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Note on behalf of NWWRAC to ICES ref the Stock Assessment for 7e sole and the apparent inconsistencies thrown up by the terms in Article 3 of the Council Regulation (EC) No. 509/2007 establishing a multi-annual plan for the sustainable exploitation of this stock.

Article 3

Procedure for setting the Total Allowable Catches

1. For the years 2007, 2008 and 2009 the Council shall decide each year by qualified majority on the basis of a proposal from the Commission on Total Allowable Catches (TACs) for Western Channel sole at that level of catches which, according to a scientific evaluation carried out by the Scientific, Technical and Economic Committee for Fisheries (STECF), is the higher of:
 - (a) that TAC whose application will result in a 20 % reduction in the fishing mortality rate in 2007 compared to the average fishing mortality rate in the years 2003, 2004 and 2005 as most recently estimated by STECF;
 - (b) that TAC whose application will result in the fishing mortality rate specified in Article 2(2).

2. For the years 2010, 2011 and 2012 the Council shall decide each year by qualified majority on the basis of a proposal from the Commission on TACs for Western Channel sole at that level of catches which, according to a scientific evaluation carried out by STECF, is the higher of:
 - (a) that TAC whose application will result in a 15 % reduction in the fishing mortality rate in 2010 compared to the average fishing mortality in the years 2007, 2008 and 2009 as most recently estimated by STECF;
 - (b) that TAC whose application will result in the fishing mortality rate specified in Article 2(2).

3. For 2013 and subsequent years, the Council shall decide annually by qualified majority on the basis of a proposal from the Commission on TACs for Western Channel sole at that level of catches which, according to a scientific evaluation carried out by STECF, will result in the fishing mortality rate specified in Article 2(2).

4. Notwithstanding paragraph 3, if STECF advises that the fishing mortality rate specified in Article 2(2) has not been achieved by 31 December 2012, paragraph 2 shall apply, *mutatis mutandis*, for 2013, 2014 and 2015 and paragraph 3 shall apply *mutatis mutandis* from 2016.

Supplementary brief concerning 7e Sole for the NWWRAC Executive Committee meeting in Paris on 8th October 2008.

The following is text from the Madrid WG3 (3rd July 2008) report:

Summary of latest ICES/ACOM advice: "Sole 7e: Misreported catches are accounted. The Plan implies for 2009 -20%F of reference period average. ICES evaluated in 2006 the targeted Mortality, F0.27. ICES has not yet evaluated the plan. Trends are uncertain, but present mortality is not sustainable. Precautionary Advice this year implies around 300T TAC for 2009. Recovery Plan method gives 650 tonnes for 2009 = 15% reduction of TAC. Implied TAC changes are not happening as simulated. Intention is to conduct full assessment of the Plan later this year.

Discussion: The original simulations looked at a range of F targets. Reduce F in 3-years steps. Implied TAC reductions also 3 years steps. F 0.27 target was adopted by Council. Regulation differs from the models and F 0.27 would now be met much more rapidly than modelled, with implied damaging socio-economic consequences. The Commission says F is increasing and TACs too high. Effort limits not limiting F. TAC must reduce further to save this stock. ICES requested to evaluate the plan this year in time for the negotiations.

UK industry response: Not rejecting the advice, but concerned about using older data, retrospective bias and rapid shift to F0.27. We are only asking for a graduated approach to achieve F0.27, as modelled in 2006 and as approved by the NWWRAC. Account of greater than necessary TAC changes must be taken. Socio-economic damage inflicted would be felt in the fleets, in the ports and beyond."

DEFRA and CEFAS agreed to conduct urgently a review of the Recovery Plan and compare its requirements against the WGSSDS work done in 2006 prior to the adoption by Council of the Plan.

The results of the review are appended to this note.

