

ICES advice for 2011

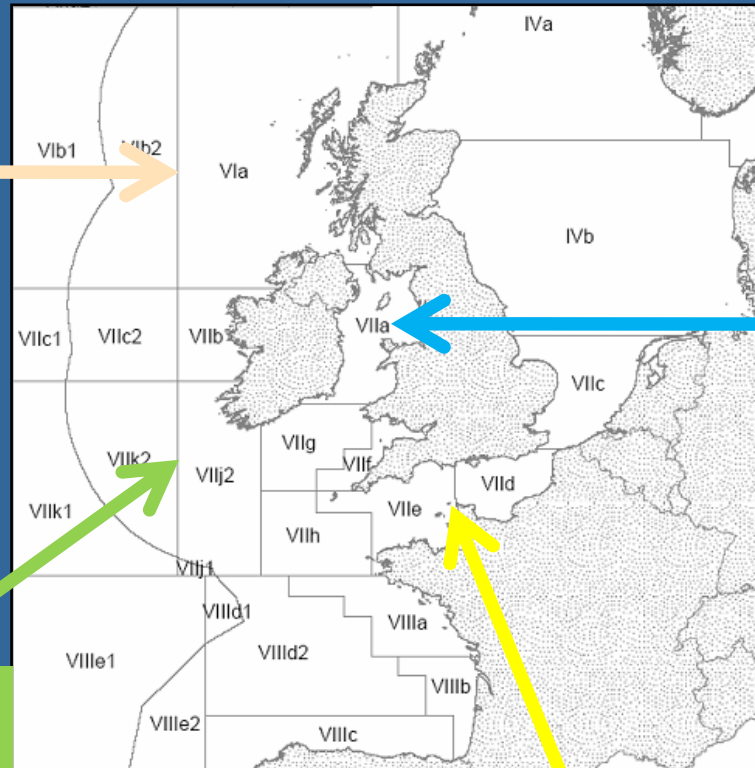
North Western Waters RAC

7 July 2010 – CNPMMEM - Paris

Manuela Azevedo
ACOM Vice-chair

West of Scotland & Rockall (VIab)

- Cod (VIa)
- Haddock (VIa VIb)
- Whiting (VIa; VIb)
- Anglerfish (IIa,IIIa,IV,VI)
- Megrin (IV, VI)
- Saithe (IV, IIIa, VI)
- Nephrops (FUs11-12-13)



Irish Sea (VIIa)

- Cod
- Haddock
- Whiting
- Plaice
- Sole
- Nephrops (FUs 14-15-19)

Celtic Sea

- Cod (VIIe-k)
- Haddock (VIIb-k)
- Whiting (VIIe-k)
- Plaice (CS; VIIh-k; VIIbc)
- Sole (CS; VIIh-k; VIIbc)
- Northern hake
- Anglerfish (VIIb-k, VIIIab)
- Megrin (VIIb-k, VIIIabd)
- Nephrops FUs 16-17-20-22)

English Channel

- Cod (IV, VIId, Skagerrak)
- Plaice (VIId)
- Plaice (VIIe)
- Sole (VIId)
- Sole (VIIe)

Deep Sea Species

Alfonsinos

Black Scabbardfish

Blue ling

Greater forkbeard

Greater silver smelt

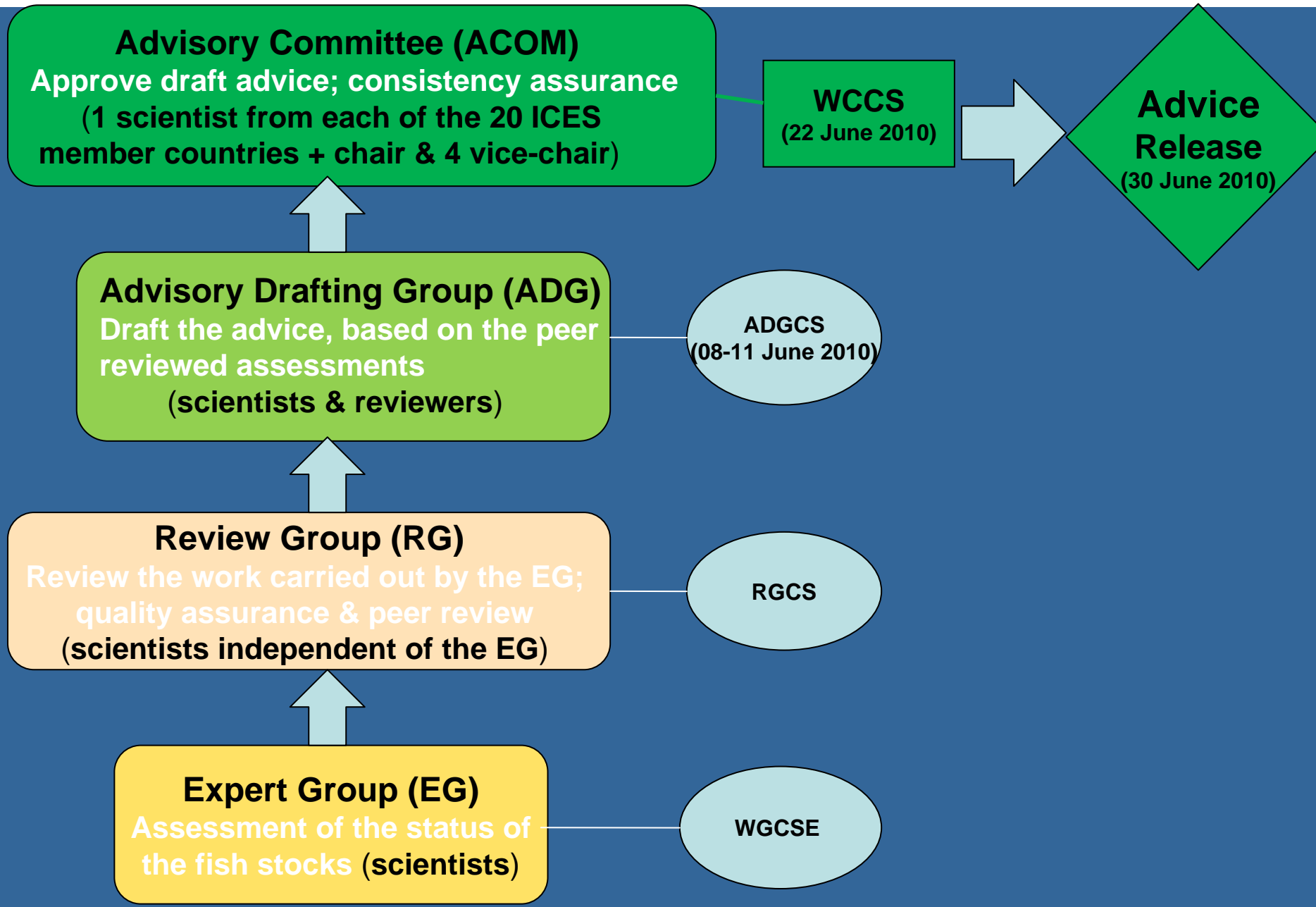
Ling

Orange roughy

Red (=blackspot) seabream

Roundnose grenadier

Tusk

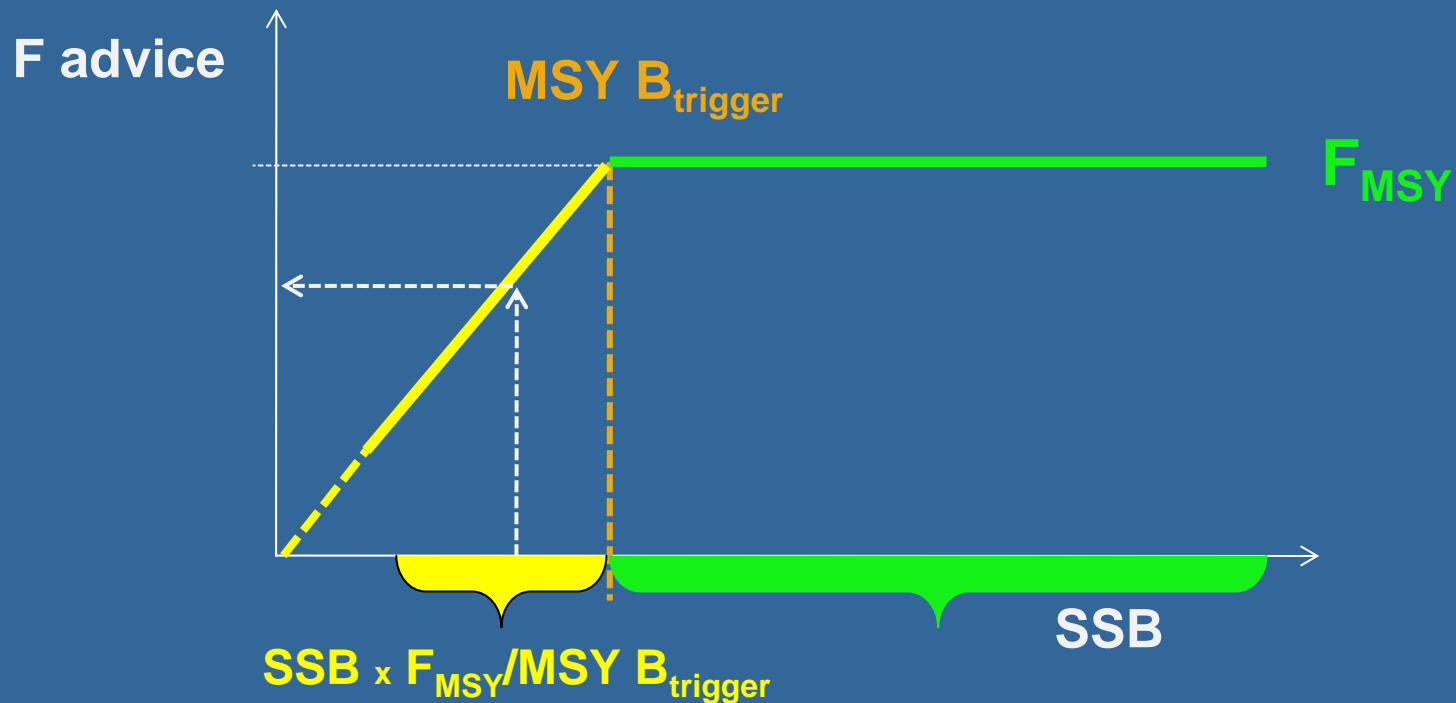


Based on an F_{MSY} and a biomass safeguard against low spawning stock biomass

F_{MSY} is the fishing mortality that in the long-term will maximize yield

MSY $B_{trigger}$ is a biomass reference point that triggers a cautious response: “A cautious biomass triggering action to maintain a stock within a desirable stock size range”

ICES MSY Harvest Control Rule (HCR)



MSY Transition

Moving from Current F to **MSY** in 2015

In 5 steps

$$2011: (F(2010)*0.8 + F_{MSY} *0.2)$$

$$2012: (F(2011)*0.6 + F_{MSY} *0.4)$$

$$2013: (F(2012)*0.4 + F_{MSY} *0.6)$$

$$2014: (F(2013)*0.2 + F_{MSY} *0.8)$$

$$2015: (F(2014)*0.0 + F_{MSY} *1.0) \rightarrow F_{MSY}$$

Advice summary table

Management Objective (s)	Landings (2011)
<ul style="list-style-type: none"> • Transition to an MSY approach with caution at low stock size 	Less than XX T
<ul style="list-style-type: none"> • Cautiously avoid impaired recruitment (Precautionary Approach) 	Less than X T
<ul style="list-style-type: none"> • Cautiously avoid impaired recruitment and achieve other objective(s) of a management plan (e.g., catch stability) 	Y t

Stocks without projections

stock trends based assessments

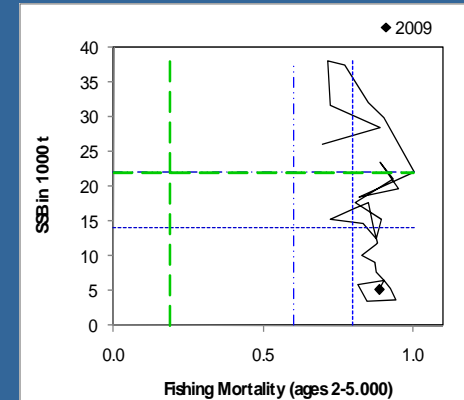
	No Overfishing	Overfishing or Unknown Exploitation Status
Decreasing stock trend	Reduce catch from recent level at rate of stock decrease	Reduce catch from recent level at rate greater than the rate of stock decrease
Stable stock trend	Maintain catch at recent level	Reduce catch from recent level
Increasing stock trend	Increase catch from recent level at rate of stock increase	Maintain catch at recent level

If unreliable catch data -> advise based on effort

West of Scotland & Rockall (VIa & VIb)

- Cod
- Haddock
- Whiting
- Anglerfish
- Megrin
- Saithe
- Nephrops

Management Objective (s)	Catches in 2011
Transition to an MSY approach with caution at low stock size	Zero catch
Cautiously avoid impaired recruitment (Precautionary Approach)	Zero catch
Cautiously avoid impaired recruitment and achieve other objective(s) of a management plan (e.g., catch stability)	n/a

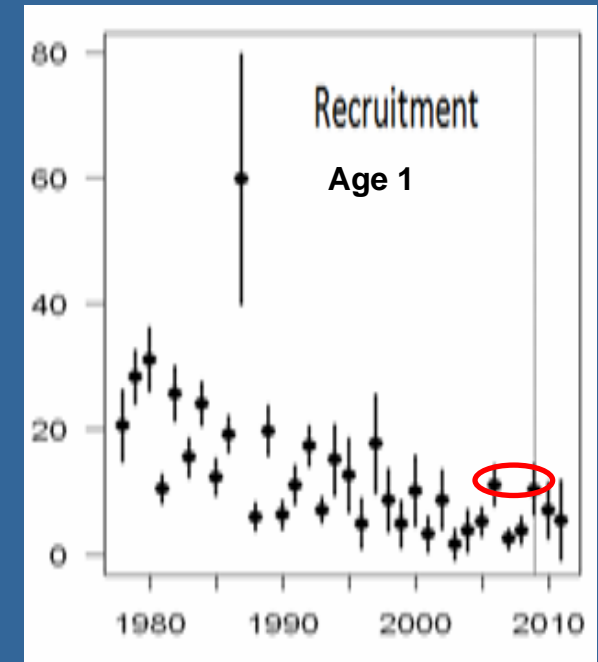
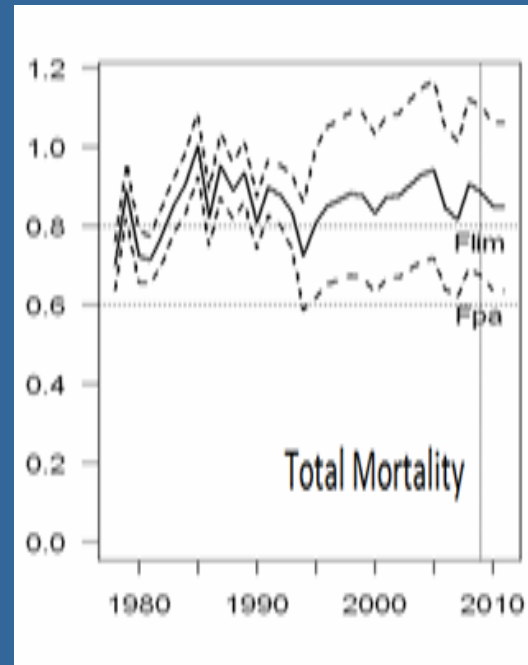
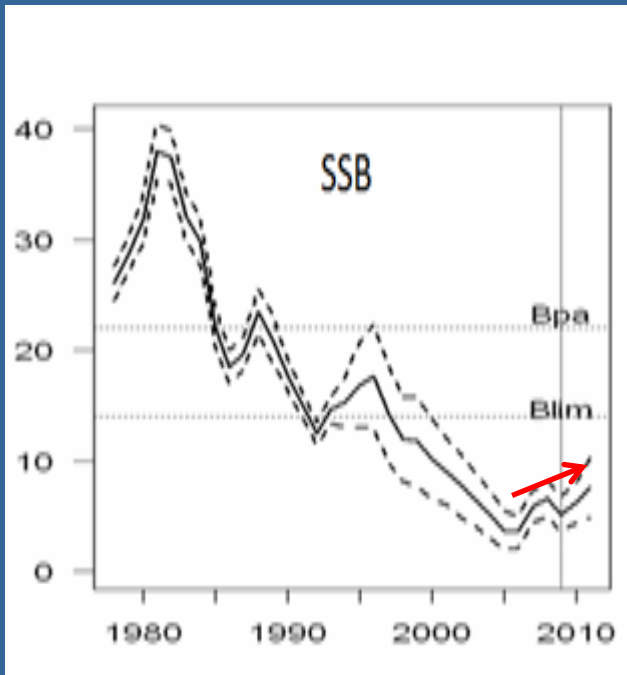


MSY $B_{\text{trigger}} = 22\,000\text{ t}$
 $F_{\text{MSY}} = 0.19$

MSY approach: Estimates of F_{MSY} for this stock are uncertain due to the absence of fisheries data in the assessment since 1994 (F_{MSY} consistent with NS cod). It is likely that current F is above F_{MSY} . SSB has declined to a very low level .

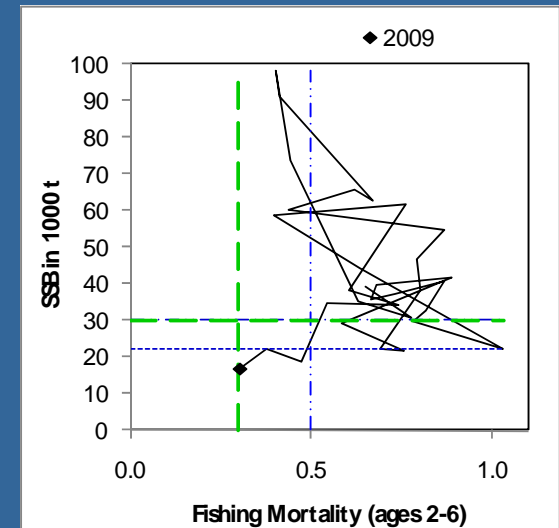
PA approach: It is not possible to identify any non-zero catch which would be compatible with PA. No targeted fishing. Bycatches including discards should be reduced to lowest possible.

