North Western Waters RAC

ICES advice for 2010

8-9th July 2009 – CNPMEM - Paris

Manuela Azevedo
ACOM Vice-chair

Stocks

8th July, 09:30-13:00

	WG3 Channel (VIIde)
cod-347	Cod in Subarea IV (North Sea), Division VIId (Eastern Channel), and IIIa West (Skagerrak)
ple-eche	Plaice in Division VIId (Eastern Channel)
ple-echw	Plaice in Division VIIe (Western Channel)
sol-eche	Sole in Division VIId (Eastern Channel)
sol-echw	Sole in Division VIIe (Western Channel)

Stocks

8th July, 14:00-17:00

	WG4 Irish Sea (VIIa)
cod-iris	Cod in Division VIIa (Irish Sea)
had-iris	Haddock in Division VIIa (Irish Sea)
ple-iris	Plaice in Division VIIa (Irish Sea)
sol-iris	Sole in Division VIIa (Irish Sea)
whg-iris	Whiting in Division VIIa (Irish Sea)
nep-VII	*Nephrops* in Division VII (FU 14 – Irish Sea East, FU 15 – Irish Sea West, FU 19 – Ireland SW and SE coast)

Stocks

9th July, 09:30-13:00

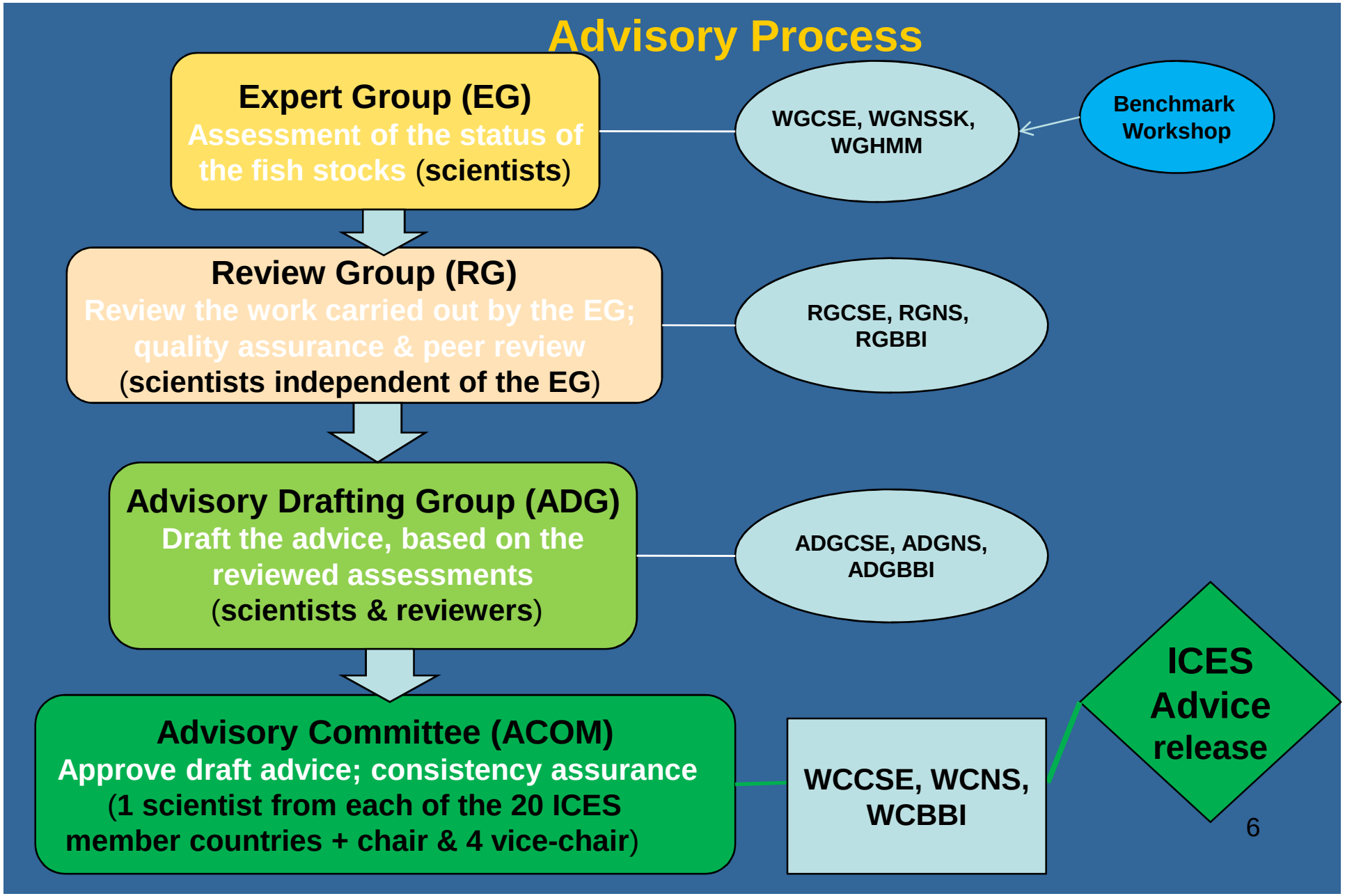
	WG1 West Scotland & Rockall (VIab)
ang-ivvi	Anglerfish (*Lophius piscatorius* and *L. budegassa*) in Divisions IIa, IIIa, Subareas IV, and VI
cod-scow	Cod in Division VIa (West of Scotland)
had-rock	Haddock in Division VIb (Rockall)
had-scow	Haddock in Division VIa (West of Scotland)
meg-scrk	Megrim (*Lepidorhombus spp)* in Subarea IV (North Sea) and VI (West of Scotland and Rockall)
sai-3a46	Saithe in Sub-area IV (North Sea), Division IIIa (Skagerrak), and Sub-area VI (West of Scotland and Rockall)
whb-rock	Whiting in Division VIb (Rockall)
whb-scow	Whiting in Division VIa (West of Scotland)
nep-VIa	*Nephrops* in Division VIa (FU 11 – North Minch, FU 12 – South Minch, FU 13 – Firth of Clyde)

Stocks

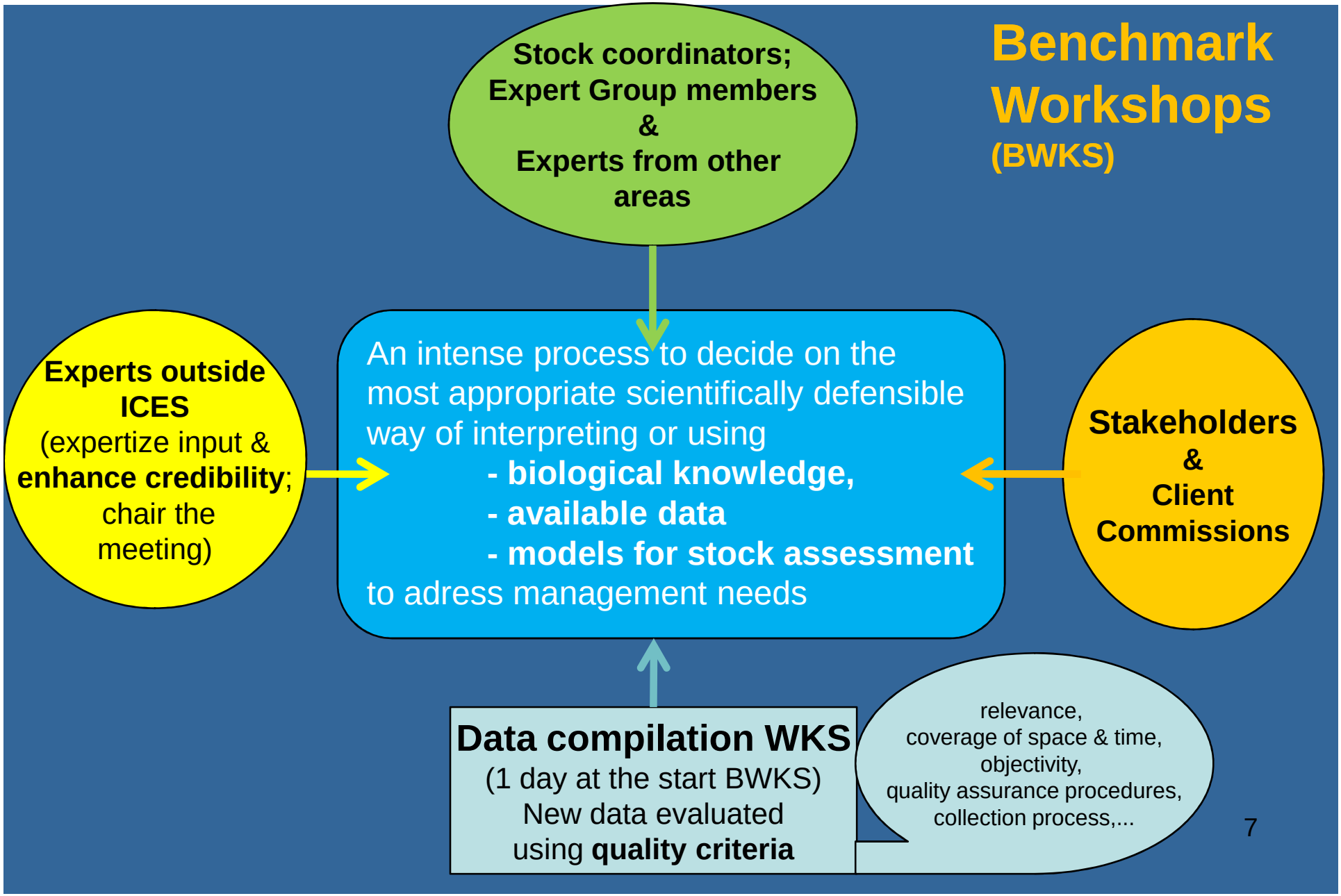
9th July, 14:00-17:00

	WG2 Celtic Sea, West & Southwest Ireland (VIIbcfghjk)
ang-78ab	Anglerfish (*L. piscatorius* and *L. budegassa*) in Divisions VIIb–k and VIIIa,b,d
cod-7e-k	Cod in Divisions VIIe–k (Celtic Sea Cod)
Had-7b-k	Haddock in Divisions VIIb–k
Hke-nrtn	Hake in Division IIIa, Subareas IV, VI, and VII, and Divisions VIIIa,b,d) (Northern stock)
megw-78	Megrim (*Lepidorhombus whiffiagonis*) in Divisions VIIb–k and VIIIa,b,d
ple-7b-c	Plaice in Divisions VIIb,c (West of Ireland)
ple-7h-k	Plaice in Divisions VIIh–k (Southwest of Ireland)
ple-celt	Plaice in Divisions VIIf and g (Celtic Sea)
sol-7b-c	Sole in Divisions VIIb,c (West of Ireland)
sol-7h-k	Sole in Division VIIh–k (Southwest of Ireland)
sol-celt	Sole in Divisions VIIf,g (Celtic Sea)
whg-7e-k	Whiting in Divisions VIIe–k
Nep-VII	*Nephrops* in Division VII (FU 16 – Porcupine Bank, FU 17 – Aran Grounds, FU 20-22 – Celtic Sea)

Introduction



Introduction



Benchmarks in 2009

➢ **WKROUND** (16-23rd January 2009)
- NS whiting
- Kattegat cod
- Western Baltic cod
- Eastern Baltic cod
- **NS cod** (WG3)
- **Celtic Sea cod** (WG2)

➢ **WKFLAT** (6-13th February 2009)
- NS plaice
- **Eastern Channel sole** (WG3)
- Western Channel sole (WG3)

➢ **WKNEPH** (2-6th March 2009)
-***Nephrops* FUs** (Div VI & VII) (WG1, WG2, WG4)

➢ **WKSHORT** (31stAug-04th September)
- Barents Sea capelin, Iceland capelin, Bay Biscay anchovy & NS sprat

Benchmarks: plan for 2010

- **ROUND fish** (? January 2010)

- Faroe saithe, Iceland saithe, Northeast Arctic saithe, Northeast Arctic haddock, Northern stock of hake, Southern stock of hake

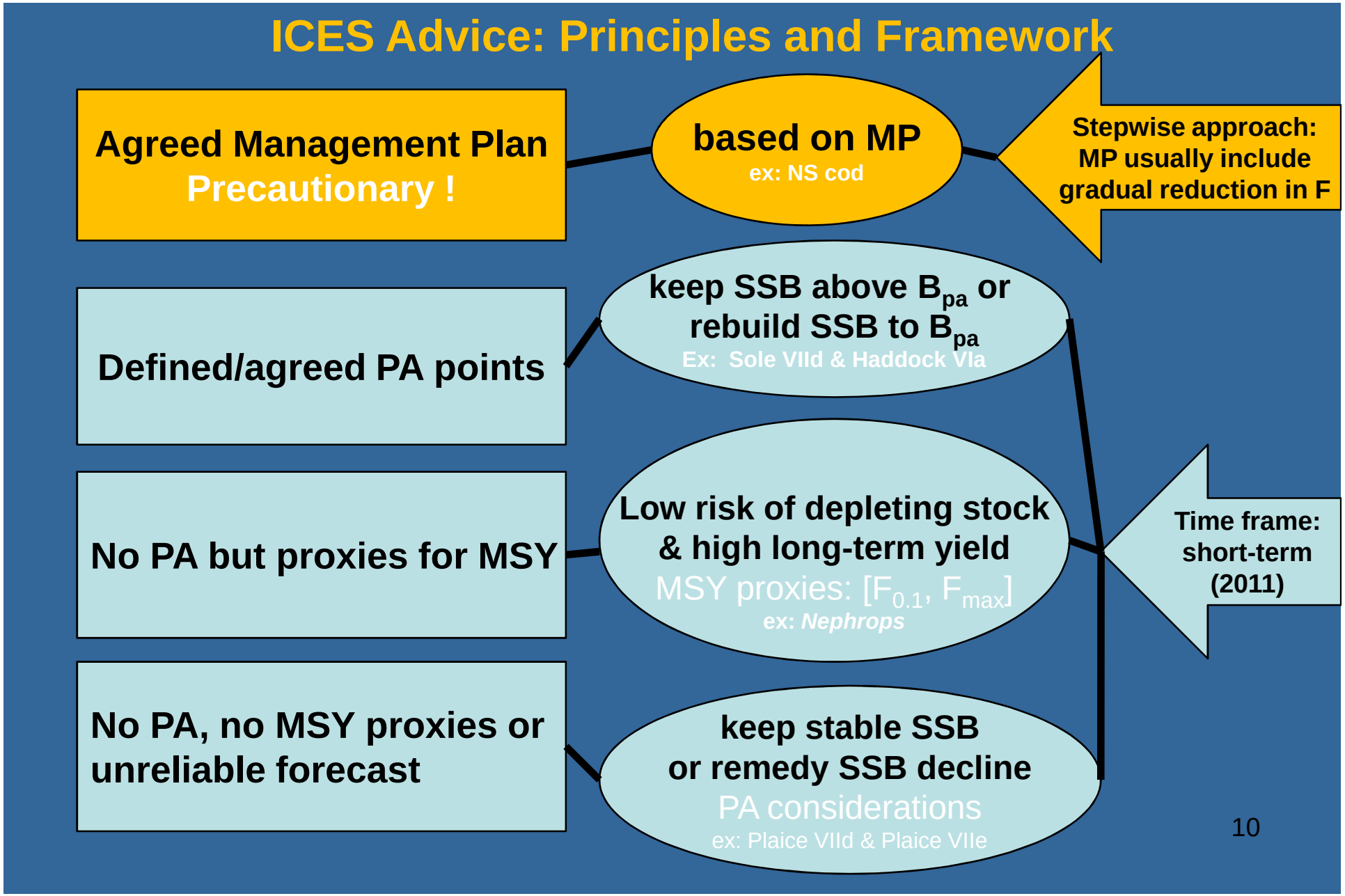
- **DEEP Sea** (? February 2010)