The concluding paragraph of DEFRA letter to UK industry is revelation:

"Rolling over the 2008 TAC (765t) into 2009 would result in a 21% reduction in fishing mortality in 2009 (from 0.42 in 2008 to 0.33); this is consistent with the level of fishing mortality that was originally intended for the years 2008 – 2010, within the ICES WG simulations used to evaluate the original plan. "

The bottom line is that following ACOM advice and cutting the TAC by 15% would not only result in ultra-rapid achievement of the target Mortality, it would also cause unacceptable and unnecessary social and economic hardship to the fleets targeting this stock and for no good reason.

Jim Portus.
Rapporteur for NWWRAC WG3 (Channel)
February 7, 2009

VIIIE SOLE MANAGEMENT PLAN

Following the post-ACOM industry briefing last month, we promised to let you have a more detailed analysis of the scientific advice for Western Channel sole and an assessment of how different a management plan based on a single year might have been for this stock.

What is the basis of the latest mortality estimate?

The mortality values for sole in Division VIIe are taken from the 2008 ICES Southern Shelf Working Group assessment based on landings, one survey index and four commercial cpue series. The estimate of the fishing mortality in 2007 is 0.45. The recent trend has been upward above the management plan reference level (average of 2003 – 2005, now estimated as 0.34) and the objective for 2009 (average 2003 – 2005 has been reduced by 20%, to 0.27).

The 2008 estimate of the objective fishing mortality for 2009 (0.27) has been revised downward by 5% compared to last year, when the management plan was first applied. It is 17% lower than the value (0.33) assumed in the ICES evaluation of the management plan, which was based on the average of the 2003 – 2005 mortalities (0.42) from the 2006 ICES assessment.

The current estimate of the three-year objective is equal to the final target for the overall management plan, which is to reduce fishing mortality to the long-term sustainable level of 0.27.

What period does it relate to and what does data for the same period on fishing effort show?

Catch at age data, available from 2003, for each Member State allow the calculation of individual country partial fishing mortalities.

Around 50-70% of the fishing mortality on VIIe sole since 2003 has been due to English beam trawls, gill and trammel nets. Fishing mortality exerted by these vessels has varied around a relatively stable level since 2003. The fishing effort of English vessels (as reported to STECF) has varied little since 2000, increasing slightly between 2000 and 2003 and decreasing by around 10% since then.

French vessels have been responsible for around 25-50% of total sole F since 2003. Although sole is likely to be mainly a by-catch in the French fleet, both the fishing mortality and the fishing effort of French vessels have increased since 2003.

Please note however that the above analysis of effort trends is based on data supplied to STECF for a meeting in September 2008, which has yet to be fully validated and therefore not yet in full circulation.

Is this a case of there not being a close relationship between mortality and effort and if so, do we know why?

Fishing mortality and fishing effort appear to follow a similar general trend. England and France are the main countries fishing and the partial fishing mortality was calculated for each. Results show that both effort and partial F for UK vessels has been relatively flat since 2003 (10% decline in effort since 2003 and a slight increase in F), whereas the effort and partial F of French vessels has been increasing.

What would the implications have been for 2008 and 2009 if instead of the TAC-setting rule adopted in the long term plan (which measures reductions in mortality against a 2003-2005 base period) we had adopted the variant which was the UK's preferred option at the time, which differed only in measuring mortality reductions against a single year 2005 base period. At the time we thought this would have given a higher reference point and would have therefore meant that a given percentage reduction from it would have been easier to reach. Would this still be the case (bearing in mind that ICES' retrospective downward adjustment of mortality estimates for this stock may mean that the 2005 estimate is now no longer so high)?

If so, how different would the outcomes have been for 2008 and 2009 TACs?

The UK preferred option of basing the management on the estimate of mortality for 2005 would also suffer from the same downward revisions (see table 2b below). The percentage revision in the objectives between advice years is equivalent to that of the agreed plan, but the outcome for the advice on yield is higher and has a less severe change from 2008 to 2009 due to the higher levels of fishing mortality in 2005 from which the 20% reduction is taken. Table 2c presents the yield that would have resulted from application of the constant fishing mortality (0.33) option originally evaluated by ICES and Cefas.