Management Plan: not possible at present to assess unaccounted mortality accurately - ICES cannot yet evaluate if the management plan is in accordance with PA



- SSB increased since 2006 (lowest) but remains well below B_{lim} (14 th t)
- Total mortality is **high**
- Recruitment **low** for many years (2005 and 2008 YC the largest since 1997 and comparable with the long term geometric mean)

Management Objective (s)	Landings in 2011
Transition to an MSY approach with caution at low stock size	Less than 1500 t
Cautiously avoid impaired recruitment (Precautionary Approach)	Zero catch and management plan
Cautiously avoid impaired recruitment and achieve other objective(s) of a management plan (e.g., catch stability)	940 t

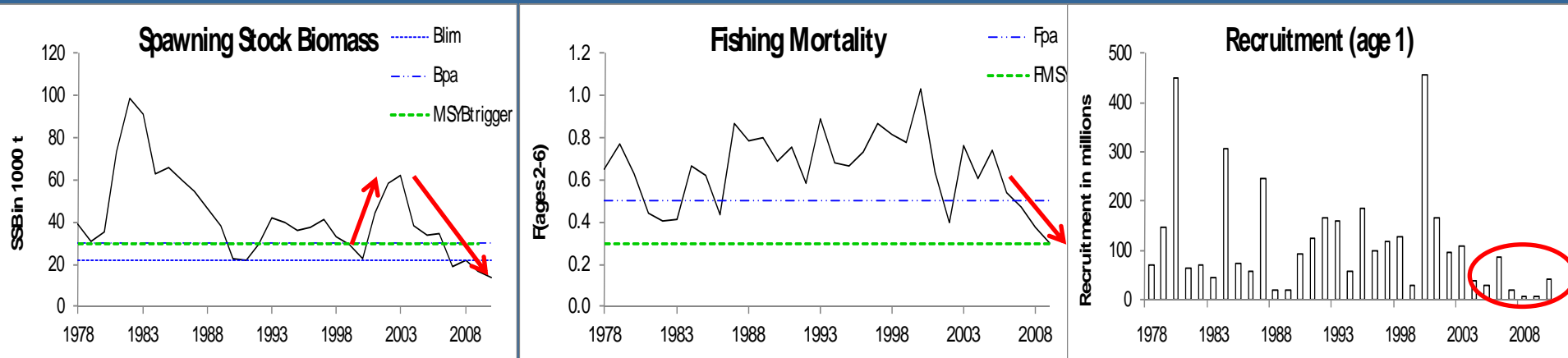


MSY $B_{trigger} = 30\ 000\ t$
 $F_{MSY} = 0.30$

MSY approach (Transition scheme): F to be reduced to 0.16 (because $SSB < MSY\ B_{trigger}$).

PA approach: $F < F_{pa}$ but $SSB < B_{lim}$. Reducing fishing mortality to zero is not expected to bring SSB above B_{pa} in the short term. ICES recommends a management plan to be developed and implemented.

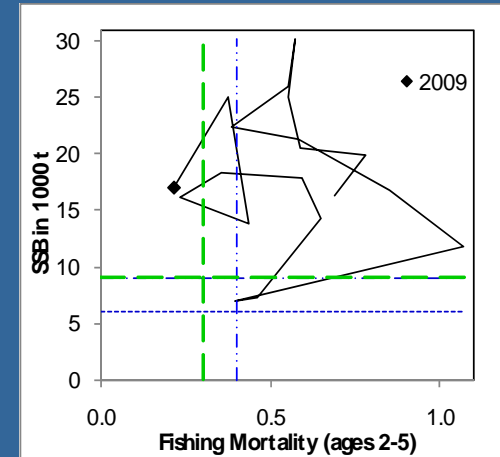
Management Plan: Management plan under development. ICES evaluated the option and considers this to be in accordance with PA.



- SSB increased from a level near the historic low in 2000 to a peak in 2003 (due to the contribution of the **high 1999 YC**); below B_{lim} in 2009
- $F > F_{pa}$ in most years since 1987; $F < F_{pa}$ since 2007; F at F_{MSY} in 2009
- Weak Recruitment since 2004 (2006-2009 YC below the long term average)

Haddock in Division VIb (Rockall)

Management Objective (s)	Landings in 2011
Transition to an MSY approach with caution at low stock size	Less than 2700 t
Cautiously avoid impaired recruitment (Precautionary Approach)	Less than 2400 t
Cautiously avoid impaired recruitment and achieve other objective(s) of a management plan (e.g., catch stability)	n/a

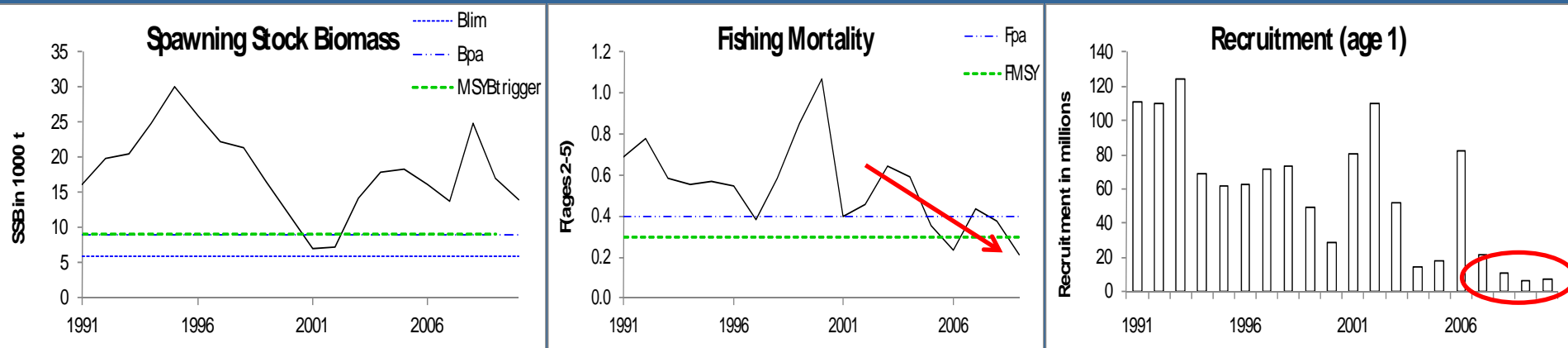


MSY $B_{\text{trigger}} = 9\ 000\ \text{t}$
 $F_{\text{MSY}} = 0.30$

MSY approach: F to be reduced to 0.30 (F in 2010 very close to F_{MSY})

PA approach: a 26% reduction in F is needed to keep SSB above B_{pa} in 2012

Management Plan: no specific management objectives are known to ICES



- SSB above B_{pa} since 2003
- F declined over time; close to F_{MSY} in 2009
- Recruitments since 2007 extremely weak

Whiting in Division VIa (West of Scotland)

Management Objective (s)	Catches in 2011
Transition to an MSY approach with caution at low stock size	Lowest possible catch and reduce discards
Cautiously avoid impaired recruitment (Precautionary Approach)	Lowest possible catch
Cautiously avoid impaired recruitment and achieve other objective(s) of a management plan (e.g., catch stability)	n/a

State of the stock unknown

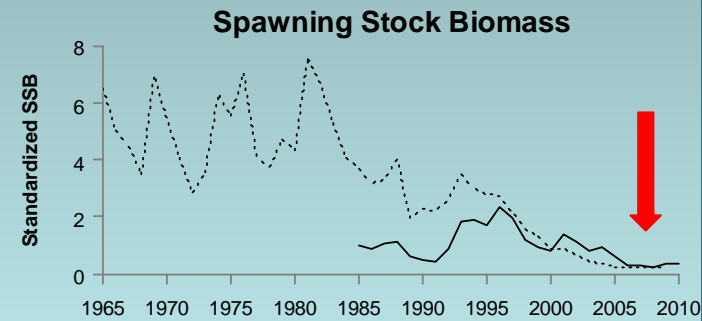
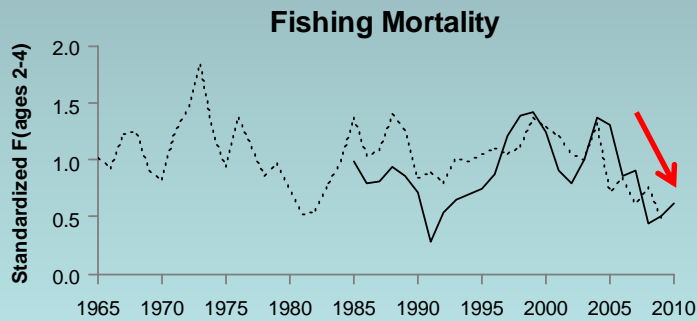
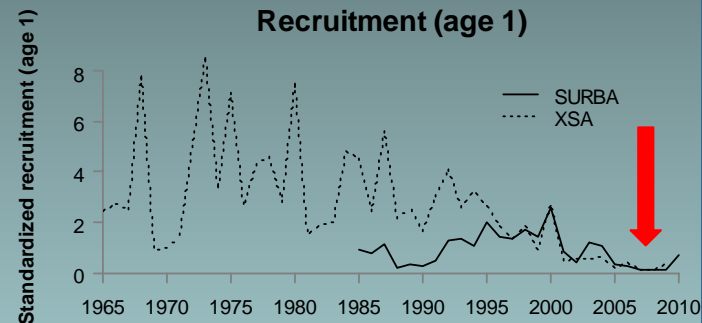
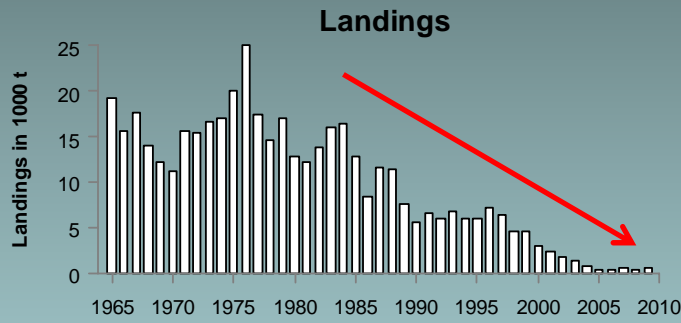
**MSY RPs:
not defined**

MSY approach: Biomass has declined to record low level in recent years. Exploitation status is unknown with regards to MSY levels. To allow the stock to rebuild, catches (half of which are discarded) should be reduced to the lowest possible level in 2011

PA approach: low SSB and weak R

Management Plan: no specific management objectives are known to ICES

Whiting in Division VIa (West of Scotland)

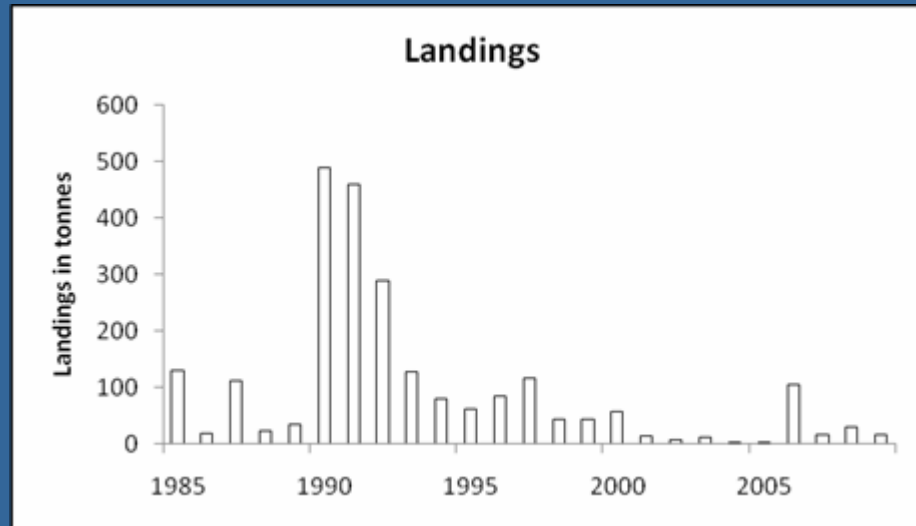


State of
the stock
unknown

Present **stock size** is at a **historical low**.

Fishing mortality estimates have declined since around 2005.

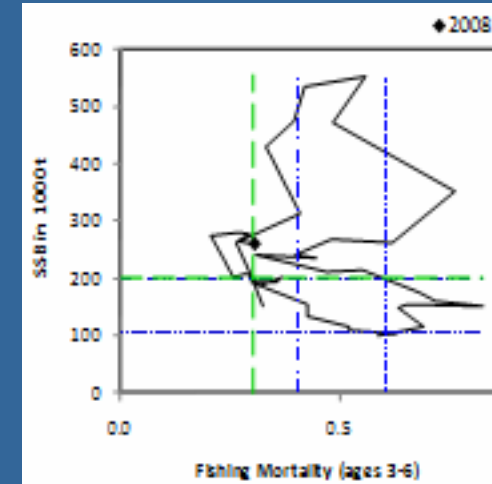
Recruitment in the most recent years is estimated to be very low with an indication of an increase in 2010



The state of the stock is unknown; No assessment
Negligible landings (31 t in 2008; 16 t in 2009)
No advice

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

Management Objective (s)	Landings in 2011
MSY approach with caution at low stock size	Less than 103 000 t
Cautiously avoid impaired recruitment (Precautionary Approach)	Less than 125 000 t
Cautiously avoid impaired recruitment and achieve other objective(s) of a management plan (e.g., catch stability)	103 000 t

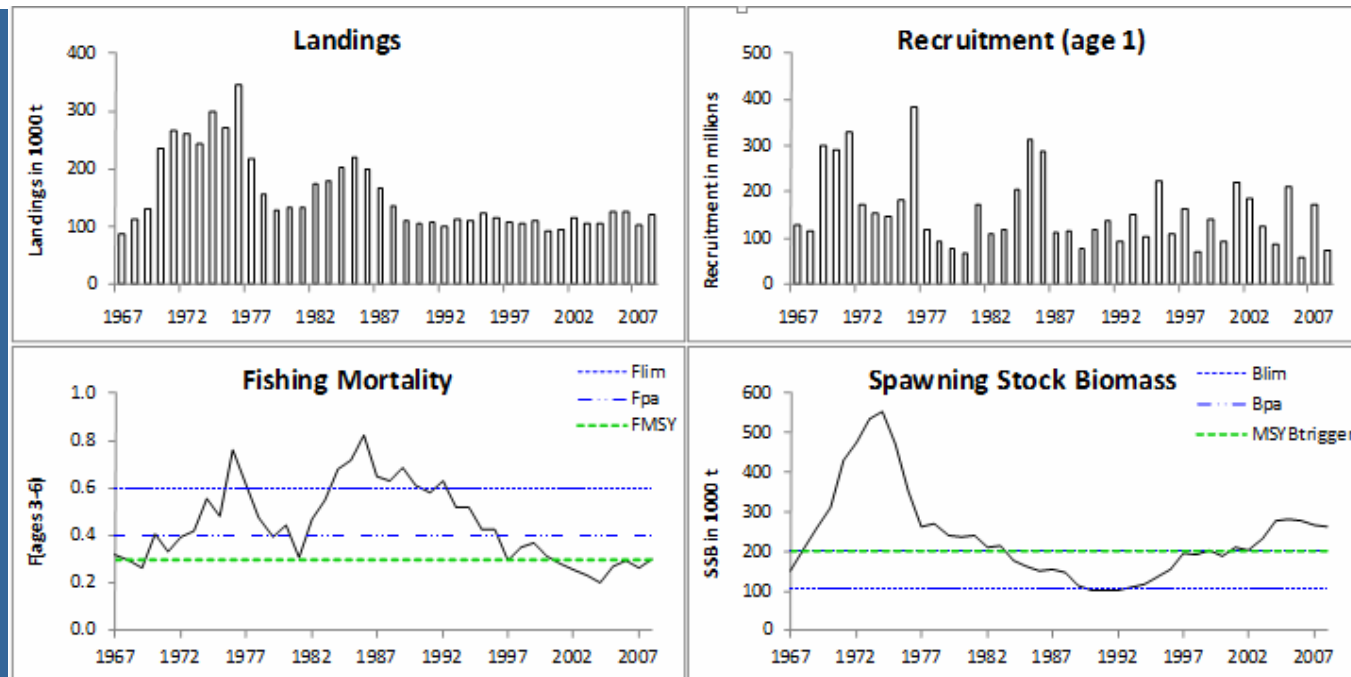


MSY $B_{trigger} = 200\ 000\ t$
 $F_{MSY} = 0.30$

MSY approach: F to be marginally increased to F_{MSY} .