- Roundnose grenadier in Division Vb and Sub-areas VI and VII, Greater Silver smelt in all areas, Tusk in Division Va, Red (blackspot) seabream in Sub-area X, Deep-water squaliform sharks in all areas, Greater forkbeard

- **FLAT Fish** (? March 2010)

-Sole in Division IIIa (Skagerrak and Kattegat), Plaice in VIId, Sole in Subarea IV

Introduction



Advice for *Nephrops*

No PA but proxies for MSY

Low risk of depleting stock & high long-term yield
MSY proxies: [$F_{0.1}$, F_{max}]

Stock Biomass trends; applied by FU

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

Where the advice suggests a large change in landings:

- **an intermediate step to $F_{0.1}$** (reduction of catch corresponding to F_{max})
- **a constraint on the year-to-year change in catches** (as in management plans and as implied by "Communication on Fishing Opportunities for 2010 [COM (2009) 224]")

Introduction

State of the stock

Spawning biomass in relation to precautionary limits	Fishing mortality in relation to precautionary limits	Fishing mortality in relation to high long-term yield	Fishing mortality in relation to agreed target	Comment

Spawning biomass in relation to precautionary limits	**Fishing mortality in relation to precautionary limits**	**Fishing mortality in relation to high long term yield**	**Fishing mortality in relation to agreed target reference points**
Full reproductive capacity (if B > Bpa)	Harvested sustainably (If F < Fpa)	Underfished (If F < Fy) only relevant if SSB>Bpa	Below target (If F < F_{target})
Increased risk (if Blim < B < Bpa)	Increased risk (If Flim > F > Fpa	Appropriate (If F ~ Fy) only relevant if SSB>Bpa	Appropriate (if close to target)
Reduced reproductive capacity (if B < Blim)	Harvested unsustainably (if F > Flim)	Overfished (if F > F_y)	Above target (If F > F_{target})
If no ref point: undefined	If no ref point: undefined	If no ref point: undefined	if no target agreed: NA
If no assessment: unknown	If no assessment: unknown	If no assessment: unknown	If no assessment: unknown

WG3: Eastern & Western Channel (VIIde)

Advice for 2010

Cod in Subarea IV (North Sea), Division VIId (Eastern Channel), and IIIa West (Skagerrak)

Catches should be less than 66 400 t in 2010. Landings should be less than 40 300 t (assuming discard rates as observed in 2008)

Basis for advice: Management plan

EU-Norway agreed Management Plan/EU long-term MP
Evaluated by ICES – in accordance with PA **only IF implemented and enforced adequately**

Reference points

	Type	*Value*	*Technical basis*
Precautionary approach	B_{lim}	70 000 t	B_{loss} (~1995)
	B_{pa}	150 000 t	B_{pa} = Previous MBAL and signs of impaired recruitment below 150 000 t.
	F_{lim}	0.86	F_{lim} = F_{loss} (~1995)
	F_{pa}	0.65	F_{pa} = Approx. 5th percentile of F_{loss}, implying an equilibrium biomass > B_{pa}.
Targets	F_{mgt}	0.4	EU/Norway agreement and EU management plan 1342/08

(Unchanged since 1998, management plan target added in 2008)

Advice for 2010

Cod in Subarea IV (North Sea), Division VIId (Eastern Channel), and IIIa West (Skagerrak)

Outlook for 2010

Management plan assumptions

Basis; F_{09} = [management plan] = $0.75F_{08}$ = 0.59 (land=0.29, disc=0.30); $R_{08\text{-}10}$ = (re-sampled from 1997-2007 YC, median of 1998-2008 YC) ~110 million; SSB(2010) = 66.0; Landings (2009) = 41.9; Discards (2009) = 24.8.

Rationale	Catches (2010)	Landings (2010)	Basis	F total (2010)	F land (2010)	F disc (2010)	Discards (2010)	SSB (2011)	%SSB change[1)]	%TAC change[2)]
Management Plan	66.4	40.3	F_{10}= 0.65*F_{08}	0.51	0.25	0.26	26.1	79.6	21%	17%

This option is considered precautionary in the context of the long term management plan.

ICES assumptions

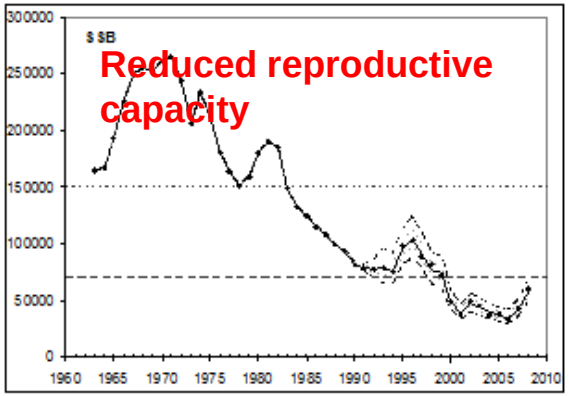
Basis: F_{sq} = $F_{06\text{-}08}$ scaled to F_{08} = 0.79; $R_{08\text{-}10}$ = (re-sampled from 1997-2007 YC, median of 1998-2008 YC) ~110 million; SSB(2010) = 54.2; Landings (2009) = 51.5; Discards (2009) = 30.8.

Rationale	Catches (2010)	Landings (2010)	Basis	F total (2010)	F land (2010)	F disc (2010)	Discards (2010)	SSB (2011)	%SSB change[1)]	%TAC change[2)]
Zero Catch	0	0.0	F=0	0.00	0.00	0.00	0.0	113.5	110%	-100%
Status quo options	46.8	27.9	0.50*Fsq	0.40	0.19	0.20	18.9	75.9	40%	-19%
	50.5	30.1	0.55*Fsq	0.44	0.21	0.22	20.4	72.9	35%	-13%
	54.3	32.3	0.60*Fsq	0.48	0.23	0.24	22.0	70.1	29%	-7%
	57.8	34.3	0.65*Fsq	0.51	0.25	0.26	23.4	67.2	24%	-1%
	61.1	36.2	0.70*Fsq	0.55	0.27	0.28	24.8	64.6	19%	5%
	64.2	38.1	0.75*Fsq	0.59	0.29	0.30	26.1	62.0	14%	10%
	67.3	39.9	0.80*Fsq	0.63	0.31	0.32	27.4	59.6	10%	15%
	70.5	41.8	0.85*Fsq	0.67	0.33	0.34	28.7	57.3	6%	21%
	73.5	43.5	0.90*Fsq	0.71	0.35	0.36	30.0	55.1	2%	26%
	79.1	46.7	Fsq	0.79	0.39	0.40	32.4	50.8	-6%	35%

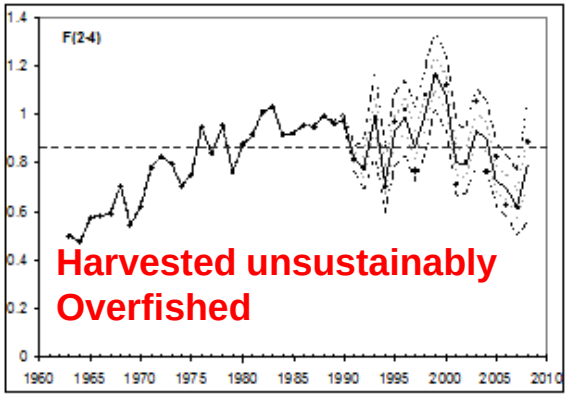
Weights in '000 t.

NS Cod

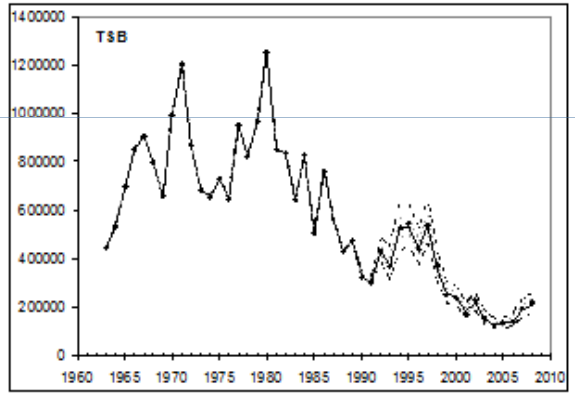
Advice for 2010

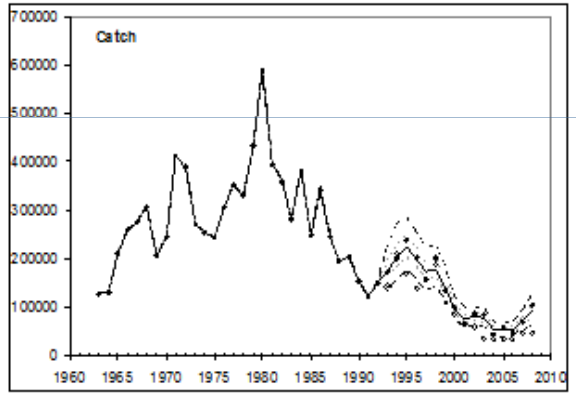


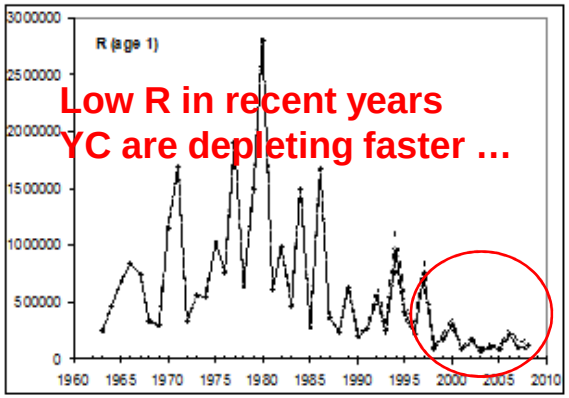
Reduced reproductive capacity



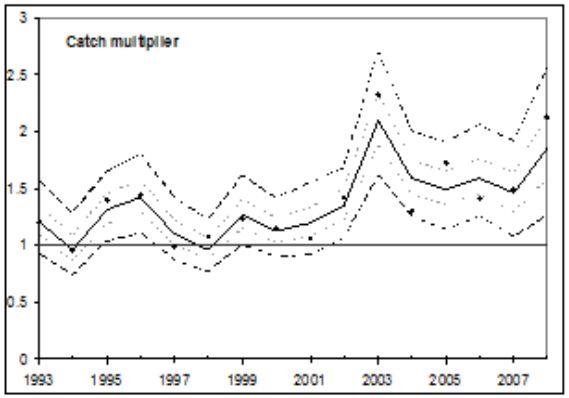
Harvested unsustainably
Overfished

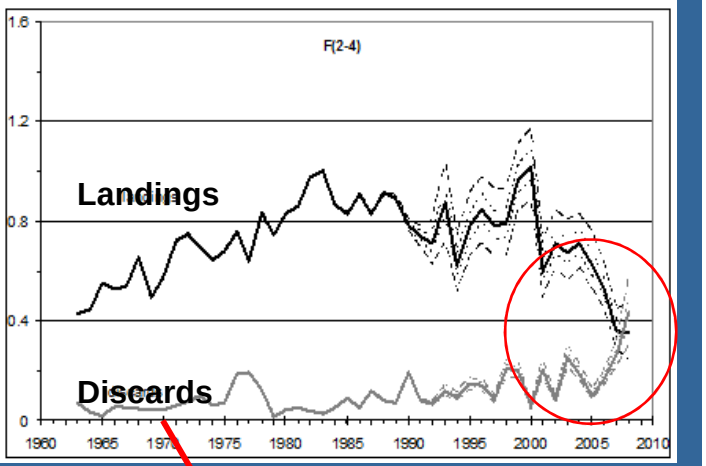


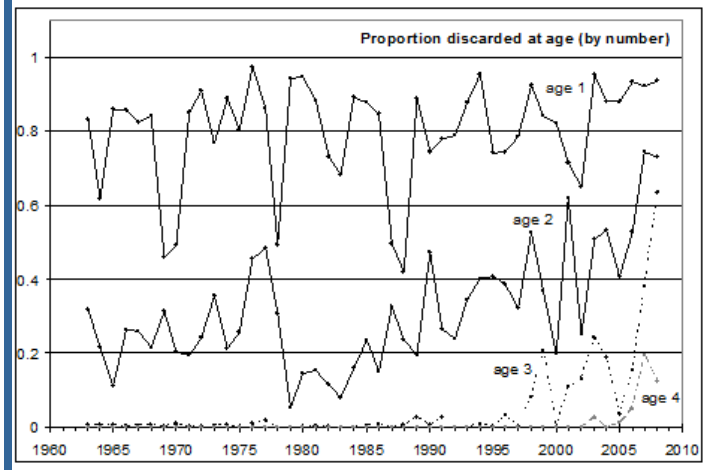




Low R in recent years
YC are depleting faster …







Advice for 2010

Plaice in Division VIId (Eastern Channel)

