each of the above categories imply the following options for TACs in 2010.

	2010 TAC	Basis
Category 1	NE*	No TAC set for separate functional units.

*** NE- not estimable**

STECF notes that the TAC corresponding to the rule for category 1 stocks cannot be estimated for *Nephrops* in FU 07 since there is no separate TAC set for this functional unit.

1.1.5. Norway lobster (*Nephrops norvegicus*) in the Norwegian Deep, FU 32 (Division IVa, East of 2° E + rectangles 43 F5-F7).

FISHERIES: Landings from this area in 2008 were 675 t, a 10 % decline compared to 2007 landings. The majority of the landings from this FU are made by Denmark (> 80%) and Norway. Since 2002 annual landings have decreased from around 1200 t to less than 700 t and this decrease is due to drecreases in Danish landings.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. Information on this stock is inadequate to provide advice based on precautionary limits. Biennial advice (for 2009 and 2010) for these two FUs were provided in 2008. The perception of the stock status is based on Danish LPUE data.

PRECAUTIONARY REFERENCE POINTS: No precautionary reference points have been determined for this stock.

STOCK STATUS: Landings per unit effort (LPUE) have been relatively stable over the last 14 years and suggest that current levels of exploitation are sustainable. A slight increase in mean size in the catches in 2007 could have indicated a reduced exploitation pressure.

RECENT MANAGEMENT ADVICE: The current fishery appears sustainable. Therefore, ICES has recommended that effort should not be allowed to increase.

STECF COMMENTS: STECF agrees with the ICES advice. STECF notes the possibility, that only part of the stock is exploited at present, considering that the sediment maps indicate that there may be scope for the fishery expand into new grounds. STECF also notes the lack of survey data for this stock.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

STECF notes that the background of the latest scientific assessments and advice and with reference to the Communication from the Commission COM (2009) 224 on a consultation on fishing opportunities for 2010, Norway lobster (*Nephrops norvegicus*) in the Norwegian Deep, FU 32 cannot be classified under any of the categories listed.

1.1.6. Norway lobster (*Nephrops norvegicus*) in the Farn Deep (FU 6)

FISHERIES: Total landings from Farn drecreased damatically in 2008: from 3,000 t in 2007 to only 1213 t in 2008 a decline of around 60% compared to 2007 landings and 75% compared to 2006 landings. The UK fleet has accountedfor virtually all landings from the Farn Deeps. Estimated discarding during this period has fluctuated around 40% by weight of the catch in the Farn Deeps.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The assessment is based UWTV surveys of absolute abundance.Previous years' estimates of absolute estimate of abundance from UWTV were considered uncertain because of too high levels of unquantifiable bias. However at the ICES Benchmark Workshop on *Nephrops* in 2009 major sources of bias were quantified for each survey and an overall bias correction factor derived which, when applied to the estimates of abundance from the UWTV survey, allows them to be treated as absolute abundance levels.

PRECAUTIONARY REFERENCE POINTS: No biological reference points have been proposed for this stock, instead, as mentioned in the introduction, F_{MAX} and $F_{0.1}$ are used as reference points

Reference points

F reference point	***Harvest ratio***
$F_{0.1}$	8.2%
F_{MAX}	13.3%

STOCK STATUS: The UWTV survey in 2008, fishery data and length frequency data all point to the stock at the start of the 2008 fishing season continuing to be at the low levels in 2007. Recruitment signals for *Nephrops* in 2008 appear to indicate low recruitment.

RECENT MANAGEMENT ADVICE: ICES advises on the basis of exploitation boundaries in relation to high long-term yield and low risk of depletion of production potential that the Harvest Rate for *Nephrops* fisheries should not exceed F_{2008}. This corresponds to landings of no more than 1 210 t for the Farn Deeps stock.

STECF COMMENTS: STECF agrees with ICES on its evaluation of the state of the stock in this FU. And given the current stock signals for the Farn Deeps, STECF also agrees that effort should not exceed the 2008 level even if this corresponds to a F-level below $F_{0.1}$.This implies a HR of 7.6 %.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission (COM (2009) 224) on a consultation on fishing opportunities for 2010, STECF notes that *Nephrops* in Farn Deep (FU 06) can be classified under Category 1 on the basis that the stock is exploited at a rate lower than F0.1.

Accordingly STECF notes that the rules for each of the above categories imply the following options for TACs in 2010.

	2010 TAC	Basis
Category 1	NE*	No TAC set for separate functional units.

*** NE- not estimable** -STECF notes that the predicted catch for 2010 corresponding to a fishing mortality rate of F0.1 for FU 6 is 1305 t. However, STECF advises that applying the rule for Category 1 stocks to the Fishery for *Nephrops* in the Farn Deeps is not appropriate, given that this would imply an increase in fishing mortality above current levels at a time when there are clear indications that the stock is at a low level. STECF therefore reiterates that it agrees with the advice from ICES that fishing mortality should not exceed F_{2008}. This implies a catch for FU6 of 1210 t for 2010.

1.1.7. Norway lobster (*Nephrops norvegicus*) in Firth of Forth (FU 8)

FISHERIES: Landings from the Firth of Forth fishery are predominantly reported from Scotland, with very small contributions from England. The area is periodically visited by vessels from other parts of the UK. Estimated discarding rates are 43% by number (24% by weight) in the Firth of Forth. Similar to levels recorded since the beginning of the data series in 1985. In the 3 recent years annual landings have been around 2500 t.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The assessment is based UWTV surveys of absolute abundance.Previous years' estimates of absolute estimate of abundance from UWTV were considered uncertain because of too high levels of unquantifiable bias. However at the ICES Benchmark Workshop on *Nephrops* in 2009 major sources of bias were quantified for each survey and an overall bias correction factor derived which, when applied to the estimates of abundance from the UWTV survey, allows them to be treated as absolute abundance levels.

PRECAUTIONARY REFERENCE POINTS: No biological reference points have been proposed for this stock. Instead, as mentioned in the introduction, F_{MAX} and $F_{0.1}$ are used as reference points

Reference points

F reference point	***Harvest ratio***
$F_{0.1}$	8.0%
F_{MAX}	13.7%

STOCK STATUS: The evidence from the UWTV survey suggests that the population has been at a relatively high level since 2003. The UWTV survey information, taken together with information showing stable mean sizes, suggest that the stock is being exploited sustainably.

RECENT MANAGEMENT ADVICE: ICES advises on the basis of exploitation boundaries in relation to high long-term yield and low risk of depletion of production potential that the Harvest Rate for *Nephrops* fisheries should not exceed F_{MAX}. For the Firth of Forth stock this corresponds to landings of no more than 1,567 tonnes.

STECF COMMENTS: STECF disagrees with the ICES advice since it is based on the TAC decision rule adopted by ICES. STECF considers that a harvest rate corresponding to $F_{0.1}$ as a proxy for F_{MSY} should be the

long-term target and that the short term aim should be to adjust the harvest rate towards that target. STECF also notes that *Nephrops* discard rates in the Firth of Forth are high and there is a need to reduce these and to improve the exploitation pattern. An additional reason for suggesting improved selectivity in this area is to reduce by-catch of other fish species.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

STECF notes that in order to to comply with the objectives of the precautionary approach as interpreted by ICES, then in accordance with the Commissions Communication on Fishing opportunities for 2010 (COM (2009) 224), the *Nephrops* in the Firth of Forth (FU8) should be classified as a category 6 stock.

Accordingly STECF notes that the rules for each of the above categories imply the following options for TACs in 2010.

	2010 TAC	Basis
Category 6	NE*	No TAC set for separate functional units.

*** NE- not estimable**

STECF notes that the TAC corresponding to the rule for category 6 stocks cannot be estimated for *Nephrops* in FU 08 since there is no separate TAC set for this functional unit.

1.1.8. Norway lobster (*Nephrops norvegicus*) in Botney Gut (FU 5).

FISHERIES: Landings from Botney Gut were 962 t in 2008. Up to 1995, the Belgian fleet used to take over 75% of the international landings from this stock, but since then, its share has dropped to less than 6%. Long-term effort of the Belgian *Nephrops* fleet has shown an almost continuous decrease since the all-time high in the early 1990s. In 2008 around 30% of the total international landings were taken by Dutch trawlers for first sale in the Netherlands or in Belgium, and more than 50 % by UK trawlers. STECF notices that there has been a considerable increase in UK landings from this FU in the same period as the landings from Farn has decreased.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. Biennial advice (for 2009 and 2010) for this FU was provided in 2008. Information on this FU is considered inadequate to provide advice based on precautionary limits. The perception of the stock is based on development in LPUEs

PRECAUTIONARY REFERENCE POINTS: No precautionary reference points have been determined for this stock.

STOCK STATUS: The state of this stock is unknown. LPUE indicators show different trends for different fleets and not all of the indicators have been updated for 2006 and 2007.
RECENT MANAGEMENT ADVICE: There are no management objectives for this fishery. The state of the stock is unknown. ICES recommends that the level of effort should not be allowed to increase. **STECF COMMENTS:** STECF agrees with the advice from ICES. STECF notes that for this FU assessment data have become sparse in the last 2 years. The available LPUE figures from the Danish fisheries (continuous) and Belgian fisheries (up to 2005) must be viewed very cautiously as stock indicators.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

STECF notes that the background of the latest scientific assessments and advice and with reference to the Communication from the Commission COM (2009) 224 on a consultation on fishing opportunities for 2010, Norway lobster (*Nephrops norvegicus*) in Botney Gut (FU 52) cannot be classified under any of the categories listed.

1.1.9. Norway lobster (*Nephrops norvegicus*) in Horns Reef (FU 33)

FISHERIES: For several years Denmark was the only country exploiting *Nephrops* in this FU, and accounted for more than 90% of total landings up to 2005. However in recent years Germany and Netherlands have expanded their share of this stock. In 2007 total landings amounted to 1,467 t, and were the highest recorded. In 2008 ladnings declined to a totaql of 1096 t

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. Biennial advice (for 2009 and 2010) for this FU was provided in 2008. Information on this stock is considered inadequate to provide advice based on precautionary limits. The perception of the stock is based on LPUE and length distribution in the catches.

PRECAUTIONARY REFERENCE POINTS: No precautionary reference points have been determined for this stock.

STOCK STATUS: The state of this stock is unknown. The LPUEs from major fisheries does not indicate any decline in availability.

RECENT MANAGEMENT ADVICE: There are no management objectives for this fishery. ICES recommend that the level of exploitation, i.e. effort on this stock should not be increased.

STECF COMMENTS: STECF agrees with the advice from ICES.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

STECF notes that the background of the latest scientific assessments and advice and with reference to the Communication from the Commission COM (2009) 224 on a consultation on fishing opportunities for 2010, Norway lobster (*Nephrops norvegicus*) in in Horns Reef (FU 33) cannot be classified under any of the categories listed.

1.2. Northern shrimp (*Pandalus borealis*) on Fladen Ground (Division IVa)

FISHERIES: : In the EU zone of the North Sea, *Pandalus* on the Fladen Ground (Div. IVa) is the main shrimp stock exploited. This stock is mainly exploited by Danish and UK trawlers with the majority of landings taken by the Danish fleet. Historically, large fluctuations in this fishery have been frequent, for instance between 1990 and 2000 annual landings ranged between 500 t and 6000 t. However since 2000 a continuous declining trend is evident, and in 2004 and 2005 recorded landings dropped to below 25 t. No catches were recorded in 2006-2007. Information from the fishing industry in 2004 gives the explanation that this decline is caused by low shrimp abundance, low prices on small shrimp characteristic for the Fladen Ground and high fuel prices.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. No assessment of this stock has been made since 1992, due to insufficient assessment data.

PRECAUTIONARY REFERENCE POINTS: There is no basis for defining precautionary reference points for this stock.

STOCK STATUS: There is a total lack of separate, fishery independent data. The most recent analytical assessment of this stock was presented in the 1992 ACFM Report (ICES, 1992). Landings have declined since 2000, and no catches were recorded in 2006 and 2007. Part of the explanation for this development is the low price for shrimp combined with the rather high fuel costs. No monitoring of this stock has taken place, and recent years' drop in landings is at least partly due to a decline demand for these shrimp. However, it cannot be ruled out that the drop also reflects a decline in the stock.

RECENT MANAGEMENT ADVICE:

No stock-specific management advice is given by ICES. In the absence of information on stock development, ICES recommends that when/if the fishery on this stock begins, the effort should not increase to levels above the average for the years prior to the present absence of fishing activities and that the fishery must be accompanied by mandatory programmes to collect catch and effort data on both target and by-catch fish.

STECF COMMENTS: STECF agrees with the ICES recommendation

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

STECF notes that in order to to comply with the objectives of the precautionary approach as interpreted by ICES, then in accordance with the Commissions Communication on Fishing opportunities for 2010 (COM (2009) 224), Northern shrimp (Pandalus borealis) on Fladen Ground (Division IVa) should be classified as a category 11 stock.

Accordingly STECF notes that the rules for the above categori imply the following options for TACs in 2010.

	2010 TAC	Basis
Category 11	NE*	No Advice, TAC based on recent catch levels.

*** NE- not estimable – recent catch level not available to STECF**

1.3. Northern shrimp (*Pandalus borealis*) in Division IIIa (West) and Division IVa East (Skagerrak and Norwegian Deeps)

FISHERIES: *Pandalus borealis* is fished by bottom trawls at 150–400 m depth throughout the year by Danish, Norwegian and Swedish fleets. Total landings have varied between 10,000 and 15,000 t in the period 1985-2007. Discarding of small shrimp due to high grading takes place, mainly du to high grading. In 2007 total landings were around 13,200 t, while estimated catches (including discards) were around 15,100 t.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. In recent years several assessment models, including both cohort based and stock production models, have been applied for this stock. A major problem has been (and still is) to obtain realistic data for the predation mortality on this stock, which is believed to have stronger influence the stock fluctuations than the fishery.

PRECAUTIONARY REFERENCE POINTS: Limit reference points have not been defined for this stock.

STOCK STATUS: As no reference points are defined, the state of the stock cannot be evaluated with regard to biological reference points, and the state of the stock is uncertain. The current state of the stock appears to be stable. LPUEs and survey indices do not show any significant changes in stock biomass from 2006 to 2008.. The perception of the state of the stock in 2007 is based on trends in Danish and Norwegian commercial LPUEs and biomass and recruitment indices from Norwegian surveys up to 2008. The recruitment index in 2008 seems to be lower than in the two preceding years.

RECENT MANAGEMENT ADVICE: The assessment in 2008 gives no reason to change the advice given for the 2008 fishery:
It is recommended that the total landings from IIIa and IVa East in 2009 should not increase above the recent averages landings (2003–2006) of 15,000 t. ICES recommends that sorting grids should be mandatory in this fishery in order to minimise by-catch.

STECF COMMENTS: STECF agrees with the ICES advice. STECF also endorses that sorting grids facilitating the escape of fish should be mandatory in this fishery as they are in all other *Pandalus borealis* fisheries in the North Atlantic.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

STECF notes that in order to to comply with the objectives of the precautionary approach as interpreted by ICES, then in accordance with the Commissions Communication on Fishing opportunities for 2010 (COM (2009) 224), Northern shrimp (Pandalus borealis) Division IIIa (West) and Division IVa East, should be classified as a category 6 stock.

Accordingly STECF notes that the rules for the above category imply the following options for TACs in 2010.

	2010 TAC *	Basis
Category 6	15,000 t	Catch advice, TAC based on recent catches

* - No TAC set for Pandalus Borealis in this area

1.4. Cod (*Gadus morhua*) in the Kattegat

FISHERIES: Cod in the Kattegat is exploited by Denmark, Sweden, and Germany. The fishery is conducted by both trawl and gillnets. Landings fluctuated between 4,000 and 22,000 t (1971-2001). Landings have decreased continuously since then. Reported landings were 449 t in 2008. Fishery-independent information indicates that removals from the stock are substantially higher than reported landings and that the mismatch between TAC/official landings and the total removals has increased in the most recent years.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The assessment is considered indicative of trends only. The assessment is based on the recently developed stochastic state-space

model (SAM) that provides statistically sound estimates of uncertainty in the model results. The model allows estimating potential additional removals from the stock, not represented by reported landings. The stock estimates for these years consequently rely more on survey information.

MANAGEMENT AGREEMENT: The EU has adopted a long-term plan for cod stocks and the fisheries exploiting those stocks (Council Regulation (EC) 1342/2008). This regulation repeals the recovery plans in Regulation (EC) No 423/2004, and has the objective of ensuring the sustainable exploitation of the cod stocks on the basis of maximum sustainable yield while maintaining a target fishing mortality of 0.4 on specified age groups.

PRECAUTIONARY REFERENCE POINTS: B_{pa} = 10,500 t, B_{lim} = 6,400, F_{pa} and F_{lim} are no longer defined.

STOCK STATUS: The assessment is indicative of trends. Based on the most recent estimates of SSB (in 2009) ICES classifies the stock as suffering reduced reproductive capacity. The SSB trend indicates a fivefold decrease since 1970 and SSB has been at a historically low level since the early 2000s. Current level of fishing mortality is unknown. Recruitment in recent years has been the lowest in the time series.

RECENT MANAGEMENT ADVICE:

ICES advises on the basis of Exploitation boundaries in relation to precautionary considerations that there should be no catches of this stock in 2010.

Other considerations:

Exploitation boundaries in relation to existing management plans: According to the long-term management plan, the fishing mortality in 2010 shall be reduced by 25 % compared with the fishing mortality rate in 2009, unless the target 0.4 is reached. The current level of fishing mortality on cod in the Kattegat cannot be reliably estimated.
Where it is advised that the catches of cod should be reduced to the lowest possible level, the TACs shall be set according to a 25 % reduction compared to the TAC in the previous year, that corresponds to a TAC at 379 tonnes in 2010.

***Exploitation boundaries in relation to precautionary considerations*:** Taking into account the current perception of the stock abundance and recruitment, fishing at any level will involve a risk of further the stock remaining depleted.

STECF COMMENTS:

STECF agrees with ICES advice that on the basis of exploitation boundaries in relation to precautionary considerations, there should be no fishing on Cod in the Kattegat.

STECF notes that this stock is subject to the provisions of the cod long-term management plan, Council Regulation (EC) 1342/2008. Since STECF is unable to derive reliable estimates of fishing mortality for this stock and is therefore unable to provide a quantitative catch forecast, the TAC for 2010 should be set according to Article 9. Furthermore since the advice is for no fishing, Article 9a applies.

STECF notes it is unclear from ICES advice whether ICES considers the cod long-term management plan (Council Regulation (EC) 1342/2008) to be consistent with the precautionary approach. ICES states that a TAC constraint alone (under Article 9) is not precautionary. However, under article 12 of the management plan fishing effort is adjusted by the same percentage as the TAC.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO THE AGREED MANAGEMENT PLAN (Council Regulation (EC) 1342/2008):

STECF notes that for this plan as applied to the Kattegat stock an evaluation was inconclusive with respect to the precautionary approach. STECF therefore notes that the TAC corresponding to the relevant rule in the management plan is 379 t.

1.5. Cod (*Gadus morhua*), in the North Sea (IIa, IIIa Skagerrak, IV and VIId)

FISHERIES: North Sea cod are exploited by fleets from Belgium, Denmark, The Netherlands, Germany, France, Sweden, Norway, and UK. Small catches are also taken by fleets from Poland and the Faroe Islands. Cod are taken mainly by mixed fisheries using otter trawls, seine nets, gill nets, long-lines and beam trawl. The stock is managed by TAC through joint negotiation between the EU and Norway, technical and supporting

effort regulations in units of days at sea per vessel since 2003. Historically, landings peaked at about 350,000 t in the early 1970s, subsequently declining to around 200,000 t by 1988. From 1989 until 1998, landings remained between about 100,000 t and 140,000 t. Reported landings decreased sharply in 1999 to 96,000 t, and then declined steadily to 24,400 t in 2007. Reported landings for 2008 were about 26,800 t. The assessment area for this stock includes ICES Divisions IIIa (Skagerrak), VIId and Sub-area IV, which are different management areas and for which separate TACs are set.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The assessment used the age-based model (B-ADAPT) incorporating landings and discards, and calibrated with two survey indices (from IBTS quarter 1 and quarter 3 surveys). For ICES Subarea IV and Divisions VIId, discards were estimated from the Scottish discards sampling program up until 2005, raised to the total international fleet. For 2006, Denmark provided its own discard estimates. For 2007 and 2008 Scottish, Danish, German, and England & Wales discard estimates were combined and used to raise landings-at-age for remaining nations in Subarea IV. Discards in Division IIIa were based on observer estimates. For 2006-2008, Danish and Swedish discard estimates were combined to raise landings-at-age from the remaining nations in Division IIIa.

PRECAUTIONARY REFERENCE POINTS: Precautionary reference points for fishing mortality and spawning stock biomass have been agreed as F_{pa} = 0.65, F_{lim} =0.86, B_{pa} = 150,000t and B_{lim} = 70,000 t.

MANAGEMENT AGREEMENT: In 2005 the EU and Norway revised their initial agreement from 1999 and agreed to implement a long-term management plan for the cod stock. This plan was again updated in December 2008 and entered into force on 1 January 2009. The plan aims to be consistent with the precautionary approach and is intended to provide for sustainable fisheries and high yield leading to a target fishing mortality to 0.4. The main changes between the 2009 and 2005 plans is a phasing (transitional and long-term phase) and the inclusion of an F reduction fraction. That is:

Transitional arrangement:
F will be reduced as follows: 75 % of F in 2008 for the TACs in 2009, 65 % of F in 2008 for the TACs in 2010, and applying successive decrements of 10 % for the following years.
The transitional phase ends as from the first year in which the long-term management arrangement leads to a higher TAC than the transitional arrangement.

F reduction fraction
If the size of the stock on 1 January of the year prior to the year of application of the TACs is:

- Above the precautionary spawning biomass level, the TACs shall correspond to a fishing mortality rate of 0.4 on appropriate age groups;
- Between the minimum spawning biomass level and the precautionary spawning biomass level, the TACs shall not exceed a level corresponding to a fishing mortality rate on appropriate age groups equal to the following formula:
- 0.4 - (0.2 * (Precautionary spawning biomass level - spawning biomass) / (Precautionary spawning biomass level - minimum spawning biomass level))
- At or below the limit spawning biomass level, the TAC shall not exceed a level corresponding to a fishing mortality rate of 0.2 on appropriate age groups.

The plan shall be subject to triennial review, the first of which will take place before 31 December 2011.

The EU has adopted a long-term plan for this stock with the same aims as the EU-Norway plan (Council Regulation (EC) 1342/2008).

ICES has evaluated the EU management plan in 2009 and considers it to be in accordance with the precautionary approach if it is implemented and enforced adequately. Discarding in excess of the assumptions under the management plan will affect the effectiveness of the plan. The evaluation is most sensitive to assumptions about implementation error (i.e. TAC and effort overshoot and the consequent increase in discards).

STOCK STATUS: Based on the most recent estimate of SSB (in 2009) and fishing mortality (in 2008), ICES classifies the stock as suffering reduced reproductive capacity and as being at risk of being harvested unsustainably. SSB has increased since its historical low in 2006, but remains below B_{lim}. Fishing mortality declined after 2000, but in 2008 increased, predominantly as a consequence of increased discarding and is currently estimated to be between F_{lim} and F_{pa}. The 2005 year-class is estimated to be one of the most abundant

amongst the recent below-average year-classes. The 2008 year-class is estimated to be one of the lowest in the series.

RECENT MANAGEMENT ADVICE:

ICES advises on the basis of the management plan on an F in 2010 that is 65% of the F in 2008 (F2010=0.51), catches should be less 66 400 t. Assuming discards rates as observed in 2008, this implies landings of less than 40 300 t in 2010. This presumes that the objectives of the management plan are realised which assumes reduction in F and control of catches in 2009 and 2010.

Other considerations:

***Exploitation boundaries in relation to existing management plans*:** The plan stipulates that, based on the assumption that the 25% reduction in F in 2009 has been effective in reducing F2009 to 25% below F2008, the following criteria be met, in order of increasing priority:

(a) TAC2009 should not exceed a level that results in F2010 being above 65% of F2008;

(b) There should be no more than a 20% change from TAC2009 to TAC2010;

These criteria imply catches should be less 66 400 t. Assuming discards rates as observed in 2008, this implies landings of less than 40 300 t in 2010.This is less than the 20% increase constraint (1.2×TAC2009 = 41 500t) for Area IV and Subdivisions VIId and IIIa (Skagerrak).

***Exploitation boundaries in relation to high long-term yield, low risk of depletion of production potential and considering ecosystem effects*:** F_{2008} is above the levels that would lead to high long-term yield and low risk of depletion of production potential, taking ecosystem effects into account.

***Exploitation boundaries in relation to precautionary limits*:** Given the low stock size and recent poor recruitment, the stock cannot be rebuilt to B_{pa} at the start of 2011 even with a zero catch. However, simulations indicate that with the recent poor recruitment, a zero catch in 2010 and 2011 is likely to achieve the rebuilding of the stock to B_{pa} by 2012.

STECF COMMENTS: STECF agrees with the ICES advice. STECF notes that ICES has evaluated the EU cod long-term management plan (Council Regulation (EC) 1342/2008) and found it consistent with the precautionary approach for the cod stock in the North Sea, the Skagerrak and the eastern Channel. STECF further notes that as the rules governing the setting of TACs are identical between the EU management plan and EU-Norway agreement.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO THE AGREED MANAGEMENT PLAN (Council Regulation (EC) 1342/2008).

STECF notes that this plan has been evaluated to be consistent with the precautionary approach. STECF therefore advises that according to the agreed management plan the TAC for 2010 should be set at 40,300 t.

1.5.1. Special request on Cod in the North Sea, Skagerrak and Eastern English Channel

STECF is requested to advise whether the ICES forecast of landings in 2010 includes sources of fishing mortality other than landings that are counted against TAC (and if so, how much).

Furthermore, DG MARE is considering asking STECF in autumn to review the 2010 estimates of discards and unallocated landings based on discard data collected in the first half of 2009. Please advise on the minimum data needs and data sources that would allow STECF to perform such a review.

STECF response

STECF is unable to respond to this request at this time

1.6. Haddock (*Melanogrammus aeglefinus*) in IIa (EU zone), in Sub-area IV (North Sea) and Division IIIa (Skagerrak- Kattegat)

FISHERIES: North Sea haddock is exploited predominantly by fleets from the UK (Scotland), Norway and Denmark. Most landings are for human consumption and are taken by towed gears, although there is a small by-catch in the small-mesh industrial fisheries. Substantial quantities are discarded in some years when new year-classes recruit to the fishery. Over 1963-2006, catches have ranged from 55,000 t to 930,000 t. In recent years catches have decreased and the estimates for 2005 to 2008 represent the lowest on record. A contributory factor to the lower catches in recent years has been the maintenance of low fishing mortality rate.

SOURCE OF MANAGEMENT ADVICE: The management advisory body is ICES. The age-based assessment model (XSA) is calibrated with three survey indices. Discards and industrial by-catch data were included in the assessment. Discards were estimated from the discards sampling programme from several countries, with most observations coming from Scotland.

PRECAUTIONARY REFERENCE POINTS: The proposed precautionary reference points for fishing mortality and biomass are $\mathbf{F_{pa}}$ = 0.70, $\mathbf{B_{pa}}$ = 140,000 t.

STOCK STATUS: Based on the most recent estimate of SSB (in 2009) and fishing mortality (in 2008), ICES classifies the stock as having full reproductive capacity and being harvested sustainably. SSB in 2009 is estimated to be above B_{pa}, although SSB has been declining since 2002. Fishing mortality in 2008 is estimated to be below F_{pa}, and below the target F_{HCR} (0.3) specified in the EU–Norway management plan. Recruitment is characterized by occasional large yield-classes, the last of which was the strong 1999 year-class. Apart from the 2005 year-class which is about average, recent recruitment has been poor.

MANAGEMENT AGREEMENT: In 1999 the EU and Norway agreed to implement a long-term management plan for the haddock stock, which is consistent with the precautionary approach and which is intended to constrain harvesting within safe biological limits (SSB > B_{lim}) and is designed to provide for sustainable fisheries and high potential yield (F_{HCR} = 0.3). A revised management plan was implemented in January 2009.

RECENT MANAGEMENT ADVICE:

ICES advises on the basis of the management plan that implies landings in 2010 of 38 000 t, including industrial by-catch.

Other considerations:

Exploitation boundaries in relation to existing management plans: Following the agreed management plan implies landings in 2010 of 38 000 t, which is expected to lead to an SSB of 154 000 t in 2011. The constraint on interannual TAC variability (±15%) is invoked in this case: the suggested 2010 landings represent a 15% decrease from the 2009 quota. The management plan can be provisionally accepted as precautionary.

Exploitation boundaries in relation to high long-term yield, low risk of depletion of production potential, and considering ecosystem effects: The current fishing mortality is estimated at 0.25, which is below the target rate expected to lead to high long-term yields (F = 0.3).

Exploitation boundaries in relation to precautionary reference points: Catches of 62 000 t implying landings of less than 49 000 t in 2010 would reduce SSB in 2011 to B_{pa} corresponding to a doubling of Fishing mortality.

STECF COMMENTS: STECF agrees with ICES advice that on the basis of the management plan landings in 2010 should be 38 000 t, including industrial by-catch.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO THE AGREED EU AND NORWAY MANAGEMENT PLAN.

STECF notes that this plan has been evaluated to be consistent with the precautionary approach. STECF therefore advises that according to the agreed EU and Norway management plan the TAC for 2010 should be set at 38,000 t.

1.7. Saithe (*Pollachius virens*) in Divisions IIa (EU zone), IIIa, Subareas IV (North Sea) and VI (West of Scotland).

FISHERIES: In the various areas over which this stock is distributed, saithe are primarily taken in a directed shelf-edge trawl fishery, and are also taken as part of the mixed roundfish fishery. The stock is exploited by nations including Norway, France, Germany, the UK, Ireland, Spain and Denmark. Between 1967-2006, ICES Working Group reported landings have varied between 88,326t and 34,3967t and have been relatively stable

over the last 19 years (mostly just over 100,000 t). In 2008 landings were 119,100 t. The stock is managed by TAC. Separate TACs are set for Saithe in IIa (EU zone), IIIa, North Sea combined (Sub-area IV) and Sub-area VI.

The Norwegian fisheries authorities annulled the maximal vessel saithe quota for bottom trawlers and pelagic trawlers in the North Sea and Skagerrak from 30th April 2008. On request from the industry, Norwegian authorities are now discussing the possibilities of opening the summer closure for the saithe fishery (23 June–3 August) in 2008. An opening of this fishery may influence the exploitation pattern as the large 2004 cohort will then be available for the fleet, despite the use of cod-ends with mesh size of 135 mm.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The advice is based on an age-based assessment (XSA) calibrated using data from two commercial cpue series and indices from two surveys. There are no discard estimates for the majority of this fishery. Discarding of saithe occurs in the non-targeted fisheries, but the level of discard is considered to be small compared to the total catch of saithe.

PRECAUTIONARY REFERENCE POINTS: The proposed precautionary reference points for fishing mortality and biomass are $F_{pa} = 0.40$, $F_{lim} = 0.6$, $B_{pa} = 200{,}000$t and $B_{lim} = 106{,}000$ t respectively.

STOCK STATUS: Based on the most recent estimates of SSB (in 2009) and fishing mortality (in 2008), ICES classifies the stock as having full reproductive capacity and being harvested sustainably. SSB is estimated to have been above Bpa since 2001. From 2001 onwards, F has been at or below the target fishing mortality of 0.3.

MANAGEMENT AGREEMENT:

In 2008 EU and Norway renewed the existing agreement on *"a long-term plan for the saithe stock in the Skagerrak, the North Sea and west of Scotland, which is consistent with a precautionary approach and designed to provide for sustainable fisheries and high yields. The plan shall consist of the following elements.*

1. *Every effort shall be made to maintain a minimum level of Spawning Stock Biomass (SSB) greater than 106,000 tonnes (Blim).*
2. *Where the SSB is estimated to be above 200,000 tonnes the Parties agreed to restrict their fishing on the basis of a TAC consistent with a fishing mortality rate of no more than 0.30 for appropriate age groups.*
3. *Where the SSB is estimated to be below 200,000 tonnes but above 106,000 tonnes, the TAC shall not exceed a level which, on the basis of a scientific evaluation by ICES, will result in a fishing mortality rate equal to 0.30-0.20*(200,000-SSB)/94,000.*
4. *Where the SSB is estimated by the ICES to be below the minimum level of SSB of 106,000 tonnes the TAC shall be set at a level corresponding to a fishing mortality rate of no more than 0.1.*
5. *Where the rules in paragraphs 2 and 3 would lead to a TAC which deviates by more than 15 % from the TAC of the preceding year the Parties shall fix a TAC that is no more than 15 % greater or 15 % less than the TAC of the preceding year.*
6. *Notwithstanding paragraph 5 the Parties may where considered appropriate reduce the TAC by more than 15 % compared to the TAC of the preceding year.*
7. *A review of this arrangement shall take place no later than 31 December 2012.*
8. *This arrangement enters into force on 1 January 2009."*

RECENT MANAGEMENT ADVICE:

ICES advises on the basis of the agreed management plan that the landings should be no more than 118 000 t in 2010.

Other considerations:

Exploitation boundaries in relation to existing management plans: At the present SSB level, F should be no more than 0.3 to be in accordance with the management plan. This would give a 24% reduction in the TAC. However, there is a 15% TAC constraint when the stock is above B_{pa} and applying this corresponds to landings of 118 000 t in 2010.

Exploitation boundaries in relation to high long-term yield, low risk of depletion of production potential, and considering ecosystem effects: The current fishing mortality (2006-2008 average) is estimated at 0.29, which is close to the management plan target rate expected to lead to high long-term yields (F = 0.3).

Exploitation boundaries in relation to precautionary limits: An increase of F to 0.39 is possible while keeping SSB above B_{pa} in 2011. This corresponds to landings of less than 132 000 t in 2010.

STECF COMMENTS: STECF agrees with the ICES advice

STECF notes that the most recent (2005) data available on landings by ICES statistical rectangle show that all significant landings come from statistical rectangles west of the 'west of Scotland management line', or from rectangles bisected by that line. It is therefore possible that the majority of cod landings from Division VIa in recent years could be from vessels unaffected by cod recovery measures and unrestricted in their catch composition (including vessels targeting saithe). It is important that cod recovery measures include all areas occupied by the depleted stock.

STECF further notes that although saithe is assessed together in area IV and VI, TACs are set separately for areas IV and VI. Saithe in the North Sea are mainly taken in a directed trawl fishery. STECF therefore considers the management advice for saithe in the North Sea to be compatible with the advice for North Sea cod provided the fishery for saithe can be shown to comply with the advice from ICES on fisheries with an incidental catch of cod.

The fishery in Subarea VI consists largely of a directed deep-water fishery operating on the shelf edge but includes a mixed fishery operating on the shelf. Therefore STECF considers the management advice for saithe in area VI must take into account the management adopted for area VI cod (no catch and discards for cod).

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO THE AGREED EU/NORWAY MANAGEMENT PLAN.

STECF notes that this plan has been evaluated to be consistent with the precautionary approach. STECF therefore advises that according to the agreed EU/Norway management plan the TAC for 2010 should be set at 118,000 t.

1.8. Whiting (*Merlangius merlangus*), Skagerrak & Kattegat (IIIa)

FISHERIES: The majority of whiting landed from the Skagerrak and Kattegat are taken as by-catch in the small-mesh industrial fisheries. Some are also taken as part of a mixed demersal fishery. As in the North Sea stock, landings decreased in the Skagerrak and Kattegat drastically and were below 2,000 t since 1997. Nominal landings for 2008 were 404 t.

SOURCE OF MANAGEMENT ADVICE: The management advisory body is ICES.

PRECAUTIONARY REFERENCE POINTS: No precautionary reference points have been proposed for whiting in the Skagerrak and Kattegat.

STOCK STATUS: The available information is inadequate to evaluate spawning stock or fishing mortality. It is likely that this stock is linked to the North Sea stock. Survey information (1980-2007) shows a decline in the stock size since 2002 and the stock is now below the average of the time-series (1980-2007).

RECENT MANAGEMENT ADVICE:

The landing data available for this stock give insufficient reason to change the advice from 2008. The advice on this stock for the fishery in 2010 is therefore the same as the advice given in 2008 for the 2009 fishery: "The landings should be less than the recent average (2003–2005) landings of 1,050 t as a precautionary value to restrict the potential for re-expansion of the fishery and misreporting from other regions."

This advice will be updated in October 2010.

STECF COMMENTS: STECF agrees with the ICES advice.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224:

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission COM (2009) 224 on a consultation on fishing opportunities for 2010, STECF notes that Whiting in IIIa can be classified under Category 6.

Accordingly STECF notes that the rule for the above category implies the following option for TACs in 2010.

Category 6 State of the stock is not known; advice on appropriate catch

	2010 TAC	Basis
Category 6	1,050t	Aim to set the TAC according to advice but do not change TAC by more than 15%

1.9. Whiting (*Merlangius merlangus*) in Subarea IV (North Sea) and Division VIId (Eastern Channel)

FISHERIES: Whiting are taken as part of a mixed fishery, as well as a by-catch in fisheries for *Nephrops* and industrial species. Substantial quantities are discarded. Historically total catches have varied considerably ranging between 25,000 and 153,000 t. In 2008, the Working Group estimated that about 26,900 t were caught. The human consumption landings were around 17,900 t with a TAC for 2008 of 17,900 t.

Whiting are caught in mixed demersal roundfish fisheries, fisheries targeting flatfish, the *Nephrops* fisheries, and the Norway pout fishery. The current minimum mesh-size in the targeted demersal roundfish fishery in the northern North Sea has resulted in reduced discards from that sector compared with the historical discard rates. Mortality has increased on younger ages due to increased discarding in the recent year as a result of recent changes in fleet dynamics of *Nephrops* fleets and small mesh fisheries in the southern North Sea. The by-catch of whiting in the Norway pout and sandeel fisheries is dependent on activity in that fishery, which has recently declined after strong reductions in the fisheries. These are low values based on the assumption of a similar by-catch rate to that observed in previous years, when the industrial fisheries were at a low level. A larger catch allocation for by-catch may be required if industrial effort increases.

Catches of whiting in the North Sea are also likely to be affected by the effort reduction seen in the targeted demersal roundfish and flatfish fisheries, although this will in part be offset by increases in the number of vessels switching to small mesh fisheries.

Recent measures to improve survival of young cod, such as the Scottish Credit Conservation Scheme, and increased uptake of more selective gear in the North Sea and Skagerrak, should be encouraged for whiting.

The minimum mesh size increased to 120 mm in the northern area in 2002 and this may have contributed to the substantial decrease in reported landings. Landings compositions from the northern area, in 2006 and 2007, indicate improved survival of older ages. In addition, the total number of fish discarded appears to have been significantly reduced since 2003, from around 60% in 2003 to around 47% in 2008.

Scotland has implemented 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 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. Despite their introduction, ICES notes that during the initial year of operation (2008) cod discarding rates increased substantially.

SOURCE OF MANAGEMENT ADVICE: The management advisory body is ICES. The stock assessment is based on an XSA assessment, calibrated with two survey indices. Commercial catch-at-age data were disaggregated into human consumption, discards, and industrial by-catch components.

Partial fishing mortalities from these catch components were calculated from their average contribution over 2006–2006. This could not be done on an area basis. Discards were estimated based on data from Scotland, England, Denmark and Germany and raised to the total international fleet in the North Sea. Discard information is now available for the years 2003 to 2008 for a major component of the catch from French fleets fishing in Areas IV and VIId, these data will be incorporated in next years assessment.

There are considerable discrepancies in stock trends prior to 1990 between the survey time-series and the assessment based on commercial catch data. Calibration data prior to 1990 were therefore omitted from the time-series.

PRECAUTIONARY REFERENCE POINTS:
No precautionary reference points are set for this stock.

STOCK STATUS: In the absence of defined reference points, the state of the stock cannot be evaluated. An analytical assessment estimates SSB in 2009 as being near the lowest level since the beginning of the time-

series in 1990. Fishing mortality has declined from 2000 - 2004, but increased in recent years. Recruitment has been very low since 2002 with an indication of a modest improvement in the 2007 year-class.

RECENT MANAGEMENT ADVICE:

Because no reference points are available ICES advises on the basis of precautionary considerations that a significant reduction of the TAC is required to remedy the decline in SSB. An immediate TAC reduction of 61% (13,400t total catch, 7,400t human consumption catch) is needed to stabilise the stock, but rebuilding would require a further reduction.

Other considerations:

ICES has developed a generic approach to evaluate whether new survey information that becomes available in September forms a basis to update the advice. If this is the case, ICES will publish new advice in November 2009.

STECF COMMENTS: STECF agrees with the ICES advice.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission COM (2009) 224 on a consultation on fishing opportunities for 2010, STECF notes that Whiting in Subarea IV and Division VIId can be classified under Category 6.

Accordingly STECF notes that the rule for the above category implies the following option for TACs in 2010.

Category 6 State of the stock is not known; advice on appropriate catch

	2010 TAC	Basis
Category 6	12,920t	State of the stock is unknown, Annex III, rule 5b, 15% TAC constraint

1.10. Anglerfish (*Lophius piscatorius)* in IIa (EU zone), North Sea IV, IIIa

FISHERIES: Anglerfish are taken as a by-catch by towed gears in the Skagerrak (IIIa), Northern North Sea and IIa, with an increasing directed trawl fishery in the deeper areas of the Northern North Sea (where 90% or more of the Area IV landings are taken). The fishery is dominated by the Scottish fleet, which takes around 70% to 90% of the total landings in this area. ICES estimates of landings of anglerfish from the North Sea show a rapid increase in the late 1980s from about 10000 t to about 18000 t (1997) followed by a decrease to between 8,000 t and 9,000 in 2003 and 2004. Provisional official landings for 2008 are given as 11,700 t.

SOURCE OF MANAGEMENT ADVICE: The management advisory body is ICES. The stock in the North Sea was formerly treated as a separate assessment unit, but the assessment has since 2004 been combined with that in Sub-Area VI – see Section 2.9.

STECF COMMENTS: ICES considers Anglerfish in Sub-areas IV and VI and Div. IIIa a single stock. For management purposes, anglerfish on the entire Northern Shelf are currently, split into 3 management units: 1) Sub-area VI (including Vb (EC), XII and XIV), 2) the North Sea (including IIIa and the EU waters of IIa), and 3) IIa, Norwegian waters. However, it is noticed by ICES, that anglerlfish in IIIa has not been included in the EU management (annual "COUNCIL REGULATIONs the fishing opportunities etc."). Since there are no national regulations for anglerfish in IIIa STECF **recommends** that IIIa is included in the EU management as well as in the EU-Norway agreement.

1.11. Brill (*Scopthalmus rhombus*) in the North Sea

ICES has not assessed this stock and STECF has no access to any stock assessment information on brill in this area.

A precautionary TAC (including turbot) in areas IIa and IV for 2009 was set to 5,263 t.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission (COM (2009) 224) on a consultation on fishing opportunities for 2010, STECF notes that Brill in the North Sea can be classified under Category 11

Accordingly STECF notes that the rules for each of the above categories imply the following options for TACs in 2010.

	2010 TAC	Basis
Category 11	4474 t*	There is no STECF advice, Average of recent catches, 15% TAC constraint

* Average 2006-2008 with 15% TAC constraint

1.12. Dab (*Limanda limanda*) IIa (EU zone), North Sea

ICES has not assessed this stock and STECF has no access to any stock assessment information on dab in this area.

A precautionary TAC (including flounder) in areas IIa and IV for 2009 was set to 18,810 t.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission (COM (2009) 224) on a consultation on fishing opportunities for 2010, STECF notes that dab in IIa (EU zone) and the North Sea can be classified under Category 11

Accordingly STECF notes that the rules for each of the above categories imply the following options for TACs in 2010.

	2010 TAC	Basis
Category 11	15989 t*	There is no STECF advice, Average of recent catches, 15% TAC constraint

* Average 2006-2008 with 15% TAC constraint

1.13. Flounder (*Platichthys flesus*) - IIa (EU zone), North Sea

ICES has not assessed this stock and STECF has no access to any stock assessment information on flounder in this area.

A precautionary TAC (including dab) in areas IIa and IV for 2009 was set to 18 810 t.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission (COM (2009) 224) on a consultation on fishing opportunities for 2010, STECF notes that flounder in IIa (EU zone) and the North Sea can be classified under Category 11

Accordingly STECF notes that the rules for each of the above categories imply the following options for TACs in 2010.

	2010 TAC	Basis
Category 11	15989 t*	There is no STECF advice, Average of recent catches, 15% TAC constraint

* Average 2006-2008 with 15% TAC constraint

1.14. Lemon sole (*Microstomus kitt*) in the North Sea

STECF did not have access to any stock assessment information on Lemon sole in this area.

A precautionary TAC (including witch) in areas IIa and IV for 2009 was set to 6,793 t.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission (COM (2009) 224) on a consultation on fishing opportunities for 2010, STECF notes that lemon sole in the North Sea can be classified under Category 11

Accordingly STECF notes that the rules for each of the above categories imply the following options for TACs in 2010.

	2010 TAC	Basis
Category 11	5774 t*	There is no STECF advice, Average of recent catches, 15% TAC constraint

* Average 2006-2008 with 15% TAC constraint

1.15. Megrim (*Lepidorhombus whiffiagonis.*) in IIa (EU zone), North Sea

Megrim in IIa and IV are assessed together with megrim in Subarea IV. The stock summary and advice is given in Section 2.11.

1.16. Plaice (*Pleuronectes platessa*) in Kattegat and Skagerrak (Division IIIa)

FISHERIES: The plaice catches in this area are taken in fisheries using seine, trawl and gill nets targeting mixed species for human consumption. Plaice is an important by-catch in a mixed cod-plaice fishery. Denmark and Sweden account for the majority of the landings while only minor landings are taken the German, Norwegian and, occasionally, vessels from Belgium and Netherlands. Landings fluctuated between 7,700 and 16,500 t. (1980-1999). Landings in 1998 and 1999 were amongst the lowest around 8,500 t. The landings increased to 11,560 t in 2001 but subsequently decreased and amounted to 6,905 in 2005 and 9,400 in 2006 compared to a TAC of 9,600 t. Landings in 2007 and 2008 are estimated to be 8,800 t and 8,600 t respectively.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES.

PRECAUTIONARY REFERENCE POINTS: No precautionary reference points have been proposed for this stock.

STOCK STATUS: In 2007, ICES identified key issues that would need to be resolved before reaching further improvements in the assessment. The various surveys give a reasonably consistent result for the eastern part of the area. The status of the western part is more uncertain, due to potential mixing with North Sea plaice and limited survey coverage. The landings-at-age matrix does not show proper tracking of the cohorts, probably due to i) mixing of the IIIa stock with the North Sea plaice stock on the main fishing ground in southwestern Skagerrak, and ii) uncertainty in ageing due to low sampling levels.
In 2009, ICES still considered these issues as outstanding, although uncertainty due to age reading is likely to have decreased in the recent years

RECENT MANAGEMENT ADVICE: As in 2008, the new analysis available for this stock has not given a reason to change the advice from 2007. The advice on this stock for the fishery in 2010 is therefore the same as the advice given over the last 2 years: "Landings should not exceed the level recorded in 2006 of 9,400 t."

This advice will be updated in 2011.

STECF COMMENTS: STECF agrees with the ICES advice.

STECF notes that fisheries for plaice in Division IIIa are linked to those exploiting sole and that this linkage should be taken into account when implementing management rules for either stock.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission (COM (2009) 224) on a consultation on fishing opportunities for 2010, STECF notes that plaice in subarea IIIa can be classified under Category 6.

Accordingly STECF notes that the rules for the above category imply the following option for TACs in 2010.

	2010 TAC	Basis
Category 6	9,935 t	State of stock not known precisely and STECF advices on an appropriate catch level, 15% TAC constraint

1.17. Plaice (*Pleuronectes platessa*) in Subarea IV (North Sea)

FISHERIES: North Sea plaice is taken mainly in a mixed flatfish fishery by beam trawlers in the southern and south eastern North Sea. Directed fisheries are also carried out with seine and gill net, and by beam trawlers in the central North Sea. Fleets involved in this fishery are the Netherlands, UK, Belgium, Denmark, France, Germany and Norway. Landings fluctuated between 70,000 and 170,000 t (1987-2002) and are predominantly taken by EU fleets. The 2003, 2004, 2005, 2006 and 2007 landings of 66,500 t, 61,400t 55,700 t, 57,900 t and 49,700 t respectively were the lowest recorded since 1957. Landings in 2008 reached a record low of 48,900 t.

The combination of days-at-sea regulations, high oil prices, and the decreasing TAC for plaice and the relatively stable TAC for sole, appear to have induced a more southern fishing pattern in the North Sea. This concentration of fishing effort results in increased discarding of juvenile plaice that are mainly distributed in those areas. This process could be aggravated by movement of juvenile plaice to deeper waters in recent years where they become more susceptible to the fishery. Also the lpue data show a slower recovery of stock size in the southern regions that may be caused by higher fishing effort in the more coastal regions.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The advice is based on an age-based assessment using landings and discards, calibrated with three survey indices.

PRECAUTIONARY REFERENCE POINTS: The assessment for North Sea plaice has been fundamentally changed with the inclusion of discards in the assessment since 2004. Accordingly, the reference points were re-estimated. B_{lim} is set as B_{loss}, (160,000t) the lowest observed biomass in 1997 as assessed in 2004. B_{pa} is based on $1.4*B_{lim}$ and set at 230,000 t. F_{pa} is based on F_{lim} ($=F_{loss}$) and set at 0.6, which is the 5th percentile of F_{loss} (0.74) and gives a 50% probability that SSB is around B_{pa} in the medium term.

MANAGEMENT AGREEMENTS: The management agreement (1999), previously agreed between the EU and Norway was not renewed for 2005 and since that year has not been in force. A multiannual plan for fisheries exploiting stocks of plaice and sole in the North Sea was established on 11 June 2007 (Council Regulation (EC) No 676/2007). This plan has two stages. The first stage aims at an annual reduction of fishing mortality by 10% in relation to the fishing mortality estimated for the preceding year, with a maximum change in TAC of +or- 15% until the precautionary reference points are reached for both plaice and sole in two successive years. ICES has interpreted the F for the preceding year as the estimate of F for the year in which the assessment is carried out. The basis for this F estimate in the preceding year will be a constant application of the procedure used by ICES in 2007. In the second stage, the management plan aims for exploitation at F = 0.3.

ICES has evaluated the agreed long-term management plan (Council Regulation (EC) No. 676/2007) for plaice and sole. For plaice, the management plan evaluation is not yet conclusive with regards to consistency with the precautionary approach due to the following shortcomings:

- Lack of robustness to the starting values for population abundance
- Systematic over-estimation of historic landings
- Under-estimation of bias and variance in the assessment model

STOCK STATUS: Based on the most recent estimate of SSB (in 2009) and fishing mortality (in 2008), ICES classifies the stock as having full reproductive capacity and as being harvested sustainably. SSB is estimated to have increased above the B_{pa}. Fishing mortality is estimated to have decreased to below F_{pa} and Ftarget. Recruitment has been of average strength from 2005 onwards. The recruitment in 2008 is just below the long-term average.

RECENT MANAGEMENT ADVICE:

ICES advises on the basis of the existing EU management plan. Although the evaluation of the plan has not been conclusive, the fishing mortality in 2010 when applying the management plan is expected to give benefits in terms of long-term yield and low risk to the stock compared to fishing at precautionary levels. ICES therefore advises to limit landings to 63 825 t for the year 2010.

Other considerations:

Exploitation boundaries in relation to existing management plans: According to the management plan adopted by the EU in 2007, the fishing mortality in 2010 should be at the target F (= 0.3) with the constraint that the change in TAC should not be more than 15%. In this case the 15% limit is the determining factor, resulting in a TAC of no more than 63 825t.

ICES has not yet concluded on the status of the EC management plan in relation to precautionary approach.

Exploitation boundaries in relation to high long-term yield, low risk of depletion of production potential and considering ecosystem effects: The current total fishing mortality (including discards) is estimated to be 0.25, which is above the rate expected to lead to high long-term yields and low risk of stock depletion (F_{MAX}).

Exploitation boundaries in relation to precautionary limits: The exploitation boundaries in relation to precautionary limits imply human consumption landings of less than 138 000 t in 2010, which is expected to maintain SSB above B_{pa} in 2011, while maintaining F below F_{pa}

STECF COMMENTS:

STECF agrees with the ICES advice and therefore **recommends** that the 2010 TAC for plaice in IV should be set in accordance with the provisions of the management plan.

STECF notes that a major part of the fleet fishing for sole and plaice in the North Sea is reported to have spent less effort in that area in 2009 compared to 2007 and 2008, including the decommissioning of 25 vessels in 2008. The magnitude of the effort reduction in 2009 is not quantifiable at present, but if it results in a reduction in fishing mortality on sole and plaice in 2009, STECF advises that forecasted catches and stock biomass for 2010 are likely to be underestimated.

STECF agrees with ICES that the current minimum landing size results in high discard rates in the mixed flatfish fishery with beam trawls using 80mm mesh size. STECF suggests that technical measures to reduce discarding in addition to an overall reduction in F should be considered

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO THE AGREED MANAGEMENT PLAN (Council Regulation (EC) No 676/2007).

STECF notes that for this plan the evaluation was inconclusive with respect to the precautionary approach. However STECF agrees with ICES advice that setting the TAC corresponding to the relevant rule in the management plan is preferable to setting a TAC according to precautionary reference points. Therefore STECF notes that the TAC for 2010 corresponding to the agreed management plan is 63,825t.

1.18. Plaice (*Pleuronectes platessa*) in Division VIId (Eastern English Channel)

FISHERIES: The stock is exploited predominantly in a mixed flatfish fishery by otter and beam trawlers. French offshore otter trawlers have a directed fishery in winter. Countries involved in this fishery are Belgium, France and the UK. Landings fluctuated between 2,000 and 10,000 t (1976-2007). Landings fluctuated hardly in the last decennia but declined slightly in the last 6 years from 5,800 t to 3,500 t in 2008.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The advice is based on an age-based assessment using commercial and survey data.

PRECAUTIONARY REFERENCE POINTS: The proposed precautionary reference points for fishing mortality and biomass are F_{pa} = 0.45, B_{pa} = 8,000t.

STOCK STATUS: The assessment is indicative of trends only. The SSB trends suggest that the spawning-stock biomass has declined through the last 15 years to a stable historical low level. The current level of SSB is low. F varies without trend around the long-term average. Recruitment in 2006 and 2007 have been above average.

RECENT MANAGEMENT ADVICE: In the absence of a short-term forecast, ICES advises on the basis of exploitation boundaries in relation to precautionary considerations that landings in 2010 should not increase above the average of landings from the last three years (2006–2008), corresponding to landings less than 3 500 t.

STECF COMMENTS: STECF agrees with the ICES advice for VIId plaice.

STECF notes that plaice in VIId and VIIe are managed by a joint TAC, and that the advice from ICES is radically different for the two stock components. "*No increase above the average of landings from the last three years (2006–2008), corresponding to landings less than 3 500 t*" for plaice in VIId and "*a substantial reduction in catches" for plaice in VIIe*.

STECF notes that following the EU Commission consultation paper on TACs for 2010 (COM (2009) 224, 12 May 2009) this stock would be categorised based on the average of SSB in the last 2 years compared to the average of the 3 preceding years. For this stock only relative measures of stock biomass are available but these show a reduction of 3%, resulting in an unchanged TAC.

STECF reiterates its previous comments:

i) Due to the minimum mesh size (80 mm) in the mixed beam trawl fishery, a large number of undersized plaice are discarded. Discard estimates are not included in the assessment. The 80-mm mesh size is not matched to the minimum landing size of plaice (27 cm). Measures taken specifically directed at sole fisheries will also impact the plaice fisheries.

ii) There is some uncertainty about the stock structure. Historical tagging information indicates that there may be significant migration of plaice between ICES divisions VIId, e and IVc.

iii) Finally, the lack of discard information also adds to the overall uncertainty of the status of the stock since discards are not included in the assessment.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission (COM (2009) 224) on a consultation on fishing opportunities for 2010, STECF notes that plaice in subarea VIId can be classified under Category 6.

Accordingly STECF notes that the rules for the above category imply the following option for TACs in 2010.

	2010 VIId TAC component	Basis
Category 6	3,500 t	State of stock not known precisely and STECF advices on an appropriate catch level

STECF further notes that the result of applying the rules of Annex II of COM (2009) 224 to both separate components result in a joint TAC for plaice in VIIde of 3,500 t + 987 t = 4,478 t. (See also section 3.17)

1.19. Sole (*Solea solea*) in Division IIIa

FISHERIES: The fishery is mainly conducted by Denmark, with smaller landings taken by Germany and Sweden. Significant amounts of sole are taken as by-catch in the fishery for *Nephrops*. Landings fluctuated between 200 t and 1,400 t (1971-2007). In 2008 landings were 543 t.