PA approach: F would have to be increased by 27% to reduce SSB to B_{pa} in 2012

Management Plan: MP (Dec 2008) consistent with PA in the short-term (< 5 years)



An update assessment could not be run in 2010 due to missing and incomplete indices for 2009: The assessment of the 2009 working group meeting has been used as a basis for the forecast run that has been extended to 4 years

SSB above B_{pa} from 2001-2008

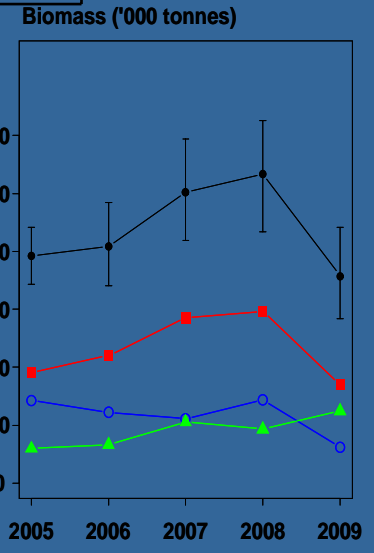
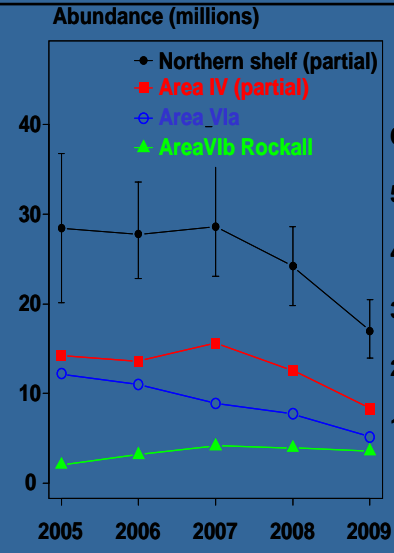
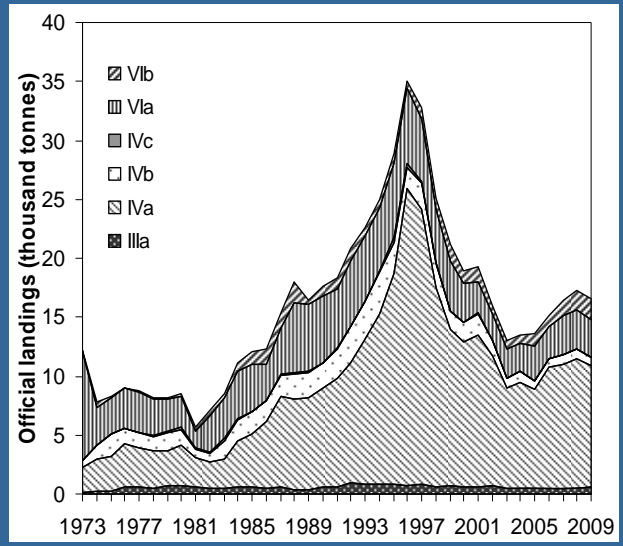
Fishing mortality From 2001 - 2008, F has been at or below the fishing mortality target of the management plan (0.30)

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

Management Objective (s)	Catches in 2011
Transition to an MSY approach with caution at low stock size	Catch and effort reduction
Cautiously avoid impaired recruitment (Precautionary Approach)	Catch and effort reduction
Cautiously avoid impaired recruitment and achieve other objective(s) of a management plan (e.g., catch stability)	n/a

State of the stock unknown

RP: nd



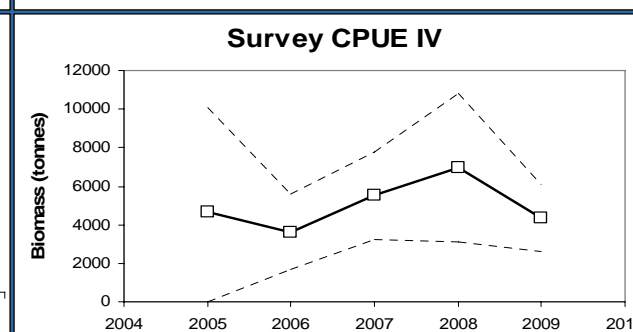
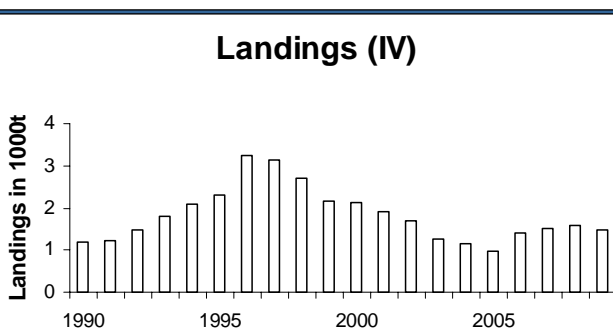
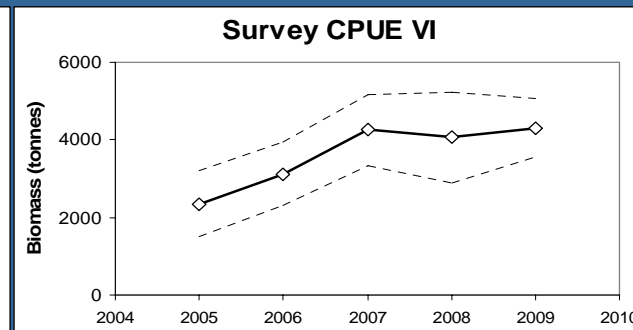
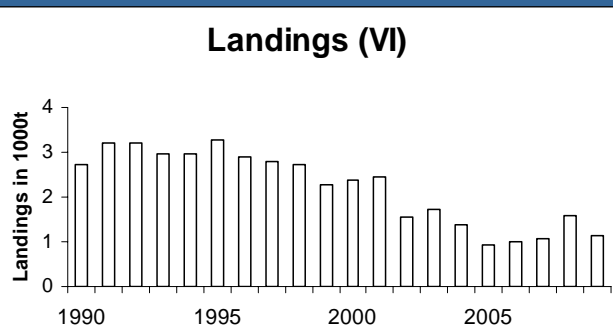
Recent dedicated anglerfish surveys in Division IVa and Subarea VI indicate a **decline in abundance since 2007**; and a **decline in biomass in 2009** in all areas surveyed with the exception of Division VIb (Rockall)

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

Management Objective (s)	Catches in 2011
Transition to an MSY approach with caution at low stock size	Effort should be consistent with no increase in catches
Cautiously avoid impaired recruitment (Precautionary Approach)	Effort should be consistent with no increase in catches
Cautiously avoid impaired recruitment and achieve other objective(s) of a management plan (e.g., catch stability)	n/a

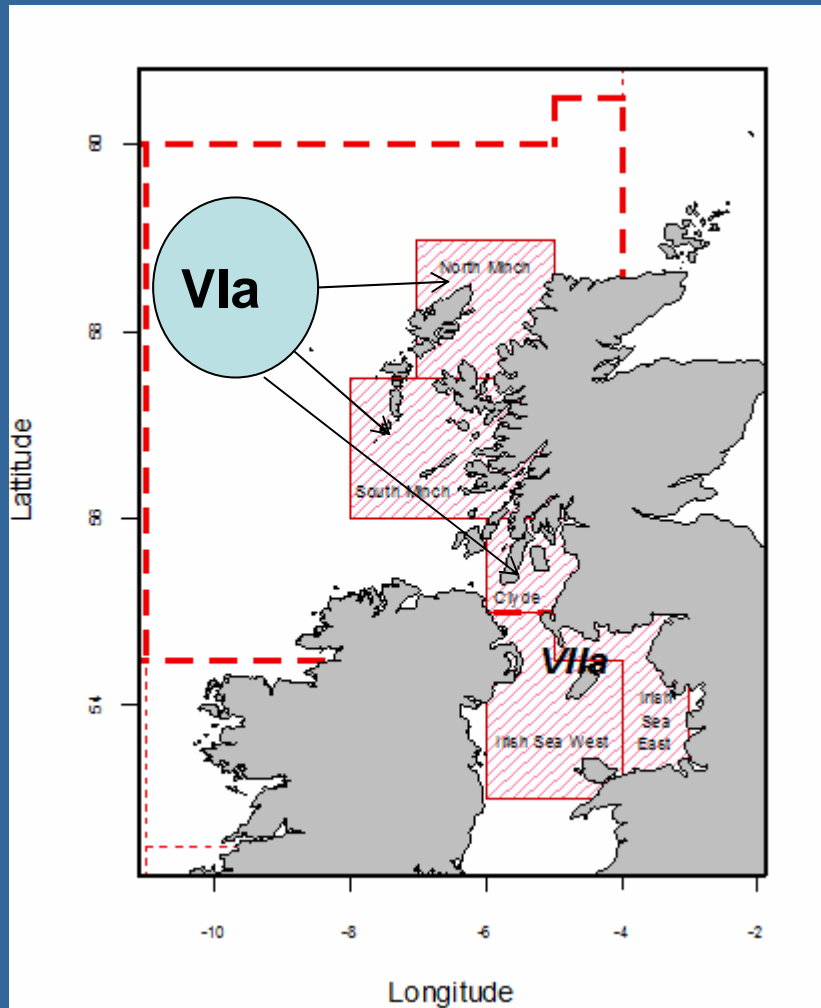
State of the stock unknown

RP: nd



MSY approach: increase in survey indices for the major part of the stock; catch levels are not known accurately

PA approach: available information inadequate to evaluate SSB or F relative to PA



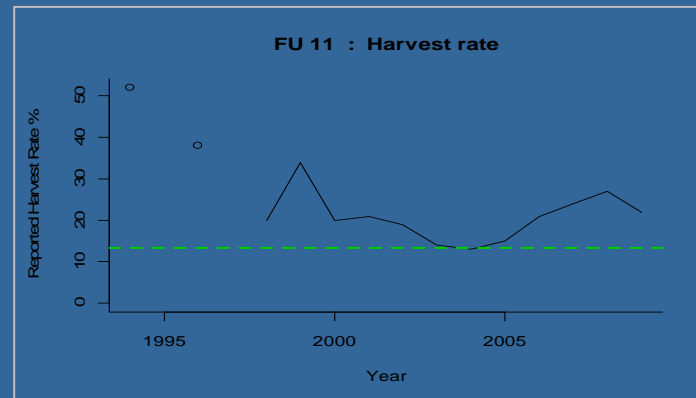
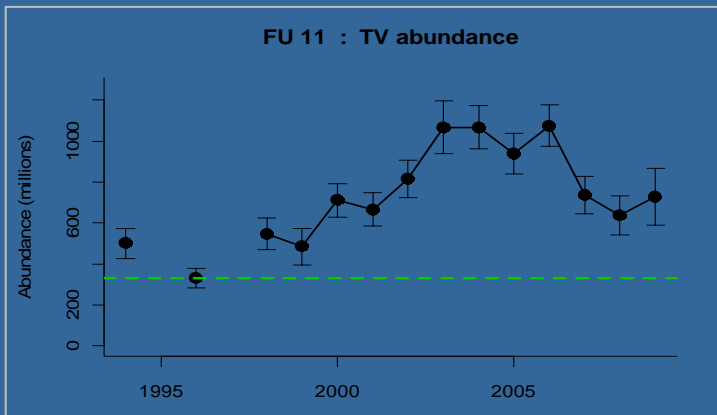
FU 11 – North Minch

FU 12 – South Minch

**FU 13 – Firth of Clyde
& Sound of Jura**

Management Objective (s)	Landings in 2011
Transition to an MSY approach with caution at low stock size	Less than 3100 t
Cautiously avoid impaired recruitment (Precautionary Approach)	n/a
Cautiously avoid impaired recruitment and achieve other objective(s) of a management plan (e.g., catch stability)	n/a

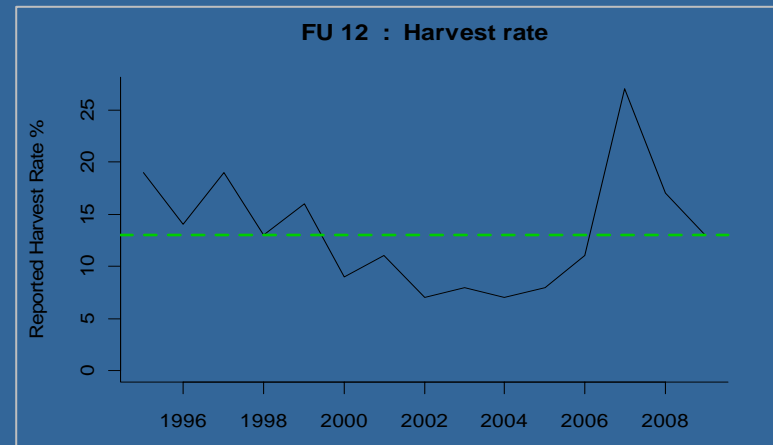
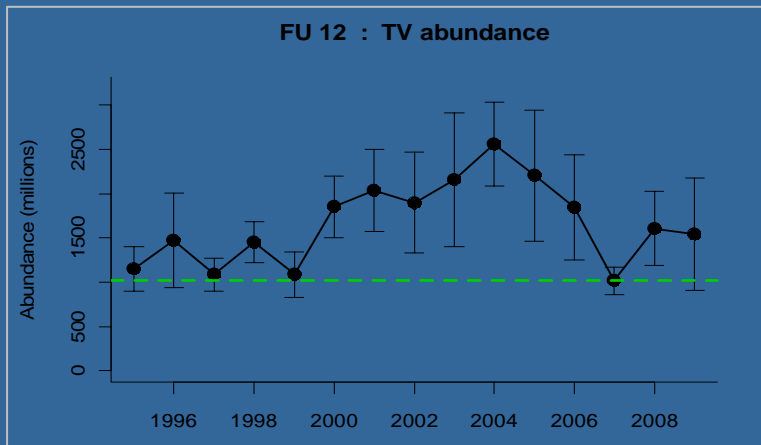
MSY $B_{trigger}$ = 330 million
 F_{MSY} = HR 12.5%



- Population stable over the last 3 years, but at a lower level than that evident from 2003–2006.
- Harvest ratio in 2009 (dead removals/UWTV abundance) > HR_{MSY}

Management Objective (s)	Landings in 2011
Transition to an MSY approach with caution at low stock size	Less than 4000 t
Cautiously avoid impaired recruitment (Precautionary Approach)	n/a
Cautiously avoid impaired recruitment and achieve other objective(s) of a management plan (e.g., catch stability)	n/a

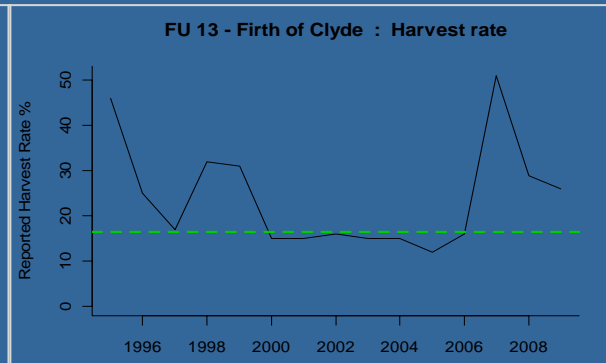
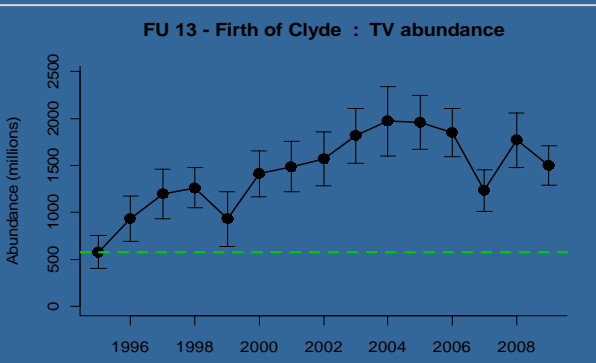
MSY $B_{trigger}$ = 1016 million
 F_{MSY} = HR 12.3%



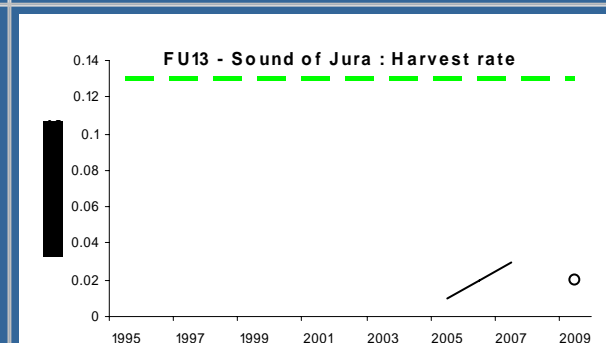
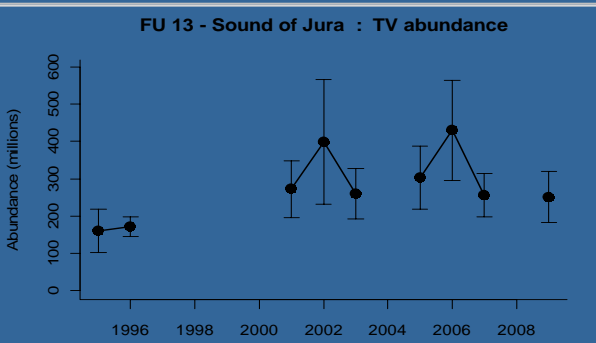
The stable mean sizes in the length compositions of catches (of individuals >35 mm CL) and recent fall in estimated harvest ratios (dead removals/TV abundance) to the equivalent of the F_{MSY} proxy suggests that the stock is now being exploited sustainably

FU 13 – Firth of Clyde & Sound of Jura

Management Objective (s)	Landings in 2011
Transition to an MSY approach with caution at low stock size	Less than 4100 t for Firth of and less than 520 t for Sound of Jura
Cautiously avoid impaired recruitment (Precautionary Approach)	n/a
Cautiously avoid impaired recruitment and achieve other objective(s) of a management plan (e.g., catch stability)	n/a



MSY $B_{trigger}$ = 579 million
 F_{MSY} = HR 16.4%



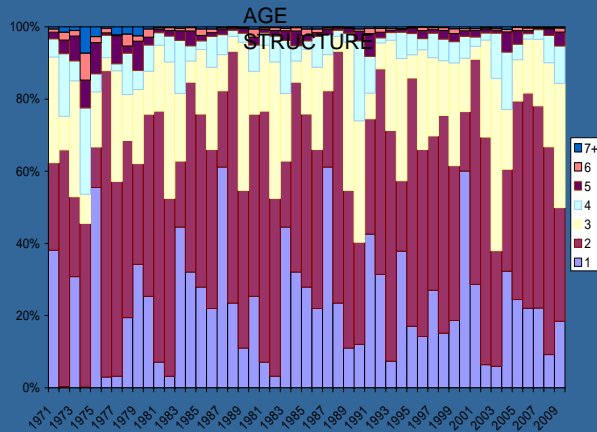
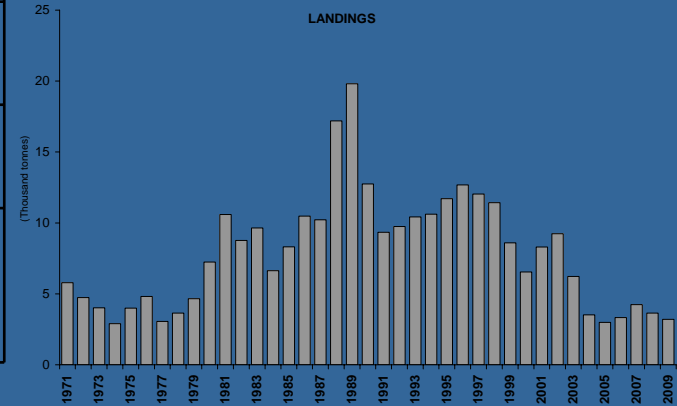
MSY $B_{trigger}$ = nd
 F_{MSY} = HR 14.5%

Celtic Sea, West & Southwest Ireland

- Cod (VIIe-k)
- Haddock (VIIb-k)
- Northern hake
- Anglerfish (VIIb-k, VIIIab)
- Megrin (VIIb-k, VIIIabd)
- Plaice (CS; VIIh-k; VIIbc)
- Sole (CS; VIIh-k; VIIbc)
- Whiting (VIIe-k)
- Nephrops FUs 16-17-20-22)

Plaice & Sole VIIb,c (West of Ireland): No advice

Management Objective (s)	Catches in 2011
Transition to an MSY approach with caution at low stock size	Catch and effort reduction
Cautiously avoid impaired recruitment (Precautionary Approach)	Catch and effort reduction
Cautiously avoid impaired recruitment and achieve other objective(s) of a management plan (e.g., catch stability)	



More than 80% of the landings consists of 3 age groups (1–3) over the available time series. Therefore the stock is highly dependent on incoming recruitment

Stock benchmarked in 2009: assessment unreliable mostly due to deterioration of recent data – high uncertainty on discards practice estimates (discard & high-grading) and landings misreporting

❖ Management plan under development

Management Objective (s)	Landings in 2011
Transition to an MSY approach with caution at low stock size	Effort should not be allowed to increase, reduce discard rates
Cautiously avoid impaired recruitment (Precautionary Approach)	Effort should not be allowed to increase
Cautiously avoid impaired recruitment and achieve other objective(s) of a management plan (e.g., catch stability)	n/a