Table 2a Sole in Division VIIe the management plan outcomes based on the annually revised estimate of the average fishing mortality over the period 2003 – 2005; ignoring the 15% constraint

	ICES WG Year		
	2006	2007	2008
Avge F03-F05	0.412	0.361	0.341
20% reduction	0.330	0.289	0.273
% relative to 06 WG		87%	83%
% relative to 07 WG			95%
Yield 2008		700	
Yield 2009			640

Table 2b Sole in Division VIIe the management outcomes based on the revised estimate of fishing mortality for 2005 (UK preferred option); +/- 15% not required.

	ICES WG Year		
	2006	2007	2008
F2005	0.493	0.416	0.388
20% reduction	0.394	0.333	0.310
% relative to 06 WG		84%	79%
% relative to 07 WG			93%
Yield 2008	780		
Yield 2009			720

Table 2c Sole in Division VIIe the management outcomes based on a constant fishing mortality of 0.33; +/- 15% not required

	ICES WG Year		
		2007	2008
Target F		0.33	0.33
Yield 2008		784	
Yield 2009			760

To conclude, the anticipated reduction in the TAC for 2009 is a consequence of three main factors.

- a. Fishing mortality is estimated to have increased in 2007, hence the reduction required to reach the management plan target fishing mortality is still significant;
- b. As a result of the restriction to a 15% change in TAC, the TAC agreed for 2008 was above that required to achieve the reduction in fishing mortality required by the plan. Therefore in order to achieve the target for 2009 a greater reduction is required;
- c. Fishing mortality in the reference period and consequently the objective for TAC setting in 2008 – 2010, have been estimated to be 5% lower by the most recent ICES assessment.

Rolling over the 2008 TAC (765t) into 2009 would result in a 21% reduction in fishing mortality in 2009 (from 0.42 in 2008 to 0.33); this is consistent with the level of fishing mortality that was originally intended for the years 2008 – 2010, within the ICES WG simulations used to evaluate the original plan.

Further supporting information is provided in Annex 1.

Annex 1

Supporting information on the ICES advice for sole in VIIe and the application of the management plan

Chris Darby, Mike Armstrong, Steve Flatman, Stuart Reeves - *Cefas 7/07/2008*

Introduction

The ICES advice for sole in Division VIIe has just been released and the TAC options for 2009 can therefore be inferred from the management option table. This annex examines the characteristics and robustness of the ICES working group assessment used for providing advice, the terminology in the EU agreement for the harvest control rule adopted for determining future TAC, the implications for the level of TAC in 2009 and the resulting stock trends.

The 2008 ICES advice for VIIe sole

ICES classifies the sole stock in Division VIIe as being at risk of reduced reproductive capacity ($B_{lim} < SSB < B_{pa}$) and being harvested unsustainably ($F > F_{pa}$). SSB has declined since 1980 and is estimated at a historic low in 2006 - 07. Fishing mortality has been above F_{pa} since 1979, and mostly above F_{lim} since 1982. Fishing mortality has generally increased since the mid-1990s.

The ICES interpretation of the application of the EU management plan for sole in VIIe would result in a TAC for 2009 of 650t (Table 1a), 15% below that of 2008 (765t) resulting in two successive years with a 15% decrease in the TAC.

In its conclusions ICES noted that it had not evaluated the management plan and gave advice consistent with the Precautionary Approach (320t).

The intention of the plan was to provide a gradual transition to lower exploitation rates and larger stock size by applying reductions in fishing mortality every three years.

Rolling over the 2008 765t TAC would result in a 21% reduction in fishing mortality from 0.42 in 2008 to 0.33 in 2009 (Table 1b).

Note that in 2008 in addition to providing the catch options ICES also highlighted problems with the application of TAC and effort management for this stock:

Management of this stock is mainly by TAC, which has largely been ineffective at regulating the fishery. In 2005 effort restrictions were implemented for towed gears in this fishery in order to enforce the TAC and improve data quality. To date these restrictions have not been limiting in this fishery, in part due to the large numbers of days available, but also because in

the UK fleet there appears to be a considerable amount of latent effort in the beam trawl fleet.

