

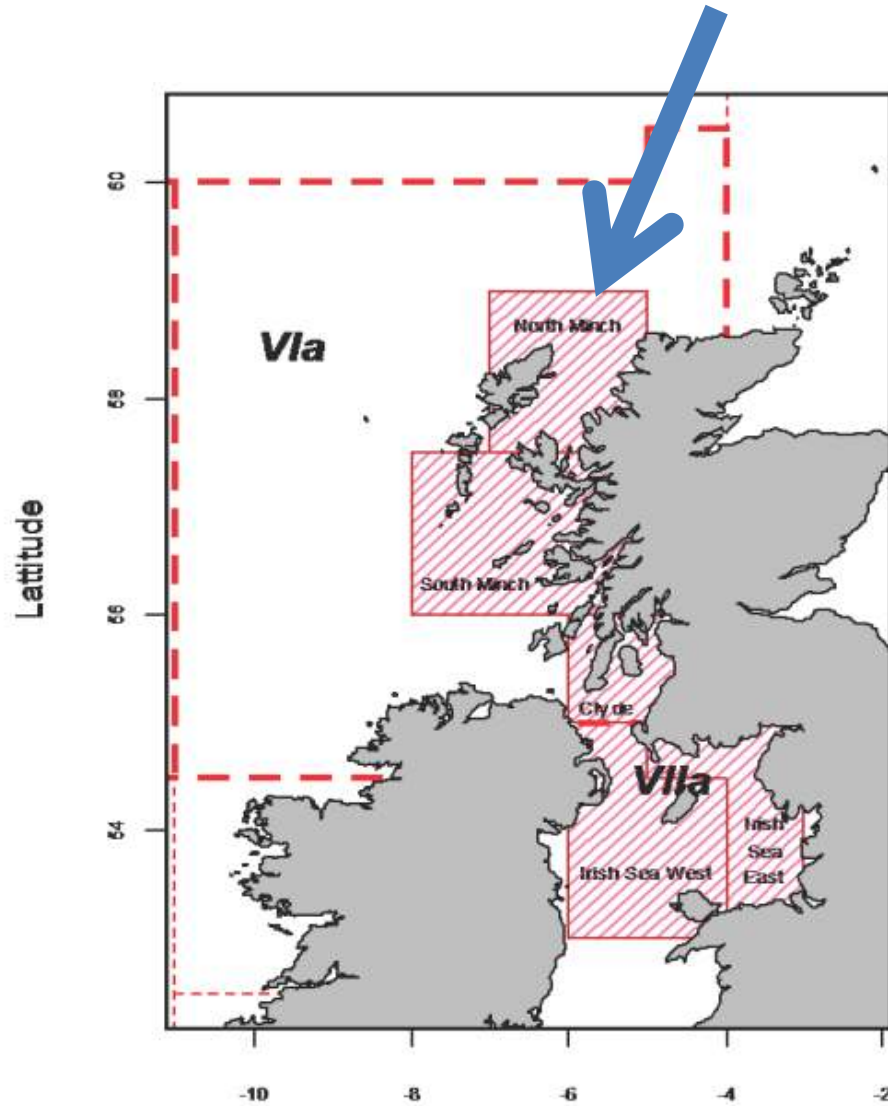
ICES Nephrops advice 2013

Joel Vigneau, outgoing co-chair WGCSE
including notes provided from ADGNEP
by Helen Dobby (co-chair WGCSE) and
Colm Lordan (incoming co-chair)

Nephrops advice 2013

- **No advice in June** due to the majority of FU being visited by UWTV survey during summer.
- **Timing of advice** is an issue for mixed fisheries advice.
- **ICES advises on landings**. Calculation of catches (including surviving discards) assumes recent discard rates. Different discards survival rates are used : 25% for FU11-13, 0% for FU14, 10% for other FUs (except FU22)
- There is no information available on the trends in the stock or exploitation status for the rectangles outside the FUs for which ICES provides advice. Based on the ICES approach to DLS (cat. 6), ICES advises that **landings from the 'other rectangles' should be reduced by 20%** compared to recent average landings
 - Div. VIa = no more than 326 tonnes.
 - Div VII = FU18 and 'others' = no more than 235 tonnes.

FU11 : North Minch



FU11 : North Minch

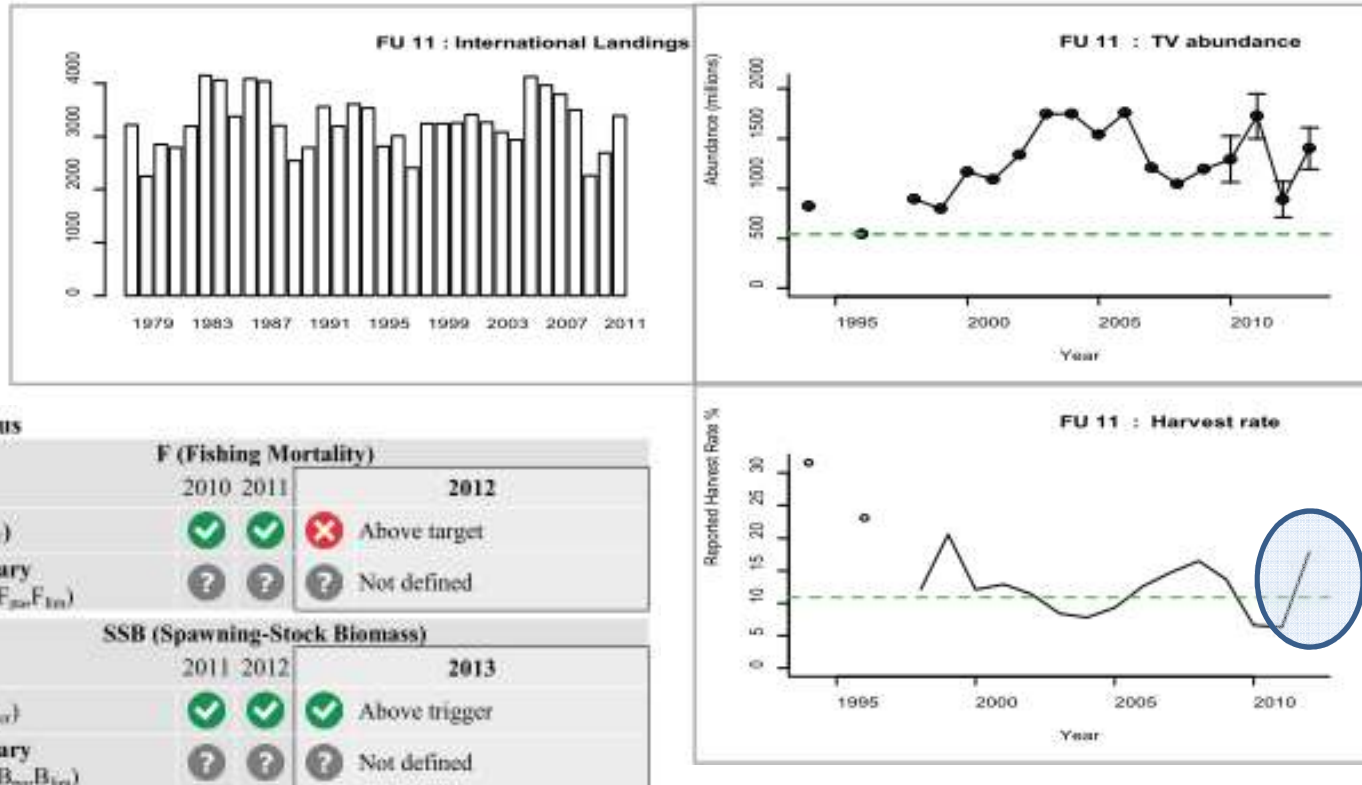
Scientific basis

Assessment type	Underwater TV survey linked to yield-per-recruit analysis from length data.
Stock data category	1
Input data	One survey index (UWTV-FU11); commercial catches (international landings, length frequencies from Scottish catch sampling); fixed maturity parameters from survey data; fixed natural mortalities. Discard survival rate.
Discards and bycatch	Discards from Scottish trawls were included in the assessment.
Indicators	Size structure of catches, mean size, lpue.
Other information	Latest benchmark (based on the UWTV survey) was performed in 2013 (WKNEPH; ICES, 2013a).
Working group report	WGCSE (ICES, 2013b).