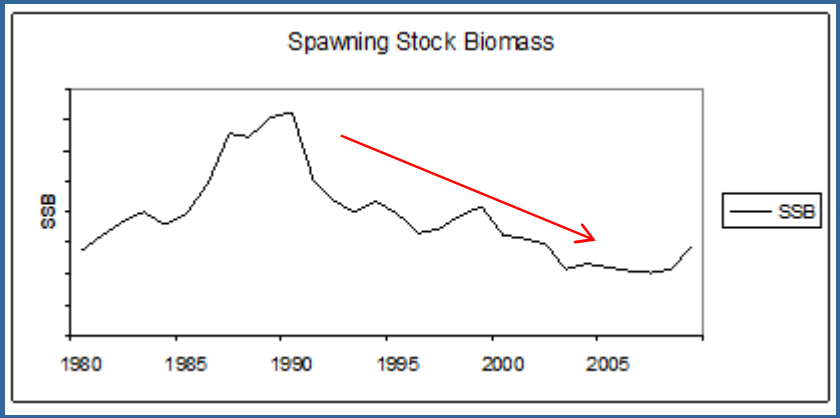
Landings in 2010 should be less than 3 500 t (av landings 2006-2008)

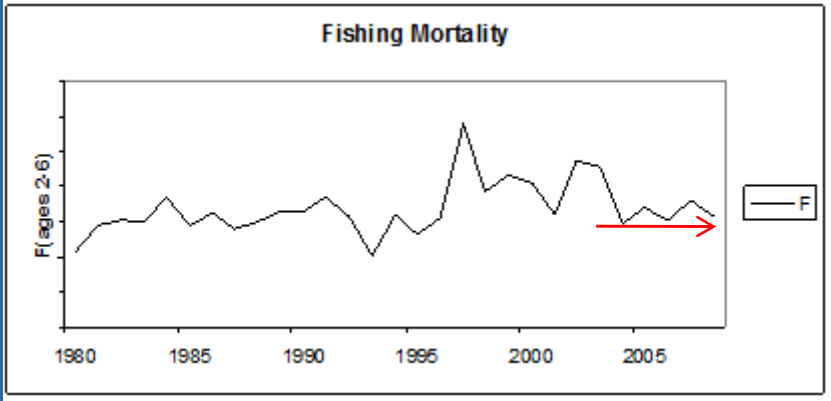
Basis for advice: trends from assessment; **precautionary considerations**

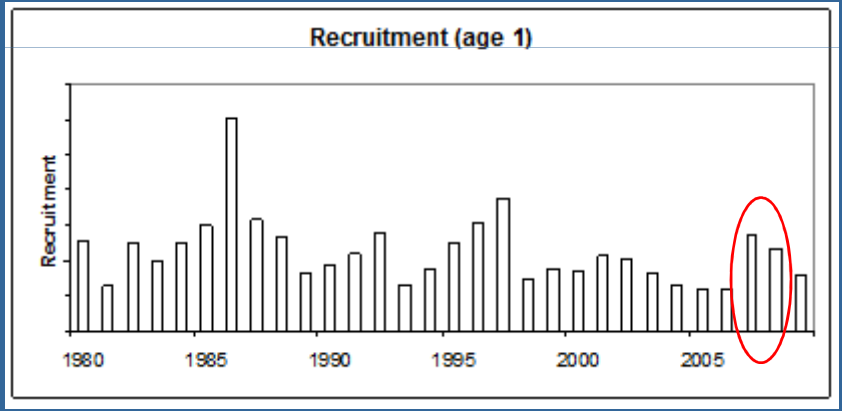
❖ Problems: Stock structure identity; Discards: time-series not available; observations from all fisheries from 2003 indicate that discards are high

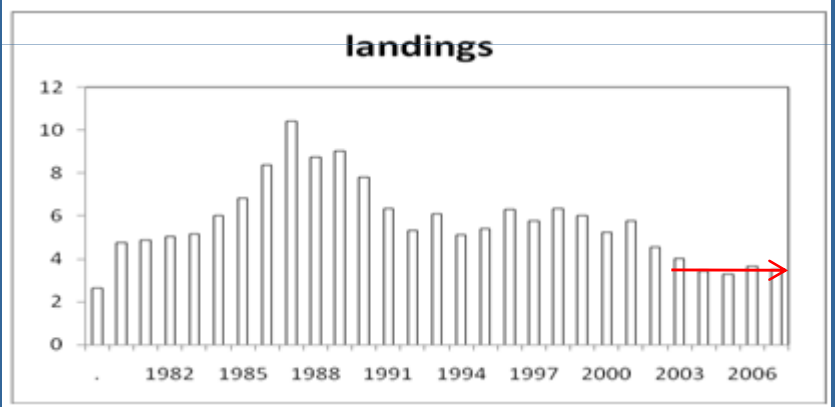
Advice for 2010

Plaice in Division VIId (Eastern Channel)









- SSB declined after 90´s to a stable historical low level
- F around the long-term average
- YC 2006-2007 above average

Plaice in Division VIIe (Western Channel)

Substantial reduction in catch

Basis for advice: rebuild the stock

Reference points

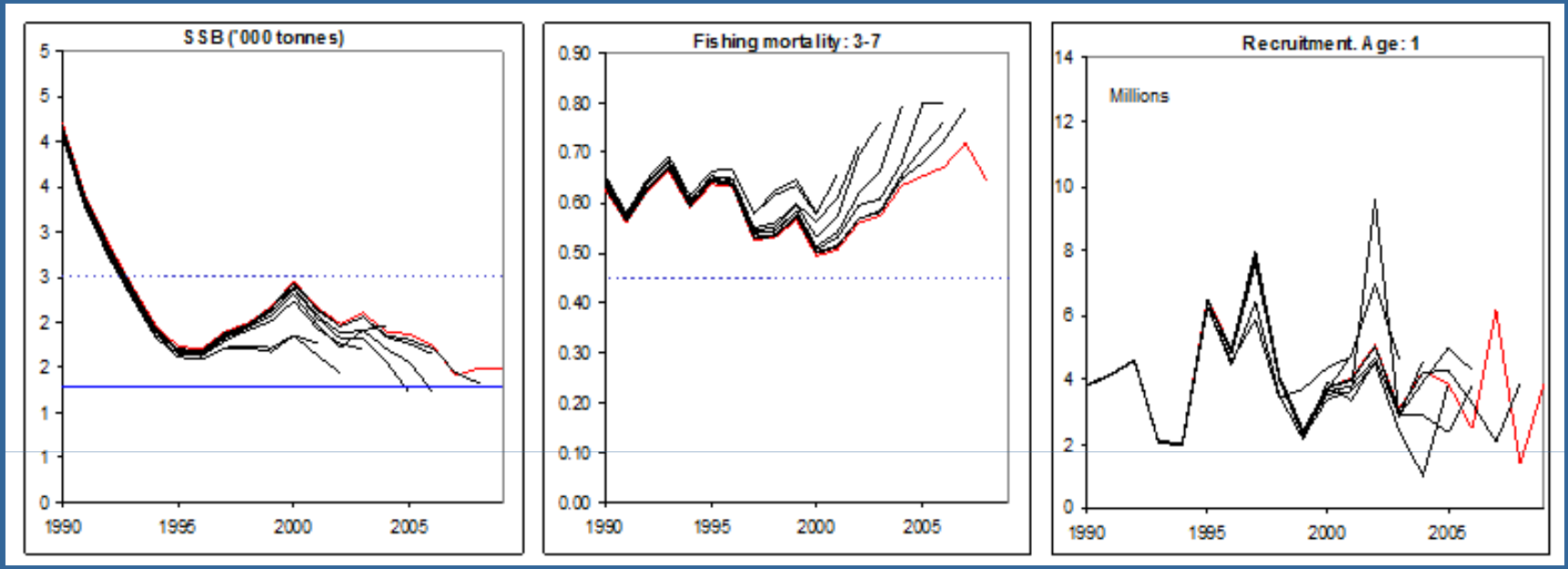
	Type	*Value*	*Technical basis*
Precautionary approach	B_{lim}	1 300 t	$B_{lim}=B_{loss}$. The lowest observed spawning stock biomass.
	B_{pa}	2 500 t	MBAL, biomass above this affords a high probability of maintaining SSB above B_{lim}, taking into account the uncertainty in assessments.
	F_{lim}	Not defined.	
	F_{pa}	0.45	This F affords low probability that ($SSB_{MT} < B_{pa}$).
Targets	F_{y}	Not defined.	

(Unchanged since: 1998)

Problems: Stock structure identity; Persistent retrospective bias in the assessment; No reliable short-term forecasts

Advice for 2010

Plaice in Division VIIe (Western Channel)



- SSB declining since 2000 and close to B_{lim} in 2009: **Increase risk of reduced reproductive capacity**
- High fishing mortality**: Increased risk of harvested unsustainably**; **Overfished** ($F > F_{0.1}$, F_{max})
- Recent **poor** recruitment

Advice for 2010

Sole in Division VIId (Eastern Channel)

Landings of less than 3 190 t in 2010

Basis for advice: **Keep SSB above B_{pa}** in the short-term

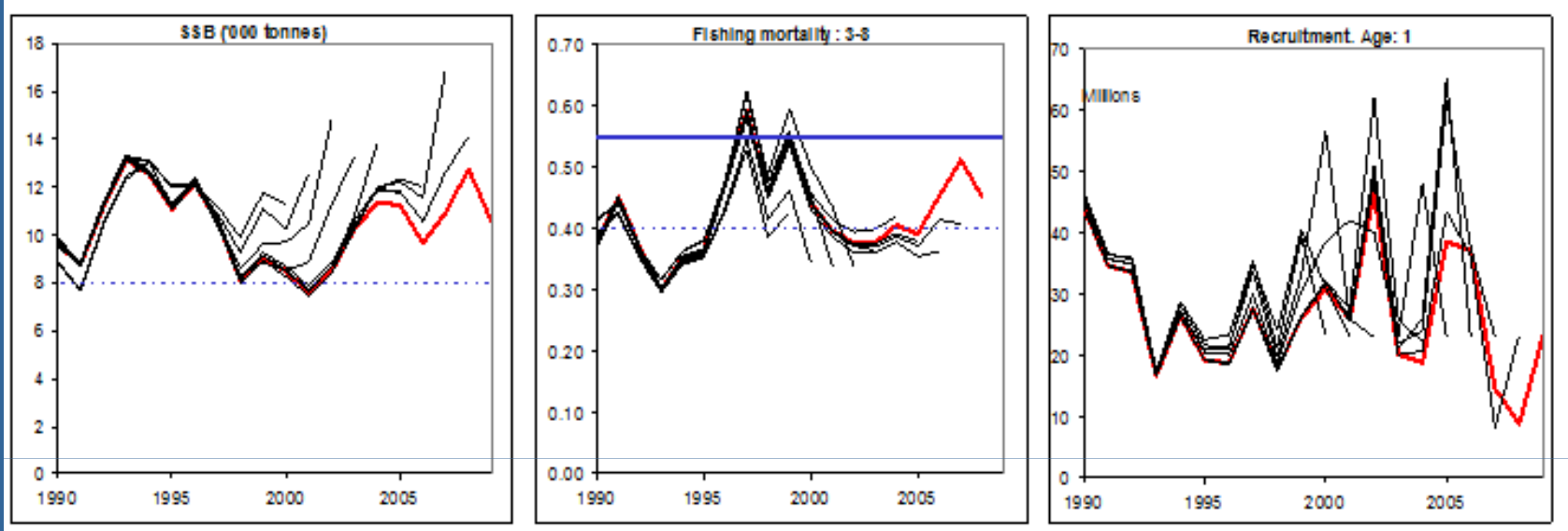
Reference points

	Type	Value	Technical basis
Precautionary approach	B_{lim}	Not defined	Poor biological basis for definition
	B_{pa}	8000 t	This is the lowest observed biomass at which there is no indication of impaired recruitment. Smoothed B_{loss}
	F_{lim}	0.55	F_{loss}, but poorly defined; analogy to North Sea and setting of 1.4 F_{pa} = 0.55. This is a fishing mortality at or above which the stock has shown continued decline.
	F_{pa}	0.4	Between F_{med} and 5th percentile of F_{loss}; SSB>B_{pa} and probability (SSB_{mt}<B_{pa}), 10%: 0.4.
Targets	F_y	Not defined	

(unchanged since 1998)

Advice for 2010

Sole in Division VIId (Eastern Channel)



- SSB in 2009 above B_{pa}: **Full reproductive capacity**
- F in 2008 above F_{pa}**: Increased risk of harvested unsustainably**; **Overfished** ($F > F_{0.1}, F_{max}$)
- Recruitment: 3 strong YC (2001 & 2004-2005) but the **2007 YC is the weakest in the time-series**

Retrospective bias !

Advice for 2010

Sole in Division VIId (Eastern Channel)

F_{pa}

Outlook for 2010

Basis: F(2009) = Fsq = mean F(06-08) = 0.47; R(2009) = GM 1982-2006 = 23.6 million; SSB(2009) = 10.6 ; SSB(2010) = 7.91; landings (2009) = 4.19

Rationale	Landings (2010) [1]	Basis	F(2010)	SSB(2011)	%SSB change [2]	%TAC Change [3]
Zero catch	0.00	F=0	0.00	11.8	49%	-100%
High long term yield	2.27	F(long term yield)	0.27	9.3	18%	-57%
Status quo	2.38	Fsq *0.6	0.28	9.2	17%	-55%
	2.72	Fsq *0.7	0.33	8.9	12%	-49%
	3.04	Fsq *0.8	0.38	8.5	8%	-42%
	3.19	Fsq *0.85	0.40	8.4	6%	-40%
	3.35	Fsq *0.9	0.42	8.2	3%	-36%
	3.65	Fsq *1	0.47	7.9	-1%	-31%
	3.94	Fsq *1.1	0.52	7.6	-4%	-25%
	4.22	Fsq *1.2	0.56	7.3	-8%	-20%
	4.48	Fsq *1.31	0.62	7.0	-12%	-15%

Weights in '000 t.