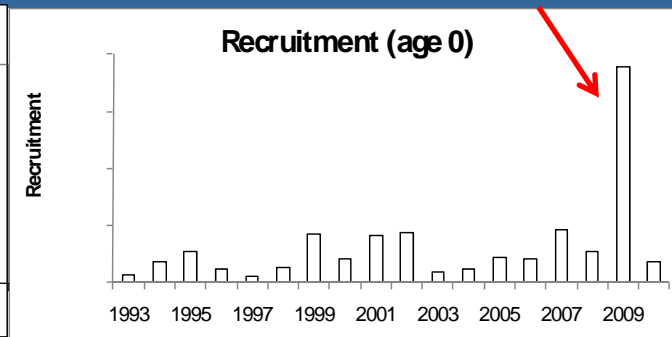
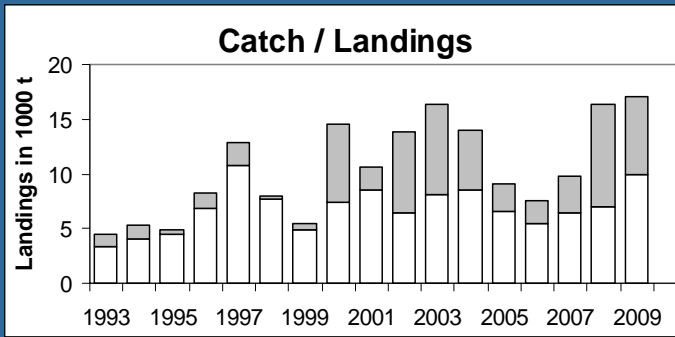
**Assessment
indicative of trends**

RPs: nd

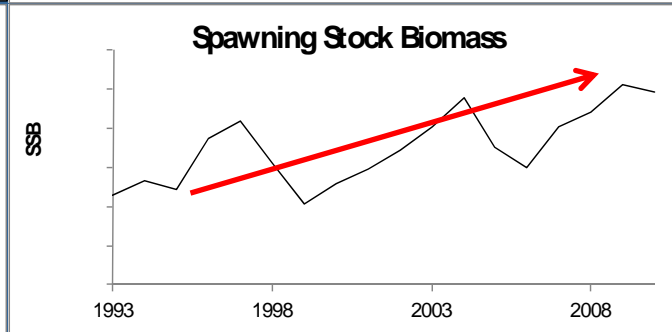
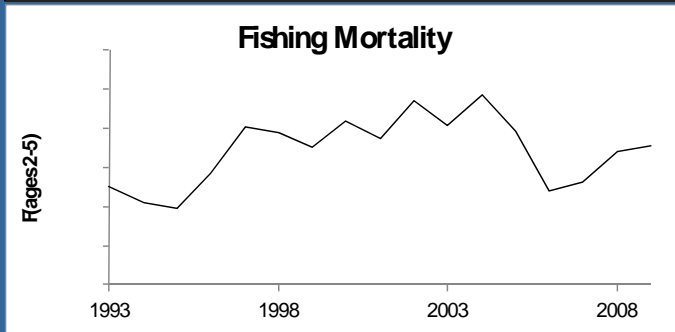
MSY approach: SSB shows an increasing trend. it is likely that recent F is above F_{MSY} at the current selection pattern.

PA approach: Future catches and SSB will be highly dependent on the strength of incoming year classes and their discard mortality

Management Plan: no specific management objectives this stock



**Assessment
indicative of
trends**



SSB: increasing trend over the time series. Recruitment is highly variable and in the past the SSB and catches have increased after good recruitment

Recruitment: the 2009 YC appears to be exceptionally good, however it is likely that many of these fish will be **discarded** before they are of a marketable size

Management Objective (s)	Landings in 2011
Transition to an MSY approach with caution at low stock size	Effort should not be allowed to increase, reduce discard rates
Cautiously avoid impaired recruitment (Precautionary Approach)	Effort should not be allowed to increase
Cautiously avoid impaired recruitment and achieve other objective(s) of a management plan (e.g., catch stability)	n/a

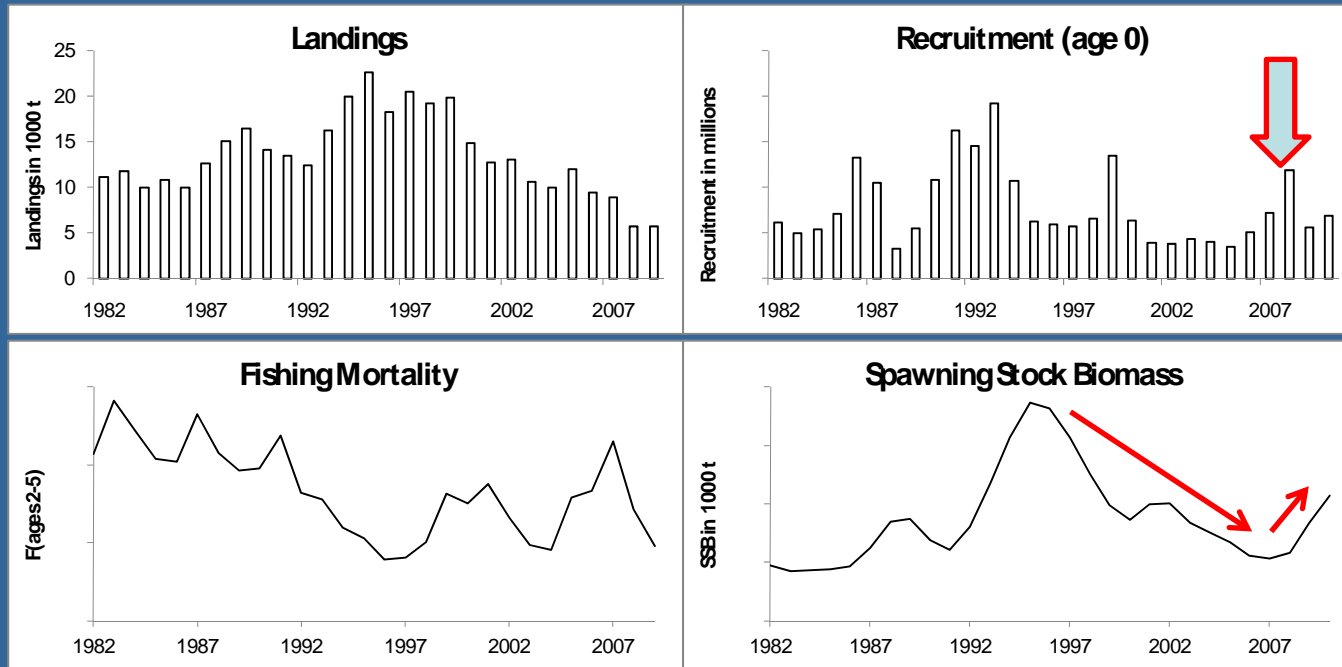
Assessment indicative of trends

RP: nd

MSY approach: SSB shows an increase since 2007. It is likely that recent F is above F_{MSY} at the current selection pattern.

PA approach: current estimates of fishing mortality and SSB are uncertain, but SSB shows an increasing trend since 2007

Management Plan: no specific management objectives this stock



Assessment indicative of trends

SSB: declined since the mid 1990's and has recently increased to the long term average

Fishing mortality: estimates are variable and recent trends suffer in precision due to lack of discard data in the assessment

Recruitment: the 2008 YC may be strong

Plaice in Divisions VIIh-k (Southwest of Ireland)

State of the stock unknown. However, exploratory estimates of mortality suggest that the stock is being exploited above F_{MSY} .

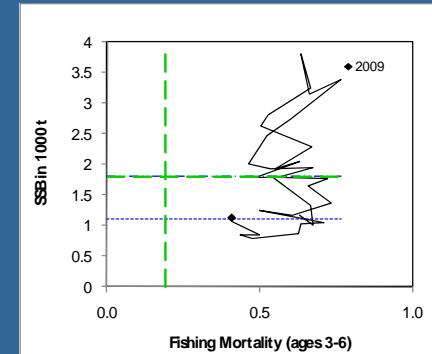
Management Objective (s)	Landings in 2011
Transition to an MSY approach with caution at low stock size	Reduce catches
Cautiously avoid impaired recruitment (Precautionary Approach)	Reduce catches
Cautiously avoid impaired recruitment and achieve other objective(s) of a management plan (e.g., catch stability)	n/a

Sole in Divisions VIIh-k (Southwest of Ireland)

State of the stock unknown. However, exploratory estimates of mortality suggest the stock is being exploited below F_{MSY} .

Management Objective (s)	Landings in 2011
Transition to an MSY approach with caution at low stock size	No increase in catches
Cautiously avoid impaired recruitment (Precautionary Approach)	No increase in catches
Cautiously avoid impaired recruitment and achieve other objective(s) of a management plan (e.g., catch stability)	n/a

Management Objective (s)	Landings in 2011
Transition to an MSY approach with caution at low stock size	Less than 390 t
Cautiously avoid impaired recruitment (Precautionary Approach)	Less than 150 t
Cautiously avoid impaired recruitment and achieve other objective(s) of a management plan (e.g., catch stability)	n/a

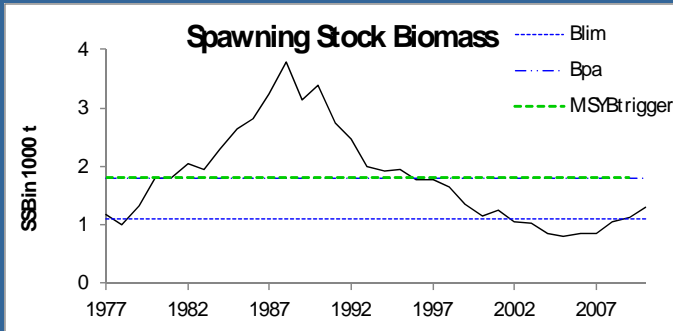


MSY $B_{\text{trigger}} = 1\ 800\ \text{t}$
 $F_{\text{MSY}} = 0.19$

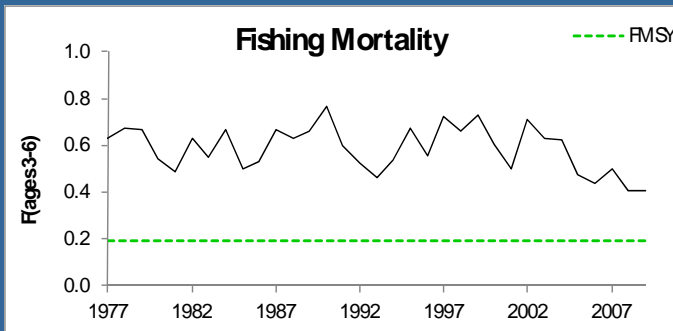
MSY approach (Transition scheme): F to be reduced to 0.29 (because $SSB < MSY\ B_{\text{trigger}}$).

PA approach: F in 2011 should be no more than 0.10 to allow SSB to increase above B_{pa} in 2012.

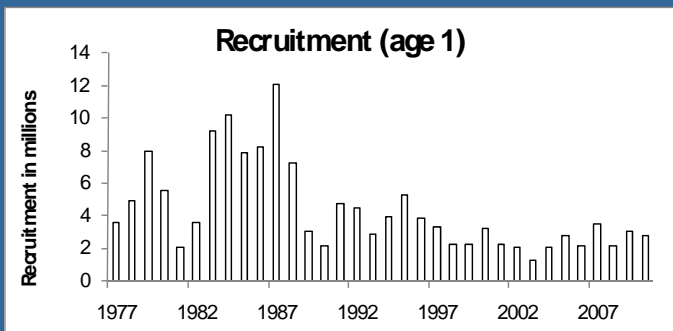
Management Plan: no specific management objectives are known to ICES



SSB: peaked in 1988–1990, following a series of good year classes, then declined rapidly and has since 2002 been below or around B_{lim}

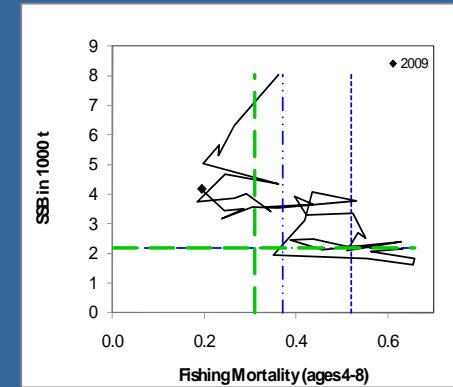


F: estimates have declined since 2004, but are likely to be underestimates



R: relatively high in most years during the 1980s, but has been lower since then

Management Objective (s)	Landings in 2011
Transition to an MSY approach with caution at low stock size	Less than 1400 t
Cautiously avoid impaired recruitment (Precautionary Approach)	Less than 1700 t
Cautiously avoid impaired recruitment and achieve other objective(s) of a management plan (e.g., catch stability)	n/a

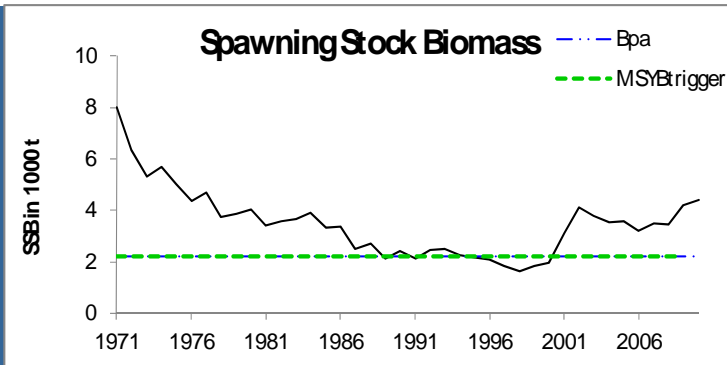


MSY $B_{trigger} = 2\ 200\ t$
 $F_{MSY} = 0.31$

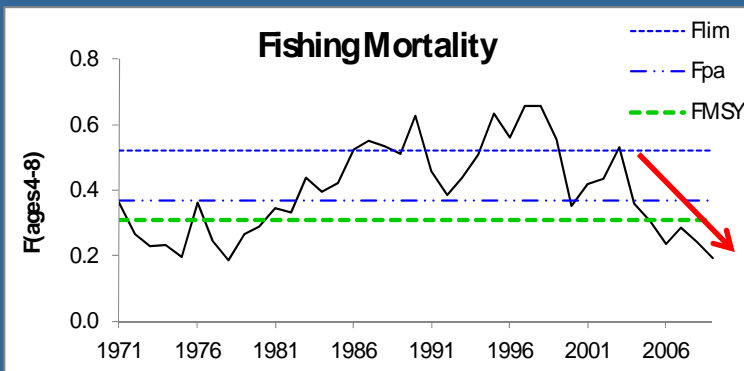
MSY approach: $F < F_{MSY}$ & $SSB > MSY\ B_{trigger}$
 Increase F to 0.31

PA approach: no more than F_{pa}

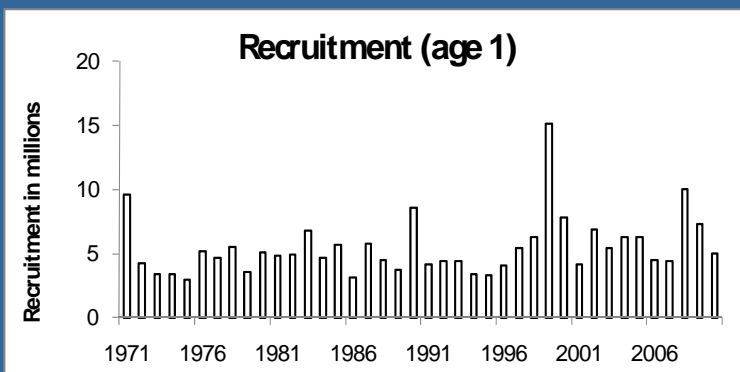
Management Plan: no specific management objectives are known to ICES



SSB: above B_{pa} since 2001



F: decreased from F_{lim} in 2003 to the lowest levels in the time series

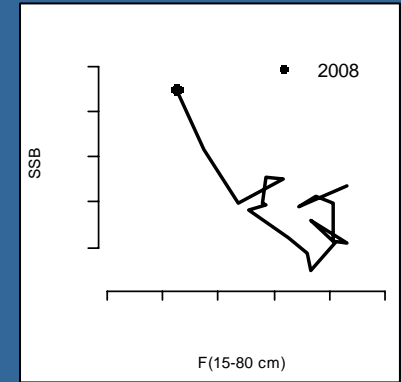


R: the 2007 and 2008 YC are estimated to be above average

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

Management Objective(s)	Landings in 2011
Transition to an MSY approach with caution at low stock size	Less than 44 800 t
Cautiously avoid impaired recruitment (Precautionary Approach)	Less than 44 800 t
Cautiously avoid impaired recruitment and achieve other objective(s) of a management plan (e.g. catch stability)	n/a

Assessment indicative of trends only



Benchmarked in 2010

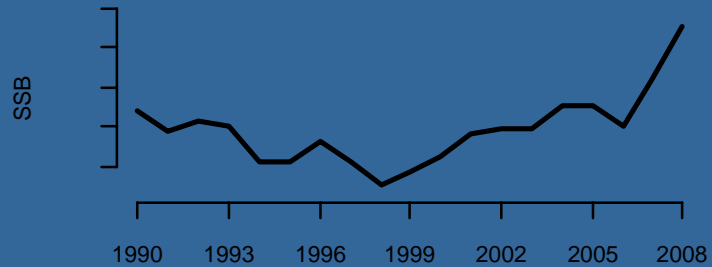
$$F_{MSY} = 0.24$$

MSY approach: The stock trend is increasing and the exploitation status is unknown -> catches should be maintained at recent levels

PA approach: no sign of impaired recruitment throughout the assessed period -> catches should not exceed recent levels

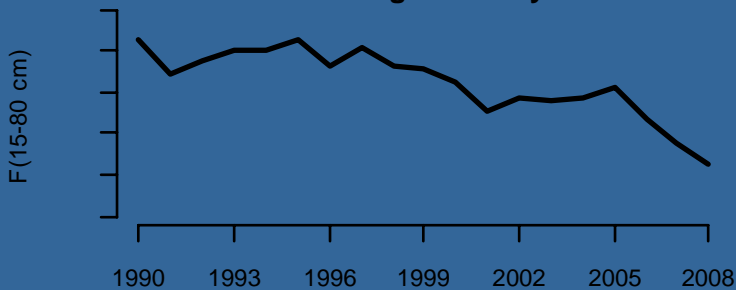
Management Plan: ICES did not evaluate the recovery plan. EU in 2009:LT management plan - ICES has evaluated the F_{MSY} candidate value proposed for this plan, and found the candidate to be inappropriate