Benchmark 2013

- Survey area refined based on VMS
- Sea lochs not included, because these cover only a very small % of total area
- New MSY reference points
- New maturity estimates

FU11 : North Minch



The harvest ratio in 2012 increased to a value (17.9%) above Fmsy proxy

FU11 : North Minch

ECOREGION Celtic Sea and West of Scotland
STOCK *Nephrops* in North Minch (FU 11)

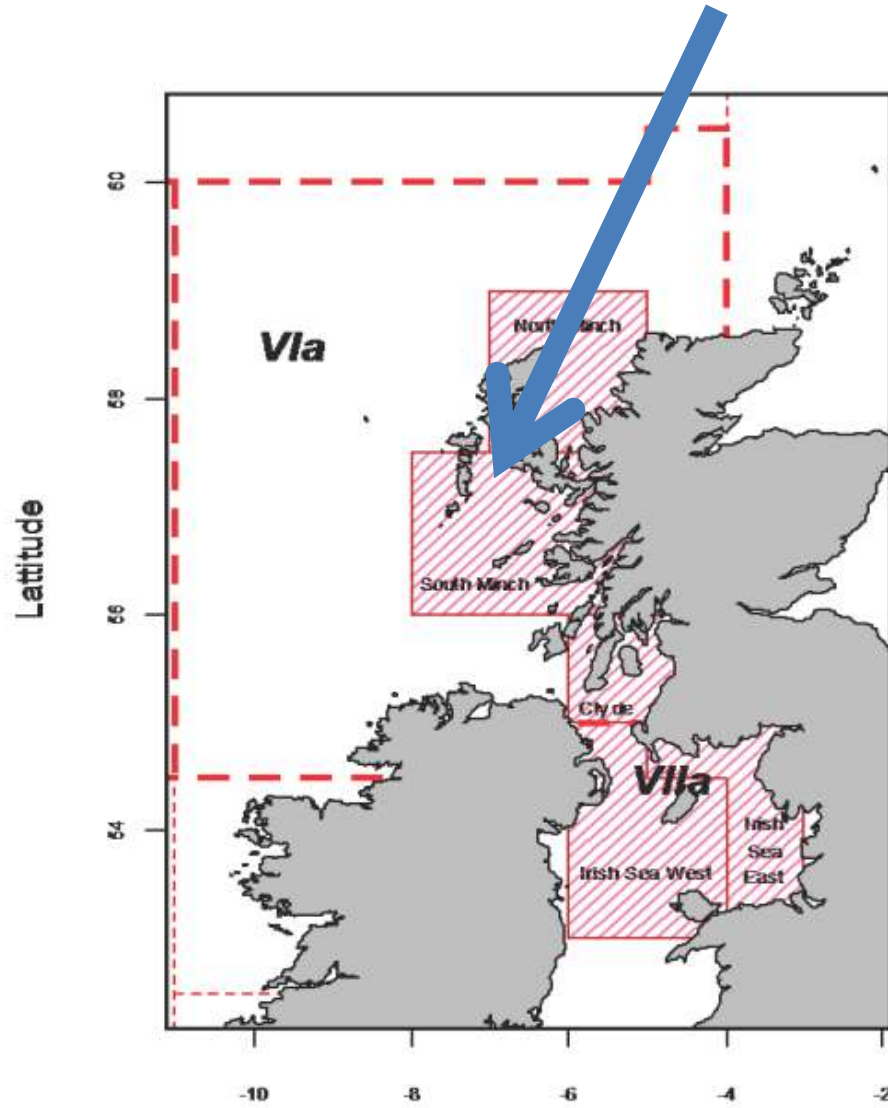
Advice for 2014

ICES advises on the basis of the MSY approach that landings in 2014 should be no more than 3485 tonnes. If total discard rates do not change from the average of the last three years (2010–2012), this implies total catches of no more than 3702 tonnes. Note that this figure includes discards expected to survive the discarding process – assumed to be 25% of the total number discarded for this stock.

In order to ensure the stock in this FU is exploited sustainably, management should be implemented at the functional unit level.

2007	No increase effort and harvest rate of 15%	3.2
2008	As for 2007	3.2
2009	No increase effort and recent average catch	< 4.1
2010	Harvest rate no greater than that equivalent to fishing at $F_{0.1}$	< 1.0
2011	MSY transition scheme	< 3.1
2012	MSY approach	< 3.2
2013	MSY approach	< 4.2
2014	MSY approach	< 3.5

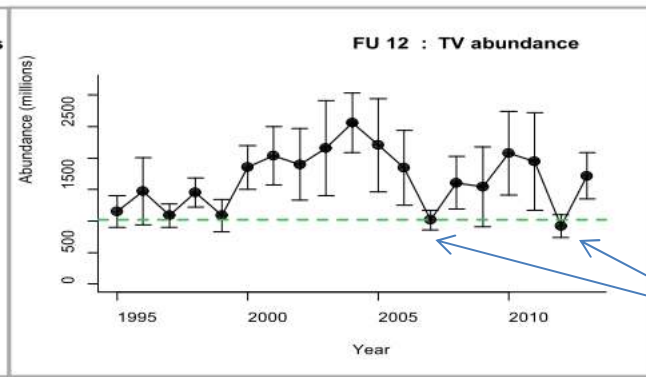
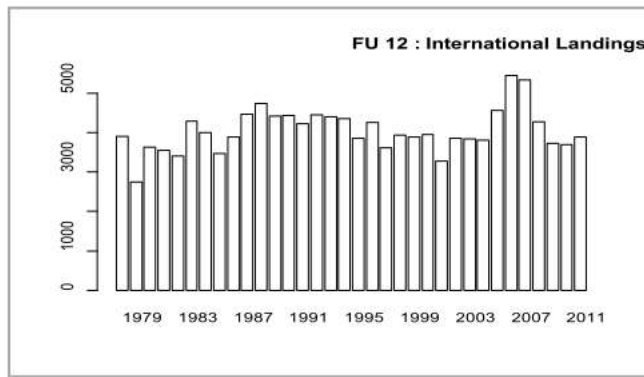
FU12 : South Minch



FU12 : South Minch

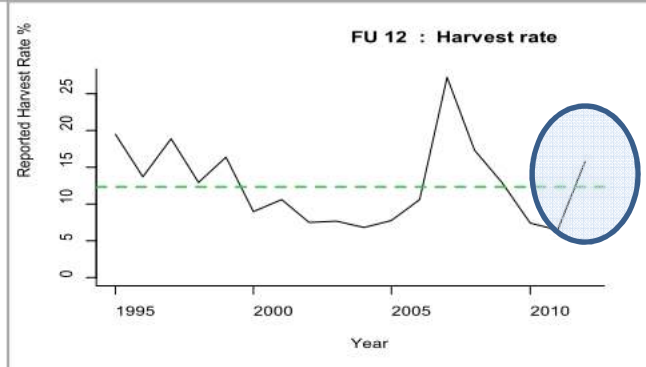
Scientific basis

Assessment type	Underwater TV survey linked to yield-per-recruit analysis from length data.
Stock data category	1
Input data	One survey index (UWTV-FU12); commercial catches (international landings, length frequencies from Scottish catch sampling); fixed maturity parameters (from survey data) and natural mortality. Discard survival rate.
Discards and bycatch	Discards from Scottish trawls were included in the assessment.
Indicators	Size structure of catches, mean size, lpue.
Other information	Latest benchmark (based on the UWTV survey) was performed in 2009 (ICES, 2009).
Working group report	WGCSE (ICES, 2013).