Sole in Division VIIe (Western Channel)

Fishing effort and catches in 2010 should be reduced

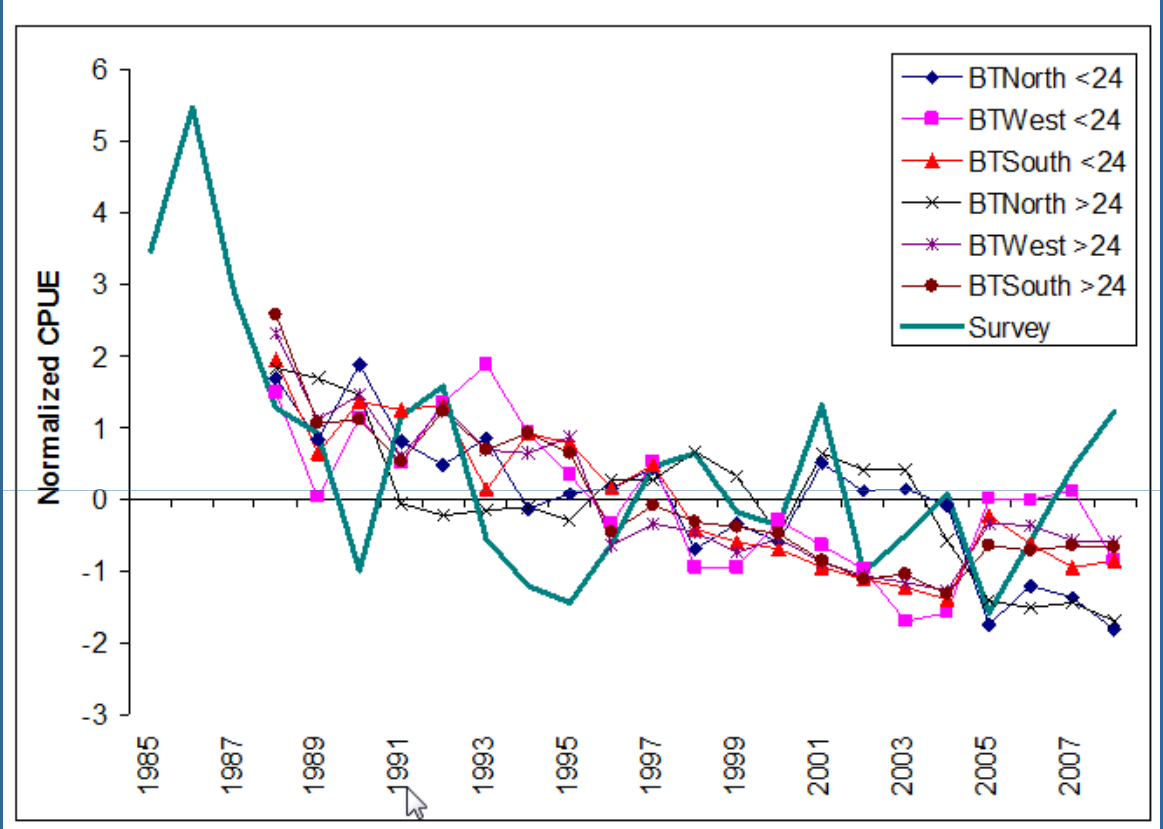
Basis for advice: **precautionary considerations** – perception of low stock size & high mortality - need to rebuild the stock

❖ Stock benchmarked in 2009: assessment unreliable; still substantial and persistent retrospective bias in F & SSB - uncertainty about stock structure; only one UK BTS survey data series

❖ **EU Management plan** (target F of 0.27) – not possible to evaluate the MP in the absence of a full assessment and PA reference points

Advice for 2010

Sole in Division VIIe (Western Channel)



Lpue and survey data indicate low stock size relative to historic estimates

Thank you for your attention!
Comments and questions?

WG4: Irish Sea (VIIa)

Advice for 2010

Cod in Division VIIa (Irish Sea)

Close fisheries for cod

Basis for advice**:** Recovery of the cod spawning stock biomass; any catches taken in 2010 will prolong the recovery of SSB to B_{pa}

EU Management Plan

Evaluated by ICES – Not in accordance with PA (all scenarios with TAC constraint of ± 20% show very low probability of recovering the stock to B_{lim} by 2015; The chances of recovering the stock remain low even IF the TAC constraints are removed)

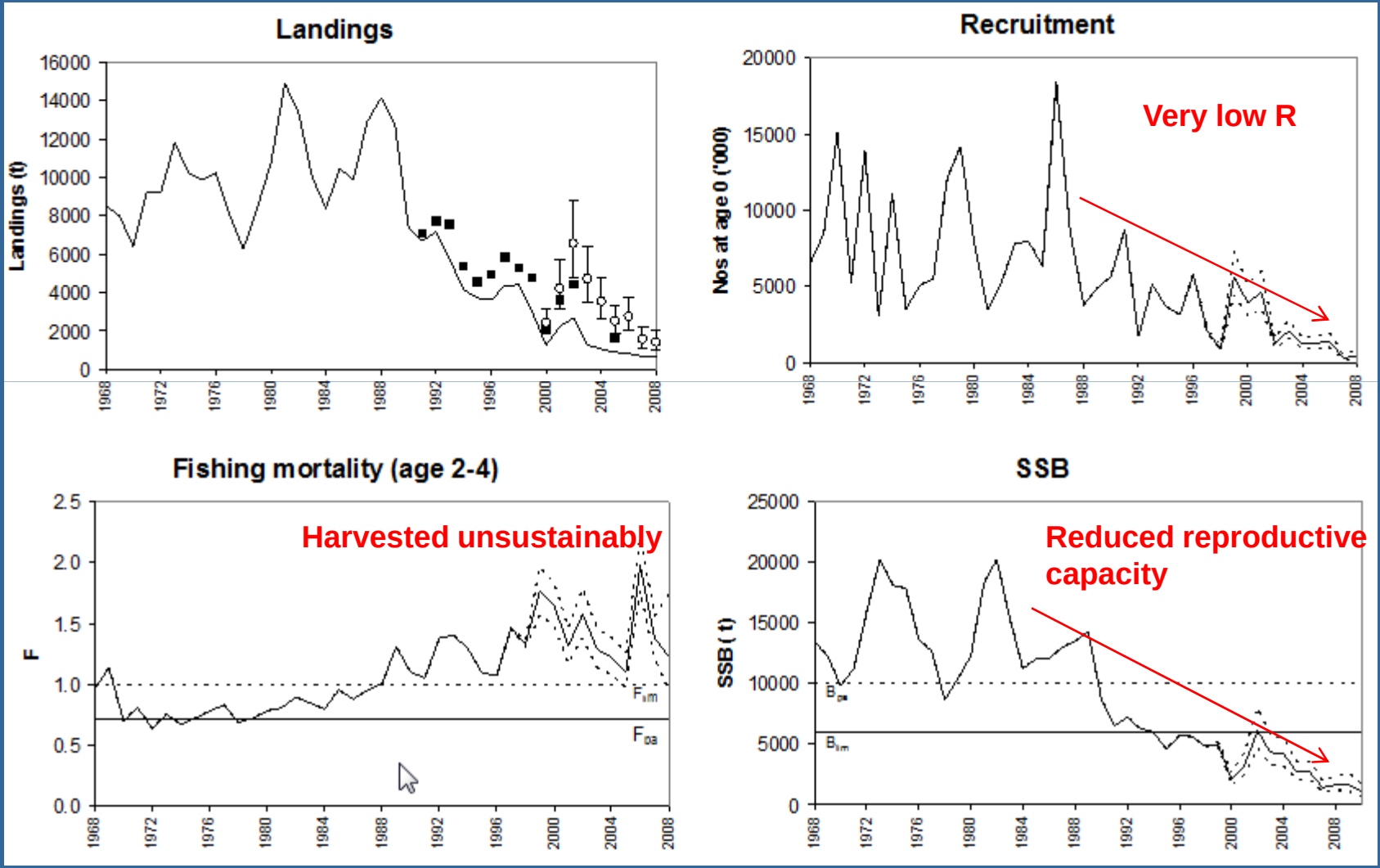
Reference points

	Type	Value	Technical basis
Precautionary approach	B_{lim}	6 000 t	B_{lim}= B_{loss}, lowest observed level.
	B_{pa}	10 000 t	B_{pa} = MBAL, this level affords a high probability of maintaining the SSB above B_{lim}. Below this value the probability of below-average recruitment increases.
	F_{lim}	1.00	F_{lim}= F_{med}
	F_{pa}	0.72	F_{pa}: F_{med}* 0.72. This F is considered to have a high probability of avoiding F_{lim}. Fishing mortalities above F_{pa} have been associated with the observed stock decline.
Targets	F_{mgt}	0.40	(Council Regulation (EC) 1342/2008)

(F_{mgt} introduced in 2009, rest is unchanged since: 1998)

Advice for 2010

Cod in Division VIIa (Irish Sea)



Plaice in Division VIIa (Irish Sea)

Catches should not exceed 1 627 t in 2010

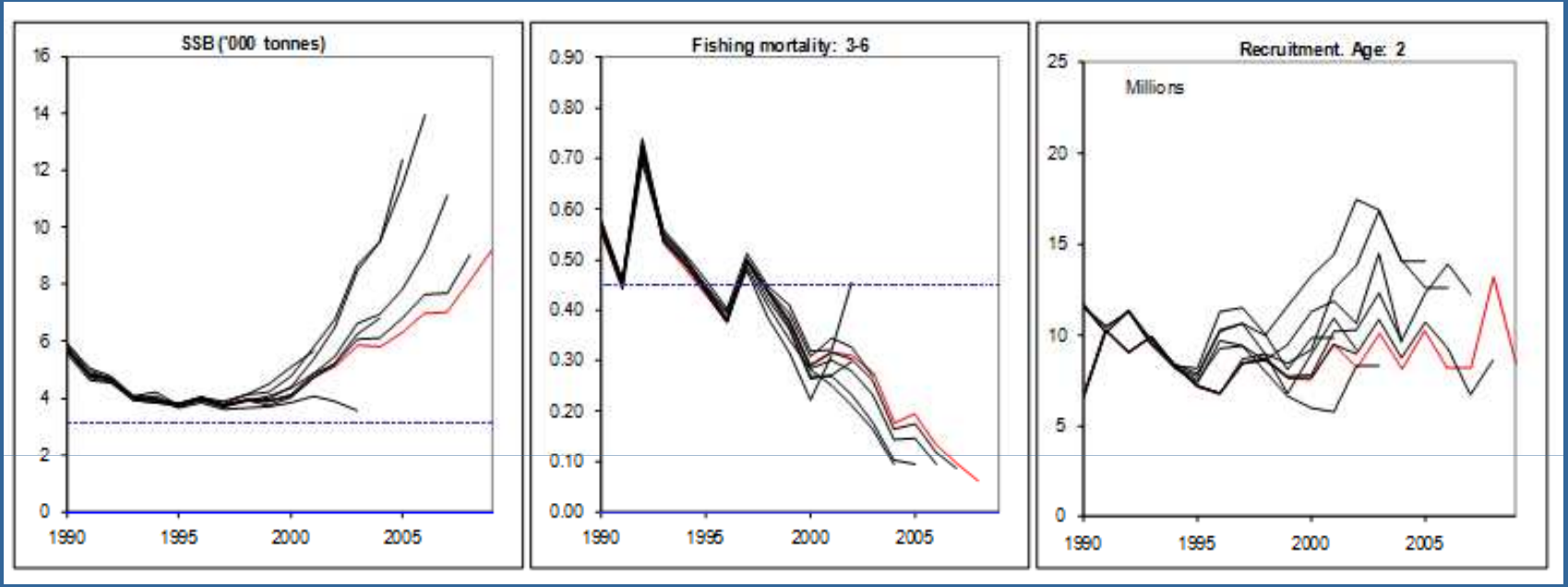
❖ Basis for advice: No long-term gain in yield by increasing fishing mortality above $F_{0.1}$

Same basis as last year but this year (unreliable short-term forecast) the predicted catches are based on the yield per recruit at $F_{0.1}$ and average recruitment 1989-2007:

0.19 kg/R * 8561 th R = 1 627 t

Advice for 2010

Plaice in Division VIIa (Irish Sea)



- SSB increasing since 2000: **Full reproductive capacity**
- F declining since 90´s and below B_{pa} since1998**: Harvested sustainably**; **Underfished** ($F < F_{0.1}$)
- Recruitment stable since 1989

  Problems: Consistent retrospective bias in the assessment; Lack of discard data (discards up to 80% in number)

Advice for 2010

Sole in Division VIIa (Irish Sea)

No fishing in 2010. A recovery plan should be implemented.

Outlook for 2010

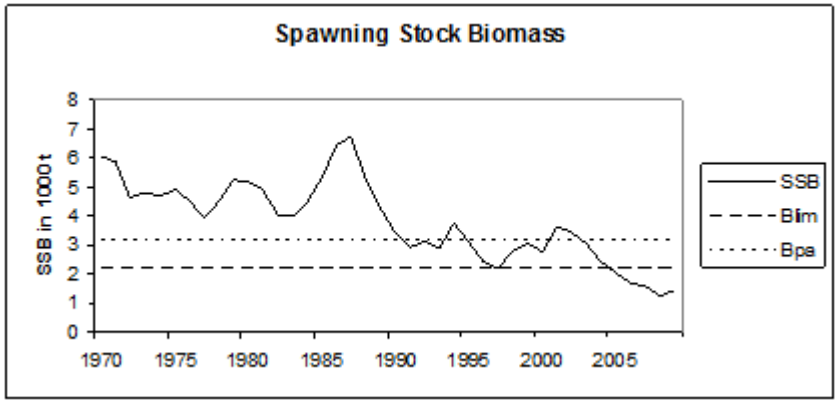
Basis: F(2009) = Fsq = mean F(06-08) = 0.38; R(2009) = RCT3 = 3.6 million; R(10-11) = GM(70-06) = 5.5 million; SSB(2009) = 1.45kt; SSB(2010) = 1.77kt; landings (2009) = 0.47kt