Spawning Stock Biomass



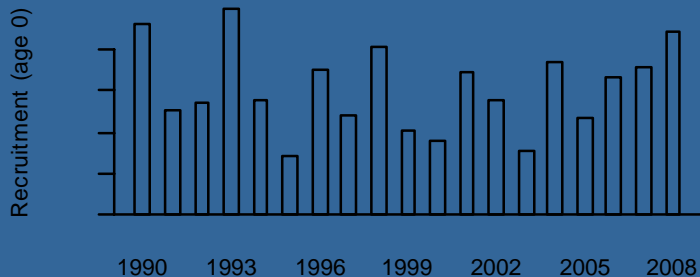
SSB: increasing in recent years

Fishing mortality



F: decreasing in recent years

Recruitment



R: relatively stable over the last two decades

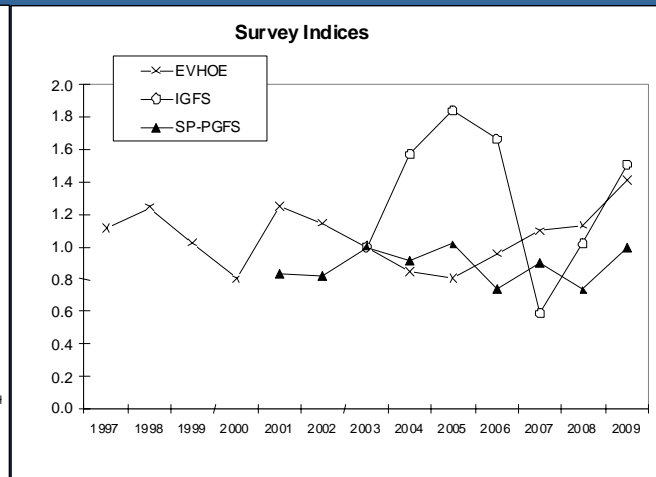
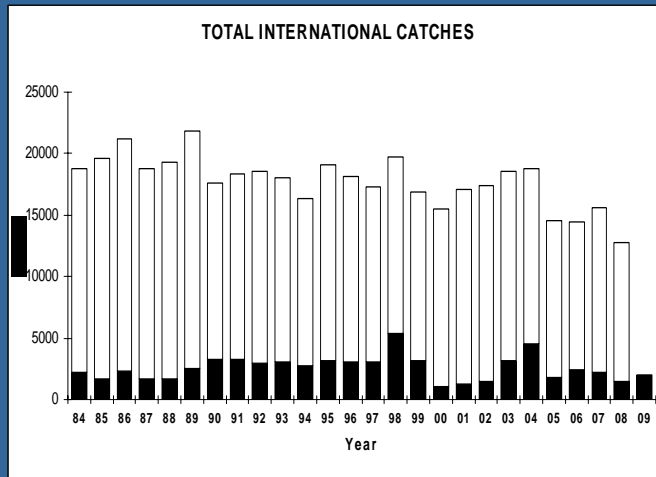
2009: missing data;
The assessment is found to be limited in its ability to precisely estimate current stock abundance and mortality

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

Management Objective (s)	Catches in 2011
Transition to an MSY approach with caution at low stock size	Catch and effort reduction
Cautiously avoid impaired recruitment (Precautionary Approach)	No increase in catch and effort
Cautiously avoid impaired recruitment and achieve other objective(s) of a management plan (e.g., catch stability)	n/a

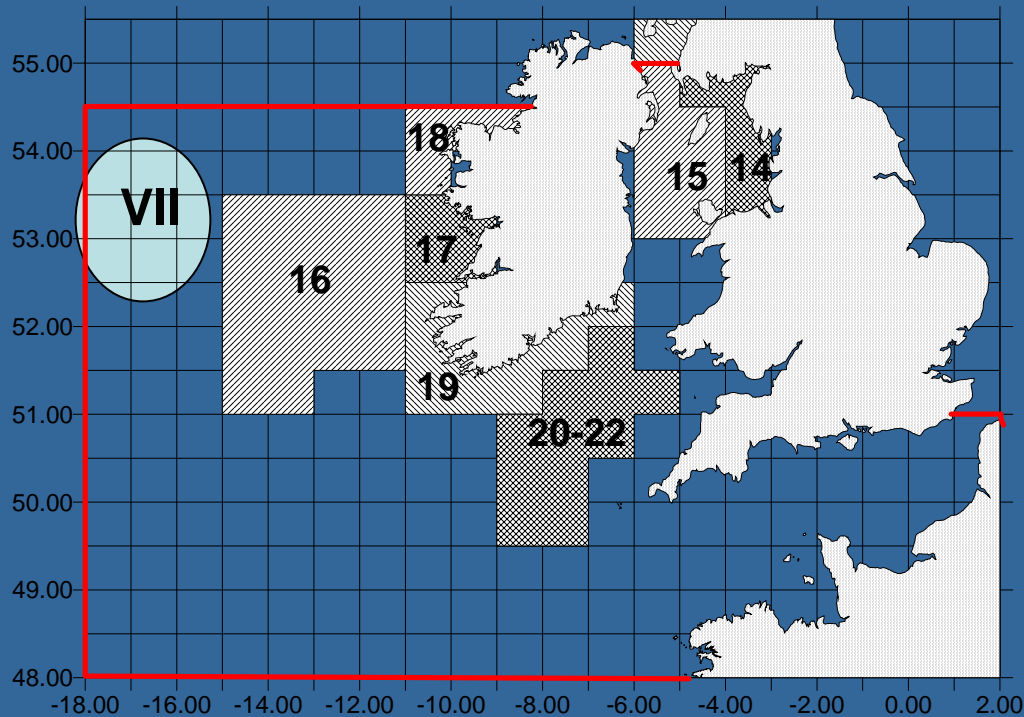
Exploitation level unknown

RPs: nd



Stock size fluctuating without trend. Catch levels are not known accurately (only landings and partial discard data)

Nephrops in Division VII



FU 16 – Porcupine Bank (VIIbcjk)

FU 17 – Aran Grounds (VIIb)

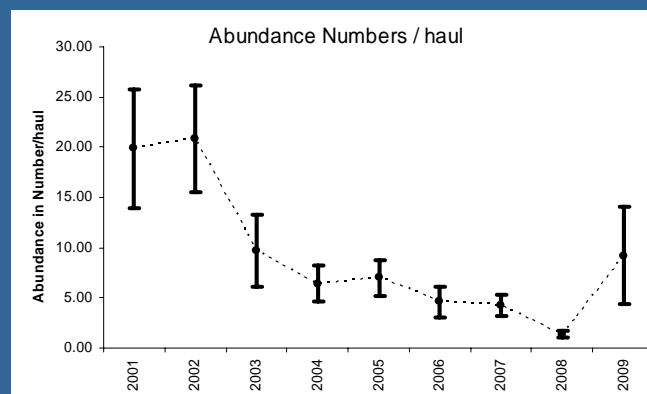
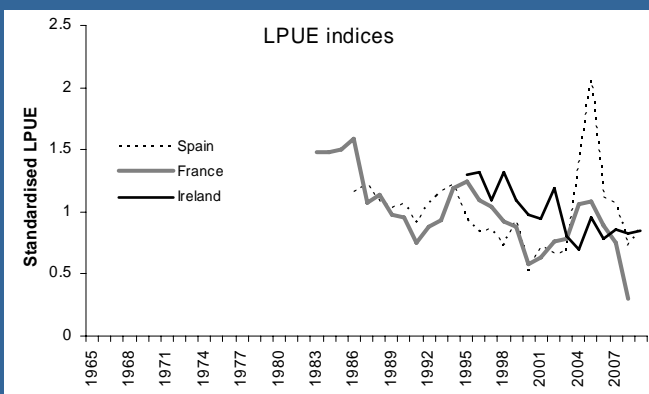
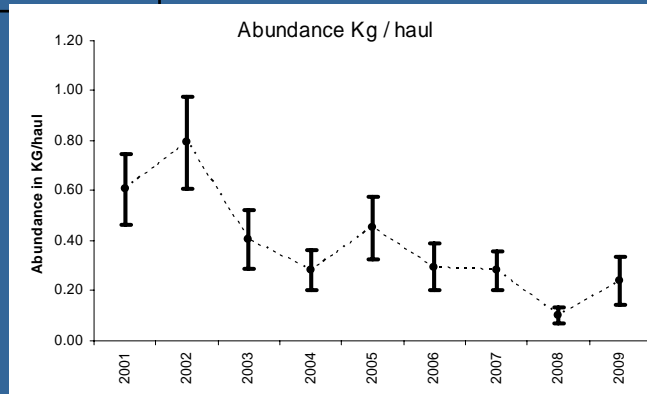
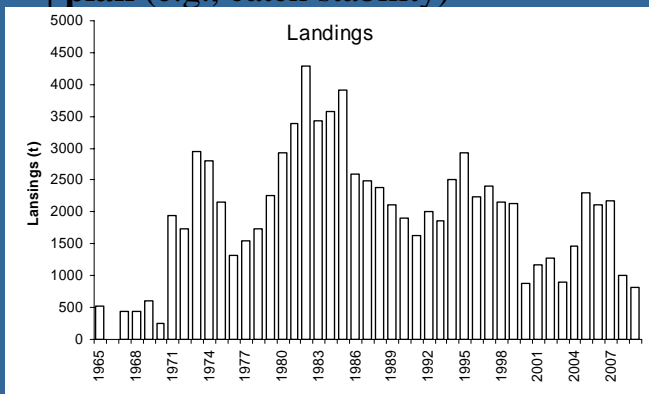
FU 20-22 – Celtic Sea (VIIgh)

Management Objective (s)	Landings in 2011
Transition to an MSY approach with caution at low stock size	Lowest possible level
Cautiously avoid impaired recruitment (Precautionary Approach)	Lowest possible level
Cautiously avoid impaired recruitment and achieve other objective(s) of a management plan (e.g., catch stability)	n/a

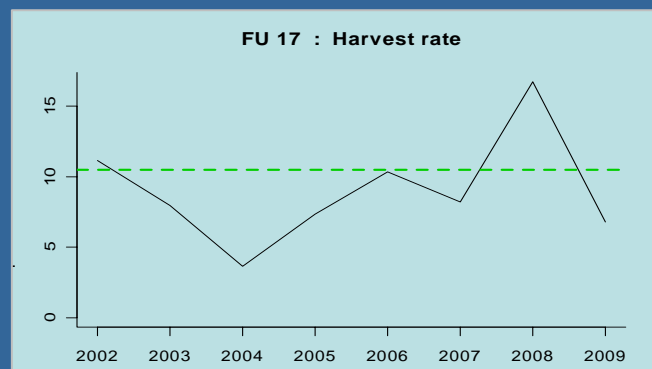
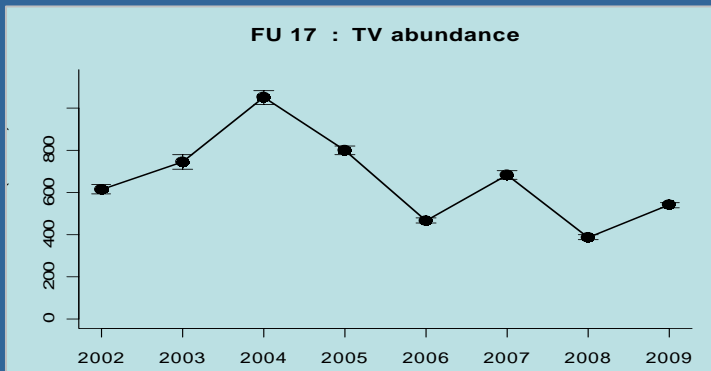
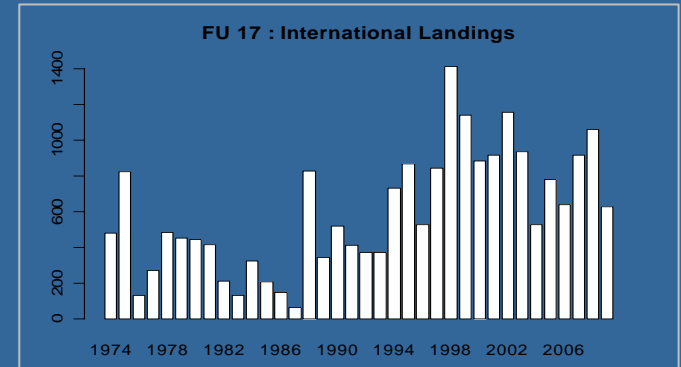
MSY RPs: nd

Recruitment to the fishery has been very weak between 2004 and 2008 and the stock has declined to a low level.

Catches in 2011 should be reduced to the lowest possible level to **allow the incoming R to rebuild the stock**



Management Objective (s)	Landings in 2011
MSY approach with caution at low stock size	Less than 950 t
Cautiously avoid impaired recruitment (Precautionary Approach)	n/a
Cautiously avoid impaired recruitment and achieve other objective(s) of a management plan (e.g., catch stability)	n/a



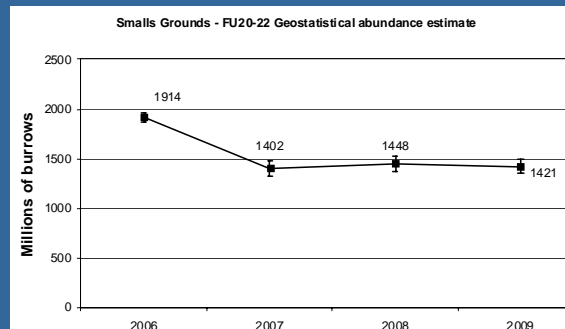
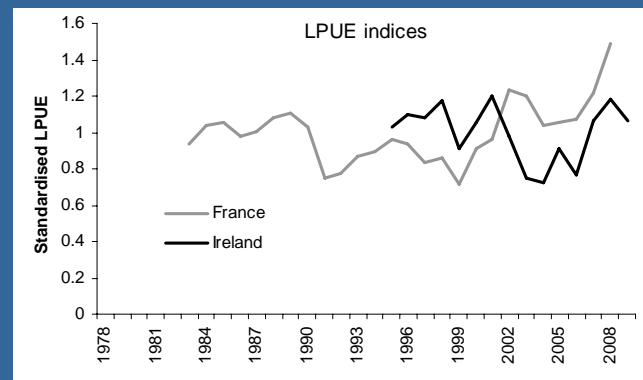
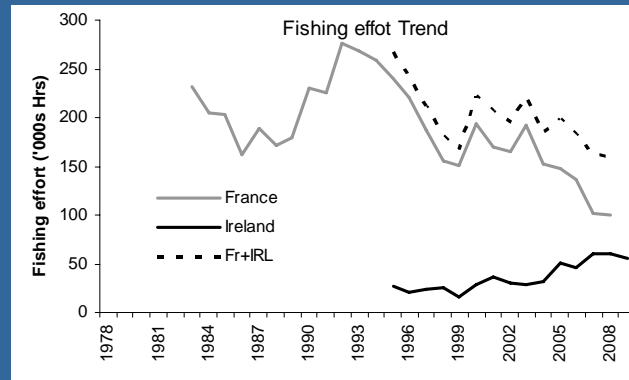
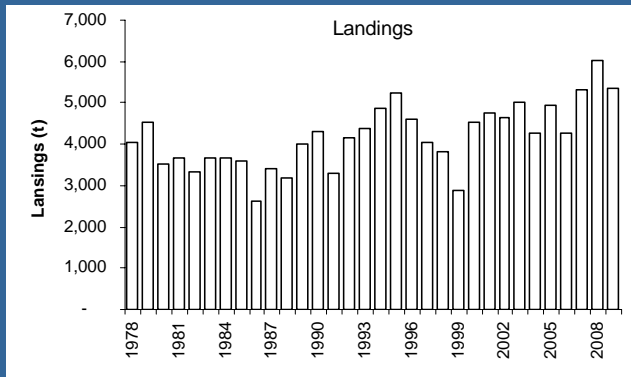
MSY $B_{trigger}$ = nd

F_{MSY} = HR 10.5%

Abundance (UWTV survey) have fluctuated widely without a significant trend. The generally low harvest rate (9% average) appears to have little impact on observed stock fluctuations

Management Objective (s)	Landings in 2011 and 2012
Transition to an MSY approach with caution at low stock size	Reduce landings from recent level
Cautiously avoid impaired recruitment (Precautionary Approach)	Less than 5 300 t
Cautiously avoid impaired recruitment and achieve other objective(s) of a management plan (e.g., catch stability)	

RPs: nd



MSY: Stable lpu trend and unknown exploitation status -> catches should be reduced from the recent level

PA: fisheries should not be allowed to increase relative to recent landings

English Channel (VIId & VIle)

- Cod (IV, VIId, Skagerrak)
- Plaice (VIId)
- Plaice (VIle)
- Sole (VIId)
- Sole (VIle)

Management Objective (s)	Landings in 2011
Transition to an MSY approach with caution at low stock size	Less than 18 100 t
Cautiously avoid impaired recruitment (Precautionary Approach)	Zero
Cautiously avoid impaired recruitment and achieve other objective(s) of a management plan (e.g., catch stability)	32 240 t

$$MSY B_{trigger} = 150\,000\text{ t}$$

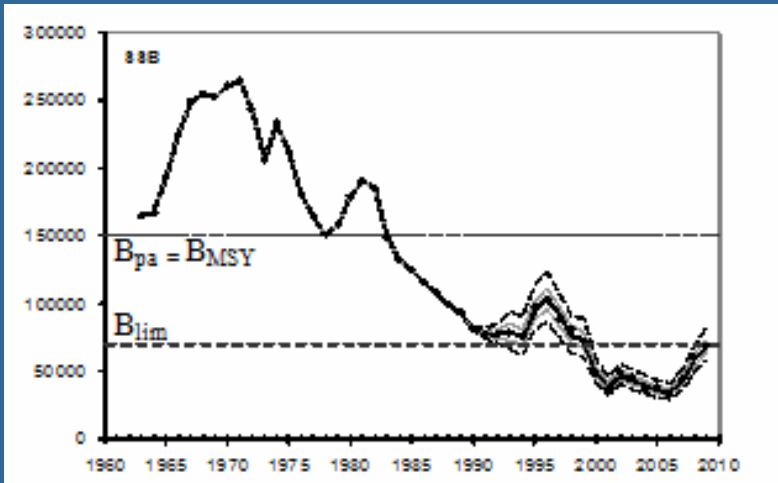
$$F_{MSY} = 0.19$$

MSY approach (Transition scheme):

F to be reduced to 0.24 (because $SSB < MSY B_{trigger}$). SSB of 79 300 t in 2012.
%TAC change of - 55%

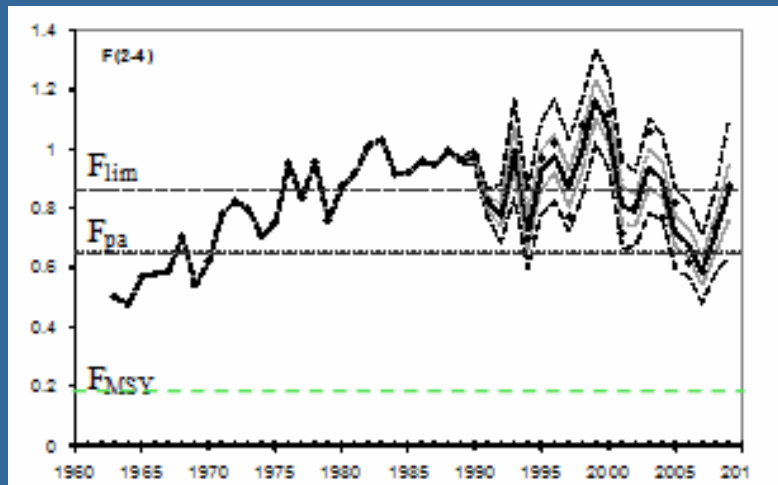
PA approach: $F_{pa} = 0.4$: even a zero catch in 2011 is not expected to result in SSB reaching B_{pa} in 2012

Management Plan: $F_{08} * 0.55$ with TAC constraint (-20%). SSB of 72 000 t in 2012.