Table 1a The extended version of the sole in Vlle management options table taken from the 2008 ICES Southern Shelf Working Group Report.

SSB 2009 = 2257
 TSB 2009 = 3627
 TAC 2008 = 765

F-mult	F	Yield 2009	SSB 2010	TSB 2010
0.0	0.000	0	3105	4543
0.2	0.084	215	2897	4322
0.4	0.168	415	2705	4117
0.6	0.252	600	2528	3928
0.8	0.336	771	2364	3752
1.0	0.420	931	2212	3589
1.2	0.505	1078	2072	3438
1.4	0.589	1216	1942	3298
1.6	0.673	1344	1822	3168
1.8	0.757	1463	1710	3047
2.0	0.841	1573	1607	2934
0.657 Mplan	0.276	650	2479	3877

Table 1b Extrapolation to derive the consequences of a TAC roll-over

F-mult	F	Yield 2009	SSB 2010	TSB 2010
0.79	0.33	765	2370	3758

The ICES assessment

The 2006, 2007 and 2008 ICES WG assessments of Vlle sole estimated the time series of fishing mortalities at the values listed in Table 2 and the time series are illustrated in Figure 1.

The addition of new information (more years of data) to the stock assessment has resulted in a continuous revision of the status of the exploitation during 2003 – 2005 such that average fishing mortality has been revised downwards by successive assessments, by 13% from the 2006 assessment to the 2007 assessment and by a further 5% from 2007 to 2008.

Quality / robustness of the ICES assessment and advice

ICES notes that there is a bias in the assessment overestimating F and underestimating SSB in recent years, consequently revisions in the most recent estimates of fishing mortality make the short-term forecast uncertain. In addition because of the uncertainty of the estimate of the incoming year-class abundance, the catch projections are based on an average recruitment for the years 1969 - 2004. The assumed recruitment accounts for 25% of the predicted landings in 2009.

Substantial area misreporting of catches has been evident for a number of years and the catch statistics have been partially corrected for this. Estimates of unreported landings are not available and are not included in the assessment. The extent of underreporting is unknown and the current stock assessment and forecast will be conditional on the accuracy of the landings statistics.

The management plan

The agreed management plan specifies that for the years 2007, 2008 and 2009 the Council shall decide on a TAC that is the higher of:

- (a) that TAC whose application will result in a 20 % reduction in the fishing mortality rate in 2007 compared to the average fishing mortality rate in the years 2003, 2004 and 2005 as most recently estimated by STECF;
- (b) that TAC whose application will result in the fishing mortality of $F=0.27$.

The agreed plan differs from the evaluations carried out by Cefas and the ICES Southern Shelf WG, in that the target fishing mortality is re-calculated on the basis of each successive assessment. The evaluations for the plan used a fixed target fishing mortality of 0.33 based on the values for 2003 – 2005 taken from the 2006 assessment.

Application of the management plan

2007

As noted by ACFM in 2007, the ICES 2007 estimate of annual fishing mortality averaged across the years 2003 – 2005 was 0.36. Reduced by 20% to 0.29 the resulting catch advice for 2008 would have been 700t. However, as a result of the 15% constraint on changes in TAC from year to year the resulting management plan catch was set at 765t a 15% reduction from the 900t of 2007. Consequently the advice for 2008 did not result in as severe a reduction as the target F implied.

2008

As noted by ACOM in 2008, the ICES 2008 estimate of annual fishing mortality averaged across the years 2003 – 2005 is now 0.34. Reduced by 20% to 0.27 the resulting catch advice for 2009 is 643t. As a result of the 15% constraint on changes in TAC from year to year the resulting management plan catch would be 650t for 2009.