SOURCE OF MANAGEMENT ADVICE: The management advisory body is ICES. The advice is based on an age-based assessment using cpue data from three commercial tuning series (reference fleets) and one scientific survey series. During the period 2002–2004 there was considerable misreporting due to limiting TACs and weekly quota, which were included in the assessment. Since mid-2005, the increase in TAC and improved control are believed to have resulted in insignificant misreporting.

PRECAUTIONARY REFERENCE POINTS: The proposed precautionary reference points for fishing mortality and biomass are $F_{pa} = 0.30$, $B_{pa} = 1{,}060$ t.

STOCK STATUS Based on the most recent estimates of SSB (in 2009) and F (in 2008), ICES classifies the stock as having full reproductive capacity and being harvested sustainably. SSB has decreased since 2005 but is still well above B_{pa}. Fishing mortality has increased from 0.22 in 2007 to 0.28 in 2008. Recruitment has been below average in recent 4 years.

RECENT MANAGEMENT ADVICE:

ICES advises on the basis of exploitation boundaries in relation to precautionary limits that fishing mortality in 2010 should be kept below F_{pa}, corresponding to landings of less than 620 t.

STECF COMMENTS: STECF agrees with the ICES advice.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission (COM (2009) 224) on a consultation on fishing opportunities for 2010, STECF notes that sole in subarea IIIa can be classified under Category 2.

Accordingly STECF notes that the rules for the above category imply the following option for TACs in 2010.

	2010 TAC	Basis
Category 2	680 t	Stock overexploited compared to maximum sustainable yield

but inside safe biological limits, 15% TAC constraint

1.20. Sole (*Solea solea*) in Sub-area IV (North Sea)

FISHERIES: Sole is mainly taken by beam trawl fleets in a mixed fishery for sole and plaice in the southern part of the North Sea. A relatively small part of the catch is taken in a directed fishery by gill-netters in coastal areas, mostly in the 2nd quarter of the year. The stock is exploited predominantly by The Netherlands with smaller landings taken by Belgium, Denmark, France, Germany and the UK. Landings have fluctuated between 11,000 and 35,000 t (1957-2007). The landings in 2008 are around 14,100 t.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The advice is based on an age-based assessment using commercial and survey data.

PRECAUTIONARY REFERENCE POINTS: The proposed precautionary reference points for fishing mortality and biomass are F_{pa} = 0.40, B_{pa} = 35,000t, Blim = 25,000 t.

MANAGEMENT AGREEMENTS: A multiannual plan for fisheries exploiting stocks of plaice and sole in the North Sea was established on 11 June 2007 (Council Regulation (EC) No 676/2007). This plan has two stages. The first stage aims at an annual reduction of fishing mortality by 10% in relation to the fishing mortality estimated for the preceding year, with a maximum change in TAC of +or- 15% until the precautionary reference points are reached for both plaice and sole in two successive years. ICES has interpreted the F for the preceding year as the estimate of F for the year in which the assessment is carried out. The basis for this F estimate in the preceding year will be a constant application of the procedure used by ICES in 2007. In the second stage, the management plan aims for exploitation at F = 0.2.

ICES has evaluated the agreed long-term management plan (Council Regulation (EC) No. 676/2007) and concluded that it leads on average to a low risk of $B < B_{lim}$ within the next 10 years. ICES conclude that for sole the management plan can be provisionally accepted as precautionary.

STOCK STATUS: Based on the most recent estimate of SSB (in 2009) and fishing mortality (in 2008), ICES classifies the stock as having full reproductive capacity and is being harvested sustainably. SSB has fluctuated around the precautionary reference points for the last decade, but has increased since 2008 owing to a large incoming 2005 year-class and reduced fishing mortality. Fishing mortality has shown a declining trend since 1995 and is currently estimated to be below F_{pa}. The assessment suggests that the 2006 year-class was below average, and 2007 average.

RECENT MANAGEMENT ADVICE:

ICES advises on the basis of the existing EU management plan that landings should be less that 14,100 t in 2010.

Other considerations:

Exploitation boundaries in relation to the agreed management plan: According to the management plan adopted by the EC in 2007, fishing mortality in 2010 should be reduced by 10% compared to the fishing mortality estimated for the preceding year (F2008=F2009=0.34) with the constraints that the TAC should not be changed by more than 15%. A 10% reduction in fishing mortality corresponds to an F of 0.304 and landings of 14 100t in 2010 which is within the 15% change (TAC 2009=14 000t). Additional evaluations of the management plan are necessary to take into account retrospective bias of the assessment and the sporadic nature of recruitment.

Exploitation boundaries in relation to high long-term yield, low risk of depletion of production potential and considering ecosystem effects: The current fishing mortality is within the range that is expected to lead to high long-term yields and low risk to stock depletion.

Exploitation boundaries in relation to precautionary limits: The fishing mortality in 2010 should be no more than F_{pa}, corresponding to landings of less than 17,800 t..

ICES further notes that

- Sole are mainly caught in a mixed beam trawl fishery with plaice and other flatfish using 80-mm mesh in the southern North Sea. The minimum mesh size in the mixed beam trawl fishery in the southern North Sea means that large numbers of undersized plaice and cod are discarded. Measures to reduce discarding in the mixed beam trawl fishery would greatly benefit these stocks. An increase in the minimum landing size of sole could provide an incentive to fish with larger mesh sizes and would therefore mean a reduction in the discarding of plaice. The minimum landing size of North Sea sole is 24 cm. An increased mesh size in the fishery would reduce the catch of undersized plaice and cod, but would also result in short-term loss of marketable sole.
- The peaks in the historical time-series of SSB of North Sea sole correspond with the occasional occurrence of strong year-classes. Due to a high fishing mortality the SSB has declined during the nineties. The fishery opportunities and SSB are now dependent on incoming year-classes and can therefore fluctuate considerably between years. The SSB and landings in recent years have been dominated by the 2001 and 2005 year-classes. The predicted SSB in 2010 is largely dependent on the above-average recruitment of the 2005 year-class.

STECF COMMENTS: STECF agrees with the ICES advice and therefore **recommends** that the 2010 TAC for sole in IV should be set in accordance with the provisions of the management plan.

STECF notes that a major part of the fleet fishing for sole and plaice in the North Sea is reported to have spent less effort in that area in 2009 compared to 2007 and 2008, including the decommissioning of 25 vessels in 2008. The magnitude of the effort reduction in 2009 is not quantifiable at present, but if it results in a reduction in fishing mortality on sole and plaice in 2009, STECF advises that forecasted catches and stock biomass for 2010 are likely to be underestimated.

STECF notes that as sole are mainly caught in a mixed beam trawl fishery, the management measures for sole should take into account management measures adopted for other species especially North Sea plaice and North Sea cod for which stringent management is advised.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO THE AGREED MANAGEMENT PLAN (Council Regulation (EC) No 676/2007).

STECF notes that this plan has been evaluated to be consistent with the precautionary approach. STECF therefore advises that according to the agreed management plan the TAC for 2010 should be set at 14,100 t.

1.21. Sole (*Solea solea*) in Division VIId (Eastern English Channel)

FISHERIES: The main fleets, fishing for sole in Division VIId, are Belgian and English offshore beam trawlers (> 300 HP), which also take plaice as a by-catch. These fleets also operate in other management areas. French offshore trawlers targeting roundfish also take sole as a by-catch. Also numerous inshore < 10 m boats on the English and French coasts target sole in the spring and autumn mainly using fixed nets. Between 1986–1997, the total landings have been fluctuating around 4,500t. In 1998 the lowest landings were observed (3,400t),

since 2000 the landings have increased to 5,000t in 2003 and fluctuated around that high value for the next 7 years. Landings in 2008 are slightly lower at 4,500 tonnes. It should be noted that although sometimes official landings were declared according agreed TAC's, it is apparent that since 1997 the uptake was always lower than the TAC.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. Although corrected for, the analytical assessments, using catch-at-age and CPUE data from commercial fleets and surveys are considered uncertain due to under-reporting from the inshore fleet and mis-reporting by beam trawlers.

PRECAUTIONARY REFERENCE POINTS: The proposed precautionary reference points for fishing mortality and biomass are F_{pa} = 0.40, B_{pa} = 8,000 t.

STOCK STATUS: Based on the most recent estimate of SSB (in 2009) and fishing mortality (in 2008), ICES classifies the stock as having full reproductive capacity and at risk of being harvested unsustainably. The spawning-stock biomass has been fluctuating around a mean of about 10 000 t since 1982, and has been above B_{pa} since 2002. The fishing mortality has decreased since 1999 and has been around F_{pa} from 2001 until 2005. In the last 3 years fishing mortality has increased and fluctuated between F_{pa} and F_{lim}. The 2001, 2004 and 2005 year-classes were the three highest since 1990. The 2007 year-class is the weakest in the time-series.

RECENT MANAGEMENT ADVICE:

ICES advises on the basis of precautionary limits that fishing mortality in 2010 should be no more than F_{pa} corresponding to landings of less than 3,190 t in 2010.

Other considerations:

Exploitation boundaries in relation to high long-term yield, low risk of depletion of production potential, and considering ecosystem effects: Fishing mortality in 2008 is estimated at 0.45, above the range that would lead to high long-term yields and low risk of stock depletion.

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Exploitation boundaries in relation to precautionary limits: The fishing mortality in 2010 should be below Fpa corresponding to landings less than 3,190 t in 2010, which is expected to keep SSB above B_{pa} in 2011.

STECF COMMENTS: STECF agrees with the ICES advice for VIId sole.

STECF notes that the 80mm mesh size in the mixed beam trawl fishery is not matched to the minimum landing size of plaice. Measures to reduce plaice discarding in the sole fishery would greatly benefit the plaice stock and future yields Mesh enlargement would reduce the catch of undersized plaice, but would also result in short-term loss of marketable sole. Furthermore, an increase in the minimum landing size of sole could provide an incentive to fish with larger mesh sizes and therefore mean a reduction in the discarding of plaice.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission (COM (2009) 224) on a consultation on fishing opportunities for 2010, STECF notes that sole in Division VIId can be classified under Category 3.

Accordingly STECF notes that the rules for the above category imply the following option for TACs in 2010.

Category 3, Stock outside safe biological limits.

	2010 TAC	Basis
Category 3	3,650 t	Aim to set the TAC to the forecast cast that will result in a 30% reduction in fishing mortality rate, but do not reduce the TAC by more than 20% as long as fishing mortality will not increase. Limiting landings in 2010 3,650 t.

1.22. Turbot (*Psetta maxima*) in the North Sea

ICES has not assessed this stock and STECF has no access to any stock assessment information on turbot in this area.

A precautionary TAC (including brill) in areas IIa and IV for 2009 was set to 5,263 t.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission (COM (2009) 224) on a consultation on fishing opportunities for 2010, STECF notes that turbot the North Sea can be classified under Category 11
Accordingly STECF notes that the rules for each of the above categories imply the following options for TACs in 2010.

	2010 TAC	Basis
Category 11	4474 t*	There is no STECF advice, Average of recent catches, 15% TAC constraint

* Average 2006-2008 with 15% TAC constraint

1.23. Witch (*Glyptocephalus cynoglossus*) in the North Sea

ICES has not assessed this stock and STECF has no access to any stock assessment information on turbot in this area.

A precautionary TAC (including lemon sole) in areas IIa and IV for 2009 was set to 6,793 t.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission (COM (2009) 224) on a consultation on fishing opportunities for 2010, STECF notes that witch in the North Sea can be classified under Category 11
Accordingly STECF notes that the rules for each of the above categories imply the following options for TACs in 2010.

	2010 TAC	Basis
Category 11	5774 t*	There is no STECF advice, Average of recent catches, 15% TAC constraint

* Average 2006-2008 with 15% TAC constraint

1.24. Norway pout (*Trisopterus esmarki*) in IIa, IIIa and the North Sea

FISHERIES: The fishery is mainly by Danish and Norwegian vessels using small mesh trawls in the northern North Sea.

The stock is managed by TACs. Landings fluctuated between 110,000 and 735,000 t. in the period 1971-1997, and apart from 2000 (184,000 t) decreased substantially in the following years The fishery was closed in 2005, reopened in 2006 and closed again in 2007. The agreed TAC for 2008 is 43,500 t. Landings in 2008 were 36,100 t.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The analytical seasonal XSA assessment model fitted for this stock is based on time-series of catch-at-age, one commercial cpue series, and four research survey series.

MANAGEMENT OBJECTIVES: No management objectives have been set for this stock. Due to the short-lived nature of this species a preliminary TAC is set every year, which is updated on the basis of advice in the first half of the year.

ICES has evaluated and commented on three management strategies, following requests from managers – fixed fishing mortality (0.35), fixed TAC (50 000 t), and a variable TAC escapement strategy. The evaluation shows that all three management strategies are capable of generating stock trends that stay away from Blim with a high probability in the long-term and are therefore considered to be in accordance with the precautionary approach.

PRECAUTIONARY REFERENCE POINTS: No F_{pa} is set for this stock. The proposed B_{pa} = 150,000t, B_{lim} = 90,000.

STOCK STATUS: Based on most recent estimates of SSB (Q1 2009), ICES classifies the stock as having full reproductive capacity. SSB has shown an increasing trend since 2005. In the absence of reference points for F the state of the stock exploitation in relation to precautionary limits cannot be evaluated, but F in 2008 was well below the long-term average F. Recruitment in 2008 was at the long-term average

RECENT MANAGEMENT ADVICE:

For 2009, considering the options below, ICES advises on the basis of precautionary limits that in order to maintain the spawning stock biomass above B_{pa} in 2010 catches should be restricted to less than 157 000 t.

Other considerations:

Exploitation boundaries in relation to management plan options: From the objective of maintaining the spawning stock biomass above B_{pa} by 1st of January 2010 then a catch no more than 157 000 t can be taken in 2009 according to the escapement strategy (corresponding to F around 0.60). Under a fixed F-management-strategy with F around 0.35 a catch no more than 100 000 t can be taken in 2009. Under a fixed TAC strategy a TAC of 50 000 t can be taken in 2009 (corresponding to an F around 0.16) according to the long-term management strategies for the stock.

Exploitation boundaries in relation to precautionary limits: In order to maintain the spawning stock biomass above B_{pa} in 2010 landings should be restricted to less than 157 000 t in 2009.

STECF COMMENTS: STECF agrees with the advice from ICES.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission (COM (2009) 224) on a consultation on fishing opportunities for 2010, STECF notes that Norway pout in Subarea IV should be classified as a category 5 stock.

Accordingly STECF notes that the rules specify that a provisional TAC is set and will be changed when new information is available during the year. The advice given above relates to such an in year amendment.

1.25. Sandeel (*Ammodytidae*) in the Skagerrak and Kattegat (IIIa)

The stock summary and advice for Sandeel in IIIa are given together with Sandeel in Subarea IV in Section 1.26.

1.26. Sandeel (*Ammodytidae*) in the North Sea (IV), Skagerrak and Kattegat (IIIa)

The stock summary and advice for sandeel in the North Sea (IV), Skagerrak and Kattegat (IIIa) will be updated after the release of the ICES update assessment in September 2009 and included in the consolidated STECF review of advice for 2010 for Stocks of Community interest.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission (COM (2009) 224) on a consultation on fishing opportunities for 2010, STECF notes that Sandeel (Ammodytidae) in the North Sea (IV), Skagerrak and Kattegat (IIIa) should be classified as a category 5 stock.

Accordingly STECF notes that the rules specify that a provisional TAC is set and will be changed when new information is available during the year.

1.27. Sandeel (*Ammodytidae*) in the Shetland area

STECF did not have access to any assessment of advice for sandeel in the Shetland area.

1.28. Rays and skates in the North sea

Previous stock summaries and advice on skates and rays has been provided at the NE Atlantic regional level and at present, STECF is unable to provide additional information and advice at the level of the North Sea ecoregion. Furthermore, ICES has not issued any new advice since 2008. The most recent advice for skates and rays in the North Sea was provided by STECF in its consolidated review of advice for 2009 and is reproduced in Sections 6.1 and 6.6 of this report. In view of this, STECF has not attempted to categorise these resources according to the Communication on Fishing opportunities for 2010 (COM (2009) 224).

1.29. Spurdog (*Squalus acanthias*) in the North Sea

Previous stock summaries and advice on spurdog has been provided at the NE Atlantic regional level and at present, STECF is unable to provide additional information and advice at the level of the North Sea ecoregion. Furthermore, ICES has not issued any new advice since 2008. The most recent advice for spurdog in the North Sea was provided by STECF in its consolidated review of advice for 2009 and is reproduced in Sections 6.1 and 6.2 of this report. In view of this, STECF has not attempted to categorise these resources according to the Communication on Fishing opportunities for 2010 (COM (2009) 224).

1.30. Other Demersal elasmobranches in the North sea, Skagerrak and Eastern channel

Previous stock summaries and advice on demersal elasmobranchs has been provided at the NE Atlantic regional level and at present, STECF is unable to provide additional information and advice at the level of the North Sea ecoregion. Furthermore, ICES has not issued any new advice since 2008. The most recent advice for demersal elasmobranchs was provided by STECF in its consolidated review of advice for 2009 and is reproduced in Section 6 this report. In view of this, STECF has not attempted to categorise these resources according to the Communication on Fishing opportunities for 2010 (COM (2009) 224).

1.31. Herring (*Clupea harengus*) in the North Sea (Sub-area IV) including components of this stock in Divs. IIa, IIIa and VIId

Based on the distributions of the spawning grounds, larvae drift, nursery areas and migration of the adults, three main stock units of herring have been defined in the North Sea:

- Buchan herring. Spawn July to September in the Orkney Shetland area and off the Scottish east coast. Nursery areas are along the east coast of Scotland and the Skagerrak and Kattegat.
- Banks herring. Spawn August to September, off English east coast. Historically spawning also took place on the western edge of the Dogger Bank. Nursery areas are off the English east coast and Danish west coast.
- Downs herring. Spawn December to February in the southern North Sea and Eastern Channel. Nursery areas are off the English east coast, Dutch coast, Danish west coast and in the German Bight.

In addition to the three main stock units a number of small spring spawning units exist, spawning in coastal area in the eastern North Sea.

The stock complexity of herring in the North Sea is further complicated by the appearance in the north-eastern North Sea of herring belonging to herring populations spawning in the spring in the western Baltic, Skagerrak and Kattegat. Herring from these populations migrate into the North Sea in summer and autumn.

Although the three main North Sea herring stocks include summer, autumn and winter spawners they are often named autumn spawners to distinguish them from the spring spawning stocks.

FISHERIES: The North Sea autumn spawning herring is exploited by Belgium, Denmark, France, Faroe Islands, Germany, Netherlands, Norway, Sweden, and UK. Four main fisheries exploit the stock:

- Fleet A: Directed herring fisheries with purse-seiners and trawlers (32 mm minimum mesh size) in the North Sea and eastern Channel.
- Fleet B: Herring taken as by-catch in the small-mesh fisheries in the North Sea under EU regulations (mesh size less than 32 mm).
- Fleet C: Directed herring fisheries in Skagerrak and Kattegat with purse-seiners and trawlers (32 mm minimum mesh size).
- Fleet D: By-catches of herring caught in the small-mesh fisheries (mesh size less than 32 mm) in Skagerrak and Kattegat.

At present, the fishery on the stock is managed by five separate TACs in three different management areas (Skagerrak and Kattegat, Northern and Central North Sea, and Southern North Sea and Eastern Channel) through joint arrangements by EU and Norway. For both the North Sea and the Skagerrak and Kattegat two separate TAC's are set, one for each of the four fleets.

Most catch data reported by ICES were official landings, but for some nations catch estimates were corrected by ICES for unallocated and misreported catch. Discard data are either incomplete or entirely missing. ICES catch includes unallocated and misreported landings, discards and slipping. Denmark and Norway provided information on by-catches of herring in the industrial fishery. The catch estimate for the North Sea and eastern Channel in 2008 by ICES amounts to 245,000 t including available estimates of discards. This represents an excess of the 2008 total TAC (220,000 t) of 11%, which is an increase compared to the 2006 and 2007 excess of 3% and 4% respectively. The total amount of catch taken by fleet A has exceeded the human consumption TAC by 17% in 2008 (11% in 2007).

SOURCE OF MANAGEMENT ADVICE: The main advisory body is ICES. The age-based assessment is based on landings from Subarea IV and Division IIIa and VIId and on four survey time series (Acoustic 1–9+ ring index, IBTS age 1–5+, 0-group and larvae SSB indices).

PRECAUTIONARY REFERENCE POINTS: The precautionary reference points for biomass and fishing mortality are $\mathbf{B}_{pa}$ =1,300,000 t, $\mathbf{F}_{pa}$ = 0.12 for age groups 0-1 and $\mathbf{F}_{pa}$ = 0.25 for age groups 2-6.

STOCK STATUS: Based on the most recent estimates of SSB and fishing mortality, ICES classifies the stock as being at risk of having reduced reproductive capacity and harvested sustainably. The SSB in autumn 2008 was estimated at 1.0 million t, and is expected to remain below B_{pa} (1.3 million t) in 2009. F2-6 in 2008 was estimated at 0.24, above the management target F2-6 (for this state of the stock = 0.14). The year-classes since 2002 are estimated to be among the weakest since the late 1970s.

MANAGEMENT AGREEMENTS:

In November 2008 EU-Norway have agreed on an adjusted management plan taking account of recent poor recruitment. The elements of the plan are as follows:

1. *1. Every effort shall be made to maintain a minimum level of Spawning Stock Biomass (SSB) greater than 800,000 tonnes (Blim).*
2. *2. Where the SSB is estimated to be above 1.5 million tonnes the Parties agree to set quotas for the directed fishery and for by-catches in other fisheries, reflecting a fishing mortality rate of no more than 0.25 for 2 ringers and older and no more than 0.05 for 0 - 1 ringers.*
3. *3. Where the SSB is estimated to be below 1.5 million tonnes but above 800,000 tonnes, the Parties agree to set quotas for the direct fishery and for by-catches in other fisheries, reflecting a fishing mortality rate on 2 ringers and older equal to:*
4.
    5. *0.25-(0.15*(1,500,000-SSB)/700,000) for 2 ringers and older,*
    6. *and no more than 0.05 for 0 - 1 ringers*
    7.
8. *4. Where the SSB is estimated to be below 800,000 tonnes the Parties agree to set quotas for the directed fishery and for by-catches in other fisheries, reflecting a fishing mortality rate of less than 0.1 for 2 ringers and older and of less than 0.04 for 0-1 ringers.*

9. *5. Where the rules in paragraphs 2 and 3 would lead to a TAC which deviates by more than 15 % from the TAC of the preceding year the parties shall fix a TAC that is no more than 15 % greater or 15 % less than the TAC of the preceding year.*
10. *6. Notwithstanding paragraph 5 the Parties may, where considered appropriate, reduce the TAC by more than 15 % compared to the TAC of the preceding year.*
11. *7. By-catches of herring may only be landed in ports where adequate sampling schemes to effectively monitor the landings have been set up. All catches landed shall be deducted from the respective quotas set, and the fisheries shall be stopped immediately in the event that the quotas are exhausted.*
12. *8. The allocation of the TAC for the directed fishery for herring shall be 29 % to Norway and 71 % to the Community. The by-catch quota for herring shall be allocated to the Community.*
13. *9. A review of this arrangement shall take place no later than 31 December 2011.*
14. *10. This arrangement enters into force on 1 January 2009.*

ICES has evaluated this management plan (WKHMP ICES CM 2008 ACOM:27) and concluded that the plan is consistent with the precautionary approach.

RECENT MANAGEMENT ADVICE:

ICES advises on the basis of the agreed EU–Norway management plan. Following the agreed management plan implies catches of 164 300 t for fleet A and 10 400 t for fleet B in 2010.

STECF COMMENTS: STECF agrees with the ICES advice.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO THE AGREED EU AND NORWAY MANAGEMENT PLAN.

STECF notes that this plan has been evaluated to be consistent with the precautionary approach. STECF therefore advises that according to the agreed EU and Norway management plan implying catches of 164 300 t for fleet A and 10 400 t for fleet B in 2010.

1.32. Herring (*Clupea harengus*) in Divisions IVc and VIId (Downs spring-spawning herring)

FISHERIES: The Downs herring constitutes one of the three main stock units forming the North Sea autumn spawning herring stock and is included in Section 1.30.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. Assessment has only been made on the combined North Sea stock based on analysis of catch at age data calibrated with survey data. No separate assessment has recently been made for the Downs component of the stock.

PRECAUTIONARY REFERENCE POINTS: No precautionary reference points have been defined for Downs herring. The precautionary reference points for North Sea autumn spawning herring are $\mathbf{B}_{pa}$ =1,300,000 t, $\mathbf{F}_{pa}$ = 0.12 for ages 0-1 and $\mathbf{F}_{pa}$ =0.25 for ages 2-6 (c.f. Sect. 2.30).

STOCK STATUS: The stock has returned to its pre-collapsed state and is now again a major component of the stock.

RECENT MANAGEMENT ADVICE: See the Section 1.30 on herring in the North Sea and adjacent areas. Since 2003 the TAC for Downs herring has averaged 11% of the total TAC for fleet A. This is based on the average share from 1989 – 2002. In the absence of any additional data ICES proposes that a share of 11% of the total North Sea TAC would still be appropriate for Downs herring.

STECF COMMENTS: STECF agrees with the ICES advice.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO THE AGREED EU AND NORWAY MANAGEMENT PLAN:

STECF notes that if a TAC for IVc and VIId for 2010 is set according to the ICES advice, the TAC for IVc and VIId should be equal to 11% of the TAC for fleet A which under the agreed management plan corresponds to 18,073 t.

1.33. Horse mackerel (*Trachurus trachurus*) in the North Sea (Divisions IIIa eastern part, IVbc, VIId).

The stock summary and advice for horse mackerel in the North Sea (Divisions IIIa eastern part, IVbc, VIId) will be included in the consolidated STECF review of advice for 2010 for Stocks of Community interest.

1.34. Mackerel (*Scomber scombrus*) - combined Southern, Western and North Sea spawning components)

The stock summary and advice for mackerel in in the North Sea is given in Section 5.6 (Combined Southern, Western and North Sea spawning components).

1.35. Sprat (*Sprattus sprattus*) in ICES Division IIIa

FISHERIES: The fisheries in IIIa are carried out by Denmark and Sweden using trawlers and along the Swedish coast by small purse seiners. Landings of sprat in Division IIIa averaged about 70,000 t in the 1970s, but since 1982 have typically been around 20,000 t, with the exception of 1994–1995 when the ACFM catches were 96,000 t and 56,000 t respectively. Landings in the last ten years have been below 30,000 t, except for 2005 when 40,000 t were reported. ICES estimates the catch in 2007 to be 15,700 t, an increase from 2006 landings of 12,500 t, and 9,000 t in 2008, which was the lowest recorded in the last ten years. The directed human consumption sprat fishery serves a very small market while most sprat catches are taken in an industrial fishery, where catches are limited by herring by-catch restrictions. This combination of factors has prevented full utilisation of the occasional strong year-classes (which, in general, emerge and disappear very quickly).

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES.

PRECAUTIONARY REFERENCE POINTS: No precautionary reference points have been proposed for sprat in Division IIIa.

STOCK STATUS: The available information is inadequate to evaluate stock trends and therefore the state of the stock is unknown. Sprat in this area is short-lived with large annual natural fluctuations in stock biomass.

MANAGEMENT OBJECTIVES: There are no explicit management objectives for this stock. ICES considers that sprat cannot be fished without by-catches of herring except in years with high sprat abundance or low herring recruitment. As sprat in Division IIIa is mainly fished together with juvenile herring, the exploitation of sprat is limited by the restrictions imposed on fisheries for juvenile herring.

RECENT MANAGEMENT ADVICE:

The advice on this stock for the fishery in 2010 is therefore the same as the advice given in 2008 for the 2009 fishery: "Sprat in Division IIIa is mainly fished together with juvenile herring and the exploitation of sprat is limited by the restrictions imposed on fisheries for juvenile herring"

STECF COMMEMTS: STECF agrees with the ICES advice.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission (COM (2009) 224) on a consultation on fishing opportunities for 2010, STECF notes that sprat in Division IIIa should be classified as a category 5 stock.

Accordingly STECF notes that the rules specify that a provisional TAC is set and will be changed when new information is available during the year.

1.36. Sprat (Sprattus sprattus) in the North Sea (Subarea IV)

FISHERIES: Denmark, Norway and UK exploit the sprat in this area. The fishery is carried out using trawlers and purse seiners. There are considerable fluctuations in total landings, from a peak in 1975 of 641,000 t to a low in 1986 of around 20,000 t. Since 1994, landings have varied from a high, in 1994, of 320,000t to a low, in 1997, of 103,400t. In the last 10 years landings have been below 200,000 t. Estimated total landings in 2007 and 2008 were around 83,800 t, and 61,000 t respectively, the lowest values in the entire time series.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The assessment is based on indicators derived from a research survey and on a two-stage Catch-Survey Analysis (CSA). The CSA model assumes that the population consists of two stages: the recruits and the fully recruited ages. Uncertainties in both the assessment method and the survey indices make the current understanding of this stock extremely poor. Detailed study of improved or alternative assessment methods (e.g. length-based assessment) and the use of additional information sources (e.g. acoustic surveys, catch per unit effort) are required in order improve our level of understanding and ability to adequately manage this stock.

MANAGEMENT OBJECTIVES: There are no explicit management objectives for this stock

PRECAUTIONARY REFERENCE POINTS: No reference points have been defined for this stock.

STOCK STATUS: The state of the stock is uncertain. Survey trends indicate the stock size has increased from the 1980s and varied around an average level since 1998 with no trend.

RECENT MANAGEMENT ADVICE:

ICES notes that there is no evidence recent catches have created problems for the stock. There is no basis for specific numerical advice for the TAC in 2009.

The sprat stock in the North Sea is dominated by young fish. The stock size is mostly driven by the recruiting year-class. Thus, the fishery in a given year will be dependent on that year's incoming year. In the forecast table for North Sea herring, industrial fisheries are allocated a by-catch of approx 10 000 t of juvenile herring in 2010. It is important to continue monitoring of by-catch of juvenile herring to ensure compliance with this allocation. Catches in recent years have been well below the advised and agreed TAC and have decreased because of economic and other reasons.

STECF COMMENTS: Noting that because of the current recruitment problems for North Sea herring, STECF **recommends** that the by-catch quota for herring taken in fisheries conducted with fishing gears with mesh sizes below 32 mm in the North Sea should be significantly reduced.

STECF notes that ICES has scheduled a benchmark assessment for North Sea sprat in September 2009.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission (COM (2009) 224) on a consultation on fishing opportunities for 2010, STECF notes that sprat in he North Sea should be classified as a category 5 stock.

Accordingly STECF notes that the rules specify that a provisional TAC is set and will be changed when new information is available during the year.

2. Resources West of Scotland and West of Ireland

2.1. Norway lobster (*Nephrops norvegicus*) in ICES Div. Vb and Sub-area VI, (West of Scotland)

There are no exploited *Nephrops* stocks in Div. Vb. In Sub-area VI (waters west of Scotland) the following functional units are considered by ICES:

FU no.	Name	ICES Divisions	Statistical rectangles
11	North Minch	VIa	44–46 E3-E4
12	South Minch	VIa	41–43 E2-E4
13	Clyde	VIa	39–40 E4-E5

Nephrops also occur in other areas not contained within the Functional Units. TV surveys in deep water suggest widespread distribution at low density, and surveys at Stanton Bank indicate a population there. The three *Nephrops* stocks (FUs) in Sub-area VI are currently assessed from UWTV surveys. On basis of these, current stock abundance and harvest ratios are estimated. The HRs advised by ICES aim at exploitation rates between $F_{0.1}$ and F_{MAX} according to the options/decision rules given in the table:

F relative to $F_{0.1}$ and F_{MAX}	**SSB Stable or Increasing**	**SSB Decreasing**
$F > F_{MAX}$	Reduce F to F_{MAX}	Reduce F to $F_{0.1}$
$F_{MAX} > F > F_{0.1}$	Maintain current F	Reduce F to $F_{0.1}$
$F < F_{0.1}$	Increase F to $F_{0.1}$	Maintain current F

STECF considers that it is premature to use the decision rules advocated by ICES as a basis for setting fishing opportunities without a proper evaluation of the likely outcome of such a rule. In view of this, STECF **recommends** that the decision rules advocated by ICES should not form the basis of setting fishing opportunities for 2010 for those *Nephrops* FUs to which it has been applied. The rationale behind this recommendation is given in Section 1.1 of this report.

A summary of the TAC advice for 2010 for the three Functional Units in VIa, is as follows: North Minch (FU11) 972 t, South Minch (FU12) = 4126 t and Firth of Clyde (FU13) 3855 t. STECF notes that there also are *Nephrops* catches in "other rectangles" in Division VIa, e.g. from offshore areas adjacent to Stanton Bank where Irish fishers frequently operate from the shelf edge. To provide some guidance on appropriate future landings for these areas, the use of an average landings figure of around 250 tonnes could be considered.

2.1.1. Norway lobster (*Nephrops norvegicus*) in North Minch (FU 11)

FISHERY: Total *Nephrops* landings increased in the recent years, from about 3,000 t in 2005 to around 3800 t in 2007 (provisional). Available information indicates that landings from the late 1990s up to 2005 are most likely to be an underestimate of actual landings, but the reliability of landings figures has improved since 2006 with the introduction of buyers and sellers legislation. The *Nephrops* trawl fishery in this area takes by-catches of other species, especially haddock and whiting, anglerfish. Creel fishing takes place mainly in the sea-loch areas of this FU accounting for 600-700 tonnes. Overall effort in creel numbers is not known.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The assessment is based UWTV surveys of absolute abundance. Previous years' estimates of absolute estimate of abundance from UWTV were considered uncertain because of too high levels of unquantifiable bias. However at the ICES Benchmark Workshop on *Nephrops* in 2009 major sources of bias were quantified for each survey and an overall bias correction factor derived which, when applied to the estimates of abundance from the UWTV survey, allows them to be treated as absolute abundance levels.

PRECAUTIONARY REFERENCE POINTS: No biological reference points have been determined for this stock. No biological reference points have been determined for this stock of *Nephrops*, instead, as mentioned in the introduction, F_{MAX} and $F_{0.1}$ are used as reference points.

Reference points

F reference point	***Harvest ratio***
$F_{0.1}$	8.8%
F_{MAX}	15.4%

STOCK STATUS: The stock is being exploited unsustainably. The UWTV survey indicates that the population has declined by around 40% over the past two years from a previous time series high in 2006. Harvest ratios in

this period were above the values associated with high long-term yield and low risk of stock depletion. Estimated HR indicate that F(2008) is above F_{MAX}.

RECENT MANAGEMENT ADVICE: ICES advises on the basis of exploitation boundaries in relation to high long-term yield and low risk of depletion of production potential that the Harvest Rate for *Nephrops* fisheries should be less than $F_{0.1}$. This corresponds to landings less than 972 t for the North Minch stock.

STECF COMMENTS: STECF agrees with ICES advice. It is noticed how this year's assessment, based on UWTV survey data, apparently has changed the perception of the status of this stock in 2008. Prior to 2007, the survey and all other information showed this stock to be stable or increasing. The large reduction in survey abundance in 2007 has changed this perception. ICES comments that for this FU, the advice for 2010 implies a large reduction in landings, i.e. a reduction of around 70% compared to 2008 landings. To move toward a fishing mortality corresponding to MSY in steps, a reduction of the catch corresponding to F_{MAX} could be considered as an intermediate step toward $F_{0.1}$. However, adhering to a 'category 2 stock' action plan, a constraint on the year to year change in TAC over several years, as is typical of management plans, would be a feasible alternative.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission (COM (2009) 224) on a consultation on fishing opportunities for 2010, STECF notes that the *Nephrops* in North Minch (FU 11) can be classified under Category 6. Accordingly STECF notes that the rules for each of the above categories imply the following options for TACs in 2010.

	2010 TAC	Basis
Category 6*	NE	No TAC set for separate functional units.

*STECF notes that the predicted catch for 2010 corresponding to a fishing mortality rate of F0.1 for FU 11 is 972 t. The stock is overexploited compared to MSY. Safe biological limits have not been established.

2.1.2. Norway lobster (*Nephrops norvegicus*) in South Minch (FU 12)

FISHERY: Total *Nephrops* landings from this FU have been around 4400 t in the two most recent years. Available information indicates that landings from the late 1990s up to 2005 are most likely to be underestimates of actual landings. The reliability of landings figures improved from 2006 with the introduction of buyers and sellers legislation. The *Nephrops* trawl fishery in this area takes by-catches of other species, especially haddock, whiting, anglerfish and megrim. Larger vessels operating on the western limits of the ground generally take higher by-catches of fish. Creel fishing takes place mainly in the sea-loch areas of this FU accounting for around 900 tonnes. Overall effort in creel numbers is not known.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The assessment is based UWTV surveys of absolute abundance. Previous years' estimates of absolute estimate of abundance from UWTV were considered uncertain because of too high levels of unquantifiable bias. However at the ICES Benchmark Workshop on *Nephrops* in 2009 major sources of bias were quantified for each survey and an overall bias correction factor derived which, when applied to the estimates of abundance from the UWTV survey, allows them to be treated as absolute abundance levels.

PRECAUTIONARY REFERENCE POINTS: No biological reference points have been determined for this stock of *Nephrops*. Instead, as mentioned in the introduction, F_{MAX} and $F_{0.1}$ are used as reference points

Reference points

F reference point	***Harvest ratio***
$F_{0.1}$	9.6%
F_{MAX}	16.0%

STOCK STATUS: The UWTV survey indicates that the population has declined from record high in 2004 to record low in 2007 but has increased in 2008. Harvest ratios since 2006 have been above $F_{0.1}$, but below F_{MAX}.

RECENT MANAGEMENT ADVICE: ICES advises on the basis of exploitation boundaries in relation to high long-term yield and low risk of depletion of production potential that the Harvest Rate for *Nephrops* fisheries should not exceed F(2008). This corresponds to landings of no more than 4126 t for the South Minch stock.

STECF COMMENTS: STECF disagrees with the ICES advice since it is based on the TAC decision rule adopted by ICES. STECF considers that a harvest rate corresponding to $F_{0.1}$ as a proxy for F_{MSY} should be the long-term target and that the short term aim should be to adjust the harvest rate towards that target..

STECF agrees with the ICES comment on the change of perception of this FU due to the large reduction in survey abundance in 2007: Prior to 2007, surveys and all other information showed this stock to be stable or increasing. Therefore, given that such a large reduction in abundance is possible with little apparent change in effort a more precautionary management approach is prudent.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission (COM (2009) 224) on a consultation on fishing opportunities for 2010, STECF notes that the *Nephrops* in South Minch (FU 12) can be classified under Category 6

Accordingly STECF notes that the rules for each of the above categories imply the following options for TACs in 2010.

	2010 TAC	Basis
Category 6*	NE	No TAC set for separate functional units.

*STECF notes that the predicted catch for 2010 corresponding to a fishing mortality rate of F(2008) for FU 12 is 4126 t. The stock is overexploited compared to MSY. Safe biological limits have not been established.

2.1.3. Norway lobster (*Nephrops norvegicus*) in Firth of Clyde (FU 13)

FISHERY: Total *Nephrops* landings increased in the recent years, from around 3,400 t in 2005 to around 6000 t in 2007, but landings decreased to 5300 t in 2008. Available information indicates that landings from the late 1990s up to 2005 most likely are underestimates of actual landings, but the reliability of landings figures has improved from 2006 with the introduction of buyers and sellers legislation. The *Nephrops* trawl fishery in this area takes by-catches of other species, mainly haddock, whiting and some cod. Creel fishing takes place in parts of this FU accounting for about 200 tonnes. Overall effort in creel numbers is not known.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The assessment is based UWTV surveys of absolute abundance. Previous years' estimates of absolute estimate of abundance from UWTV were considered uncertain because of too high levels of unquantifiable bias. However at the ICES Benchmark Workshop on *Nephrops* in 2009 major sources of bias were quantified for each survey and an overall bias correction factor derived which, when applied to the estimates of abundance from the UWTV survey, allows them to be treated as absolute abundance levels.

PRECAUTIONARY REFERENCE POINTS: No biological reference points have been determined for this stock of *Nephrops*. Instead, as mentioned in the introduction, F_{MAX} and $F_{0.1}$ are used as reference points

Reference points

F reference point	***Harvest ratio***
$F_{0.1}$	8.7%
F_{MAX}	15.1%

STOCK STATUS: The UWTV survey indicates that the population has been at a relatively high level since 2003 except for 2007. The stock is being exploited unsustainably. The current harvest rate is well above F_{MAX}.

RECENT MANAGEMENT ADVICE: ICES advises on the basis of exploitation boundaries in relation to high long-term yield and low risk of depletion of production potential that the Harvest Rate for *Nephrops* fisheries should not exceed F_{MAX}. This corresponds to landings of no more than 3 855 t for the Firth of Clyde stock.

STECF COMMENTS: STECF disagrees with the ICES advice since it is based on the TAC decision rule adopted by ICES. STECF considers that a harvest rate corresponding to $F_{0.1}$ as a proxy for F_{MSY} should be the long-term target and that the short term aim should be to adjust the harvest rate towards that target.

For this FU, this advice implies a large reduction in catch, a situation similar to that for FU 11. The 2009 assessment has changed the perception of this FU due to the large reduction in survey abundance in 2007: Prior to 2007, surveys and all other information showed this stock to be stable or increasing. STECF agrees with ICES that given that such a large reduction in abundance is possible with little apparent change in effort a more precautionary management approach is prudent.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission (COM (2009) 224) on a consultation on fishing opportunities for 2010, STECF notes that the *Nephrops* in Firth of Clyde (FU 13) can be classified under Category 6

Accordingly STECF notes that the rules for each of the above categories imply the following options for TACs in 2010.

	2010 TAC	Basis
Category 6*	NE	No TAC set for separate functional units.

*STECF notes that the predicted catch for 2010 corresponding to a fishing mortality rate of F_{MAX} for FU 13 is 3855 t. The stock is overexploited compared to MSY. Safe biological limits have not been established.

2.1.4. Norway lobster (*Nephrops norvegicus*) in FU 16, Porcupine Bank, Divisions VIIb,c,j,k

FISHERIES: Reported total landings for this FU dcreased to drastically from 2003 t in 2007 to only 861 in 2008. even there are concerns about the accuracy of the landings statistics from some fleets. Landings, effort and LPUEs in this fishery indicate increased targeting of *Nephrops* over the last two years by all countries involved in the fishery.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. Analytical assessments are not feasible at present.

PRECAUTIONARY REFERENCE POINTS: No precautionary reference points have been established for this FU.

STOCK STATUS: The state of the stock is uncertain. Effort, landings and size distribution indicate that exploitation rate has been high in the last 5 years. Fishery independent survey information indicates that recruitment has been very weak since 2004 and that the stock has declined to a low level.

RECENT MANAGEMENT ADVICE: ICES advises on the basis of exploitation boundaries in relation to precautionary considerations that catches in 2010 should be reduced to the lowest possible level.

STECF COMMENTS: STECF agrees with the advice from ICES based on currently available data. STECF notes that in the past, this functional unit supported a larger fishery sustained over a considerable period and that a reduction in the fishery coincided with reduced activity by Spain and France. STECF agrees with ICES' concern that the productivity of deep water *Nephrops* stocks is generally lower than those on the shelf although individual *Nephrops* grow to relatively large sizes and attain high market prices. Other deep water *Nephrops* stocks off the Spanish and Portuguese coast have collapsed and have been subject to recovery measures for several years. STECF also notes concerns expressed by ICES about the accuracy of fishery data for some fleets and concludes that improvements are required in order to increase confidence in the assessment.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission (COM (2009) 224) on a consultation on fishing opportunities for 2010, STECF notes that the *Nephrops* in Porcupine Bank (FU 16) may be classified under Category 9.

Accordingly STECF notes that the rules for each of the above categories imply the following options for TACs in 2010.

Category 10 STECF advises a zero catch, a reduction to the lowest possible level or similar advice.

	2010 TAC	Basis
Category 10	NE*	Advice for lowest possible level.

*** NE- not estimable**

STECF notes that the advised catch for 2010 should be at the lowest possible level (= 0 t).

2.1.5. Norway lobster (*Nephrops norvegicus*) in FU17, Aran Grounds (Division VIIb)

FISHERIES: Reported landings from this FU were around 1000 t in 2007 and 2008. In the Aran Grounds the most recent change in the fishery is the proportion of twin-rig vessels, which has increased to over 90 % of the fleet in the past eight years. This implies a large increase in effective effort, even if such an increase is not observed in the nominal effort figures.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The assessment is based on an UWTV surveys. However, the corresponding length composition data are insufficient to base estimates of stock specific F reference point on. The use of reference points from other, similar stocks increases the uncertainties.

PRECAUTIONARY REFERENCE POINTS: There are no precautionary reference points for this FU. $F_{0.1}$ for similar stocks ranges between 8% and 12%. F_{MAX} for similar stocks ranges between 13% and 20%

STOCK STATUS: The UWTV survey conducted since 2002 estimates abundance to have fluctuated widely with a peak in 2004. The 2008 survey is the lowest in the series and the abundance is 60% of the abundance of the maxmum observed in 2004. Based on estimates of $F_{0.1}$ and F_{MAX} from other *Nephrops* stocks this stock may be overfished.

RECENT MANAGEMENT ADVICE: ICES advises on the basis of exploitation boundaries in relation to high long-term yield and low risk of depletion of production potential that the Harvest Ratio for *Nephrops* fisheries should be less than the lower bound of $F_{0.1}$ ranges for similar stocks (8%). This corresponds to landings of no more than 505 t for the Aran Grounds stock.

STECF COMMENTS: STECF agrees with the advice from ICES. STECF notes that prior to 2007 landings by some fleets probably have been underreported. The implementation of "sales notes" in Ireland in 2007, coupled with the increased TAC in 2007, have probably improved the reliability of reported landings data. STECF further notes, that the advised landings for 2010 imply a reduction of 54% relative to the 2008 landings (1100 t). To move toward a fishing mortality corresponding to MSY in steps, a reduction of the catch corresponding to the higher boundaries of F0.1 could be considered as an intermediate step toward the lower boundaries of $F_{0.1}$ (as a proxy for F_{msy}). Alternatively, a constraint on the year-to-year change in catches as is typical of management plans might be considered.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission (COM (2009) 224) on a consultation on fishing opportunities for 2010, STECF notes that the *Nephrops* in Aran Grounds (FU 17) may be classified under Categories 2 and 6

Accordingly STECF notes that the rules for each of the above categories imply the following options for TACs in 2010.

	2010 TAC	Basis
Category 2	NE*	Stock overexploited compared to MSY.
Category 6	NE*	State of stock not known precisely.

*** NE- not estimable**

STECF notes that the advised catch for 2010 should not exceed 505 t

2.2. Cod (*Gadus morhua*) in Division VIa (West of Scotland)

FISHERIES: Cod is taken in mixed demersal fisheries and in Division VIa is now regarded as a by-catch species. The fleets involved include French vessels targeting saithe and Scottish whitefish trawlers. Landings are predominantly taken by EU fleets and were sustained at about 21,000 t until the late 1980s. Landings have since declined markedly to a value of about 440 t in 2008. Landings restrictions in the first half of the 1990s led to considerable misreporting. Legislation introduced in Britain and Ireland in 2006 has reduced misreporting. Observer data, however, show an increase in discards starting in 2006. The management area for this stock also includes cod in VIb, Vb, XII and XIV with a specified share allocated to VIa.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. A catch-at-age model using catch data up to 1994 tuned by survey data and utilizing survey information alone from 1995 onward was used to evaluate trends in spawning-stock biomass and recruitment. Trends in SSB are similar to results from a model based on survey data alone.

PRECAUTIONARY REFERENCE POINTS: The proposed precautionary reference points are F_{pa} = 0.6 and B_{pa} = 22,000 t.

STOCK STATUS: The spawning stock biomass has increased from an all time low in 2006 but remains well below Blim. Total mortality is high, but cannot be accurately partitioned into fishing mortality and natural mortality. . Recruitment has been estimated to be low over the last decade. The 2005 year-class is estimated to be the largest for that decade, but still below the long-term average.

MANAGEMENT OBJECTIVES:

The EU has adopted a long-term plan for cod stocks and the fisheries exploiting those stocks (Council Regulation (EC) 1342/2008). This regulation repeals the recovery plans in Regulation (EC) No 423/2004, and has the objective of ensuring the sustainable exploitation of the cod stocks on the basis of maximum sustainable yield while maintaining a target fishing mortality of 0.4 on specified age groups.
The regulation is complemented by a system of fishing effort limitation (see EC 43/2009 for latest revision).

Because it is not possible at present to assess unaccounted mortality accurately, ICES cannot yet evaluate if the management plan is in accordance with the precautionary approach.

RECENT MANAGEMENT ADVICE:

ICES evaluated the long-term management plan and has not yet been able to confirm that it is precautionary. Considering the options below, ICES advises on the basis of exploitation boundaries in relation to precautionary considerations that no fishing should take place on cod in Division VIa.

Other considerations:

Exploitation boundaries in relation to existing management plans:

Due to the uncertainty in the level of fishing mortality, ICES is not in a position to give quantitative forecasts. Given the stock status it is likely that the stock will fall into the category defined in Article 9.a of the plan which implies a 25% TAC reduction.

Exploitation boundaries in relation to precautionary limits:

Given the low SSB and low recruitments in recent years, it is not possible to identify any non-zero catch, which would be compatible with the precautionary approach.

STECF COMMENTS: STECF agrees with the ICES advice that on the basis of exploitation boundaries in relation to precautionary considerations, there should be no fishing on Cod in Division VIa.

STECF notes that this stock is subject to the provisions of the long-term management plan for cod (Council Regulation (EC) 1342/2008). Since STECF is unable to derive reliable estimates of fishing mortality for this stock and is therefore unable to provide a quantitative catch forecast, the TAC for 2010 should be set according to Article 9. Furthermore since the advice is for no fishing, Article 9a applies.

At its cod recovery review subgroup (SGRST 07-02), STECF pointed out that changes in fishing behaviour following reductions in days at sea allocations (such as greater concentration in cod rich areas) may prevent delivery of the required reduction in F and that if managers wished to implement effort reductions through reduced days at sea allocations, additional supportive measures might also need to be considered. STECF notes that cod avoidance measures implemented by UK (Scotland) under its Conservation Credits scheme came into operation in 2008. The scheme has continued in 2009 in response to article 13.2 of the cod long-term management plan (Council Regulation (EC) 1342/2008) which allows "*Allocation of additional fishing effort for highly selective gear and cod-avoiding fishing trips***"**STECF further notes the difficulty in assessing the effectiveness of either effort reductions or cod avoidance schemes when overall cod mortality can not be reliably partitioned into natural and fishing mortality.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO THE AGREED MANAGEMENT PLAN (Council Regulation (EC) 1342/2008).

STECF notes that for this plan as applied to cod in VIa an evaluation was inconclusive with respect to the precautionary approach. STECF therefore notes that the TAC corresponding to the relevant rule in the management plan is 227 t for cod in Division VIa and Vb_1.

2.3. Cod (*Gadus morhua*) in Division VIb (Rockall)

FISHERIES: Rockall cod has been exploited predominantly by Scottish, Irish and Norwegian vessels using towed gears. Landings have fluctuated between 500 t and 2,000 t (1984-2000) but thereafter showed a steady decline to a level of about 60 t from 2005. In 2008 landings increased to just over 90 t. The management area for this stock also includes cod in VIa, Vb, XII and XIV.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES but no explicit management advice is given for this stock.

PRECAUTIONARY REFERENCE POINTS: No precautionary reference points are defined for this stock.

STOCK STATUS: There is no information on the status of cod in Division VIb.

RECENT MANAGEMENT ADVICE: No advice has been given.

STECF COMMENTS: Because cod are taken in a mixed fishery with haddock, management measures adopted for VIb cod should also be consistent with the management measures adopted for VIb haddock

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

Given this stock has received no assessment and no advice and with reference to the Communication from the Commission (COM (2009) 224) on a consultation on fishing opportunities for 2010, STECF notes that cod in VIb can be classified under Category 11.

However, because cod in VIb is included in a TAC set for Vb_1, VI, XII_1, XII_2 and XIV_1 and XIV_2 it is not possible to apply the associated rule for this category to calculate an implied TAC for cod in VIb for 2010.

2.4. Haddock (*Melanogrammus aeglefinus*) in Division VIa (West of Scotland)

FISHERIES: Haddock to the West of Scotland are taken as part of a mixed demersal fishery, with the biggest landings reported by UK (mainly Scottish) trawlers (1,769 tonnes in 2008 representing 64% of the landings); Irish trawlers (879 tonnes in 2008 representing 32% of the landings); and with smaller landings reported by other nations including France, Germany and Norway. Landings by non-EU fleets have not exceeding 100 tonnes over the reported period (1988 – 2008).

In 2006, landings of 5,700 tonnes were reported for this stock, representing an 80% increase on the (previous) record low landings of 3,148 tonnes reported in 2005. Since then reported landings have once again fallen to 3,700 tonnes and 2,800 tonnes in 2007 and 2008 respectively. The 2008 reported landings (9,895 tonnes) are the lowest on record.

It is noteworthy that substantial quantities are discarded when strong year-classes enter this fishery. This is reflected in the estimated catches over the same period, 2005 – 2008, which were 23,628 tonnes, 18,240 tonnes, 11,556 tonnes, and 9,895 tonnes respectively. The 2008 estimated catch of 9,895 is the lowest on record.

Recruitment to this stock has varied greatly over the entire time series. Between 1978 and 2008 it varied from a high of >500 million in 2000 (the 1999 year-class) to a low of some 6.6 million in 2008. The very strong 1999 year-class caused SSB to increase from a level near the historic low in 2000 (24,932 tonnes) to a peak in 2003, although SSB has declined since that time. In recent years recruitment has shown a general and dramatic decline from 2000 (the largest on record) to an estimated recruitment of 6.6 million in 2008 (the lowest on record). Recruitment estimates for 2009 (2008 year-class) are 29.6 million.

Haddock in Division VIa are mainly caught by trawlers, however these fisheries have declined recently with increasing focus on the corresponding Division VIb (Rockall) fishery and the neighbouring *Nephrops* fishery in Division IVa. There has also been a shift from twin trawls to single trawls, and an increase in the use of pair trawls and seines. This changes have been driven by a combination of increased fuel costs during 2008 (driving the shift to more fuel efficient gear) and lack of quota and restrictive day allocations related to the cod recovery plan in Division VIa.

In Scotland the 'Conservation Credits Scheme' (CCS) was implemented at the beginning of February 2008. The two central themes of CCS are aimed at reducing the amount of cod caught by (i) avoiding areas with elevated abundances of cod through the use of compulsory Real Time Closures (RTCs) and voluntary 'amber zones' and (ii) the use of more species-selective gears. Within the scheme, efforts are also being made to reduce discards generally. Although the scheme is intended to reduce cod mortality, it may also affect the mortality of haddock: vessels may move away from areas inhabited by both cod and haddock and so effect positive change, or, targeting of haddock to compensate for forgone cod catches may increase. Early indications suggest that improved gear selectivity is likely to contribute to reductions in fishing mortality and discard levels, particularly of haddock and whiting

SOURCE OF MANAGEMENT ADVICE: The management advisory body is ICES. The analytical age-based assessment is based on landings-at-age data, discard-at-age data, and indices from research vessel surveys. Due to uncertainties in landings quantity, catch data 1995–2008 were not used in the assessment. The assessment model therefore estimates total catch from the fishery.

PRECAUTIONARY REFERENCE POINTS: The proposed precautionary reference points for this stock are $F_{pa} = 0.50$, $B_{pa} = 30{,}000$ t and $B_{lim} = 22{,}000$ t.

STOCK STATUS:
Based on the most recent estimates of SSB (in 2009), ICES classifies the stock as 'having reduced reproductive capacity'.
Based on the most recent estimate of fishing mortality (in 2008), ICES classifies the stock as 'being harvested sustainably'.
The very strong 1999 year-class caused SSB to increase from a level near the historic low in 2000 to a peak in 2003, although SSB has declined since that time.
F has been above F_{pa} in most years since 1987 and is estimated just below F_{pa} in 2008.
The 2003 to 2007 year-classes are estimated to be weak.

RECENT MANAGEMENT ADVICE:
ICES advises, on the basis of exploitation boundaries in relation to precautionary limits, that in the absence of fishing the stock is expected to be rebuilt close to B_{pa} in the short-term and that no fishing should take place in 2010 for haddock in VIa. ICES has also recommended the development of a management plan which is under development.

Other considerations:

Exploitation boundaries in relation to high long-term yield: low risk of depletion of production potential and considering ecosystem effects: The current fishing mortality (2008) is estimated to be 0.46, which is above the rate expected to lead to high long-term yields and low risk of stock depletion.

Exploitation boundaries in relation to precautionary limits: In the absence of fishing, the stock is expected to be rebuilt close to B_{pa} in the short-term.