Stock status

F (Fishing Mortality)			
	2010	2011	2012
MSY (F_{MSY})	✓	✓	✗ Above target
Precautionary approach (F_{pa}, F_{lim})	?	?	? Not defined
SSB (Spawning-Stock Biomass)			
	2011	2012	2013
MSY ($B_{trigger}$)	✓	✗	✓ Above trigger
Precautionary approach (B_{pa}, B_{lim})	?	?	? Not defined



The harvest ratio in 2012 increased to a value (17.9%) above Fmsy proxy

FU12 : South Minch

ECOREGION Celtic Sea and West of Scotland
STOCK *Nephrops* in South Minch (FU 12)

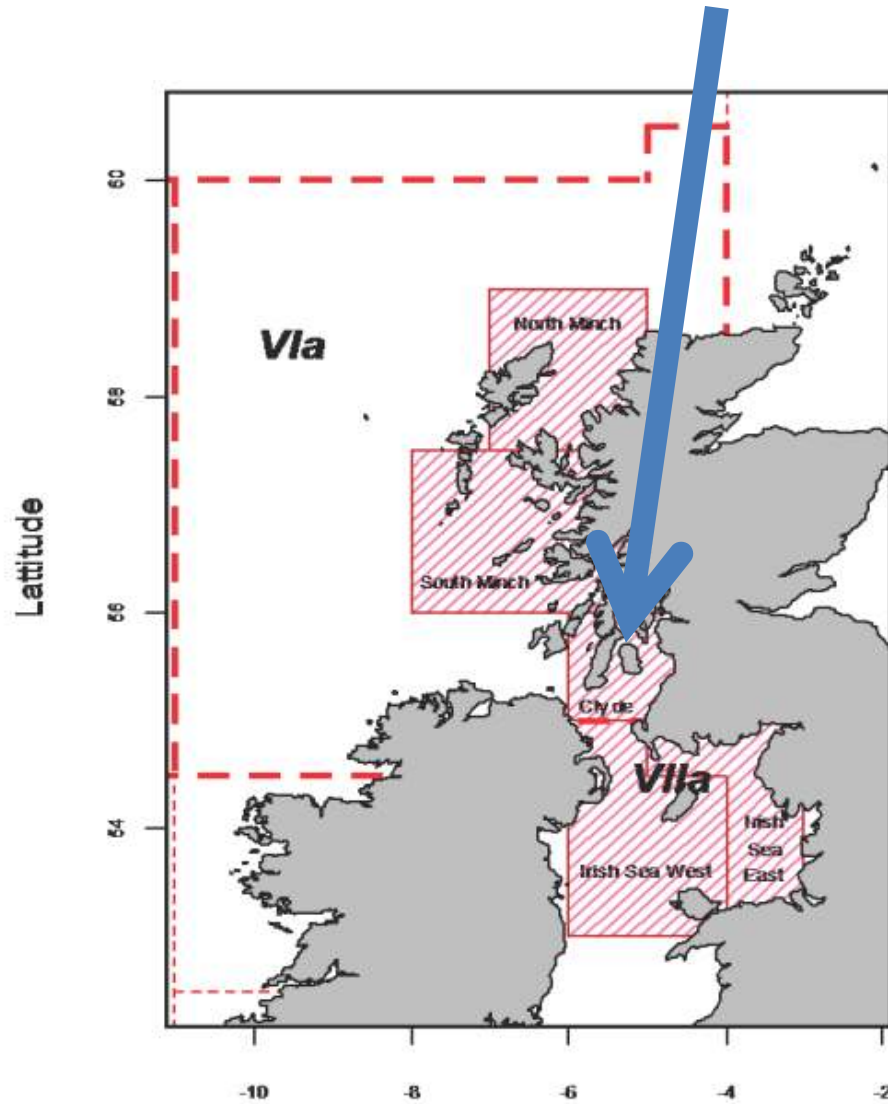
Advice for 2014

ICES advises on the basis of the MSY approach that landings in 2014 should be no more than 5211 tonnes. If total discard rates do not change from the average of the last three years (2010–2012), this implies total catches of no more than 5394 tonnes. Note that this figure includes discards expected to survive the discarding process – assumed to be 25% of the total number discarded for this stock.

In order to ensure the stock in this FU is exploited sustainably, management should be implemented at the functional unit level.

2007	No increase in effort and harvest rate of 15%	7.2
2008	as for 2007	7.2
2009	No increase effort and recent average catch	< 5.0
2010	Harvest rate no greater than that equivalent to fishing at $F_{0.1}$	< 4.1
2011	MSY transition scheme	< 4.0
2012	MSY approach	< 5.5
2013	MSY approach	< 5.8
2014	MSY approach	< 5.2