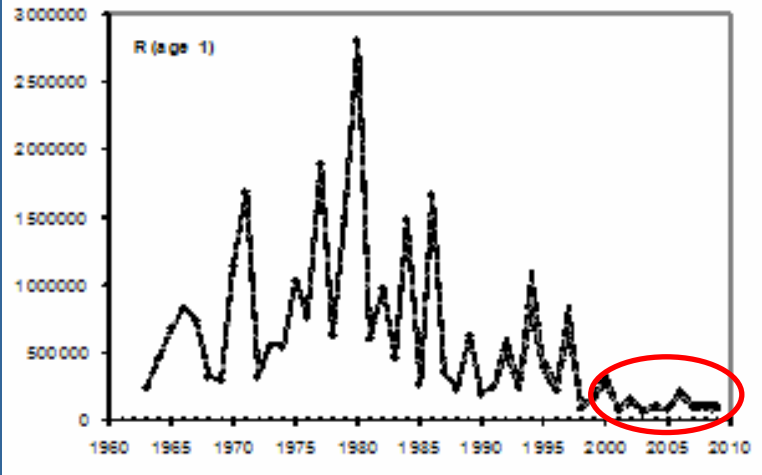
SSB has increased since its historical low in 2006, but remains below B_{lim} (70 000 t);

$$SSB_{2009} = 68.6 \text{ kt}$$

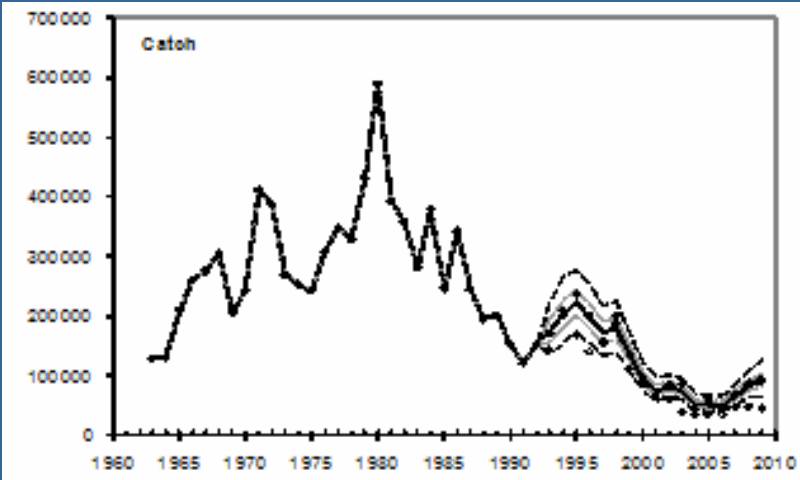


Fishing mortality declined after 2000, and although its most recent trajectory is considered uncertain, it is estimated to be well above the long-term objectives of maximum yield, and likely above F_{pa} (0.65);

$$F_{2009} = 0.85$$

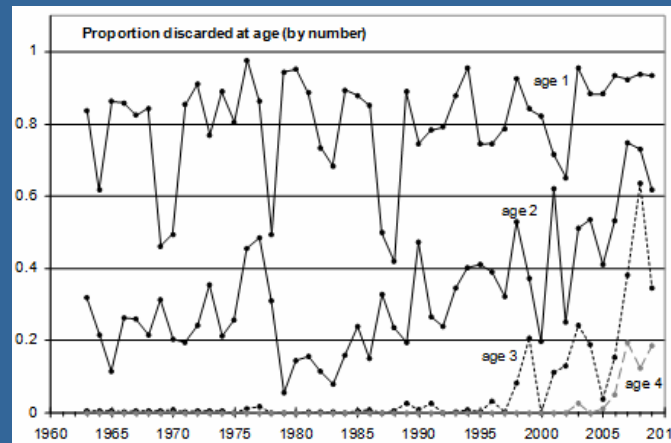


Recruitment since 2000 is poor



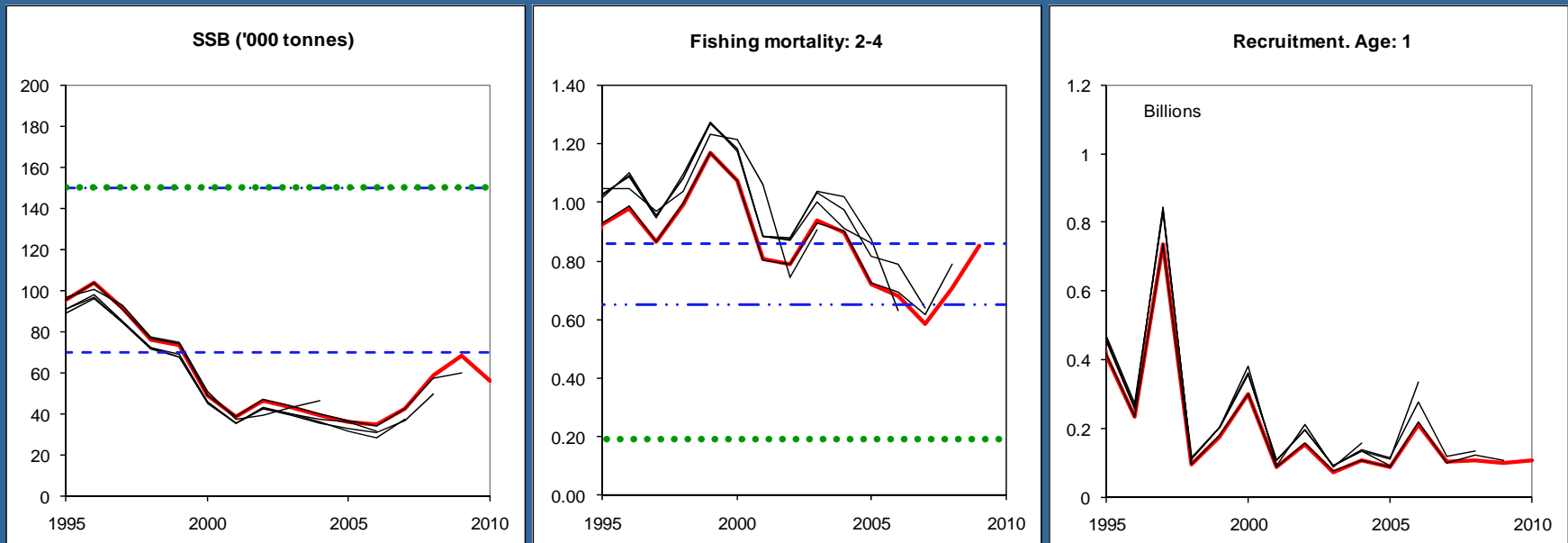
Catch 2008: 84 kt

Catch 2009: 91.4 kt
 30.8 kt recorded landings
 14.6 kt recorded discards



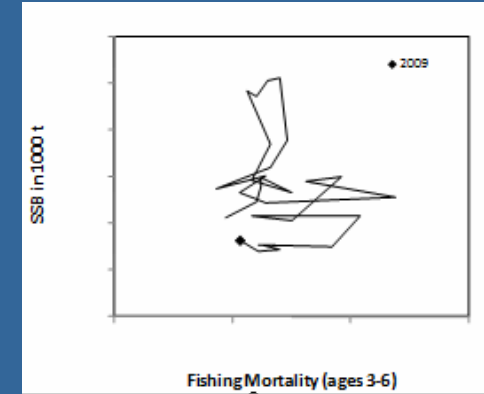
2009:
 93% (1)
 62% (2)
 34% (3)
 18% (4: YC2005)

Historical performance



Assessment is an update (benchmark in 2009). Considered more uncertain than last year (mainly most recent year). Informative of general stock status in relation to BRPs; alternative assessment method gives same perception.

Management Objective (s)	Landings in 2011
Transition to an MSY approach with caution at low stock size	Reduce landings from recent level
Cautiously avoid impaired recruitment (Precautionary Approach)	Less than 3 400 t
Cautiously avoid impaired recruitment and achieve other objective(s) of a management plan (e.g., catch stability)	n/a



Assessment indicative of trends only

MSY considerations: the state of the stock is unknown but SSB since 2004 is stable.

PA considerations: no reason to revise the perception of the stock condition. Landings should not exceed average level 2007-2009.

MP: no specific management objectives known to ICES



Assessment indicative of trends only

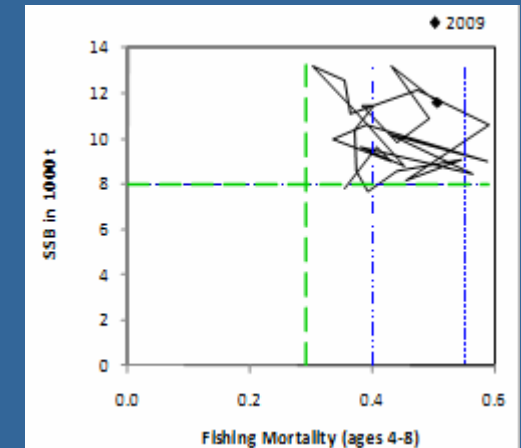
SSB since 2004 is stable at a low level

Fishing mortality varies without trend around LT average

Recruitment is stable in most recent years

Total catch (2009) 2.9 kt (including components of the IV and VIIe coming in VIId to spawn in the beginning of the year).
No discards time-series are yet available.

Management Objective (s)	Landings in 2011
Transition to an MSY approach with caution at low stock size	Less than 4840 t
Cautiously avoid impaired recruitment (Precautionary Approach)	Less than 4840 t
Cautiously avoid impaired recruitment and achieve other objective(s) of a management plan (e.g., catch stability)	n/a



$$MSY B_{trigger} = 8\ 000\ t$$

$$F_{MSY} = 0.29$$

MSY approach (Transition scheme):

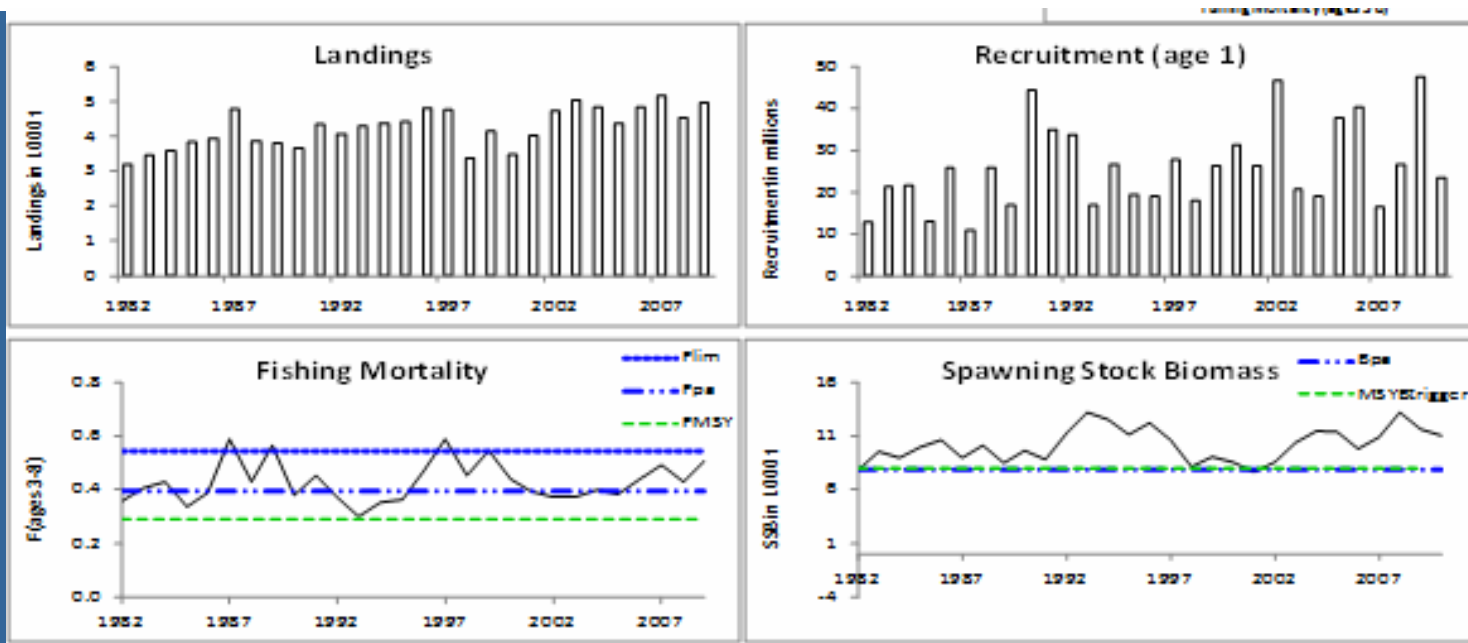
Transition implies $F=0.44$ ($> F_{pa}=0.40$) \rightarrow Reduce F to F_{pa} . SSB in 2012 above B_{pa} .
 %TAC change: +15 %

PA considerations:

No more than F_{pa} . SSB above B_{pa} in 2012.

Management Plan:

No specific management objectives known to ICES



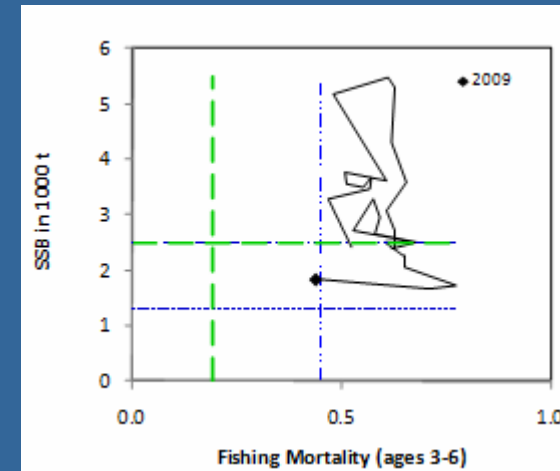
SSB fluctuating around a mean of about 10 000 t since 1982, and has been above B_{pa} since 2002.

Fishing mortality increased and fluctuated between F_{pa} and F_{lim} the last 4 years

Recruitment YC 2001, 2004 & 2005 were the three highest since 1990. The 2008 year class is predicted to be the highest in the time-series

Plaice in Division VIIe (Western Channel)

Management Objective (s)	Landings in 2011
Transition to an MSY approach with caution at low stock size	Less than 890 t
Cautiously avoid impaired recruitment (Precautionary Approach)	Less than 980 t
Cautiously avoid impaired recruitment and achieve other objective(s) of a management plan (e.g., catch stability)	n/a



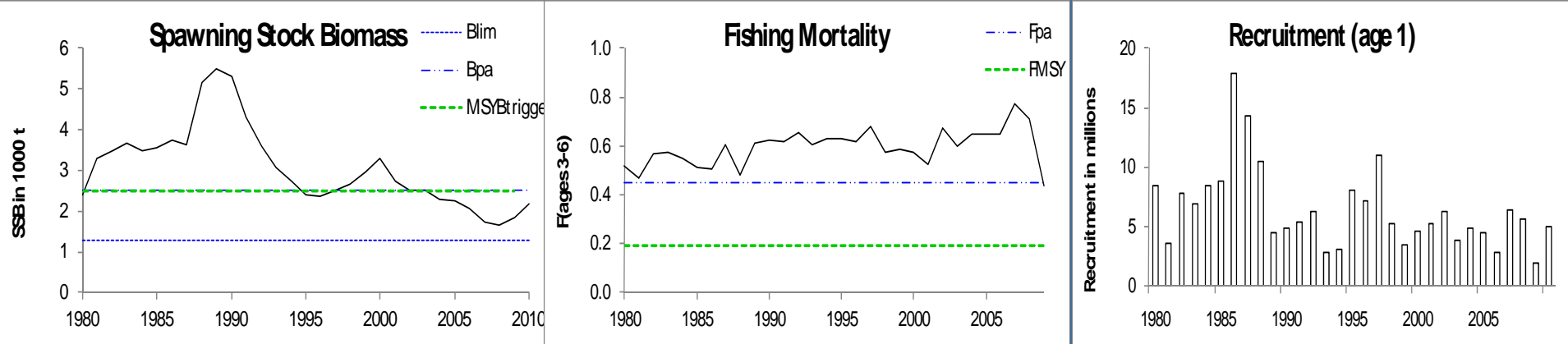
$$MSY B_{trigger} = 2\,500 \text{ t}$$

$$F_{MSY} = 0.19$$

MSY approach (Transition scheme): Reduce F to 0.36 (because $SSB < MSY B_{trigger}$)

PA approach: F no more than 0.4 ($< F_{pa}$); SSB above B_{pa} in 2012

MP: No specific management objectives known to ICES



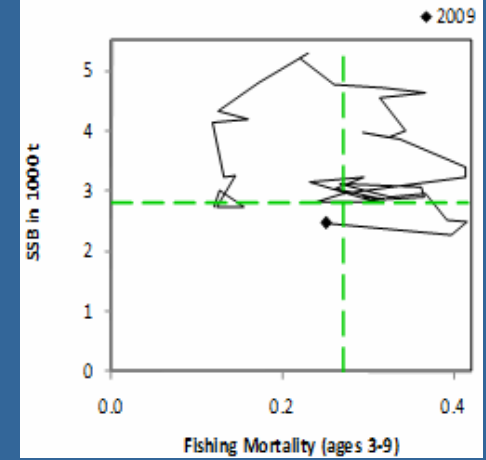
SSB around the lowest observed values in the time series

Fishing mortality: large reduction of F in 2009 reflects the reduction in fishing effort

Recruitment: current levels are lower than those observed in the 1980s

Sole in Division VIIe (Western Channel)

Management Objective (s)	Landings in 2011
MSY approach with caution at low stock size	Less than 660 t
Cautiously avoid impaired recruitment (Precautionary Approach)	n/a
Cautiously avoid impaired recruitment and achieve other objective(s) of a management plan (e.g., catch stability)	n/a

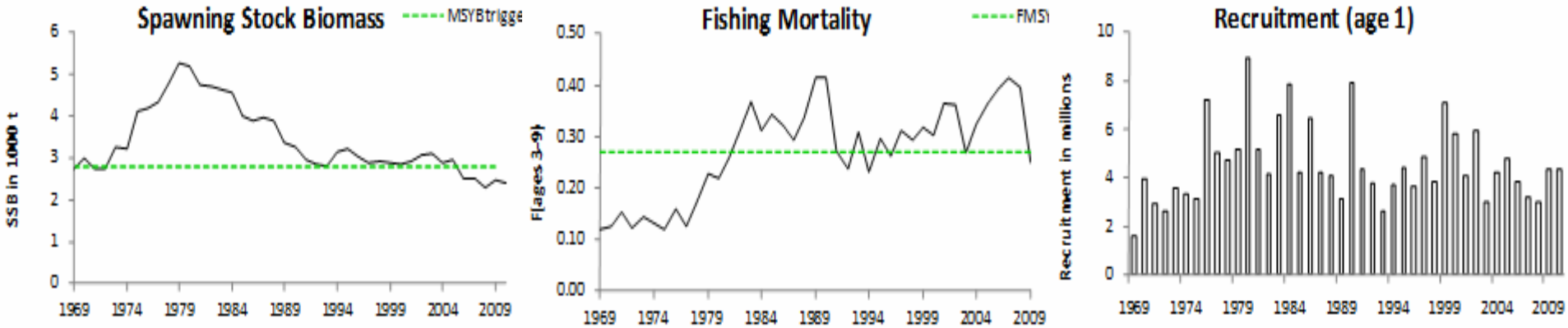


MSY $B_{\text{trigger}} = 2\,800\text{ t}$
 $F_{\text{MSY}} = 0.27$

MSY approach: Reduce F to 0.24 (because $SSB < MSY B_{\text{trigger}}$)

PA approach: No PA reference points.