Recent recruitments to this stock have been poor and both the 2006 and 2007 year-classes are very weak. A complete closure of the haddock fishery in 2010 would bring SSB very close to B_{pa} in 2011.

STECF COMMENTS: STECF agrees with the ICES advice and notes this is consistent with the precautionary approach and notes that this implies closure of all demersal fisheries in VIa that catch haddock. If this cannot be achieved, STECF **recommends** that measures should be taken to ensure a significant reduction in fishing mortality in 2010, which should be maintained in subsequent years until recovery is achieved.

STECF **recommends** that an intergrated long-term management plan for the fisheries exploiting haddock and other demersal stocks in VIa should be developed and implemented.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224
With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission (COM (2009) 224) on a consultation on fishing opportunities for 2010, STECF notes that this stock can be classified under Category 10. Accordingly STECF notes that the rules for the above category imply the following options for TACs in 2010.

Category 10 STECF advises a zero catch, a reduction to the lowest possible level or similar advice.

	2010 TAC	Basis
Category 10	≤ 2640 t	The TAC should be reduced by at least 25%. Recovery measures should be implemented including effort reductions and introduction of more selective fishing gear

2.5. Haddock (*Melanogrammus aeglefinus*) in Division VIb (Rockall)

FISHERIES: Until recently the Rockall haddock fishery largely occurred in summer months, when conditions are easier and particularly when fishing at Rockall was more profitable compared with the North Sea or West of Scotland. A few Irish vessels did however exploit this stock on a more regular basis.

As part of this stock area now falls outside the EU EEZ there was an increase in activity by non-EU fleets, notably Russian Federation vessels, from 1999 onwards, although this has declined in recent years. Catches by non-EU fleets reached a peak in 2004, when reported catches by the Russian Federation amounted to 5,844 tonnes or some 90% of the total.

Between 1987 and 2006, reported landings have varied between 2,300 t and 8,000 tonnes, while for the most recent reported year, 2008, catches by Community vessels (UK Scotland, 1,779 tonnes and Ireland 721 tonnes) together account for 60% of the total catch of 4,221 tonnes with the balance taken by Russian Federation vessels. The total catch of 4,221 tonnes in 2008, is an increase on the 2007 catch of 3,349 tonnes and the 2007 catch of 2,76 tonnes.

Effort by the Irish fleet has increased in recent years at Rockall and anecdotal information suggests that both Irish and Scottish effort will again increase in 2009 largely s a consequence of effort restrictions introduced as part of the long-term plan for cod introduced in 2009.

Haddock are caught in a mixed fishery together with blue whiting and a number of non-assessed species such as grey gurnard. Reported landings in 2007 increased slightly to 2,765 t.

Traditionally Scottish and Irish trawlers target haddock, whilst Russian trawlers also fish for species such as gurnard. UK, Russian and Irish vessels account for the highest proportion of the landings, with smaller quantities taken by other nations including Iceland, France, Spain and Norway.

Following the NEAFC agreement in March 2001, an area of the NEAFC zone around Rockall was closed to fishing using demersal trawls; in spring 2002 part of the shallow water in the EU component also. Effort in the rectangle containing the closure declined when the closure came into effect. There was also a decline in UK effort across the bank as a whole at this time, but an increase of effort in other areas of Division VIb. Spawning biomass has increased since 2003, the fishing mortality has decreased since 2004. The fishing mortality has decreased for small individuals (age 1 and 2) since 2001. However, it is difficult to determine to what extent this may be contributed to the efforts made to protect juveniles in the closed area.

SOURCE OF MANAGEMENT ADVICE: The management advisory body is ICES. The assessment is based on catch numbers-at-age and one survey index (Scottish Groundfish Survey). Discarding occurs in part of the fishery and has been estimated and used in the assessment.The management body is NEAFC.

PRECAUTIONARY REFERENCE POINTS: The proposed precautionary reference points for this stock are F_{pa} = 0.40, and B_{pa} = 9,000 t.

ICES considers that a candidate for a target reference point (consistent with taking high long-term yields and achieving a low risk of depleting the productive potential of the stock) may be around $F_{0.1}$ = 0.18, based on total catches including discards).

STOCK STATUS: Based on the most recent estimates of SSB (in 2009) and fishing mortality (in 2008), ICES classifies the stock as having full reproductive capacity and being harvested sustainably. Spawning biomass has increased in recent years as a result of the 2001 and 2005 year-classes. SSB has been above B_{pa} since 2003. Fishing mortality levels have historically been high, between 0.4 and 1.1 for the period 1991-2004. Fishing mortality was above F_{pa} throughout most of the time-series but declined in 2005 to below F_{pa} and remained low in 2006–2008. Current fishing mortality is slightly greater than $F_{0.1}$. Recent recruitments are estimated to be low.

RECENT MANAGEMENT ADVICE:

ICES advises that there is little gain on the long-term yield by increasing fishing mortality above current levels. ICES therefore recommends limiting catches and landings in 2010 to 4,280 t and 3,330 t, respectively.

Other considerations:

Exploitation boundaries in relation to high long-term yield, low risk of depletion of production potential and considering ecosystem effects*:* Fishing mortality around $F_{0.1}$ (0.18) can be considered as a candidate target reference point consistent with taking high long-term yields and achieving a low risk of depleting the productive potential (< 5%). The present fishing mortality (0.23) is above the candidate reference point and below F_{pa}.

Exploitation boundaries in relation to precautionary limits
Fishing mortality should be less than F_{pa}, corresponding to total catches less than 7 090 t in 2010. Assuming that current discarding practices will be continued, landings should be less than 5 480 t in 2010.

STECF COMMENTS: STECF agrees with the advice from ICES.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224
With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission (COM (2009) 224) on a consultation on fishing opportunities for 2010, STECF notes that this stock can be classified under Category 2.

Accordingly STECF notes that the rules for the above category imply the following options for TACs in 2010.

Category 2 Stock overexploited compared to maximum sustainable yield but inside safe biological limits.

	2010 TAC	Basis
Category 2	4,997 t	Aim to set the TAC to the higher value of (a) to the forecast catch corresponding to taking the highest yield in the long-term, or (b) fishing at an unchanged mortality rate, **but** do not change the TAC by more than 15%. Limit catches and landings in 2010 to 4,280 t and 3,330 t, respectively.

2.6. Saithe (*Pollachius virens*) in Div´s Vb (EU zone), VI, XII and XIV

The assessment has been combined with that in Sub-Area VI – see Section 1.7.

STECF notes that the TAC for that area is set according an EU/Norway management applying a landings split according to the average in 1993–1998, i.e. 90.6% in Sub-area IV and Division IIIa and 9.4% in Sub-area VI..

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO THE AGREED EU/NORWAY MANAGEMENT PLAN.

STECF notes that this plan has been evaluated to be consistent with the precautionary approach. STECF therefore advises that according to the agreed EU/Norway management plan the TAC for 2010 should be set at 11,000 t.

2.7. Whiting (*Merlangius merlangus*) in Division VIa (West of Scotland)

FISHERIES: Whiting are taken as part of a mixed roundfish fishery, as well as a by-catch in fisheries for *Nephrops*. Scottish trawlers take most of the whiting catch in Division VIa. Since 1976, Scottish heavy trawl and seine effort has declined, whilst that of light trawlers has generally increased. Ireland and France take smaller proportions of the catch and all the remaining catch is taken by EU vessels. Approximately 50% of the total catch in weight is discarded. Since 1987, human consumption landings declined from about 11,500 t to an historic low of 290 t reported officially in 2005. Reported landings for 2008 have increased to 441 t.

The fishery is regulated by a TAC that does not, however, seem to restrict catches. However, the increase in minimum mesh size from 100 to 120 mm in 2001/2002 (before the introduction of effort regulation 27/2005) partly caused a shift to 80-mm mesh sizes in the mixed fishery trawls, due to the loss of valuable *Nephrops* catches. Poorer selectivity at this mesh size may have led to increased discarding and high grading. With the introduction of effort regulation, vessel operators have effectively been further encouraged to reduce mesh size and shift to other fisheries, particularly *Nephrops* trawling, in order to gain more days-at-sea. There is insufficient information to quantify any effect mesh size changes and effort limitations may have had on the stock of whiting. However, any management measures leading to a shift of vessels to smaller mesh sizes will result in a worse exploitation pattern and higher discards.

Emergency EU measures directed towards cod protection were established in the first half of 2001 and led to short-term area closures in the north of the Division VIa and, on a smaller scale, in the Clyde Sea area. The Clyde closure continued in 2002-2008 under national UK legislation.

SOURCE OF MANAGEMENT ADVICE: The management advisory body is ICES. No assessment was carried out in 2008. Previously a survey-based assessment was used to evaluate trends in SSB, total mortality, and recruitment.

PRECAUTIONARY REFERENCE POINTS: The proposed precautionary reference points for fishing mortality and biomass are $F_{pa} = 0.6$, $B_{pa} = 22{,}000$ t.

STOCK STATUS: The state of the stock is unknown, but long-term information on the historical yield and catch composition and the survey-based assessment conducted in 2007 all indicate that the present stock size is at a historical low. Total mortality has been higher in the last decade than in the previous one. Recruitment in the most recent years is estimated to be very low.

RECENT MANAGEMENT ADVICE: ICES advice is unchanged from 2008. Given that SSB is estimated at the lowest observed level and total mortality at the highest level over the time period, catches in 2010 should be reduced to the lowest possible level.

STECF COMMENTS: STECF agrees with the ICES advice. STECF notes that the mixed fisheries advice implies a zero catch of whiting.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission COM (2009) 224 on a consultation on fishing opportunities for 2010, STECF notes that Whiting in VIa can be classified under Category 10.

Accordingly STECF notes that the rule for the above category implies the following option for TACs in 2010.

Category 10 STECF advises a zero catch, a reduction to the lowest possible level or similar advice.

	2010 TAC	Basis
Category 10	≤ 431 t	The TAC should be reduced by at least 25%. Recovery measures should be implemented including effort reductions and introduction of more selective fishing gear

2.8. Whiting (*Merlangius merlangus*) in Division VIb (Rockall)

FISHERIES: Landings of whiting from Division VIb are negligible, 31t in 2008.

SOURCE OF MANAGEMENT ADVICE: The management advisory body is ICES. No assessment has been carried out.

PRECAUTIONARY REFERENCE POINTS: No precautionary reference points have been proposed.

STOCK STATUS: The state of the stock is unknown.

RECENT MANAGEMENT ADVICE: No advice has been provided.

STECF COMMENTS: STECF has no comments.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission COM (2009) 224 on a consultation on fishing opportunities for 2010, STECF notes that Whiting in VIb can be classified under Category 11.

Accordingly STECF notes that the rule for the above category implies the following option for TACs in 2010.

	2010 TAC	Basis
Category 11	NE*	No advice

*NE- not estimable

2.9. Anglerfish (*Lophius piscatorius)* in Vb (EU zone), VI, XII, XIV

FISHERIES: The main fishery is in Sub-Area VI where anglerfish have become the subject of a directed trawl fishery. They are also taken as a by-catch in trawl fisheries targeting roundfish species and *Nephrops*. The main exploiters are the UK, France and Ireland, with smaller landings reported by other nations including Norway, Spain and Denmark. Vessels from EU Member States take most of the catch. ICES estimates of landings of anglerfish in Division VI show a similar trend to those in the North Sea – a rapid increase in the late 1980s (from about 6,000 t in 1989 to about 18,000 t in 1996) followed by a continuous decline since 1996 to 5200 t in 2004 . No estimate of total landings is available since 2005. Official landings in 2008 are around 4100 t. Anglerfish are caught widely in VIa with the highest catch rates occurring along the shelf edge in deeper waters.

SOURCE OF MANAGEMENT ADVICE: The management advisory body is ICES. The assessment now includes anglerfish from Sub-area IV. The information basis for anglerfish is being developed, with improvements to both industry related data and surveys. There is currently insufficient data to support an assessment of the state of the stock.

PRECAUTIONARY REFERENCE POINTS: No precautionary reference points have been agreed for this stock. ICES has previously defined a precautionary fishing mortality reference point of F_{pa}=0.3 (based on $F_{35\%SPR}$), but have been unable to discover the basis for this calculation and so no longer considers it appropriate. New reference points will be defined when a new assessment procedure is developed.

STOCK STATUS: There are major uncertainties about catch and effort data for anglerfish, as well as limited knowledge about population dynamics and distribution. The available information is inadequate to evaluate spawning stock or fishing mortality relative to risk. A recently conducted fishery independent survey has indicated an increasing trend in biomass in areas VI and IV since 2005. The new data available this year for this stock do not change the perception of the stock status.

MANAGEMENT OBJECTIVES: There are no explicit management objectives for this stock but the European Community and Norway are in discussions regarding the joint management of this shared stock.

RECENT MANAGEMENT ADVICE:

ICES advises on the basis of precautionary considerations that the effort in fisheries that catch anglerfish should not be allowed to increase.

The advice for the fishery in 2010 is the same as the advice given in 2008 for the 2009 fishery: The effort in fisheries that catch anglerfish should not be allowed to increase and the fishery must be accompanied by mandatory programmes to collect catch and effort data on both target and by-catch fish.

STECF COMMENTS: STECF agrees with the ICES advice.

STECF also notes that following ICES suggestions in 2005 a number of initiatives were instigated covering anglerfish in Division IVa and Subarea VI: dedicated Scottish and Irish scientific anglerfish surveys which are coordinated to involve the use of both research vessels and commercial fishing vessels; a Scottish tallybook scheme (linked to a longer time-series of personal diaries); increased observer coverage (short-term initiative in 2006). Data are currently being gathered, with improvements to both industry-related data and surveys covering Subarea VI and part of the North Sea. There are currently only four years of survey data and that is considered not long enough for an assessment of the state of the stock.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

STECF notes that the background of the latest scientific assessments and advice and with reference to the Communication from the Commission COM (2009) 224 on a consultation on fishing opportunities for 2010, Anglerfish in Division Vb, Subareas VI, XII and XIV cannot be classified under any of the categories listed.

2.10. Megrim (*Lepidorhombus whiffiagonis and Lepidorhombus boscii*) in ICES Subarea VI (West of Scotland and Rockall).

The stock summary and advice for megrim in Subarea VI is given together with Divisions Vb, XII and XIV in Section 2.11.

2.11. Megrim (*Lepidorhombus whiffiagonis*.) in Vb (EU zone), VI, XII & XIV

FISHERIES: The main fishery is in Sub-Area VI where megrim is taken as a by-catch in trawl fisheries targeting anglerfish, roundfish species and *Nephrops*. Since 2009, ICES also provides advice on megrim in Subarea IV (North Sea). This is because the spatial distribution of landings data and survey catches provide good evidence to suggest that megrim population is contiguous between Divisions IVa and VIa.

The main exploiters are the UK (≥ 80% of catch in the past 3 years), Ireland and France.

Between 1990 and 2008 nominal catchs of Megrim in Division VIa, VIb and subarea IV as officially reported to ICES have ranged from 1,920 t in 2005 to 6,148 t in 1996. Although combined landings generally declined between 1996 and 2005, they have increased each years from 2005 to 2009. Combined landings in 2008 were 2,951 tonnes.

It is unclear if the trends in landings reflects trends in abundance or are a consequence of changes in trawl effort observed over the period.

- Recent reductions in effort in Scotland and Ireland are considered to have contributed to the decline of landings in Subarea VI.
- In 2009 new mesh regulations introduced in Division VIa have increased the mesh size from 100 to 120 mm (vessels >15 m); this will result in an increase in the length of first capture. This measure, coupled with further effort restrictions associated with the long-term management plan for cod (Council Regulation (EC) No 1342/2008), is likely to result in further effort displacement away from the shelf fisheries in Division VIa, with indications of effort switching to Rockall (Division VIb). However, at this stage it is not possible to quantify this until an integrated analysis of VMS and logbook data is conducted.
- Landings in VI are well below the TAC. Uptake by France, who account for 44% of the TAC, is very low (~11%).
- Official landings in Sub-area IV and Division IIa in recent years are close to the TAC.

In the past, management of the megrim stock has been linked to that for anglerfish on the assumption that landings were correlated in the fishery. This may no longer be true due to recent changes in the fishing pattern in the Scottish and Irish fleets, and the dynamics of the species are probably not linked.

SOURCE OF MANAGEMENT ADVICE: The management advisory body is ICES. In recent years there has been no analytical assessment for this stock and the management advice has been based on average landings. This year the advice is based on effort.

While the information basis for megrim is being developed, with improvements to both industry-related data and surveys, there is currently only four years of survey data and that is considered not long enough for an assessment of the state of the stock. Overall, the quality of the available landings data and discard information, as well as a lack of effort and cpue data for the main fleet in the fishery, severely hampers the ability of ICES to carry out an assessment. For stocks like megrim (and anglerfish) on the Northern Shelf, there is a general need for improved spatio-temporal resolution of commercial catch and effort data through integration of VMS and logbook data.
Since 2009, ICES also provides advice on megrim in Subarea IV (North Sea). This is because the spatial distribution of landings data and survey catches provides good evidence to suggest that megrim population is contiguous between Divisions IVa and VIa.

PRECAUTIONARY REFERENCE POINTS: No precautionary reference points have been proposed for this stock.

STOCK STATUS:
A recently developed fishery independent survey suggests an increasing trend in biomass in both areas VI and IV since 2005.

RECENT MANAGEMENT ADVICE: ICES advises, on the basis of exploitation boundaries in relation to precautionary considerations that the effort in fisheries that catch megrim should not be allowed to increase.

STECF COMMENTS: STECF agrees with the advice from ICES. STECF notes that scientific surveys show that a significant population of megrim exists in the northern part of Division IVa and landings are reported from this area. However, this stock component is not considered by any ICES expert group. Recent surveys aimed at providing a scientific basis for anglerfish management, could potentially be used for the assessment of megrim stocks in Subarea VI and Division IVa. Area misreporting between IVa and VI still appears to be a problem due to the association of megrim with anglerfish catches.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

STECF notes that the background of the latest scientific assessments and advice and with reference to the Communication from the Commission COM (2009) 224 on a consultation on fishing opportunities for 2010, Megrim in Division Vb, Subareas VI, XII and XIV can not be classified under any of the categories listed.

2.12. Plaice (*Pleuronectes platessa*) - Vb (EU zone), VI, XII, XIV

STECF did not have access to any stock assessment information on plaice in these areas.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224
With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission (COM (2009) 224) on a consultation on fishing opportunities for 2010, STECF notes that this stock can be classified under Category 11.

Accordingly STECF notes that the rules for the above category imply the following options for TACs in 2010.

	2010 TAC	Basis
Category 11	668 t*	There is no STECF advice, Average of recent catches, 15% TAC constraint

* Average 2006-2008 with 15% TAC constraint

2.13. Sole (*Solea solea*) – VIIhjk

FISHERIES: Sole are predominantly caught within mixed species otter trawl fisheries in Division VIIj. These vessels target mainly hake, anglerfish, and megrim. Beam trawlers and seiners generally take a lesser catch of sole. Ireland is the major participant in this fishery with around 50% of the international landings between 1993-

2001. Landings have been fluctuating between 655 tonnes and 1104 tonnes over the period 1973-1998. Since then landings have been around 500 tonnes. Landings in 2008 are estimated to be 204 tonnes.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES.

REFERENCE POINTS: No precautionary reference points have been proposed for this stock

STOCK STATUS: The available information is inadequate to evaluate stock trends. Exploratory estimates of mortality suggest that this stock is not severely overexploited. The state of the stock is unknown and there is no basis for advice.

RECENT MANAGEMENT ADVICE:

STECF COMMENTS:

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission (COM (2009) 224 on a consultation on fishing opportunities for 2010, STECF notes that Sole in VIIh,j,k can be classified under Category 11.

Accordingly STECF notes that the rule for the above category implies the following option for TACs in 2010.

	2010 TAC	Basis
Category 11	470 t*	There is no STECF advice, Average of recent catches, 15% TAC constraint

* Average 2006-2008 with 15% TAC constraint

2.14. Sole (*Solea solea*) - VIIbc

FISHERIES: Ireland is the major participant in this fishery. Sole are normally caught in mixed species otter trawl fisheries in Division VIIb. These vessels mainly target other demersal fish species and *Nephrops*.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES.

REFERENCE POINTS: No precautionary reference points have been proposed for this stock

STOCK STATUS: The state of the stock is unknown. No assessment was performed, due to the short series of data and lack of reliable tuning indices.

RECENT MANAGEMENT ADVICE: Recent catches have varied between 78 t in 2000 and 37 t in 2008 and have been close to the TAC.

Single-stock exploitation boundaries: The available information is insufficient to evaluate stock trends. Therefore the state of the stock is unknown and there is no basis for advice.

STECF COMMENTS: STECF agrees with the advice from ICES.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission (COM (2009) 224 on a consultation on fishing opportunities for 2010, STECF notes that Sole in VIIbc can be classified under Category 11.

Accordingly STECF notes that the rules for the above category implies the following option for TACs in 2010.

	2010 TAC	Basis
Category 11	43 t*	There is no STECF advice, Average of recent catches, 15% TAC constraint

* Average 2006-2008 with 15% TAC constraint

2.15. Norway pout (*Trisopterus esmarki*) in Division VIa (West of Scotland)

FISHERIES: Total landings are available for this stock for the years 1987 – 2008. Landings during this period have varied considerable, from a high in 1987 of some 38,000 tonnes to less than 50 tonnes every year since

2005. Historically the majority of landings have been taken by Danish fleets with lesser catches by UK, Netherlands and Germany.

There are currently no dedicated fisheries for Norway Pout in Division VIa (West of Scotland).

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. **PRECAUTIONARY REFERENCE POINTS:** No fishing mortality or biomass reference points are defined for this stock.

STOCK STATUS: The available information is inadequate to evaluate the state of the stock.

RECENT MANAGEMENT ADVICE: The only data available are official landings statistics which have been highly variable and do not provide an adequate basis for scientific advice.

STECF COMMENTS: STECF notes that there are currently no dedicated fisheries for Norway Pout in Division VIa (West of Scotland).

2.16. Sandeel (*Ammodytes spp. & Gymnammodytes spp.*) in Division VIa

FISHERIES: In the past the stocks were exploited exclusively by Scottish vessels. Recorded landings were between 15,000 t and 25,000 t from 1987 to 1990. Landings of between 5,000 t and 13,000 t were taken between 1991 and 2000 (except for 2,600 t in 1999). From 2001 landings fell sharply. The last recorded landings by Scotland were in 2004. Recorded landings have been zero in 2003, 2005 and 2006. In 2007 57 t were reported landed by the Faroe Islands, the first time this country has reported landings of sandeel from VIa.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The only recent data available, however, are official landings statistics which have been highly variable and do not provide an adequate basis for scientific advice. The stock was last assessed in 1996.

PRECAUTIONARY REFERENCE POINTS: none.

STOCK STATUS: The available information is inadequate to evaluate stock trends relative to risk, so the state of the stock is unknown.

RECENT MANAGEMENT ADVICE: none.

STECF COMMENTS: STECF notes that work to better understand potential trends in natural mortality on cod in division VIa by modelling seal predation has been hampered because the level and trend in sandeel biomass available to the seal population west of Scotland is not known. As such, a lack of knowledge about this stock is potentially adversely affecting assessment of stocks of high commercial importance in the area.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

Given this stock has received no assessment and no advice and with reference to the Communication from the Commission (COM (2009) 224) on a consultation on fishing opportunities for 2010, STECF notes that sandeel in VIa can be classified under Category 11.

Accordingly STECF notes that the rule for the above category implies the following TAC in 2010.

	2010 TAC	Basis
Category 11	zero	No advice. TAC based on recent real catch levels, which are zero

2.17. Rays and skates in ICES Subareas VI and VII

Previous stock summaries and advice on skates and rays has been provided at the NE Atlantic regional level and at present, STECF is unable to provide additional information and advice at the level of ICES Subareas VI and VII. Furthermore, ICES has not issued any new advice since 2008. The most recent advice for skates and rays in ICES Subareas VI and VII was provided by STECF in its consolidated review of advice for 2009 and is reproduced in Section 6.1 of this report. In view of this, STECF has not attempted to categorise these resources according to the Communication on Fishing opportunities for 2010 (COM (2009) 224).

2.18. Catsharks and Nursehounds (*Scyliorhinus canicula and Scyliorhinus stellaris*) in Subareas VI and VII

Previous stock summaries and advice on skates and rays has been provided at the NE Atlantic regional level and at present, STECF is unable to provide additional information and advice at the level of ICES Subareas VI and VII. Furthermore, ICES has not issued any new advice since 2008. The most recent advice for catsharks and nursehounds in ICES Subareas VI and VII was provided by STECF in its consolidated review of advice for 2009 and is reproduced in Section 6.3 of this report. In view of this, STECF has not attempted to categorise these resources according to the Communication on Fishing opportunities for 2010 (COM (2009) 224).

2.19. Tope (*Galleorhinus galeus*) in ICES Subareas VI and VII

Previous stock summaries and advice on tope has been provided at the NE Atlantic regional level and at present, STECF is unable to provide additional information and advice at the level of ICES Subareas VI and VII. Furthermore, ICES has not issued any new advice since 2008. The most recent advice for tope in ICES Subareas VI and VII was provided by STECF in its consolidated review of advice for 2009 and is reproduced in Section 6.5 of this report. In view of this, STECF has not attempted to categorise these resources according to the Communication on Fishing opportunities for 2010 (COM (2009) 224).

2.20. Other demersal elasmobranches West of Scotland

Previous stock summaries and advice on demersal elasmobranchs has been provided at the NE Atlantic regional level and at present, STECF is unable to provide additional information and advice for demersal elasmobranchs West of Scotland. Furthermore, ICES has not issued any new advice since 2008. The most recent advice for demersal elasmobranchs in the area West of Scotland was provided by STECF in its consolidated review of advice for 2009 and is reproduced in Section 6.1 of this report. In view of this, STECF has not attempted to categorise these resources according to the Communication on Fishing opportunities for 2010 (COM (2009) 224).

2.21. Herring (*Clupea harengus*) in Division VIa North

FISHERIES: Historically, catches have been taken from this area by three fisheries:

i) A Scottish domestic pair trawl fleet and the Northern Irish fleet operating in shallower, coastal areas, principally fishing in the Minches and around the Island of Barra in the south; younger herring are found in these areas. This fleet has reduced in recent years.

ii) The Scottish single-boat trawl and purse seine fleets, with refrigerated seawater tanks, targeting herring mostly in the northern North Sea, but also operating in the northern part of Division VIa (N). This fleet now operates mostly with trawls, but many vessels can deploy either gear.

iii) An international freezer-trawler fishery has historically operated in deeper water near the shelf edge where older fish are distributed. These vessels are mostly registered in the Netherlands, Germany, France, and England, but most are Dutch owned.

In recent years the age structure of the catch of these last two fleets has become more similar. A stricter enforcement regime in the UK is responsible for the major decrease in area misreporting in 2006.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The assessment in 2009 is based on catch data and an acoustic survey. This assessment is considered to be noisy but unbiased. Misreporting has decreased since 2006 and the quality of the catch data has improved. The basis for the advice has changed from last year and allows for an increase in catch in line with the agreed management plan. This management plan was evaluated by ICES in 2005 and found to be consistent with the precautionary approach.

PRECAUTIONARY REFERENCE POINTS: Precautionary management reference points have only been set for spawning stock biomass (B_{lim} has been set at 50 000 t and B_{pa} is not defined).There are no proposed fishing mortality reference points. F_{mgt} has been set at 0.25.

STOCK STATUS: In the absence of precautionary reference points the state of the stock cannot be evaluated. An analytical assessment shows that SSB (in 2009) is 1.8 times B_{lim}. ICES considers that the stock over recent years has been fluctuating at a low level and is being exploited close to F_{msy}. Recruitment has been very low since 1998, and the 2001 and 2002 year-classes are weak.

MANAGEMENT AGREEMENT: The EU adopted a management plan on 18 December 2008 (Council Regulation (EC) 1300/2008) based on the following rule;

SSB in the year of the TAC	**Fishing mortality**	**TAC constraint**
SSB > 75 000 t	F = 0.25	20%
SSB < 75 000 t	F = 0.2	20%
SSB < 62 500 t	F = 0.2	25%
SSB < 50 000 t (B_{lim})	F = 0	-

A similar proposed management plan was evaluated by ICES in 2005 and found to be consistent with the precautionary approach. In 2008 ICES checked that the recent changes in stock dynamics and the changes to the plan had not significantly increased the risks. ICES gives advice based on the management plan.

Agreed Management Plan for VIaN herring: Council Regulation 1300/2008

1. Each year, the Council, acting by qualified majority on the basis of a proposal from the Commission, shall fix for the following year the TAC applicable to the herring stock in the area west of Scotland, in accordance with paragraphs 2 to 6.

2. When STECF considers that the spawning stock biomass level will be equal or superior to 75 000 tonnes in the year for which the TAC is to be fixed, the TAC shall be set at a level which, according to the advice of STECF, will result in a fishing mortality rate of 0.25 per year. However, the annual variation in the TAC shall be limited to 20%.

3. When the STECF considers that the spawning stock biomass level will be less than 75 000 tonnes but equal or superior to 50 000 tonnes in the year for which the TAC is to be fixed, the TAC shall be set at a level which, according to the advice of STECF, will result in a fishing mortality rate of 0,2 per year. However, the annual variation of the TAC shall be limited to:

> *(a) 20% if the spawning stock biomass level is estimated to be equal or superior to 62 500 tonnes but less than 75 000 tonnes;*
>
> *(b) 25% if the spawning stock biomass level is estimated to be equal or superior to 50 000 tonnes but less than 62 500 tonnes.*

4. When STECF considers that the spawning stock biomass level will be less than 50 000 tonnes in the year for which the TAC is to be fixed, the TAC shall be set at 0 tonnes.

5. For the purposes of the calculation to be carried out in accordance with paragraphs 2 and 3, STECF shall assume that the stock will experiences a fishing mortality rate of 0,25 in the year prior to the year for which the TAC is to be fixed.

6. By way of derogation from paragraphs 2 or 3, if STECF considers that the herring stock in the area west of Scotland is failing properly to recover, the TAC shall be set at a level lower than that provided for in those paragraphs.

RECENT MANAGEMENT ADVICE:

ICES advises on the basis of the agreed management plan. This corresponds to catches weighing no more than 24,420t in 2010

Other considerations:

Exploitation boundaries in relation to the proposed management plan

Following the agreed management plan implies catches of no more than 24 420 tonnes in 2010, which is expected to lead to an SSB of 94 000 t in 2011. The agreed management plan is consistent with the precautionary approach.

Exploitation boundaries in relation to high long-term yield, low risk of depletion of production potential and considering ecosystem effects

Fishing mortality in the range of the target mortality of the proposed management plan is expected to give a high long-term yield and a low risk of stock depletion.

Exploitation boundaries in relation to precautionary limits

Precautionary reference points for fishing mortality have not been defined for this stock. Any management measures should have a high probability of avoiding B_{lim}.

In addition, ICES offers the following considerations:

The stock identity of herring west of the British Isles was reviewed by the EU-funded project WESTHER. This identified Division VIaN as an area where catches comprise a mixture of fish from Divisions VIaN, VIaS, and VIIaN. Concerning the management plan for Division VIaN, ICES has advised that herring components should be managed separately to afford maximum protection. If there is an increasing catch on the mixed fishery in Division VIaN, this should be considered in the management of the Division VIaS component which is in a depleted state. In 2008 ICES will begin to evaluate management for this Division and also VIaS and VIIaN It will be a number of years before ICES can provide a fully operational integrated strategy for these units. In this context ICES recommends that the previously endorsed plans for Division VIaN should be continued.

STECF COMMENTS: STECF agrees with the ICES advice.

STECF notes the new management plan for this stock adopted in 2008. It is similar to the one evaluated by ICES in 2005 and found to be precautionary.

STECF notes that the 2009 assessment has resulted in a downward revision of Fby 37% and an upward revision of SSB by 49% compared to 2008 values.

STECF notes the ICES consideration regarding the results of the EU funded project WESTHER which have shown that the herring populations in this area and in VIaS, VIIb,c and VIIa (N) form a metapopulation. In 2008 ICES began to evaluate management for this metapopulation. In the meantime, each population will continue to be managed separately. The management plan for VIaN should be continued.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO THE AGREED MANAGEMENT PLAN (Council Regulation (EC) 1300/2008).

STECF notes that this plan has been evaluated to be consistent with the precautionary approach. STECF therefore advises that according to the agreed management plan the TAC for 2010 should be set at 24,420 t.

2.22. Herring (*Clupea harengus*) in the Clyde (Division VIa)

The following text remains unchanged because ICES has not undertaken any new assessments or provided any new advice since 2005.

FISHERIES: There are two stock components present on the fishing grounds, resident spring-spawners and immigrant autumn-spawners. The UK exploits the small stock of herring in this area. TACs have been set at 800 t since 2006. Since 1999, annual landings have varied from no fishing in 2004 to around 600 t in 2007.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. No analytical assessment has been made in recent years and no independent survey data are available for recent years.

PRECAUTIONARY REFERENCE POINTS: No precautionary reference points have been proposed for this stock.

STOCK STATUS The available information is inadequate to evaluate stock trends, and the state of the stock is uncertain.

RECENT MANAGEMENT ADVICE: Until new evidence is obtained on the state of the stock, existing time and area restrictions on the fishery should be continued in 2010.

STECF COMMENTS: STECF agrees with the previous advice from ICES.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission COM (2009) 224 on a consultation on fishing opportunities for 2010, STECF notes that Herring Clyde VIa can be classified under Category 11.

Accordingly STECF notes that the rule for the above category implies the following option for TACs in 2010.

	2010 TAC	Basis
Category 11	NE*	No advice

*NE Not estimable

2.23. Herring (*Clupea harengus*) in Division VIa south and VIIbc

FISHERIES: In recent years only Ireland and the Netherlands have recorded catches from this area with minimal landings taken by the Netherlands in 2007. Catches in 2008 amounted to 10,237 t which is a decrease on the 2007 figure (12,675 t). The fishery exploits a mixture of autumn-and winter/spring-spawning fish. The winter/spring-spawning component is distributed in the northern part of the area. The main decline in the overall stock appears to have taken place on the autumn-spawning component.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. Exploratory assessment runs showed similar trends in stock development over a range of assumptions.

PRECAUTIONARY REFERENCE POINTS: The proposed precautionary reference points for biomass and fishing mortality are $\mathbf{B}_{pa}$ =110,000 t, B_{lim} = 81,000 t $\mathbf{F}_{pa}$ = 0.22 and F_{lim} = 0.33.

STOCK STATUS: Exploratory assessments suggest that SSB may be stable at a low level. The current level of SSB is uncertain but likely to be below B_{lim}. There is no evidence that large year-classes have recruited to the stock in recent years. F is likely to be above F_{pa} and also likely to be above F_{lim}.

RECENT MANAGEMENT ADVICE:

The updated exploratory assessment available for this stock does not change the perception of the stock and does not give reason to change the advice from 2008. The advice for the fishery in 2010 is therefore the same as the advice given in 2008 for the 2009 fishery: "ICES recommends a rebuilding plan be put in place that will reduce catches. If no rebuilding plan is established, there should be no fishing. The rebuilding plan should be evaluated with respect to the precautionary approach".

In addition, ICES offers the following considerations:

The stock identity is complex as the juveniles mix with those from the west of Scotland and the adults mix with those from the Irish Sea and Division VIaN over the shelf areas to the west of Scotland after spawning. The stock identity has been reviewed by an EU-funded project WESTHER. Therefore, the assessment and advisory framework for this stock is being reviewed. The results of this work are expected to be available for the ICES advice in 2010.

There is no explicit management plan for this stock. The local Irish management committee developed the objective to rebuild the stock to above B_{pa} (110,000 t) and has a long-term objective to achieve catches of 25,000 t per year. Although there is little information on recruitment available, it is unlikely that it is above average and it may possibly be below average. The long-term catch aspiration of the local management committee is not likely to be achievable at current stock productivity. A rebuilding plan is urgently required and should include further substantial reductions in catches.

STECF COMMENTS: STECF agrees with the ICES advice.

STECF notes the ICES advice that there should be no fishing of this stock unless a rebuilding plan is put in place. This implies that the TAC should be reduced by at least 25% and recovery measures should be implemented.

STECF notes the ICES consideration regarding the results of the EU-funded project WESTHER which have shown that the herring populations in this area and in VIaN, and VIIa (N) form a metapopulation. In 2008 ICES began to evaluate management for this metapopulation. In the meantime, each population will continue to be managed separately.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission COM (2009) 224 on a consultation on fishing opportunities for 2010, STECF notes that Herring in Divisions VIaS and VIIbc can be classified under Category 10.

Accordingly STECF notes that the rule for the above categoriy implies the following option for TACs in 2010.

Category 10 STECF advises a zero catch, a reduction to the lowest possible level or similar advice or a rebuilding plan should be set into plaice.

	2010 TAC	Basis
Category 10	≤ 7000 t	The TAC should be reduced by at least 25%. Recovery measures should be implemented including effort reductions and introduction of more selective fishing gear

2.24. Herring (*Clupea harengus*) in Division Vb and VIb.

No assessment is made for these areas and no information was available to STECF from these areas.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission COM (2009) 224 on a consultation on fishing opportunities for 2010, STECF notes that Herring in Divisions Vb and VIb can be classified under Category 11.

Accordingly STECF notes that the rule for the above category implies the following option for TACs in 2010.

	2010 TAC	Basis
Category 11	NE*	No advice

*NE – Not estimable

2.24.1. Special request on Herring VIIa South & Celtic Sea

STECF is requested to explain why the advice completely changes within one year (from "no fishing without plan" in 2008 to "harvest of 10 000 tonnes" in 2009).

STECF response

STECF notes that the change in advice is primarily a result of increased confidence in the 2009 ICES assessment of the state of the stock. In 2008 the ICES assessment was exploratory and could only be considered indicative of stock trends and the recent estimates of F, SSB and recruitment were too poorly defined to be used as a basis for a catch forecast. The assessment in 2009 included a revision of input data, reduction of the age of

the plus-group and a longer time series of reliable survey data which gave rise to an acceptable model fit. The 2009 assessment was therefore accepted as a basis for providing catch options for 2010.

ICES based its advice on fishing opportunities for 2010 on the proposed rebuilding plan and a fishing mortality rate of 0.19, which ICES considers is in line with the precautionary approach. The gives rise to an estimated catch in 2010 of 10,150 t.

3. Resources in the Celtic and Irish Seas

3.1. Norway lobster (*Nephrops norvegicus*) in Division VII

Norway lobster in Division VII contains 6 Functional Units:

FU no.	Name	ICES Divisions	Statistical rectangles
14	Irish Sea East	VIIa	35–38E6; 38E5
15	Irish Sea West	VIIa	36E3; 35–37 E4–E5; 38E4
16	Porcupine Bank	VIIb,c,j,k	31–36 D5–D6; 32–35 D7–D8
17	Aran Grounds	VIIb	34–35 D9–E0
19	Ireland SW and SE coast	VII,g,j	31–33 D9–E0; 31E1; 32E1–E2; 33E2–E3
20–22	Celtic Sea	VIIg,h	28–30 E1; 28–31 E2; 30–32 E3; 31 E4

Of these, FU 15 (Irish Sea W.) and FU 17 (Aran Grounds) are assessed on basis of UWTV surveys. On basis on the UWTV surveys current stock abundance and harvest ratios are estimated. The HRs advised by ICES aim at exploitation rates between $F_{0.1}$ and F_{MAX} according to the options/decision rules given in the table:

F relative to $F_{0.1}$ and F_{MAX}	**SSB Stable or Increasing**	**SSB Decreasing**
$F > F_{MAX}$	Reduce F to F_{MAX}	Reduce F to $F_{0.1}$
$F_{MAX} > F > F_{0.1}$	Maintain current F	Reduce F to $F_{0.1}$
$F < F_{0.1}$	Increase F to $F_{0.1}$	Maintain current F

STECF considers that it is premature to use the decision rules advocated by ICES as a basis for setting fishing opportunities without a proper evaluation of the likely outcome of such a rule. In view of this, STECF **recommends** that the decision rules advocated by ICES should not form the basis of setting fishing opportunities for 2010 for those *Nephrops* FUs to which it has been applied. The rationale behind this recommendation is given in Section 1.1 of this report.

For the FUs covered by UWTV surveys new advice for 2010 is provided. The advice for 2010 for the other FUs is the same as for 2009 (biennial advice given in 2008). A summary of the TAC advice for 2010 for the six Functional Units in VII, is as follows: Irish Sea E. (FU14) = 1000 t, Irish Sea W. (FU15) = 5465 t, Porcupine Bank (FU16) = 0 t, Aran Grounds (FU 17) = 505 t, SE & SW coasts of Ireland (FU 19) = 800 t and Celtic Sea (FUs 20-22) = 5300 t.

STECF COMMENTS: STECF notes that the current management approach with an aggregated TAC for VII (which comprises 6 *Nephrops* FUs), runs the risk of unbalanced effort distribution. This has appeared to be a particular problem in the Porcupine bank, where a large increase in effort over the past 5 years has occurred with a subsequent substantial decline in the stock. In addition, STECF notes that aggregated management of all *Nephrops* FUs in VII as one single unit is a major obstacle for a management complying with the Commissions Communication on Fishing opportunities for 2010 (COM (2009) 224).

3.1.1. Norway lobster (*Nephrops norvegicus*) in FU 14, Irish Sea East (Division VIIa)

FISHERIES: Prior to 2007 landings from this FU was believed to be underreported. However, new legislation in 2007 increased the reliability of the landings data. Estimates of landings in 2007 were 959 t. Most of the landings are taken by the UK with the Republic of Ireland taking the remainder. The *Nephrops* trawl fisheries take by-catches of other species such as cod and particularly juvenile whiting.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. Biennial advice (for 2009 and 2010) for this stock was provided in 2008. The advice was based on trends in the surveys and fisheries indicators.

PRECAUTIONARY REFERENCE POINTS: No precautionary reference points have been determined for *Nephrops* in this stock.

STOCK STATUS: Mean size and sex ratios in the catches are stable. Landing per unit effort (lpue) indicators do not show signs of decrease in recent years. The stock is considered to be stable.

RECENT MANAGEMENT ADVICE: The current fishery appears sustainable. Therefore, ICES recommends that *Nephrops* fisheries should not be allowed to increase relative to 2007. This corresponds to landings of no more than 1,000 tonnes for the Eastern Irish Sea stock (FU 14) in 2009 and 2010.

STECF COMMENTS: STECF agrees with the ICES advice. STECF notes that landings by some fleets prior to 2007 are thought to have been underreported. The implementation of the Buyers and Sellers legislation in the UK in 2006 and "sales notes" in Ireland in 2007, coupled with the increased TAC in 2007, is thought to have improved the reliability of reported landings data. Therefore the advice for this stock refers to landings in 2007 only and does not use landings data prior to 2007. STECF agrees with ICES approach and advice that, as a temporary measure, the use of average landings from a period when these are considered accurate offers a way of giving catch advice. STECF welcomes the commitment by ICES to hold a workshop specifically tasked to develop improved methods for utilising TV survey data, particularly in view of the fact that average landings approaches are unsuitable in situations where the stock abundance is observed to be increasing or decreasing.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission (COM (2009) 224) on a consultation on fishing opportunities for 2010, STECF notes that the *Nephrops* in Irish Sea East (FU 14) can be classified under Category 6.

Accordingly STECF notes that the rules for each of the above categories imply the following options for TACs in 2010.

	2010 TAC	Basis
Category 6*	NE**	No TAC set for separate functional units.

*Biennial advice for 2009 and 2010

**NE – Not estimable

3.1.2. Norway lobster (*Nephrops norvegicus*) in FU 15, Irish Sea West (Division VIIa)

FISHERIES: Prior to 2007 landings from this FU are believed to be underreported. However, new legislation in 2007 increased the reliability of the landings data. Estimates of landings in 2007 were 8461 t from the Irish Sea West. Most of the landings are taken by the UK and the Republic of Ireland. The *Nephrops* trawl fisheries take by-catches of other species such as cod and particularly juvenile whiting. 2008 landings from this FU were more than 10500 t, an increase of 25% compared to 2007 landings.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The assessment is based UWTV surveys of absolute abundance. At the ICES Benchmark Workshop on *Nephrops* in 2009 the major sources of bias associated to UWTV survey estimates of absolute abundance were quantified and an overall bias correction factor derived.

PRECAUTIONARY REFERENCE POINTS: No biological reference points have been determined for this stock of *Nephrop*, Instead, as mentioned in the introduction, F_{MAX} and $F_{0.1}$ are used as reference points

Reference points

F reference point	***Harvest ratio***
$F_{0.1}$	12.2%
F_{MAX}	20.4%

STOCK STATUS: The stock is overfished. UWTV survey abundance estimates declined by 42 % between 2004 and 2008. 2008 catch rates from trawl surveys are close to the long-term mean of the series. Sex ratio and mean size from commercial catches and surveys remain stable. However, F(2008) is above F_{MAX}.

RECENT MANAGEMENT ADVICE: ICES advises on the basis of exploitation boundaries in relation to high long-term yield and low risk of depletion of production potential that the Harvest Rate for *Nephrops* fisheries should not exceed $F_{0.1}$. This corresponds to landings of no more than 5 465 t for the western Irish Sea stock.

STECF COMMENTS: STECF agrees with the ICES advice. STECF notes that landings by some fleets prior to 2007 are thought to have been underreported. The implementation of the Buyers and Sellers legislation in the UK in 2006 and "sales notes" in Ireland in 2007, coupled with the increased TAC in 2007, is thought to have improved the reliability of reported landings data. STECF notes that the advised landings for 2010 imply a reduction of 48% relative to the 2008 landings (10 500t). STECF further agrees with the ICES approach of a stepwise approach could be considered in this case. To move toward a fishing mortality corresponding to MSY in steps, a reduction of the catch corresponding to F_{MAX} could be considered as an intermediate step toward $F_{0.1}$ (as a proxy for F_{msy}). Alternatively, a constraint on the year-to-year change in catches as is typical of management plans might be considered

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission (COM (2009) 224) on a consultation on fishing opportunities for 2010, STECF notes that the *Nephrops* in Irish Sea West (FU 15) can be classified under Categories 2 and 6

Accordingly STECF notes that the rules for each of the above categories imply the following options for TACs in 2010.

	2010 TAC	Basis
Category 2*	NE**	Stock overexploited compared to MSY.
Category 6*	NE**	State of stock not known precisely.

*Biennial advice for 2009 and 2010

**NE – Not estimable

3.1.3. Norway lobster (*Nephrops norvegicus*) in FU19, SW and SE Ireland (Divisions VII g, j)

FISHERIES: Reported landings for this FU were 866 t in 2008, but there are concerns about the accuracy of the landings statistics in some fleets. Similar to the situation in Aran Grounds the most recent change in the fishery is the proportion of twin-rig vessels, which has increased to over 90 % of the fleet in the past eight years. This implies a large increase in effective effort, even if such an increase is not observed in the nominal effort figures.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. Biennial advice (for 2009 and 2010) for this FU was provided in 2008. Analytical assessments are not feasible at present.

PRECAUTIONARY REFERENCE POINTS: No precautionary reference points have been established for this FU.

STOCK STATUS: Stock status is not known. Landings have been variable throughout the time-series, reaching the highest observed levels in 2002–2004. Landings from 2005 onwards have been around the average. LPUE has fluctuated without a detectable trend over the short time-series.

RECENT MANAGEMENT ADVICE: The current fishery appears sustainable. Therefore, in 2008 ICES recommended that *Nephrops* fisheries should not be allowed to increase relative to 2007. This corresponds to landings of no more than 800 tonnes for the Ireland SW and SE Coast (FU 19).

STECF COMMENTS: STECF agrees with the advice from ICES. STECF notes that landings by some fleets prior to 2007 are thought to have been underreported. The implementation of "sales notes" in Ireland in 2007, coupled with the increased TAC in 2007, is thought to have improved the reliability of reported landings data. Therefore the advice for this stock refers to landings in 2007 only and does not use landings data prior to 2007.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission (COM (2009) 224) on a consultation on fishing opportunities for 2010, STECF notes that the *Nephrops* in SW and SE Ireland (FU 19) may be classified under Category 6

Accordingly STECF notes that the rules for each of the above categories imply the following options for TACs in 2010.

	2010 TAC	Basis
Category 6*	NE**	State of stock not known precisely.

*Biennial advice for 2009 and 2010

**NE – Not estimable

STECF notes that the advised catch for 2010 should not exceed 800 t

3.1.4. Norway lobster (*Nephrops norvegicus*) in FU 20-22, Celtic Sea (Divisions VIIf, g, h)

FISHERIES: There are three Functional Units in the Celtic Sea area but they are treated as one. Landings from this stock are reported by France, the Republic of Ireland and the UK, the main contributors being France and Ireland. In 2008 total reported landings amounted to 6012 t. France accounted for 2348 t and Ireland for 3428 t, while UK took 242 t. There has been a considerable increase in Irish landings, from around 500 t in 1990 to more than 3,400 t in 2008. There has also been increasing effort by Irish vessels targeting *Nephrops* in the Celtic Sea in recent years. Discarding is substantial, but varies between fleets and areas.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. Biennial advice (for 2009 and 2010) for this FU was provided in 2008. The advice is based on recent average landings and indicators for LPUE and CPUE.

PRECAUTIONARY REFERENCE POINTS: No precautionary reference points have been proposed for these FUs.

STOCK STATUS: No assessment is available. In 2006 and 2007 mean sizes in landings for the Irish and French fleets decreased consistent with higher recruitment in recent years. LPUE indicators do not show signs of decrease in recent years. The stock is considered to be stable.

RECENT MANAGEMENT ADVICE: The current fishery appears sustainable. Therefore, ICES recommends that *Nephrops* fisheries should not be allowed to increase relative to 2007. This corresponds to landings of no more than 5300 tonnes for the Celtic Sea stock (FU20-22).

STECF COMMENTS: STECF agrees with the advice from ICES. Landings by some fleets prior to 2007 are probably underreported. The implementation of the Buyers and Sellers legislation in the UK in 2006 and "sales notes" in Ireland in 2007, coupled with the increased TAC in 2007, is thought to have improved the reliability of

reported landings data. Therefore the advised TAC for this stock refers to landings in 2007 only and does not use landings data prior to 2007. STECF notes that the TAC is set for Sub-area VII, and this may allow unrestricted catches for Functional Units where restrictions on catches should in fact apply. STECF further notes that the discarding of small *Nephrops* is substantial.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission (COM (2009) 224) on a consultation on fishing opportunities for 2010, STECF notes that the *Nephrops* in Celtic Sea (FUs 20-22) may be classified under Category 6

Accordingly STECF notes that the rules for each of the above categories imply the following options for TACs in 2010.

	2010 TAC	Basis
Category 6*	NE**	State of stock not known precisely.

*Biennial advice for 2009 and 2010

**NE – Not estimable

STECF notes that the advised catch for 2010 should not exceed 5300 t.

3.2. Cod (*Gadus morhua*) in area VIIa (Irish Sea Cod)

FISHERIES: 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. Activities of these vessels have decreased, whilst a fishery for cod and haddock using large pelagic trawls increased substantially during the 1990s. In recent years the pelagic fishery has also targeted cod during the summer. Cod are also taken as a by-catch in fisheries for *Nephrops*, plaice, sole and rays. Landings are taken entirely by EU fleets and were between 6,000 t and 15,000 t from 1968 to the late 1980s. There has since been a steep decline in landings to levels as low as 1,300 t in 2000. There has been a slight increase from this level in 2001 and 2002 (up to 2,700 t) but since then, landings have continuously declined to the record low value of 661 t in 2008. The quality of the commercial landings and catch-at-age data for this stock deteriorated in the 1990s following reductions in the TAC without associated control of fishing effort. Legislation introduced in Britain and Ireland in 2006 has reduced misreporting.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The advice is based on an age-based assessment using commercial and survey data. Reported landings are replaced by estimates derived from a port sampling scheme for the years 1991-1999. From 2000 the model estimates the removals needed for abundance estimates to follow the same trends as observed by surveys in the area.

PRECAUTIONARY REFERENCE POINTS: The proposed precautionary reference points for biomass and fishing mortality are B_{pa}=10,000 t, F_{pa}=0.72

STOCK STATUS:

Based on the most recent estimates of SSB (in 2009), ICES classifies the stock as having reduced reproductive capacity. Based on the most recent estimates of fishing mortality (in 2008), ICES classifies the stock as being harvested unsustainably. The spawning-stock biomass has declined ten-fold since the late 1980s and has had reduced reproductive capacity since the mid-1990s. Recruitment has been below average for the past seventeen years, and the seven most recent year-classes are amongst the smallest on record.

RECENT MEASURES TO PROMOTE STOCK RECOVERY: To rebuild the SSB of the stock, a spawning closure was introduced in 2000 for ten weeks from mid-February which was argued to maximize the reproductive output of the stock (EU Regulations 304/2000 and 549/2000). The measures were revised in 2001, 2002, 2003 and 2004, involving a continued, but smaller spawning ground closure, coupled with changes in net design to improve selectivity.

The EU has adopted a long-term plan for cod stocks and the fisheries exploiting those stocks (Council Regulation (EC) 1342/2008). This regulation repeals the recovery plans in Regulation (EC) No 423/2004, and has the objective of ensuring the sustainable exploitation of the cod stocks on the basis of maximum sustainable yield while maintaining a target fishing mortality of 0.4 on specified age groups.

The regulation is complemented by a system of fishing effort limitation (see EC 43/2009 for latest revision).

ICES has evaluated the management plan and found that all scenarios with the TAC constraints imposed (±20%) show very low probabilities of recovering the stock to Blim by 2015. ICES therefore considers the management plan not to be in accordance with the precautionary approach. If the TAC constraint is taken off, the chances of recovering the stock before 2015 increase significantly, although they remain low.

RECENT MANAGEMENT ADVICE:

ICES has evaluated the long-term management plan and found it not precautionary. Considering the options below, ICES continues to advise on exploitation boundaries in relation to precautionary limits and recommends that the fisheries for cod be closed until an initial recovery of the cod SSB has been proven. Any catches that are taken in 2010 will prolong the recovery to B_{pa}.

Exploitation boundaries in relation to existing management plans:

Given the highly uncertain estimates of fishing mortality resulting from the assessment, and the inability to attribute unaccounted removals from the assessment to fishery catches, non-fishery removals or other causes, it has not been possible to conduct a short-term forecast on the basis of the management plan. Given the stock status it is likely that the stock will fall into the category defined in Article 9.a of the plan which implies a 25% TAC reduction.

Exploitation boundaries in relation to high long-term yield, low risk of depletion of production potential and considering ecosystem effects:

Fishing mortalities between F0.1 and F_{MAX} can be considered as candidate target reference points, consistent with taking high long-term yields and achieving a low risk of depleting the productive potential. The present fishing mortality is uncertain. However, the total mortality in excess of assumed natural mortality is estimated to be well above any candidate reference points for F.

Exploitation boundaries in relation to precautionary considerations:

Given the low stock size and recent poor recruitment, it is not possible to identify any non-zero catch which would be compatible with the precautionary approach.

STECF COMMENTS:

STECF agrees with the ICES advice that on the basis of exploitation boundaries in relation to precautionary considerations, there should be no fishing on Cod in Division VIIa. STECF further notes the considerable problems with the assessment for this stock. STECF believes that the bias and uncertainty in the assessment are being exacerbated by the deterioration in availability and reliability of catch and effort data although the recent implementation of stricter landings enforcement has potentially improved the quality of the landings data from 2006 onwards.

STECF notes that this stock is subject to the provisions of the long-term management plan for cod (Council Regulation (EC) 1342/2008) but also that this plan has been evaluated as not precautionary with respect to the VIIa cod stock.

STECF notes that the stock is ouside safe biological limits and according to the Commissions Communication on Fishing opportunities for 2010 (COM (2009) 224) cod in VIIa can be classified as a category 3 stock. STECF further notes that given the background of the latest scientific assessment and advice and with reference to COM (2009) 224) cod in VIIa can be classified as a category 10 stock.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO THE AGREED MANAGEMENT PLAN (Council Regulation (EC) 1342/2008).

STECF notes that this plan has been evaluated to be inconsistent with the precautionary approach for cod in area VIIa. Nevertheless, STECF notes that according to the agreed management plan the TAC for 2010 should be set at 674 t.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission (COM (2009) 224) on a consultation on fishing opportunities for 2010, STECF notes that cod in VIIa can be classified under Categories 3 and 10.

Accordingly STECF notes that the rules for each of the above categories imply the following options for TACs in 2010.

	2010 TAC	Basis
Category 3	NE*	Outside Safe Biological limits (but STECF unable to advise on TACs linked to forecast F).
Category 10	≤674 t	PA (advice for zero catch), ≥25% reduction in TAC

*NE- not estimable

3.3. Cod (*Gadus morhua*) in areas VIIe-k

FISHERIES: Cod in Divisions VIIe-k are taken as a component of mixed trawl fisheries. Landings are made mainly by French gadoid trawlers, which prior to 1980 were mainly fishing for hake in the Celtic Sea. Landings peaked in 1989 at 20,000 t and have since been maintained at between 3,500 and 13,000 texcept for 2005-06 where landings fell to just above 3,000 t (the lowest level in the time series). All landings are taken by EU fleets.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The advice is based on an age-based assessment using commercial and survey data.