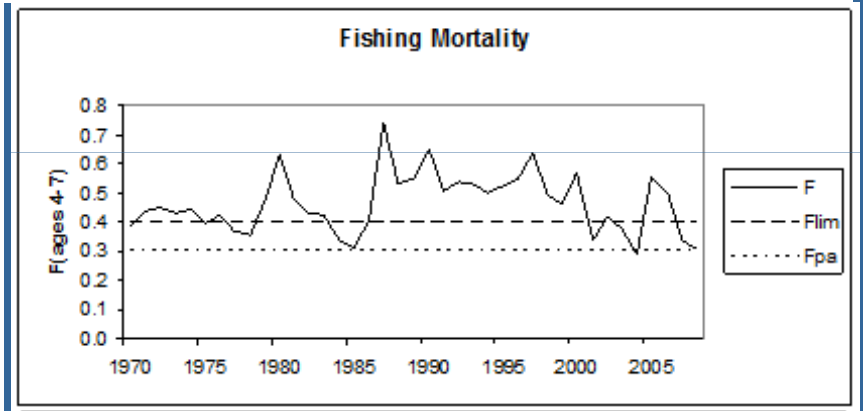
Rationale	Landings (2010)	Basis	F(2010)	SSB(2011)	%SSB change[1)]	%TAC change[2)]
Zero catch	0	F=0	0	2.68	52%	-100%
High long-term yield	0.46	F(long-term yield)	0.30	2.26	28%	-29%
Status quo	0.42	Fsq *0.7	0.27	2.30	30%	-36%
	0.46	Fpa = Fsq *0.79	0.30	2.26	28%	-34%
	0.52	Fsq *0.9	0.34	2.21	25%	-20%
	0.55	Fsq *0.97	0.37	2.18	23%	-15%
	0.57	Fsq *1	0.38	2.16	22%	-13%
	0.62	Fsq *1.1	0.42	2.12	20%	-5%
	0.66	Fsq *1.2	0.46	2.08	18%	2%
	0.73	Fsq *1.35	0.51	2.02	14%	12%
	0.75	Fsq *1.4	0.53	2.00	13%	15%

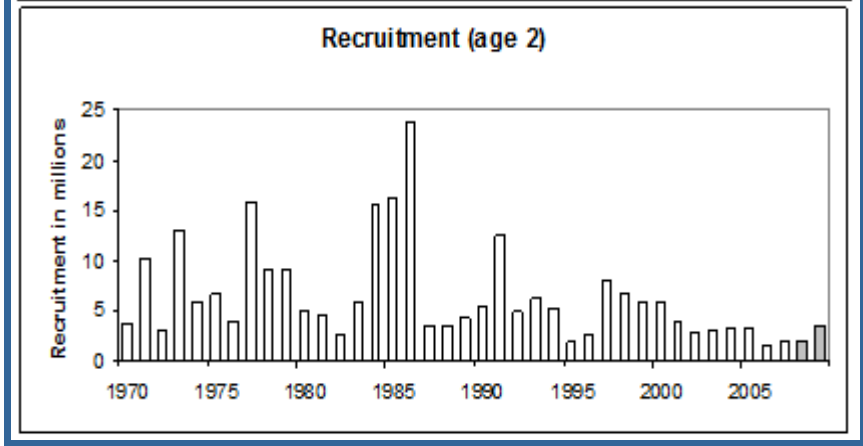
All weights in thousand tonnes.

With zero catch SSB is predicted to increase about 52% in the short-term but still below Bpa

Advice for 2010







Sole in Division VIIa (Irish Sea)

- SSB declining since 2001; lowest level in 2008: **Reduced reproductive capacity**

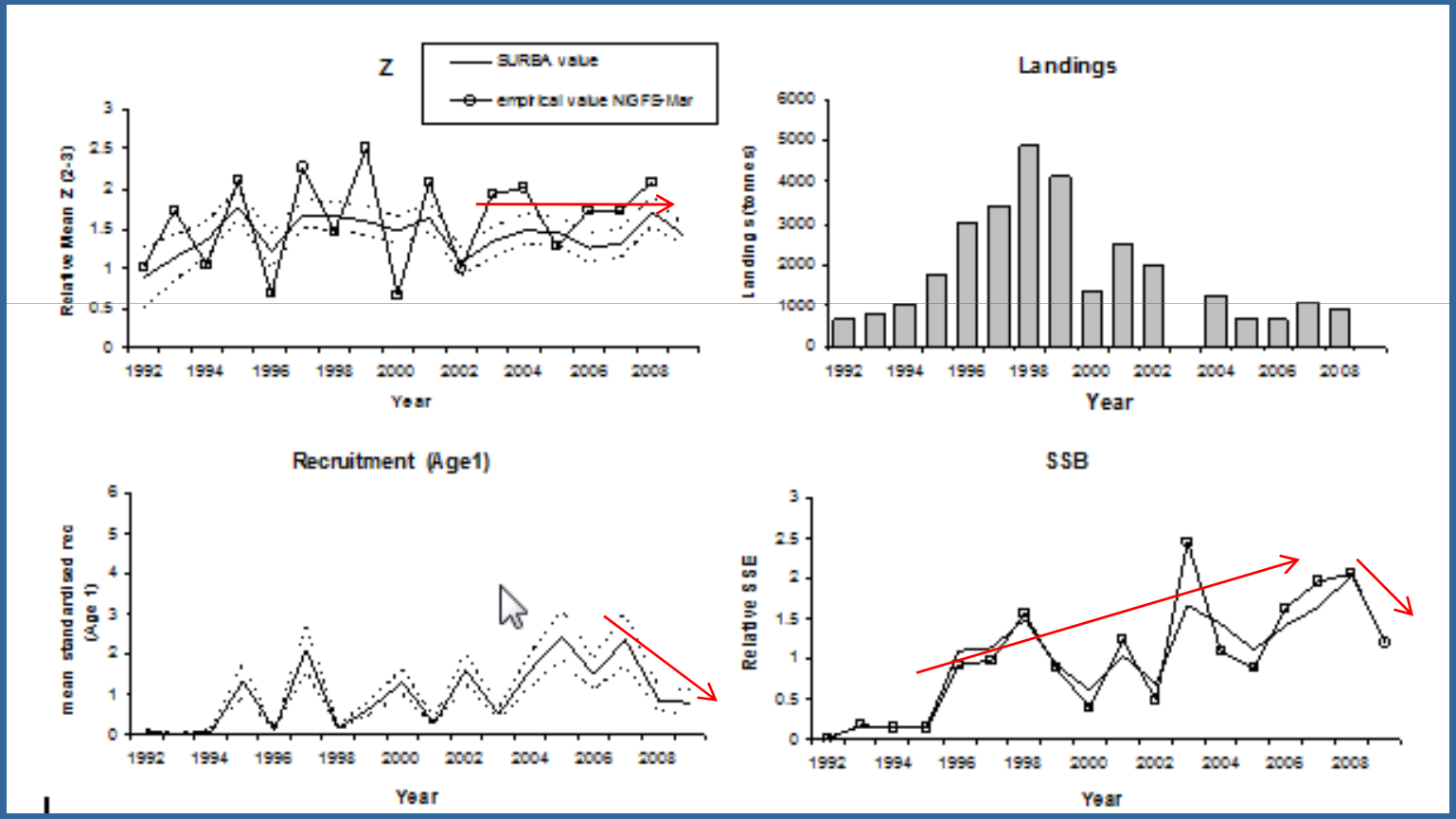
- F decreased in recent years and in 2008 just above F_{pa}**: Increased risk of harvested unsustainably**;
  Overfished ($F > F_{0.1}$)

- Low recruitment in recent years; Assumed recruitment in the forecast contributes ~50% to predicted landings in 2010 and predicted SSB in 2011

Advice for 2010

Haddock in Division VIIa (Irish Sea)

No increase in effort relative to 2009



Projection of 2009 survey indicates continuation of **decreasing trend in SSB**

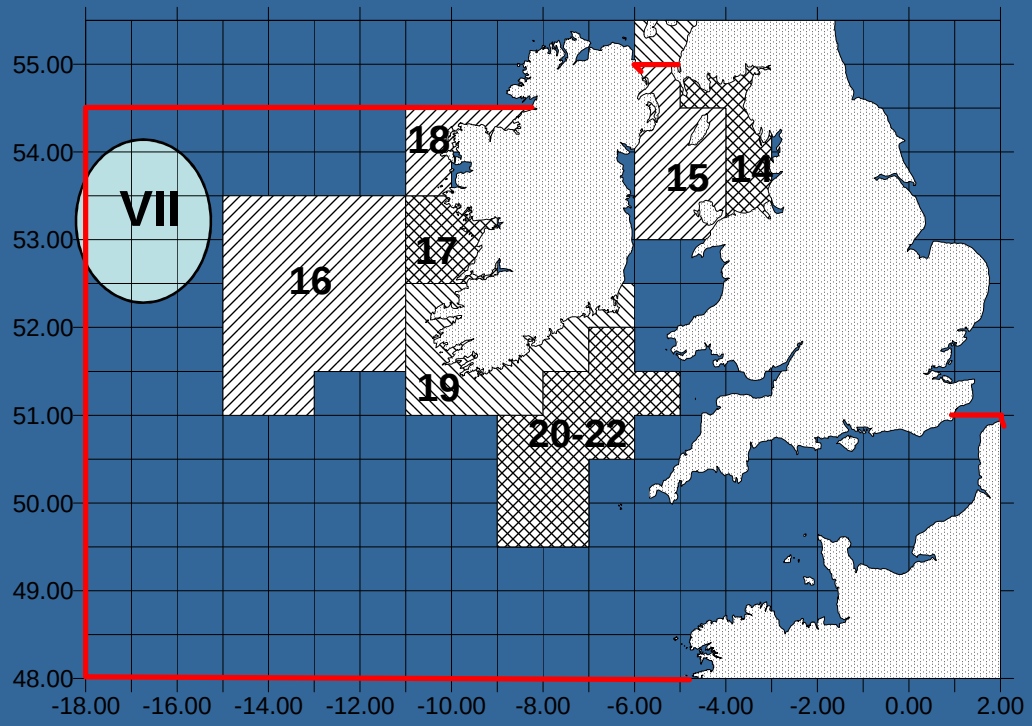
Advice for 2010

Whiting in Divisions VIIa (Irish Sea)

New data does not change perception of the stock – same advice as last year:

Catches of whiting in 2010 should be the lowest possible

Nephrops in Division VII



FU 14 – Irish Sea East (VIIa)

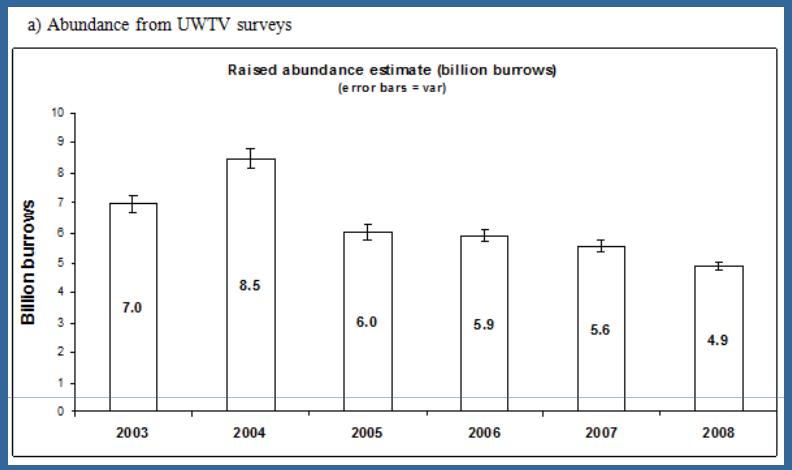
FU 19 – Ireland SW and SE coast (VIIagj)

Biennial advice: same advice as last year – **No increase in effort and landings**

FU 15 – Irish Sea West (VIIa)

FU 15 – Irish Sea West

Nephrops in Division VII



State of the stock

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.

Advice for 2010

FU 15 – Irish Sea West

***Nephrops* in Division VII**

Outlook for 2010

Basis: Bias corrected survey index (2008) = 4288, Mean weights in landings (13.2g) and retention factors based (79%) on 2008 sampling.

Rationale	Harvest rate	Landings 2010 (tonnes)
	2%	896
	4%	1 792
	6%	2 688
	8%	3 583
	10%	4 479
	12%	5 375
$F_{0.1}$	12.2%	5 465
	14%	6 271
	16%	7 167
	18%	8 063
	20%	8 959
F_{max}	20.4%	9 138
	22%	9 854
F_{2008}	23.5%	10 514
	24%	10 750

Advice: landings no more than 5 465 t - implies a large reduction in catch:

(i) **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});

(ii) A **constraint on the year to year change in TAC** as is typical of management plans and as implied by the Communication on Fishing Opportunities for 2010 [COM (2009) 224] might be considered.

Thank you for your attention!
Comments and questions?

WG1: West Scotland & Rockall (VIab)

Advice for 2010

Cod in Division VIa (West of Scotland)

No fishing should take place in 2010

Reference points

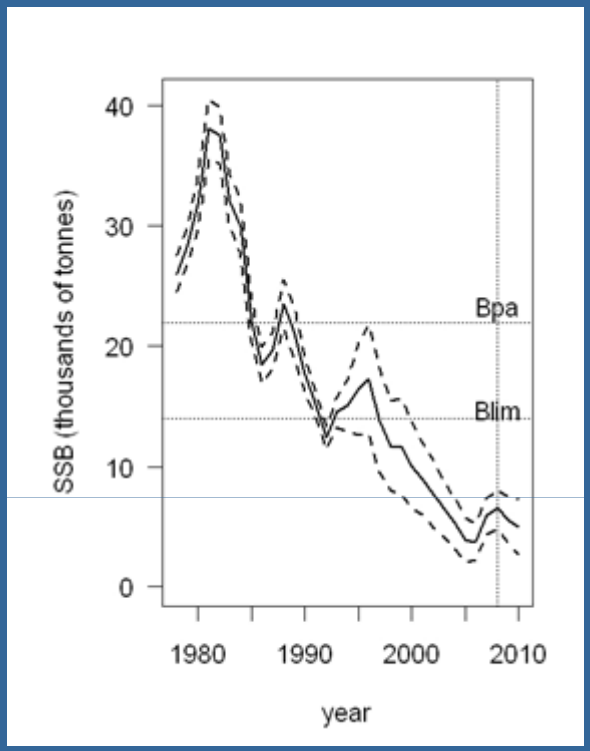
	Type	Value	Technical basis
Precautionary approach	B_{lim}	14 000 t	$B_{lim} = B_{loss}$, the lowest observed spawning stock estimated in previous assessments.
	B_{pa}	22 000 t	This is considered to be the minimum SSB required to ensure a high probability of maintaining SSB above B_{lim}, taking into account the uncertainty of assessments. This also corresponds with the lowest range of SSB during the earlier, more productive historical period.
	F_{lim}	0.8	Fishing mortalities above this have historically led to stock decline.
	F_{pa}	0.6	This F is considered to have a high probability of avoiding F_{lim}.
Targets	F_{mgt}	0.4	Council Regulation (EC) 1342/2008.