FU13 : Firth of Clyde and Sound of Jura

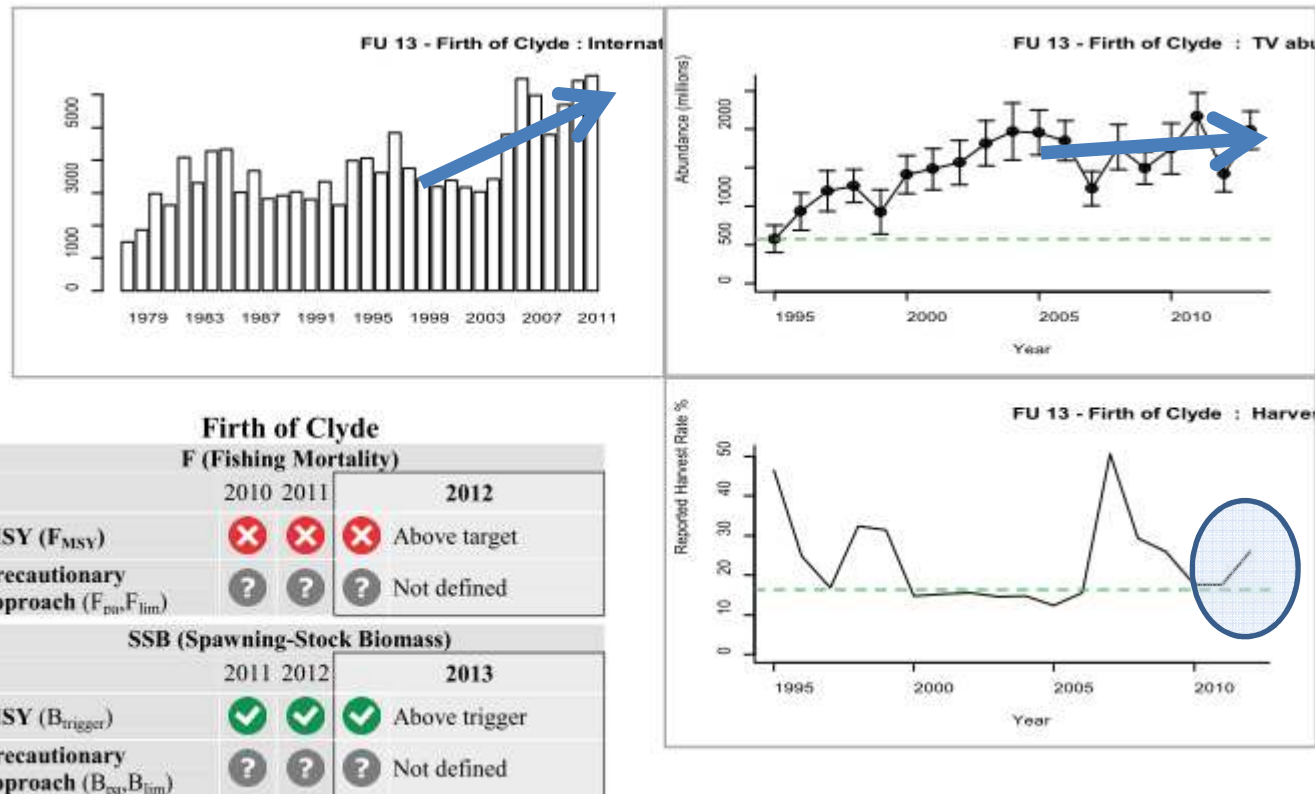


FU13 : Firth of Clyde and Sound of Jura

Scientific basis

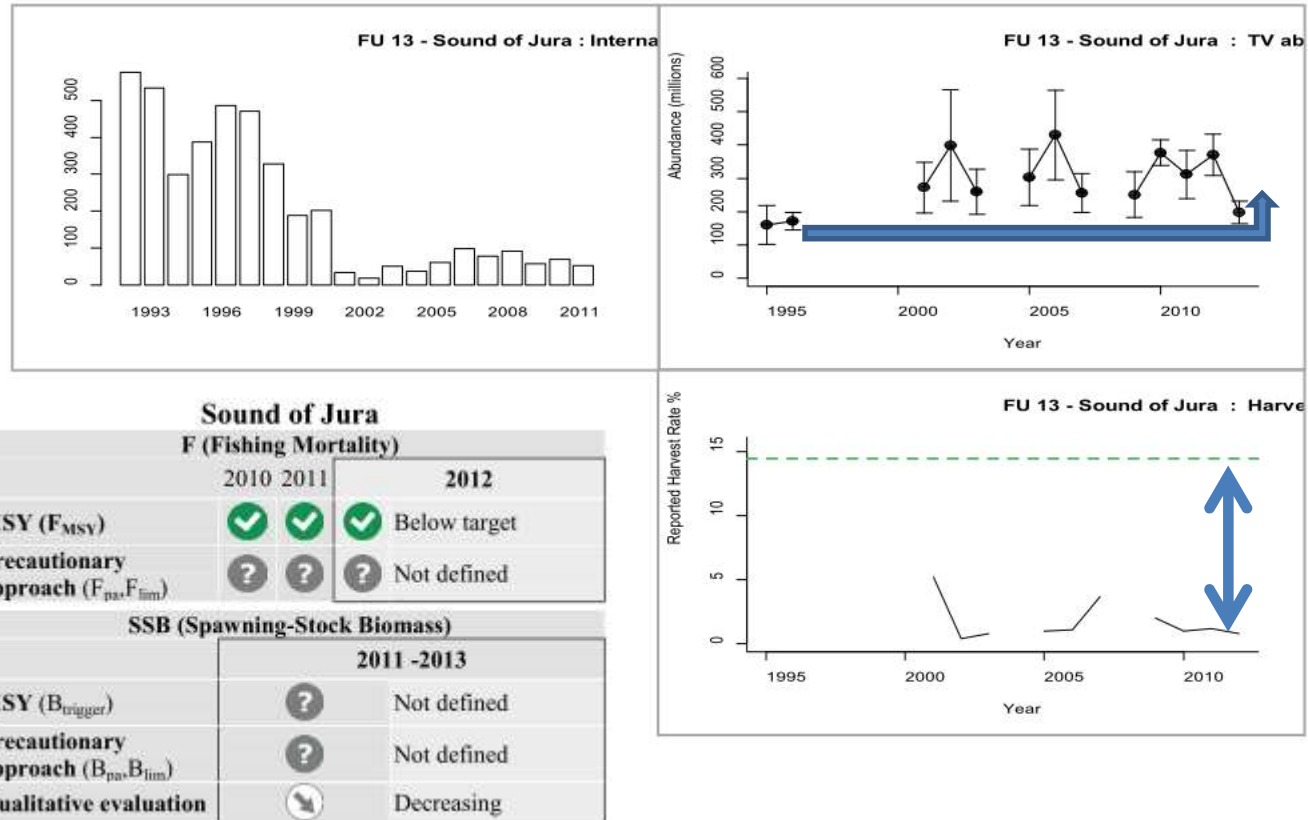
Assessment type	Underwater TV survey linked to yield-per-recruit analysis from length data.
Stock data category	1
Input data	One survey index (UWTV-FU13); commercial catches (international landings, length frequencies from Scottish catch sampling); fixed maturity parameters (from survey data); fixed natural mortalities. Discard survival rate.
Discards and bycatch	Discards from Scottish trawls were included in the assessment.
Indicators	Size structure of catches, mean size, lpue.
Other information	Latest benchmark (based on the UWTV survey) was performed in 2009 (ICES, 2009).
Working group report	<u>WGCSE</u> (ICES, 2013).

FU13 : Firth of Clyde and Sound of Jura



UWTV abundance remains above the MSY B trigger . Harvest rates (removals/UWTV abundance) for Nephrops in the Firth of Clyde have increased in 2012 to 26.0% and remain above the proposed F MSY proxy.

FU13 : Firth of Clyde and Sound of Jura



Harvest rates (removals/UWTV abundance) for Nephrops in the Sound of Jura have been well below the proposed F_{MSY} proxy in recent years. UWTV abundance remains higher than observed at the start of the series, but the series is too short and patchy to propose a MSY B trigger .

FU13 : Firth of Clyde and Sound of Jura

ECOREGION Celtic Sea and West of Scotland
STOCK *Nephrops* in the Firth of Clyde + Sound of Jura (FU 13)

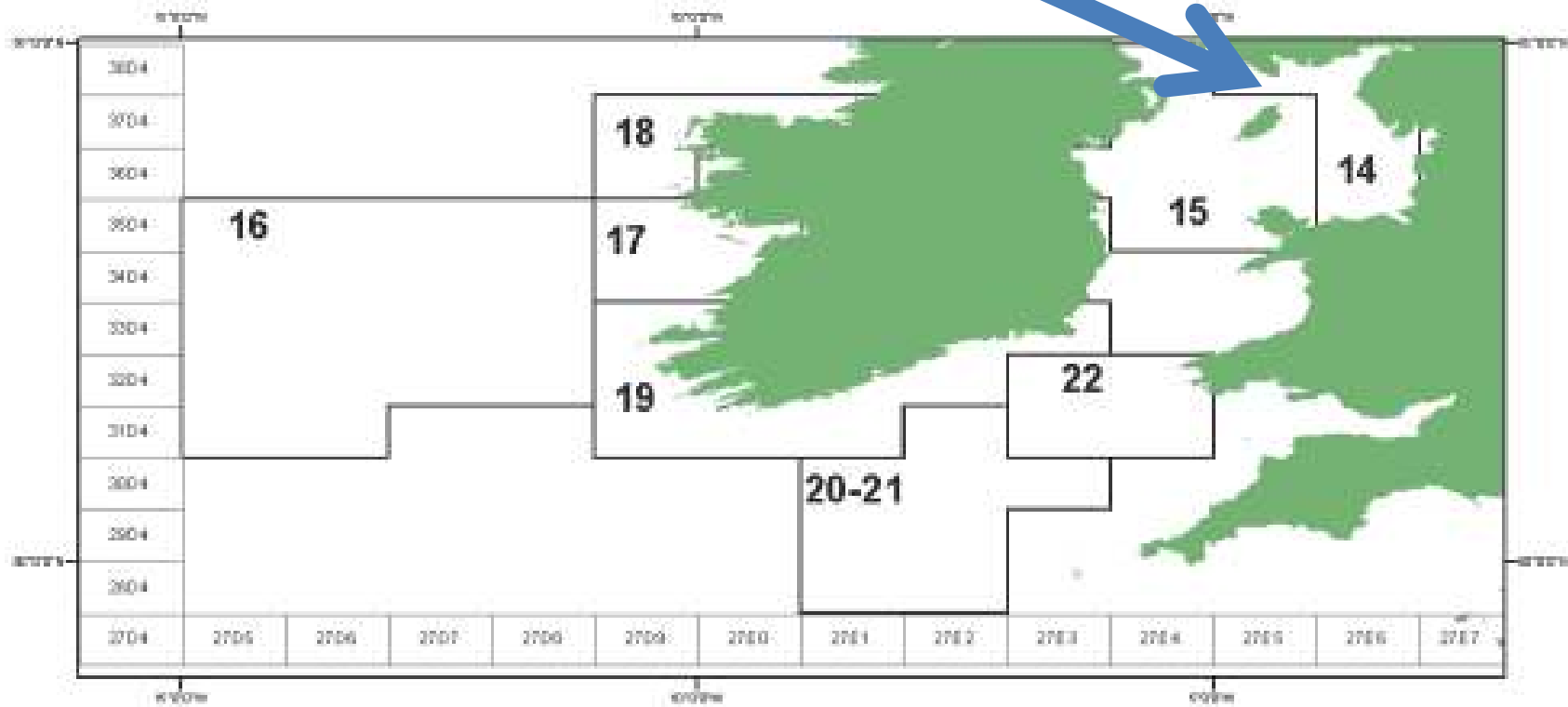
Advice for 2014

ICES advises on the basis of the MSY approach that landings in 2014 should be no more than 6265 tonnes (5744 tonnes for Firth of Clyde and 521 tonnes for Sound of Jura). If total discard rates do not change from the average of the last three years (2010–2012), this implies total catches of no more than 6959 tonnes (6382 tonnes for Firth of Clyde and 577 tonnes for Sound of Jura). Note that this figure includes discards expected to survive the discarding process – assumed to be 25% of the total number discarded for this functional unit.

In order to ensure the stock is exploited sustainably, management of *Nephrops* should be implemented at the functional unit level. In this FU the two subareas imply that additional controls maybe required to ensure that the landings taken in each subarea are in line with the advice.