Current management measures for Divisions VIIe–k also apply to cod in Divisions VIIbc and cod in Division VIId. Similarly the TAC is set for Divisions VIIb–k, Subareas VIII, IX, X, and CECAF 34.1.1. Within this larger area there is no control over where the catches are taken.

The assessment area covers Divisions VIIe–k and the ICES advice applies to these areas only, while Cod in Division VIId is assessed together with cod in the North Sea (the assessment of the stock in Division VIId is combined with that of Sub-area IV and IIIa).

The TAC for Division VIIa is based on a separate assessment for that Division and has a separate TAC.

If it is necessary to calculate a TAC for Sub-area VII - excluding Divisions VIIa and VIId - and including Sub-areas VIII, IX and X, then 1,000 t representing the average catches from the non-assessed areas should be added to the proposed TAC for Divisions VIIe–k.

PRECAUTIONARY REFERENCE POINTS: The proposed reference points for fishing mortality and biomass are $F_{pa} = 0.68$, $B_{pa} = 8{,}800$ t.

STOCK STATUS: The available information on landings, cpue, surveys, and stock structure are inadequate to establish reliable assessments and evaluate stock trends. Therefore the state of the stock is unknown and there is no basis for quantitative advice.

The stock is highly dependent on incoming recruitment levels. More than 50% of the stock abundance was composed of age 2 during the last four years. The total mortality estimated from the surveys does not show any trends other than a fluctuation within the span of the uncertainty. Survey data indicate weak year-classes in 2002, 2003, and 2004 in line with the catch data. This was followed by slightly better recruitment in 2005, 2006, and 2007. These are below average compared with the time-series.

RECENT MANAGEMENT ADVICE:

ICES advises on the basis of precautionary considerations that fishing effort and catches should be reduced although it is not possible to determine the appropriate scale of such reduction.

The displacement of effort from areas with existing effort control regimes (Division VIIa, Subareas VI and IV) would have a detrimental effect on measures to reduce the mortality of cod in the Celtic Sea.

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.

This stock has had a truncated age structure observed in the landings over many years. The historical dynamics of Celtic Sea cod have been "recruitment driven", i.e. the stock increased in the past in response to good recruitments and decreased rapidly during times of poor recruitment. Recruitment in recent years appears to be poor. Fishing mortality should be reduced in the longer term to maximize the contributions of recruitment to future SSB and yield and will result in reduced risk to the stock.

STECF COMMENTS:

STECF considers that because there is no quantitative advice and spawning stock biomass in relation to precautionary limits is unknown there is no basis on which to give advice.

STECF **recommends** that given the apparent poor state of the cod stock in VIIe-k and potential displacement of effort from areas with existing effort control regimes a long-term management plan, which includes provision for stock recovery should be developed and implemented.

STECF concludes that with the background of the latest ICES advice and based on the Commissions Communication on Fishing opportunities for 2010 (COM (2009) 224), cod in VIIe-k would be classified as a Category 11 stock. Further, for stocks classified in categories 6 to 9 Annex III of (COM (2009) 224) applies and because an abundance estimate is not available rule 4 of Annex III applies. The fishing opportunities for 2010 for this category is given below.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission (COM (2009) 224) on a consultation on fishing opportunities for 2010, STECF notes that cod in VIIe-k can be classified under Category 11.

Accordingly STECF notes that the rule for this category implies the following for the TAC in 2010.

	2010 TAC	Basis
Category 11	4,183t	No STECF advice, recent catch level (3-year average)

3.4. Haddock (*Melanogrammus aeglefinus*) in Division VIIa (Irish Sea)

FISHERIES: The haddock stock is mainly confined to the western Irish Sea where important mixed-species fisheries for *Nephrops*, whiting and cod take place. A directed fishery developed for haddock during the 1990s. Large catches of haddock are taken in the *Nephrops* fishery during periods of high haddock abundance. A directed fishery for mature haddock in spring, using pelagic trawls and whitefish otter trawls, has been curtailed since 2000 by the cod spawning closure. Fishing effort of these vessels has been redirected to surrounding regions, and some vessels switched to using *Nephrops* trawls to take advantage of the derogation for *Nephrops* fishing during the closure. The current directed fishery for haddock in the Irish Sea is likely to generate by-catches of cod in the same area. Between 1984 and 1995 landings ranged from about 400 t to 1,750 t and then increased to 3,000 t in the late 1990s. Landings have since declined to about 674 t in 2003, remained at that low level until 2006 but rose to approximately 1,000 t in 2007. Official landing reports may substantially underestimate the true removal by the fishery although legislation introduced by the UK and Ireland has potentially improved the quality of landings data in 2006 and 2007.Discard sampling levels have increased in recent years. The highly variable and very large estimates of discarding for this fishery that have been observed previously are still evident.

Due to the by-catch of cod in the haddock fishery, the regulations affecting Division VIIa haddock remain linked to those implemented under the Irish Sea cod recovery plan. The extent to which fishing mortality may have been reduced in 2005 by management measures such as effort limitation and decommissioning of vessels in 2003 could not be reliably evaluated.

SOURCE OF MANAGEMENT ADVICE: The management advisory body is ICES. An assessment was carried out based on survey information only and is considered to be indicative of trends only. Both total mortality and SSB estimates are relative as survey catchabilities at age are not known.
PRECAUTIONARY REFERENCE POINTS: There are no biomass reference points defined for this stock. The proposed precautionary fishing mortality reference point is $F_{pa} = 0.50$.

STOCK STATUS: The state of the stock is uncertain. Stock trends indicate an increase in SSB over the time-series but a decrease in 2008. Recruitment in the last two years appears to be below average. Total mortality appears relatively stable.

As recent levels of catch are uncertain the assessment carried out was based on survey trends and is, consequently, considered to be indicative of trends only. Overall the perception of the stock has not changed since last year's assessment.

- Both total mortality and SSB estimates are relative as survey catchabilities at age are not known.
- Although the relative SSB estimate for 2009 is still above the series average, the SSB is expected to decrease further due to two successive years of below average recruitment. The most recent SSB estimate indicates that the stock has declined since last year.
- The survey estimate of biomass is projected to decline.
- Additional recruitment survey indices indicate that the recruitment estimates for the last two years might be lower than estimated by the current survey based assessment.

RECENT MANAGEMENT ADVICE:

ICES advises on the basis of precautionary considerations that there should be no increase in effort relative to 2009.
Further ICES consider the current TAC management measures as being 'not responsive enough considering the dynamic nature of changes in stock abundance. The TAC has been restrictive in 2007 and became exhausted in the third quarter for some member states. ICES advises no increase in effort. Under the assumption of constant effort, the increase in abundance from 2005-2008 created increased catch opportunities. During this period the TAC remained relatively constant and resulted in increased discarding of older fish (particularly in 2007). The TAC for 2009 was increased based on the increasing trend of stock abundance, in spite of evidence of weaker recruitment and possible decreasing abundance'.

STECF COMMENTS: STECF agrees with the advice from ICES: the state of the stock is uncertain, and, on the basis of precautionary considerations, there should be no increase in effort relative to 2009.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

STECF notes that the background of the latest scientific assessments and advice and with reference to the Communication from the Commission COM (2009) 224 on a consultation on fishing opportunities for 2010, Haddock in Division VIIa can not be classified under any of the categories listed.

3.5. Haddock (*Melanogrammus aeglefinus*) in Division VIIb-k (Celtic Sea and West of Ireland)

FISHERIES: In this area, haddock is taken in mixed fisheries along with cod, whiting, plaice, *Nephrops*, sole and rays. Most catches come from otter trawlers, mainly from France and Ireland. The TAC has not been restrictive for haddock. Landings peaked at about 11,000 t in 1997 and have fluctuated between about 5,000 t and 8,000 t since then. In 2008, total ICES estimated (preliminary) landings amounted to 7,013t from an estimated total catch of 16,467 tonnes.

SOURCE OF MANAGEMENT ADVICE: The management advisory body is ICES.

PRECAUTIONARY REFERENCE POINTS: No fishing mortality or biomass reference points have been established for this stock.

STOCK STATUS: The state of the stock is uncertain.

The new landings, lpue and survey data available for this stock do not change the perception of the stock and do not give reason to change the advice from 2008. The advice for the fishery in 2010 is therefore the same as the advice given in 2008 for the 2009 fishery: *"Future catches and SSB will be highly dependent on the strength of incoming year-classes and their discard mortality. No strong recruitment has been observed since 2002 and estimated recruitment for 2006 is the lowest since 1997. In this context the stock should be managed by ensuring that fishing effort is not allowed to increase."*

Additionally ICES notes that large numbers of haddock under the minimum landing size of 30 cm are caught and discarded. Due to high levels of discarding, the fleets have not been able to benefit from the increased biomass that follows strong recruitment. Catches more than doubled from 2006 to 2008.

RECENT MANAGEMENT ADVICE: The advice is the same as last year: ICES advises, on the basis of precautionary considerations, that there should be no increase in effort relative to 2009. Future catches and SSB will be highly dependent on the strength of incoming year-classes and their discard mortality. No strong recruitment has been observed since 2002 and estimated recruitment for 2006 is the lowest since 1997. In this context the stock should be managed by ensuring that fishing effort is not allowed to increase."

STECF COMMENTS: STECF agrees with the advice given by ICES.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

STECF notes that the background of the latest scientific assessments and advice and with reference to the Communication from the Commission COM (2009) 224 on a consultation on fishing opportunities for 2010, Haddock in Division VIIb-k can not be classified under any category.

3.5.1. Special request on Haddock VII b-k

STECF is requested to explain the statements made on recent recruitment levels. It is not clear whether recruitment trend is good, bad or none of those.

STECF notes that the most recent information on recruitment trends for haddock in Divisions VIIb-k is given in the ICES advice for 2008 (ICES advice 2007, Book V), which indicates that while recruitment appears to have varied over time without any clear trend, recruitment in 2006 is one of the lowest in the time series (1993-2006 inclusive). STECF did not have any data relating to recruitment of haddock in Divisions VIIb-k for years after 2006.

3.6. Saithe (*Pollachius virens*) in Div´s VII, VIII, IX, X

No stock assessment of saithe is conducted in this area.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission (COM (2009) 224) on a consultation on fishing opportunities for 2010, STECF notes that Saithe in Subareas VII, VIII, IX, X can be classified under Category 11.

Accordingly STECF notes that the rules for each of the above category imply the following option for the TACs for 2010.

	2010 TAC	Basis
Category 11	NE*	No STECF advice. Recent catch level with 15% constraint on TAC change

*NE- not estimable

STECF did not have access to information on the recent level of catches for saithe in these areas and is therefore unable to advise on the TAC for saithe in Subareas VII, VIII, IX, X corresponding to the rule for Category 11 stocks.

3.7. Whiting (*Merlangius merlangus*) in VIIa (Irish Sea)

FISHERIES: Whiting is taken mainly as a by-catch in mixed-species otter trawl fisheries for *Nephrops*, cod, and other demersal species. Landings of whiting by all vessels, and discards of whiting estimated for *Nephrops* fisheries, have declined substantially. From 1989 to 2006, reported landings declined from 11,300 t to less than 100 t. Reported landings in 2008 were 80 t. Only EU vessels exploit the stock, with the UK and Ireland accounting for the majority of the landings, with very smaller quantities landed by Belgium and France. Due to the low value of the catch, a high proportion of whiting are discarded. Reports of significant non-reported landings indicate that the current implementation of the TAC system is not able to restrict fishing.

SOURCE OF MANAGEMENT ADVICE: The management advisory body is ICES. The last analytical assessment was undertaken in 2003. Since then analytical assessment has not been possible because of low and unreliable catch figures and because of poor consistency in the survey results.

PRECAUTIONARY REFERENCE POINTS: The proposed precautionary reference points for fishing mortality and biomass are $F_{pa} = 0.65$, $B_{pa} = 7{,}000$ t.

STOCK STATUS Long-term information on the historical yield and catch composition all indicate that the present stock size is low. Survey information indicate a decline in SSB.

RECENT MANAGEMENT ADVICE: On the basis of the stock status ICES advises that catches of whiting in 2010 should be the lowest possible.

The advice on the exploitation of this stock is presented in the context of mixed fisheries in the Irish Sea and is found in Section 3.2.

STECF COMMENTS: STECF agrees with the advice from ICES that catches should be the lowest possible. STECF notes that the high level of discard and non-reported landings indicates that the current TAC and quota system is inefficient in regulating fishing mortality. STECF therefore **recommends** that the TAC system is supplemented with enhanced control measures to reduce unreported landings and measures reducing discards. STECF is currently not in the position to provide advice on concrete measures to reduce discards and **recommends** that such measures are developed in close cooperation between the fishing sector, managers and scientists

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission COM (2009) 224 on a consultation on fishing opportunities for 2010, STECF notes that Whiting in VIIa can be classified under Category 10.

Category 10 STECF advises a reduction to the lowest possible level.

	2010 TAC	Basis
Category 10	≤ 157 t	The TAC should be reduced by at least 25%. Recovery measures should be implemented including effort reductions and introduction of more selective fishing gear

3.8. Whiting (*Merlangius merlangus*) in VIIb-k

There is a mismatch between management area and assessments units. Whiting in VIIe-k is assessed as one stock, VIId whiting are included in the North Sea whiting and whiting from b--c is not included in any assessment.

FISHERIES: Celtic Sea whiting are taken in mixed fisheries along with cod, whiting, hake, *Nephrops*. French trawlers account for about 60% of the total landings, Ireland takes about 30%, and the UK (England and Wales) 7%, while Belgian vessels take less than 1%. Catch levels peaked in the late nineties with over 23,000 t reported by ICES and subsequently declined to less than 10,000 t in 2006. Catches in 2008 were less than 6000t.

There is substantial discarding above the minimum landing size due to economic or other factors.

Management regulations, particularly effort control regimes in other areas (VIIa, VI, & IV), became increasingly restrictive in 2004 and 2005 and resulted in a displacement of effort into the Celtic Sea.

Since 2005, ICES rectangles 30E4, 31E4, and 32E3 have been closed during the first quarter (Council Regulations 27/2005, 51/2006, 41/2007 and 40/2008) with the intention of reducing fishing mortality on cod. The effects of the closure on whiting are not known although there have been spatial and temporal changes in the distribution of effort.

SOURCE OF MANAGEMENT ADVICE: The management advisory body is ICES. Advice is based on an exploratory assessment, which is indicative of trends only. Discarding is considered to be significant and the assessment does not include discard information.

PRECAUTIONARY REFERENCE POINTS: The proposed precautionary reference point for biomass is B_{pa} = 21,000t. No precautionary reference point for fishing mortality has been proposed for whiting in VIIb-k.

STOCK STATUS: The available information is inadequate to evaluate the spawning stock in relation to precautionary approach reference points. The stock is estimated to have declined in recent years as the strong 1999 year-class passed through the fishery. There are some indications that recent recruitment has been stable at low levels. Fishing mortality was very high during the 1980s and decreased in the early 1990s; the estimates of recent fishing mortality are variable.

RECENT MANAGEMENT ADVICE:

The new exploratory assessment available for this stock does not change the perception of the stock and does not give reason to change the advice from 2008.

The advice on this stock for the fishery in 2010 is therefore the same as the advice given in 2008 for the 2009 fishery: *"The current estimates of fishing mortality and SSB are uncertain, but SSB shows a decreasing trend while recruitment has been low in recent years, although the 2007 year-class is above average, and the 2008 year-class may be very strong. In order to reverse the trend in SSB, ICES considers that fishing mortality should be reduced. However, ICES cannot quantify the required reduction in fishing mortality."*

STECF COMMENTS: STECF agrees with the advice from ICES that fishing mortality should be reduced.

In addition STECF notes that (according to ICES) surveys indicate the 2007 and 2008 year-classes may be strong and therefore management measures should be introduced in the Celtic Sea to reduce discarding of these year-classes in order to maximize its contribution to future yield and SSB.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission COM (2009) 224 on a consultation on fishing opportunities for 2010, STECF notes that Whiting in VII b-k can be classified under Category 7.

Category 7 State of the stock not known precisely and STECF to reduce fishing effort.

Accordingly STECF notes that the rule for the above category implies the following option for TACs in 2010.

	2010 TAC	Basis
Category 7	14,410t	State of the stock is unknown, reduce fishing mortality, 15% reduction in TAC

3.9. Anglerfish (*Lophius piscatorius & Lophius budegassa*) in Div. VII

Anglerfish within the two management areas VII and VIII a,b,d,e are assessed together and comprise of two species (*Lophius piscatorius & Lophius budegassa*) which are not always separated for market purposes. The management area for this stock also includes the Irish Sea (VIIa) where catches since 1995 have been between about 300t and 1,300 t, (330 t officially reported in 2007). These catches are not included in the assessment.

FISHERIES: The trawl fishery for anglerfish in the Celtic Sea and Bay of Biscay developed in the 1970s. Anglerfish are also taken as a by-catch in other demersal fisheries in the area. Landings of both species have fluctuated over the last 20 years. Landings of *L. piscatorius* have declined steadily from 23 700 t in 1986 to 12 800 t in 1992, then increased to 22 100 t in 1996 and declined to 14 900 t in 2000. The landings have increased since then reaching the maximum of the time series in 2007 (29 700 t). In 2008, landings were 24,600t. Landings of *L. budegassa* have fluctuated all over the studied period between 5 700 t to 9 600 t with a succession of high (1989-1992, 1998 and 2003) and low values (1987, 1994 and 2001). The total estimated landings for 2008 is 7,500 t.

SOURCE OF MANAGEMENT ADVICE: The management advisory body is ICES. Lacking an analytical assessment the advice is based on survey data and catch information.

PRECAUTIONARY REFERENCE POINTS As a consequence of recently identified problems with growth estimates, previous reference points are not considered to be valid. Reference points will have to be redefined based on an approved analytical assessment**.**

STOCK STATUS:

Lophius piscatorius

The state of the stock is unknown. It has not been possible to quantify SSB, fishing mortality, and recruitment for this stock. However, survey data (biomass and abundance indices, length distribution) give indication that the biomass has been increasing as a consequence of the good recruitment observed in 2001, 2002, and 2004 and has stabilized in recent years. There are evidences of good recruitment in 2008.

Lophius budegassa

The state of the stock is unknown. It has not been possible to quantify SSB, fishing mortality, and recruitment for this stock. However, survey data give indication that the biomass has shown a continuous increase since the mid-2000s as a consequence of several good incoming recruitments. There is good evidence of a strong incoming recruitment from 2008 data.

RECENT MANAGEMENT ADVICE: ICES advises on the basis of precautionary considerations that the effort in fisheries that catch anglerfish should not be allowed to increase

STECF COMMENTS: STECF agrees with the advice from ICES. STECF notes that ICES advice is based on recent effort due to concerns about the accuracy of landings in recent years and increased discarding rates

The management area for this stock also includes the Irish Sea (VIIa) but the catches of the Irish Sea are not included in the assessment.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

STECF notes that the background of the latest scientific assessments and advice and with reference to the Communication from the Commission COM (2009) 224 on a consultation on fishing opportunities for 2010, Anglerfish in Division VII can not be classified under any of the categories listed..

3.10. Megrim (*Lepidorhombus whiffiagonis and Lepidorhombus boscii*) in VII and VIIIabde.

Megrim in management areas VII and VIIIabde are assessed as a single stock.

FISHERIES: Megrim to the west of Ireland and Britain and in the Bay of Biscay are caught predominantly by Spanish and French vessels, which together have reported more than 60% of the total international landings, and by Irish and UK demersal trawlers. Megrim is mostly taken in mixed fisheries for hake, anglerfish, *Nephrops*, cod, and whiting. Over the period 1984 to 2003, annual catches as estimated by ICES have been between 15,500 t t to 21,800 t. In 2005 and 2006, catches dropped to 14,500 t. In 2007, catches were at 15,600 t. In 2008, catches decreased again to 12,700 t. Discards have been estimated to vary between 1,100 t and 5,400 t.

SOURCE OF MANAGEMENT ADVICE: The management advisory body is ICES.

PRECAUTIONARY REFERENCE POINTS: The proposed precautionary reference points for fishing mortality and biomass are F_{pa} = 0.30, B_{pa} = 55,000 t.

STOCK STATUS: The state of the stock is unknown. It has not been possible to quantify SSB, fishing mortality, and recruitment for this stock. However, surveys and commercial data indicate that the stock has been rather stable over the time-series.

RECENT MANAGEMENT ADVICE: ICES advises on the basis of exploitation boundaries in relation to precautionary considerations that there should be no increase in effort of fisheries that catch L. whiffiagonis in 2010

STECF COMMENTS: STECF agrees with the ICES advice.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

STECF notes that the background of the latest scientific assessments and advice and with reference to the Communication from the Commission COM (2009) 224 on a consultation on fishing opportunities for 2010, Megrim in Division VII can not be classified under any of the categories listed.

3.11. Megrim (*Lepidorhombus whiffiagonis and Lepidorhombus boscii*) in VIIb-k and VIIIa,b,d.

The stocks summary for megrim in Divisions VIIb-k and VIIIa,b,d are given in Section 3.10.

3.12. Plaice (*Pleuronectes platessa*) in Division VIIa (Irish Sea)

FISHERIES: Plaice are taken mainly in long-established UK and Irish otter trawl fisheries for demersal fish. They are also taken as a by-catch in the beam trawl fishery for sole. The main fishery is concentrated in the northeast Irish Sea. Catches are predominantly taken by the UK, Belgium and Ireland, with smaller catches by France and at the end of the 1990s by The Netherlands. Landings were sustained between 2,900 t and 5,100 t from 1964-1986. Landings declined from the 1987 peak of 6,200 t to between 1,100-1,500 t from 1999-2005, well below the agreed TAC. Landings in 2008 are the lowest in the time series at 534 t.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The advice is based on an age-based assessment using commercial landings data and three scientific surveys.

PRECAUTIONARY REFERENCE POINTS: The proposed precautionary reference points for fishing mortality and biomass are $F_{pa} = 0.45$, $B_{pa} = 3{,}100$ t.

STOCK STATUS: Based on the most recent estimate of SSB (in 2009) and fishing mortality (in 2008), ICES classifies the stock as having full reproductive capacity and being harvested sustainably. The SSB in 2009 was well above $\mathbf{B}_{pa}$. Fishing mortality on this stock has been declining since the late 1980's and has been below $\mathbf{F}_{pa}$ since 1998.

RECENT MANAGEMENT ADVICE:

ICES advises on the basis of high long-term yield that catches should not exceed 1,627t in 2010

STECF COMMENTS: STECF agrees with the advice for VIIa plaice.

STECF notes that the assessment is based on catch-at-age analysis with CPUE series from both commercial fleets and surveys, but no discard information is included.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission COM (2009) 224 on a consultation on fishing opportunities for 2010, STECF notes that Plaice in Division VIIa can be classified under Category 1.

Accordingly STECF notes that the rule for the above category implies the following options for TACs in 2010.

	2010 TAC	Basis
Category 1	1,627t	Stock exploited at maximum sustainable yield

3.13. Plaice (*Pleuronectes platessa*) in the Celtic Sea (Divisions VIIf and g)

FISHERIES: The fishery for Celtic Sea plaice involves vessels from France, Belgium, England and Wales and Ireland. In the 1970s, the VIIfg plaice fishery was mainly carried out by Belgian beam trawlers and Belgian and UK otter trawlers. Effort in the UK and Belgian beam-trawl fleets increased in the late 1980s but has since declined. Recently, many otter trawlers have been replaced by beam trawlers, which target sole. Landings increased in the late eighties to its record high (2100t) and have declined since.

Currently the main fishery occurs in the spawning area off the north Cornish coast, at depths greater than 40 m, about 20 to 25 miles offshore. Although plaice are taken throughout the year, the larger landings occur during

February–March after the peak of spawning, and again in September. Recent increases in fuel costs are thought to have restricted the range of some fleets and may have resulted in a reduction in effort in Divisions VIIf,g.

Since 2000 the estimated landings have been below the TACs, and lowest catch levels of 389 t were recorded in 2005. Nevertheless, according to the catch forecast the predicted landings in 2009 (at status quo fishing mortality) are 36% higher than the agreed TAC for 2009.

Plaice in the Bristol Channel and Celtic Sea (ICES Divisions VIIf and VIIg) is managed by TAC and technical measures. Technical measures in force for this stock are minimum mesh sizes, minimum landing size, and restricted areas for certain classes of vessels. Technical regulations regarding allowable mesh sizes for specific target species, and associated minimum landing sizes, came into force on 1 January 2000. The minimum landing size for plaice in Divisions VIIf,g is 27 cm.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The assessment is based on landings, one survey index, and two commercial CPUE series. There is a retrospective bias of overestimation of SSB and underestimation of fishing mortality. Recent forecasts for this stock have been overly optimistic.

PRECAUTIONARY REFERENCE POINTS: The proposed precautionary reference points for fishing mortality and biomass are F_{pa} = not defined, B_{pa} = 1,800 t.

STOCK STATUS: Based on the most recent estimates of SSB (in 2009), ICES classifies the stock as having reduced reproductive capacity. SSB peaked in 1988–1990, following a series of good year-classes, then declined rapidly and has since 2002 been below or around Blim. Fishing mortality has fluctuated around an average level (0.60) for the entire time-series but has declined since 2004. Recruitment was relatively high in most years during the 1980s, but has been lower since then. Some very weak year-classes have occurred since the late 1990s.

RECENT MANAGEMENT ADVICE:

ICES advises on the basis of exploitation boundaries in relation to precautionary considerations that a 50% reduction in F is needed to increase SSB to around B_{pa} in 2011. This corresponds to landings of less than 330t in 2010.

Exploitation boundaries in relation to high long-term yield, low risk of depletion of production potential and considering ecosystem effects:The current fishing mortality (2008) is estimated at 0.37, which is above the range that would lead to high long-term yields and low risk of stock depletion.

Exploitation boundaries in relation to precautionary considerations*:* A 50% reduction in F is needed to increase SSB to around B_{pa} in 2011. This corresponds to landings of less than 330 t in 2010.

Since 2005, ICES rectangles 30E4, 31E4, and 32E3 have been closed during the first quarter (Council Regulations 27/2005, 51/2006, and 41/2007) with the intention of reducing fishing mortality on cod. There is evidence that this closure has redistributed effort to other areas. Fishing mortality has decreased since 2005, and the closure may have been one of the contributing factors

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 should 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.

STECF COMMENTS: STECF agrees with the ICES advice.

Furthermore, STECF notes that adopting a target F in the range F=0.14 to F=0.28 for Celtic Sea plaice is desirable whilst also take into account the interactions with Celtic Sea sole.

Discard rates are believed to be high for this stock and their non-inclusion in the analysis may represent a major deficiency in the assessment, particularly if there have been changes in discarding practices over time.
The high level of discarding indicated in this mixed fishery would suggest a mis-match between the mesh size employed and the size of the fish landed. Increases in the mesh size of the gear should result in fewer discards and, ultimately, 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.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission COM (2009) 224 on a consultation on fishing opportunities for 2010, STECF notes that Plaice in Divisions VIIfg can be classified under Category 3.

Accordingly STECF notes that the rule for the above category implies the following options for TACs in 2010.

	2010 TAC	Basis
Category 3	450 t	Aim to set the TAC to the forecast cast that will result in a 30% reduction in fishing mortality rate, but do not reduce the TAC by more than 20% as long as fishing mortality will not increase. Limiting landings in 2010 450 t.

3.14. Plaice (*Pleuronectes platessa*) in Divisions VIIe (Western English Channel)

FISHERIES: The fisheries taking plaice in the Western Channel mainly involve vessels from the bordering countries: the total landings (2008) are split among UK vessels (80%), France (12%), and Belgium (8%). Landings of plaice in the Western Channel were low and stable between 1950 and the mid-1970s, and increased rapidly during 1976 to 1988 as beam trawls began to replace otter trawls, although plaice are taken mainly as a by-catch in beam-trawling directed at sole and anglerfish. Estimated landings have been fairly stable since 1994. Landings decreased in 2008 (974 t.) to a similar low level as in the late-1970s. The main fishery is south and west of Start Point. Although plaice are taken throughout the year, the larger landings are made during February, March, October, and November

The TAC for plaice in the English Channel is set for Divisions VIId,e combined.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The advice is based on an age-based assessment using commercial and survey data.

PRECAUTIONARY REFERENCE POINTS: The proposed precautionary reference points for fishing mortality and biomass are F_{pa} = 0.45, B_{pa} = 2,500t.

STOCK STATUS: Based on the most recent estimate of SSB (in 2009) ICES classifies this stock as being at risk of reduced reproductive capacity. SSB has been declining since 2000 and is now close to Blim. Based on the most recent estimate of F (in 2008) ICES classifies this stock as being at risk of being harvested unsustainably. Fishing mortality has shown an increase in recent years but this may be due to the retrospective bias. Fishing mortality remained above F_{pa} since the late 1980s

RECENT MANAGEMENT ADVICE:

ICES advises on the basis of exploitation boundaries in relation to precautionary limits. This corresponds to a substantial reduction in catch until SSB is above B_{pa} or other strong evidence of rebuilding is observed.

Other considerations:

Exploitation boundaries in relation to high long-term yield, low risk of depletion of production potential and considering ecosystem effects: Fishing mortalities in the range of F0.1 = 0.12 to F_{MAX} = 0.26 can be considered as candidate target reference points, which are consistent with taking high long-term yields and achieving a low risk of depleting the productive potential. The recent fishing mortality is well above these potential fishing mortality targets.

Exploitation boundaries in relation to precautionary limits: Given the low stock size, recent poor recruitment, high fishing mortality, the uncertainty in the assessment, and the inability to reliably forecast catch, ICES recommends a substantial reduction in catch until the estimate of SSB is above B_{pa} or other strong evidence of rebuilding is observed.

STECF COMMENTS: STECF agrees with the advice from ICES.

STECF notes that plaice in VIId and VIIe are managed by a joint TAC and that the advice from ICES is radically different for the two stock components. “No increase above the average of landings from the last three years (2006–2008), corresponding to landings less than 3 500 t” for plaice in VIId and “a substantial reduction in catches” for plaice in VIIe.

STECF also notes that the advice, based on exploitation boundaries in relation to precautionary limits requires a substantial reduction in catches whereas application of the appropriate rule in the Communication from the Commission (COM (2009) 224) does require a reduction in TAC of 15% according to category 9 rule 2.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission (COM (2009) 224) on a consultation on fishing opportunities for 2010, STECF notes that plaice in subarea VIIe can be classified under Category 9 rule 2.

Accordingly STECF notes that the rules for the above category imply the following option for TACs in 2010.

	2010 VIIe TAC component	Basis
Category 9	978 t	State of stock not known precisely and STECF advices the stock is decreasing

STECF further notes that the result of applying the rules of Annex II of COM (2009) 224 to both separate components result in a joint TAC for plaice in VIIde of 3,500 t + 987 t = 4,478 t. (See also section 1.26)

3.15. Plaice (*Pleuronectes platessa*) in VIIhjk

FISHERIES: Ireland, UK, France and Belgium are the major participants in this fishery. Plaice are predominantly caught within mixed species otter trawl fisheries in Division VIIj.

Official landings have declined from 790 t in 1998 to 135 t in 2008.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The assessment for this stock in 2002 was preliminary. In 2007 the data were screened and updated but no new analytical assessment was carried out.

PRECAUTIONARY REFERENCE POINTS: No precautionary reference points have been proposed for this stock.

STOCK STATUS: The available information is inadequate to evaluate the state of the stock. Landings have decreased continuously since the beginning of the time-series. However, the new data available do not change the perception of the stock and do not give reason to change the advice from 2007.

RECENT MANAGEMENT ADVICE: The new data available for this stock (landing and sampling) do not change the perception of the stock. Based on precautionary approach and considering that exploratory estimates suggest that the current fishing mortality is greater than F_{MAX},

"ICES advice that there should be a reduction in catches in 2010 until there is more information to facilitate an adequate assessment."

STECF COMMENTS: STECF agrees with the ICES advice. However since current F is estimated to be above F_{MAX}, it is likely that a reduction in fishing mortality is required to achieve MSY. STECF therefore advises that fishing effort on plaice in Divisions VIIh-k should be reduced.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission (COM (2009) 224) on a consultation on fishing opportunities for 2010, STECF notes that plaice in subarea VIIh-k can be classified under Category 7.

2010 TAC	Basis	
Category 7	218t	State of the stock unknown advice for effort reduction, Annex III, Rule 1

3.16. Plaice (*Pleuronectes platessa*) in Division VIIbc

FISHERIES: Ireland is the major participant in this fishery with around 90% of the international landings between 1993-2006. Plaice are normally caught in mixed species otter trawl fisheries in Division VIIb. These vessels mainly target other demersal fish species and *Nephrops*. Official landings have declined from 251t in 1996 to 30t in 2007.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES.

PRECAUTIONARY REFERENCE POINTS: No fishing mortality or biomass reference points are defined for this stock.

STOCK STATUS: The available information is inadequate to evaluate the state of the stock. Landings show a declining trend in recent years with a record low of 30t in 2006, rising to 35t in 2008. The new data available do not change the perception of the stock and do not give reason to change the advice from 2007.

RECENT MANAGEMENT ADVICE:

The available information is insufficient to evaluate stock trends. However, exploratory estimates of mortality suggest that the current fishing mortality is greater than F_{MAX}. This together with a reduction in recent landings leads to an advice to reduce TAC to recent average landings (2006-2008) of less than 33 t.

STECF COMMENTS: STECF agrees with the advice from ICES. The exploitation of this stock should be conducted in the context of mixed fisheries protecting stocks outside safe biological limits.

STECF notes that the proposed TAC is unlikely to constrain the fishery as the landings in recent years are below the advised landings and agreed TAC's.

However since current F is estimated to be above F_{MAX}, it is likely that a reduction in fishing mortality is required to achieve MSY. STECF therefore advises that fishing effort on plaice in Divisions VIIb,c should be reduced.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission (COM (2009) 224) on a consultation on fishing opportunities for 2010, STECF notes that plaice in subarea VIIb,c can be classified under Category 7.

Accordingly STECF notes that the rule for the above category implies the following option for TACs in 2010.

	2010 TAC	Basis
Category 6	80 t	State of the stock not known, advice for effort reduction, Annex III rule 1

3.17. Sole (*Solea solea*) in Division VIIa (Irish Sea)

FISHERY: Sole are taken mainly in a beam trawl fishery that commenced in the 1960s and are also taken as a by-catch in the long established otter trawl fisheries. Effort in the Belgian beam trawl fleet increased in the late 1980s as vessels normally operating in the North Sea were attracted into the Irish Sea by better fishing opportunities. In recent years, however, catch rates of sole have been low in the Irish Sea, and part of the beam trawl fleet has moved to other sole fishing grounds. Over the last 30 years, the total landings have been in the order of 1,000 t to 2,000 t. Landings in 2006, 2007 and 2008 were 570 t and 490 t and 330t respectively.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The advice is based on an age-based assessment which uses commercial landings data and two scientific surveys.

PRECAUTIONARY REFERENCE POINTS: The proposed precautionary reference points for fishing mortality and biomass are $F_{pa} = 0.30$, $B_{pa} = 3{,}100$ t. The biomass reference point was revised in 2007 as the SSB estimates have been rescaled.

STOCK STATUS: Based on the most recent estimates of SSB (in 2009) and fishing mortality (in 2008), ICES classifies the stock as suffering reduced reproductive capacity and at risk of being harvested unsustainably. SSB has declined since 2001 to low levels and reached the lowest level in 2008. Fishing mortality has been close to or above F_{lim} throughout most of the time-series. Fishing mortality has decreased in recent years and is estimated to be just above F_{pa} in 2008. Recent recruitment levels have been lower than earlier in the time-series, with the last three years of recruitment being the lowest in the series.

RECENT MANAGEMENT ADVICE:

ICES advises on the basis of exploitation boundaries in relation to precautionary limits that no fishing of sole should take place in the Irish Sea in 2010.

Other considerations:

Exploitation boundaries in relation to high long-term yield, low risk of depletion of production potential and considering ecosystem effects: Fishing mortality is estimated to be above $F_{0.1}$ -F_{pa} (0.15-0.30).

Exploitation boundaries in relation to precautionary limits: Given the low SSB and low recruitment since 2000, it is not possible to identify any non-zero catch, which would be compatible with the precautionary approach. ICES recommends a closure of the fishery in 2010 and a recovery plan should be developed and implemented as a prerequisite to reopening the fishery.

STECF COMMENTS: STECF agrees with the ICES advice for VIIa sole.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission (COM (2009) 224) on a consultation on fishing opportunities for 2010, STECF notes that Sole in Division VIIa can be classified under Category 10.

Category 10 STECF advises a zero catch, a reduction to the lowest possible level or similar advice.

Accordingly STECF notes that the rules for the above category implies the following option for TACs in 2010.

	2010 TAC	Basis
Category 10	≤ 377 t	The TAC should be reduced by at least 25%. Recovery measures should be implemented including effort reductions and introduction of more selective fishing gear

3.18. Sole (*Solea solea*) in Divisions VIIf,g (Celtic Sea)

FISHERIES: The sole fishery is concentrated on the north Cornish coast off Trevose Head and around Lands End. Reported landings have generally declined since the mid 1980s, up to 1998. Since then they increased to around 1,300 t in the early 2000's. Landings in 2008 were 800 t.

Sole are taken mainly in a beam trawl fishery that started in the early 1960s and, to a lesser extent, in the longer established otter trawl fisheries. In the beam trawl fishery sole is mainly taken as part of a mixed demersal fishery with plaice and, to a lesser extent, cod. Both of the latter stocks require a reduction in fishing mortality.

In the 1970s, the fishery was mainly carried out by Belgian beam trawlers and Belgian and UK otter trawlers. The use of beam trawls (to target sole and plaice) increased during the mid-1970s, and the Belgian otter trawlers have now been almost entirely replaced by beam trawlers. Effort in the Belgium beam trawl fleet increased in the late 1980s as vessels normally operating in the North Sea were attracted to the west by improved fishing opportunities. Beam trawling by UK vessels increased substantially from 1986, reaching a peak in 1990 and decreasing thereafter. In the Celtic Sea, the beam and otter trawl fleets also take other demersal species such as plaice, cod, rays, brill, turbot, and anglerfish.

Currently the fisheries for sole in the Celtic Sea and Bristol Channel involve vessels from Belgium, taking around 65%, the UK around 25%, France around 5% and Ireland also around 5% of the total landings.

The Celtic Sea is an area without days-at-sea limitations for demersal fisheries. In the past this has resulted in increased effort in the Celtic Sea as a direct result of restrictive effort in other areas. This was particularly the case in 2004–2005 when effort in the sole fishery increased because of restrictive days at sea in the eastern channel (Division VIId).

SOURCE OF MANAGEMENT ADVICE: The advice is based on an analytical age-based assessment using landings, two commercial cpue series, and one survey index.

PRECAUTIONARY REFERENCE POINTS: The proposed precautionary reference points for fishing mortality and biomass are F_{pa} = 0.37, proposed B_{pa} = 2,200 t. There are no specific management objectives for this stock.

STOCK STATUS: Based on the most recent estimates of SSB and fishing mortality, ICES classifies the stock as having full reproductive capacity and being harvested sustainably. The most recent estimate of fishing mortality is slightly above F_{MAX}. The 2007 year-class is estimated to be strong.

RECENT MANAGEMENT ADVICE:

ICES advises that there is no long-term gain in yield to increase fishing mortality. ICES therefore recommends limiting landings in 2010 to no more than 920t.

Other considerations:

Exploitation boundaries in relation to high long-term yield, low risk of depletion of production potential and considering ecosystem effects: The current fishing mortality (2008) is estimated to be 0.27, which is slightly above the rate expected to lead to high long-term yields and low risk of stock depletion.

Exploitation boundaries in relation to precautionary limits: F should be kept below F_{pa}, corresponding to landings of less than 1185 tonnes in 2010. This is expected to keep the stock above B_{pa}.

Comparison with previous assessment and advice: The general trends in the estimates of the stock numbers, fishing mortality, and recruitment are similar to those of the previous assessment. The current assessment has revised the value of SSB in 2007 upwards by 5%. The perception of the fishing mortality in 2007 was revised downwards by 7%. Recruitment in 2007 was revised downwards by 40%.

The advice last year was based on no increase in F because there is no long-term gain in increasing fishing mortality. The basis for the advice this year is the same.

Regulations and their effects: Since 2005, ICES rectangles 30E4, 31E4, and 32E3 have been closed during the first quarter (Council Regulations 27/2005, 51/2006, 41/2007 and 40/2008) with the intention of reducing fishing mortality on cod. The effects of the closure on sole are not known although there have been spatial and temporal changes in the distribution of effort.

Changes in fishing technology and fishing patterns

Beam trawlers account for the majority of the vessels targeting sole. High fuel costs contributed to a reduction in effort in Division VIIf,g in 2008. In addition, several vessels of this fleet segment are developing methods to reduce fuel costs.

STECF COMMENTS: STECF agrees with the advice from ICES.

STECF notes that effort restrictions are in place for many areas but not in the Celtic Sea, which makes the latter vulnerable to unrestricted increases in effort. This is undesirable where stocks are already overexploited.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission (COM (2009) 224 on a consultation on fishing opportunities for 2010, STECF notes that Sole in VIIfg can be classified under Category 2.

Accordingly STECF notes that the rules for the above category implies the following options for TACs in 2010.

	2010 TAC	Basis
Category 2	920t	Overexploited compared to F_{msy} but inside safe biological limits

3.19. Sole (*Solea solea*) in Division VIIe (Western English Channel).

FISHERIES: Total landings reached a peak in the early 1980s, initially because of high recruitment in the late 1970s and later because of an increase in exploitation. In recent years, English vessels have accounted for around 60% of the total landings, with France taking approximately a third, and Belgian vessels the remainder. UK landings were low and stable between 1950 and the mid-1970s, but increased rapidly after 1978 due to the replacement of otter trawlers by beam trawlers.

Sole are widespread and usually taken in conjunction with other species to varying degrees, dependent on location and season. The most productive sole fishery grounds are located close to ports, while the highest catches of anglerfish for example are taken further south and west in Division VIIe.

The principal gears used are otter-trawls and beam-trawls, and sole tends to be the target species of an offshore beam-trawl fleet, which is concentrated off the south Cornish coast and also catches plaice and anglerfish. The

total landings have been stable over 1991-1999 and amounts to around 900 t. Since 2000, landings have been around 1,050 with the 2008 landings of 904 t.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. Analytical assessment based on landings, survey and commercial CPUE data.

PRECAUTIONARY REFERENCE POINTS: There are no proposed precautionary reference points for this stock but an EC multiannual plan has been implemented (Council Regulation (EC) 509/2007 of 7 May 2007)

STOCK STATUS: Precautionary reference points established in 2001 for this stock are no longer valid and there is no accepted assessment.

Survey, lpue, and the exploratory assessment suggest low stock size and high fishing mortality relative to historic estimates.

MANAGEMENT AGREEMENT: Council Regulation (EC) No. 509/2007 establishes a multi-annual plan for the sustainable exploitation of Division VIIe sole. The management plan adopted to reduce fishing mortality and increase SSB in this stock cannot be evaluated in the absence of a full analytical assessment or biological reference points.

RECENT MANAGEMENT ADVICE:

ICES advises on the basis of exploitation boundaries in relation to precautionary considerations that fishing effort and catches should be reduced, although it is not possible to determine the appropriate scale of such reductions.

STECF COMMENTS: STECF agrees with the advice from ICES. STECF notes current F is well above sustainable levels and that in order to reduce fishing mortality a reduction in effort is required rather than TAC controls alone. This advice for a reduction in fishing mortality for sole in VIIe is inconsistent with the advice for plaice in this area which is for a substantial reduction in catch of plaice.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO THE AGREED MANAGEMENT PLAN (Council Regulation (EC) 509/2007.

STECF notes that this plan has not yet been evaluated or the evaluation was inconclusive with respect to the precautionary approach. In the absence of any estimate of the recent level of fishing mortality or stock size STECF is unable to estimate the catch that corresponds to the management plan harvest rule.

3.20. Demersal elasmobranches in the Celtic and Irish Seas

Previous stock summaries and advice on demersal elasmobranchs has been provided at the NE Atlantic regional level and at present, STECF is unable to provide additional information and advice for demersal elasmobranchs in the Celtic and Irish Seas. Furthermore, ICES has not issued any new advice since 2008. The most recent advice for demersal elasmobranchs in the Celtic and Irish Seas was provided by STECF in its consolidated review of advice for 2009 and is reproduced in Sections 6.1 and 6.6 of this report. In view of this, STECF has not attempted to categorise these resources according to the Communication on Fishing opportunities for 2010 (COM (2009) 224).

3.21. Herring (*Clupea harengus*) in the Irish Sea (Division VIIa)

FISHERIES: This fishery is mainly exploited by the UK with Ireland taking a small proportion of the catches in some years. Since 1987 the landings have fluctuated between about 2,000 t and 10,000 t. Catches in 2008 were 4,900 t which is slightly higher than 2007 when 4,600 t were landed. Since 2002 the agreed TAC has been 4,800 t.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The exploratory assessment of the stock is based on survey data and catch-at-age data. The assessment is not considered accurate with respect to recent F and SSB, but it is indicative of trends and levels in the past.

PRECAUTIONARY REFERENCE POINTS: The proposed precautionary reference point for biomass is $\mathbf{B}_{pa}$ = 9,500 t, B_{lim} = 6,000 t. $\mathbf{F}_{pa}$ is not defined.

STOCK STATUS: Based on the most recent estimates of SSB and fishing mortality ICES classifies the state of the stock as uncertain. SSB is unknown but thought to be stable at a low level. It seems likely that the stock has been relatively stable for the last 10 years.

RECENT MANAGEMENT ADVICE:

The new landings and survey data available for this stock do not change the perception of the stock and do not give reason to change the advice from 2008. The advice for the fishery in 2010 is therefore the same as the advice given for the 2009 fishery: *"SSB is unknown but thought to be stable at a low level. The recent TACs do not appear to have been detrimental to the stock".*

Other considerations:

In addition, ICES offers the following consideration: The stock identity is complex as the juveniles mix with those of the Celtic Sea and the adults migrate from the Irish Sea after spawning. The stock identity has been reviewed by an EU-funded project WESTHER. Therefore, the assessment and advisory framework for this stock is currently being reviewed. Results of this work are expected to be available for the ICES advice in 2010.

This advice will be updated in 2011.

STECF COMMENTS: STECF notes that the state of the stock is not known precisely. It notes the advice from ICES, which it interprets as meaning that catches in 2010 should not exceed 4,800 t. However STECF suggests the TAC should be reduced by not more than 15% leading to catches of 4080t in 2010.

STECF notes the ICES consideration regarding the results of the EU-funded project WESTHER which have shown that the herring populations in this area and in VIaS, VIIb,c, and VIaN form a metapopulation. In 2008 ICES began to evaluate management for this metapopulation. In the meantime, each population will continue to be managed separately.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission COM (2009) 224 on a consultation on fishing opportunities for 2010, STECF notes that Herring in Division VIIa can be classified under Category 6.

Accordingly STECF notes that the rule for the above category implies the following option for TACs in 2010.

	2010 TAC	Basis
Category 6	4,800t	State of the stock is not known, advice on appropriate catch level

3.22. Herring (*Clupea harengus*) in the Celtic Sea (VIIg and VIIa South), and in VIIj Division VIIg,h,j,,k

FISHERIES: France, Germany, Ireland, Netherlands and UK have participated in the herring fisheries in this area. However in recent years the fishery has mainly been exploited by Irish vessels and Ireland has been allocated nearly 90% of the overall quota. Until the late nineties, landings fluctuated between about 19,000 and 23,600 t. From 1998 to 2008, landings decreased from 20,300 to just above 6800 t. The fishery exploits a stock, which is considered to consist of two spawning components (autumn and winter). The stock is exploited by two types of vessels, larger boats with Refrigerated Sea Water (RSW) storage, and smaller dry hold vessels. The smaller vessels are confined to the spawning grounds (VIIaS and VIIg) during the winter period. The RSW vessels target the stock inshore in winter and offshore during the summer feeding phase (VIIg). The number of vessels participating in the fishery has decreased in recent years. However, efficiency has increased, especially in the RSW vessels. An increasing proportion of the catch is now being taken by RSW vessels and lower amounts by dry-hold vessels. There has been little fishing in VIIj in recent seasons, and there is evidence that stock abundance in this area is currently low.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The current management regime has resulted in catch data, which are thought to be reasonably reliable in recent years. The assessment is based on catch-at-age data and acoustic survey data. There is no recruitment index available for this stock. There was no quantitative assessment in 2008. Hence, the levels of SSB and F in the most recent year are indicative of trends only. However, it is clear that there are low abundances of older fish both in the catches and the population. Also, it is clear that SSB has declined since the mid-1990s. In a fishery that is based on only

a few age classes, this is a cause for concern as there may be a high risk to the reproductive capacity of the stock from such a series of events.

PRECAUTIONARY REFERENCE POINTS: The proposed precautionary reference point for biomass is $\mathbf{B}_{pa}$ = 44,000 t, B_{lim}=26,000 t No precautionary fishing mortality reference point has been defined. F_{mgt} has been set at 0.19 in the management plan.

STOCK STATUS: The stock SSB is increasing and based on the most recent estimates (in 2008/2009) ICES classifies the stock as having full reproductive capacity. An analytical assessment demonstrates that F in 2008/2009 has substantially reduced to the lowest rate in 45 years, and is below $F_{0.1}$. There is evidence of two good recruitments and three poor recruitments in recent years.

MANAGEMENT AGREEMENT:

The Irish Celtic Sea Herring Management Advisory Committee was established to manage the Irish fishery for this herring stock. This Committee manages the Irish quota and implements measures in addition to the EU regulations. The committee proposed a rebuilding plan in 2008. The TAC for 2009 was set by the Council accordingly. This plan has not been formally agreed yet and implies fishing at $F_{0.1}$ (In 2007: 0.19, in 2008/2009=0.17).

Rebuilding Plan Proposed by the Celtic Sea Management Advisory Committee, Ireland, for this stock.

1. For 2009, the TAC shall be reduced by 25% relative to the current year (2008).
2. In 2010 and subsequent years, the TAC shall be set equal to a fishing mortality of $F_{0.1}$.
3. If, in the opinion of ICES and STECF, the catch should be reduced to the lowest possible level, the TAC for the following year will be reduced by 25%.
4. Division VIIaS will be closed to herring fishing for 2009, 2010 and 2011.
5. A small-scale sentinel fishery will be permitted in the closed area, Division VIIaS. This fishery shall be confined to vessels, of no more than 65 feet length. A maximum catch limitation of 8% of the Irish quota shall be exclusively allocated to this sentinel fishery.
6. Every three years from the date of entry into force of this Regulation, the Commission shall request ICES and STECF to evaluate the progress of this rebuilding plan.
7. When the SSB is deemed to have recovered to a size equal to or greater than B_{pa} in three consecutive years, the rebuilding plan will be superseded by a long-term management plan.

ICES has evaluated the plan and considers it is precautionary within the estimated stock dynamics. If a sequence of low recruitments takes place then the harvest control rule may have to be reevaluated.

RECENT MANAGEMENT ADVICE:

ICES advises on the basis of exploitation boundaries in relation to existing management plans that fishing mortality in 2010 could be increased to 0.19 corresponding to catches of 10,150t.

Other considerations:

Exploitation boundaries in relation to existing management plans

Following the proposed rebuilding plan implies catches of 10 150 t in 2010, which is expected to lead to SSB of 58 000 t in 2011.

Exploitation boundaries in relation to high long-term yield

Fishing at Fmgt=0.19 is consistent with high long-term yield and low risk to stock biomass.

Exploitation boundaries in relation to precautionary limits

No catch option less than 13 100 t in 2010 would bring SSB below B_{pa}.

STECF COMMENTS: STECF agrees with the ICES advice.

STECF notes that the stock is subject to a new rebuilding plan which has been evaluated by ICES and is deemed precautionary within the estimated stock dynamics.

STECF notes that the application of this rebuilding plan results in a 71% increase in TAC, corresponding to an increase of 4250 tonnes.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO THE AGREED MANAGEMENT PLAN.

STECF notes that this plan has been evaluated to be consistent with the precautionary approach. STECF therefore advises that according to the agreed management plan the TAC for 2010 should be set at 10,150 t.

3.23. Herring (*Clupea harengus*) in Division VIIe,f

FISHERIES: This stock is exploited by the UK and France. The TAC for this stock has been set at 1,000 t and has remained unchanged in recent years. This TAC is divided equally between the UK and France. Landings have fluctuated over the last ten years, from a low of 176 t to a high of 1,040 t. In 2004, 2005 and 2006 catches have been around 700 t. Catches in 2007 were around 500 t.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. No analytical assessment has been made in recent years.

PRECAUTIONARY REFERENCE POINTS: No precautionary reference points have been proposed for this stock.

STOCK STATUS The available information is inadequate to evaluate stock trends, and the state of the stock is uncertain.

RECENT MANAGEMENT ADVICE: No management advice is provided for this stock.

STECF COMMENTS: No comments.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission COM (2009) 224 on a consultation on fishing opportunities for 2010, STECF notes that Herring in Division VIIef can be classified under Category 11.

Accordingly STECF notes that the rule for the above category implies the following option for TACs in 2010.

	2010 TAC	Basis
Category 11	850 t*	There is no STECF advice, Average of recent catches, 15% TAC constraint

* Average 2006-2008 with 15% TAC constraint????

3.24. Sprat (*Sprattus sprattus*) in Divisions VIId,e.

FISHERIES: Only the UK carries out a sprat fishery in this area. For the last 20 years the annual landings have been in the order of 1,200 to 5,400 t. Landings have decreased since 1999. Landings in 2004 were the lowest in the time series, at about 800 t. Slight increases in landings were seen in 2005 and 2006 with about 1,600 t and 2,000 t reported respectively. Landings in 2008 were around 3400 t.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. There have been no attempts to undertake an assessment and in 2009 ICES once again consider that insufficient data are available to carry out an assessment.

PRECAUTIONARY REFERENCE POINTS: There are no reference points for this stock.

STOCK STATUS: the state of this stock remains unknown. Sprat is a short-lived species with natural fluctuations in stock biomass.

RECENT MANAGEMENT ADVICE: None.

STECF COMMENTS: No comments

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission COM (2009) 224 on a consultation on fishing opportunities for 2010, STECF notes that Sprat in VIIde can be classified under Category 11.

Accordingly STECF notes that the rule for the above category implies the following option for TACs in 2010.

	2010 TAC	Basis
Category 11	5,223 t*	There is no STECF advice, Average of recent catches, 15% TAC constraint

* Average 2006-2008 with 15% TAC constraint????

4. Resources in Southwestern waters

4.1. Norway lobster (*Nephrops norvegicus*) in Southwestern waters

Norway lobster in Divisions VIII, IX and IX contains 4 Functional Units:

- Divisions VIIIa, b: Bay of Biscay North and south (FU 23 & FU 24)
- Divisions VIIIc: North Galicia (FU 25) and Cantabrian Sea (FU 31)

Of the 4 *Nephrops* FUs in ICES div. VIII the *Nephrops* in Bay of Biscay (FUs 23 and 24) is the major contributor to *Nephrops* landings from this area. All the fisheries in VIII taking *Nephrops* are mixed fisheries, in which a single target species often may be difficult to identify. A major fin-fish component is hake. None of these 4 FUs are assessed by UWTV surveys. At present only FUs 23 and 24 are subject to analytical assessments. These *Nephrops* FUs are assessed by the ICES Working Group on the Assessment of Southern Shelf Stocks of Hake, Monk and Megrim (WGHMM),

4.1.1. Norway lobster (*Nephrops norvegicus*) in FU 23 & FU 24, Bay of Biscay (Divisions VIIIa, b)

FISHERIES: There are two Functional Units in these divisions VIIIa & VIIIb: a) Bay of Biscay North (FU 23) and b) Bay of Biscay South (FU 24), together called Bay of Biscay. Nearly all landings are taken by French trawlers. Landings have fluctuated between 3,500 and 6,000 t during the time-series. These fluctuations may be explained by variability in recruitment. In 2008 total landings amounted to 3030 t. The corresponding estimated discards were 2123 t. Despite a decommissioning programme for French vessels, it is likely that effective effort has stabilised since 1994 or even increased due to increased gear efficiency.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. Biennial advice (for 2009 and 2010) for this FU was provided in 2008. The advice is based on an (pseudo-)age-based assessment. Catch-at-age data are generated by slicing of sampled length distributions combined for males and females.

PRECAUTIONARY REFERENCE POINTS: No precautionary reference points have been defined for this stock.

STOCK STATUS: According to the 2008 assessment sawning biomass has been relatively stable over the entire period. The fishing mortality wasll above the F_{MAX} of 0.15. Recruitment showed a declining trend up to 1998, but seems to have recovered since then.