Interpretation of the management plan

Potentially there are several interpretations of the management plan wording:

a) The ICES interpretation of the management plan, contained in the 2008 advice, assumes that the objective fishing mortality for 2008, 2009 and 2010 is revised following each new assessment. The revision in F could have taken any direction, but as a result of the downward revision of the estimated fishing mortality for 2003 – 2005, the triennial objective fishing mortality (80% of the average estimate for 2003 – 2005) was 0.33 from the 2006 assessment, 0.29 from the 2007 assessment and in 2008 is estimated at 0.27 (Table 3a). This means that the target F value used by ICES in 2008 is 18% lower than that on which the management agreement was reached.

b) An alternative interpretation of the management plan agreement is that the phrase “*as most recently estimated by STECF*” only applied to the first year of the plan and that the target value for fishing mortality of 0.33 should be applied in 2008, 2009 and 2010. Based on the ICES WG management forecast table, which provides a wider range of options than the ACOM table, fishing at 0.33 in 2009 would result in a yield of 760t a 5t decrease from the 2008 TAC (Table 3c). The resulting reduction in fishing mortality would be 22% from the expected value for 2008 consistent with a reduction to lower exploitation rates.

In addition to the above interpretations of the current agreement, during the original negotiations, the UK expressed a preference for a plan basing the reference for management on the estimate of mortality for 2005.

This scenario would also suffer from the same downward revisions in estimates of mortality (Table 3b). The percentage mortality rate change between advice years is equivalent to the ICES interpretation of the management plan but the outcome for yield is higher with a less severe change from 2008 to 2009 resulting from the higher estimates of fishing mortality in 2005.

Effort trends

Note that the analysis below is based on effort data supplied to STECF for a meeting in September, and these have yet to be fully validated. The data are therefore not yet in the public domain.

Time series of Division VIIe effort (Kw Days) by gill, trammel, beam and otter trawl gears are plotted in Figures 2 - 5 (total all countries and the UK and UK by gear) with the trends in VIIe sole fishing mortality as estimated by the most recent ICES assessment.

Overall effort from all countries and gears (Figure 2) that are likely to catch sole has been increasing along with the estimated fishing mortality rate.

UK effort (Figures 3 and 5) has remained stable or declined across all gear types. Other countries effort (Figure 4) has increased over time in line with increasing fishing mortality on the stock.

For beam trawl there has been substantial mis-reporting of catch from VIIe into VIId in recent years (corrected by the working group) and the extent to

which the effort data is affected is unknown. Therefore validity of the UK trends have yet to be fully evaluated.

Partial mortality

The partial fishing mortality trends below are based on data supplied to the ICES WG and could be requested by STECF etc..

The fishing mortality for VIIe sole can be partitioned between fleets or countries according to their proportional contribution to the total annual numbers at age (Figure 6).

England and France are the main countries fishing, and the partial fishing mortality was calculated for each. Results show that both effort and partial F for UK vessels are relatively flat since 2003 (10% decline in effort since 2003 and a slight increase in F), whereas the effort and partial F of French vessels has been increasing. The partial F of French vessels is less than for UK vessels, but appears to be a main contributor to the increase in overall F. The increase in French effort in VIIe appears to be continuous since 2000 although the VIIf&g cod closure may have also resulted in some displacement of effort into VIIe.

Table 2 Sole in Division VIIe annual average fishing mortality across ages 3 – 7 estimated by three successive ICES assessment working groups. The 2006 values, presented for comparison, were those used in the ICES and Cefas evaluations of the management plan in which the higher, constant, target mortality rate of 0.33 was applied for three years.