Management Plan: has not been evaluated by ICES



SSB around the lowest observed values in the time series

Fishing mortality: large reduction of F in 2009 reflects the reduction in fishing effort

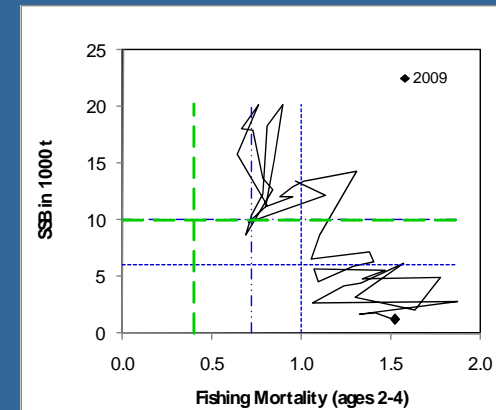
Recruitment: fluctuating without trend

Irish Sea (VIIa)

- Cod
- Haddock
- Whiting
- Plaice
- Sole
- Nephrops

Management Objective (s)	Landings in 2011
Transition to an MSY approach with caution at low stock size	Zero catch
Cautiously avoid impaired recruitment (Precautionary Approach)	Zero catch
Cautiously avoid impaired recruitment and achieve other objective(s) of a management plan (e.g., catch stability)	n/a

Current landings (i.e. TAC) effort and spatial management of fisheries catching cod in Division VIIa are not controlling mortality levels



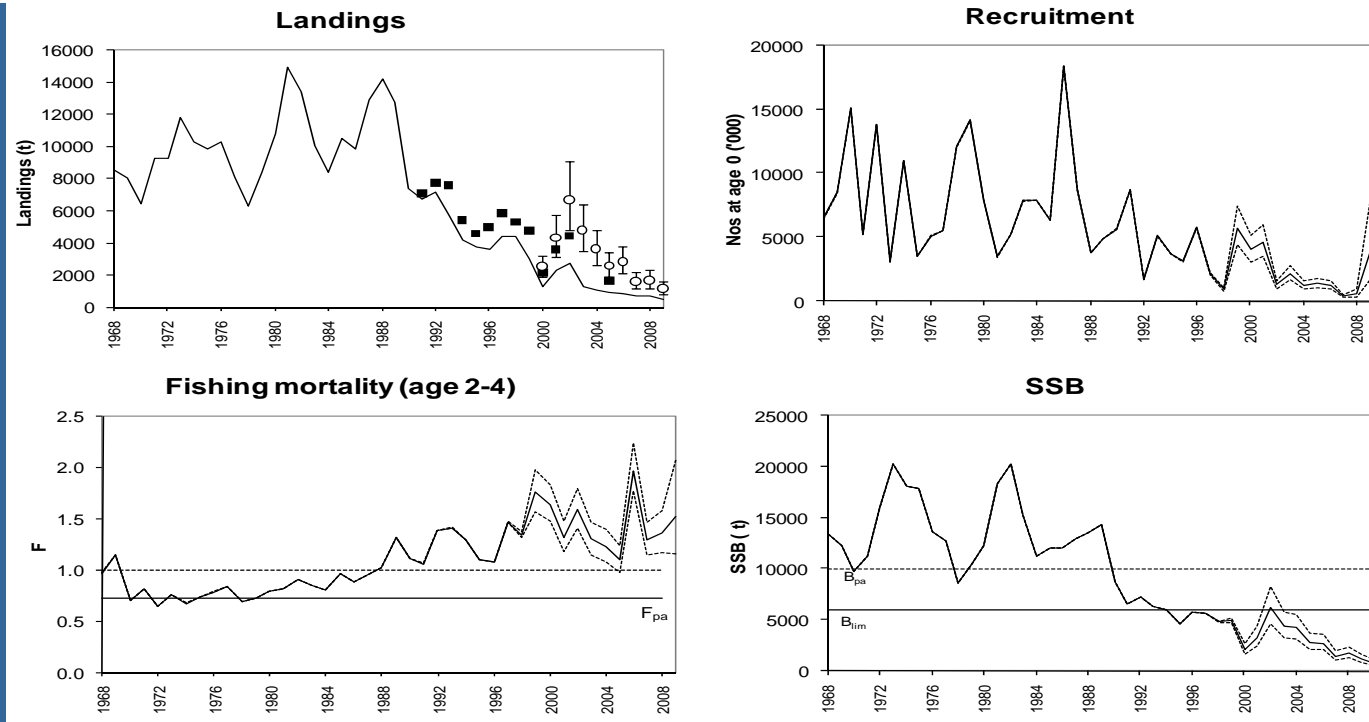
MSY $B_{trigger} = 10\ 000\ t$
 $F_{MSY} = 0.40$

MSY approach: Given the low SSB and low recruitment it is not possible to identify any non zero catch which would be compatible with the MSY transition scheme

PA approach: No targeted fishing should take place on cod in Division VIIa. Bycatches including discards of cod in all fisheries in Division VIIa should be reduced to the lowest possible level

Management Plan: ICES (2009) evaluated the plan – not in accordance with the PA

Cod in Vlla (Irish Sea)



SSB declined ten-fold since the late 1980s and has had reduced reproductive capacity since the mid-1990s. The spawning-stock biomass remains well below B_{lim}

Fishing mortality: uncertain in recent years but total mortality remains very high

Recruitment: After 7 years of some of the lowest recruitments in the time series, the 2009 year class is estimated to be more abundant and is estimated by surveys to be the largest since 2001

Management Objective (s)	Landings in 2011
Transition to an MSY approach with caution at low stock size	Effort should be decreased, reduce discard rates
Cautiously avoid impaired recruitment (Precautionary Approach)	Effort should not be allowed to increase
Cautiously avoid impaired recruitment and achieve other objective(s) of a management plan (e.g., catch stability)	n/a

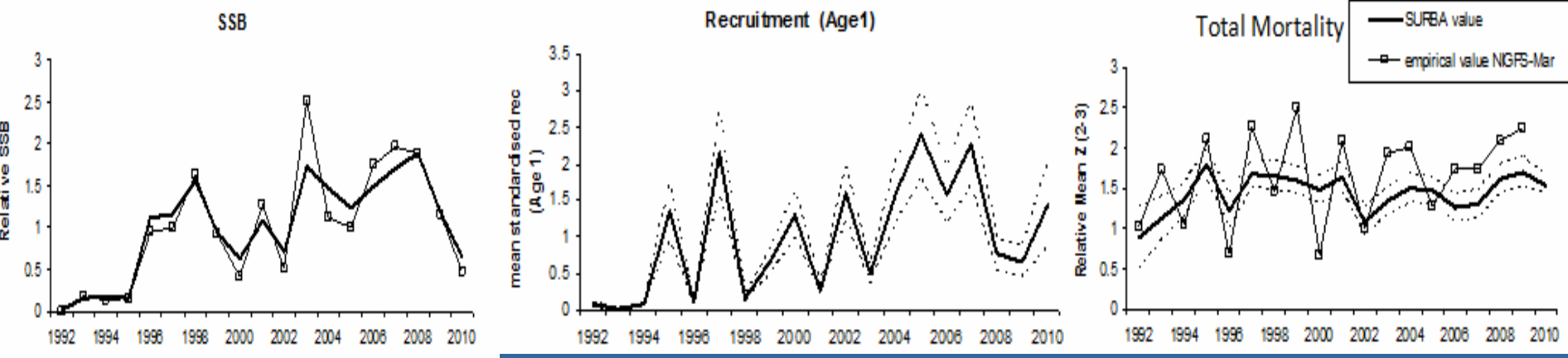
Rps:
unknown

Assessment indicative of trends only

MSY approach: It is likely that current F is above F_{MSY} at the current selection pattern. Management by TAC is **inappropriate** for this stock because landings – but not catches – are controlled. Management measures should be introduced in the Irish Sea to **reduce discarding of small haddock** in order to maximize their contribution to future yield and SSB

PA approach: no signs of impaired recruitment at recent catch levels

Management Plan: no specific management objectives are known to ICES



Assessment indicative of trends only

SSB & R: increase in SSB over the time-series but a decrease since 2008. The 2009 year class appears to be above average. The SSB is expected to remain at current levels or increase due to the 2009 YC.

Total mortality: relatively stable

Management Objective (s)	Catches in 2011
Transition to an MSY approach with caution at low stock size	Effort should be consistent with no increase in catches
Cautiously avoid impaired recruitment (Precautionary Approach)	Effort should be consistent with no increase in catches
Cautiously avoid impaired recruitment and achieve other objective(s) of a management plan (e.g., catch stability)	n/a

**MSY RPs:
Not defined**

Assessment indicative of trends only

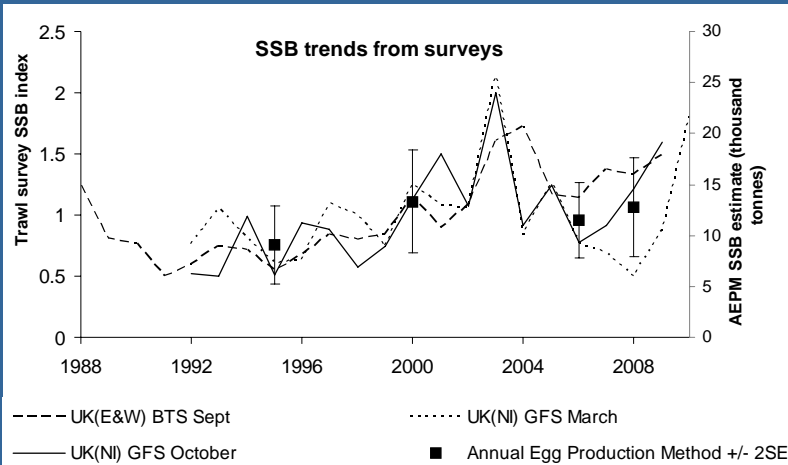
MSY approach: The state of the stock is unknown but there is an increase in survey indices; catch levels are not known accurately (substantial discards) -> effort to be restricted to make sure catches are not allowed to

PA considerations:

Available information is inadequate to evaluate SSB or F relative to the PA RPs

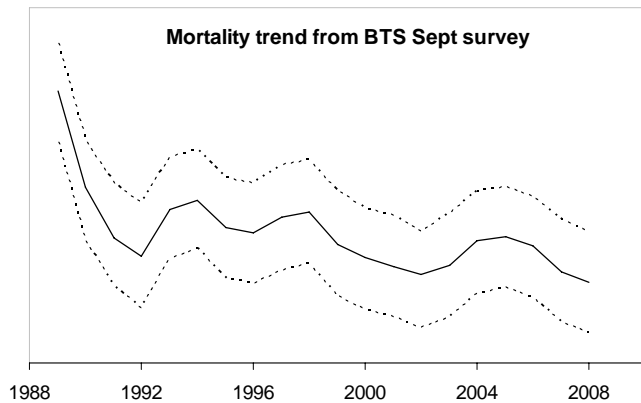
MP: No specific management objectives known to ICES

Assessment indicative of trends only



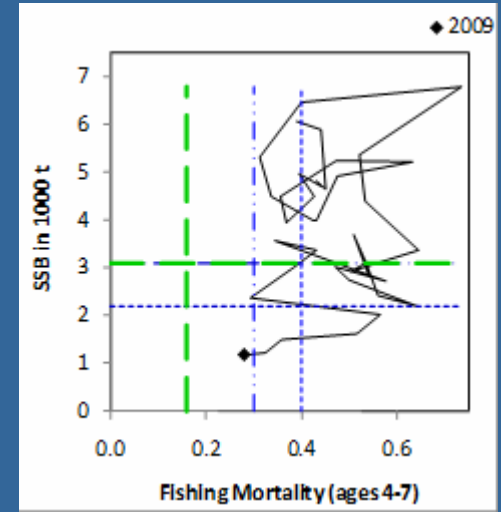
SSB trends show an increase in stock size since the mid-1990s to a stable level

Total mortality shows a declining trend since the early 1990s



Sole in Division VIIa (Irish Sea)

Management Objective (s)	Landings in 2011
Transition to an MSY approach with caution at low stock size	Less than 240 t
Cautiously avoid impaired recruitment (Precautionary Approach)	Zero and a management plan should be developed
Cautiously avoid impaired recruitment and achieve other objective(s) of a management plan (e.g., catch stability)	n/a



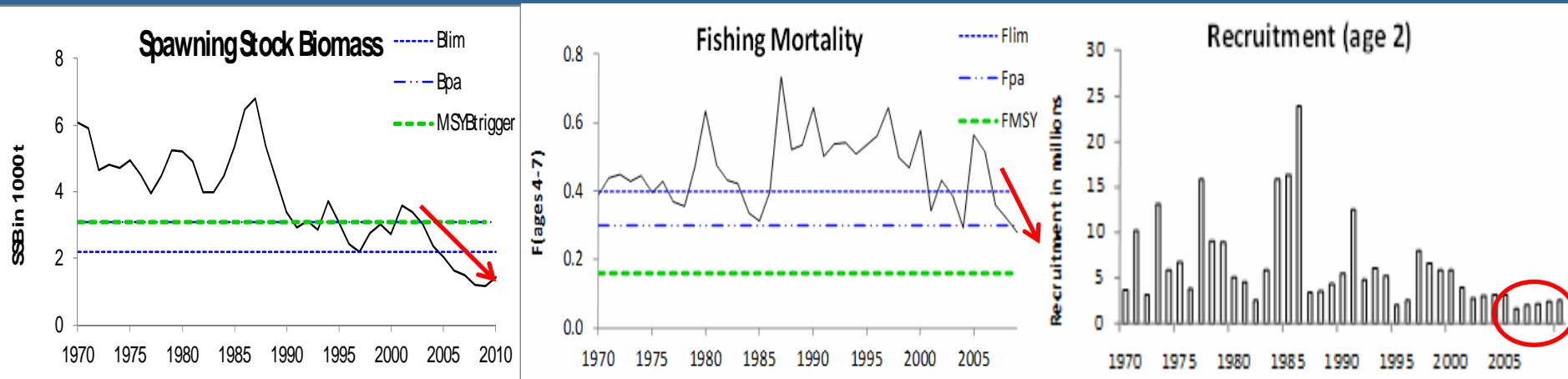
$$MSY B_{trigger} = 3\ 100\ t$$

$$F_{MSY} = 0.16$$

MSY approach /Transition scheme): Reduce F to 0.14 (because $SSB < MSY B_{trigger}$)

PA approach: 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 PA

Management Plan: has not been evaluated by ICES



SSB continuously declined since 2001 to low levels and reached its lowest level in 2008

Fishing mortality: large reduction of F in recent years reflects the reduction in fishing effort

Recruitment: recent levels have been lower than earlier in the time-series, with the last five years of recruitment being the lowest in this series

Whiting in Division VIIa (Irish Sea)

Management Objective (s)	Catches in 2011
Transition to an MSY approach with caution at low stock size	Catches (mainly discards) should be reduced
Cautiously avoid impaired recruitment (Precautionary Approach)	Reduce catches to the lowest possible level
Cautiously avoid impaired recruitment and achieve other objective(s) of a management plan (e.g., catch stability)	n/a