RECENT MANAGEMENT ADVICE: Since the SSB has been relative stable, the current landings can be maintained. The ICES advice for 2009 generally recommends not to increase effort and to restrict catches to the recent average value of 3,400 t (2006-2007 average).

STECF COMMENTS: STECF agrees with the advice from ICES. STECF also notes, that application of age based assessment methodology using slicing for creating pseudo-ages has been criticised by ICES. A main problem being that application of knife-edge slicing technique for creating pseudo ages may lead to biases in estimates of F.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission (COM (2009) 224) on a consultation on fishing opportunities for 2010, STECF notes that the *Nephrops* in Divisions VIIIa, b (FU 23 & FU 24) may be classified under Category 6

Accordingly STECF notes that the rules for each of the above categories imply the following options for TACs in 2010.

	2010 TAC	Basis
Category 6	3400 t	State of stock not known precisely (biennial advice for 2009 and 2010).

4.1.2. Norway lobster (*Nephrops norvegicus*) in Division VIIIc (FU 25 & FU 31)

FISHERIES: There are two Functional Units in this Management Area: a) North Galicia (FU 25) and b) Cantabrian Sea (FU 31). All catches from these FUs are taken by Spain. *Nephrops* constitutes a small component of mixed fishery landings taken by bottom trawlers. Hake constitutes a main component of these landings. Landings and effort in both functional units have declined and landings are now at extremely low levels compared to earlier years (58 t in 2008) compared to landings of about 500 t in the early 1990s).

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. Biennial advice (for 2009 and 2010) for this FU was provided in 2008. Advice is based on landings data, LPUE data and trends in mean size for both FUs

PRECAUTIONARY REFERENCE POINTS: No precautionary reference points are defined for this stock.

STOCK STATUS: The trends in LPUE indicate low stock level in both stocks. Increasing mean size in catches indicate failing recruitment in both stocks.

RECENT MANAGEMENT ADVICE: Given the very low state of the stock, ICES advises zero catches in 2009 and 2010 for both stocks (FU 25 & FU 31).

There are explicit management objectives for southern hake and *Nephrops* under the EC Reg. No. 2166/2005 establishing measures for the recovery of the Southern hake and Norway lobster stocks in the Cantabrian Sea and Western Iberian Peninsula by January 2006. The aim of the recovery plan is to rebuild the stocks within 10 years, with a reduction of 10% in F relatively to the previous year and the TAC set accordingly. However, given the very low state of the stock, ICES advices a zero TAC for both FUs in this Management Area.

STECF COMMENTS: STECF agrees with the advice from ICES.

According to article 6 of the recovery plan the TACs for Norway lobster in Divisions VIIIc and IXa shall be set at a level that will result in the same relative change in its fishing mortality rate as the change in fishing mortality rate achieved for the hake stock. However, the changes in TAC shall be limited to no more than +/- 15 %.

The TAC advised by ICES for hake for 2010 consistent with the recovery plan is 9,300 t. This reflects an increase in the hake TAC of 15 % and if fully enforced, corresponds to a reduction in the fishing mortality on hake of about 50 % compared to the value of fishing mortality assumed by ICES for 2009.

The latest assessment of the five functional *Nephrops* units recognised in Divisions VIIIc and IXa conducted in 2006 does not include information allowing precise catch predictions. However, the information available indicates that a reduction in the fishing mortality on *Nephrops* of about 50 % would result in reduction in catches of more than 15 %. STECF therefore advises that the TACs for *Nephrops* in Divisions VIIIc and IXa consistent with the recovery plan should the set equal to 15 % reduction of the 2009 TACs.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO THE AGREED MANAGEMENT PLAN (EC Reg. No. 2166/2005).

STECF notes that this plan has not yet been evaluated or the evaluation was inconclusive with respect to the precautionary approach. STECF therefore notes that the TAC corresponding to the relevant rule in the management plan is 95 t (15 % reduction of the 2009 TAC).

4.1.3. Norway lobster (*Nephrops norvegicus*) in Divisions VIIId, e

FISHERIES: There are no reported landings of *Nephrops* from this area

RECENT MANAGEMENT ADVICE: ICES has suggested that a zero TAC be set for this area to prevent misreporting.

STECF COMMENTS: STECF notes that the most recent information for this stock relates to the year 2002. The above text is unchanged from the STECF Review of Scientific advice on stocks of Community interest for 2004. STECF agrees with the advice from ICES.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

STECF considers it is not appropriate to give a category to Nephrops in VIIId,e, since there are no reported catches from this area.

4.1.4. Norway lobster (*Nephrops norvegicus*) in Division IX and X.

FISHERIES: There are five Functional Units (FU) in Division IXa: a) West Galicia (FU 26), b) North Portugal (FU 27), c) Southwest Portugal (FU 28), d) South Portugal (FU 29), and e) Gulf of Cadiz (FU 30). There are no reported landings of *Nephrops* from Division IXb and Subarea X. These *Nephrops* FUs are assessed by the ICES Working Group on the Assessment of Southern Shelf Stocks of Hake, Monk and Megrim (WGHMM),

Nephrops represents a small, but valuable by-catch in these fisheries targeting mainly demersal fish species. In the Southwest and South SW and S Portugal there is a crustacean trawl fishery, targeting mainly deepwater crustaceans. The fishery in West Galicia, North Portugal and Gulf of Cádiz is mainly conducted by Spanish vessels, and that in Southwest and South Portugal by Portuguese vessels, on deep water grounds (200-750 m). The Portuguese fleet comprises two components: demersal fish trawlers and crustacean trawlers. Total landings from Div. IXa (FUs 26-30) have drecreased dramatically during the last 30 years. In 1980 landings exceeded 2000 t, while they were 323 t in 2008, of which 208 t were taken from FU 28 and FU 29.

SOURCE OF MANAGEMENT ADVICE: The management advisory body is ICES. Biennial advice (for 2009 and 2010) for these FUs was provided in 2008.The advice for the stocks in FUs 26 and 27(West Galicia and North Portugal), and FU 30 (Gulf of Cadiz) was based on trends in LPUE data and data on mean size, while the advice for the stocks in FU 28 and FU 29 (Southwest and South Portugal) was based on an (pseudo-) age-based assessment using catch-at- age data generated by slicing of sampled length distributions (combined for males and females).

PRECAUTIONARY REFERENCE POINTS: No precautionary reference points have been defined for these stocks.

STOCK STATUS: West Galicia (FU 26)and North Portugal (FU 27): The available information indicates that the stocks are at a very low level of abundance in SW and S Portugal (FU 28 & FU 29): Stock status is uncertain, but appears to have recovered from its low level in 1996 to almost the level of the mid-1980s in 2002 and has been relatively stable since then.

Gulf of Cadiz (FU 30): State of the stock is unknown, but abundance has been stable in recent years.

RECENT MANAGEMENT ADVICE: FUs 26–27: These stocks are at an extremely low level. Mean sizes and previous assessments (2006) indicated that the stocks suffer a progressive recruitment failure. ICES advises no fishing on *Nephrops* until there is evidence of stock improvement.

FUs 28–29: these stocks appear to have recovered from its low level in 1996 to almost the level of the mid-1980s by 2002 and have been relatively stable since then. The average landings during the period when the stock was recovering (1996–2002) was about 200 t. Therefore, ICES advises that landings in 2009 should not exceed 200 t.

STECF COMMENTS: STECF agrees with the advice from ICES.According to article 6 of the recovery plan the TACs for Norway lobster in Divisions VIIIc and IXa shall be set at a level that will result in the same relative change in its fishing mortality rate as the change in fishing mortality rate achieved for the hake stock. However, the changes in TAC shall be limited to no more than +/- 15 %.

The TAC advised by ICES for hake for 2009 consistent with the recovery plan is 8,104 t. This reflects an increase in the hake TAC of 15 % and if fully enforced, corresponds to a reduction in the fishing mortality on hake of more than 50 % compared to the value of fishing mortality assumed by ICES for 2008.

The latest assessment of the five functional *Nephrops* units recognised in Divisions VIIIc and IXa conducted in 2006 does not include information allowing precise catch predictions. However, the information available indicates that a reduction in the fishing mortality on *Nephrops* of about 50 % would result in reduction in catches of more than 15 %. STECF therefore advises that the TACs for *Nephrops* in Divisions VIIIc and IXa consistent with the recovery plan should the set equal to 15 % reduction of the 2008 TACs corresponding to a TAC in 2009 for *Nephrops* in IX, X and EC waters of CECAF 34.1.1 of 353 t.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO THE AGREED MANAGEMENT PLAN (EC Reg. No. 2166/2005).

STECF notes that this plan has not yet been evaluated or the evaluation was inconclusive with respect to the precautionary approach. STECF therefore notes that the TAC for *Nephrops* in IX, X and EC waters of CECAF 34.1.1corresponding to the relevant rule in the management plan is 318 t (15 % reduction of the 2009 TAC).

4.2. Hake (*Merluccius merluccius*) in Divisions VIIIc, IX and X (Southern hake)

FISHERIES: This stock is exploited in a mixed fishery by Spanish and Portuguese trawlers and artisanal fleets.. Landings fluctuated between 6,700 and 35,000 t (1972-2005) and in 2008 were 10,200 t.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The advice is based on an age-based assessment using commercial CPUE series and survey data. The assessment excludes the Gulf of Cadiz. Discards are not included in the assessment, but preliminary estimates are approximately 3000 tonnes in 2008, representing approximately 20% of the total landings

PRECAUTIONARY REFERENCE POINTS: The proposed precautionary reference points are $\mathbf{B}_{pa}$: 35,000 t, F_{pa}: 0.4. Precautionary reference points for $\mathbf{B}_{lim}$ and F_{lim} are 25,000 t and 0.55 respectively.

STOCK STATUS: Based on the most recent estimates of SSB (in 2009), ICES classifies the stock as suffering reduced reproductive capacity. Based on the most recent estimate of fishing mortality (in 2008) ICES classifies the stock as at risk of being harvested unsustainably. Fishing mortality has increased in recent years and is currently near F_{lim}. SSB and recruitment have increased in recent years, but recruitment in 2008 is lower than in previous years and estimated to be poor (the lowest in the 27-year time series)..

MANAGEMENT OBJECTIVES: There are explicit management objectives for southern hake and *Nephrops* established under the EC Reg. No. 2166/2005 establishing measures for the recovery of the Southern hake and Norway lobster stocks in the Cantabrian Sea and Western Iberian Peninsula by January 2006. The recovery plan has the objective of bringing the spawning stock biomass of hake above 35 000 tonnes within 10 years and to reduce fishing mortality to 0.27. The main elements in the plan are a 10% annual reduction in F and a 15% constrain on TAC change between years.

ICES have not yet evaluated the plan. However, preliminary evaluation of the recovery plan indicated that the proposed level of F might be insufficient to rebuild the stock within 10 years.

RECENT MANAGEMENT ADVICE:

ICES advises on the basis of the exploitation boundaries in relation to precautionary limits that landings for 2010 should not exceed 4 900 t.

Other considerations:

Exploitation boundaries in relation to existing management plans

According to the recovery plan, the reduction in F of 10% would result in a TAC increase greater than 15%. Therefore, landings in 2010 should not exceed 9 300 t, corresponding to a 15% increase of the 2009 TAC.

Exploitation boundaries in relation to high long-term yield, low risk of depletion of production potential and considering ecosystem effects

The status quo fishing mortality is estimated at 0.52, well above levels that could support sustainable long-term yield (F_{MAX} = 0.18).

Exploitation boundaries in relation to precautionary limits

For SSB to reach a B_{pa} in 2011 an F of 0.13 in 2010 should be applied. The corresponding yield (including Gulf of Cadiz) is 4.9 thousand tonnes in 2010.

STECF COMMENTS: STECF agrees with the ICES advice.

STECF notes that the agreed TAC is consistently overshot, and fishing mortality is increasing. STECF therefore **recommends** that measures to ensure compliance with the agreed TAC and effort restrictions be put in place as a matter of urgency. STECF also **recommends** that the measures currently in place to recover the hake stock in Divisions VIIIc and IXa, should be extended to include all fisheries that exploit hake in these areas.

STECF further notes that a preliminary evaluation of the recovery plan indicated that even the agreed target level of F (0.27) might be insufficient to rebuild the stock within 10 years.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO THE AGREED MANAGEMENT PLAN (EC Reg. No. 2166/2005).

STECF notes that this plan has not yet been evaluated or the evaluation was inconclusive with respect to the precautionary approach. STECF therefore notes that the TAC corresponding to the relevant rule in the management plan is 9,300 t.

4.3. Whiting (*Merlangius merlangus*) - VIII

STECF did not have access to any stock assessment information on whiting in this area.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission (COM (2009) 224) on a consultation on fishing opportunities for 2010, STECF notes that whiting in Subarea VIII can be classified under Category 11
Accordingly STECF notes that the rule for the above category implies the following option for TACs in 2010.

	2010 TAC	Basis
Category 11	3,060 t*	There is no STECF advice, Average of recent catches, 15% TAC constraint

* Average 2006-2008 with 15% TAC constraint????

4.4. Whiting (*Merlangius merlangus*) - IX, X

STECF did not have access to any stock assessment information on whiting in this area.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission (COM (2009) 224) on a consultation on fishing opportunities for 2010, STECF notes that whiting in Subareas IX and XI can be classified under Category 11

	2010 TAC	Basis
Category 11	555 t*	There is no STECF advice, Average of recent catches, 15% TAC constraint

* Average 2006-2008 with 15% TAC constraint

4.5. Anglerfish (*Lophius piscatorius and Lophius budegassa*) in Div´s VIIIa, b, d, e

Anglerfish within the two management areas VII and VIII abde are assessed together and comprise of two species (*L. piscatorius and L. budegassa*), which are not always separated for market purposes. Details of stock status and advice are given in Section 3.9.

4.6. Anglerfish (*Lophius piscatorius and Lophius budegassa*) in VIIIc, IX, X

FISHERIES: Anglerfish in the Iberian region are caught as part of a mixed demersal fishery by vessels using trawls and fixed nets. Two species (*L. piscatorius* and *L. budegassa*) are caught and they are not always separated for market purposes so the advice is combined for the two stocks. Landings of (*L. piscatorius*) decreased from 6,900t in 1986 to about 790t in 2001. Landings have increased to 3,600 t in 2005 and decreased to 2,300 t in 2007 and 2008. For *L. budegassa* landings decreased from 3,700t in 1988 to 800 t in 2002 but have increased in recent years. In 2007 they were estimated at 1,300 t. They decreased again in 2008 to 950 t

SOURCE OF MANAGEMENT ADVICE: The management advisory body is ICES. In 2009, a surplus production model (ASPIC) was used to provide estimates of stock biomass and fishing mortality relative to their respective maximum sustainable yield (MSY) values. No assessment was performed in 2008.

PRECAUTIONARY REFERENCE POINTS Precautionary reference points have not been defined for these stocks. FMSY could be considered as a candidate for a reference point consistent with high long-term yield.

STOCK STATUS: In the absence of defined reference points, the state of the stock cannot be evaluated in relation to these. The assessment is only considered indicative of stock trends and provides relative measures of stock status.

Biomass (in 2009) of L. piscatorius is estimated to be below BMSY and despite the decrease in fishing mortality since 2005, F (in 2008) is still above FMSY. The fishing mortality in 2008 is estimated to be 1.6 times higher than FMSY.

Fishing mortality for L. budegassa shows a decreasing trend since 1999 and in 2008 is below FMSY. This has led to an increase in biomass but in 2009 it is still below BMSY.

RECENT MANAGEMENT ADVICE:

ICES advises on the basis of exploitation boundaries in relation to high long-term yield, low risk of depletion of production potential and considering ecosystem effects. In order to reach BMSY the 2010 catches should be zero or a management plan should be developed. The advice accounts for the poor condition of L. piscatorius stock.

Other considerations:

Exploitation boundaries in relation to high long-term yield, low risk of depletion of production potential and considering ecosystem effects

L. piscatorius fishing mortality equal to zero is not expected to bring the stock to BMSY until 2013.

L. budegassa fishing mortality equal to F status quo is expected to bring the stock to BMSY in 2011.

STECF COMMENTS: STECF notes that both stocks are caught together in most fisheries and managed under a common TAC, and that the advice depends on the stock in the poorer condition

STECF notes that anglerfish in VIIIc and IXa are caught in the same fisheries as hake and *Nephrops*. The provisions of the management plan for hake and *Nephrops* are not being enforced and its objectives are not being met.

To ensure recovery of anglerfish in VIIIc and IXa, it is essential that the provisions of the management plan for hake and *Nephrops* are fully implemented and enforced. Failure to do so may severely compromise any recovery of the stock. STECF therefore **recommends** that enforcement of the provisions of the management plan for hake and *Nephrops* is given high priority and that measures to ensure compliance with the TAC for anglerfish and effort restrictions are put in place as a matter of urgency.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission (COM (2009) 224) on a consultation on fishing opportunities for 2010, STECF notes that anglerfish in VIIIc, IX, X would be categorised as being overfished with respect to the fishing mortality that will deliver maximum sustainable yield (Rule1, annex III). Accordingly, a 15% reduction in TAC in 2010 (1,500 t for combined stocks), would generate more than a 37% increase in SSB in both anglerfish stocks between 2010 and 2011. However the advice is to reduce catches to zero which means that Anglerfish in Division VIIIc, IX and X can be classified under Category 10

	2010 TAC	Basis
Category 10	≤ 1,320 t	The TAC should be reduced by at least 25%. Recovery measures should be implemented including effort reductions and introduction of more selective fishing gear

4.7. Megrim (*Lepidorhombus whiffiagonis*) in VIIIa,b,d,e.

Megrim in Divisions VIIIa,b,d,e are assessed together with megrim in Sub area VII (Section 3.10).

4.8. Megrim (*Lepidorhombus whiffiagonis* & *Lepidorhombus boscii*) in VIIIc, IX & X

FISHERIES: Megrim in the Iberian region are caught as a by-catch in the mixed bottom trawl fisheries by Portugueses and Spanish vessels and also in small quantities by the Portugueses artisanal fleet. Two species (Lepidorhombus whiffiagonis & L. boscii) are caught and they are not usually separated for market purposes and a combined advice is provided for the two stocks. Changes in the demersal fisheries in recent years have reduced the fishing effort on megrim. Landings of L. whiffigonis and L. boscii declined from 1986 to record low levels in 2002. Landings of both stocks have increased slightly since then and reached 930 t for L. boscii and 180 t for L. whiffigonis in 2008.

SOURCE OF MANAGEMENT ADVICE: The management advisory body is ICES.

STOCK STATUS: In the absence of defined precautionary reference points, the state of the two stocks cannot be evaluated with regard to these. SSB of both species has decreased since the late 1980s. However, SSB for L. boscii shows a slightly upwards trend after reaching a minimum in 2001. For both species fishing mortality has decreased since the late 1990s. Recent recruitment for L. boscii has been below average. For L. whiffiagonis recruitment has been low in the last decade.

RECENT MANAGEMENT ADVICE:

Last year the advice was based on precautionary considerations. This year, ICES advises on the basis of exploitation boundaries in relation to high-long-term yield and low risk of depletion of the production potential that combined catches of L. whiffiagonis and L. boscii should not exceed 900 t.

Exploitation boundaries in relation to high long-term yield, low risk of depletion of production potential and considering ecosystem effects

2008 fishing mortality for L. whiffiagonis estimated at 0.20, is above F0.1 = 0.17.

2008 fishing mortality for L. boscii estimated at 0.23, is above F0.1 = 0.18.

Fishing at F0.1 in 2010 is predicted to generate SSBs in 2011 that are 6-10% higher than in 2010 for the two megrim stocks.

STECF COMMENTS: STECF agrees with the ICES advice.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission (COM (2009) 224) on a consultation on fishing opportunities for 2010, STECF notes that Megrim in VIIIc, IX & X can be classified under Categories 6.

Accordingly STECF notes that the rule for the above category implies the following option for TACs in 2010.

	2010 TAC	Basis
Category 6	1,200	STECF advice on catch level (15% limit on TAC variation).

4.9. Plaice (*Pleuronectes platessa*) in VIII, IX and X.

No information is available to STECF on these stock(s).

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission (COM (2009) 224) on a consultation on fishing opportunities for 2010, STECF notes that plaice in VIII, IX and X can be classified under Category 11
Accordingly STECF notes that the rules for each of the above categories imply the following options for TACs in 2010.

	2010 TAC	Basis
Category 11	381 t*	There is no STECF advice, Average of recent catches, 15% TAC constraint

* Average 2006-2008 with 15% TAC constraint

4.10. Sole (*Solea solea*) in Divisions VIIIa,b (Bay of Biscay)

FISHERIES: The French fixed net fishery for sole (largely in the spawning season) has increased over the assessment period, from less than 5% of landings prior to 1985, to around 90% in the recent years and this has resulted in an improvement of the selection pattern. Landings by Belgium beam trawlers increased rapidly in the late 1980s and since 1991 have been relatively constant at 8% of the total. For the last 15 years the total landings have varied from about 4,000 t to 7,300 t. The catches were 4,300 t in 2008.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES.

The advice is based on an age-based analytical assessment based on landings and CPUE data series from surveys and commercial fleets. Partial discard information is available from 1984 to 2003, but is no longer included in the assessment since 2004 because of the low contribution of discards to the catch and therefore to the assessment. No recruitment indices are available for this stock.

STECF also notes that there is a need for fisheries independent data to improve the stock assessment and the estimation of recruitment. This assessment relies on time series of commercial fleets. In addition, the proportion of landings taken by these fleets is decreasing. Commercial data do not provide reliable estimates of incoming year-classes

Furthermore, different age reading methodology and age interpretation exists between nations involved in the fisheries.

PRECAUTIONARY REFERENCE POINTS: The proposed precautionary reference points for fishing mortality (revised in 2006) and biomass are F_{pa} = 0.42, B_{pa} = 13,000 t.

MANAGEMENT AGREEMENT: The EC regulation 388/2006 of 23 February 2006 has established a management plan, which set the objective of bringing the spawning stock biomass above 13,000 tonnes in 2008. The current estimate of the SSB from the most recent assessment is above that level.

According to article 3 of the multi-annual plan it is necessary for EU to decide on a long-term target fishing mortality. Fishing at F_{pa} in 2010 will keep SSB at current level.

STOCK STATUS: Based on the most recent estimates of SSB (in 2009) ICES classifies the stock as having the full reproductive capacity. Based on the most recent estimates of fishing mortality (in 2008), ICES classifies the stock as being harvested sustainably. The most recent estimates of SSB are above B_{pa}. The most recent estimates of fishing mortality are below F_{pa}. Recruitment has been stable since 1993

RECENT MANAGEMENT ADVICE:

ICES advises on the basis of exploitation boundaries in relation to precautionary considerations that landings for 2010 should not exceed 4 900 t.

Other considerations:

Exploitation boundaries in relation existing management plans

The agreed management plan aims to bring SSB above 13 000 t in 2008 as a first step. This target has been reached since 2007. According to the multi-annual plan a target fishing mortality should be established by the EU.

Exploitation boundaries in relation to high long-term yield, low risk of depletion of production potential and considering ecosystem effects

Target reference points have not been agreed for this stock. The fishing mortality in 2008, estimated to be 0.38, is well above any candidates for reference points in the range of F0.1– F_{MAX}.

Exploitation boundaries in relation to precautionary limits

F should be kept below F_{pa}. Applying F_{pa} in 2010 results in landings of 5 190 t in 2010, and generates an SSB in 2011 of 14 370 t, corresponding to a 2% decline compared with 2010.

STECF COMMENTS: STECF agrees with the ICES advice. STECF notes however that fishing at F_{pa} would imply that landings for 2010 should not exceed 5 190 t.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO THE AGREED MANAGEMENT PLAN (EC regulation 388/2006).

STECF notes that this plan has not yet been evaluated or the evaluation was inconclusive with respect to the precautionary approach. STECF further notes that according to *article 3* of the multi-annual plan, when .the spawning stock biomass is evaluated by ICES to be equal to or above the precautionary level of 13 000 tonnes, a target fishing mortality should be established by the Council. Until this is done the plan offers no practical guidance for managing the fishery

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission (COM (2009) 224) on a consultation on fishing opportunities for 2010, STECF notes that sole in Divisions VIIIa,b (Bay of Biscay) can be classified as Category 2 stock

Accordingly STECF notes that the rule for the above category implies the following option for TACs in 2010.

	2010 TAC	Basis
Category 2	4900t	Stock overexploited compared to msy but inside safe biological limits.

4.10.1. Special request on Sole VIIIa,b

STECF is requested to advise on a suitable target fishing mortality rate related to MSY as requested by the management plan (Article 3 of Council Regulation 388/2006), and advise on the consequences of setting TACs by gradual approximation to that rate of 10 % per year, or other appropriate value(s).

STECF response

STECF is unable to respond to this request at this time

4.11. Sole (*Solea* spp.) - VIIIcde, IX, X

STECF did not have access to any stock assessment information on sole in this area.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission (COM (2009) 224) on a consultation on fishing opportunities for 2010, STECF notes that sole in VIIIc,d,e, IX and X can be classified under Category 11

	2010 TAC	Basis
Category 11	1,034 t*	There is no STECF advice, Average of recent catches, 15% TAC constraint

* Average 2006-2008 with 15% TAC constraint

4.12. Rays and skates in ICES Subareas VIII and IX

Previous stock summaries and advice on skates and rays has been provided at the NE Atlantic regional level and at present, STECF is unable to provide additional information and advice for ICES Subareas VIII and IX. Furthermore, ICES has not issued any new advice since 2008. The most recent advice incorporating skates and rays in the Subareas VIII and IX was provided by STECF in its consolidated review of advice for 2009 and is reproduced in Section 6.1of this report. In view of this, STECF has not attempted to categorise these resources according to the Communication on Fishing opportunities for 2010 (COM (2009) 224).

4.13. Catsharks and Nursehounds (*Sciliorhinus canicula and Sciliorhinus stellaris*) in Subareas VIII, IX and X

Previous stock summaries and advice on catsharks and nursehounds has been provided at the NE Atlantic regional level and at present, STECF is unable to provide additional information and advice for Subareas VIII, IX and X. Furthermore, ICES has not issued any new advice since 2008. The most recent advice incorporating catsharks and nursehounds ICES Subareas VIII, IX and X was provided by STECF in its consolidated review of advice for 2009 and is reproduced in Section 6.1 of this report. In view of this, STECF has not attempted to categorise these resources according to the Communication on Fishing opportunities for 2010 (COM (2009) 224).

4.14. Tope (*Galleorhinus galeus*) in ICES Subareas VIII, IX and X

Previous stock summaries and advice on tope has been provided at the NE Atlantic regional level and at present, STECF is unable to provide additional information and advice for Subareas VIII, IX and X. Furthermore, ICES has not issued any new advice since 2008. The most recent advice for tope was provided by STECF in its consolidated review of advice for 2009 and is reproduced in Section 6.5 of this report. In view of this, STECF has not attempted to categorise these resources according to the Communication on Fishing opportunities for 2010 (COM (2009) 224).

4.15. Other demersal elasmobranches in the Bay of Biscay and Iberian Waters

Previous stock summaries and advice on demersal elasmobranchs has been provided at the NE Atlantic regional level and at present, STECF is unable to provide additional information and advice for the Bay of Biscay and Iberian Waters. Furthermore, ICES has not issued any new advice since 2008. The most recent advice for demersal elasmobranchs was provided by STECF in its consolidated review of advice for 2009 and is reproduced in Section 6.1 this report. In view of this, STECF has not attempted to categorise these resources according to the Communication on Fishing opportunities for 2010 (COM (2009) 224).

4.16. Anchovy (*Engraulis encrasicolus*) in Division VIII (Bay of Biscay)

FISHERIES: The fishery for anchovy in the bay of Biscay has been closed since 2005. Traditionally, anchovy in the bay of Biscay are mainly taken by pelagic trawlers and purse-seiners from France and Spain. The Spanish and French fleets fishing for anchovy in Subarea VIII are well separated geographically and in time. The Spanish fleet operates mainly in Division VIIIc and VIIIb in spring, while the French fleets operate in Division VIIIa in summer and autumn and in Division VIIIb in winter and summer. There is fishing for anchovy throughout the year. The fishery is mostly dependent on the year-class recruiting at age 1. The estimated total catch in 2006 was 1,753 t. and the estimated catch in 2007 (only from experimental fisheries) amounted to 141 t. There were no catches up to June in 2008. This fishery has been managed by annual TACs, which have been set at a fixed level (in the range of 30,000 t to 33,000 t) independent of the advice (from 1979 to 2005). Since

2002, the total annual catches have been well below the fixed annual TAC indicating that when the recruitment is low, a management regime based on such annual TACs has not constrained the fishery.

SOURCE OF MANAGEMENT ADVICE: Annual advice on management is provided by ICES. The assessment is based on stock biomass estimates from egg (1987–2008) and acoustic surveys (1989–2008) and catches from the French and Spanish fisheries.

PRECAUTIONARY REFERENCE POINTS: ICES considers that B_{lim} is 21,000 t, the lowest observed biomass in the 2003 assessment, and proposed B_{pa} be set a 33,000 t. There is no biological basis for defining $\mathbf{F}_{lim}$, and it is proposed that $\mathbf{F}_{pa}$ be established between F=1.0 and F=1.2. A $\mathbf{B}_{pa}$ reference point is difficult to use in management for this short-lived stock and the advice given by ICES is therefore not linked to this reference point.
Because the assessment provides the probability distributions for the SSB, it is possible to estimate directly the risk of the SSB falling below B_{lim} $\mathbf{B}_{pa}$ and $\mathbf{F}_{pa}$ reference points may become unnecessary.

STOCK STATUS: Based on the most recent estimates of SSB, ICES classifies the stock as being at risk of reduced reproductive capacity. Although median SSB in 2009 is estimated to be above B_{lim}, this estimate has a 47% probability of being below B_{lim}. Low recruitment at age 1 since 2002 and almost complete recruitment failure of the 2004 year-class are the primary causes of the low stock size. The recruitment at age 1 in 2009 is at the same level as last year but lower than in 2006 and 2007.

RECENT MANAGEMENT ADVICE: There are no explicit management objectives for this stock. The present closure of the fishery aims at protecting the remaining stock until a strong year-class recruits to the stock. There is a 37% risk that SSB in 2010 will be below B_{lim} even with no catch. ICES advises on the basis of exploitation boundaries in relation to precautionary limits that the fishery should remain closed until the stock condition has improved. The stock condition can be re-evaluated when estimates of the 2010 SSB and 2009 year-class are available based on the spring 2010 acoustic and DEPM surveys. This implies a closure of the fishery until at least July 2010.

STECF COMMENTS:

STECF agrees with the ICES advice and notes that there have been large inter-annual fluctuations in recruitment, which are strongly dependent on environmental factors.

STECF further notes that there is a 37% risk that SSB in 2010 will be below B_{lim} even with no catch in 2009.

STECF recommendations:

- With the current poor stock situation, maximum protection of the remaining spawning population is required.
- STECF **recommends** that the Biscay anchovy fishery should remain closed until reliable estimates of the 2010 SSB and 2009 year-class, based on the results from the spring 2010 acoustic and DEPM surveys, become available. This implies closure of the fishery for anchovy in the Bay of Biscay (ICES Subarea VIII) until at least July 2010.

STECF stresses that any recovery is entirely dependent on good incoming recruitment. STECF also agrees with ICES that supplementary management measures (e.g. closed areas, minimum landing size) may be considered in addition to TACs

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission (COM (2009) 224) on a consultation on fishing opportunities for 2010, STECF notes that anchovy in VIII (Bay of Biscay) can be classified under Category 5
Accordingly STECF notes that the rules for each of the above categories imply the following options for TACs in 2010.

2009/10 TAC Basis

Category 5 0 t* Short-lived species: In-year advice for zero catch

4.17. Anchovy (*Engraulis encrasicolus*) in Sub-area IX

This review relates to anchovy in Division IXa only.

FISHERIES: There is a regular fishery for anchovy in Division IXa South (Gulf of Cádiz). The fleets in the northern part of Division IXa occasionally target anchovy when abundant, as occurred in 1995. The anchovy in Subdivision IXa South has different biological characteristics and dynamics compared to anchovy in other parts of Division IXa. The anchovy population in Subdivision IXa South appears to be well established and relatively independent of populations in other parts of Division IXa. These other populations seem to be abundant only when suitable environmental conditions occur.

In 2000, catches in Division IXa South decreased, probably as a result of a large reduction in the fishing effort by the Barbate single-purpose purse-seine fleet, one of the main fleets harvesting anchovy in the area. Most of these vessels accepted a tie-up scheme in 2000 and 2001 because the EU Morocco Fishery Agreement was not renewed. Since 2002, these vessels have been fishing again in the Gulf of Cadiz. The effort exerted by the entire purse-seine fleet since 1997 has been high (even with a fishing closure in the 2004 fourth quarter). However, in 2005 and 2006, the possible combination of a new fishing closure in the fourth quarter and a reduction in the number of active vessels fishing anchovy (from 135 vessels in 2004 to 106 vessels in 2005 and only 99 vessels in 2006) led to a marked decrease in fishing effort. Such a decreasing trend seemed to have affected all the fleet segments in 2005, whereas in 2006 the reduction in the annual effort was only evident in the Barbate's home-based fleets. The total landings of anchovy in 2006 and 2007 were approximately 4,500 t and 6,500 t respectively. An important decrease in total landings was observed in 2008 (3,500t).

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. Analytical assessment of the stock is not possible at present.

PRECAUTIONARY REFERENCE POINTS: No precautionary reference points have been estimated for this stock.

STOCK STATUS: The information on this stock is inadequate to evaluate the spawning stock or fishing mortality relative to precautionary reference points, and the state of the stock is unknown.

RECENT MANAGEMENT ADVICE: The new landings, cpue, and survey data available for this stock do not change the perception of the stock and do not give reason to change the advice from 2007 and reiterated in 2008. The advice on this stock for the fishery in 2010 is therefore the same as the advice given in 2008 for the 2009 fishery: "Catches should be restricted to 4800 t (mean catches from the period 1988–2006 excluding 1995, 1998, 2001, and 2002, the years where catches were probably influenced by exceptionally high recruitment). This level should be maintained until the response of the stock to the fishery is known".

Other considerations:

It is important that surveys are continued, in particular the spring acoustic survey and the recently initiated egg survey. It has not been possible to provide a reliable analytic assessment for this stock as a basis for management. A better alternative would be to consider management rules based directly on survey observations.

STECF COMMENTS: STECF agrees with the advice of ICES. STECF also considers that in-season management or alternative management measures (taking into account the data limitations) should be considered, due to fact that the stock experiences high natural mortality and is highly dependent upon recruitments.

STECF also agrees with the ICES consideration that it is important that surveys are continued, in particular the acoustic survey in May and the recently initiated egg survey. It has not been possible to provide a reliable analytic assessment for this stock as a basis for management. A better alternative would be to consider management rules based directly on survey observations.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission (COM (2009) 224) on a consultation on fishing opportunities for 2010, STECF notes that anchovy in Sub-area IXa can be classified under category 6.

Accordingly STECF notes that the rules for the above categories imply a TAC of 4,800 t in 2010 for Division IXa oly.

4.18. Anchovy (*Engraulis encrasicolus*) in Sub-area X

There is no information on Anchovy in Sub-area X.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission (COM (2009) 224) on a consultation on fishing opportunities for 2010, STECF notes that anchovy in VIII (Bay of Biscay) can be classified under Category 5
Accordingly STECF notes that the rules for each of the above categories imply the following options for TACs in 2010.

	2009/10 TAC	Basis
Category 5	NE*	Short-lived species: No in-year advice

* NE = not estimable

4.19. Horse mackerel (*Trachurus trachurus*) in ICES division IXa

The stock summary and advice for Horse mackerel in ICES Division IXa will be updated in October 2009 and included in the consolidated STECF review of advice for 2010 for Stocks of Community interest. In view of this, STECF has not attempted to categorise these resources according to the Communication on Fishing opportunities for 2010 (COM (2009) 224).

4.20. Horse mackerel (*Trachurus trachurus*) in CECAF areas (Madeira Island)

The stock summary and advice for Horse mackerel in CECAF areas (Madeira Island) will be updated in October 2009 and included in the consolidated STECF review of advice for 2010 for Stocks of Community interest. In view of this, STECF has not attempted to categorise these resources according to the Communication on Fishing opportunities for 2010 (COM (2009) 224).

4.21. Horse mackerel (*Trachurus trachurus*) in CECAF areas (Canary Islands)

The stock summary and advice for Horse mackerel in CECAF areas (Canary Islands) will be updated in October 2009 and included in the consolidated STECF review of advice for 2010 for Stocks of Community interest. In view of this, STECF has not attempted to categorise these resources according to the Communication on Fishing opportunities for 2010 (COM (2009) 224).

4.22. Horse mackerel (*Trachurus trachurus*) in ICES Subarea X (Azores Islands

The stock summary and advice for Horse mackerel in CECAF areas (Azores Islands) will be updated in October 2009 and included in the consolidated STECF review of advice for 2010 for Stocks of Community interest. In view of this, STECF has not attempted to categorise these resources according to the Communication on Fishing opportunities for 2010 (COM (2009) 224).

4.23. Sardine (*Sardina pilchardus*) in VIIIc and IXa

FISHERIES: Sardine in these Divisions are exploited by purse seiners from Portugal and Spain. Historically during the last 55 years landings have fluctuated with periods of high landings during the '40s, '60s and '80s, and low landings during the '50s, '70s and '90s. The total catch in 2008 was 101,000 t.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The assessment is based on combined Spanish and Portuguese March acoustic surveys, a DEPM (Daily Egg Production Method) survey series, and catch-at-age data. These have been analysed in a flexible age-structured model, combining these fishery-independent indices of abundance and catch-at-age information. The main uncertainties in the assessment relate to the extent of sardine movement across the northern stock boundary, the weighting of Portuguese and Spanish acoustic surveys in the combined abundance index, and the estimation of selection for the older ages.

PRECAUTIONARY REFERENCE POINTS: No precautionary approach reference points have been identified for sardine stock.

STOCK STATUS: In the absence of defined reference points, the state of this stock cannot be evaluated with regard to these. SSB has declined since 2006 due to successive low recruitments and SSB in 2009 was below the long-term average. Fishing mortality in 2008 was 40% higher than in 2007, but is still below the historical average.

RECENT MANAGEMENT ADVICE: The current fishing mortality does not appear detrimental for the development of the stock, which is largely driven by the incoming recruitment. Therefore, ICES advises on the basis of exploitation boundaries in relation to precautionary considerations that the current level of fishing mortality could be maintained as a guide for management. This corresponds to a catch of 75 thousand tonnes in 2010.

STECF COMMENTS: STECF agrees with ICES advice.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission (COM (2009) 224) on a consultation on fishing opportunities for 2010, STECF notes that Sardine in VIIIc and IXa can be classified under Category 6.

Accordingly STECF notes that the rules for the above categories imply the following option for TAC in 2010.

	2010 TAC	Basis
Category 6	NE*	No TAC set for this stock.

*** NE- not estimable**

5. Widely distributed and migratory stocks

5.1. European eel (*Anguilla anguilla*)

The text below remains unchaged from that given in the STECF Consolidated review of advice for 2009 (STECF, 2009, EUR 23630 EN). STECF did not have access to more recent advice. In view of this, STECF has not attempted to categorise europen eel according to the Communication on Fishing opportunities for 2010 (COM (2009) 224).

FISHERIES: The European eel (*Anguilla anguilla* (L.)) is found and exploited in fresh, brackish and coastal waters in almost all of Europe, in northern Africa and in Mediterranean Asia. Eel fisheries are found throughout the distribution area. Fisheries are generally organised on a small scale (a few fishermen catching 1-5 tonnes per year) and involve a wide range of gears. The fisheries are managed on a national (or lower, regional or catchment) level. Landings peaked around 1965 at 40,000 tonnes, since when a gradual decline occurred to a level of 20,000 tonnes in the late 1990s, but throughout the decades, landing statistics cover only about half the true catches. Recent years show a rapid decline in reported catches, to below 10,000 tonnes. Recruitment remained high until 1980, but declined afterwards, to a level of only 2 % of former levels in 2001, and has remained low since. Aquaculture of wild-caught recruits (glass eel) has been expanding since 1980, in Europe as well as in eastern Asia (using European glass eel). Other anthropogenic factors (habitat loss, contamination and

transfer of diseases) have had negative effects on the stock, most likely of a magnitude comparable to exploitation. In 2007, eel was included in CITES Appendix II that deals with species not necessarily threatened with extinction, but in which trade must be controlled in order to avoid utilization incompatible with their survival. The listing will be made effective in March 2009.

SOURCE OF MANAGEMENT ADVICE: Management advice has been provided by ICES and FAO/EIFAC. The joint ICES/EIFAC working group is the main assessment body.

STOCK STATUS: In the absence of defined reference points, the state of the stock cannot be fully evaluated. An analytical assessment of the state of the European eel stock is not available and reference points for the stock have not been defined. Nevertheless, all available information indicates that the stock is at a historical minimum in most of the distribution area and continues to decline. Fishing mortality is thought to be high both on juvenile (glass eel) and older eel (yellow and silver eel). Recent recruitment varies between areas from 1 to 10% of the recruitment observed in the 1970s and most recent observations do not indicate recovery. Estimated total yield has declined to about 25% of the mid-1960s.

PRECAUTIONARY REFERENCE POINTS: Precautionary reference points have not been agreed for eel. Due to the large uncertainties in eel management and biology (one single stock, spawning only once in their lifetime), ICES has proposed an escapement target of 50% (ICES, 2003). There are strong indications that recruitment might be impaired by the low spawning stock, while in the 1970s, recruitment of glass eel was still at historically normal levels. Therefore, an interim recovery level target could be 100% of the pre-1980 average silver eel escapement which generated higher recruitment.

MANAGEMANT OBJECTIVES: A management framework for the recovery of the European eel stock was established in 2007 through an EU regulation (EU 1100/2007). The objective of this Regulation is the protection and sustainable use of the stock. To achieve the
objective, member states will develop eel management plans for their river basin districts, designed to reduce anthropogenic mortalities. According to the EU regulation, eel management plans shall allow, with high probability, an escapement to sea of at least 40% of the biomass of silver eel, defined as the best estimate of the theoretical escapement if the stock had been completely free of anthropogenic influences. The EU regulation does not quantify high probability.

RECENT MANAGEMENT ADVICE:

Exploitation boundaries in relation to precautionary considerations*:* The recruitment of glass eels to Europe has shown a sharp and continued decline over more than 25 years to historically low levels. These low recruitment levels are an indication that the reproduction might be seriously impaired as a result of the stock being severely depleted. Since recruitment remains in decline and stock recovery is a long-term process for biological reasons, ICES recommends that all exploitation and other anthropogenic impacts on production and escapement of eels should be reduced to as close to zero as possible.

STECF COMMENTS: STECF agrees with the advice of ICES and EIFAC and notes the adoption of the EU regulation setting out a management framework for the recovery of the European eel stock. Member States need to develop and implement national plans as soon as practicable. Development of adequate tools for setting reference points, for stock assessment, and for post-evaluation will be required, to support the development of these national management plans.

5.2. Hake (*Merluccius merluccius*) in Division Vb (1), VI and VII, and XII, XIV (Northern hake)

The management area covers Skagerrak, Kattegat, IIa, IIIb,c,d, IV, VI, VII, VIII, XII and XIV with separate TAC's for these Divisions.

FISHERIES: Hake is caught in nearly all fisheries in Subareas VII and VIII and also in some fisheries of Subareas IV and VI. The main part of the fishery (close to 80% of the total landings) was conducted in Subarea VII (Non-*Nephrops* trawling in medium to deep water, long-line in medium to deep water and gill nets in Sub-area VII), and in Sub-area VIII (gill nets in shallow to medium water and trawling in medium to deep water).

Landings were 47,800 t in 2008 (note: no discards estimates are available for 2008). The major fleets exploiting Northern hake have shown, in the longer term, a decrease in nominal fishing effort. Discards of juvenile hake can be substantial in some areas and fleets.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The advice is based on an age-based assessment (XSA) using four commercial cpue series and four surveys for tuning.. Discards were not included in the assessment due to data quality..

MANAGEMENT AGREEMENT: There are explicit management objectives for this stock in the recovery plan (EC Reg. No 811/204). The aim is to increase the SSB to above 140,000 t. An agreed fishing mortality of F < 0.25 with a year-on-year constraint on TAC of 15%, unless the stock is below 100-000. In this case a lower TAC is applied.

PRECAUTIONARY REFERENCE POINTS: Precautionary reference points were updated in 2003 following a revision of the assessment model and data in the recent years. The basis for setting reference points remained unchanged. The proposed reference points are: B_{lim}: 100,000 t, B_{pa}: 140,000 t, F_{lim}: 0.35, F_{pa}: 0.25, F_{target}: 0.25.

STOCK STATUS: Based on the most recent estimates of SSB and fishing mortality ICES classifies the stock as being at full reproductive capacity and being harvested sustainably. SSB in 2009 (145,900) is estimated to be above B_{pa}, and F has been around F_{pa} since 2001. Recruitment has been relatively stable over the last decade.

RECENT MANAGEMENT ADVICE:

ICES advises on the basis of the exploitation boundaries in relation to precautionary limits that landings for 2010 should not exceed 55,200 t. ICES uses F_{pa} as a basis for advice in 2010, which coincides with the maximum fishing mortality allowed by the recovery plan. Accordingly ICES advises that landings for 2010 should not exceed 55,200 t.

Other considerations

Exploitation boundaries in relation to existing management plans*: A fishing mortality of F = 0.25 as indicated in Article 5.2 of the agreed recovery plan is expected to lead to an SSB of 171200 t in 2011 (the highest SSB since 1989), with estimated landings in 2010 of 55 200 t. This implies an increase in TAC of 7%.*

Exploitation boundaries in relation to high long-term yield, low risk of depletion of production potential and considering ecosystem effects: *The fishing mortality in 2008, estimated at 0.24, is above fishing mortalities that are expected to lead to high long-term yields and low risk of stock depletion (F0.1 = 0.10 and Fmax = 0.18). This indicates that long-term yield is expected to increase at fishing mortalities well below the historic values. Fishing at such a lower mortality is expected to lead to higher SSB and therefore lower the risk of observing the stock to be outside precautionary limits.*

Exploitation boundaries in relation to precautionary limits: *A fishing mortality of F_{pa} = 0.25 is expected to lead to landings of 55 200 t in 2010 and an SSB of 171 200 t in 2011, which is above B_{pa}.*

STECF COMMENTS: STECF agrees with the ICES assessment of the state of the stock and agrees with the TAC advice for 2010.

STECF notes that the ICES advice is based on the precautionary approach and not on the agreed management plan. However the ICES approach results in a fishing mortality in 2010 which is consistent with the maximum fishing mortality allowed by the recovery plan.

STECF also agrees with ICES that effective measures to reduce discarding are also needed, given the substantial discards of juvenile hake in some areas and fleets.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO THE AGREED MANAGEMENT PLAN

STECF notes that this plan has not yet been evaluated or the evaluation was inconclusive with respect to the precautionary approach. STECF therefore notes that the TAC corresponding to the relevant rule in the management plan is 55,200 t.

STECF note that a fishing mortality of F_{pa} = 0.25 is expected to lead to landings of 55,200 t in 2010 and an SSB of 171,200 t in 2011, which is above B_{pa}.

5.2.1. Special request on Hake VI & VII

STECF is requested to advise on the TAC corresponding to the application of the management plan proposed by the Commission in March 2009 (COM(2009) 122 final) which should replace the existing one this year.

STECF response

STECF notes that the provision osf Articles 6 and 7 of (COM(2009) 122 final, set out the procedure for calculating TACs. Based on the most recent assessment of Northern hake, the stock is above Bpa. In such circumstances forecast total removals should be estimated based on a target fishing mortality rate of 0.17 (Article 6). Article 7 then makes provision for estimating the corresponding TAC by deduction from the estimated total removals, a quantity of fish equivalent to the expected discards of hake from the stock concerned and as appropriate, a quantity corresponding to other relevant sources of hake.

STECF notes that the proportion of the total catch that is discarded is not available for recent years and that the assessment is based on landings data only. STECF is therefore unable to provide a value for a TAC corresponding precicely to the provisions of (COM(2009) 122 final. However, STECF notes that based on the 2009 ICES assessment for Northern hake, the predicted landings for Northern hake for 2010 corresponding to a target fishing mortality rate of F=0.17 are about 40,000 t.

5.3. Pollack (*Pollachius pollachius*) in all areas

There is no assessment or advice on Pollack in all areas.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission (COM (2009) 224) on a consultation on fishing opportunities for 2010, STECF notes that Pollack in all areas can be classified under Category 11
Accordingly STECF notes that the rules for each of the above categories imply the following options for TACs in 2010.

	2010 TAC	Basis
Category 11	15283 t*	There is no STECF advice, Average of recent catches, 15% TAC constraint

* Average 2006-2008 with 15% TAC constraint

5.4. Blue whiting (*Micromesistius poutassou*) in ICES subareas I-IX, XII & XIV

The stock summary and advice for Blue whiting (*Micromesistius poutassou*) in ICES subareas I-IX, XII & XIV will be updated in October 2009 and included in the consolidated STECF review of advice for 2010 for Stocks of Community interest. In view of this, STECF has not attempted to categorise these resources according to the Communication on Fishing opportunities for 2010 (COM (2009) 224).

5.5. Horse mackerel (*Trachurus trachurus*) in ICES Divisions IIa, IVa, Vb, VIa, VIIa-c,e-k and VIIIa-e

The stock summary and advice for horse mackerel in ICES Divisions IIa, IVa, Vb, VIa, VIIa-c,e-k andVIIIa-e will be updated in October 2009 and included in the consolidated STECF review of advice for 2010 for Stocks of Community interest. In view of this, STECF has not attempted to categorise these resources according to the Communication on Fishing opportunities for 2010 (COM (2009) 224).

5.6. Northeast Atlantic Mackerel (*Scomber scombrus*) - combined Southern, Western and North Sea spawning components)

The stock summary and advice for northeast Atlantic mackerel in ICES Divisions IIa, IVa, Vb, VIa, VIIa-c,e-k andVIIIa-e will be updated in October 2009 and included in the consolidated STECF review of advice for 2010

for Stocks of Community interest. In view of this, STECF has not attempted to categorise these resources according to the Communication on Fishing opportunities for 2010 (COM (2009) 224).

6. Elasmobranch resources in the Northeast Atlantic

The text in Section 6 remains unchaged from that given in the STECF Consolidated review of advice for 2009 (STECF, 2009, EUR 23630 EN). Advice on elasmobranch resources is provided every two years and the advice for 2010 was provided in 2008. In view of this, STECF has not attempted to categorise these resources according to the Communication on Fishing opportunities for 2010 (COM (2009) 224).

The stock summaries and advice for elasmobranch resources in the northeast Atlantic will be updated in October 2009 and included in the consolidated STECF review of advice for 2010 for Stocks of Community interest.

6.1. General Comments

In European waters approximately 145 chondrichthyan species are listed, though this includes many species that are found either in the Mediterranean, or that have northerly records in the NE Atlantic off either Northwest Africa or Madeira (i.e. south of ICES Division IX). Many of these species are deep-water species for which the biology is poorly known.

FISHERIES: Historically, the increase of commercial fisheries directed to elasmobranch species and the economic value of them rank low among marine commercial fisheries (Bonfil, 1994). In the Northeast Atlantic, although some elasmobranchs are taken in directed fisheries (a few inshore vessels target skates and rays), the majority is landed as a by-catch from fisheries (various trawl, seine, longline and set net fisheries) targeting commercial teleost species. Recreational fisheries, including charter angling, for elasmobranchs may be an important component of the tourist industry in some areas.

Fisheries data for elasmobranchs in the ICES area are very poor in most of the cases, because the use of many countries "NEI" (not elsewhere identified) category. Furthermore, landings data is considered inaccurate for a number of reasons:

a) Quota species may be reported as elasmobranchs to avoid exceeding quota. This would lead to over reporting.
b) Fishermen may not take care when completing landings data records, for a variety of reasons.
c) Administrations may not consider that it is important to collect accurate data for these species.
d) Some species could be underreported to avoid highlighting that by-catch is a significant problem in some fisheries.
In most countries skates and rays are landed together, most often sorted in particular size categories, rather than by species. They are usually gutted, and sometimes only wings are landed. For assessment purposes, species-specific catch data are essential. Only some countries report (part of) the landings by species, e.g. Sweden, France and lately Spain (Basque country). As a result of market sampling programmes the species composition of the landings can now be estimated for some of the countries landing skates and rays. In the North Sea (IIa & IV), for 2008 onwards, countries are obliged to report landings for the major skate species separately. On the basis of a longer track record on a species basis (at least 5 years) it will be possible in future to advise on species-specific catches (ICES advice 2008 book 9).

Until 1999, the only control on elasmobranch species in the North-east Atlantic were TACs for basking shark and porbeagle agreed between Norway and the EU for Norwegian vessels fishing in EU waters (REF SGRST 2006 OLD). Since then, in 1999, TAC introduced for "skates and rays" in the North Sea, for spurdog in area IV and division IIa and in 2007 for spurdog in IIIA , I, V, VI, VII, VIII, XII and XIV (ICES WGEF Report 2007) (subsequently altered to cover I, V, VI, VII, VIII, XII & XIV in 2008). In the NAFO area, some directed fisheries for spurdog and skate are regulated by quota controls

SOURCE OF MANAGEMENT ADVICE: The main advisory body is ICES and ICCAT (for pelagic sharks).

PRECAUTIONARY REFERENCE POINTS: The reference points of deepwater sharks are U_{lim} at 0.2 × virgin biomass and U_{pa} at 0.5 × virgin biomass. There are no reference points for spurdog, catsharks and nursehounds, basking sharks, porbeagles, tope, and ray and skates in the North Sea.

STOCK STATUS: Elasmobranchs are typically slow-growing, have a high age-at-maturity and a low reproductive capacity. As a result of their life history traits, they are particularly sensitive to exploitation. They can be depleted very quickly and recovery will be slow. Most, though not all elasmobranchs in the ICES area, have exhibited declines under pressure of fishing activity.

RECENT MANAGEMENT ADVICE: Survey data are the basis for the advice of skates, rays and demersal sharks in the North Sea and in the Celtic Seas. These data are the most reliable species-specific data available for demersal skates. However, many of the fishery-independent surveys in this ecoregion are not based on extensive time-series. These surveys are designed primarily for other types of fish and so the gears and sampling grids are not ideal for skate stocks, especially those species with patchy distributions (ICES advice 2008 book 5). In addition, the analysis of survey data is hampered by uncertainties about the proper identification of some species of skate, and starry ray may have been misidentified as thornback ray on some occasions. This leads to problems in the interpretation of some survey data (ICES advice 2008 book 9).

In 1997 ICES gave an overview of the relative status of the main skate species in the North Sea. In 2005 ICES produced advice for these species for the first time. ICES previously recommended that the catches for skates and rays be set to zero if, and only if skates and rays were landed as a generic group. Since it is now required to report by species, ICES is now providing advice for the main species. The basis for the advice is the same as in 2006. ICES in 2008 provided advice for the Celtic Seas and Bay of Biscay/Iberian demersal elasmobranchs for first time.

Due to their life history traits it is recommended that directed fisheries to exploit elasmobranches should only be allowed when indicators and reference points for stock status and future harvest have been identified and management strategies, including appropriate monitoring requirements have been decided upon and are implemented.

There are potential problems in introducing effective management measures that will target elasmobranch species, which tend to be taken as a by-catch in multi-species fisheries, when management of the exploitation of other species inhabiting the same grounds may be a priority. Nevertheless, the possible benefits of implementing management measures (e.g. minimum and maximum landing sizes, and measures designed to protect nursery and breeding grounds) need to be fully investigated.

A Maximum Landing Length (MLL) of 100 cm for all skates and rays would be beneficial for common skate while not influencing most other species (ICES advice 2008 book 9). Because the elasmobranch species are caught as a by-catch in demersal fisheries, they would benefit from a reduction in the overall demersal fishing effort. Mesh-size regulations are probably not restrictive as there are few directed fisheries for these species (ICES advice 2008 book 5).

From 2005 to 2008 the TAC for North Sea skates and rays has been reduced by approximately 50%, and is now significantly lower than average recent landings. TACs only regulate the landings, and a low TAC on a low-value by-catch species could induce more discards. Discard survival is unknown although for some species is believed to be high, especially for the adult specimens.

Management objectives have not been adopted. An European sharks action plan was published by the European Commission in December 2007 and went out for consultation in 2008.

6.2. Spurdog (*Squalus acanthias*) in the North-east Atlantic

FISHERIES: Spurdog is a relatively small (<130 cm TL), widely distributed species occurring throughout the ICES area, and also widespread in the NW Atlantic, Pacific and other major oceans. Spurdog is one of the most important commercial elasmobranchs, with catches in directed and by-catch fisheries. There have been directed longline and gillnet fisheries in IIa, Iva, VIa, VIIa and VIIb-k and there are by-catches from demersal otter trawl and seine fisheries throughout the range of the stock.