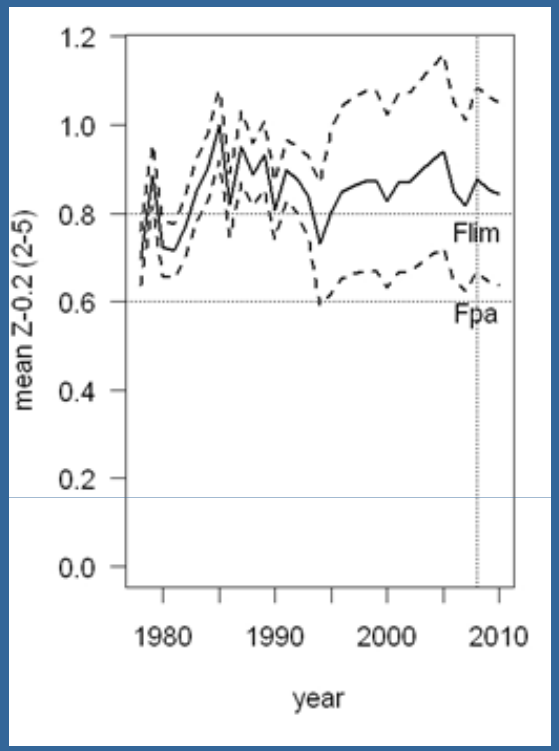
(F_{mgt} introduced 2009, otherwise unchanged since: 1998)

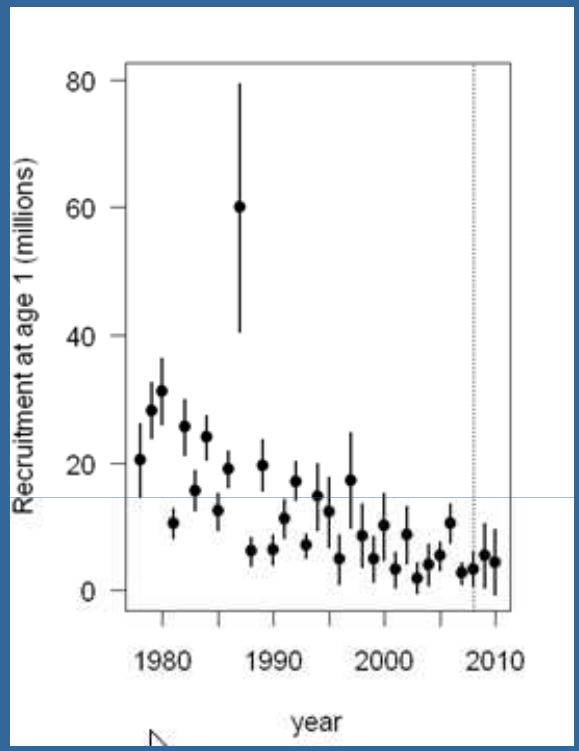
EU Management Plan but ICES cannot evaluate if the MP is precautionary**:** not possible at present to assess unaccounted mortality

Advice for 2010

Cod in Division VIa (West of Scotland)







- Spawning Stock Biomass (SSB) in 2009 (5.5 th t) well below B_{lim} (14.0 th t) - **Reduced reproductive capacity**
- Total mortality is **high**
- Recruitment **low** for many years (the 2005 YC is stronger but still below LT average)

Advice for 2010

Haddock in Division VIa (West of Scotland)

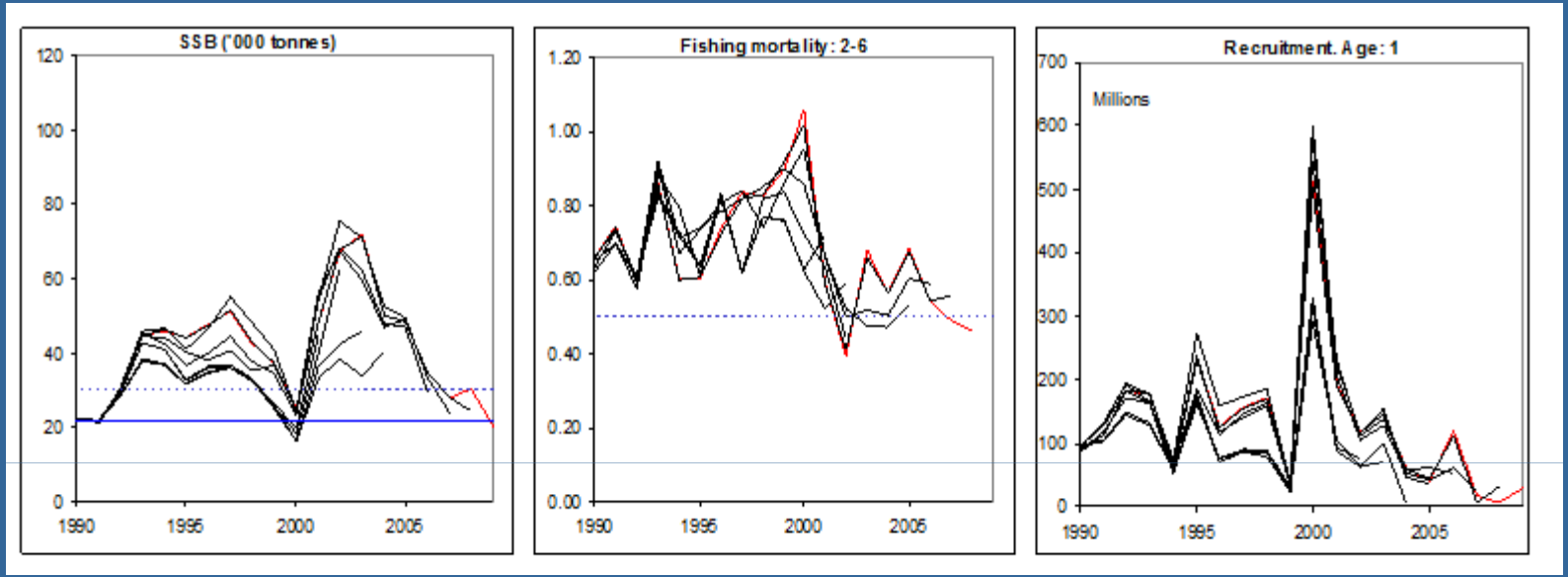
No fishing should take place in 2010

Basis for advice: In the absence of fishing, the stock is expected to be rebuilt close to B_{pa} (30000 t) in the short term (2011)

❖ ICES has recommended the development of a **management plan**, which is under development

Advice for 2010

Haddock in Division VIa (West of Scotland)



- SSB in 2009 below B_{lim} (22000 t): **reduced reproductive capacity**
- Fishing mortality in 2008 just below F_{pa} (0.5): **Harvested sustainably**
- **Weak** Recruitment from 2004 to 2008

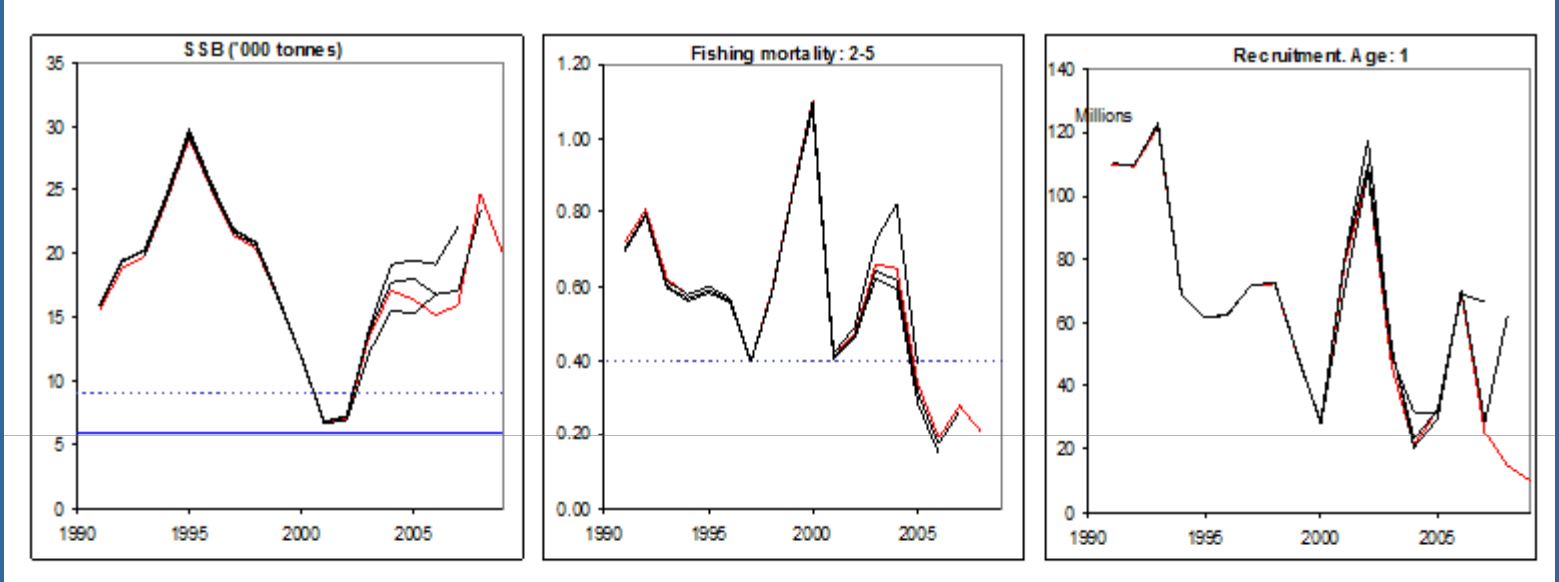
Haddock in Division VIb (Rockall)

Catches and landings in 2010 should not exceed 4280 t and 3 330 t, respectively

Basis for Advice: No long-term gains in increasing fishing mortality above current levels;
SSB is predicted to remain above B_{pa} in 2011

Advice for 2010

Haddock in Division VIb (Rockall)



- SSB above B_{pa} since 2003: **Full reproductive capacity**
- Fishing mortality below F_{pa} since 2005: **Harvested sustainably** (F in 2008 close to $F_{0.1}$)
- Recent recruitments low

Advice for 2010

Saithe in Sub-area IV (North Sea), Division IIIa (Skagerrak), and Sub-area VI (West of Scotland and Rockall)

Landings should be no more than 118 000 t in 2010
(IIIa & IV=107 000 t ; VI=11 000 t)

Basis for advice: EU-Norway Management Plan
evaluated as precautionary:

IF SSB > B_{pa} then F=0.3 but TAC constraint of ± 15%

IF SSB < B_{lim} then F=0.1

IF B_{lim} < SSB < B_{pa} then F= 0.30-0.20*(200000-SSB)/94000

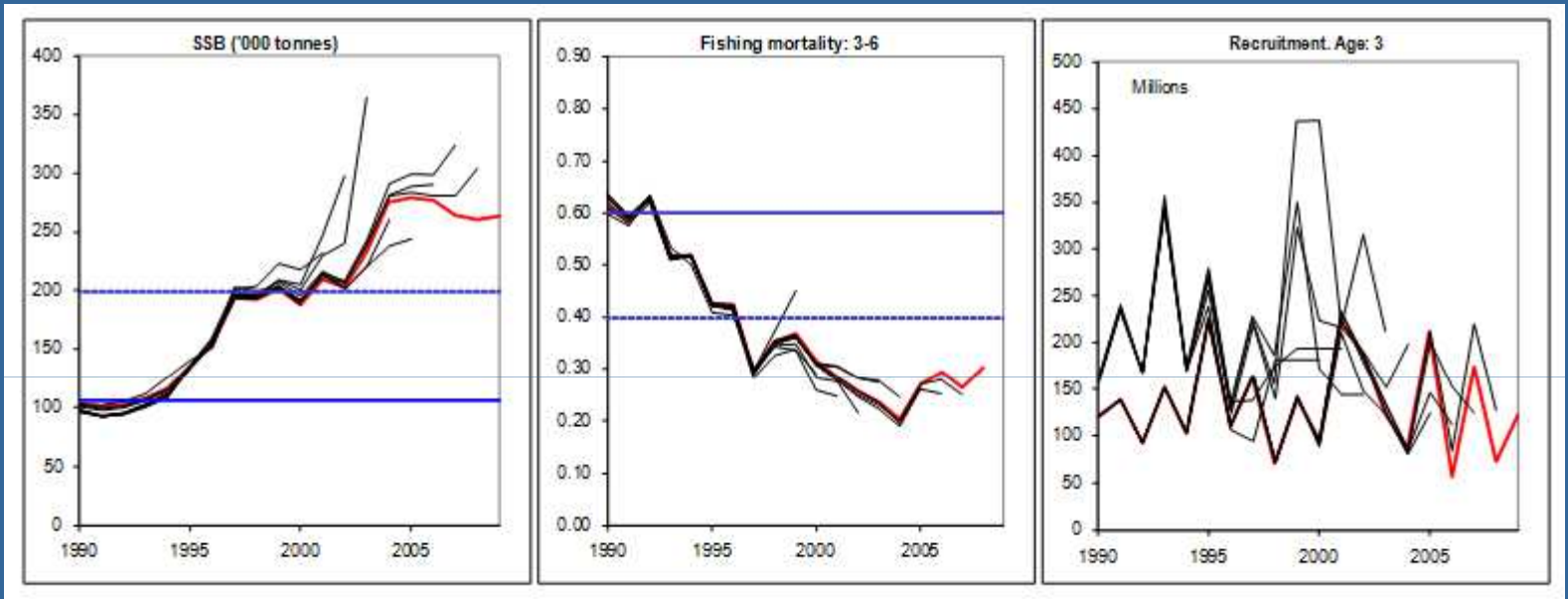
Reference points

	Type	Value	Technical basis
Precautionary approach	B_{lim}	106 000 t	B_{loss} = 106 000 t (estimated in 1998).
	B_{pa}	200 000 t	affords a high probability of maintaining SSB above B_{lim}.
	F_{lim}	0.6	F_{loss} the fishing mortality estimated to lead to stock falling below B_{lim} in the long term.
	F_{pa}	0.4	implies that $B_{eq} > B_{pa}$ and $P(SSB_{MT} < B_{pa}) < 10\%$.
Targets	F_{mgt}	0.3	EU-Norway management plan

(unchanged since 1998)

Advice for 2010

Saithe in Sub-area IV (North Sea), Division IIIa (Skagerrak), and Sub-area VI (West of Scotland and Rockall)



- SSB above B_{pa} since 2001: **Full reproductive capacity**
- Fishing mortality below F_{pa} since 1997: **Harvested sustainably**
- Recruitment poorly estimated – 2005 YC strength very uncertain, having large impact on the forecast