**RPs:
unknown**

**State of the stock is
uncertain**

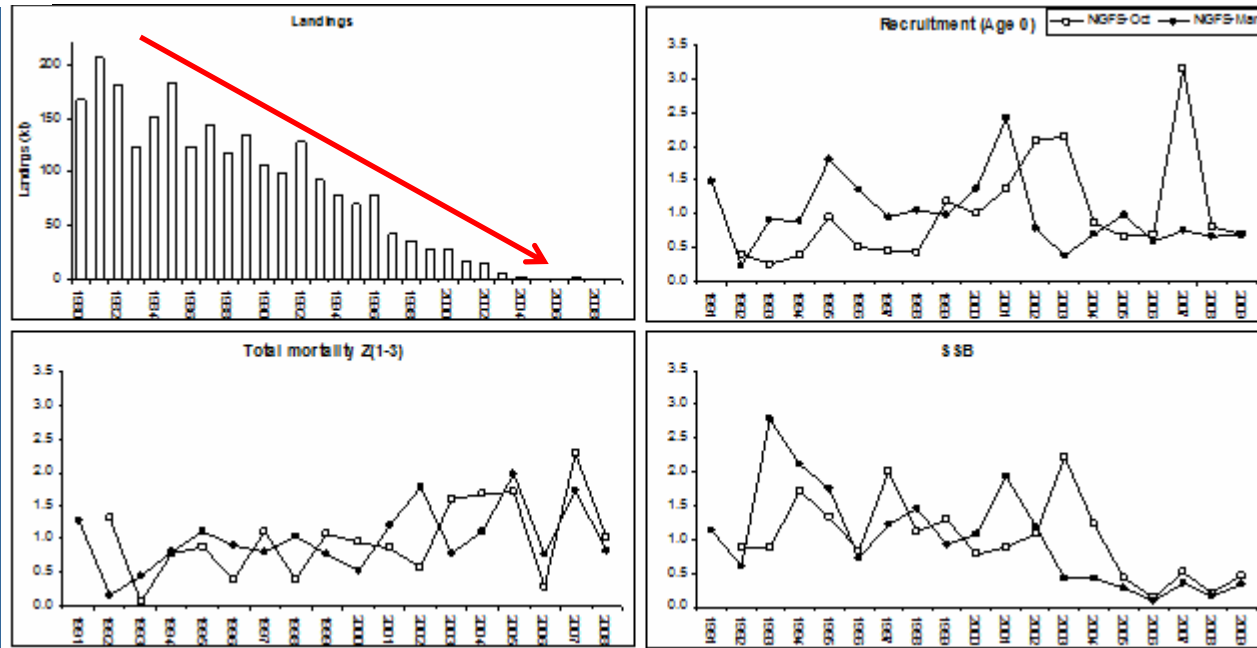
Management measures should be introduced in the Irish Sea to reduce discarding of small whiting in order to maximize their contribution to future yield and SSB

MSY approach: SSB has declined to a very low level; it is likely that current F is above F_{MSY} . Management by TAC is inappropriate for this stock because landings – but not catches – are controlled. Further management measures should be introduced in the Irish Sea to **reduce discarding of small whiting** in order to maximize their contribution to future yield and SSB

PA approach: reduce catches

Management Plan: no specific objectives known to ICES

Whiting in Division VIIa (Irish Sea)



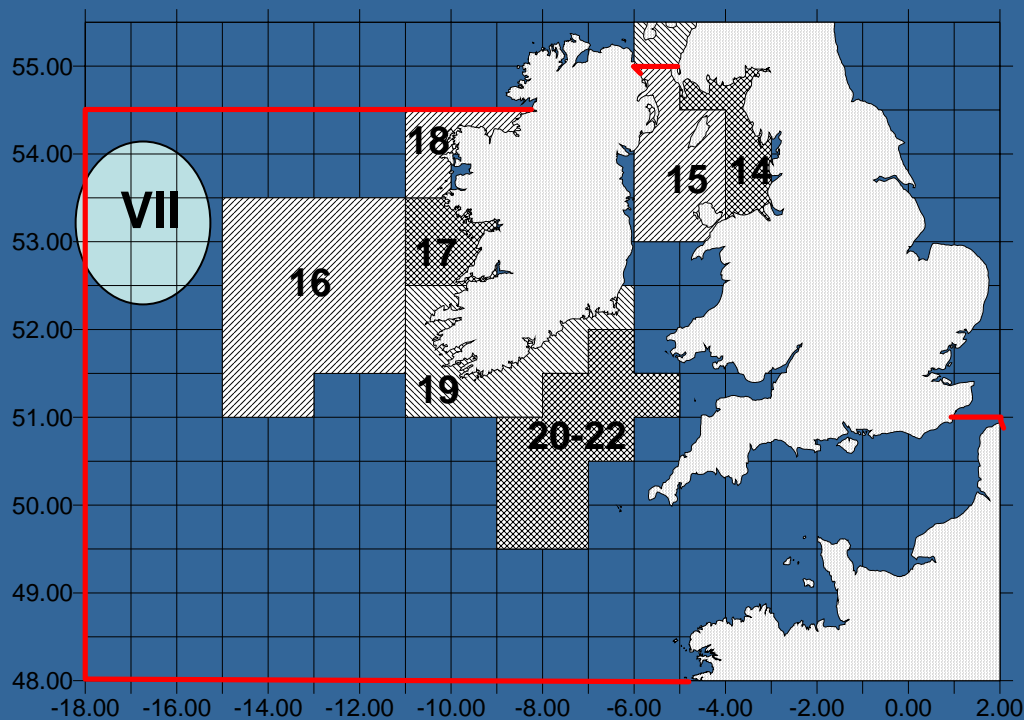
Long-term information on the historical yield and catch composition indicate that the present stock size is **extremely low**. Landings have seen a declining trend since the early 1980s, reaching lowest levels in the 2000s.

The survey results indicate a **decline in relative SSB**.

Total mortality has been variable with some conflicting signals between surveys over time

There are conflicting recruitment signals between surveys.

Nephrops in Division VII

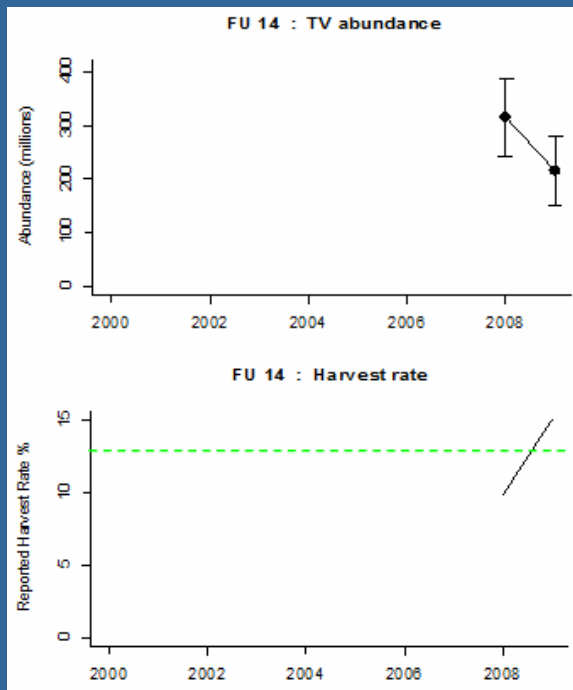
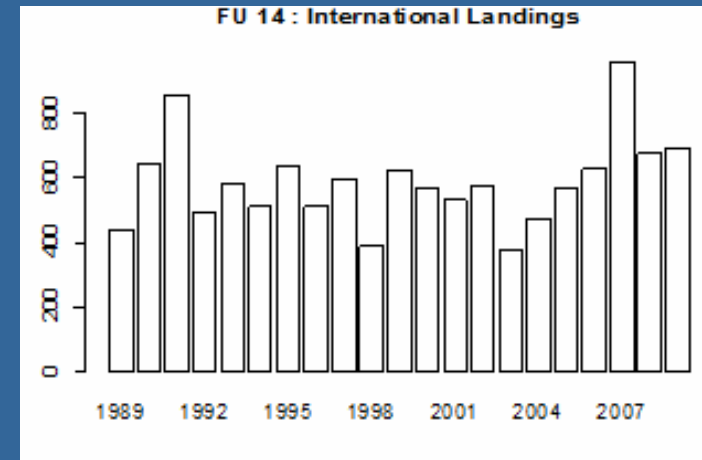


FU 14 – Irish Sea East (VIIa)

FU 15 – Irish Sea West (VIIa)

FU 19 – Ireland SW and SE coast (VIIagj)

Management Objective (s)	Landings in 2011
Transition to an MSY approach with caution at low stock size	Less than 680 t
Cautiously avoid impaired recruitment (Precautionary Approach)	n/a
Cautiously avoid impaired recruitment and achieve other objective(s) of a management plan (e.g., catch stability)	n/a

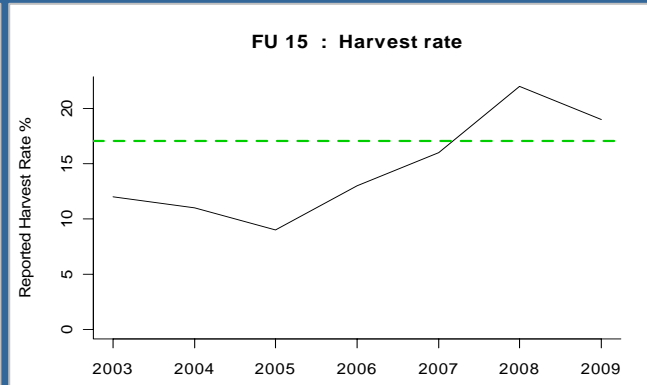
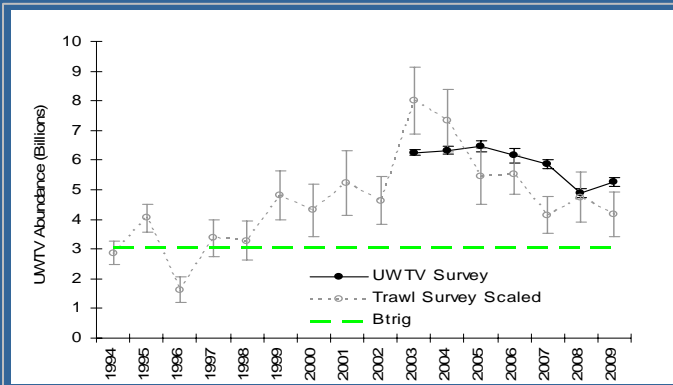
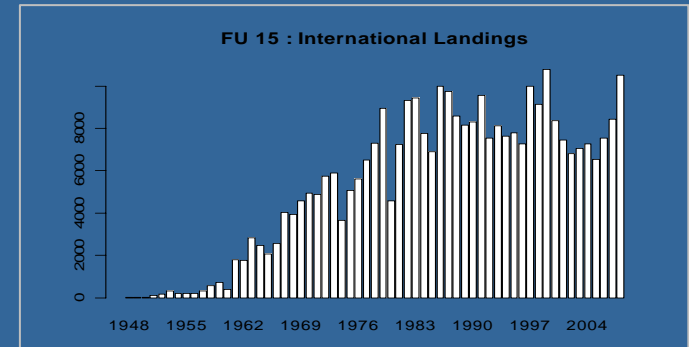


MSY $B_{trigger} = nd$
 $F_{MSY} = HR 13.0\%$

There is not enough information to evaluate the state of the stock.

Current harvest rates are around the MSY reference point.

Management Objective (s)	Landings in 2011
Transition to an MSY approach with caution at low stock size	Less than 9500 t
Cautiously avoid impaired recruitment (Precautionary Approach)	n/a
Cautiously avoid impaired recruitment and achieve other objective(s) of a management plan (e.g., catch stability)	n/a

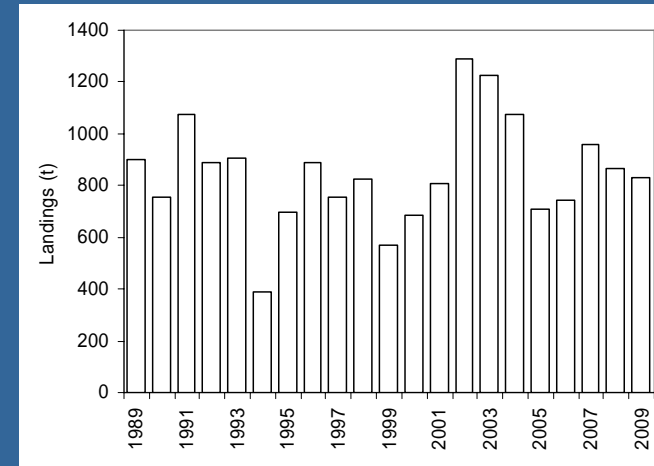


MSY $B_{\text{trigger}} = 3$ billion

$F_{\text{MSY}} = \text{HR } 17.1\%$

This stock has sustained landings at around **9000 t** for many years. The stock increased until 2003. Since then, the stock has decreased but is still at high levels

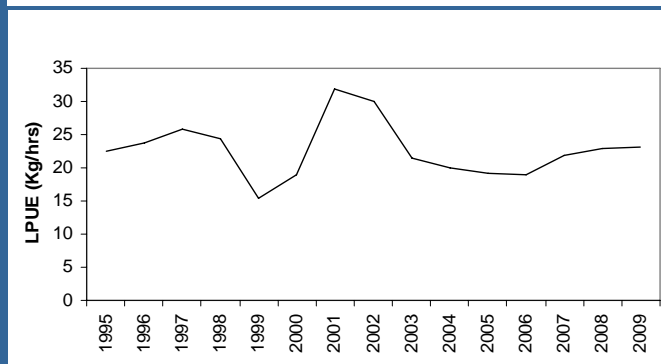
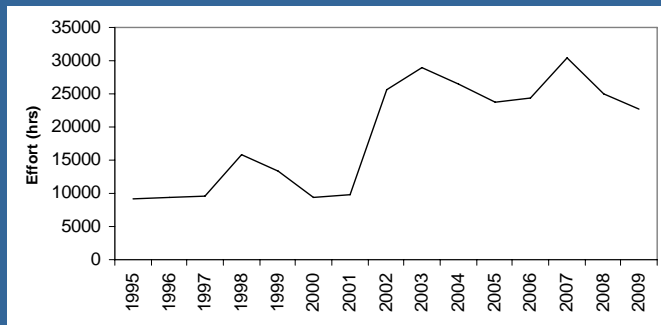
Management Objective (s)	Landings in 2011 and 2012
Transition to an MSY approach with caution at low stock size	Reduce catches
Cautiously avoid impaired recruitment (Precautionary Approach)	Less than 800 t
Cautiously avoid impaired recruitment and achieve other objective(s) of a management plan (e.g., catch stability)	n/a



MSY RPs: not defined

The fishery does not appear to be detrimental to the stock.

Lpue indicators do not show signs of decrease in recent years



**Brief summary by stock:
advice based on the ICES MSY approach**

Stock	F_{MSY}	MSY $B_{trigger}$	Catch/Land
Cod NS	0.19	150 000	< 18 100
Cod scow	0.19	22 000	Zero catch
Cod Celtic Sea	nd	nd	Catch & effort reduction
Cod Irish Sea	0.40	10 000	Zero catch

Stock	F_{MSY}	MSY $B_{trigger}$	Catch/Land
Haddock scow	0.30	30 000	< 1 500
Haddock rock	0.30	9 000	< 2 700
Haddock VIIb-k	nd	nd	No increase in effort; reduce discards rates
Haddock Iris	nd	nd	Decrease effort; reduce discards rates

Stock	F_{MSY}	MSY $B_{trigger}$	Catch/Land
Whiting scow	nd	nd	Lowest possible catch & reduce discards
Whiting VIIb-k	nd	nd	No increase in effort; reduce discards rate
Whiting Irish	nd	nd	Catches (mainly discards) should be reduced

Stock	F_{MSY}	MSY $B_{trigger}$	Catch/Land
Plaice VIIh-k	nd	nd	Reduce catches
Plaice Celtic	0.19	1 800	< 390
Plaice VIId	nd	nd	Reduce from recent levels
Plaice VIle	0.19	2 500	< 890
Plaice Irish	nd	nd	Effort consistent with no increase in catches

Stock	F_{MSY}	MSY $B_{trigger}$	Catch/Land
Sole VIIh-k	nd	nd	No increase in catches
Sole Celtic	0.31	2 200	< 1 400
Sole VIId	0.29	8 000	< 4 840
Sole VIle	0.27	2 800	< 660
Sole Irish	0.16	3 100	< 240

FU	HR (F_{MSY})	MSY $B_{trigger}$	Catch/Land
11-North Minch	12.5%	330 million	< 3 100
12-Sout Minch	12.3	1 016	< 4 000
13-Firth Clyde	16.4	579	< 4 100
13- Sound of Jura	14.5	nd	< 520
16-Porcupine	nd	nd	Lowest possible
17-Aran Grounds	10.5	nd	< 950
20-22-Celtic Sea	nd	nd	Reduce from recent levels
14-Irish Sea East	13.0	nd	< 680
15-Irish Sea West	17.1	3 billion	< 9 500
19-Ireland	nd	nd	Reduce catches

Black scabbardfish in Subareas VI, VII, and Divisions Vb, XIIb

In the last 10 years there is not an obvious response from the stock to fishery. However it is not known if this catch level is sustainable in the long term. The Cpue index indicates that the current abundance of the stock is around 20% of the initial levels (start of the fishery). Under these circumstances there should be no increase in the exploitation above the previously advised landings.

< 2 000 t

Blue ling in Subdivisions Vb, and Subareas VI, and VII

The history of the exploitation is longer than the available cpue series and the cpue indices indicate that the current abundance of the stock is much lower than the initial level prior to the fishery. In the last 10 years there is not an obvious response from the stock to the fishery (i.e. noisy but relatively stable cpue and tally-book information).

No direct fishery and effort should be made to reduce bycatches commensured with the rate of the stock decline, namely:

- Current **closed areas to protect spawning aggregations** should be maintained, and new closed areas should be identified and implemented where appropriate;
- Closed areas should be **identified and implemented** to protect identified spawning aggregations in international waters in Divisions Vb and VIb.

Greater silver smelt in other Sub-areas I, II, IV, VI, VII, VIII, IX, X, XII, and XIV & Div IIIa and Vb

The new data (landings and cpue) available for this stock give no reason to change the advice from that given in 2008: *“Due to its low productivity greater silver smelt can only sustain low rates of exploitation”*

The fishery **should not be allowed to expand**, and a **reduction in catches** should be considered, in light of survey data indicating a recent decline.

Ling in Division IIIa, IVa, and Subareas VI, VII, VIII, IX, XII, and XIV

The historic CPUE data were reinterpreted and suggest that the stock was stable 2003-2008. Catches in these Subareas should be kept at the same level as the average catch during the period 2003 through 2008 (10000 t). The ICES' advice relates to all catches of ling in these areas.

Constrain catches to **recent average (2003-2008)** and a **reduction in catches** should be considered in order to be consistent with the MSY

Red (=blackspot) seabream in Subareas VI, VII, and VIII

The new data (landings) available do not change the perception of the stock. Therefore, the advice for the fishery given in 2008 is still appropriate: *“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”*

Fishery **should not be allowed to expand** and a **reduction in catches** should be considered in order to be consistent with the MSY

Roundnose grenadier in Subareas VI, VII, and Div Vb, XIIb

The 2008-2009 data (landings and cpue) do not change the perception of the stock. Therefore, the advice for the fishery given in 2008 is still appropriate: *“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”*

< 6 000 t and a further **reduction in catches from recent levels** should be considered in order to be consistent with MSY

Tusk in Rockall

The historic cpue data were reinterpreted and suggest that catches in Division VIb should be reduced by at least the rate of decline of the cpue

Reduced catches by at least the rate of decline of the cpue

**Thank you for your attention!
Comments and questions?**