Year	ICES WG Year		
	2006	2007	2008
1990	<i>0.391</i>	0.388	0.39
1991	<i>0.276</i>	0.275	0.275
1992	<i>0.26</i>	0.258	0.259
1993	<i>0.329</i>	0.327	0.328
1994	<i>0.248</i>	0.246	0.247
1995	<i>0.298</i>	0.296	0.297
1996	<i>0.25</i>	0.249	0.249
1997	<i>0.341</i>	0.34	0.341
1998	<i>0.313</i>	0.313	0.313
1999	<i>0.33</i>	0.329	0.329
2000	<i>0.344</i>	0.338	0.337
2001	<i>0.389</i>	0.371	0.369
2002	<i>0.393</i>	0.364	0.359
2003	<i>0.346</i>	0.304	0.293
2004	<i>0.398</i>	0.362	0.342
2005	<i>0.493</i>	0.416	0.388
2006		0.426	0.421
2007			0.452

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2005	0.493	0.416	0.388
2006		0.426	0.421
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Table 3a Sole in Division VIIe the management plan outcomes based on the estimate of the average fishing mortality over the period 2003 – 2005; ignoring the 15% constraint

	ICES WG Year		
	2006	2007	2008
Avg F03-F05	0.412	0.361	0.341
20% reduction	0.330	0.289	0.273
% relative to 06 WG		87%	83%
% relative to 07 WG			95%
Yield 2008		700	
Yield 2009			640

Table 3b Sole in Division VIIe the management outcomes based on the estimate of fishing mortality for 2005 (UK preferred option); +/- 15% not required.

	ICES WG Year		
	2006	2007	2008
F2005	0.493	0.416	0.388
20% reduction	0.394	0.333	0.310
% relative to 06 WG		84%	79%
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Yield 2008		780	
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		2007	2008
Target F		0.33	0.33
Yield 2008		784	
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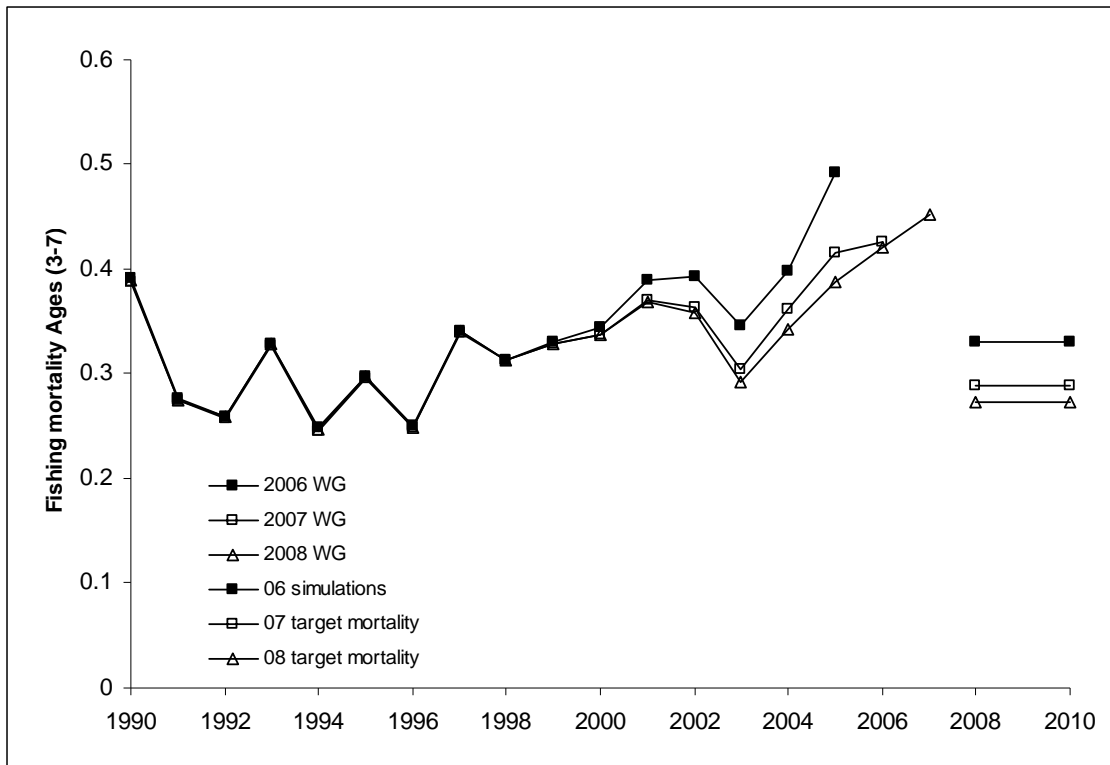


Figure 1 Trends in the time series of estimates of Division VIIe sole annual fishing mortality (ages 3-7) from the 2006, 2007 and 2008 ICES assessment working groups, and the objective fishing mortality estimates based on them (a 20% reduction on average F 2003 – 2005).