2007	No increase in effort and harvest rate no more than 15%	3.765
2008	as for 2007(no new advice)	3.765
2009	No increase effort and recent average catch	< 5.7
2010	Harvest rate no greater than that equivalent to fishing at F_{max}	< 3.9
2011	MSY transition scheme in Firth of Clyde and MSY framework in Sound of Jura	< 4.1
2012	MSY transition scheme in Firth of Clyde and MSY framework in Sound of Jura	< 4.2
2013	MSY approach both in Firth of Clyde and Sound of Jura	< 5.6
2014	MSY approach both in Firth of Clyde and Sound of Jura	< 5.7

FU14 : Irish sea East



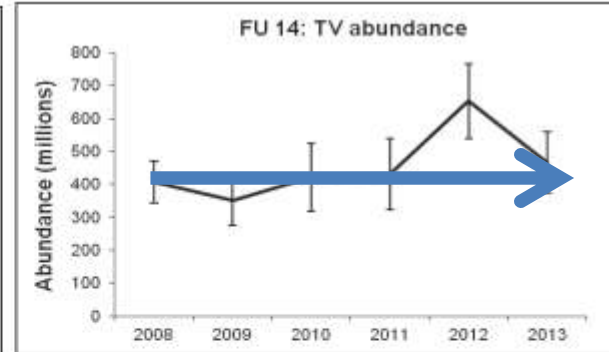
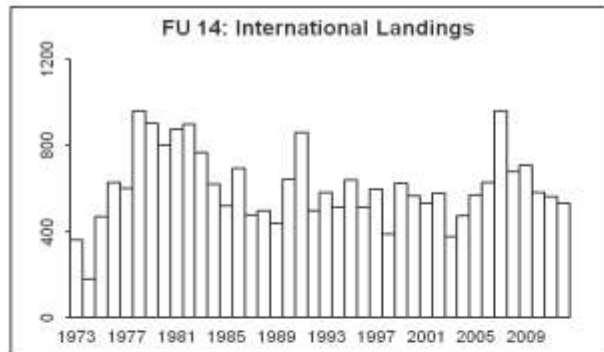
FU14 : Irish sea East

Scientific basis

Assessment type	UWTV and trends.
Stock data category	1
Input data	One survey index (UWTV-FUs 14–15); commercial catches (international landings and length frequencies from the <i>Nephrops</i> catch sampling programme and the CEFAS Observer programme); maturity data from commercial catch sampling; fixed natural mortality.
Discards and bycatch	Discards from English trawls were included in the assessment.
Indicators	Size structure of catches, sex ratio, and lpue.
Other information	None.
Working group report	<u>WGCSE</u> (ICES, 2013).

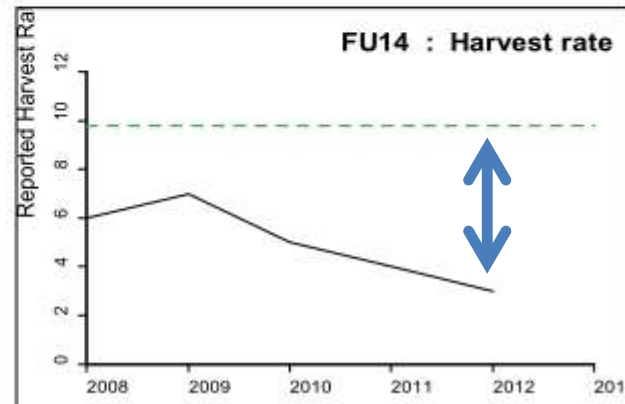
Main concern is lack of fishery (landings and discards) data in recent years
0% discards survival (different from other FUs)

FU14 : Irish sea East



Stock status

F (Fishing Mortality)			
	2010	2011	2012
MSY (F_{MSY})	✓	✓	✓ Below target
Precautionary approach (F_{pa}, F_{lim})	?	?	? Undefined
SSB (Spawning-Stock Biomass)			
	2011–2013		
MSY ($B_{trigger}$)	?	Undefined	
Precautionary approach (B_{pa}, B_{lim})	?	Undefined	
Qualitative evaluations	→	Stable	



The abundance of Nephrops in FU 14 is stable with the exception of 2012, where there has been an increase. There is not a long enough time-series to determine a candidate for MSY B trigger . The current harvest rate (removals/UWTV abundance) is below the F MSY proxy.

FU14 : Irish sea East

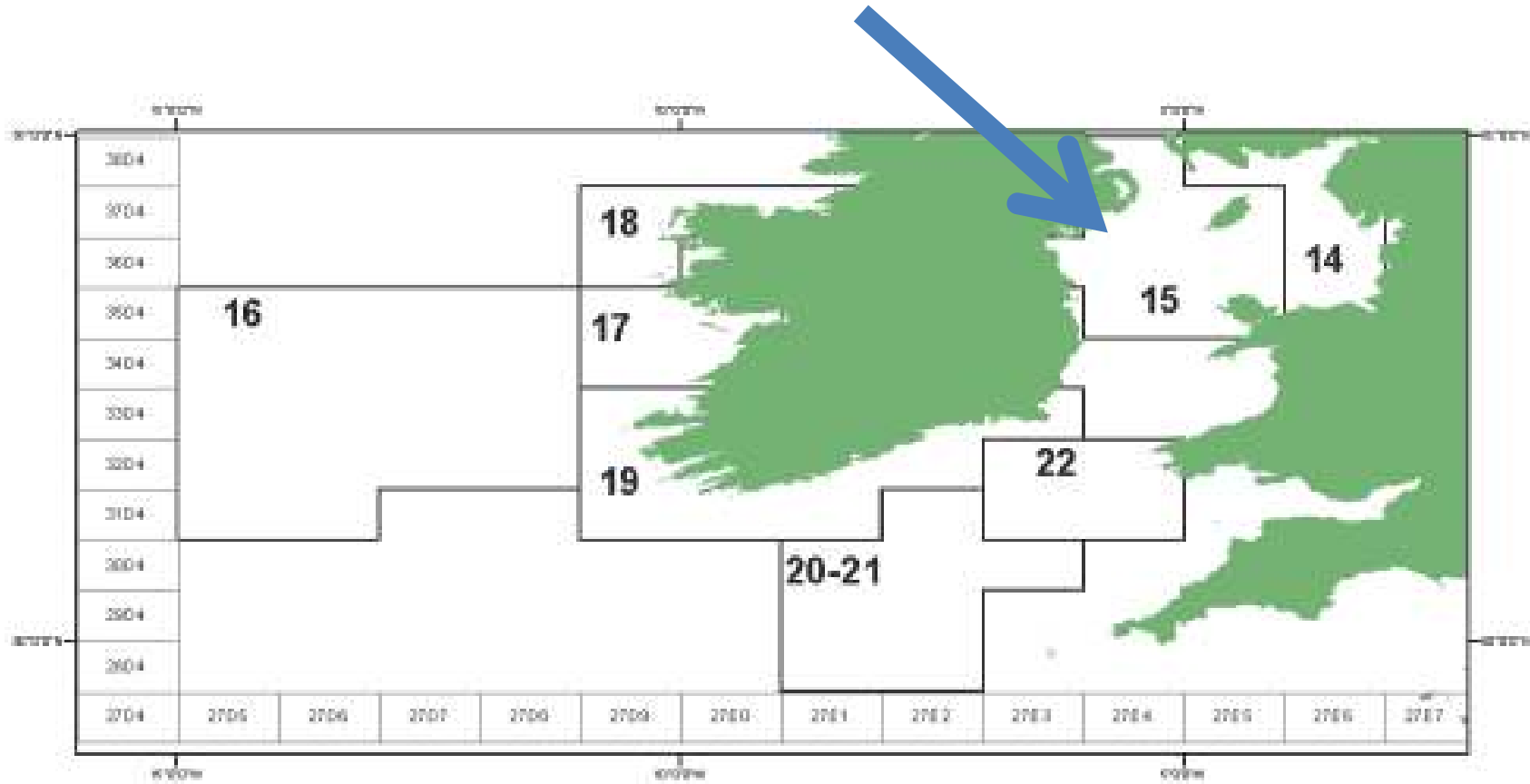
Advice for 2014

ICES advises on the basis of the MSY approach that landings from FU 14 in 2014 should be no more than 951 tonnes. If total discard rates do not change from the average of 2006–2008, this implies total catches of no more than 1131 tonnes. For this FU, no discards are expected to survive the discarding process.

In order to ensure the stock in this FU is exploited sustainably, management should be implemented at the functional unit level.