Anglerfish (*Lophius piscatorius* and *L. budegassa*) in Divisions IIa, IIIa, Subareas IV, and VI

The effort in fisheries that catch anglerfish should not be allowed to increase

Basis for advice: precautionary considerations

❖ Improve the quality and quantity of data – data series building up

Megrim (*Lepidorhombus spp)* in Subarea IV (North Sea) and VI (West of Scotland and Rockall)

The effort in fisheries that catch megrim should not be allowed to increase

Basis for advice: precautionary considerations

- ICES advises on megrim in both Subarea IV and VI
- Improve the quality and quantity of data – data series building up

Advice for 2010

- Whiting in Division VIa (West of Scotland)

New landings and survey data **- same perception of the stock**

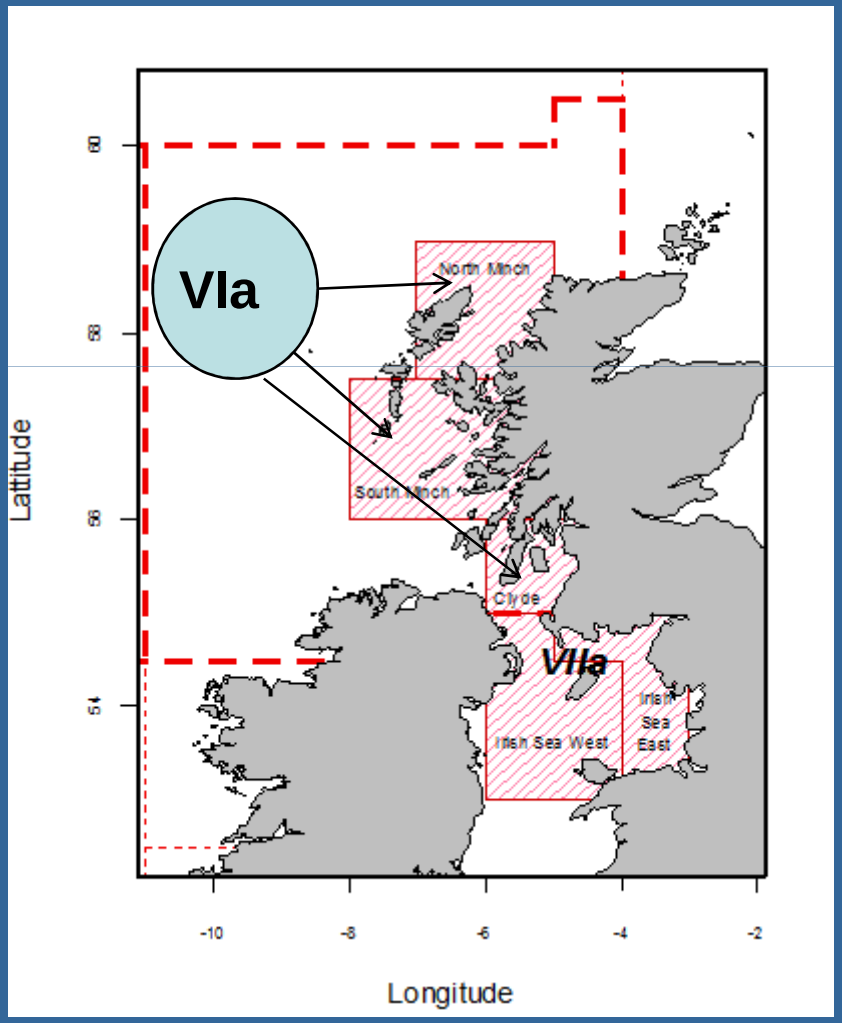
Same advice as last year: **catches in 2010 reduced to the lowest possible level**

-Whiting in Division VIb (Rockall)

No assessment; negligible landings (31 t in 2008)

No advice

Nephrops in Division VIa



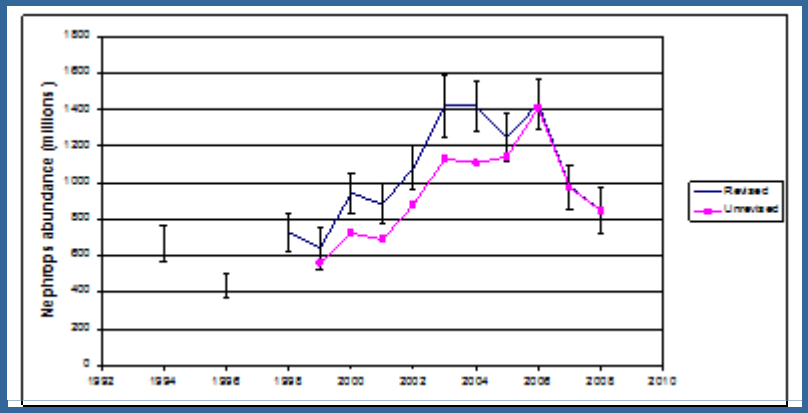
FU 11 – North Minch

FU 12 – South Minch

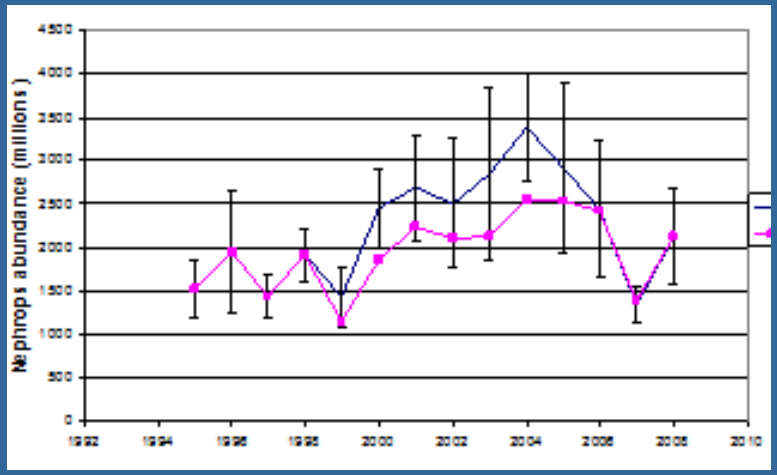
FU 13 – Firth of Clyde

Nephrops in Division VIa

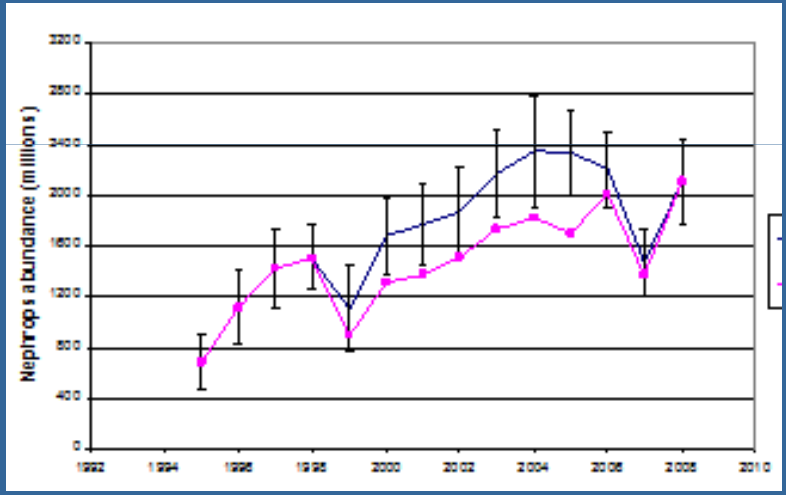
FU 11 – North Minch



FU 12 – South Minch



FU 13 – Firth of Clyde



Advice for 2010

Nephrops in Division VIa

FU 11 – North Minch

State of the stock

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.

Outlook for 2010

Basis: Bias corrected survey index (2008) = 638

Rationale	Harvest rate	Landings 2010 (tonnes)
	5.0%	552
	8.0%	883
$F_{0.1}$	8.8%	972
	10.0%	1104
	15.0%	1656
F_{max}	15.4%	1700
	20.0%	2208
F_{2008}	26.0%	2871
	31.6%	3485
	42.7%	4715

Advice: landings no more than 972 t - implies a large reduction in catch:

(i) **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});

(ii) A **constraint on the year to year change in TAC** as is typical of management plans and as implied by the Communication on Fishing Opportunities for 2010 [COM (2009) 224] might be considered.

Advice for 2010

Nephrops in Division VIa

FU 12 – South Minch

State of the stock

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 $F_{0.1}$.

Outlook for 2010

Basis: Bias corrected survey index (2008) = 1608

Rationale	Harvest rate	Landings 2010 (tonnes)
	5.0%	1474
	8.0%	2358
F0.1	9.6%	2829
	10.0%	2947
F2008	14.0%	4126
	14.4%	4250
	15.0%	4421
Fmax	16.0%	4715
	19.5%	5750
	20.0%	5894

Advice: Landings no more than 4126 t.

Advice for 2010

Nephrops in Division VIa

FU 13 – Firth of Clyde

State of the stock

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

Outlook for 2010

Basis: Bias corrected survey index (2008) = 1768

Rationale	Harvest rate	Landings (tonnes)
	5.0%	1277
	8.0%	2043
$F_{0.1}$	8.7%	2221
	10.0%	2553
	15.0%	3830
F_{max}	15.1%	3855
	19.0%	4845
	20.0%	5106
	25.7%	6555
F_{2008}	27.0%	6894

Advice: landings no more than 3855 t - implies a large reduction in catch:

(i) **Move toward a fishing mortality corresponding to MSY in steps**;

(ii) A **constraint on the year to year change in TAC** as is typical of management plans and as implied by the Communication on Fishing Opportunities for 2010 [COM (2009) 224] might be considered.

Thank you for your attention!
Comments and questions?

WG2: Celtic Sea, West & Southwest Ireland (VIIbcfghjk)

Advice for 2010

Hake in Division IIIa, Subareas IV, VI, and VII and Divisions VIIIa,b,d (Northern stock)

Landings for 2010 should not exceed 55 200 t

Basis for advice: at F_{pa} (=F_{target}) SSB is predicted to be above Bpa in 2011

Reference points

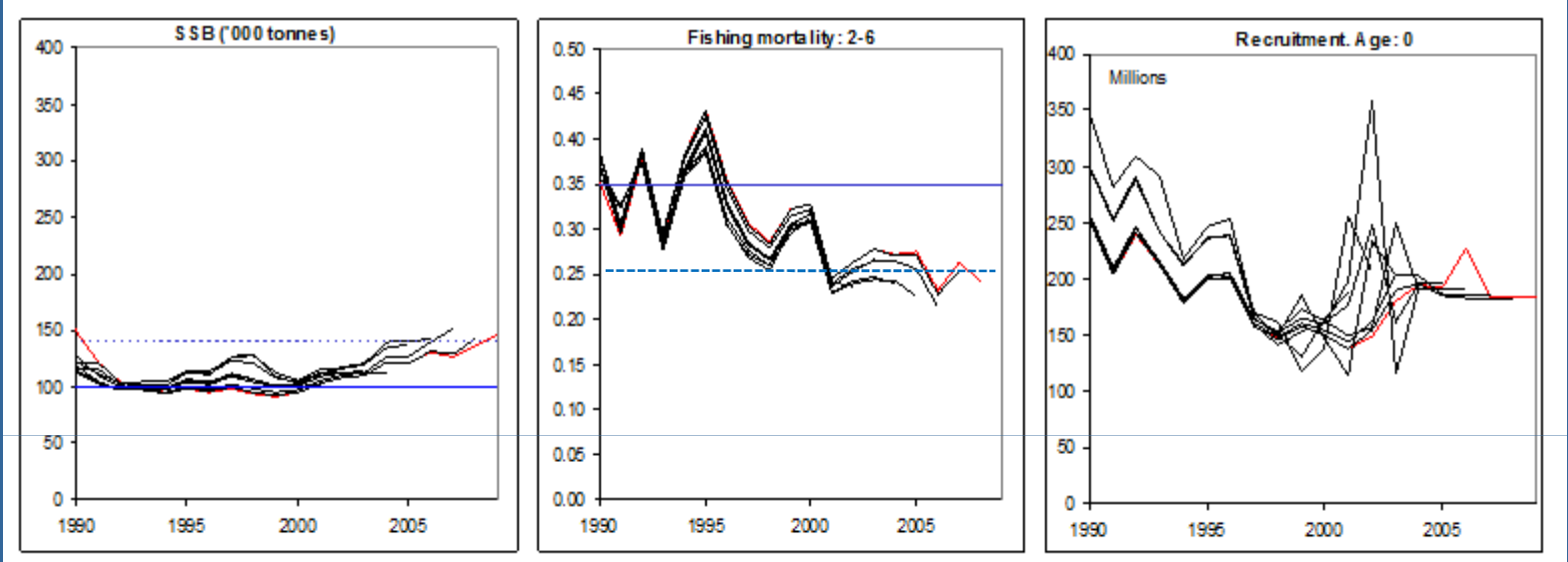
	Type	Value	Technical basis
Precautionary approach	B_{lim}	100 000 t	$B_{lim} = B_{loss}$ the lowest observed biomass in the 2003 assessment
	B_{pa}	140 000 t	$B_{pa} \sim B_{lim} * 1.4$
	F_{lim}	0.35	$F_{lim} = F_{loss}$
	F_{pa}	0.25	$F_{pa} \sim F_{lim} * 0.72$
Targets	F_{target}	0.25	Recovery plan (EC Reg. No. 811/2004)

(unchanged since: 2003)

- **EU agreed Recovery Plan** – not yet evaluated by ICES

Advice for 2010

Hake in Division IIIa, Subareas IV, VI, and VII and Divisions VIIIa,b,d (Northern stock)



- SSB above B_{pa} in 2009: **Full reproductive capacity**

- Fishing mortality around F_{pa} since 2001 and just below Fpa in 2008: **Harvested sustainably**

- Recruitment stable since 1998 but large uncertainties in most recent R estimates (estimated by a single survey).

Advice for 2010

Cod in Divisions VIIe-k (Celtic Sea cod)

Fishing effort and catches should be reduced although it is not possible to determine the appropriate scale of such reduction

Basis for advice: precautionary considerations – perception of low stock size, high mortality - need to **rebuild the stock**

❖ Stock benchmarked in 2009: assessment unreliable mostly due to deterioration of recent data – high uncertainty on discards estimates, increased high-grading & discards since 2002, landings misreporting, ...