The main fishing grounds for spurdog are: Norwegian Sea (ICES Sub-area II); North Sea (ICES Sub-area IV); NW Scotland (ICES Sub-area VI) and the Celtic Sea (ICES Sub-area VII). Some landings are also from the Skagerrak and Kattegat (ICES Sub-area IIIa) and Iceland (ICES Sub-area V). In the Celtic Sea, spurdog is

caught primarily by French trawlers and by English and Welsh longliners. In the Bristol Channel and Irish Sea by fixed gill nets.

Scottish and Irish trawlers and seiners fish for spurdog off the west coast of Scotland, and some English longliners from the east coast moved into this area after continuous poor fishing in the North Sea. They are also taken in small quantities in the Bay of Biscay (ICES Sub-area VIII) and off Greenland. These last areas are considered to be outside the main area of the NE Atlantic stock, which is also considered to be separate (at least for assessment and management purposes) from the NW Atlantic stock. Although most spurdog are now taken as by-catch in otter trawls and seines aimed principally at whitefish, directed fisheries for this species continue to operate locally and seasonally.

In the UK (E&W), just over 50% of spurdog landings were taken in line and net fisheries in 2006, with most landings coming from Sub-area VII and in particular the Irish Sea. About 45% of the Scottish landings originating from demersal trawl fisheries and less than 30% of the Irish landings coming from the gill nets and line fisheries (ICES CM 2007/ACFM:27).

Landings of this species remain difficult to quantify due to differences in the level to which they are identified in national landing statistics. Landings which are specifically identified as *S. acanthias* probably represent a minimum estimate, while a maximum estimate includes categories such as “Squalidae”, “dogfish” or “dogfish and hounds” which may include a number of other species (eg. deep-water squalids, spotted dogs, smoothhound and tope). Though not complete, the landings data for spurdogs show a marked decline since the mid-1980s. In earlier times, up to 60,000t were landed annually in the early 1960s, landings averaged about 35,000t throughout the 1980s, then steadily declined to an average of about 15,000t by the late 1990s. The landings for 2005 were reported to be as low as 5600t and for 2006 3000t, the lowest for many decades.

A TAC has been introduced for the EU waters of Subarea IV and Division IIa in 1999. This TAC has been reduced from 8870t in 2001 to 1051t in 2006. A by-catch quota of 841t has been set in 2007 for IIA(EC) and IV. These species shall not comprise more than 5 % by live weight of the catch retained on board. A TAC has been set for first time in 2007 for IIIA , I, V, VI, VII, VIII, XII and XIV of 2828t, but this was subsequently altered to 2004 t covering only areas I, V, VI, VII, VIII, XII and XIV in 2008. In 2008 there was no TAC for Division IIIa. Norway has a 70-cm minimum landing size, but it is not known if this is effective in reducing the exploitation of mature females. (ICES advice 2006 widely distributed stocks).

In 2007 Norway introduced a general ban on fishing and landing of spurdog in the Norwegian economic zone and in international waters in ICES areas I-XIV. However, boats less than 28m in length are allowed to fish for spurdog with traditional gear inshore and in territorial waters (4 nm). Spurdog caught as by-catch in other fisheries have to be landed and Fiskeridirektoratet are allowed to stop the fishery when catches reach last years level. Norway has a 70 cm minimum landing size. In 2004, Germany proposed that the EU propose that spurdog be listed under Appendix II of CITES (i.e. so that nations involved in the import/export trade would have to show that the harvesting and utilization was sustainable). Sweden has recently added spurdog to their national Red List.

SOURCE OF MANAGEMENT ADVICE: The main advisory body is ICES.

PRECAUTIONARY REFERENCE POINTS: No precautionary reference points have been defined or agreed for spurdog in the Northeast Atlantic.

STOCK STATUS: All analyses presented in previous reports of WGEF have indicated that the NE Atlantic stock of spurdog has been declining rapidly and is at its lowest ever level. Preliminary assessments making use of the long time-series of commercial landings data suggest that this decline has been going on over a long period of time and that the current stock size may only be a small fraction of its virgin biomass (< 10%). In addition, spurdog are less frequently caught in groundfish surveys than they were 20 years ago, and the preliminary analysis of Scottish survey data presented in 2006 (and in Dobby *et al.*, 2005) indicate significant declines in catch-rate (> 75% decline in CPUE since 1985). Input data are too limited to give an accurate estimate of current stock status in terms of absolute biomass and fishing mortality, but the illustrated trends in the stock biomass are undeniable (ICES CM 2007/ACFM:27).

RECENT MANAGEMENT ADVICE: The biology of spurdog is relatively well known in comparison to most other elasmobranch. Survey and landings data are available. A number of different methods have been explored making use of the long time-series of landings data, including surplus production models, separable age-based assessments and length-structure approaches. Survey data have also been analysed in terms of trends in CPUE and frequency of occurrence in survey hauls. All analyses indicate similar stock trends. Although these

models have not proved entirely satisfactory (due to the quality of the assessment input data), these exploratory assessments and survey data, indicate a decline in spurdog (ICES CM 2007/ACFM:27).

The ICES 2008 advice for 2009 and 2010 is the same as the advice given in 2006 since the only new information available for the stock was landings data which does not offer any reason to change the advice. The stock is depleted and may be in danger of collapse. ICES therefore advises that targeted fisheries should not be permitted to continue, and by-catch in mixed fisheries should be reduced to the lowest possible level. The TAC should cover all areas where spurdog are caught in the northeast Atlantic and should be set at zero for 2009.

Additionally to the 2006 advice, ICES offers the following considerations:

Simulation modelling has shown there are strong potential benefits to the stock by protecting mature female spurdog in this long-lived species. If a non-zero TAC would be set, ICES recommends the introduction of a **maximum** landing length (MLL). This is expected to deter fisheries targeting areas where large females occur.

The maximum landing length should initially be set at 100 cm. The length at 50% maturity for female spurdog is just over 80 cm and the maximum size of females is about 120 cm. The maximum size of males is about 90 cm. Fecundity of spurdog increases with length and females of 100–120 cm length generally produce the highest amount of pups (10–21). Survivorship of spurdog released from longline fisheries is thought to be high, but will be lower in gillnet and trawl fisheries.

It is recommended that exploitation of this species should only be allowed when indicators and reference points for stock status and future harvest have been identified and a management strategy, including appropriate monitoring requirements has been decided upon and is implemented. (ICES advice 2006 widely distributed stocks).

In addition, because a large proportion of spurdog are taken as by-catch in mixed demersal trawl fisheries. ICES supports the opinion that and the stock would be benefited from a reduction in overall demersal fishing effort. Spurdog form size- and sex-specific schools and these have historically been subject to directed fisheries specifically targeting large females.

STECF COMMENTS: STECF agrees with the ICES advice

6.3. Catsharks and nursehounds (*Scyliorhinus canicula and Scyliorhinus stellaris*) in the north-east Atlantic

FISHERIES: In the NE Atlantic nursehounds (*Scyliorhinus canicula* and *Scylliorhinus stellaris*) appear to be much more sedentary than the spurdog, and the few available tagging results indicate quite restricted movement. The nursehound is found on rough, even rocky grounds to the south and west of the UK, extending to the Mediterranean. Because it is comparatively scarce it has only a minor contribution to commercial fisheries.

Lesser spotted dogfish *Scyliorhinus canicula* is common on all coasts, from Mediterranean latitudes to south Norway, and contributes substantially to the landings of 'dogfish' from the North Sea, English Channel, Celtic Sea and Iberian waters. This species is taken primarily as a by-catch in demersal fisheries targeting other species and a large proportion of the catch is discarded, although in some coastal areas there are seasonal small-scale directed fisheries. In areas III, IV and VIId, landings for *Scyliorhinus canicula* increased from 1633 in 2000 to 1842t in 2006. In the Bay of Biscay and Iberian waters landings of Scyliorhinus spp have recorded since the mid nineties and have fluctuated between 1500t and 2000t. Landings were 1688t in 2005 and 1572 in 2006.

SOURCE OF MANAGEMENT ADVICE: The main source of information on lesser-spotted dogfish in the Northeast Atlantic is ICES.

PRECAUTIONARY REFERENCE POINTS: No precautionary reference points have been agreed for *S. canicula* or *S. stellaris* in the Northeast Atlantic.

STOCK STATUS: The stock structure is unknown although it is admitted separate stocks reside in separate ICES Divisions and that immigration and emigration from adjacent populations are either insignificant or on a par. An assessment of *S. canicula* in the Cantabrian Sea indicates an increase in the stock. Possible explanations for this increase in abundance of lesser-spotted dogfish is the high survival of discards, plus the fact that other discarded fish might be providing additional food sources to the dogfish. The stock of the lesser stotted dogfish in North Sea shows a general increase in abundance, whereas in areas VIa and VII is stable/increased. The

greater spotted dogfish in area VII is locally stable and is increasing in area VIIa. (ICES advice 2008). Both species have have a high discard survival ratio.

RECENT MANAGEMENT ADVICE:
Appropriate species-specific landings (for *Scyliorhinus* spp.) are required before the level of a *status quo* catch could be advised on. There are no management measures in place for the demersal sharks (*Scyliorhinus*) in North Sea and Celtic Seas. The current exploitation rates on this species appear to be sustainable. As there are no apparent detrimental impacts on the stock from current commercial fisheries, no management actions are required for this species at this time. The greater spotted dogfish in Celtic seas has a restricted distribution and is locally abundant in parts of the Celtic Seas ecoregion, and should be monitored appropriately.

STECF COMMENTS: STECF agrees with the ICES advice.

6.4. Basking shark (*Cetorhinus maximus*) in the north-east Atlantic

FISHERIES: According to WGEF a single stock of basking sharks *Cetorhinus maximus* exists in the ICES area. There is no information on transatlantic migrations. A genetics study underway in the UK aims to differentiate distinct stocks globally. They are known to congregate in areas with a high zooplankton biomass (e.g. fronts) and, therefore, may be locally important, but the locations of these areas are variable.

Biological data are limited, although all lamniform sharks have a very low fecundity and late age at maturity and they are likely to be sensitive to additional mortality.

There have been directed fisheries for this species by Ireland, the UK, and Norway. The last directed fishery was that of Norway, and was prosecuted in II, IV, VI and VII. The Norwegian fleet has prosecuted local fisheries from the Barents Sea to the Kattegat, as well as more distant fisheries ranging across the North Sea and as far as the south and west of Ireland, Iceland and Faeroe. The geographical and temporal distribution of the Norwegian domestic basking shark fishery changes markedly from year to year, and this was suggested by Stott (1982) to be due to the unpredictable nature of the sharks' inshore migration. Recent studies have highlighted the important role that oceanographic conditions can play in affecting basking shark distribution.

Since the mid-1940s, catches have varied considerably. In the late 1970s catches were about 10000t, in early 1980s about 4000t and in recent years a serious decline has been registered with catches ranging between 77t and 293t in the last eight years. Catches in 2005 were 221t and in 2006 16t (Norwegian by-catch) which was considerably less than in 2005. It is not known whether this decrease is related to marked price reductions, or that release of live specimens has increased, or because actual abundance has declined.

Limited quantitative information exists on basking shark discarding in non-directed fisheries. However, anecdotal information is available indicating that this species is caught in gillnet and trawl fisheries in most parts of the ICES area. Most of this by-catch takes place in the summer months as the species moves inshore. The total extent of these catches is unknown. The requirement for EU fleets to discard all basking sharks caught as by-catch means that information cannot be obtained on these catches. A better protocol for recording and obtaining scientific data from by-catches is necessary for assessing the status of the stock.

Since 2006, there is no targeted fishery for basking sharks in Norway, UK or Ireland. Based on ICES advice Norway banned all directed fisheries for basking shark in 2006, but dead or dying by-catch specimens can be landed and sold as before. The basking shark has been protected from killing, taking, disturbance, possession and sale in UK territorial waters since 1998. In Sweden it is forbidden to fish for or to land basking shark. Since 2002, there has a complete ban on the landings of basking shark from within the EU waters of ICES Sub-areas IV, VI and VII (Annex ID of Council Regulation (EC) 2555/2001). Since 2007, the EU has prohibited fishing for, retaining on board, transhipping or landing basking sharks by any vessel in EU waters or EU vessels fishing anywhere (Council regulation (EC) No 41/2006).

Basking shark was listed on Appendix II of the Convention on International Trade in Endangered Species (CITES) in 2002, on Appendices I and II of the Convention on the Conservation of Migratory Species (CMS) in 2005, on Annex I, Highly Migratory Species, of the UN Convention on the Law of the Sea (UNCLOS) and on the OSPAR (Convention on the protection of the marine environment of the north-east Atlantic) list of threatened and / or declining species in 2004.

SOURCE OF MANAGEMENT ADVICE: The main advisory body is ICES. There is no assessment of this stock. The evaluation is based on landings data and anecdotal information.

PRECAUTIONARY REFERENCE POINTS: No precautionary reference points have been proposed for basking shark in the Northeast Atlantic.

STOCK STATUS: Available landings and anecdotal information suggest that the stock is severely depleted.

RECENT MANAGEMENT ADVICE: The only new information available in 2008 for basking shark is landings data which gives no basis to revise the advice from 2006. The advice for 2009 and 2010 is therefore the same as the advice given in 2006: "No targeted fishing for basking shark should be permitted and additional measures should be taken to prevent by-catch of basking shark in fisheries targeting other species. A TAC should cover all areas where basking sharks are caught in the northeast Atlantic. This TAC should be set at zero." At present there is no directed fishery for this species. The WGEF considered that no targeted fishery should be permitted unless a reliable estimate of a sustainable exploitation rate is available. The TAC area should correspond to the stock's distribution, thus the entire ICES area. The present TAC only covers Areas IV, VI & VII, although most of the recorded landings are in Areas I & II. Proper quantification of the impact of by-catch, discarding, and ship strikes on this species in the ICES area is required. Where national legislation prohibits landing of bycaught basking sharks, measures should be put in place to ensure that incidental catches are recorded and carcasses made available for research.ICES advises that additional measures should be taken to prevent by-catch of basking shark in fisheries targeting other species.

STECF COMMENTS: STECF agrees with the ICES advice.

6.5. Tope (*Galeorhinus galeus*) in the north-east Atlantic

FISHERIES: There are no currently no targeted commercial fisheries for tope in the north-eastern Atlantic, though they are taken as a by-catch in trawl, gillnet and longline fisheries, including demersal and pelagic set gears. Though tope are discarded in some fisheries, due to their low market value, other fisheries land this by-catch. Tope is also an important target species in recreational sea angling and charter boat fishing in several areas, with most anglers and angling clubs following catch and release protocols. Landings data are limited, as landings data are often included as "dogfishes and hounds" (DGH). Nevertheless, England and France have some species-specific landings data, and there are also limited data from Denmark, Ireland, Portugal and Spain in recent years. Many of the reported landings are from the English Channel, Celtic Sea and northern Bay of Biscay. Tope is also caught in Spanish fisheries in the western Cantabrian Sea (Galicia), where about 80% of the landings are from longline vessels, with the remainder from trawl and small gillnets. Tope also feature in the catches off mainland Portugal, and are an important component of Azorean bottom long line fisheries. Tope are also caught in offshore long-line fisheries is this area. There were no major changes to the fishery noted in 2006. It has been suggested that there may be a greater retention of tope in some UK inshore fisheries operating in ICES Division IVc, as a result of by-catch limits on skates and rays, although no data are currently available to examine this.

Landings were increased since 1992 until 2002 (from 427t to 798t), then dropped to 372t in 2005. In 2006 landings were 497t. The degree of possible mis-reporting or under-reporting is not known. Landings indicate that France is one of the main nations landing tope. The United Kingdom also land tope, though species-specific data are not available prior to 1989. Since 2001, Ireland, Portugal and Spain have also declared species-specific landings, though recent data were not available for Spanish fisheries. Though some discards information is available from various nations, data are limited for most nations and fisheries. The available data (England and Wales) indicated that juvenile tope tend to be discarded in demersal trawl fisheries, though larger individuals are usually retained, with tope caught in drift and fixed net fisheries usually retained.

SOURCE OF MANAGEMENT ADVICE: The main recent source of information is ICES. However no species specific management advice is given.

PRECAUTIONARY REFERENCE POINTS: No precautionary reference points have been agreed for tope in the Northeast Atlantic.

STOCK STATUS: Stock structure is unknown. No assessment was undertaken, due to insufficient data. WGEF considers that there is a single stock of tope in the ICES area, with the centre of the distribution ranging from Scotland and southern Norway southwards to the coast of north-western Africa and Mediterranean Sea. Hence, the North East Atlantic tope stock covers the ICES Area (II–X), Mediterranean Sea (Subareas I–III) and northern part of the CECAF area, and any future assessment of the Northeast Atlantic tope stock may need to be undertaken in conjunction with the General Fisheries Commission for the Mediterranean (GFCM) and Fishery

Committee for the Eastern Central Atlantic (CECAF). The stock unit identified by WGEF was based on published tagging studies which clearly indicate that tagged fish move widely throughout the north-eastern Atlantic). Tope is listed in the UK Biodiversity priority list and is classified as Vulnerable in the IUCN Red data List.

RECENT MANAGEMENT ADVICE: There is no species specific management advice for Tope in the NE Atlantic. However ICES considers that tope is highly vulnerable to over-exploitation, as they have low population productivity, relatively low fecundity and protracted reproductive cycle. Unmanaged, targeted fisheries elsewhere in the world have resulted in stock collapse (e.g. off California and in South America).

STECF COMMENTS: STECF has no comments.

6.6. Rays and Skates in the North Sea and Celtic Seas

SPECIES:

Common skate	*Dipturus batis*	North Sea	Celtic Seas
Thornback ray	*Raja clavata*	North Sea	Celtic Seas
Spotted ray	*Raja montagui*	North Sea	Celtic Seas
Starry ray	*Amblyraja radiata*	North Sea	Celtic Seas
Cuckoo ray	*Leucoraja naevus*	North Sea	Celtic Seas
Blonde ray	*Raja brachyura*	North Sea	Celtic Seas
Undulate ray	*Raja undulata*	North Sea	Celtic Seas
Smalleyed ray	*Raja microocellata*		Celtic Seas
Sandy ray	*Leucoraja circularis*		Celtic Seas
Shagreen ray	*Leucoraja fullonica*		Celtic Seas
White skate	*Rostroraja alba*		Celtic Seas

DISTRIBUTION OF SKATES: Collectively, skates have a wide distribution in coastal waters of the Northeast Atlantic, though individual species can be localized in a relatively small area where their preferred habitat occurs. The most abundant skate species in the North Sea is starry ray (*Amblyraja radiata*).

Cuckoo ray (*Leucoraja naevus*), is a relatively small-bodied species (L_{MAX} = 75cm) that lives in shallow to moderate depths from 20 m down to about 150 m in the north-west sector of the North Sea. Thornback ray (*R. clavata*) has a more coastal distribution, being found in water depths down to 60 m. It occurs in a number of local concentrations in the North Sea, between which there appears to be a regular exchange of individuals (Walker *et al*, 1997).

All rays have a commercial value, except for starry ray (*A. radiata*), though even this species is landed incidentally in the Danish industrial fisheries and is taken in Icelandic fisheries.

Common skate (*Dipturus batis*) tends to be found in water from 30 to 600 m deep, whilst the long-nose skate (*D. oxyrinchus*) is found in deeper water from 150 to 900 m, although juveniles can be found in shallower water (Wheeler, 1969). The distribution of the latter species is not as extensive as that of the common skate, being found off southern Norway and around Scotland. In the past, the common skate was considered to be extensively distributed throughout the central and northern North Sea, but in the last few decades this species appears to have retreated to the very northern North Sea and is currently caught only off Shetland (Walker, 1995).

FISHERIES: Rays and skates are taken as target and by-catches in most demersal fisheries in the ICES area, with the exception of the Baltic. There are some directed fisheries, for example, in VIIa, but most ray and skate landings are by-catches in trawl and in seine fisheries.

A generic TAC introduced for all skate and rays species In North Sea in 1999 but not yet for Celtic Seas. Prior there has been no obligation for fishermen to record catches in the logbooks used for monitoring quota uptake of TAC species. As a consequence, there is a lack of information on the fisheries for rays. Statistical information by species is also limited because few European countries differentiate between species in landings statistics and

they are collectively recorded as skates and rays. The main exception is France, for which the cuckoo ray and the thornback ray are the most important species of skates and rays landed.

After France, the UK lands a greater weight of mainly thornback, cuckoo, blonde and spotted rays than any other European country. The majority of rays landed by both these countries, and from the Netherlands, Belgium, Denmark, Germany and Sweden are taken as a by-catch in otter trawls and seines aimed principally at gadoids and flatfish. There are, however, a number of small-scale fisheries using large meshed tangle nets directed at thornback ray, and there have been directed longline fisheries for common skate.

Ray fisheries occur in coastal waters and tend to be seasonal, and size selection in towed gears is minimal owing to the shape of rays, though selection on board has occurred to comply with the market's preference for larger fish. Rays have been subjected to intensive exploitation in the North Sea: Landings decreased significantly during the 1930s, but increased after World War II, during which period fishing had almost ceased. In the southern North Sea, landings have declined since 1948, whereas in the northern and central area the major decline started around 1965. Walker (1994) reports that, despite an increase in fishing effort, landings dropped from 12 to 5 thousand tonnes between 1954 and 1974. Since the mid-1970s, total landings of rays from the North Sea have remained more or less constant and, in recent years, Norwegian landings from the northern North Sea and Norwegian Sea have seldom exceeded 1000 t.

Overall landing figures for Rays and Skates in the North Sea have decreased in the last 10 years from almost 5,000t in 1996 to 3,000t in 2005, and 2,800 in 2006. For 2007, the landings estimated to be 1,100 t (preliminary data). In Celtic Seas, landings from 19,000 in 2006 decreased to 10,000 in 2006.

SOURCE OF MANAGEMENT ADVICE: The main advisory body is ICES. In 2008, ICES gave advice for Celtic Seas rays and skates for first time.

PRECAUTIONARY REFERENCE POINTS: There are no agreed reference points for rays and skates in the North Sea.

STOCK STATUS: In the absence of defined reference points, the status of the stocks of demersal skates and rays (members of the family Rajidae) cannot be evaluated. The following provides a qualitative summary of the general status of the major species based on surveys and landings:

North Sea

Common skate – is depleted in IVa (likely merging with VIa & IIa). It was formerly widely distributed over much of the North Sea but is now found only rarely, and only in the northern North Sea. The distribution extends into the west of Scotland and the Norwegian Sea.

Thornback ray – Stable/increasing in areas IVc, VIId and uncertain in IVa,b. Thedistribution area and abundance have decreased over the past century, with the stock concentrated in the southwestern North Sea where it is the main commercial skate species. Its distribution extends into the eastern Channel. Survey catch trends in Division IVc have been stable/increasing in recent years. The status of *R. clavata* in Divisions IVa,b is uncertain.

Spotted ray – stable/increasing in IVb,c. The area occupied and abundance has fluctuated without trend.

Starry ray– stable in IVa,b, IIa. Survey catch rates increased from the early 1970s to the early 1990s and have decreased slightly since then.

Cuckoo ray – stable in IVa,b. Since 1990 the area occupied has fluctuated without trend. Abundance has decreased since the early 1990s, but has been stable in recent years.

Blonde ray – uncertain in IVc, VIId. This species has a patchy occurrence in the North Sea. It is at the edge of its distributional range in this area.

Undulate ray – uncertain, reason for concern in VIId, merges with VIIe. Mainly limited to Division VIId where it merges with Division VIIe. Occasional vagrants in Division IVc. The biology of the species and recent disappearance from surveys give rise to concern. It has a patchy and localized distribution, possibly forming discrete stocks, which make the undulate ray sensitive to local depletion. Additionally, the species has disappeared from the English beam trawl survey in Division VIId in the last two years.

Celtic Seas

Common skate – Depleted in areas VI, VII. It was formerly widely distributed in the Irish Sea (VIIa), but is now rarely found in this division. Now mostly found off Northwest Scotland (VIa), west of Ireland (VIIb,c), and in the deeper waters of the Celtic Sea (VIIg–j), with occasional individuals in shallower areas (VIIe–f).

Thornback ray – Stable/increasing in areas Via, VIIa,f,g. Catches in the main areas of abundance (VIa, VIIa,f,g) have been stable/increasing in recent years

Spotted ray – Stable/increasing in areas Via, VIIa,f,g.. Catches in the main areas of abundance (VIa, VIIa,f,g) have been stable/increasing in recent years

Cuckoo ray – Stable/increasing in area Via, uncertain in area VII. Uncertain and more robust studies on stock identity are required. Data from surveys give contrasting signals showing stable/increasing catches in VIa, but stable or declining catches within Subarea VII. French lpue in the Celtic Sea is also declining.

Blonde ray – Uncertain in areas, Via, VIIa, f. This species has a patchy distribution in the Celtic Seas ecoregion, so interpretation of survey trends is problematic.

Undulate ray – Uncertain in areas VIIj and VIId,e. Given that this large-bodied species has a patchy distribution in the inshore waters of the Celtic Seas ecoregion, it is susceptible to localized over-exploitation.

Smalleyed ray – Stable/increasing in area VIIf. Catches in the main area of the stock distribution (VIIf) have been stable/increasing over the survey time-series.

Sandy ray – Uncertain in area VI, stable/increasing in area VIIb,c,h-k. This offshore species is not well sampled in most groundfish surveys. Catches on the Porcupine Bank have been stable/increasing in recent.

Shagreen ray – Uncertain in area VII. This offshore species is not well sampled in most groundfish surveys.

White skate – Severely depleted in area VII. Possibly extirpated from most parts of this ecoregion. No authenticated records in recent groundfish surveys.

RECENT MANAGEMENT ADVICE: In 2006 the EC TAC for skates and rays for areas IIa (EC waters) and IV (EC waters) was set at 2737t, which was 15% less than the TAC for 2005. The TAC for 2007 was set at 2190t, 20% less than that for 2006 (on no particular scientific ground). This TAC is indicated to comprise of "by-catch quota" and it is specifically mentioned that "These species shall not comprise more than 25% by live weight of the catch retained on board". Subject to the individual recording of landed species, combined catches for demersal skates and rays should be set on the basis of the recent average landings (2002–2006). The ICES advice for 2008 was zero catch while for 2009 and 2010 is the combined catches of recent average landings (2002–2006). According to this advice, the predicted landings for 2009 and 2010 are expected to be 3100t for IIIa, IV and VIId. Targeted fisheries of the most threatened species (common skate and undulate ray) should not be permitted, and measures should be taken to minimize by-catch.

From 2005 to 2008 the TAC for North Sea skates and rays has been reduced by approximately 50%, and is now significantly lower than average recent landings. Based on the level of recent landings it is obvious that the current TAC has become restrictive for some countries, which may increase discarding. Discard survivorship, however, is not known. A Maximum Landing Length (MLL) of 100 cm for all skates and rays would be beneficial for common skate while not influencing most other species.

Species specific advice in North Sea

Common skate and Undulate ray: ***No target fisheries*** (target fisheries for these species should not be permitted and measures should be taken to minimize by-catch).

Spotted ray, Starry ray, Cuckoo ray, Thornback ray (in Division IVc): ***Status quo*** **catch** (fishing mortality should not increase and the fishery should be closely monitored. Measures to deter fisheries that target spawning concentrations of thornback ray in Division IVc should be considered because this is the most vital part of the thornback ray spawning in the southwestern North Sea).

Blonde ray Thornback ray (in Division IVa,b): ***No advice*** (Because these species have a tendency to form aggregations, they may be prone to localized depletion).

Species specific advice in Celtic Seas

White skate: ***No fisheries*** (has a localized and patchy distribution, and is extirpated from most parts of the Celtic Seas ecoregion. It should receive the highest possible protection. Any incidental by-catch should not be landed, but returned, to the sea, as they are likely to have a high survival rate).

Common skate, Undulate ray: ***No target fisheries*** (Common skate has declined in many inshore areas of England and Wales, although is still present in the inshore areas of Scotland and Ireland. Target fisheries for this species should not be permitted and measures should be taken to minimize by-catch and undulate ray has a patchy distribution, with some of these areas showing signs of depletion. As a precautionary measure, target fisheries for this species should not be permitted unless exploitation rates are shown to be sustainable).

Thornback ray, spotted ray in VIa and VIIa,f,g., cuckoo ray in VIa and smalleyed ray in VIIf: ***Status quo catch*** (smalleyed ray has a restricted distribution and is locally abundant in the Bristol Channel, this stock should be monitored to ensure that it does not decline).

Cuckoo ray in VII, blonde ray, sandy ray, shagreen ray: ***No advice*** (For cuckoo ray, further studies to better understand stock structure are required, although this species is one of the more abundant skates in the Celtic Seas ecoregion, blonde ray is widely distributed in the Celtic Seas ecoregion, but it has a tendency to form local aggregations and so may be prone to localized depletions, sandy ray is most abundant on the outer continental shelf and upper continental slope, it is not well sampled in most existing groundfish surveys and shagreen ray is most abundant on the outer continental shelf and upper continental slope, it is not well sampled in most existing groundfish surveys).

STECF COMMENTS: STECF agrees with the ICES advice

6.7. *Porbeagle* (*Lamna nasus*) in the north-east Atlantic

FISHERIES: Porbeagle is a highly migratory and schooling species. Sporadic targeted fisheries develop on these schools. Porbeagle fisheries are highly profitable. The main countries catching or having caught porbeagles are Spain and France. However in the past, important fisheries were prosecuted by Norway, Denmark and the Faeroe Islands.

The only regular, target fishery that still exists is the French fishery. Several countries have sporadic fisheries taking porbeagles (which also takes occasional tope and blue sharks), in the North Sea, west of Ireland and Biscay, as they appear. These include Denmark, UK, and French vessels fishing to the south and west of England. There is a by-catch by demersal trawlers from many countries, including Ireland, UK, France and Spain.

SOURCE OF MANAGEMENT ADVICE: The main recent sources of information and advice on porbeagle in the Northeast Atlantic is ICES. There is no fishery-independent information on this stock. Landings data for porbeagle may be reported as porbeagle, or as 'various sharks nei' in the official statistics. This means that the reported landings of porbeagle are likely an underestimation of the total landing of the species from the NE Atlantic.

PRECAUTIONARY REFERENCE POINTS: No precautionary reference points have been agreed for porbeagle in the Northeast Atlantic.

STOCK STATUS: Available information from Norwegian and Faroese fisheries shows that landings declined strongly and these fisheries ceased in the ICES area. These fisheries have not resumed, implying that the stock has not recovered, at least in the areas where those fisheries took place. The available information from the French fishery suggests that CPUE reached a peak in 1994 and afterwards has declined. The CPUE has been stable at a much lower level since 1996.

Porbeagle is subject to the UN agreement on highly Migratory Stocks and the UK Biodiversity priority list. In IUCN, porbeagle is classified as Vulnerable for the depleted unmanaged population in the northeast Atlantic, and Lower Risk (conservation dependent) for the northwest Atlantic, in recognition of the introduction of the US and Canadian Fisheries Management Plans (IUCN 2000).

RECENT MANAGEMENT ADVICE: Given the state of the stock, no targeted fishing for porbeagle should be permitted and by-catch should be limited. Landings of porbeagle should not be allowed.

Porbeagles are particularly vulnerable to fishing mortality, because the population productivity is low (long-lived, slowgrowing, high age-at-maturity, low fecundity, and a protracted gestation period) and they have an aggregating behavior. In the light of this, risk of depletion of reproductive potential is high. It is recommended that exploitation of this species should only be allowed when indicators and reference points for stock status and future harvest have been identified and a management strategy, including appropriate monitoring requirements has been decided upon and is implemented.

STECF COMMENTS: STECF agrees with the ICES advice that no targeted fishing for porbeagle should be permitted. STECF also agrees with ICES that it should be a requirement for all countries to document all incidental by-catches of this species.

To afford the stock maximum protection, STECF **recommends** that there should be no catches of porbeagle from the Northeast Atlantic.

7. Deep Sea Resources

The text in Section 7 remains unchaged from that given in the STECF Consolidated review of advice for 2009 (STECF, 2009, EUR 23630 EN). Advice on deep sea resources is provided every two years and the advice for 2010 was provided in 2008. In view of this, STECF has not attempted to categorise these resources according to the Communication on Fishing opportunities for 2010 (COM (2009) 224).

The stock summaries and advice for deep sea resources in the northeast Atlantic will be updated in October 2009 and included in the consolidated STECF review of advice for 2010 for Stocks of Community interest.

7.1. Deep-water fish (several species) in IVA, IIIa, Vb, VI, VII, VIII, IX, X and XII.

GENERAL COMMENTS AND DESCRIPTION OF FISHERIES

The term 'deep-water' is defined by ICES to include waters of depths greater than 400 m. Deep water in the ICES area covers the deep parts of ICES Sub-areas I, II, III, V-X, XII, and XIV. However, some of the species included as deep-water species in the management advice by ICES are also distributed in more shallow waters, e.g. ling and tusk. Other species/stocks, which have similar depth distributions, e.g. anglerfish and Greenland halibut, are already assessed by ICES in area-specific assessment working groups.

Deep-water covers a huge area from the Arctic north to the sub-tropical south. It also covers ridges and underwater seamounts often with a quite unique biology. Productivity is very low in the deep-water. The diversity of deep-water life history strategies is considerable, but many species of fish targeted by fisheries are particularly vulnerable to disturbance because they grow slowly, mature late in life, and form aggregations easily accessible to fisheries. Recovery rates are much slower than in shallower waters. The knowledge of central biological characteristics such as stock identity, migration, recruitment, growth, feeding, maturation, and fecundity of most deep-water species still lags considerably behind that of commercially exploited shelf-based species. Such information is required to expand our understanding of the population dynamics of deep-water fishes, which in turn is required to underpin stock assessments.

Fisheries data including length and age compositions, discards, and cpue, are slowly increasing for deep-water stocks but time-series data are often short and are not available in sufficient spatial resolution for some stocks e.g. orange roughy and alfonsinos. VMS data are not readily available for most fleets.

In many cases, information on stock structure of deep-water species is lacking. This year, ICES provides advice on separate stocks of tusk (*Brosme brosme*) on the basis of new genetic evidence considered in 2007, but for the other species there is no conclusive information on stock structure. In those cases "management units" have been used that have previously been suggested on the basis of distribution, life history and biological parameters, and bathymetrical considerations.

Fisheries on deep-water species have developed rapidly and the resources they exploit are generally especially vulnerable to over-fishing. Within the ICES area species/stocks have been depleted before appropriate

management measures have been implemented e.g. orange roughy. It is also of concern that the landings statistics available may not reflect the true scale of the recent fishing activity, especially in waters outside national EEZs.

In ICES Division IVa there is a by-catch of Greater silver smelt (*Argentina silus*) in the industrial trawl fishery. A longline fishery targets tusk (*Bosme brosme*) and ling with forkbeard (*Phycis blennoides*) and grenadier as a by-catch. Some deepwater species are landed as a by-catch in the trawl fisheries targeting anglerfish and Greenland halibut.

In ICES Division IIIa there is a targeted trawl fishery for roundnose grenadier (*Coryphaenoides rupestris*) and greater silver smelt. Several deep-water species are also taken as a by-catch in, for instance, the trawl fisheries for northern shrimp.

In ICES Sub-area V there are trawl fisheries targeting blue ling, redfish species, argentine and orange roughy (*Hoplostethus atlanticus*), which have as by-catch a great number of other deep-water species. There are also traditional longline fisheries for ling and tusk, and trawl and gill net fisheries for Greenland halibut and anglerfish.

In ICES Sub-areas VI and VII there are directed fisheries for blue ling, roundnose grenadier, orange roughy, black scabbardfish and deep-water sharks.

In Sub-area VIII there is a longline fishery, which mainly targets greater forkbeard, and trawl fisheries for hake, megrim, anglerfish and *Nephrops* which have a by-catch of deep-water species.

In ICES Sub-area IX some deep-water species are a by-catch of the trawl fisheries for crustaceans. Typical species are bluemouth (*Helicolenus dactylopterus*), greater forkbeard, conger eel (*Conger conger*), blackmouth dogfish (*Galeus melastomus*), kitefin shark (*Dalatias licha*), gulper shark (*Centrophorus granulosus*) and leafscale gulper shark (*Centrophorus squamosus*). There is a directed longline fishery for black scabbard fish (*Aphanopus carbo*) with a by-catch of the Portuguese dogfish (*Centroscymnus coelolepis)* and leafscale gulper shark (*Centrophorus squamosus)*. There is also a longline (Voracera) fishery for *Pagellus bogaraveo*.

In ICES Sub-area X the main fisheries are by handline and longline near the Azores, and the main species landed are red (blackspot) seabream (*Pagellus bogaraveo*), wreckfish (*Polyprion americanus*), conger eel , bluemouth , golden eye perch (*Beryx splendens*) and alfonsino (*Beryx decadactylus*). At present the catches of kitefin shark are made by the longline and handline deepwater vessels and can be considered as accidental. There are no vessels at present catching this species using gillnets. Outside the Azorean EEZ there are trawl fisheries for golden eye perch, orange roughy, cardinal fish (*Epigonus telescopus*), black scabbard fish, and wreckfish .

In ICES Sub-area XII there are trawl fisheries on the mid-Atlantic Ridge for orange roughy, roundnose grenadier, and black scabbard fish. There is a multispecies trawl and longline fishery on Hatton Bank, and some of this occurs in this sub-area, some in Sub-area VI. There is considerable fishing on the slopes of the Hatton Bank, and effort may be increasing. Smoothheads (*Alepocephalus* species.) were previously usually discarded but now feature to a greater extent in the landings statistics.

In ICES Sub-area XIV there are trawl and longline fisheries for Greenland halibut (*Rheinhardtius hippoglossoides*) and redfish that have by-catches of roundnose grenadier, roughhead grenadier (*Macrourus berglax*) and tusk.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES.

PRECAUTIONARY REFERENCE POINTS: Precautionary reference points have not been defined for these stocks.

STOCK STATUS: No update or benchmark stock assessments could be made in 2008, and information on exploitation rates remains uncertain. The information on stock status of deep-water species derives from different sources. In many cases the main source of information is catch rates from the commercial fisheries, although in some cases there is also information from research surveys. A number of research surveys have been initiated in recent years, and these are expected to aid the future knowledge on these species.

MANAGEMENT MEASURES Some fisheries are regulated by unilateral or internationally agreed TACs and these may have reduced exploitation /curbed expansion.

In the NEAFC regulatory area, NEAFC has in recent years introduced measures requiring that effort should be reduced by a total of 35% by 2008 and the EU introduced measures in 2006 that set effort for vessels holding deepwater licences to 80% of the 2003 level.

RECENT MANAGEMENT ADVICE: For a number of deep-water and elasmobranch stocks, the new information available since the last advice in 2006 is too sparse to warrant a new advice. This generally refers to situations where only landings information is available from which stock status cannot be derived. In those cases, ICES presents the updated (landings) information but reiterates the advice provided in 2006 and does not provide the full descriptions of the background of the fisheries and the assessment. To improve the knowledge base on these stocks, it is vital to develop indicators of abundance (i.e. surveys, cpue) and/or indicators of exploitation (i.e. fishing effort).

Deep-water stocks have previously been classified by ICES (ICES, 2005) on the basis of longevity and growth rate.

Only in very rare cases did ICES have information on indicators for exploitation pressure (e.g. fishing mortality). The approach to the ICES advice on deep-water species has been largely driven by the interpretation of the available abundance indicators (cpue or survey indicators) and the classification according to life history parameters:

- For species in cluster 1 (highly vulnerable)
    - When cpue information shows declines and life history information indicates that species are highly vulnerable, ICES generally recommends no catches of that species.
- For species in cluster 2 (less vulnerable)
    - When recent cpue is much lower than historical cpue, ICES generally recommends a reduction in catch or a low catch, maintaining that level until there is sufficient information that the species can sustain higher exploitation.
    - When cpue information shows no clear trend, ICES generally recommends recent average catches.
    - When surveys show a clear increase in abundance, ICES generally recommends no increase in current catches.

ICES reiterates that effort should be a driving management tool in these mixed deep-water fisheries. However, in the absence of pressure indicators, ICES has attempted to interpret the available landings and cpue data in a way that could be useful even when effort information is not available. The perceived tendency of the stock indicators (cpue, surveys) has been used to argue for the suggested changes to the landings. While acknowledging that a one-to-one relationship between catches and effort is unlikely ICES, in the absence of information, considers that the suggested reductions in landings would result in reductions of effort.

The ICES advice for deep-water species is provided every second year. The advice is applicable for 2009 and 2010.

These have been supplemented by new advice arising from recent requests to ICES made by NEAFC. New ICES advice on deep-water species will be provided in 2010.

STECF COMMENTS: STECF agrees with the ICES recommendation and considers the proposals as a constructive way forward in the light of uncertainties on the states of these stocks and the likely risks to them. STECF notes that appropriate sustainable exploitation rates for most deepwater species have not been determined and the risks associated with current fishing effort are not quantified. Given the biology of many of these species, very low exploitation rates or zero fishing are likely to be advised in most cases.

STECF once again reiterates its comment that management measures based on effort/fleet regulation are a more appropriate long-term approach for management of these fisheries and consequently fisheries based advice, in addition to that currently given, has value. STECF notes that in its advice for some species, ICES groups together stock components that are characterised by a shortage of data rather than on a biological basis. STECF suggests that in order to provide rational fisheries based advice, there is a need to define groupings, which have a spatial coherence that facilitates management. STECF further suggests that continued efforts should be made to define biological units based on, for example, genetic studies.

ICES has commented in 2006 on the precautionary reference points used for some stocks. Reference points that were previously suggested were: $\mathbf{U}_{lim}$= 0.2* $\mathbf{U}_{MAX}$ and $\mathbf{U}_{pa}$= 0.5* $\mathbf{U}_{MAX}$ (where U is the index of exploitable biomass). The ICES SGPA and NAFO proposed these reference points in 1997 for use in data poor situations. However, for most stocks ICES does not consider the available cpue series as suitable for defining $\mathbf{U}_{MAX}$ because the series are too short and U_{MAX} is not an index virgin biomass. STECF agrees that this is a valid point

but in a data-poor situation and in the precautionary context, these reference points are likely to the best available for these stocks, even though they may underestimate depletion/overestimate recovery in relation to actual U_{MAX}.

STECF notes that in any scheme to reduce existing fisheries in the short-term, attention would need to be paid to potential effort displacement into other neighbouring fisheries on the continental shelf. STECF further notes that several of these deep-water fisheries take place in international waters outside national or EU jurisdiction. Hitherto this has rendered it difficult to enforce management measures for these fisheries.

7.2. Alfonsinos/Golden eye perch (*Beryx spp.*)

FISHERIES: The section deals with two species, *Beryx splendens* and *B. decadactylus*. Most of the landings of *Beryx* are from hand-lines and long-lines within the Azorean EEZ of Sub-area X and by trawl outside the EEZ on the Mid-Atlantic Ridge. The trawl fishery landings refer to both species combined. Under reporting of catches from international waters is suspected. Alfonsinos aggregate in shoals, often associated with seamounts, and the fisheries have high catch rates once the shoals are located. Localized sub-units of the population can be quickly depleted by fisheries, even within a single season. In various seamounts of ICES Sub-area X there are some indications that the stocks were intensely exploited during the last decade.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES.

STOCK STRUCTURE: The stock structure of both species is uncertain. They are distributed over a wide area, which may be composed of several populations.

REFERENCE POINTS: No precautionary reference points have been proposed for the stock(s) of Alfonsino/golden eye perch in the NE Atlantic, due to the lack of appropriate data.

STOCK STATUS: Assessment data are sparse and reliable assessments are not possible at present.

RECENT MANAGEMENT ADVICE: Due to their spatial distribution associated with seamounts, their life history and their aggregation behaviour, alfonsinos/golden eye perch are easily overexploited by trawl fishing; they can only sustain low rates of exploitation. Fisheries on such species should not be allowed to expand above current levels unless it can be shown that such expansion is sustainable To prevent wiping out entire subpopulations that have not yet been mapped and assessed the exploitation of new seamounts should not be allowed.

STECF COMMENTS: STECF agrees with the ICES advice, and notes that there may be a need to harmonise management measures in Sub-area X with those for red (blackspot) seabream.

7.3. Ling (*Molva molva*)

FISHERIES: Ling is primarily fished in the depth range 200-500 m, though it is also found in shallower depths. This species does not have such extreme low productivity and high longevity as typical deep-water species, though specific data for many areas are lacking. The major fisheries are the longline and gillnet fisheries, but there are also by-catches in other gears, i.e. trawls and handline.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES.

STOCK STRUCTURE: There is insufficient scientific information to establish the extent of putative stocks; however, ling may be sufficiently isolated at separate fishing grounds to be considered as individual management units. On this basis ICES advice is presented for the following management units:

- Divisions I and II (Arctic)
- Va (Iceland)
- Vb (Faroes)
- IIIa, IVa, VI, VII, VIII, IX, XII, and XIV (other areas).

7.3.1. Ling (*Molva molva*) in Divisions I and II (Arctic)

REFERENCE POINTS: No precautionary reference points have been established.

STOCK STATUS: Commercial cpue for Norwegian longliners has in recent years been lower than observed in the 1970s and 80s. There is some evidence of a recent increase.

RECENT MANAGEMENT ADVICE: Cpue in Areas I and II has been at a reduced level. ICES reiterates the advice to constrain catches to 6,000 t and to collect information that can be used to evaluate a long-term sustainable level of exploitation.

STECF COMMENTS: STECF agrees with the ICES advice, but notes there may be a need to harmonise management measures for ling and tusk in this area.

7.3.2. Ling (*Molva molva*) in Va (Iceland)

REFERENCE POINTS: In common with other deep-water stocks, U_{lim} has previously been proposed at 0.2* virgin biomass and U_{pa} at 0.5* virgin biomass (ICES, 1998). In the absence of abundance indices that correspond to the start of the fishery, the reference points cannot be calculated.

STOCK STATUS: A survey biomass index shows increasing abundance since 2000. The levels are currently at a similar high level as in the start of the series. There are indications that fishing mortality may have declined in recent years.

RECENT MANAGEMENT ADVICE: Surveys indicate that the overall biomass is increasing. Landings have also increased. ICES recommends constraining catches to 7500 t (recent average 2006–2007) and to collect information that can be used to evaluate a long-term sustainable level of exploitation.

STECF COMMENTS: STECF agrees with the ICES advice.

7.3.3. Ling (*Molva molva*) in Vb (Faroes)

REFERENCE POINTS: In common with other deep-water stocks, U_{lim} has previously been proposed at 0.2* virgin biomass and U_{pa} at 0.5* virgin biomass (ICES, 1998). In the absence of abundance indices that correspond to the start of the fishery, the reference points cannot be calculated.

STOCK STATUS: Abundance indices suggest that ling in the management unit Vb is stable at a low level compared with the 1970s and 80s.

RECENT MANAGEMENT ADVICE: Cpue in Area Vb has been at a reduced level. ICES reiterates the advice that effort should not be allowed to increase and that information should be collected that can be used to evaluate a long-term sustainable level of exploitation.

STECF COMMENTS: STECF agrees with the ICES advice.

7.3.4. Ling (*Molva molva*) in IIIa, IVa, VI, VII, VIII, IX, XII, and XIV (Other areas)

REFERENCE POINTS: In common with other deep-water stocks, U_{lim} has previously been proposed at 0.2* virgin biomass and U_{pa} at 0.5* virgin biomass (ICES, 1998). In the absence of abundance indices that correspond to the start of the fishery, the reference points cannot be calculated.

STOCK STATUS: The cpue series of the main fleet in Divisions IVa, Via, and VIb suggest that the abundance has remained at a reduced level after the decline in the 1970s to 1990s.

RECENT MANAGEMENT ADVICE: Cpue in these areas has been at a reduced level. ICES reiterates the advice to constrain catches to 10,000 t and to collect information that can be used to evaluate a long-term sustainable level of exploitation.

STECF COMMENTS: STECF agrees with the ICES advice but notes there is a need to harmonise management measures for ling and tusk in these other areas. STECF considers that there is no biological basis to consider ling in these areas as a unit stock and should not be considered as a single management unit.

7.4. Blue Ling (*Molva dypterygia*).

FISHERIES: The majority of landings are from the Norwegian coast (II), Iceland (Va), Faroes (Vb), west of Scotland and Rockall Trough (VI) and the Mid-Atlantic Ridge and Hatton Bank (XII). Landings from the west of Ireland and Western Approaches (VII) and further south are very small. A major part of this fishery is on spawning aggregations. Landings from Division IIa are mainly catches in a gillnet fishery off mid-Norway, elsewhere this species is taken mainly as by-catch in trawl fisheries.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. No reliable analytical assessments are available.

STOCK STRUCTURE: There is insufficient scientific information to establish the extent of putative stocks; however, blue ling may be sufficiently isolated at separate fishing grounds to be considered as individual management units. On this basis advice is presented for the following management units:

- Subdivisions Va and XIV (Iceland and Reykjanes ridge);
- Subdivisions Vb,VI, and VII (Faroes Rockall and Celtic shelf); and
- Subdivisions I, II, IIIa, IVa, VIII, IX, and XII.

The latter grouping is a combination of isolated fishing grounds and these areas are grouped thus due to lack of data. Blue ling is more vulnerable to over-exploitation than ling due to a slower growth rate and higher age at first maturity. It is particularly susceptible to rapid local depletion due to its highly aggregating behaviour during spawning. Ageing is a problem in this species, and thus age-structured analytical assessments are unlikely in the short-term.

7.4.1. Blue Ling (*Molva dypterygia*) in Va and XIV

REFERENCE POINTS: In common with other deep-water stocks, U_{lim} has previously been proposed at 0.2* virgin biomass and U_{pa} at 0.5* virgin biomass (ICES, 1998). In the absence of abundance indices that correspond to the start of the fishery, the reference points cannot be calculated.

STOCK STATUS: Cpue of blue ling in Va and XIV has steadily declined from 1991 to 2000 and has remained at a low level since then.

RECENT MANAGEMENT ADVICE: There should be no directed fisheries and measures should be implemented to minimise catches in mixed fisheries. Blue ling is susceptible to sequential depletion of spawning aggregations and closed areas to protect spawning aggregations should therefore be maintained and expanded where appropriate.

STECF COMMENTS: STECF agrees with the ICES advice.

7.4.2. Blue Ling in Vb, VI and VII

REFERENCE POINTS: In common with other deep-water stocks, U_{lim} has previously been proposed at 0.2* virgin biomass and U_{pa} at 0.5* virgin biomass (ICES, 1998). In the absence of abundance indices that correspond to the start of the fishery, the reference points cannot be calculated.

STOCK STATUS: Cpue information suggests that the abundance of blue ling remains at a low level.

RECENT MANAGEMENT ADVICE: There should be no directed fisheries for blue ling in Subdivisions Vb, VI and VII and measures should be implemented to minimise catches in mixed fisheries. Blue ling is susceptible to sequential depletion of spawning aggregations and closed areas to protect spawning aggregations should therefore be maintained and expanded where appropriate.

STECF COMMENTS: STECF agrees with the ICES advice. To discourage any directed fishing on blue ling, STECF **recommends** the following:

- the current trip limit of 25 t per trip should be substantially reduced.
- closure of spawning areas

The additional information available following the ICES response to the NEAAFC request (ICES advice 2008, book 9, section 9.3.2.7) on spawning aggregations of blue ling is sufficient to identify specific spawning aggregations on Hatton Bank, Rosemary Bank, Lousy Bank and the continental slope to the NW of Scotland (see section11.1 of the STECF/PLEN-08-02 report).

7.4.3. Blue ling (*Molva dypterygia*) in other areas (I, II, IIIa, IVa, VIII, IX, and XII)

REFERENCE POINTS: No precautionary reference points have been established for this species in these areas.

STOCK STATUS: Trends in landings suggest serious depletion, at least in Sub-areas IIa and IIb.

RECENT MANAGEMENT ADVICE: There should be no directed fisheries and management measures should be taken to minimise the by-catch of this species in mixed fisheries. Blue ling is susceptible to sequential depletion of spawning aggregations and closed areas to protect spawning aggregations should therefore be maintained and expanded where appropriate.

STECF COMMENTS: STECF agrees with the ICES advice. STECF considers that there is no biological basis to consider blue ling in these areas as a unit stock and should not be considered as a single management unit.

7.5. Tusk (*Brosme brosme*)

FISHERIES: Tusk is primarily fished in the depth range 200-500 m, though it is also found at shallower depths. Tusk is more vulnerable to overexploitation than ling due to a slower growth rate and higher age at first maturity. The majority of landings are from ICES sub-areas IIa, IIIa, from along the Norwegian coast of IVa, Va (around Iceland), and Vb (around Faroe Islands). This species is taken mainly in long line fisheries, and most of the catches are by-catches in ling fisheries. Tusk is also taken as by-catch in bottom trawl fisheries.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES.

STOCK STRUCTURE: This year, ICES provided advice on separate stocks of tusk on the basis of new genetic evidence considered in 2007. On this basis advice is presented for the following revised management units:

- I and II (Arctic)
- Division Va and Subarea XIV
- The Mid-Atlantic Ridge (Division XII excluding XIIb)
- Subarea VIb (Rockall)
- IIIa, IV, Vb,VIa, VII, VIII, IX, XIIb, . (This latter grouping is a combination of isolated fishing grounds and these areas are grouped due to their mutual lack of data.)

7.5.1. Tusk (*Brosme brosme*) in Divisions I and II (ARCTIC)

REFERENCE POINTS: In common with other deep-water stocks, U_{lim} has previously been proposed at 0.2* virgin biomass and U_{pa} at 0.5* virgin biomass (ICES, 1998). In the absence of abundance indices that correspond to the start of the fishery, the reference points cannot be calculated.

STOCK STATUS: Tusk has been exploited in Sub-areas I and II for centuries, but landings increased from the 1950s onwards. The state of the stock is unknown. CPUE has in recent years been well below historical levels.

RECENT MANAGEMENT ADVICE: Cpue in Areas I and II has been at a reduced level. ICES reiterates the advice to constrain catches to 5,000 t and to collect information that can be used to evaluate a long-term sustainable level of exploitation.

STECF COMMENTS: STECF agrees with the ICES advice, but notes there is a need to harmonise management measures for ling and tusk in this area.

7.5.2. Tusk (*Brosme brosme*) in Division Va and Subarea XIV

REFERENCE POINTS:. In common with other deep-water stocks, U_{lim} has previously been proposed at 0.2* virgin biomass and U_{pa} at 0.5* virgin biomass (ICES, 1998). In the absence of abundance indices that correspond to the start of the fishery, the reference points cannot be calculated.

STOCK STATUS:. The state of the stock is unknown. Recruitment has increased from a low level in 1995. There are indications that fishing mortality may have declined in recent years.

RECENT MANAGEMENT ADVICE: Surveys indicate that the overall biomass is increasing but consists mostly of small individuals. ICES reiterates the earlier advice to constrain catches to 5000 t (average 2001–2004) to allow the juveniles to recruit to the adult stock. ICES also recommends collecting information that can be used to evaluate a long-term sustainable level of exploitation.

STECF COMMENTS: STECF agrees with the ICES advice.

7.5.3. Tusk (*Brosme brosme*) on the Mid-Atlantic Ridge (Division XII excluding XIIb)

REFERENCE POINTS: Reference points for this stock have not been calculated. Reference points that were previously suggested for tusk would be based on unexploited abundance; however, the data to calculate this point do not exist.

STOCK STATUS: Fisheries in this area take very small catches of tusk. There is no information on the state of the stock.

RECENT MANAGEMENT ADVICE: Fisheries on tusk should be accompanied by programmes to collect data on both target and by-catch fish. Fisheries should not be allowed to expand unless there is information that can be used to evaluate a long-term sustainable level of exploitation.

STECF COMMENTS: STECF agrees with the ICES advice:

7.5.4. Tusk (*Brosme brosme*) in Subarea VIb (Rockall)

REFERENCE POINTS: Reference points for this stock have not been calculated. Reference points that were previously suggested for tusk would be based on unexploited abundance; however, the data to calculate this point do not exist.

STOCK STATUS: The state of the stock is unknown. Cpue does not indicate apparent changes under the historic catch regime.

RECENT MANAGEMENT ADVICE: Cpue in Rockall does not indicate any clear trends. Therefore, recent levels of catches do not appear to have had a negative impact. ICES recommends that catches should be constrained to 530 t (average 2003–2007) and to collect information that can be used to evaluate a long-term sustainable level of exploitation.

STECF COMMENTS: STECF agrees with the ICES advice.

7.5.5. Tusk (*Brosme brosme*) in IIIa, IV, Vb, VIa, VII, VIII, IX, XIIb (Other areas)

REFERENCE POINTS: Reference points for this management unit have not been calculated. Reference points that were previously suggested for tusk would be based on unexploited abundance; however, the data to calculate these points do not exist.

STOCK STATUS: Cpue indicators for Divisions IVa, VIa, and Vb suggest that tusk abundance has been at a reduced level but may be increasing.