2009	No increase in effort and landings (2007)	< 1.0
2010	No new advice, same as for 2009	< 1.0
2011	Transition towards the ICES MSY framework	< 0.68
2012	MSY approach	< 0.96
2013	MSY approach	< 0.88
2014	MSY approach	< 0.951

FU15 : Irish sea West



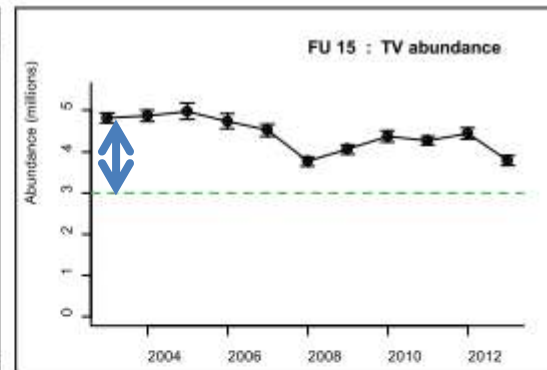
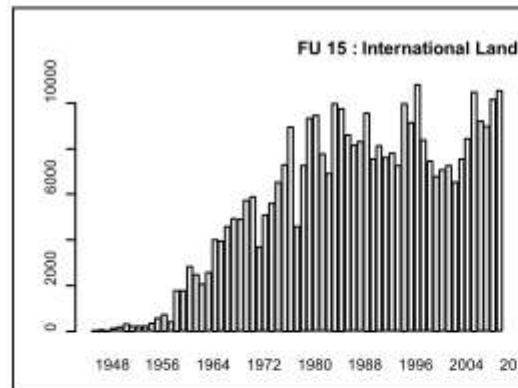
FU15 : Irish sea West

Scientific basis	
Assessment type	UWTV and trends, catch options based on UWTV and Fs from per-recruit analysis.
Stock data category	1
Input data	One survey index (UWTV (FUs 14–15); commercial catches (international landings, length frequencies from catch sampling); fixed maturity ogive based on survey sampling, fixed natural mortality. Discard survival rate.
Discards and bycatch	Discards included in the assessment from the Irish directed <i>Nephrops</i> fleet and the UK(NI) directed <i>Nephrops</i> fleet.
Indicators	One trawl survey index (NI-NEP-Trawl-Summer). Size structure of catches, sex ratio, and lpu.
Other information	The latest benchmark (based on the UWTV survey) was performed in 2009 (ICES, 2009).
Working group report	WGCSE (ICES, 2013).

No trawl survey in 2013 to compare with

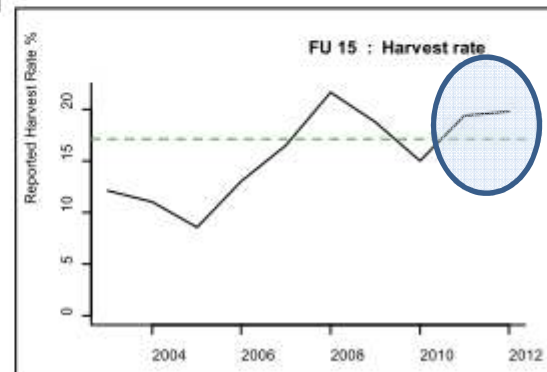
Increased grid spacing of survey stations, but still achieved required precision

FU15 : Irish sea West



Stock status

	F (Fishing Mortality)		
	2010	2011	2012
MSY (F_{MSY})	✓	✗	✗ Above target
Precautionary approach (F_{pa}, F_{lim})	?	?	? Undefined
	SSB (Spawning-Stock Biomass)		
	2011	2012	2013
MSY ($B_{trigger}$)	✓	✓	✓ Above trigger
Precautionary approach (B_{pa}, B_{lim})	?	?	? Undefined



Since 2003 stock abundance has been above MSY B trigger . Recent harvest rates (removals/UWTV abundance) have fluctuated around the F MSY proxy and are now above it.

FU15 : Irish sea West

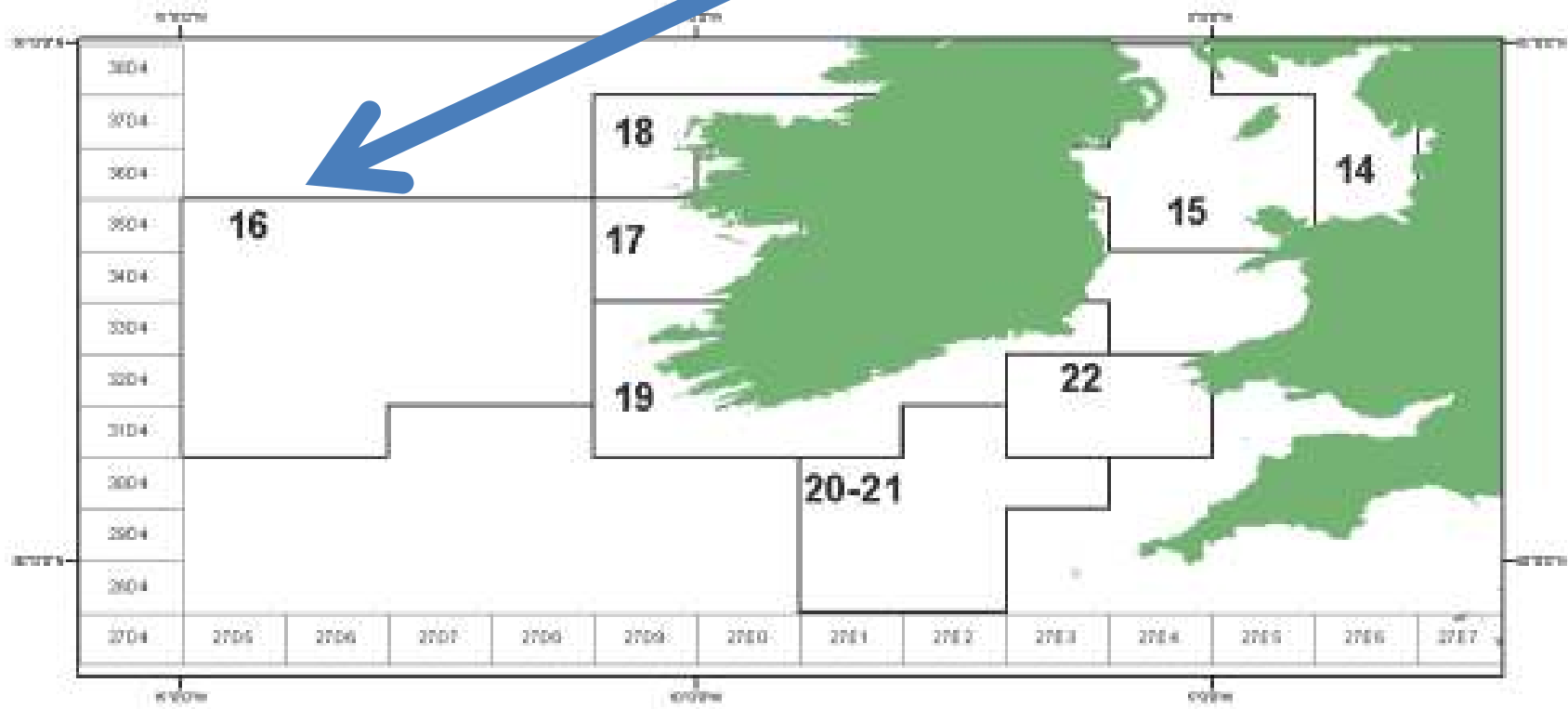
Advice for 2014

ICES advises on the basis of the MSY approach that landings in 2014 should be no more than 8244 tonnes. If total discard rates do not change from the average of the last three years (2010–2012), this implies total catches of no more than 9914 tonnes. Note that this figure includes discards expected to survive the discarding process – assumed to be 10% of the total number discarded for this stock.

In order to ensure the stock in this functional unit is exploited sustainably, management should be implemented at the functional unit level.

2009	No increase in effort and landings	< 8.5
2010	Harvest ratio no greater than that equivalent to fishing at $F_{0.1}$	< 5.5
2011	Transition scheme towards the ICES MSY framework	< 9.5
2012	MSY approach	< 9.8
2013	MSY approach	< 9.3
2014	MSY approach	< 8.2

FU16 : Porcupine bank



FU16 : Porcupine Bank

Scientific basis

Assessment type	UWTV and trends of the size structure of catches.
Stock data category	1
Input data	Commercial catches (international landings and length frequencies reconstructed from sampling and industry data); one UWTV survey (UWTV-FU 16); fixed maturity and natural mortality.
Discards and bycatch	Discards were not included and are assumed negligible.
Indicators	Two trawl surveys (SpPGFS-WIBTS-Q4, Irish IFSRP), cpue, and catch size.
Other information	Commercial lpue for Ireland, Spain, and France. Sex ratio. This stock was benchmarked in 2013 (ICES, 2013a).
Working group report	WGCSE (ICES, 2013b).