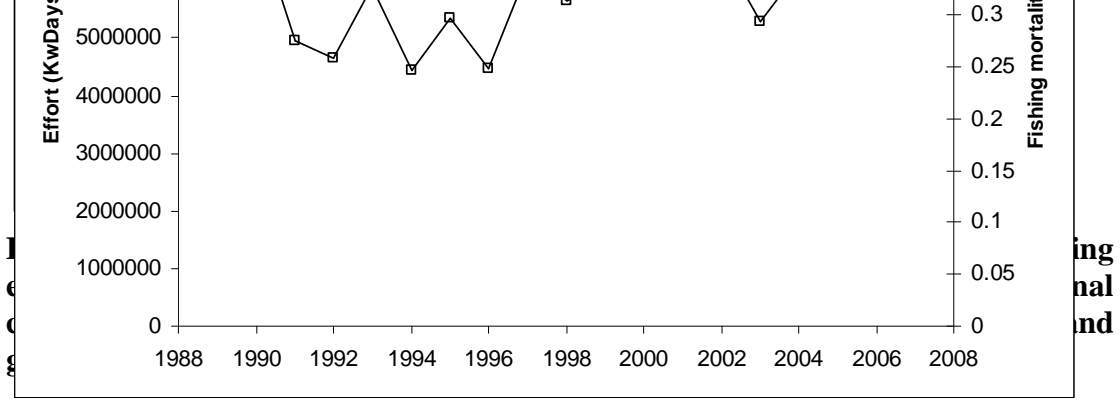


Figure 3 Trends in Division VIIe sole annual fishing mortality and total fishing effort for the UK (taken from the provisional contributions to the 2008 STECF data base, KwDays otter, beam, trammel and gill)