❖ Management plan under development

Advice for 2010

Sole in Divisions VIIf,g (Celtic Sea)

Landings in 2010 should not exceed 920 t

Basis for advice: No long-term gain in yield to increase current F; at F_{sq} SSB is predicted to remain above B_{pa} in 2011

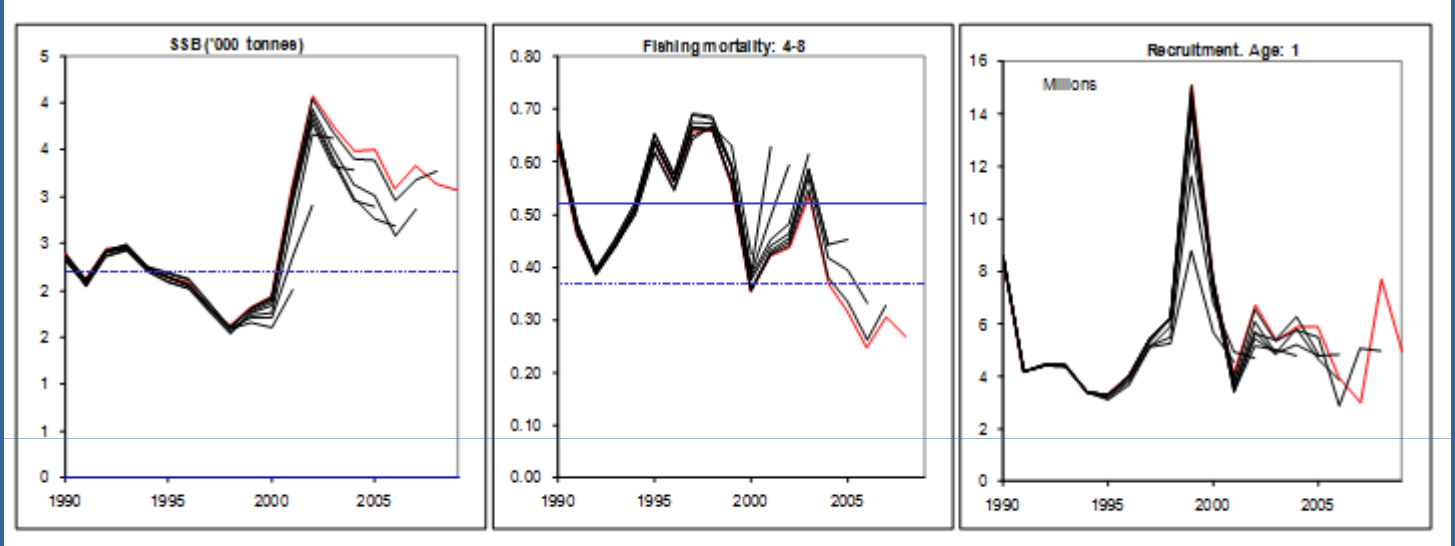
Reference points

	Type	Value	Technical basis
Precautionary approach	B_{lim}	Not defined.	
	B_{pa}	2 200 t	There is no evidence of reduced recruitment at the lowest biomass observed and B_{pa} can therefore be set equal to the lowest observed SSB.
	F_{lim}	0.52	F_{lim}: F_{loss}.
	F_{pa}	0.37	This F is considered to have a high probability of avoiding F_{lim} and maintaining SSB above B_{pa} in 10 years, taking into account the uncertainty of assessments. F_{pa}: $F_{lim} \times 0.72$ implies a less than 5% probability that ($SSB_{MT} < B_{pa}$).
Targets	F_v	Not defined.	

(Unchanged since: 1998)

Advice for 2010

Sole in Divisions VIIf,g (Celtic Sea)



- SSB above B_{pa} since 2001: **Full reproductive capacity**
- Fishing mortality below F_{pa} since 2005: **Harvested sustainably**; F in 2008 (0.27) slightly above F_{max} (0.25) in 2008
- 2007 YC estimated to be **strong**

Anglerfish (*Lophius piscatorius* and *L. budegassa*) in Divisions VIIb-k and VIIIabd

The effort in fisheries that catch anglerfish should not be allowed to increase

Basis for advice: trends in survey data and length distribution of survey catches; **precautionary considerations**

❖ Concerns about accuracy of landings, increased discards, ..., need to improve the quality of data

Advice for 2010

- Haddock in Divisions VIIb-k

New landings, lpue and survey data **- same perception of the stock.**
Same advice as last year: **fishing effort should not be allowed to increase**

-Megrim (*L. Whiffiagonis*) in Divisions VIIb-K & VIIIa,b,d

Survey and commercial data suggest the stock is stable.
No increase in effort of fisheries catching megrim (mixed demersal fisheries).

-Plaice in Divisions VIIb,c (West of Ireland)

Exploratory estimates of F suggest that the stock is being exploited above F_{max}.
Reduce TAC to less than 33 t (av. Landings 2006-2008)

-Sole in Divisions VIIb,c (West of Ireland)

No assessment; negligible landings (40 t in 2008)
No advice

Advice for 2010

-Plaice in Divisions VIIh-k (Southwest of Ireland)

New landings and sampling gives same perception of the stock. However, exploratory estimates of F suggest that the stock is being exploited above F_{max}.

Reduce catches in 2010 until there is more information to perform an assessment.

- Sole in Divisions VIIh-k (Southwest of Ireland)

No reliable analysis of stock trends. However, exploratory estimates of F suggest the stock is not severely overexploited.

No advice

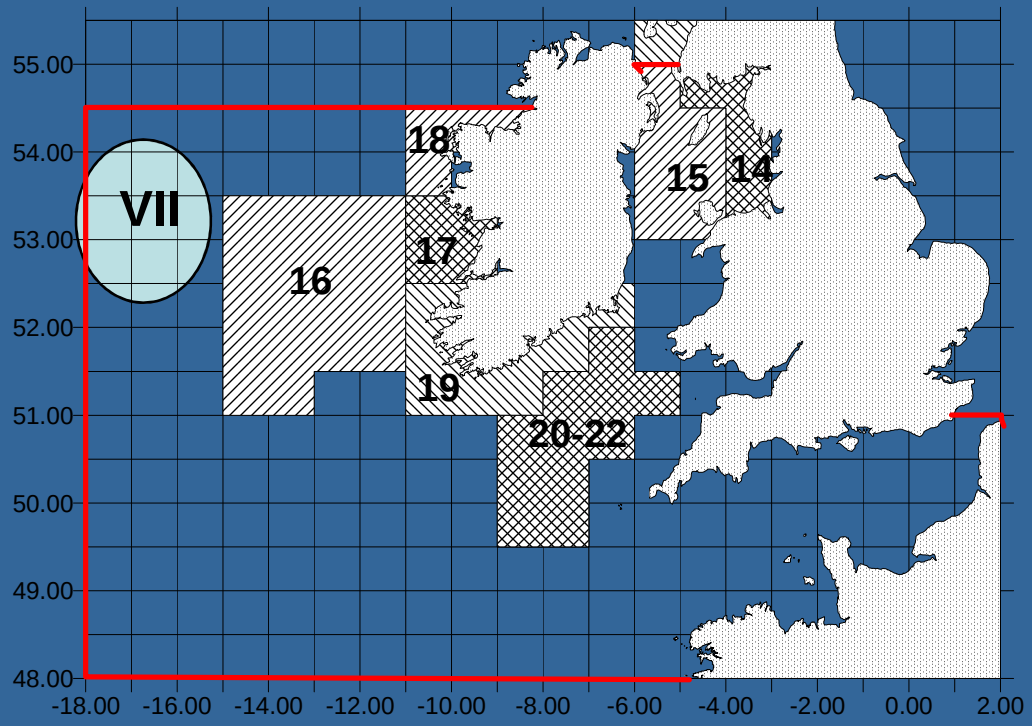
-Whiting in Divisions VIIe-k

Update assessment – same perception of the stock.

Fishing mortality should be reduced but ICES cannot quantify the required reduction

Note that: survey indicate above average 2007 YC and strong 2008 YC – measures to reduce discarding of these YC

Nephrops in Division VII



FU 16 – Porcupine Bank (VIIbcjk)

FU 17 – Aran Grounds (VIIb)

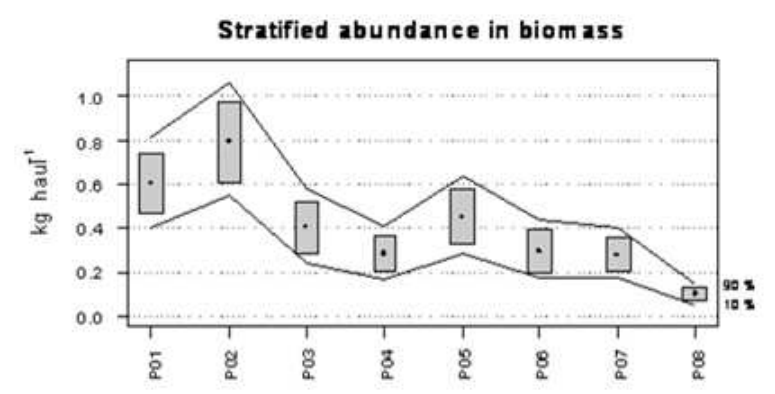
FU 20-22 – Celtic Sea (VIIgh)

Biennial advice: same advice as last year - **No increase in effort and landings**

Advice for 2010

Nephrops in Division VII

FU 16 – Porcupine Bank



Advice: Caches in 2010 should be reduced to the lowest possible level; due to continued decline in stock (last year the advice was to reduce catches to below 1000 t)

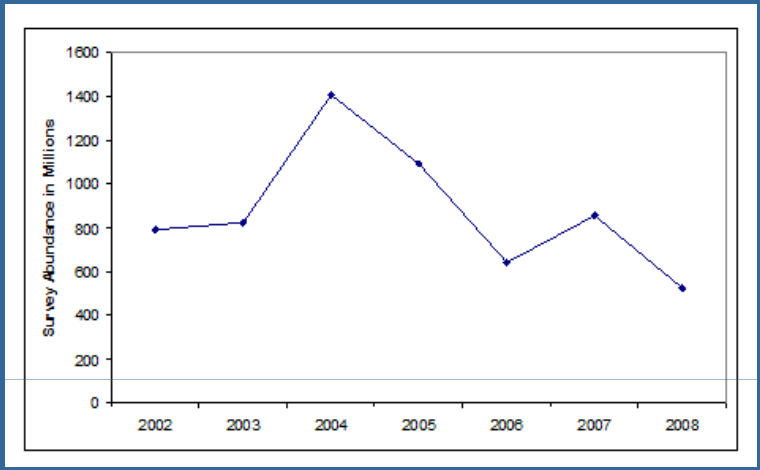
State of the stock

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 the stock has declined to a low level**.

Landings per unit effort (lpue) show a generally declining trend in most fleets over the time-series available. Mean size indicators in all commercial fleets and a survey indicate a large increase in mean size for both sexes in the past five years. There has been a large change in sex ratio in the survey catches and fishery landings with females *Nephrops* accounting for a larger proportion Landings have declined by 57% between 2007 and 2008.

FU 17 – Aran Grounds

Nephrops in Division VII



State of the stock

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 maximum observed in 2004**.

Advice for 2010

Nephrops in Division VII

FU 17 – Aran Grounds

Outlook for 2010

Basis: Bias corrected survey index (2008) = 396, Mean weights in landings (22.6g) and retention factors based (71%) on 2008 sampling.

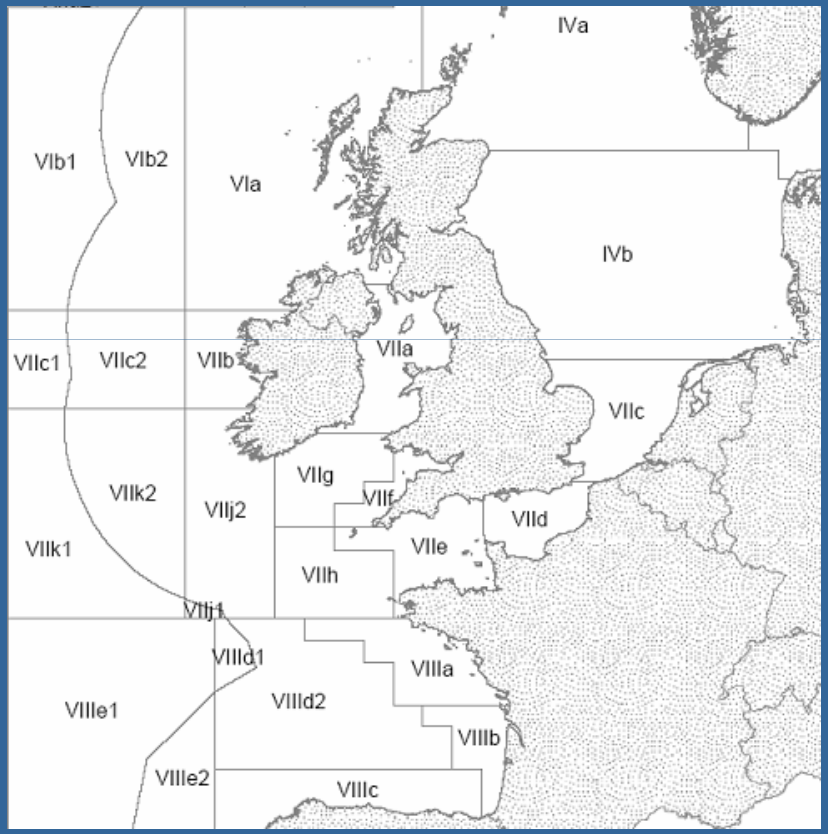
Rationale	Harvest rate	Landings 2010 (tonnes)
	2%	126
	4%	252
	6%	379
$F_{0.1}$ range for similar *Nephrops* stocks	8%	505
	10%	631
	12%	757
F_{max} range for similar *Nephrops* stocks	13%	820
	14%	883
	15%	946
	16%	1 009
	17%	1 072
	20%	1 262
F_{2008}	16.7%	1 050

Advice: landings no more than 505 t - implies a large reduction in catch:

(i) **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});

(ii) A **constraint on the year to year change in TAC** as is typical of management plans and as implied by the Communication on Fishing Opportunities for 2010 [COM (2009) 224] might be considered.

Thank you for your attention!
Comments and questions?


IVa
VIb1
VIb2
VIa
IVb
VIIa
VIIc1
VIIc2
VIIb
VIIc
VIIg
VIIf
VIIk2
VIIj2
VIId
VIIe
VIIk1
VIIh
VIIj1
VIIId1
VIIIa
VIIIe1
VIIId2
VIIIb
VIIIe2
VIIIc