Benchmarked in 2013

- Approved process used in autumn 2012 (new survey, correction factors)
- Reference points recalculated – but hardly changed the provisional ones used in 2012
- Suggestion of a good recruitment in 2009. Stock higher now with lower exploitation.
- Data / Knowledge of this stock is improving – in part due to industry collaboration (trawl survey and graded landings data)

FU16 : Porcupine Bank

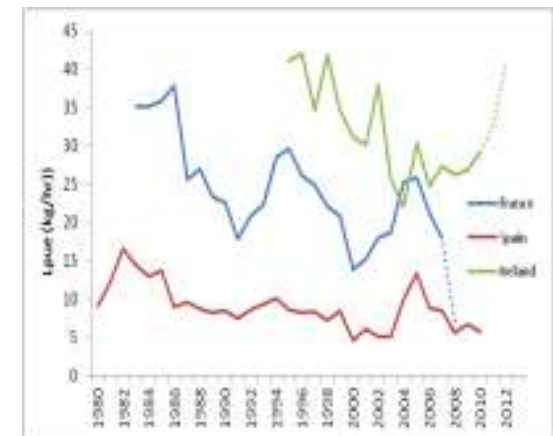
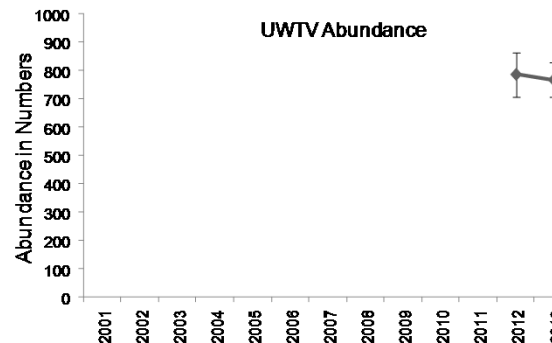
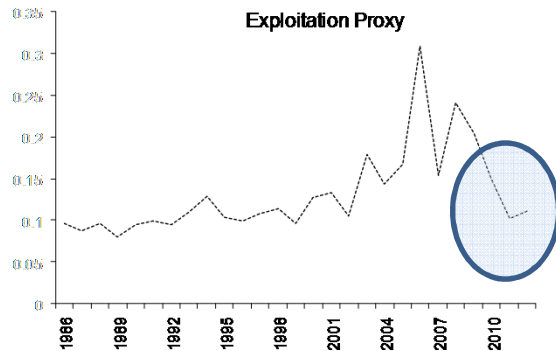
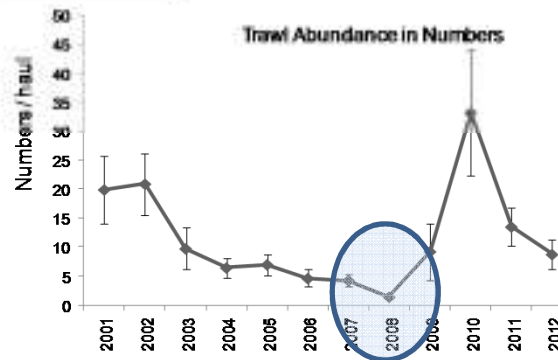
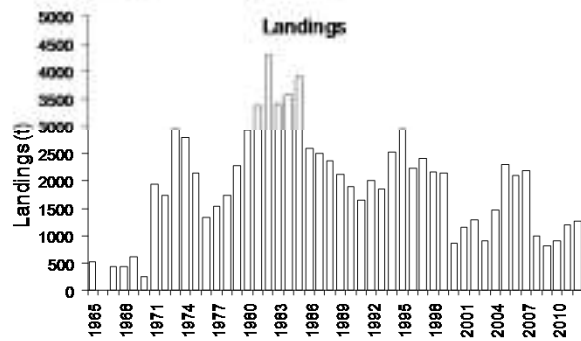
Stock status

F (Fishing Mortality)			
	2010	2011	2012
MSY (F_{MSY})	?	?	✓ Appropriate
Precautionary approach (F_{pa}, F_{lim})	?	?	Undefined

SSB (Spawning-Stock Biomass)	
2012-2013	
MSY (B_{MSY})	Undefined
Precautionary approach (B_{pa}, B_{lim})	Undefined
Qualitative evaluation	↔ Stable (based on UWTV abundance)

The 2012 harvest ratio (removals/UWTV abundance) is estimated to be 3.2%, which is below the F_{MSY} proxy (5%).

Bottom trawl survey cpue increased significantly in 2010 and this has been linked to a stronger recruitment first observed in the survey in 2009.



FU16 : Porcupine Bank

Advice for 2014

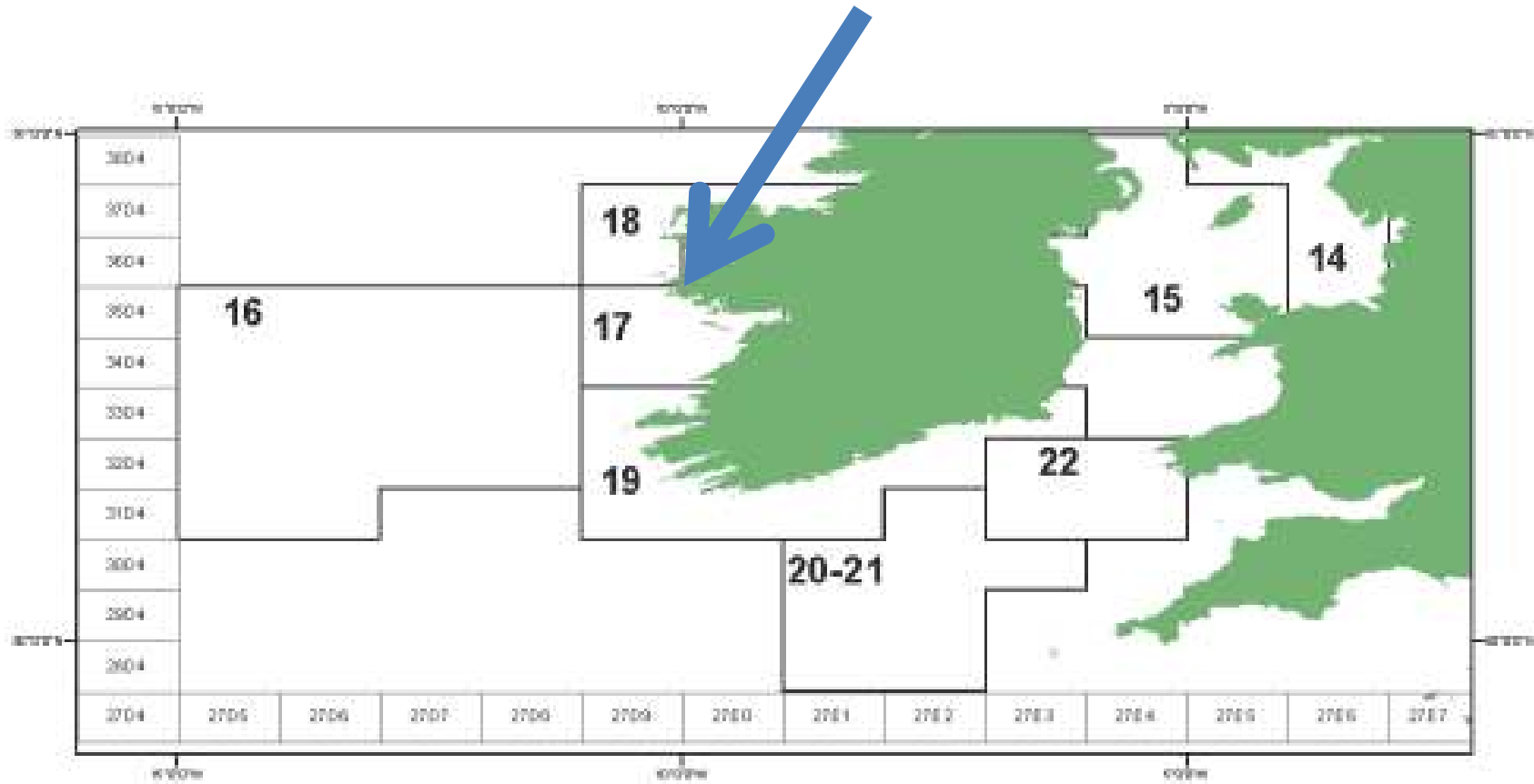
ICES advises on the basis of the MSY approach that catches from FU 16 in 2014 should be no more than 1848 tonnes. All catches are assumed to be landed.