RECENT MANAGEMENT ADVICE: Cpue in these areas has been at a reduced level but may have been increasing in recent years. Because of these uncertainties, ICES recommends to constrain catches to 5000 t and to collect information that can be used to evaluate a long-term sustainable level of exploitation.

STECF COMMENTS: STECF agrees with the ICES advice but notes there is a need to harmonise management measures for ling and tusk in these areas. STECF considers that there is no biological basis to consider tusk in these areas as a unit stock and should not be considered as a single management unit.

7.6. Greater silver smelt or argentine (*Argentina silus*)

FISHERIES: Argentine is primarily fished in the depth range 100 to 700 m. The majority of landings are from ICES sub-areas IIa, IIIa, IVa along the Norwegian coast, Va (around Iceland), and Vb (around Faroe Islands). This species is taken mainly in long line fisheries, and most of the catches are by-catches in ling fisheries. This species is also taken as by-catch in bottom trawl fisheries. The Norwegian fishery accounts for the more than 50% of total catches.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. No reliable analytical assessment is available.

STOCK STRUCTURE: There is insufficient scientific information to establish the extent of putative stocks; however, argentine may be sufficiently isolated at separate fishing grounds to be considered as individual management units. On this basis advice is presented for the following management units:

- Sub-area Va (Iceland); and
- Sub-areas I, II, IIIa, IVa, Vb, VI, VII, VIII, IX, and XII (other areas).

The latter grouping is a combination of isolated fishing grounds and these areas are thus grouped due to their mutual of lack of data.

7.6.1. Greater silver smelt (*Argentina silus*) in Va

REFERENCE POINTS: No precautionary reference points have been established for stocks of this species.

STOCK STATUS: The status of greater silver smelt in Subdivision Va is unknown.

RECENT MANAGEMENT ADVICE: Due to its low productivity greater silver smelt can only sustain low rates of exploitation. Fisheries on such species should always be accompanied by programmes to collect data on both target and by-catch fish. The fishery should not be allowed to expand unless it can be shown that it is sustainable.

STECF COMMENTS: STECF agrees with the comments of ICES, but notes there may be a need to harmonise management measures with those for redfish and blue whiting.

7.6.2. Greater silver smelt (*Argentina silus*) in other areas (I, II, IIIa, IV, Vb, VI, VII, VIII, IX, X, XII and XIV)

REFERENCE POINTS: No precautionary reference points have been established for stocks of this species.

STOCK STATUS: The state of the silver smelt resource in other areas is unknown. Catches increased considerably in recent years, but were reduced in 2003 in some areas, partly due to introduction of TAC management in EU waters. In Subarea VI the frequency of old fish (20+) in the catches declined significantly after a few years of target fisheries. Such changes suggest high exploitation rates.

RECENT MANAGEMENT ADVICE: Due to its low productivity greater silver smelt can only sustain low rates of exploitation. Fisheries on such species should always be accompanied by programmes to collect data on both target and by-catch fisheries. The fishery should not be allowed to expand unless it can be shown that it is sustainable.

STECF COMMENTS: STECF agrees with the comments from ICES, but notes there may be a need to harmonise management measures with those for roundnose grenadier in IIIa and small-mesh bottom trawl industrial fisheries mainly in IVa**.**

7.7. Black scabbardfish (*Aphanopus carbo*)

FISHERIES: Black scabbardfish is caught in two very different fisheries: (1) in waters off Mainland of Portugal (Division IXa) and (2) to the west of British Isles. In the waters off Mainland of Portugal it is taken in a targeted artisanal longline fishery and CPUE data have been relatively stable over the years. To the west of the British Isles it is taken in a mixed species, mainly French trawl fishery along with roundnose grenadier and sharks.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES.

STOCK STRUCTURE: The stock structure is uncertain. This section deals with a species distributed over a wide area which may be composed of several populations. Three management units are considered:

- northern (Sub-areas V, VI, VII, and XIIb);
- southern (Sub-areas VIII and IX).
- Other areas (Sub-areas I, II, IIIa, IV, X, and XIV)

REFERENCE POINTS: No precautionary reference points have been established for the stock(s) of this species.

STOCK STATUS: The status of the species is unknown. In the northern area, indicators show a decline in abundance since 1990. In the southern area indicators have been relatively stable during the past decade. In the other areas only very small catches have been taken. Due to its low productivity, black scabbardfish can only sustain low rates of exploitation.

RECENT MANAGEMENT ADVICE: Despite the lower landings in recent years, cpue in Areas Vb, VI, VII, and XIIb has declined to about 20% of its initial level. ICES recommends that catches should be constrained to 2000 t (50% of the level before the expansion of the fishery, 1993–1997). The fishery should not be allowed to expand unless it can be shown that it is sustainable.

Cpue in Subareas VIII and IX does not indicate any clear trends, but no information is available before 1996. Recent levels of catches do not appear to have had a negative impact. ICES recommends that catches in these areas should be constrained to 2800 t (average 2003–2007) and to collect information that can be used to evaluate a long-term sustainable level of exploitation.

The fishery in other areas should not be allowed to expand unless it can be shown that it is sustainable.

STECF COMMENTS: STECF **recommends** that in order to reverse the observed decline in the stock of black scabbard in Vb, VI, VII and XIIb, a significant reduction in fishing mortality is required. STECF advises that if fully enforced, the measures advised by ICES may achieve such a reduction.

STECF **recommends** that an attempt be made to harmonise management measures for black scabbard in Vb, VI, VII and XIIb with those for other species taken in the mixed trawl fishery in these areas, particularly deep-water sharks and roundnose grenadier.

For black scabbard in other areas, STECF agrees with the ICES advice.

7.8. Greater forkbeard (*Phycis blennoides*)

FISHERIES: The landings of greater forkbeard are mainly by-catch from both trawl and longline fisheries. Landings from Sub-areas VI and VII comprise around the 85% of the total landings of this species in the ICES area. Fluctuations in landings are probably the result of changing effort on different target species and/or market prices. The increase in landings in Sub-areas VIII and IX probably represents a directed longline fishery.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES.

REFERENCE POINTS: No precautionary reference points have been established for the stock(s) of this species.

STOCK STATUS: There is no information available that allows for evaluation of the stock trends. The state of the stock is unknown.

RECENT MANAGEMENT ADVICE: Fisheries on greater forkbeard should be accompanied by programmes to collect data. The fishery should not be allowed to expand unless it can be shown that it is sustainable.

STECF COMMENTS: STECF agrees that fisheries catching Greater forkbeard should not be allowed to expand unless there is information that can be used to evaluate a long-term sustainable level of exploitation.

7.9. Orange roughy (Hoplostethus atlanticus)

FISHERIES: The directed fishery for orange roughy aggregations west of Ireland in Sub-area VII has now ceased. The fishery in Sub-area VI has decreased dramatically since the depletion of the main aggregation on the Hebrides Terrace Seamount in the early 1990s and there has not been a major directed fishery since 2002. Faroese fisheries in Sub-areas VI, XII, and X have ceased and so has an Icelandic fishery in Division Va.

. In Sub-area XII, the Faroes dominated the fishery throughout the 1990s, with small landings by France. In recent years, New Zealand and Ireland have targeted orange roughy in this area. There are many areas of the Mid-Atlantic Ridge where aggregations of this species occur, but the terrain is very difficult for trawlers.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES.

STOCK STRUCTURE: It is not known if individual aggregations are reproductively distinct.

REFERENCE POINTS: No precautionary reference points have been established for the stock(s) of this species.

STOCK STATUS: Orange roughy form discrete aggregations, which are susceptible to sequential depletion.

Orange roughy catches in Subarea VI increased rapidly and subsequently dropped. Orange roughy cpue in Subarea VI has shown a strong declining trend since early 1990s. It is presumed that the aggregations were fished out. Landings have declined to low levels in each management area (VI, VII, and other).

Orange roughy fisheries in Subarea VII have exhibited a similar pattern to that in VI. High catches have not been sustained by individual fleets and have dropped to low levels, suggesting sequential depletion. Orange roughy cpue in Subarea VII has shown a strong declining trend since the early 1990s. It is unclear if there are unfished aggregations remaining in Subarea VII.

RECENT MANAGEMENT ADVICE: Orange roughy can only sustain very low rates of exploitation. Currently, it is not possible to manage a sustainable fishery for this species. ICES recommends no directed fishery for this species. By-catches in mixed fisheries should be as low as possible.

STECF COMMENTS: STECF agrees with the ICES advice.

7.10. Roundnose grenadier (*Coryphaenoides rupestris*)

FISHERIES: The majority of international landings are from the Skagerrak (III), Faroes (Vb), west of Scotland and Rockall Trough (VI), west of Ireland and Western Approaches (VII) and the Mid-Atlantic ridge and western Hatton Bank (XII). In most areas, roundnose grenadier is the target species of mixed trawl fisheries.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES.

STOCK STRUCTURE: This section deals with a species distributed over a wide area, which may be composed of several populations. The scientific basis for stock identification is uncertain. The Wyville-Thomson Ridge and fjord sills, between Western Scotland and the edge of the North Sea slope, could be natural physical boundaries. It is therefore considered that the northern North Sea and the Norwegian Deep could represent a separate unit. The roundnose grenadier on the Mid-Atlantic Ridge and the Hatton Bank are separated by a major oceanic basin and may constitute separate units. This would indicate that the units could be split as:

- Divisions IIIa;
- Divisions Vb, VI, VII, and XIIb (Hatton bank);
- Mid-Atlantic ridge (Subdivisions Xb, XIIc, Va1, XIIa1, and XIVb1) ;
- All other areas (I, II, IV, Va2, VIII, IX, XIVa, XIVb2).

7.10.1. Roundnose grenadier (*Coryphaenoides rupestris*) in Division IIIa

REFERENCE POINTS: No precautionary reference points have been established for the stock(s) of this species.

STOCK STATUS: It has not been possible to assess the status of the stock. However, as scientific investigations have indicated slow growth of this species, the drastic increase in exploitation of this stock during the years 2003–2005 gave rise for serious concern, even if no clear signs of the increasing fishing pressure were observed in recent years. No directed fishery has taken place since 2007. A decrease in mean length in the catch from 1987 to 2004 and 2005 indicates heavy exploitation on this stock.

RECENT MANAGEMENT ADVICE: Due to its low productivity, roundnose grenadier can only sustain low rates of exploitation. ICES reiterates the advice to constrain catches to 1000 t, which corresponds to the catch level before the expansion of the fishery (1988–1991). The fishery should not be allowed to expand again unless it can be shown that it is sustainable.

STECF COMMENTS: STECF agrees with the ICES advice.

7.10.2. Roundnose grenadier (*Coryphaenoides rupestris*) in Subareas VI and VII and in Divisions Vb and XIIb

REFERENCE POINTS: No precautionary reference points have been established for the stock(s) of this species.

STOCK STATUS: Overall the stock status is uncertain, but there is some evidence of biomass depletion for Vb, VI and VII.

Survey data from the west of Scotland (Division VI) indicate that grenadier does not occur in the shallower waters. Length distribution of French landings indicates a change towards smaller fish. The results of an exploratory age-structured assessment of the stock in Subareas VI and VII and in Division Vb indicate that the total biomass has declined consistently since 1996.

RECENT MANAGEMENT ADVICE: Due to its low productivity, roundnose grenadier can only sustain low rates of exploitation. Cpue in the areas has been at a reduced level. ICES recommends that catches should be constrained to 6000 t (50% of the level before the expansion of the fishery, 1990–1996). The fishery should not be allowed to expand unless it can be shown that it is sustainable.

STECF COMMENTS: STECF **recommends** that in order to reverse the observed decline in the stock of roundnose grenadier in Vb, VI, VII and XIIb, a significant reduction in fishing mortality is required. STECF notes the dramatic decline in the landings of roundnose grenadier from this area from a level of 50,000 t in 2001 to 9,000 t in 2006. The reported landings for 2007 are about 3,000 t.

To ensure a significant reduction in fishing mortality STECF advises that it may be necessary to ensure that catches are lower than the TAC advised by ICES.

Given that roundnose grenadier is taken in a deepwater mixed fishery, there is a need to harmonise management measures to account for the management requirements for other species taken.

7.10.3. Roundnose grenadier (*Coryphaenoides rupestris*) on the Mid-Atlantic ridge (Xb, XIIc, Va1, XIIa1, and XIVb1)

REFERENCE POINTS: No precautionary reference points have been established for the stock(s) of this species.

STOCK STATUS: The state of the stock is uncertain. Soviet data suggested a high biomass in the 1970–1980s. Cpue data suggest an overall decline in catch rates after the 1970s (Figure 9.4.15.3.1). A Russian trawl acoustic survey in 2003 showed relatively low biomass of the pelagic component of the stock, an increasing depth of the aggregations, and a higher number of small immature fish.

RECENT MANAGEMENT ADVICE: Due to its low productivity, roundnose grenadier can only sustain low rates of exploitation. Fisheries on such species should always be accompanied by programmes to collect data on both target and by-catch fisheries. The fishery should not be allowed to expand from the current low level unless it can be shown that it is sustainable.

STECF COMMENTS: STECF **recommends** that fisheries on the mid-Atlantic ridge should not be allowed to expand unless there is information that can be used to evaluate a long-term sustainable level of exploitation for roundnose grenadier.

7.10.4. Roundnose grenadier (*Coryphaenoides rupestris*) in all other areas. (I, II, IV, Va2, VIII, IX, XIVa, and XIVb2)

REFERENCE POINTS: No precautionary reference points have been established for the stock(s) of this species.

STOCK STATUS: This assessment unit consists of a number of discrete areas in which only very small catches of roundnose grenadier occur.

RECENT MANAGEMENT ADVICE: Due to its low productivity, roundnose grenadier can only sustain low rates of exploitation. Fisheries on such species should always be accompanied by programmes to collect data on both target and by-catch fisheries. The fishery should not be allowed to expand unless it can be shown that it is sustainable.

STECF COMMENTS: STECF **recommends** that deepwater mixed fisheries in I, II, IV, Va_2, VIII, IX, XIVa, and $XIVb_2$ should not be allowed to expand unless there is information that can be used to evaluate a long-term sustainable level of exploitation for roundnose grenadier.

7.11. Red (blackspot) seabream (*Pagellus bogaraveo*)

FISHERIES: There is a directed hand-line and longline fishery in Sub-areas IX and X. Red seabream have been caught in hook and line fisheries off the Azores since the 16th Century. There are now directed artisanal hand-line as well as longline fisheries in area Xa2. Historically, improvements in fishing technology have taken place in the directed hand-line and longline fisheries. These include the introduction of bottom longlines and bigger fishing vessels. The resulting improvement on fishing efficiency has not been quantified. Red seabream is caught by Spanish and Portuguese fleets in Sub-area IX. The Spanish artisanal longline fishery targeting red sea began in early 1980s. After 1997 there was a serious decline in landings. In Sub-areas VI, VII and VIII Red seabream appears as by-catch in the longline and trawl fisheries for hake, megrim, anglerfish, and *Nephrops*.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES.

STOCKS STRUCTURE: The stock structure is uncertain. This section deals with a species distributed over a wide area, which may be composed of several populations. Three units are considered:

- Sub-areas VI, VII, and XII;
- Sub-area IX;
- Sub-area X.

This management unit division is supported by information on genetics and tagging.

REFERENCE POINTS: No precautionary reference points have been established for the stock(s) of this species.

STOCK STATUS (ALL STOCKS):

Red seabream in VI, VII, and VIII appears to be severely depleted based on historical catches.

Red seabream in Subarea IX is depleted and there is no evidence of a significant recovery as a result of the local recovery plan in Spanish waters of the Strait of Gibraltar.

The status in Subarea X is uncertain but there are signs of increases in indices of abundance from surveys. The cpue in the fishery is stable. It is possible that sequential depletion of local populations may occur and this may contribute to the stability of the commercial cpue series.

RECENT MANAGEMENT ADVICE: Catches in Subareas VI, VII, and VIII have been very low for the last 20 years and ICES recommends that the fishery should not be allowed to expand unless it can be shown that it is sustainable.

ICES recommends that catches in Areas IXa and Xa should be constrained to recent average catches (2003–2007) of 500 t in Area IXa and 1050 t in Area Xa and to collect information that can be used to evaluate a long-term sustainable level of exploitation.

STECF COMMENTS: STECF agrees with the ICES advice and notes that studies focussing on defining the spatial distribution of juveniles should be carried out with the aim of implementing management measures to protect juveniles and to conserve the proportion of males in the populations (which may require increasing minimum landing sizes in all areas to 35 cm). In Sub-area IX, the local technical measures relating to the Regional Recovery Plan for this species should be maintained/improved.

7.12. Portuguese dogfish (*Centroscymnus coelolepis*) in the north-east Atlantic

FISHERIES: Portuguese dogfish are caught in virtually all deep-water fisheries in the NE Atlantic although catch data is patchy and incomplete. French trawlers, UK and German longliners and gillnetters in VI and VII are the fleets targeting this species. These fisheries began in 1991 and before that the species was not exploited. There are also directed longline fisheries in VIII and IX and some by-catches from XII. Landings of this species have been routinely grouped together with Leafscale gulper shark and reported as siki. Combined siki landings began in 1988 (although an unknown quantity is likely to have been discarded prior to this) and increased rapidly to over 8000 tonnes in 1997. Since 1997 landings have fluctuated with an overall upward trend, reaching a maximum of over 10,000 tonnes in 2003. Since 2003, reported landings have declined due to stock depletion and the introduction and gradual reduction in EU TACs and quotas is response to ICES advice, which in recent years has been for a zero TAC. However, deep-water sharks continue to be taken as a by-catch in a mixed deep-water trawl fishery in Vb, VI and VII and in a long-line fishery in Sub-area IX.

SOURCE OF MANAGEMENT ADVICE: The main advisory body is ICES. No analytical assessment was carried out in 2008. The assessment is based on commercial CPUE trends and survey trends. Landings data on these species remain very problematical and, in many cases, reliable data are only available for combined siki sharks. Many countries continue to report landings in amalgamated categories such as various sharks N.E.I. Retrospective splitting of the data into species categories and reconstruction of historic data from mixed categories is based on limited information and is problematic.

PRECAUTIONARY REFERENCE POINTS: No reference points have been defined for this species. In common with other deep-water species, U_{lim} has previously been proposed at 0.2* virgin biomass and U_{pa} at 0.5* virgin biomass (ICES, 1998) but in the absence of abundance indices that correspond to the start of the fishery, the reference points cannot be estimated.

STOCK STATUS: There is insufficient information to separate the landings of Portuguese dogfish Centroscymnus coelolepis and leafscale gulper shark Centrophorus squamosus. Total international landings of the combined species have steadily increased to around 11 000 t in 2003 and have rapidly declined after 2003 to the lowest levels since the fishery started. Substantial declines in cpue series for the two species in Subareas V, VI, and VII suggest that both species are severely depleted and that they have been exploited at unsustainable levels. In Division IXa, lpue series are stable for leafscale gulper shark and declining for Portuguese dogfish.

RECENT MANAGEMENT ADVICE: Due to its very low productivity, Portuguese dogfish and leafscale gulper shark can only sustain very low rates of exploitation. The rates of exploitation and stock sizes of deepwater sharks cannot be quantified. However, based on the cpue information, Portuguese dogfish and leafscale gulper shark are considered to be depleted. Given their very poor state, ICES recommends a zero catch of Portuguese dogfish and leafscale gulper shark.

STECF COMMENTS: STECF agrees with the ICES advice for Portuguese dogfish and leafscale gulper shark.

STECF also **recommends** that EU fisheries exploiting deepwater sharks should not proceed until sustainable exploitation rates for deepwater sharks have been determined.

STECF further advises that in order to maximise protection of deep-water sharks, the gill netting ban introduced in 2006 (EC council regulation 51/2006Annex III) in waters deeper than 600m should be maintained. STECF supports the proposal to extend the gill net ban to other areas (Council regulation (EC) 40/2008, Annex III)

7.13. Leaf-scale gulper shark (*Centrophorus squamosus*) in the north-east Atlantic

FISHERIES: Leaf-scale gulper shark are caught in virtually all deep-water fisheries in the NE Atlantic. Catch data is patchy and incomplete. French trawlers in VI and VII target this species. Gill-net vessels registered in the UK (England and Wales), UK (Scotland) and Germany, target this and other deepwater species since the mid-1990s and takes place mainly west of the British Isles (Sub-areas VI and VII). There are also directed longline fisheries in VIII and IX and some by-catches from XII. Landings of this species have been routinely grouped together with Portuguese dogfish and reported as siki. Combined siki landings began in 1988 (although an unknown quantity is likely to have been discarded prior to this) and increased rapidly to over 8000 tonnes in 1997. Since 1997 landings have fluctuated with an overall upward trend, reaching a maximum of over 10 000 tonnes in 2003. Since 2003, reported landings have declined due to stock depletion and the introduction and gradual reduction in EU TACs and quotas is response to ICES advice, which in recent years has been for a zero TAC. However, deep-water sharks continue to be taken as a by-catch in a mixed deep-water trawl fishery in Vb, VI and VII and in a long-line fishery in Sub-area IX.

SOURCE OF MANAGEMENT ADVICE: The main advisory body is ICES. No analytical assessment was carried out in 2008. The assessment is based on commercial CPUE trends and survey trends. Landings data on these species remain very problematical and, in many cases, reliable data are only available for combined siki sharks. Many countries continue to report landings in amalgamated categories such as various sharks N.E.I. Retrospective splitting of the data into species categories and reconstruction of historic data from mixed categories is based on limited information and is problematic.

PRECAUTIONARY REFERENCE POINTS: No reference points have been defined for this species. In common with other deep-water species, U_{lim} has previously been proposed at 0.2* virgin biomass and U_{pa} at 0.5* virgin biomass (ICES, 1998) but in the absence of abundance indices that correspond to the start of the fishery, the reference points cannot be estimated.

STOCK STATUS: There is insufficient information to separate the landings of Portuguese dogfish Centroscymnus coelolepis and leafscale gulper shark Centrophorus squamosus. Total international landings of the combined species have steadily increased to around 11 000 t in 2003 and have rapidly declined after 2003 to the lowest levels since the fishery started. Substantial declines in cpue series for the two species in Subareas V, VI, and VII suggest that both species are severely depleted and that they have been exploited at unsustainable levels. In Division IXa, lpue series are stable for leafscale gulper shark and declining for Portuguese dogfish.

RECENT MANAGEMENT ADVICE: Due to its very low productivity, Portuguese dogfish and leafscale gulper shark can only sustain very low rates of exploitation. The rates of exploitation and stock sizes of deepwater sharks cannot be quantified. However, based on the cpue information, Portuguese dogfish and leafscale gulper shark are considered to be depleted. Given their very poor state, ICES recommends a zero catch of Portuguese dogfish and leafscale gulper shark.
STECF COMMENTS: STECF agrees with the ICES advice for Portuguese dogfish and leafscale gulper shark.

STECF also **recommends** that EU fisheries exploiting deepwater sharks should not proceed until sustainable exploitation rates for deepwater sharks have been determined.

STECF further advises that in order to maximise protection of deep-water sharks, the gill netting ban introduced in 2006 (EC council regulation 51/2006Annex III) in waters deeper than 600m should be maintained. STECF supports the proposal to extend the gill net ban to other areas (Council regulation (EC) 40/2008, Annex III)

7.14. Kitefin shark (*Dalatias licha*) in the north-east Atlantic

FISHERIES Kitefin shark are caught in the deep-water fisheries in ICES Sub-areas VIII, IX and X and the Mediterranean but the main fishing is in Sub-area X (Azores). In this sub-area X (Azores) this species is a by-catch in demersal deepwater fisheries. At present, there are no directed fisheries for this species. There is the risk that sporadic small-scale target fisheries may develop in the Azores, as a function of the markets. Excluding ICES Subarea X (Azores) where species-specific landings are available, landings of this species are incomplete and have mostly been reported with other species as Squalidae.

SOURCE OF MANAGEMENT ADVICE: The main recent source of information and advice on kitefin shark in the Northeast Atlantic is ICES. No assessment was carried out in 2008.

PRECAUTIONARY REFERENCE POINTS No reference points have been defined for this species. In common with other deep-water species, U_{lim} has previously been proposed at 0.2* virgin biomass and U_{pa} at 0.5* virgin biomass (ICES, 1998) but in the absence of abundance indices that correspond to the start of the fishery, the reference points cannot be estimated.

STOCK STATUS: No new information available.

RECENT MANAGEMENT ADVICE: The new information available for kitefin shark (Dalatias licha) in the North Atlantic is too sparse to revise the advice from 2006. The advice for 2009 and 2010 is therefore the same as the advice given in 2006: "This stock is managed as part of the deep-sea shark fisheries. No targeted fisheries should be permitted unless there are reliable estimates of current exploitation rates and sufficient data to assess productivity."

STECF COMMENTS: STECF agrees with the ICES advice for kitefin shark.

STECF also **recommends** that EU fisheries exploiting deepwater sharks should not proceed until sustainable exploitation rates for deepwater sharks have been determined.

STECF further advises that in order to maximise protection of deep-water sharks, the gill netting ban introduced in 2006 (EC council regulation 51/2006Annex III) in waters deeper than 600m should be maintained. STECF supports the proposal to extend the gill net ban to other areas (Council regulation (EC) 40/2008, Annex III)

8. Icelandic and East Greenland resources

8.1. Cod (*Gadus morhua*) in ICES Subarea XIV and NAFO Subarea 1 (Greenland cod)

FISHERIES: Commercial fisheries for Greenland cod started along the Greenland West coast in the 1910's (inshore) and 1920's (offshore). The fishery gradually developed culminating with catch levels above 400,000 tons annually in the 1960s. The East Greenland offshore cod fishery started in the 1950's. Due to overfishing and deteriorating environmental conditions, the stock size declined and the fishery completely collapsed in the early 1990's. The 1990s stock collapse was followed by a decade of very limited fishing, with inshore catches falling below 1000 t annually and with no directed offshore fisheries taking place. From 2000, the inshore catches have gradually increased from less than 1000 t to 12,000 t in 2007. From 2002, limited offshore quotas have been allocated to Faeroese and Norwegian vessels, and in 2005-2006, Greenland trawlers were allowed limited quotas for experimental cod fishery. In 2007, small quotas were given to Greenland, the EU (Germany and UK), Norway and the Faeroe Islands with catches reaching 5000 tons, mainly taken off East Greenland.

In 2008, the catches from the coastal fleet amounted to 12,270 including 6 tons taken in East Greenland. The coastal fleet's catches peaks during summer where the dominant pound net fishery takes place. Catches in Div. 1F includes catches from the offshore area taken by coastal vessels. In 2008, the offshore area north of 63°N was closed for directed cod fisheries and the 2008 offshore catches were therefore exclusively off south Greenland (71% in NAFO 1F; 26% in ICES XIVb). The longliners caught 1,339 tons, the trawlers caught 11,582 tons. The EU, Norway and Faeroe Islands took their quotas. Of the Greenland quotas of 11,500 tons, only 8,370 tons were taken.

SOURCE OF MANAGEMENT ADVICE: Analytical assessment is available up to 1992. After the stock depletion in 1992, the trends of the stock have been based on two research survey indices. Cod in Greenland derives from three stock components, labelled by their spawning areas: I) an offshore Greenland spawning stock, II) inshore West Greenland fiords spawning populations, and III) Icelandic spawned cod that drift to Greenland with the Irminger Current. It is not feasible to sample and assess stock status of the various stock components separately, and they are therefore assessed together.

PRECAUTIONARY REFERENCE POINTS: No reference points have been proposed by ICES for this stock.

STOCK STATUS: In the absence of defined reference points, the state of the stock cannot be fully evaluated. The offshore component has been severely depleted since 1990. Surveys indicate that the stock is increasing, but it is still far below historical levels. Some of the increase may be due to inflow of recruits (2003 year-class) from Iceland. Dense concentrations of large spawning cod have been found off East Greenland, indicating that a Greenland offshore spawning stock is being established. Stock size and exploitation rate of the inshore component are unknown.

MANAGEMENT AGREEMENTS: Greenland and EC established an agreement on offshore fisheries valid from 2007 to 2012. A variable TAC regulation has been agreed, with annual TACs adjusted to take account of ICES information on stock trends but aiming at fishing mortalities at 0.1. The agreement also provides for a transfer of unutilized quota into future years, should a rapid increase in the stock occur.

RECENT MANAGEMENT ADVICE:

ICES recommends that no fishery should take place in 2010 to allow for rebuilding of the spawning stock. ICES recommends the development of a multi-annual management plan which ensures sustainable stock development.

Other considerations

Exploitation boundaries in relation to existing management plans: As the management agreement has not been evaluated, ICES does not advise according to this agreement.

STECF COMMENTS: STECF agrees with the ICES advice. STECF notes that there are some outstanding issues with the derivation of the survey indices and understands that ICES will take the necessary steps to solve these issues in a designated survey workshop.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission (COM (2009) 224) on a consultation on fishing opportunities for 2010, STECF notes that Greenland cod can be classified under Category 10.

Accordingly STECF notes that the rule for the above category implies the following option for TACs in 2010.

	2010 TAC	Basis
Category 10	≤15,000 t	Advice for zero catch, ≥25% reduction in TAC

8.2. Cod (*Gadus morhua*) in ICES Subarea XII

STECF does not have access to any information on cod in ICES Subarea XII

8.3. Cod (*Gadus morhua*) in Division Va (Icelandic cod)

FISHERIES: Icelandic cod is primarily caught by bottom otter trawlers. Historically, the landings of bottom trawlers constituted a larger portion of the total catches than today, in some years prior to 1990 reaching 60% of the total landings. In the 1990's, the landings from bottom trawlers declined significantly and have been just above 40% of the total landings in the last decade. The share of long-lining has tripled over the last 20 years and is now on par with bottom trawling. The share of gill netting has over the same time period declined and is now only half of what it was in the 1980's. Since the size of cod caught by the gillnet fleet is generally much larger than caught by other fleets, this change in fishing pattern is likely to have caused a significant reduction in the fishing mortality of older fish.

Landings of Icelandic cod in 2008 are estimated to have been 147,000 t, which are the lowest post-war landings. Of the total landings, 144,000 t were taken by the Icelandic fleet but 3,000 t by other nations. The latter includes 1,800 t of cod taken by the Faroese bottom trawl fleet inside the Faroese EEZ close to the line separating the Icelandic and Faroese EEZ. The trend in landings in recent years is largely a reflection of the TAC that is set for the fishing year (starting 1 Sep and ending 31 Aug).

Estimates of annual cod discards since 2001 are in the range of 0.4-1.8% of weight landed. Mean annual discard of cod over the period 2001-2008 was around 2,000 t, or just over 1% of landings. In 2008, estimates of cod discards amounted 0.8% of the landings. The method used for deriving these estimates assumes that discarding only occurs as high-grading. In recent years, misreporting has not been regarded as a major problem in the fishery of this stock. No study is though available to support that general perspective.

SOURCE OF MANAGEMENT ADVICE: The data used in the assessment are landings-at-age and age-structured survey indices. The analytical assessment is based on landings and survey data using the ADCAM (a statistical Catch-at-age Model using AD model builder) programme. Additional assessments using five different models gave consistent results. Landings-at-age data as well as survey indices are considered reliable. The modelling setup is the same as last year.

PRECAUTIONARY REFERENCE POINTS: Precautionary reference points have not been defined for this stock.

STOCK STATUS: In the absence of defined reference points, the state of the stock cannot be evaluated. Since 1990, SSB is slightly increasing but is considerably lower than prior to the mid-1960s. The year-classes from 2001 to 2007 are all below the long-term average. The first estimate of the 2008 year-class indicates that it may be above average. That year-class will not contribute to the fisheries until 2012. The low recruitment in addition to a historical low weight-at-age means that the productivity of the stock at present is very low. Fishing mortality has declined significantly and is presently lowest observed in 40 years.

MANAGEMENT AGREEMENTS: TACs for Icelandic cod stock have since 1994 been based on a harvest control rule that has been modified three times. The management objective, set in spring 2009, is that there is high probability (>95%) that spawning stock biomass will be above the present size (220,000 t in 2009) by 2015. A harvest control rule, to achieve those objectives has been set in place:

$TAC_{y/y+1} = (0.2\ B_{4+,y} + TAC_{y-1/y}) / 2$, where y refers to the assessment year and B refers the biomass of cod 4 year and older.

The TAC for the fishing year 2008/2009 was set at 160,000 t and the TAC for the fishing year 2009/2010 is estimated to be around 150,000 t. Based on these numbers, the landings for the 2009 calendar year are estimated to be around 160,000 t.

RECENT MANAGEMENT ADVICE:

ICES advises on the basis of high long-term yield (F_{MAX} = 0.32) and landings for the fishing year 2009/2010 of 135,000 t.

Other considerations:

Exploitation boundaries in relation to existing management plans: Following the agreed management plan implies landings of 150,000 t in the fishing year 2009/2010. This management plan is in the process of being evaluated by ICES.

Exploitation boundaries in relation to high long-term yield, low risk of depletion of production potential, and considering ecosystem effect: The current fishing mortality (0.41) is above the fishing mortality that would lead to high long-term yield (F_{MAX}=0.32). This indicates that the long-term yield will increase at fishing mortalities well below historical values. Landings corresponding to F_{MAX} are 135,000 t.

STECF COMMENTS: STECF notes that the ICES advice for a catch in 2010of 135,000 t is based on a fishing mortality rate equivalent to F_{MAX}. STECF considers that F_{MAX} should be regarded as an upper limit on F and therefore advises a catch for 2010 less than 135,000 t.

STECF notes that cod and haddock are often caught in the same fishing operation. The TAC constraint on cod is expected to result in a significant reduction in fishing mortalities. Recent reduction of fishing mortality for cod is not in line with development of fishing mortality for haddock. Anecdotal information from the fisheries indicates that the restrictions on the landings of cod are presently changing the behaviour of the fishing fleet, with fishers trying to avoid catching cod but targeting haddock. Setting a TAC for haddock higher than the advice will likely result in an increase in discarding and misreporting of cod.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission (COM (2009) 224) on a consultation on fishing opportunities for 2010, STECF notes that Icelandic cod can be classified under Category 6.

Accordingly STECF notes that the rules for the above categories imply the following option for TACs in 2010.

	2010 TAC	Basis
Category 6	≤136,000 t	STECF advice on catch level: 15% constraint on TAC

8.4. Haddock (*Melanogrammus aeglefinus*) in Division Va (Icelandic haddock)

FISHERIES: Icelandic haddock is caught around Iceland with bottom otter trawls, Danish seine and longline. The share of different gears in the haddock catches have been varying with time, with the share of longlines and Danish seine increasing in recent years while the proportion of haddock caught in gillnets is now very small. Landings in 2008 are estimated to have been 102,500 t, whereof 101,650 t are taken by Iceland and 840 t by other nations (Faroes and Norway). Landings in 2007 were 108,000 tonnes, being the highest for over 40 years.

SOURCE OF MANAGEMENT ADVICE: The assessment is based on age-disaggregated landings from 1979 to 2008 and on survey data from the March survey 1985-2009 and the October survey 1995-2008. An Adapt-type model is being used, not taking into account discards. Commercial cpue from the most important fleets targeting haddock are available for 17 years or more, but are not used in the analytical assessment.

PRECAUTIONARY REFERENCE POINTS: B_{lim}, F_{lim} and B_{pa} have not been defined for this stock. F_{pa}=0.47 (F_{pa}=F_{med}) was defined by ICES in 2000, but taking into account the strong reductions in mean weight-at-age, the F_{pa} as defined in 2000 corresponds to a fishing mortality of 0.35 under the current conditions.

STOCK STATUS: In the absence of defined reference points, the state of the stock cannot be evaluated. Based on the most recent estimate of fishing mortality (in 2008), ICES classifies the stock as at risk of being harvested unsustainably. SSB increased from 2001 to 2005 due to several strong year-classes. Since then, the spawning stock has decreased. Recruitment was high for the year-classes 1998-2003, with five strong year-classes and the 2003 year-class very strong. Recruitment has been around the long-term average since year-class 2004. In recent years, growth was reduced considerably and at the beginning of 2009, the mean weight of most age groups was near a historic low as it has been for the last 3 years. The large 2003 year-class grows especially slowly.

MANAGEMENT AGREEMENTS: For this stock, a TAC is being set by Iceland supplemented with technical measures such as area closures for protecting juveniles and minimum mesh size regulations. The regulatory system includes provision for real-time closures of areas where juveniles are a high proportion of the catch. The effects of these measures have not been evaluated. Trawl grids are mandatory in certain areas.

RECENT MANAGEMENT ADVICE:

The reduction of the mean weight-at-age has caused large changes in the selection pattern in the fishery. Under these circumstances the precautionary fishing mortality (F_{pa} = 0.47) corresponds to a fishing mortality of 0.35 because the fish are caught at a smaller size. ICES recommends restricting the fishing mortality to 0.35 in 2010, corresponding to landings of less than 57 000 t.

STECF COMMENTS: STECF agrees with the ICES advice. STECF notes that haddock and cod are often caught in the same fishing operation. The TAC constraint on cod is expected to result in a significant reduction in fishing mortalities. Recent reduction of fishing mortality for cod is not in line with development of fishing mortality for haddock. Anecdotal information from the fisheries indicates that the restrictions on the landings of cod are presently changing the behaviour of the fishing fleet, with fishers trying to avoid catching cod but targeting haddock. Setting a TAC for haddock higher than the advice will likely result in an increase in discarding and misreporting of cod.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission (COM (2009) 224) on a consultation on fishing opportunities for 2010, STECF notes that Icelandic haddock can be classified under Category 6.

Accordingly STECF notes that the rules for the above categories imply the following option for TACs in 2010.

	2010 TAC	Basis
Category 6	79,050 t	STECF advice for catch level: 15% TAC constraint

8.5. Saithe (*Pollachius virens*) in Division Va (Icelandic saithe)

FISHERIES: Icelandic saithe are caught around Iceland in directed saithe fisheries as well as in mixed demersal fisheries which target cod, mainly with bottom otter trawls and at a smaller proportion with gill nets and by jigging. Landings of saithe in Icelandic waters have peaked at 102,000 t in 1991, decreased to 31,000 t in 1998 and increased again to around 70,000 t in recent years. In 2008, landings are estimated to have been 70,189 tonnes, predominantly taken by Iceland. Faroese catches were 196 t.

SOURCE OF MANAGEMENT ADVICE: The analytical assessment is based on age-disaggregated landings from 1974 to 2008 and spring survey indices 1985-2009. Information of incoming recruits is limited. An autumn survey and commercial cpue (available for 15 years or more) provide independent support to the assessment, although they are not included in the analysis. Migration of saithe into Icelandic waters is relevant in some years and is estimated in the assessment. The assessment is relatively uncertain due to lack of representative survey data for a species that is partly pelagic, schooling, and relatively widely migrating. The lack of good survey information on incoming recruitment adds to uncertainty in the forecast.

PRECAUTIONARY REFERENCE POINTS: The proposed precautionary reference points for fishing mortality and biomass are F_{pa} = 0.30, F_{lim} = Not defined, B_{pa} = 150,000t and B_{lim} = 90,000 t respectively.

Note: Taking into account the strong reductions in mean weight-at-age and change in fishing pattern, the F_{pa} as defined in 1998 now corresponds to a lower fishing mortality than 0.3. Under the current conditions, F_{pa} corresponds to a value of 0.22. B_{pa} has been calculated based on of inappropriate historic weight-at-age. Therefore it cannot be used as basis for advice.

STOCK STATUS: Based on the most recent estimate of fishing mortality (in 2008), ICES classifies the stock as at risk of being harvested unsustainably. There has been a change in the selection patterns in recent years, resulting in increasing fishing mortality on younger, small fish. SSB has been declining since 2002 and is at present around the long-term average. Recruitment in recent years has been around the long-term average. The weights-at-age are currently at low values.

MANAGEMENT AGREEMENTS: The fishery is regulated by TACs and minimum mesh size in fishing gears. The national Icelandic advice of 50,000 t in the current fishing year differed from the ICES advice (22,000 t) for 2009 where the latter based the advice on maintaining SSB above B_{pa} in the year following the advisory year. ICES, however, noted that "recent information on stock dynamics and growth rate of saithe suggests that the biomass reference points defined in 1998 would need to be re-evaluated. Fishing at F_{pa}, and thereby ignoring the B_{pa} threshold, would correspond to landings of 50,000 t which is expected to decrease SSB to 124,000 t (10% decrease in SSB compared to 2009)." The TAC for the current fishing year was, however, set by the managers to 65,000 t.

RECENT MANAGEMENT ADVICE:

The reduction of the mean weight-at-age has caused large changes in the selection pattern in the fishery. Under these circumstances, the precautionary fishing mortality (F_{pa}=0.30) corresponds to a fishing mortality of 0.22, as the fish are caught at a smaller size. ICES recommends restricting the fishing mortality to 0.22 in 2010, corresponding to landings of less than 34,000 t.

Other considerations:

Low recruitment and low weights-at-age in recent years will result in a low productivity of the stock. There is also a shift in the selection pattern, resulting in an increase in fishing mortality on younger fish. Medium-term simulations indicate that under the current growth and selection conditions, there is a high probability that the

stock will decline below the currently defined B_{lim} if fished at F_{pa}=0.3. Fishing at 0.73 x F_{pa}=0.22 indicate that there is very low probability that the spawning stock will be below B_{lim} under the present growth and selection condition.

STECF COMMENTS: STECF agrees with the ICES advice.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission (COM (2009) 224) on a consultation on fishing opportunities for 2010, STECF notes that Icelandic saithe can be classified under Category 3.

Accordingly STECF notes that the rules for the above categories imply the following option for TACs in 2010.

Category 3 Stock outside safe biological limits.

	2010 TAC	Basis
Category 3	52,000 t	Aim to set the TAC to the forecast cast that will result in a 30% reduction in fishing mortality rate, but do not reduce the TAC by more than 20% as long as fishing mortality will not increase. Limiting landings in 2010 52,000 t.

8.6. Greenland halibut (*Reinhartius hippoglossoides*) in Sub-areas V, VII, XII and XIV

FISHERIES: Most of the fishery for Greenland halibut in Divisions Va, Vb and XIVb is a directed fishery. During the period 1982–1986, landings were stable at about 31,000–34,000 t. In the years 1987–1989, landings increased to about 62,000 t. This was followed by a decline to around 20,000 t in 1999. In the recent period 2000 to 2008, landings were in the range 21,000 to 31,000 t. Landings within Icelandic EEZ have traditionally been reported as caught in Division Va. Therefore, when referring to Division Va (or Icelandic waters), the area covers both Va and the Icelandic EEZ part of XIVb. A smaller part of the landings and fishery relates to the Greenland EEZ part of XIVb as well as international waters on the Reykjanes Ridge. Catches in Icelandic waters have, due to quota regulations, decreased from 37,000 t in 1990 to 11,000 t in 1999. Landings have increased to above 20,000 t in 2003 and were around 11,000 t in recent years.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The data are insufficient for an analytical assessment. A probabilistic (Bayesian) version of a surplus-production model was used to assess the stock. Biomass is expressed on a scale relative to B_{MSY} and F relative to F_{MSY}. The assessment uses biomass indices from a standardized cpue series of the Icelandic trawl fleet (1985 2008) and two trawl surveys (Va: 1996-2008, XIV: 1998-2008).

PRECAUTIONARY REFERENCE POINTS: Presently, there are no defined reference points.

STOCK STATUS: In the absence of defined reference points, the state of the stock cannot be fully evaluated. The assessment is considered indicative of stock trends, and provides relative measures of stock status. The stock has been below B_{MSY} since the mid-1990s and is presently at a historical low of 40% of B_{MSY}. Present fishing mortality is estimated at twice the fishing mortality that is associated with maximum sustainable yield.

MANAGEMENT AGREEMENTS: There is no regional management agreement in place. ICES recommends that an adaptive management plan is developed and implemented, covering the whole stock area.

RECENT MANAGEMENT ADVICE:

Given the continued poor state of the stock, there is a need to reduce the exploitation of the stock considerably. Therefore, the present high fishing mortality must be reduced to well below F_{MSY}, in order to increase the probability of a more rapid stock recovery. ICES recommend restricting catches to no more than 5,000 tonnes in 2010 to ensure that fishing mortality is kept well below F_{MSY}. This reduction in catches could be part of an adaptive management plan that covers the whole stock area.

Other considerations:

ICES has previously advised on catches of no more than 15,000 t as an initial step in an adaptive management

plan. The medium-term forecasts now available suggest that catches of 15,000 t could lead to a further decline in the stock. Stock recovery is slow under all fishing scenarios for a slow-growing and long-lived species as Greenland halibut, even in the case of no fishery. Therefore ICES recommends a reduction of the present high fishing mortality (two times F_{MSY}) to well below F_{MSY}, in order to increase the probability of a more rapid stock recovery. Catch reductions no more than 5 kt are required to ensure that fishing mortality is kept well below F_{MSY}. The management plan should include monitoring of the effort and stock development as well as a framework for adapting future fishing according to the response of the stock. Since Greenland halibut is a highly vulnerable species, it is expected that a change in stock dynamics may take several years and this should be taken into consideration in the adaptive management plan. Distribution of total fishing effort for Greenland halibut indicates that the fishery in 2008 is concentrated in a much smaller area compared to the overall fishery in the period 1991–2008 for the species.

Available biological information such as tagging and genetic studies and information on distribution of the fisheries suggest that Greenland halibut in Divisions XIV and V belong to the same stock entity.

Because the nursery grounds are not known and recruits and juveniles are therefore not monitored, and because Greenland halibut is a slow-growing species that first appears in the catches at age 4-6, a possible recruitment failure will only be detected in the fishery some 5–10 years after it occurs.

STECF COMMENTS: STECF agrees with the ICES advice and supports its conditions highlighted in its proposals for an adaptive joint management plan.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission (COM (2009) 224) on a consultation on fishing opportunities for 2010, STECF notes that Greenland halibut in Sub-areas V, VII, XII and XIV can be classified under Categorys 6.

Accordingly STECF notes that the rules for the above categories imply the following option for TACs in 2010.

	2010 TAC	Basis
Category 6	21,250 t	STECF advice on catch level, Annex III Rule 1, 15% reduction TAC

8.7. Redfish (*Sebastes marinus*) in Sub-areas V, VI, XII and XIV

FISHERIES: *S. marinus* are mainly taken by bottom otter trawlers in depths down to 500 m. Icelandic trawlers account for the majority of the catches from Division Va, while Faroese trawlers take most of the catches from Division Vb. In Sub-area XIV, the catches are mainly a by-catch in shrimp fisheries. In order to reduce the catches of *S. marinus* in Division Va, an area closure was imposed in 1994 and the quotas have been reduced in recent years.

The total catch of *S. marinus* in Divisions Va and Vb and in the Sub-areas VI and XIV has decreased from about 130,000 t in 1982 to about 40,000 t during the mid-1990s. Since then, the annual catches varied without a clear trend between 40,000 - 50,000 t. In recent years, around 98% of total catches were taken in Division Va.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The state of the stock is classified according to results of the Icelandic spring groundfish survey (1985-2009). The quantitative advice is derived from analysis with an age–length-based model (GADGET). Data from the commercial catch in Division Va include length distribution, age length key, and mean length-at-age. Survey data available from Divisions Vb (1994-2009) and XIV (1985-2008) are not used in the forecast. There are no explicit management objectives for this stock.

PRECAUTIONARY REFERENCE POINTS: ICES suggest that the relative state of the stock be assessed through survey index series (U) in Icelandic waters, which imply a maximum, U_{MAX}, as well as the present state. Given these data, ICES has proposed that U_{pa} be set at 60% of U_{MAX}, the highest observed survey index.

STOCK STATUS: Based on the most recent indicator of SSB (in 2008), ICES classifies the stock as being at risk of having reduced reproductive capacity. In recent years, the survey index in Icelandic waters has fluctuated around U_{pa} and at present, is slightly below. Survey indices of both pre-fishery recruits and of fishable size in East Greenland have increased in recent years.

In Division Vb, the Faroese groundfish survey (covering 1994–2009) indicates that the abundance has been stable at a low level since 2001. Landings have declined since 1985 to a low level in recent years, and this decline is also reflected in the Faroese summer survey.

MANAGEMENT AGREEMENTS: The present management scheme in Division Va sets a joint TAC for *S. marinus* and demersal *S. mentella* on the shelf. This impedes direct management of fisheries on *S. marinus*. TAC or effort allocated to demersal redfish fishery should be given separately for each of the redfish species. Subarea XIV is an important nursery area for redfish. Measures to protect juvenile redfish in Subarea XIV are in place (sorting grids in the shrimp fishery). No formal agreement on the management of *S. marinus* exists among the three coastal states, Greenland, Iceland and the Faroe Islands. In Greenland and Iceland, the fishery is regulated by a TAC and in the Faroe Islands by effort limitation.

RECENT MANAGEMENT ADVICE:

Catches in 2010 should be less than 30,000 t, because this is expected to keep the stock above U_{pa} in the medium term.

STECF COMMENTS: STECF agrees with the ICES advice. STECF notes that the Ministry of Fisheries in Iceland established a committee with the objective to review and recommend on how to separate quotas for the two redfish species and understands that consensus was reached that quota for those two species should be given separately and that this scheme is expected to be implemented in the next fishing year which starts 1 September 2009.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission (COM (2009) 224) on a consultation on fishing opportunities for 2010, STECF notes that redfish (*Sebastes marinus*) in Sub-areas V, VI, XII and XIV can be classified under Category 6.

Accordingly STECF notes that the rule for the above category implies the following option for TACs in 2010.

	2010 TAC	Basis
Category 6	NE*	STECF advice on catch level, Annex III rule 4, Unchanged TAC

*NE = not estimable – no separate TAC for *S. marinus*

8.8. Redfish (*Sebastes mentella*) on the continental shelf of Iceland (demersal in Division Va and Sub-area XIV)

The stock structure of redfish *S. mentella* in Subareas V, VI, XII and XIV, and in the NAFO Convention Area has been evaluated by ICES early 2009. The outcome is that demersal *S. mentella* in Icelandic waters (in ICES Divisions Va and XIV) is to be treated as one biological stock, separated from the demersal *S. mentella* found on the continental slopes of Greenland (Division XIV) and the Faroe Islands (Vb).

FISHERIES: In Division Va, demersal S. *mentella* are taken mainly by Icelandic trawlers at depths greater than 500 m. The total annual catches almost doubled in the early 1990s, but have since then decreased to the level of the 1980s. The increase was mainly caused by an increased catch in Division Va. The increased catch of *S. marinus* in Va in 2002 and decreased catch of *S. mentella* in 2001 and 2002 is due to a joint quota for *S. marinus* and *S. mentella* on the shelf, and the fishing fleet has increased the proportion taken from *S. marinus* in most recent years. Since 2004, total annual catches varied between 18,000 and 25,000 t. Landings in 2007 are estimated to be the lowest since that time at 17,600 t. The catch figures of demersal *S. mentalla* do include catches taken by pelagic gears close to the bottom and east of a management line in the Icelandic EEZ, which by definition separates Icelandic demersal from pelagic catches of *S. mentella*.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. Survey data are used from the Icelandic groundfish survey in Va (2000-2008). Cpue data was used from Icelandic trawlers in Division Va (1986-2008). There are no explicit management objectives for this stock.

PRECAUTIONARY REFERENCE POINTS: No precautionary reference points are established.

STOCK STATUS: In the absence of reference points, the state of the stock cannot be fully evaluated. Commercial cpue indicates a general decrease in stock biomass from the late 1980s to the early 1990s; since

then it has been relatively stable. Available survey biomass estimates indicate that in Division Va, the biomass has been low but stable in recent years.

MANAGEMENT AGREEMENTS: The present management scheme in Division Va sets a joint TAC for *S. marinus* and demersal *S. mentella* on the shelf. This impedes direct management of fisheries on *S. marinus*. TAC or effort allocated to demersal redfish fishery should be given separately for each of the redfish species. No formal agreement on the management of demersal *S. mentella* exists among the three coastal states, Greenland, Iceland and the Faroe Islands. In Greenland and Iceland, the fishery is regulated by a TAC and in the Faroe Islands by effort limitation.

RECENT MANAGEMENT ADVICE:

ICES advises that a management plan be developed and implemented which takes into account the uncertainties in science and the properties of the fisheries. ICES suggests that catches of *S. mentella* are set no higher than 10,000 t as a starting point for the adaptive part of the management plan.

Other considerations:

ICES suggests that catches of *S. mentella* are set at 10,000 t as a starting point for the adaptive part of the management plan. ICES has previously advised that most deep-water species like redfish can only sustain low rates of exploitation, since slow-growing, long-lived species that are depleted have a long recovery period. Fisheries should only be allowed to expand when indicators have been identified and a management strategy including appropriate monitoring requirements has been decided and is implemented.

A catch of 10,000 t would be a significant reduction in catches compared with the recent past. This is expected to result in a lower exploitation rate, but the absolute magnitude cannot be estimated. Subarea XIV in Greenland waters is believed to be an important nursery area for *S. mentella* found in Icelandic waters. Measures to protect juvenile redfish in Subarea XIV should be continued (sorting grids in the shrimp fishery).

STECF COMMENTS: STECF agrees with the ICES advice. STECF notes that the Ministry of Fisheries in Iceland established a committee with the objective to review and recommend on how to separate quotas for the two redfish species and understands that consensus was reached that quota for those two species should be given separately and that this scheme is expected to be implemented in the next fishing year which starts 1 September 2009. STECF further notes that no advice from ICES is available on demersal redfish (*S. mentella*) in areas Vb and XIV, which are now being assessed separately from *S. mentella* on the continental shelf of Iceland.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission (COM (2009) 224) on a consultation on fishing opportunities for 2010, STECF notes that redfish (*Sebastes mentella*) on the continental shelf of Iceland can be classified under Category 6.

Accordingly STECF notes that the rule for the above category implies the following option for TACs in 2010.

	2010 TAC	Basis
Category 6	NE*	STEF advice on catch level, Annex III, rule 4, unchanged TAC

*NE = not estimable –no separate TAC for *S. mentella*

8.9. Pelagic redfish (*Sebastes mentella*) in ICES areas Va, XII and XIV and NAFO Sub-areas 1-2

The stock summary and advice for pelagic redfish (*Sebastes mentella*) in ICES areas Va, XII and XIV and NAFO Sub-areas 1-2will be updated in October 2009 and included in the consolidated STECF review of advice for 2010 for Stocks of Community interest. In view of this, STECF has not attempted to categorise pelagic redfish in ICES areas Va, XII and XIV and NAFO Sub-areas 1-2 according to the Communication on Fishing opportunities for 2010 (COM (2009) 224).

8.10. Icelandic summer-spawning herring (*Clupea harengus,* Division Va)

FISHERIES: Icelandic summer-spawning herring are caught with purse seines and mid-water trawls. The catches increased rapidly in the early 1960s due to the development of the purse-seine fishery off the southern coast of Iceland. This resulted in a rapidly increasing exploitation rate until the stock collapsed in the late 1960s. A fishing ban was enforced during 1972-1975. The catches have since increased gradually to over 100,000 t. Formerly, the fleet consisted of multi-purpose vessels, mostly under 300 GRT, operating purse-seines and driftnets. In recent years, larger vessels (up to 1500 GRT) have entered the fishery. These are a combination of purse-seiners and pelagic trawlers operating in the herring, capelin, and blue whiting fisheries. Since the 1997/1998 fishing season, there has been a fishery for herring both to the west and east of Iceland, which is unusual compared to earlier years when the fishable stock was only found south and east of Iceland. Pelagic trawl fisheries were introduced in 1997/98 and have since then contributed with approximately 20-60% of the catches, but with much less contribution in recent two years (<5%). By-catch in the herring fishery is normally insignificant as the fishing season is during the over-wintering period when the herring is in large dense schools. Until the autumn 1990, the herring fishery took place during the last three months of the calendar year. During 1990-2008, the autumn fishery continued until January or early February of the following year, and has started in September/October since 1994. In 2003, the season was further extended to the end of April, and in the summers of 2002 and 2003, an experimental fishery for spawning herring with a catch of about 5,000 t each year was conducted at the south coast. The number of vessels participating in the fishery has shown a decreasing trend in the 2000s from around 30 down to 20 in 2007.

SOURCE OF MANAGEMENT ADVICE: The data used in the assessment are catch-at-age (from 1990 onwards) and one age-structured acoustic survey index, based on a survey conducted since 1974 in October-December and/or January. In addition to the acoustic survey aimed at the fishable part of the stock, there have been occasionally acoustic surveys off the NW, N, and NE coast of Iceland aimed to estimate the year-class strength of the juveniles. This survey has not taken place since 2003, but was partly resurrected in January 2009. The results of these measurements were normally not used in the assessment directly even if the year-class indices derived from the survey have shown a significant relationship to recruitment of the stock.

PRECAUTIONARY REFERENCE POINTS: The proposed precautionary reference points for fishing mortality and biomass are F_{pa} = 0.22, F_{lim} = Not defined, B_{pa} = 300,000t and B_{lim} = 200,000 t respectively.