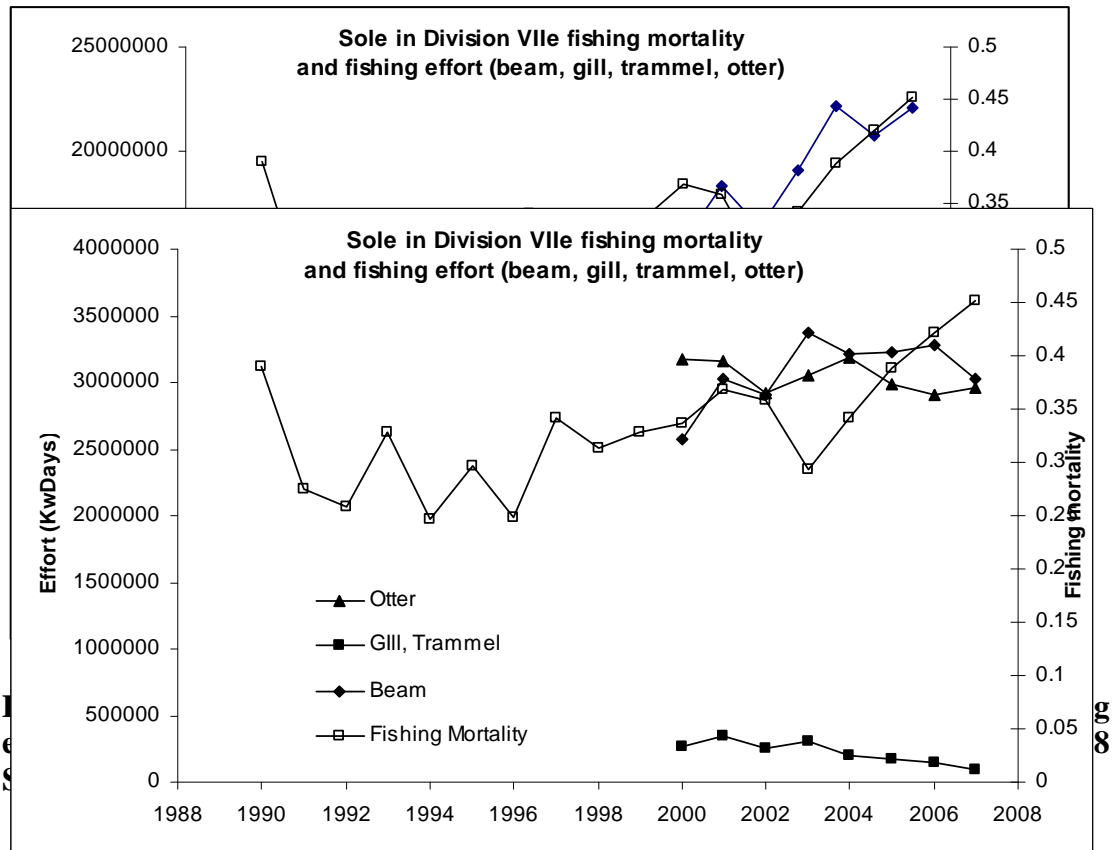


Figure 5 Trends in Division VIIe sole annual fishing mortality and fishing effort by gear for the UK (taken from the provisional contributions to the 2008 STECF data base, KwDays otter, beam, trammel and gill)

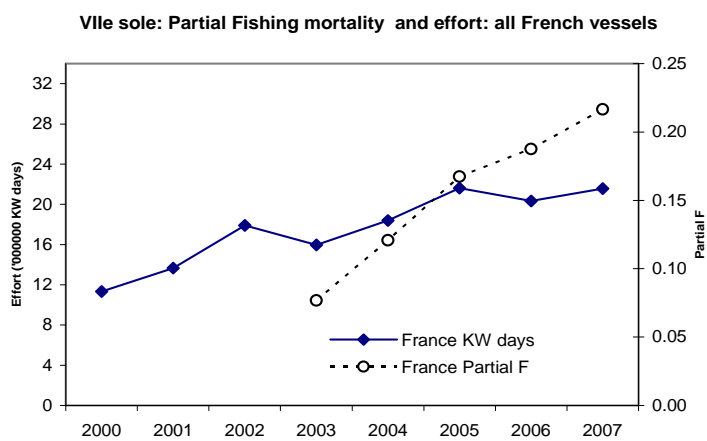
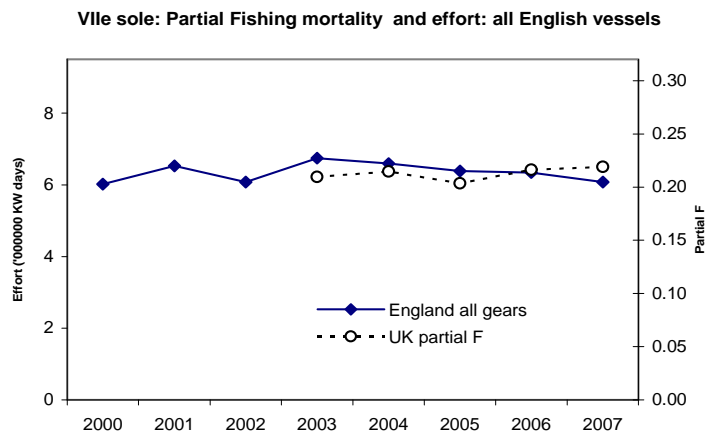


Fig. 6. Time series of total effort (kW-days, STECF 2008 data) and partial fishing mortality of VIIe sole for vessels from UK (England) and France.