STOCK STATUS: Based on the most recent estimates of SSB (in 2009), ICES classifies the stock as having full reproductive capacity. Based on the most recent estimate of fishing mortality (in 2008), ICES classifies the stock as being at increased risk of being harvested unsustainably. Recruitment in the last decade has been at or above the long-term average, with occurrence of strong year-classes in 1999, 2000 and 2002. A high *Ichthyophonus* infection was observed in the stock in the winter 2008/2009 causing an additional natural mortality.

MANAGEMENT AGREEMENTS: The practice has been to manage fisheries on this stock at F = F0.1 (= 0.22 = F_{pa}) for more than 20 years. However, no formal management strategy has been adopted. The Icelandic TACs for herring apply from 1 September to 1 May the following year. The catch is normally taken from September to February.

RECENT MANAGEMENT ADVICE:

Fishing at F_{pa}=0.22 in 2009/2010 implies catches of 75,000 t, assuming 32% mortality due to *Ichthyophonus* infection in beginning of 2009 and no further *Ichthyophonus* mortality in remaining 2009. Because of the *Ichthyophonus* infection a forecast is not provided. In July 2009, new information on *Ichthyophonus* infection will be available from survey monitoring, and ICES recommends that no TAC be set until this information is available.

STECF COMMENTS: STECF agrees with the ICES advice.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission (COM (2009) 224) on a consultation on fishing opportunities for 2010, STECF notes that Icelandic summer-spawning herring can be classified under Category 3.

Accordingly STECF notes that the rule for the above category implies the following option for TACs in 2010.

2010 TAC	Basis

Category 3 NE* Outside safe biological limits: reduce F by 30%, 20% TAC constraint

*NE = not estimable – no catch forecast

8.11. Capelin (*Mallotus villosus*) in Subareas V and XIV and Division IIa west of 5°W (Iceland-East Greenland-Jan Mayen area)

The stock summary and advice for Capelin (*Mallotus villosus*) in Subareas V and XIV and Division IIa west of 5°W will be updated in October 2009 and included in the consolidated STECF review of advice for 2010 for Stocks of Community interest.

9. Resources in the Barents and Norwegian Seas

9.1. Northern Shrimp (*Pandalus borealis*) in Sub-areas I (Barents Sea) and & IIb (Svalbard Waters)

FISHERIES: The fisheries for Northern shrimp in Sub-areas I & II (Barents Sea & Svalbard area) are among the largest shrimp fisheries in the North east Atlantic. Norway and Russia take the majority of the landings. In the early 1980s total landings were above 100,000 t, but have since declined.

Reported landings for all countries increased between 1995 (25,000 t) and 2000 (83,000 t), but have since decreased: 60,000 t in 2002, around 40 000 t in 2003-2005 and around 30 000 t in 2007.

SOURCE OF MANAGEMENT ADVICE: This stock is currently managed jointly by Norway and Russia. ICES is providing biological advice for management of this stock.

PRECAUTIONARY REFERENCE POINTS: Following a NAFO recommendation for stocks assessed by stock production models, a limit reference values (B_{lim}) defined as 30% of Bmsy is used.

STOCK STATUS: Stock biomass was well above Bmsy and F below Fmsy at the end of 2007. Since 2006 this stock has been assessed by a Bayesian version of a surplus production model, using a) total catch and b) 2 different sets of indices (Norwegian and Russian) of stock biomass as input. This model provides estimates of biomass relative to Bmsy. According to this model the biomass has fluctuated above Bmsy since the late 1980s. Correspondingly Fmsy has been below Fmsy. However, the effect of predation by the Barents Sea cod stock has not yet been included in the model.

RECENT MANAGEMENT ADVICE: There are no explicit management objectives for this stock. Based on a catch option table with associated risks of B falling below B_{lim}, ICES recommends that the TAC for 2009 should not exceed 50000 t. According to the model output such catch level would imply a low risk (probability), that the biomass falls below B_{lim} and F being above F_{lim}.

Shrimp is an important prey for several fish species, especially cod, and consumption by cod probably influences shrimp population dynamics significantly and should be taken into account in management. Estimates of cod consumption of shrimp are on average much higher than shrimp landings.

STECF COMMENTS: STECF agrees with the ICES advice

9.2. Cod (*Gadus morhua*) in area I and II (North East Arctic cod)

FISHERIES: Northeast arctic cod is exploited predominantly by Norway and Russia with smaller landings by countries including the UK, the Faroe Islands, Spain and Germany. The fishery for North east Arctic cod is conducted both by an international trawler fleet operating in offshore waters and by vessels using gillnets, long-lines, hand-lines and Danish seine operating both offshore and in the coastal areas.

From a level of about 900,000 t in the mid-1970s, landings declined steadily to around 300,000 t in 1983-1985. Landings increased to above 500,000 t in 1987 before dropping to 212,000 t in 1990, the lowest level recorded in the post-war period. The catches increased rapidly from 1991 onwards, stabilised around 750,000 t in 1994-1997

but decreased to about 414,000 t in 2000. The catches in 2004 and 2005 are estimated to be to 606,000 t and 641,000 t. In 2006, the catch was estimated to 538,000 t, 487,000 t in 2007 and 464,000 t in 2008.

Under-reporting of landings has been an important issue for this stock in recent years. Two sets of estimates of non-reported landings (IUU) for the period 2002–2007 were available, ranging from 41,000–166,000 t and 9,000–41,000 t in recent years. ICES does not have a basis on which to choose one estimate over the other. The series with 41,000–166,000 t unallocated landings was taken forward in the calculations because this is the same method as the one used last year. The choice of the time-series of unreported landings does not affect the advice according to the agreed HCR. The discrepancies between the two methods for estimation of unreported landings must be resolved by the management authorities and made available to ICES.

The TAC for 2009 was set above the catch corresponding to the agreed management plan. The earlier testing of the agreed management plan presumed that the plan should be strictly followed for setting TAC, and the deviation from the management plan in last year is not considered to be a precautionary practice. ICES considers that application of the agreed management plan in 2010 has long-term benefits above the application of F_{pa}.

The estimates of unreported landings have been reduced considerably from 2006 to 2008, which can probably be attributed to the introduction of port state control in the NEAFC area from 1 May 2007. For 2008, the estimate of 15 000 t unreported landings is around 3% of the international reported catch.

Unreported landings will reduce the effect of management measures and will undermine the intended objectives of the harvest control rule. It is therefore important that management agencies ensure that all catches are counted against the TAC.

Quotas were introduced in the trawl fishery in 1978 and for the fisheries with conventional gears in 1989. In addition to quotas, the fisheries are regulated by mesh size limitations (including sorting grids), a minimum catching size, a maximum by-catch of undersized fish, maximum by-catch of non-target species, closure of areas with high densities of juveniles, and by seasonal and area restrictions. Since January 1997 sorting grids have been mandatory for the trawl fisheries in most of the Barents Sea and Svalbard area. The fisheries are controlled by inspections of the trawler fleet at sea, by a requirement of reporting to catch control points when entering and leaving the EEZs, and by inspections for all fishing vessels when landing the fish. Keeping a detailed fishing logbook on board is mandatory for most vessels, and large parts of the fleet report to the authorities on a daily basis. There is some evidence that the present catch control and reporting systems are not sufficient to prevent under-reporting of catches.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The advice is based on analysis of catch-at-age data, using one commercial CPUE series and three survey series. Estimates of cannibalism are included in the natural mortality. The total effect of the discarding and IUU fishing is still unclear and requires more work before it can be included in the assessments.

PRECAUTIONARY REFERENCE POINTS: The proposed precautionary reference points for biomass and fishing mortality are $\mathbf{B}_{pa}$ = 460,000 t, B_{lim} = 220,000 t $\mathbf{F}_{pa}$ = 0.40 and F_{lim} =0.74.

MANAGEMENT AGREEMENTS: This stock is currently managed by a joint Norwegian and Russian scientific advisory body. The fisheries are regulated according to bilateral agreements between Russia and Norway.

At the 33rd meeting of the Joint Russian-Norwegian Fisheries Commission (JRNC) in November 2004, the following decision was made:
"The Parties agreed that the management strategies for cod and haddock should take into account the following:
- conditions for high long-term yield from the stocks
- achievement of year-to-year stability in TACs
- *full utilization of all available information on stock development*
-

On this basis, the Parties determined the following decision rules for setting the annual fishing quota (TAC) for Northeast Arctic cod (NEA cod):

- estimate the average TAC level for the coming 3 years based on F_{pa}. TAC for the next year will be set to this level as a starting value for the 3-year period.
- the year after, the TAC calculation for the next 3 years is repeated based on the updated information about the stock development, however the TAC should not be changed by more than +/- 10% compared with the previous year's TAC.

- if the spawning stock falls below B_{pa}, the procedure for establishing TAC should be based on a fishing mortality that is linearly reduced from F_{pa} at B_{pa}, to F= 0 at SSB equal to zero. At SSB-levels below B_{pa} in any of the operational years (current year, a year before and 3 years of prediction) there should be no limitations on the year-to-year variations in TAC.
- The Parties agreed on similar decision rules for haddock, based on F_{pa} and B_{pa} for haddock, and with a fluctuation in TAC from year to year of no more than +/-25% (due to larger stock fluctuations).[1]"

The plan aims to maintain F at F_{pa} = 0.40 and restrict between-year TAC change to ±10% unless SSB falls below B_{pa}, in which case the target F should be reduced.

Based on evaluations made in 2006 and 2007, ICES considers the management plan to be in accordance with the precautionary approach. If conditions change to outside the assumed range (with respect to biological conditions, assessment quality, or implementation error), the management plan may have to be revised.

STOCK STATUS: Based on the most recent estimates of SSB and fishing mortality, ICES classifies the stock as having full reproductive capacity and being harvested sustainably. The SSB has been above B_{pa} since 2002. Fishing mortality was reduced from well above F_{lim} in 1999 to below F_{pa} in 2007. As predicted last year, surveys indicate that cod recruitment is anticipated to be below the long-term mean both in 2009 and 2010, and also additionally in 2011.

RECENT MANAGEMENT ADVICE:

ICES advises on the basis of the existing management plan which implies landings of 577, 500 t in 2010.

Other considerations

Exploitation boundaries in relation to existing management plans: The agreed management plan implies landings of 577,500 t in 2010 (maximum 10% change in TAC from 2009). This projection includes all landings and therefore the TAC must account for any unreported landings.

Exploitation boundaries in relation to high long-term yield, low risk of depletion of production potential and considering ecosystem effects: The current fishing mortality is in the range of Fs that are associated with high long-term yield and low risk of depleting the production potential.

***Exploitation boundaries in relation to precautionary limits*:** The agreed management plan has been found to be consistent with the precautionary approach and is therefore the basis for the advice which implies landings of 577,500 t in 2010.

STECF COMMENTS: STECF agrees with the ICES advice. STECF notes that TACs in this fishery have not been enforced in the past and unless measures are taken to do so, the realised fishing mortality is likely to exceed the one derived from the management plan in 2009. STECF notes that the level of unreported catches has averaged 20% of total catches over the past four years and managers may wish to take this into account when setting the 2009 TAC.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO THE AGREED MANAGEMENT PLAN.

STECF notes that this plan has been evaluated to be consistent with the precautionary approach. STECF therefore advises that according to the agreed management plan the TAC for 2010 should be set at 577,500 t.

9.3. Cod (*Gadus morhua*) in area I and II (Norwegian coastal cod)

FISHERIES: In addition to TACs, the fishery is regulated by the same minimum catch size, minimum mesh size on the fishing gears as for the Northeast Arctic cod, maximum by-catch of undersized fish, closure of areas having high densities of juveniles, and by seasonal and area restrictions.

Trawl fishing for cod is not allowed inside the 6-nautical mile line except for about 10 fresh fish trawlers which in a few areas have a dispensation to fish between the 4 and 6-mile line in the period 15. April – 15. September.

[1] This quotation is taken from point 5.1, in the Protocol of the 33rd session of The Joint Norwegian-Russian Fishery Commission and translated from Norwegian to English. For an accurate interpretation, please consult the text in the official languages of the Commission (Norwegian and Russian).

Since the mid-1990s the fjords in Finnmark and northern Troms (areas 03 and 04) have been closed for fishing with Danish seine. Since 2000 the large longliners have been restricted to fish outside the 4-nautical mile line. To achieve a reduction in landings of coastal cod additional technical regulations in coastal areas were introduced in May 2004 (after the main fishing season) and continued with small modifications in 2005 and 2006. In the new regulations "fjord-lines" are drawn along the coast to close the fjords for direct cod fishing with vessels larger than 15 meter. A box closed for all fishing gears except hand-line and fishing rod is defined in the Henningsvær–Svolvær area. This is an area where spawning concentrations of coastal cod is usually observed and where the catches of coastal cod has been high. Since the coastal cod is fished under a merged coastal cod/northeast Arctic cod quota, these regulations are aimed at moving parts of the traditional coastal fishery from the catching of coastal cod in the fjords to a cod fishery outside the fjords, where the proportion of northeast Arctic cod is higher. Further restrictions were introduced in 2007 by not allowing pelagic gillnet fishing for cod and by reducing the allowed by-catch of cod when fishing for other species inside fjord lines from 25% to 5%, and outside fjord lines from 25% to 20%. The regulations were maintained in 2008. In addition, in 2009 one more spawning area was closed for fishery (except for hand line and fishing rod) in the spawning season: this is Borgundfjorden near Ålesund, which is the most important spawning area in the soutehern part of the stock distribution area.

The 2008 landings were estimated to be 26 000 t, i.e. above the 2008 TAC of 21 000 t. The regulations have not been sufficient to cause large reductions in catches, and current catches are still too high.

Norwegian coastal cod is managed as part of the Norwegian Northeast Arctic cod fishery. From the mid-1970s to 2003 an expected yield of 40 000 t from the coastal cod was added annually to the quota for Northeast Arctic cod. In 2004 and later years the additional catch expected from this stock has been set near 20 000 t.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. Surba and XSA analyses are used to give broad trends, and it is based on catch-at-age data and on an acoustic survey. The assessment is considered indicative of stock trends and does not reflect absolute stock sizes. This does not invalidate the overall conclusions.

PRECAUTIONARY REFERENCE POINTS: Precautionary references points have not been established for this stock.

MANAGEMENT AGREEMENTS: There are no stated management objectives for this stock and no known management agreements.

STOCK STATUS: In the absence of defined precautionary reference points the state of the stock cannot be fully evaluated. Survey trends in combination with reported landings indicate that the SSB is close to the lowest observed level. Recruitment declined over the period 1995–2002 and has remained low since. Recruitment is clearly impaired at present SSB. Fishing mortality is unknown, and the harvest rate (proxy for fishing mortality) has increased in 2008 after a decline in recent years.

RECENT MANAGEMENT ADVICE:

***Exploitation boundaries in relation to precautionary limits*: Given the low SSB and recruitment for this stock, no catch should be taken from this stock in 2010 and a recovery plan should be developed and implemented.**

STECF COMMENTS: STECF agrees with the ICES advice. STECF notes that TACs in this fishery have not been enforced in the past and unless measures are taken to do so, the realised fishing mortality is likely to exceed the one derived from the management plan in 2009. STECF notes that the level of unreported catches has averaged 20% of total catches over the past four years and managers may wish to take this into account when setting the 2009 TAC.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission (COM (2009) 224) on a consultation on fishing opportunities for 2010, STECF notes that Norwegian coastal cod should be classified as Category 10.

Accordingly STECF notes that the rules for category imply the following TAC for 2010.

	2010 TAC	Basis
Category 10	15,750 t	Advice for zero catch, TAC = 25% reduction.

9.4. Haddock (*Melanogrammus aeglefinus*) in subareas I and II (Northeast Arctic haddock)

FISHERIES: The fishery is mainly a trawl fishery, in some periods only as by-catch in the fishery for cod. Occasionally there is also a directed trawl fishery for haddock. A large portion of the catches is taken as by-catch in a fishery directed at cod. Quotas restrict the fishery. The fishery is also regulated by a minimum catching size, a minimum mesh size in trawls and Danish seine, a maximum by-catch of undersized fish, closure of areas with high density of juveniles, and other area and seasonal restrictions. Since January 1997, sorting grids have been mandatory for the trawl fisheries in most of the Barents Sea and Svalbard area. There are recently no discrepancies between the officially reported landings and the landings used in the assessment. Haddock landings taken in Norwegian coastal areas south of 67 N are not included. In recent years Norway and Russia have accounted for more than 70% of the landings. The total landings in 2007 and 2008 were estimated to be 161,000 t and 156,000 t respectively.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. Analytical assessment based on catch-at-age data, using three survey series. Estimates of cod predation on young haddock are included in the natural mortality. Two series of IUU catch were made available to ICES, but the advice is based on one series only. The surveys in 2006 had incomplete coverage, but the index calculation has been adjusted accordingly (ICES. 2008. Report of the Arctic Fisheries Working Group, 21–29 April 2008. ICES CM 2008/ACOM:01).

REFERENCE POINTS: The proposed precautionary reference points for biomass and fishing mortality are $\mathbf{B}_{pa}$ = 80,000 t, B_{im}=50,000 t, $\mathbf{F}_{pa}$ = 0.35 and F_{lim} = 0.49.

STOCK STATUS: Based on the most recent estimates of SSB (in 2009) and fishing mortality (in 2008), ICES classifies the stock as having full reproductive capacity and being harvested sustainably. The SSB has been above B_{pa} since 1989. Fishing mortality was reduced from above F_{lim} in 1988 to below F_{pa} in 2000-2002, and has since been around F_{pa}. Recruitment at age 3 has been at or above average since 2000. The year-classes 2004-2006 are estimated to be very strong. Surveys indicate that the year-classes 2007 and 2008 are below average.

MANAGEMENT AGREEMENTS: A management plan has been in force since 2004 with the objectives of maintaining high long-term yield, year-to-year stability, and full utilization of all available information on stock dynamics. The plan aims to maintain F at F_{pa} = 0.35 and minimize between-year TAC change to +/− 25%, unless SSB falls below B_{pa} in which case the management targets should change.

At the 36th Session of the Joint Russian–Norwegian Fishery Commission (JRNFC) in autumn 2007 the parties agreed to modify the former three-year rule to a one-year rule in accordance with the results of ICES HCR evaluation.

The agreed HCR for haddock (2007) is as follows (Protocol of the 36th Session of The Joint Norwegian–Russian Fishery Commission, 10 October 2007):

- *TAC for the next year will be set at level corresponding to F_{pa}.*
- *The TAC should not be changed by more than +/- 25% compared with the previous year TAC.*

If the spawning stock falls below B_{pa}, the procedure for establishing TAC should be based on a fishing mortality that is linearly reduced from F_{pa} at B_{pa} to F= 0 at SSB equal to zero. At SSB-levels below B_{pa} in any of the operational years (current year and a year ahead) there should be no limitations on the year-to-year variations in TAC.

ICES evaluated the modified management plan and conclude that it is in agreement with the precautionary approach.

RECENT MANAGEMENT ADVICE:

ICES advises on the basis of the existing management plan which implies catches of 243 000 t in 2010.

Other considerations

***Exploitation boundaries in relation to existing management plans*:** The agreed management plan implies landings of 243 000 t in 2010 (maximum 25% change in TAC from 2009, keeping F below F_{pa}). This projection includes all landings and therefore the TAC must also account for unreported landings

Exploitation boundaries in relation to high long-term yield, low risk of depletion of production potential, and considering ecosystem effects: The current fishing mortality, estimated at 0.35 is within the range that is expected to lead to high long-term yields and low risk of depleting the productive potential (F0.1 = 0.20 - F_{pa} = 0.35).

Exploitation boundaries in relation to precautionary considerations: The agreed management plan is considered to be consistent with the precautionary approach.

STECF COMMENTS: STECF agrees with the ICES advice. STECF notes that under-reporting of landings has been an important issue for this stock in recent years, fluctuating between 4% to 34% of the international reported landings. Non-reported landings (IUU) for the period 2002-2008 were estimated ranging from 6 000 t to 40 000 t. This series was taken forward in the calculations and is the same method as was used in previous years. Including or not including the time-series of unreported landings into assessment affects the perception of the stock, but does not affect the advice since the agreed 25% maximum annual change in TACis in effect this year.

Unreported landings will reduce the effect of management measures and will undermine the intended objectives of the harvest control rule. It is therefore important that management agencies ensure that all catches are counted against the TAC.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO THE AGREED MANAGEMENT PLAN.

STECF notes that this plan has been evaluated to be consistent with the precautionary approach. STECF therefore advises that according to the agreed management plan the TAC for 2010 should be set at 243,000 t.

9.5. Saithe (*Pollacius virens*) in the North East Arctic (Sub-areas I and II)

FISHERIES: Since the early 1960s, the fishery has been dominated by purse seine and trawl fisheries, with a traditional gill net fishery for spawning saithe as the third major component. The purse-seine fishery is conducted in coastal areas and fjords. Historically, purse-seiners and trawlers have taken, approximately, equal shares of the catches. Regulation changes led to a reduction in the amounts being taken by purse-seiners after 1990.

Landings of saithe were highest in 1970-1976 with an average of 238,000 t and a maximum of 265,000 t in 1970. This period was followed by a sharp decline to a level of about 160,000 t in the years 1978 - 1984. Another decline followed and from 1985 to 1991, the landings ranged from 70,000 - 122,000 t. An increasing trend was seen after 1990 to 171,498 t in 1996. Since then the annual landings have fluctuated between 136,000 and 212,480 t. with the highest figure in 2006. Landings in 2007 were 197,000 t and 183,000 t in 2008.

SOURCE OF MANAGEMENT ADVICE: This stock is currently managed by a joint Norwegian and Russian scientific advisory body. The fisheries are regulated according to bilateral agreements between Russia and Norway.

The Norwegian Ministry of Fisheries and Coastal Affairs implemented a harvest control rule (HCR) in autumn 2007 .The harvest control rule contains the following elements:

- *estimate the average TAC level for the coming 3 years based on F_{pa}, TAC for the next year will be set to this level as a starting value for the 3-year period.*
- *the year after, the TAC calculation for the next 3 years is repeated based on the updated information about the stock development, however the TAC should not be changed by more than +/- 15% compared with the previous year's TAC.*
- *if the spawning stock biomass (SSB) in the beginning of the year for which the quota is set (first year of prediction), is below B_{pa}, the procedure for establishing TAC should be based on a fishing mortality that is linearly reduced from F_{pa} at SSB=B_{pa} to 0 at SSB equal to zero. At SSB-levels below B_{pa} in any of the operational years (current year and 3 years of prediction) there should be no limitations on the year-to-year variations in TAC.*

The HCR has the objectives of maintaining high long-term yield, year-to-year stability, and full utilization of all available information on the stock dynamics. The plan aims to maintain target F at F_{pa} = 0.35 and minimize

between-year TAC change to +/− 15%, unless SSB falls below B_{pa} in which case the management targets should change.

ICES has evaluated the Harvest Control Rule (HCR) and concluded that it is consistent with the precautionary approach under the conditions that the assessment uncertainty and error are not greater than those calculated from historic data. This also holds true when an implementation error (difference between TAC and catch) equal to the historic level of 3 % is included. The proposed management plan is in accordance with the precautionary approach and ICES therefore advises according to this plan.

PRECAUTIONARY REFERENCE POINTS: The reference points were recalculated at the 2005 WG using the standard approaches for the determination of reference points within ICES, taking into account the changes in the age groups used in the calculation of fishing mortality (F_{bar}). The reference points, derived using standard ICES approach, are provided below. The new reference points are B_{pa} = 220,000 t, B_{lim} = 136,000 t, F_{pa} = 0.35, $F_{lim.}$ = 0.58

STOCK STATUS: Based on the most recent estimates of SSB and fishing mortality, ICES classifies the stock as having full reproductive capacity and to be harvested sustainably. Fishing mortality is stable and has been well below F_{pa} since 1996. Since 1994, SSB has been well above B_{pa}. Recruitment in 2005 was the highest in the time-series..

RECENT MANAGEMENT ADVICE:

ICES advises on the basis of the existing management plan which results in a TAC of 204,000 t in 2010

Exploitation boundaries in relation to proposed and evaluated management plan: The implemented management plan implies a TAC based on the average of predicted catches for the coming 3 years at F_{pa}. This results in a TAC of 204 000 t in 2010, and a fishing mortality of 0.30.

Exploitation boundaries in relation to high long-term yield, low risk of depletion of production potential and considering ecosystem effects: The current fishing mortality is lower than the F associated with high long-term yield when applied within the agreed HCR.

Exploitation boundaries in relation to precautionary limits: The implemented management plan has been found to be consistent with the precautionary approach and ICES therefore advises according to this plan.This results in a TAC of 204 000 t in 2010.

STECF COMMENTS: STECF agrees with the ICES advice.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO THE AGREED MANAGEMENT PLAN for Northeast Arctic saithe.

STECF notes that this plan has been evaluated to be consistent with the precautionary approach. STECF therefore advises that according to the agreed management plan the TAC for 2010 should be set at 204,000 t.

9.6. Redfish (*Sebastes mentella*) in Sub-areas I and II

FISHERIES: Traditionally, the directed fishery has been conducted by Russia and other East-European countries in the areas from south of Bear Island to Spitsbergen. From the mid-1970s to the mid-1980s, large catches were taken. In the mid-1980s, Norwegian trawlers started fishing along the continental slope (around 500-m depth) further south, in areas never harvested before, and inhabited primarily by mature fish. After a sharp decrease in the landings from the traditional area until 1987, this fishery on new grounds resulted in a temporary increase in the landings until 1991, after which the landings declined. Since 1991, the fishery has been dominated by Norway and Russia.

By-catches are taken in gadoid and shrimp-trawl fisheries. After the introduction of sorting grids in 1993, discarding in the shrimp fishery was reduced. Small redfish less than 18–20 cm are not sorted out by the grid but their catches are regulated by the maximum number of redfish per kilogram shrimp (from 2006 onwards, i.e. 3 juvenile redfish per 10 kg shrimp).

Since 1 January 2003, all directed trawl fisheries for *S. mentella* have been forbidden in the Norwegian EEZ north of 62°N and in the Svalbard area. Additional protection for adult *S. mentella* comprises area closures. Outside permanently closed areas it is, however, legal to have up to 20% redfish (*S. mentella* and *S. marinus*

combined) in round weight as by-catch per haul and on-board at any time when fishing for other species. Since 1 January 2005, the by-catch percentage has been reduced to 15% (both species combined).

A directed pelagic fishery for S. mentella in international waters of the Norwegian Sea outside EEZ has developed since 2004. Landings of *S. mentella* taken in the pelagic fishery for blue whiting and herring in the Norwegian Sea have been reported in 2004 and 2005. In 2006, this fishery developed further to become a directed fishery with 13 countries and more than 40 trawlers landed around 28,000 t. Catches in 2007 and 2008 have decreased significantly (16,000 and 9,000 t, respectively) due to TACs set by NEAFC and decreased economic value of redfish.

MANAGEMENT AGREEMENTS: The *S. mentella* occurrences inside the Norwegian and Russian EEZs are currently managed by a joint Norwegian and Russian scientific advisory body. The fisheries are regulated according to bilateral agreements between Russia and Norway. NEAFC has set a TAC for the *S. mentella* in international waters in the Norwegian Sea in 2007 (15,500 t) and 2008 (14,500 t). The 2009 TAC is 10,500 t.

SOURCE OF MANAGEMENT ADVICE: The advisory body is ICES. ICES notes that it was not possible to conduct an analytical assessment of this stock. Information, therefore, is based on Norwegian and Russian research vessel surveys carried out since 1980. These surveys provide information on both recruitment and spawning stock biomass. The management body of the pelagic redfish fishery is NEAFC. Data from national Norwegian and Russian experimental surveys on pelagic redfish in the Norwegian Sea in 2007 are available. In 2008, the first international survey was carried out.

PRECAUTIONARY REFERENCE POINTS: No precautionary reference points have been proposed for this stock.

STOCK STATUS: In the absence of defined reference points, the state of the stock cannot be fully evaluated. Surveys indicate that the demersal stock is currently near a historical low. The only year-classes that can contribute to the spawning stock are those prior to 1991 as all of the following year-classes have been extremely poor.

The state of the pelagic occurrences of *S. mentella* is unknown.

RECENT MANAGEMENT ADVICE: The new data (landings and survey) available for this stock do not change the perception of the stock in the Barents Sea and Svalbard area. The advice on this stock for the fishery in 2010 is therefore the same as the advice given in 2007 for the 2008 fishery and re-iterated in 2008 for the 2009 fishery: **There should be no directed trawl fishery on *Sebastes mentella* in Subareas I and II in 2010. Area closures should be maintained and by-catch limits should be as low as possible until a significant increase in the spawning-stock biomass (and a subsequent increase in the number of juveniles) has been verified.**

Other consideration:

Results from the pelagic survey conducted in 2008 indicate a significant, but unquantifiable, spawning biomass in the Norwegian Sea. There are indications, however, that recruitment in the next 12-15 years will be low. A limited fishery is prosecuted at present.

STECF COMMENTS:. STECF agrees with the ICES advice and notes that this implies closure of all fisheries in I&II that catch redfish. If this cannot be achieved, STECF **recommends** that measures should be taken to ensure a significant reduction in fishing mortality in 2010, which should be maintained in subsequent years until recovery is achieved.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission (COM (2009) 224) on a consultation on fishing opportunities for 2010, STECF notes that redfish (*Sebastes mentella*) in Sub-areas I and II can be classified under Category 10.

Accordingly STECF notes that the rule for the above category implies the following option for TACs in 2010.

	2010 TAC	Basis
Category 10	NE*	STECF advice on catch level, ≥25% reduction in TAC

*NE = no TAC given for demersal *S. mentella*

9.7. Redfish (*Sebastes marinus*) in Sub-areas I and II

FISHERIES: The fishery is mainly conducted by Norway, accounting for 80-90% of the historical total catch. The fish are caught mainly by bottom otter trawl (at present only as by-catch) and gillnet, and to a lesser extent by longline, Danish seine, and handline, in that order. Some of the catches are taken in mixed fisheries together with saithe and cod. Important fishing grounds are the Møre area (Svinøy), Halten Bank, outside Lofoten and Vesterålen, and at Sleppen outside Finnmark. Traditionally, *S. marinus* has been the most popular and highest priced redfish species. In the period 1984-90, landings of *S. marinus* were at a level of 23,000–30,000 t. In the period 1991-1999, the landings were around 17,000 t but since then have decreased, and from 2004 to 2007, annual landings were estimated to be about 7,000 t. The 2008 landings were 6,300 t. EU landings reached 388 t in 2007 and about 227 t in 2008.

Since 1 January 2003, all directed trawl fisheries for *S. marinus* have been forbidden in the Norwegian EEZ north of 62°N and in the Svalbard area. A minimum legal landing size of 32 cm has been set for all Norwegian fisheries and international fisheries in the Norwegian EEZ, with an allowance to have up to 10% undersized (i.e., less than 32 cm) specimens of *S. marinus* (in numbers) per haul. From January 2006, it is forbidden to use gillnets with mesh size less than 120 mm when fishing for redfish. The closed seasons enforced since 2004 seem to have reduced the gillnet catches by about 2,500 t, while the catches taken by other gears have not decreased, and in some cases increased, causing the total international catches to remain at the same level during the last 6 years.

MANAGEMENT AGREEMENTS: The stock is currently managed by a joint Norwegian and Russian scientific advisory body and regulated according to bilateral agreements between Russia and Norway.

SOURCE OF MANAGEMENT ADVICE: No explicit management objectives have been established for this stock. Information is based on Norwegian and Russian research vessel surveys carried out since 1986 as well as from CPUE (kg per trawl hour) from Norwegian trawlers since 1992. An exploratory assessment was conducted using a simulation model covering the period 19862006. Input data included catches and the annual Barents Sea joint bottom trawl survey. Work on that model is continuing.

PRECAUTIONARY REFERENCE POINTS: No precautionary reference points have been established for this stock

STOCK STATUS: In the absence of defined reference points, the state of the stock cannot be fully evaluated. Surveys and commercial CPUE show a substantial reduction in abundance and indicate that the stock at present is historically low. Information on year-class strength indicates record-low levels for the last decade. Therefore, this stock is presently in very poor condition. Given the low productivity of this species, this situation is expected to remain for a considerable period.

RECENT MANAGEMENT ADVICE: The new data (landings and survey) available for this stock do not change the perception of the stock. The advice on this stock for the fishery in 2010 is therefore the same as the advice given in 2007 for the 2008 fishery and re-iterated in 2008 for the 2009 fishery: **There should be no directed fishery on *Sebastes marinus* in Subareas I and II in 2010. Area closures should be maintained and by-catch limits should be kept as low as possible until a significant increase in the spawning-stock biomass (and a subsequent increase in the number of juveniles) has been verified.**

STECF COMMENTS: STECF agrees with the advice from ICES.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission (COM (2009) 224) on a consultation on fishing opportunities for 2010, STECF notes that redfish (*Sebastes marinus*) in Sub-areas I and II can be classified under Category 10.

	2010 TAC	Basis
Category 10	NE*	STECF advice on catch level, ≥25% reduction in TAC

*NE = no TAC given for *S. marinus*

9.8. Greenland halibut (*Reinhartius hippoglossoides*) in area I and II

FISHERIES: The regulations enforced in 1992 reduced the total landings of Greenland halibut by trawlers from about 20,000 to 8,600 t. Since then annual trawler landings have varied between 9,000 and 20,000 t without any clear trend attributable to changes in allowable by-catch. In 2008, the landings were estimated to amount to 13,000 t.
Since 1992, the fisheries have been regulated by allowing a directed fishery only by small coastal longline and gillnet vessels. By-catches of Greenland halibut in the trawl fisheries have been limited by permissible by-catch per haul and an allowable by-catch retention limit on board the vessel.

In recent years, EU Member State catches have been between 300 t and 500 t.

SOURCE OF MANAGEMENT ADVICE: This stock is currently managed by a joint Norwegian and Russian scientific advisory body. The fisheries are regulated according to bilateral agreements between Russia and Norway. ICES has been approached for advice on biological assessment and management of this stock. An exploratory assessment was based on commercial catch-at-age data, two survey series, and one commercial cpue series. The assessment is uncertain due to age-reading problems and lack of contrast in the data.

PRECAUTIONARY REFERENCE POINTS: No precautionary reference points are defined for this stock.

STOCK STATUS: In the absence of defined reference points the status of the stock cannot be fully evaluated. The tentative assessment (undertaken in 2007) indicates that SSB has been low since the late 1980s, but a slight increase is indicated until 2004. After 2004 the SSB has decreased again. There are indications of a decreasing trend in fishing mortality since the 1990s. Recruitment has been stable at a low level since the 1980s. Recent recruitment estimates are very uncertain.

RECENT MANAGEMENT ADVICE: The new data (landings, survey and CPUE) available for this stock do not change the perception of the stock and give no reason to change the advice from that given last year in 2008. Therefore, the advice for the fishery in 2010 is the same as the advice given in 2008 for the 2009 fishery: "*The stock has remained at a relatively low size in the last 25 years at catch levels of 15 000–25 000 t. In order to increase the SSB, catches should be kept well below that range. Catches should be below 13 000 t as advised since 2003; this is the level below which SSB has increased in the past*"..

This advice will be updated in 2010. ICES notes that the evaluation of this stock is uncertain due to age-reading problems and lack of contrast in the data. The age-reading issue is being addressed and should be resolved in the not too distant future. Corrections to the whole time-series are required.

STECF COMMENTS: STECF agrees with the ICES advice.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224
With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission (COM (2009) 224) on a consultation on fishing opportunities for 2010, STECF notes that Greenland halibut in area I and II can be classified under Category 6.

Accordingly STECF notes that the rule for the above category implies the following option for TACs in 2010.

	2010 TAC	Basis
Category 6	13,000t	STECF advice on catch level

9.9. Capelin *(Mallotus villosus)* in ICES subareas I and II, excluding Division IIa-west of 5°W (Barents Sea capelin)

The stock summary and advice for Capelin (*Mallotus villosus*) in Subareas I and II and Division IIa west of 5°W (Barents Sea) will be updated in October 2009 and included in the consolidated STECF review of advice for 2010 for Stocks of Community interest. In view of this, STECF has not attempted to categorise Capelin (*Mallotus villosus*) in Subareas I and II and Division IIa west of 5°W according to the Communication on Fishing opportunities for 2010 (COM (2009) 224).

9.10. Herring (*Clupea harengus*) in ICES subareas I & II (Norwegian Spring spawners)

The stock summary and advice for herring in Subareas I and II will be updated in October 2009 and included in the consolidated STECF review of advice for 2010 for Stocks of Community interest. In view of this, STECF has not attempted to categorise 9.10. Herring (Clupea harengus) in ICES subareas I & II according to the Communication on Fishing opportunities for 2010 (COM (2009) 224).

10. Resources in the Faeroe plateau ecosystem

10.1. Cod (*Gadus morhua*) in Vb1 (Faroe Plateau cod)

FISHERIES: Faroe plateau cod are taken in a mixed demersal fishery, which was initially international. Following the declaration of EEZs in the 1970s, the fishery became largely Faroese and fishing mortality declined briefly but it has increased since to former high levels. Most of the vessels involved are trawlers and longliners. Landings have fluctuated between 6,000 and 40,000 t (1986-2007), almost entirely taken by non-EU fleets. In 2007 landings were 8,100 t, the lowest observed since 1993.t. Landings in 2008 were 10,500 t. The EU fishery on this stock has been managed together with cod in VI, Vb (EC waters), International waters of XII and XIV.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The advice is based on an analytical method using survey and catch-at-age data. The technique was XSA calibrated by two research surveys.

PRECAUTIONARY REFERENCE POINTS: The proposed reference points for this stock are $\mathbf{F}_{pa}$ = 0.35 and $\mathbf{B}_{pa}$ = 40,000 t and limit reference points of $\mathbf{F}_{lim}$ = 0.68 and $\mathbf{B}_{lim}$ = 21,000 t .

STOCK STATUS: Based on the most recent estimates of SSB (in 2009) and fishing mortality (in 2008), ICES classifies the stock as suffering reduced reproductive capacity and as being harvested unsustainably. Most year-classes from 2001 onwards have been around one third of the long-term average.

MANAGEMENT OBJECTIVES: The management objective is to achieve sustainable fisheries. An effort management system was implemented in the Faroese demersal fisheries in Division Vb in 1996. From the outset the aim of the effort management system was to harvest on average 33% in numbers of the exploitable stock of cod. This translates into an average F of approximately 0.45, above the F_{pa} of 0.35. ICES considers this to be inconsistent with the precautionary approach.

RECENT MANAGEMENT ADVICE:

ICES advises on the basis of the precautionary approach to close the fishery in the fishing season 2009/2010 and to develop a recovery plan aimed at rapidly rebuilding the stock to above B_{pa}.

Other considerations

Exploitation boundaries in relation to existing management plans: The management objective implied in the effort management scheme is to achieve an average exploitation rate equivalent to a fishing mortality of 0.45, compared to the current estimate of 0.76 in 2008, and 0.60 for the last twelve years. Assuming proportionality between effort and F, adherence to the management plan would imply a 25% reduction in effort for 2010 compared with the average fishing mortality the last five years.

Exploitation boundaries in relation to high long-term yield, low risk of depletion of production potential, and considering ecosystem effects: The current fishing mortality estimated as 0.76, and the average F for 1997-2008 = 0.60, is well above rates that would support an optimal yield and low risk of stock depletion (F0.1 and F_{MAX}).

Exploitation boundaries in relation to precautionary limits: Taking into account the current perception of the stock abundance and recruitment, fishing at any level will lead to the stock remaining below B_{pa} in 2011. ICES therefore recommends a closure of the fishery in the fishing season 2009/2010 and a development of a recovery plan aimed at rapidly rebuilding the stock to above B_{pa}.

STECF COMMENTS: STECF agrees with the ICES advice.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission (COM (2009) 224) on a consultation on fishing opportunities for 2010, STECF notes that Faroe Plateau cod should be classified under Category 10.

Accordingly STECF notes that the rules for each of the above categories imply the following options for TACs in 2010.

	2010 TAC	Basis
Category 10	NE*	Advice for zero catch, TAC = 25% reduction.

*NE = not estimable. In the absence of an agreed TAC for Faroe Bank cod, STECF is unable to advice on a 25% reduction.

10.2. Cod (*Gadus morhua*) in Vb2 (Faroe Bank cod)

FISHERIES: during the recent 10 years total catches for this stock have fluctuated between 4000 and 200 t. In the latest years EU landings have constituted 10-20% of the total. The EU fishery on this stock has been managed together with cod in VI, Vb (EC waters), International waters of XII and XIV.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES.

PRECAUTIONARY REFERENCE POINTS: Biological reference points have not been defined for this stock.

STOCK STATUS: There is no analytical assessment for this stock. Survey indices indicate that the stock is severely depleted. Catches have declined strongly in the last three years despite a marked increase in the exploitation rate.

MANAGEMENT OBJECTIVES: There are no explicit management objectives for this stock

RECENT MANAGEMENT ADVICE: The new data (landings and survey indices) available for this stock do not change the perception of the stock and give no reason to change the advice from that given last year in 2008. Therefore, the advice for the fishery in 2010 is the same as the advice given in 2008 for the 2009 fishery: "Because of the very low stock size ICES advises that the fishery should be closed. Reopening the fishery should not be considered until both survey indices indicate a biomass at or above the average of the period 1996–2002"

STECF COMMENTS: STECF agrees with the ICES advice.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission (COM (2009) 224) on a consultation on fishing opportunities for 2010, STECF notes that Norwegian coastal cod should be classified as Category 10.

Accordingly STECF notes that the rules for category imply the following TAC for 2010.

	2010 TAC	Basis
Category 10	NE*	Advice for zero catch, TAC = 25% reduction.

*NE = not estimable. In the absence of an agreed TAC for Faroe Bank cod, STECF is unable to advise on a 25% reduction.

10.3. Haddock (*Melanogrammus aeglefinus*) in area Vb (Faroe)

FISHERIES: Faroe haddock are taken as part of a mixed demersal fishery, with most taken by trawls or longlines. Landings are predominantly Faroese, with only low EU landings. Since 1988 total landings from Vb have increased from 4,000 t to 27,000 t in 2003 but have dropped to 7,582t in 2008. The management is by effort restrictions through individual transferable days introduced in 1996. The fishing law also prescribes fleet specific catch compositions of cod, haddock, saithe, and redfish.

SOURCE OF MANAGEMENT ADVICE: The management advisory body is ICES. The advice is based on an age-based assessment using commercial landings and age disaggregated data from two surveys.

PRECAUTIONARY REFERENCE POINTS: The proposed precautionary reference points for this stock are F_{pa} = 0.25 and B_{pa} = 35,000 t.

STOCK STATUS: Based on the most recent estimates of SSB (in 2009) and fishing mortality (2008), ICES classifies the stock as being at risk of reduced reproductive capacity but being harvested sustainably. The fishing mortality in 2008 is estimated just below F_{pa}. SSB increased until 2003 as a result of strong recruitments, including the record-high 1999 year-class, but has declined since. Recruitment of the year-classes from 2003 onwards has been well below average.

RECENT MANAGEMENT ADVICE:

ICES advises on the basis of the precautionary approach to close the fishery in the fishing season 2009/2010 and to develop a recovery plan aimed at rapidly rebuilding the stock to above B_{pa}

Other considerations

Exploitation boundaries in relation to existing management plans:

The management objective implied in the effort management scheme is to achieve an average exploitation rate equivalent to a fishing mortality of 0.45, compared to the current estimate of 0.22 in 2008, and the average fishing mortality 1997-2008 of 0.36.

Exploitation boundaries in relation to high long-term yield, low risk of depletion of production potential, and considering ecosystem effects:

The current fishing mortality, estimated at 0.22, and the average fishing mortality 1997-2008 of 0.36. is above $F_{0.1}$ (0.18).

Exploitation boundaries in relation to precautionary limits:

Given the recent poor recruitment and slow growth and the rapidly declining SSB, the forecast indicates that even a zero fishing mortality in 2010 will not result in getting the stock above B_{pa} in 2011. ICES recommends to close the fishery in the fishing season 2009/2010 and to develop a recovery plan aimed at rapidly rebuilding the stock to above B_{pa}

STECF COMMENTS: STECF agrees with ICES' advice.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission (COM (2009) 224) on a consultation on fishing opportunities for 2010, STECF notes that this stock can be classified under Category 10.

Category 10 STECF advises a zero catch, a reduction to the lowest possible level or similar advice. Accordingly STECF notes that the rules for category imply the following TAC for 2010.

	2010 TAC	Basis
Category 10	NE*	Advice for zero catch, TAC = 25% reduction.

*NE = not estimable. In the absence of an agreed TAC for Faroe Bank haddock, STECF is unable to advise on a 25% reduction.

10.4. Saithe (*Pollachius virens*) in Division Vb (Faroe saithe).

Advice for this stock is given in Section 2.6

11. Resources in the Black Sea

11.1. Turbot (*Psetta maximus*) in Black Sea

FISHERIES: Turbot in the Black Sea is exploited by all riparian countries. In the last 5 years according to the official statistics the annual catch was between 400 and 1000t, 70% of which was caught by Turkish vessels. In EU waters (Bulgaria and Romania) the annual catch in 2007 and 2008 is about 100t corresponding to the agreed quota. The extent of illegal and unreported fishing in different countries is unknown, but is though to be important because of the high market value of turbot. Turbot fishing in Turkish waters of the Black Sea is carried out by bottom gill nets (70%), bottom trawls (28%) and by-catch from trawls and purse seines (2%). Turbot fishing in the other countries (including EU waters) is carried out by bottom gill nets because of a moratorium on bottom trawling.

Catches in the last years are in the order of 7% to 15% (depending on the countries) of the catches reported in the 1970s and 1980s.

SOURCE OF MANAGEMENT ADVICE: The management advice is provided by STECF based on assessments performed by the Black Sea Sub Group (STECF SG Black Sea-09-02). SG Black Sea has applied XSA to assess the stock of turbot, but because of uncertainties about actual catch the assessment is interpreted only in relative terms – i.e. it is considered indicative of trends only.

MANAGEMENT AGREEMENT: The TACs for turbot catches in 2007 and 2008 and quotas allocation was introduced regarding to Council Regulations (EC) No 1579/2007 and No 1139/2008. Both for Bulgaria and Romania quotas of 50 t for each country were permitted. The size of TAC is not based on an analytical procedure but on historical catches and is a matter of negotiations between Bulgaria, Romania and the EC. No management agreement exists with other Black Sea countries. Also mesh size of gillnets is regulated.

PRECAUTIONARY REFERENCE POINTS: Currently precautionary reference points are not applied.

STOCK STATUS: SG Black Sea has applied XSA to assess the stock of turbot, but because of uncertainties about actual catch the assessment is interpreted only in relative terms – i.e. it is considered indicative of trends only. Current biomass of turbot is much lower compared to historical levels.. The drop in abundance is consistent with the decreases in CPUE and landings. Recruitment has increased since 2002 and positively influenced the SSB, but given that many small and immature turbot are caught by the fisheries such a positive influence may not propagate in the next years. Fishing mortality of turbot is high.

MANAGEMENT OBJECTIVES: No formal management objectives have been adopted either by the EU or other countries that exploit turbot in the Black Sea.

RECENT MANAGEMENT ADVICE: STECF consider that the results of the most recent assessment conducted during the STECF-SGRST Working Group in Brest in July 2009 are not sufficiently reliable to use as the basis for quantitative management advice on fishing opportunities for 2010. Therefore, in line with the advice given in STECF plenary report of April 2009, STECF advises that the exploitation of turbot in the Black Sea should be kept at the lowest possible level in order to allow the stock to recover.

STECF COMMENTS: The most recent assessment was rejected by STECF as a basis for advice on fishing opportunities for 2010 because of unreliable catch data and poor model fit.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224
With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission (COM (2009) 224) on a consultation on fishing opportunities for 2010, STECF notes that this stock can be classified under Category 10. Accordingly STECF notes that the rules for the above category imply the following options for TACs in 2010.

Category 10 STECF advises a reduction to the lowest possible level or similar advice.

	2010 TAC *	Basis
Category 10	75t	The TAC should be reduced by at least 25%. Recovery measures should be implemented including effort reductions and introduction of more selective fishing gear

*** relates to a unilateral EU TAC**

11.2. Sprat (*Sprattus sprattus*) in Black Sea

FISHERIES: The fishing grounds of Black Sea sprat are in the shelf area (up to 100-120m in depth). Sprat fishing with mid-water trawls in EU waters and pair-trawls in Ukraine and in Turkey is undertaken with large fishing vessels (>12m) at mainly at depths between 30 and 60 m. During summer months (July-August) sprat inhabits deeper water below the thermocline (usually under 10.5 C at 20 m depth),. There is substantial warming up of waters during summer and above the thermocline water temperatures reach 25-27 C°. The sprat fishery is carried out year round, with the highest yields in May-October. In Turkey, the main fishing season is spring (April) and late autumn (November).

SOURCE OF MANAGEMENT ADVICE: The management advice is provided by STECF based on assessments performed by the Black Sea Sub Group (STECF SG Black Sea-09-02). Ukraine and Russian Federation also apply TAC in their national waters.

MANAGEMENT AGREEMENT: A quota is allocated in EU waters of the Black Sea (Bulgaria and Romania). No fishery management agreement exists between other Black Sea countries. In the EU Black Sea waters a TAC 12 750 t was set for 2009. This figure is a result of a reduction of the 2008 TAC of 15 000 t based on the precautionary principle.

PRECAUTIONARY REFERENCE POINTS: F_{MAX} could not be estimated. The YpR curve has a maximum well outside any reasonable range. The skewed shape of the YpR curve results from the high natural mortality and the short life span of sprat in the Black Sea. Due to such effects, STECF rejected the proposed $F_{0.1}$=1.71 as an appropriate management reference point.

The results of an age structured production model indicate that MSY is estimated to be in the range of 44,442 t. F_{msy} (ages 1-3) is estimated to be 0.53. B_{msy} appears to be in the range of 128,000 t.

STOCK STATUS: The analyse of the main population parameters reveals that the sprat stock has recovered from the depression in the 1990s due to good recruitment in 1999-2001 and the biomass and catches have gradually increased over the 1990s and early 2000s. The stock estimates, however, confirm the cyclic nature the sprat population dynamics. The years with relatively strong recruitment were followed by years of low to medium recruitment, which leads to a relative decrease of the Spawning Stock Biomass (SSB). High fishing mortalities (F_{1-3}) were observed in 1990-1994, 1998, and 2003. In recent years SSB has decreased due to lower recruitment and high fishing mortality. Landings have initially (in 2001-2005) reached levels comparable to the 1980s but then dropped in 2006-2007. In 2008 landings and fishing mortality increased again coincident with an expansion in the Turkish fishery. SSB and recruitment were at a medium level in 2008 similar to 2007. Short-term projectons with status quo fishing of around 50,000t annual catch predict that in 2008-2011 SSB will decrease from 173,000 to 144,000 t (17%). Current fishing mortality F_{1-3} = 0.52 is close to the estimated F_{msy}=0.53.

MANAGEMENT OBJECTIVES: No formal management objectives have been adopted either by the EU or other countries that exploit sprat in the Black Sea.

RECENT MANAGEMENT ADVICE: STECF consider that the results of the most recent assessment conducted during the STECF-SGRST Working Group in Brest in July 2009 are not sufficiently reliable to use as the basis for quantitative management advice on fishing opportunities for 2010. In the absence of an allocation key for the international sprat catches, STECF is unable to advice on a specific EU TAC for sprat in the Black Sea. However, and in line with the advice given in STECF plenary report in 2009, STECF consider that the state of the stock in not known exactly but that the stock biomass is low compare to historical level.

STECF COMMENTS: The most recent assessment was rejected by STECF as a basis for advice on fishing opportunities for 2010 because of unreliable catch data and poor model fit.

FISHING OPPORTUNITIES FOR 2010 ACCORDING TO ANNEX II OF COM (2009) 224

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission (COM (2009) 224) on a consultation on fishing opportunities for 2010, STECF notes that Sprat in the Black Sea can be classified under Category 6.

Accordingly STECF notes that the rules for the above categories imply the following option for TAC in 2010.

2010 TAC	Basis

Category 6 NE* No EU-TAC set for this stock.

*** NE- not estimable**

11.3. Other Black Sea stocks (anchovy, mackerel, bonito, whiting and red mullet)

STECF is presently unable to advise on the state of resources or on fishing opportunities for 2010 for these stocks.

12. List of Acronyms

ACOM	The Advisiory Committee of ICES
ACFM	The Advisory Committee on Fishery Management
ASPM	Age structured population model
BRP	Biological Reference Points
CCAMLR	Committee for the Conservation of Antarctic Marine Living resources
CCSBT	Commission for the Conservation of Southern Bluefin Tuna
CECAF	Committee for Eastern Central Atlantic Fisheries
CPFD	Catch per fishing day
CPS	Commission du Pacifique Sud
CPUE	Catch per unit effort
CTMFM	Comisión Técnica Mixta del Frente Marítimo
DEPM	Daily egg production method
DFO	Department of Fisheries and Oceans
EIAA	Economic Interpretation of the ACFM Advice
EIFAC	European Inland Fishery Advisory Committee
EEZ	Exclusive economic zone
EPO	Eastern Pacific Ocean
F	Fishing mortality
FAO	Fisheries and Agriculture Organization
FAD	Fishing Attracting Device
FARWEST	Fisheries Assessment Research in Western Mediterranean
FIGIS	Fisheries Geographical Information System
FICZ	Falkland Island Inner Conservation Zone
FIFD	Falkland Islands Fisheries Department
FOCZ	Falkland Island Outer Conservation Zone
FRCC	Fisheries Resources Conservation Committee
FU	Functional Units
GFCM	General Fisheries Commission for the Mediterranean
GRUND	GRUppo Nazionale Demersali (Italy)
IATTC	Inter American Tropical Tuna Commission
IBSFC	International Baltic Sea Fisheries Commission
ICA	Integrated catch at age analysis
ICCAT	International Commission for Conservation of Atlantic Tuna
ICES	International Council for the Exploration of the Sea
ICS	International Scientific Committee for Tuna and Tuna-like species in the North Pacific Ocean
IFREMER	Institut Français de Recherche pour l'Exploitation de la Mer
IEO	Instituto Español de Oceanografía
INIDEP	Instituto Nacional de Investigación y Desarrollo Pesquero
IOTC	Indian Ocean Tuna Commission
IUU	Illegal, Unregulated and Unreported
LCA	Length-based cohort analysis
LLUCET	Project to study the recruitment and juveniles of hake
LPUE	Landings per unit effort
MBAL	Minimum biologically acceptable level
MEDITS	International Bottom Trawl Surveys in the Mediterranean

MEDLAND	Mediterranean Landings
MSY	Maximum sustainable yield
MSVPA	Multi Species VPA
NAFO	Northwest Atlantic Fisheries Organisation
NEA	North East Atlantic
NEI	Not Elsewhere Included
NEMED	*Nephrops* in Mediterranean Sea
NRIFSF	National Research Institute for Far Seas Fisheries - Japan
PA	Precautionary Approach
PICTs	Pacific Islands Countries and Territories
PO	Pacific Ocean
RRAG	Renewable Resources Assessment Group
SAC	Scientific Advisory Committee (GFCM)
SAFC	South Atlantic Fisheries Commission
SAGP&A	Secretaria de Agricultura, Ganadería, Pesca y Alimentos (Argentine)
SCRS	ICCAT Standing Committee on Research and Statistics
SCSA	Sub-Committee on Stock Assessment (GFCM)
SCTB	Standing Committee on Tuna and Billfish (western and central Pacific Ocean)
SGRST STECF	Subgroup on Resource Status
SPC	Southern Pacific Commission
SSB	Spawning stock biomass
SSB/R	Spawning stock biomass per recruit
STECF	Scientific, Technical and Economic Committee for Fisheries
TAC	Total Allowable Catch
WCPO	Western Central Pacific Organisation
WCPFC	Western Central Pacific Fishery Organisation
WECAF	Committee for Western Central Atlantic Fisheries
WGEF	Working Group on Elasmobranches Fishes
WIO	Western Indian Ocean
WP	IOTC Working Parties
WPB	IOTC Working Parties on Billfish
WPTT	IOTC Working Parties on Tropical Tunas
WPO	Western Pacific Ocean
XSA	Extended survivors analysis
Y/R	Yield per recruit

13. Reference

Scientific, Technical and Economic - Committee for Fisheries (STECF) - Review of Scientific Advice for2009 - Consolidated Advice on Stocks of Interest to the European Community (eds. Casey, Raid, Beare & Doerner). EUR 23630 EN. Luxembourg (Luxembourg): OPOCE; 2008. JRC48991

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15. Annex II-Expert declarations

Declarations of invited experts are published on the STECF web site on https://stecf.jrc.ec.europa.eu/home together with the final report.

European Commission

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Abstract

SGRST-09-02 was held on 29 June -3 July 2009 in Brest (Brest). The meeting was the 2nd meeting convened in 2009 focussing on the review of stocks of Community interest. STECF reviewed the report during its plenary meeting on 13-17 July 2009.

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