2009	No increase in effort, and average landings (2000–2003)	< 1.0
2010	Reduce catches to lowest possible level	0
2011	Reduce catches to lowest possible level	0
2012	No increase in catch	-
2013	MSY approach (updated November 2012)	< 1.8
2014	MSY approach	< 1.848

Notes : the 'of which limit' has increased risk of high-grading & area misreporting (Irish landings are adjusted for this).

Seasonal closure – protection for most stock area at time of high female emergence (typically high landings).

FU17 : Aran Grounds



FU17 : Aran Grounds

Scientific basis

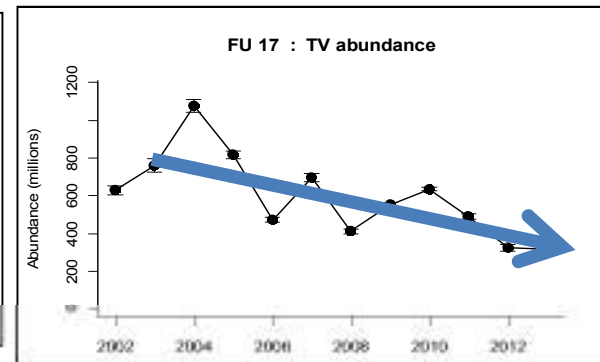
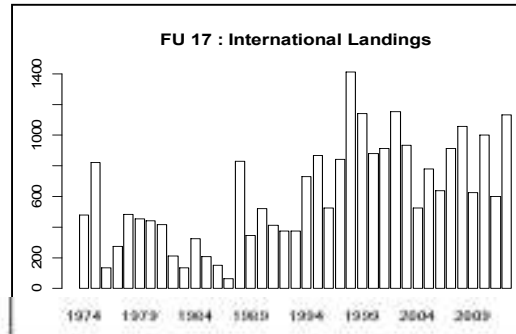
Assessment type	UWTV and trends of the size structure of catches.
Stock data category	1
Input data	One survey index (UWTV-FU 17); commercial catches (international landings, length frequencies from Irish catch sampling); maturity data (commercial catch and discard sampling, survey sampling); fixed natural mortality. Discard survival rate.
Discards and bycatch	Discards from the Irish <i>Nephrops</i> -directed fleet are included in the assessment.
Indicators	Sex ratio and l_{pue} .
Other information	The latest benchmark (based on the UWTV survey) was performed in 2009 (ICES, 2009).
Working group report	WGCSE (ICES, 2013).

High fluctuation of landings, UWTV abundance and Harvest Ratios

No Btrigger defined

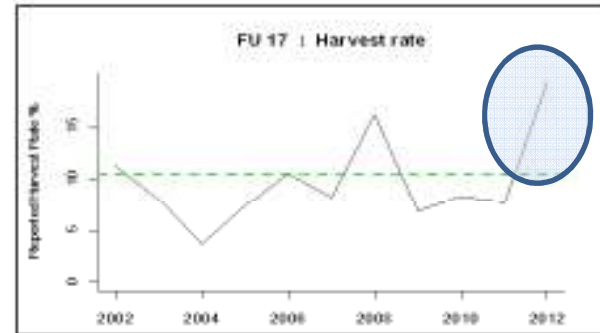
Plan to be benchmarked in 2015

FU17 : Aran Grounds



Stock status

	F (Fishing Mortality)		
	2010	2011	2012
MSY (F_{MSY})	✓	✓	✗ Above target
Precautionary approach (F_{pa}, F_{lim})	?	?	?
SSB (Spawning-Stock Biomass)			
	2011-2013		
MSY ($B_{trigger}$)	?	Undefined	
Precautionary approach (B_{pa}, B_{lim})	?	Undefined	
Qualitative evaluation	↘	Decreasing	



The abundance decreased significantly in 2012 and the 2013 survey estimate is not significantly different (although it is the lowest in the time-series). The harvest rate (removals/UWTV abundance) has increased significantly to 19.2% in 2012 and is now above the FMSY proxy.

FU17 : Aran Grounds

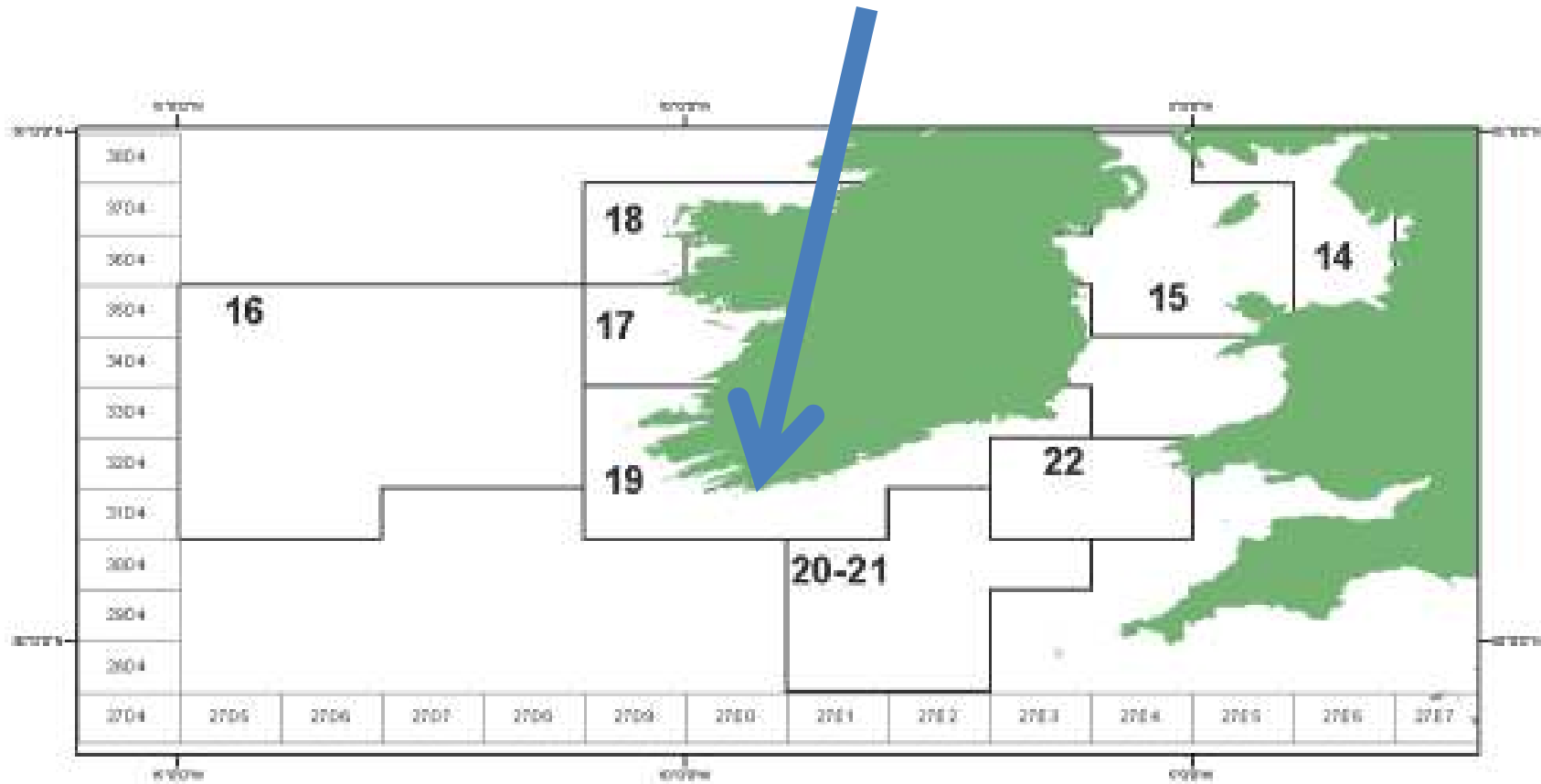
Advice for 2014

ICES advises on the basis of the MSY approach that landings in 2014 should be no more than 591 tonnes. If total discard rates do not change from the average of the last three years (2010–2012), this implies total catches of no more than 669 tonnes. Note that this figure includes discards expected to survive the discarding process – assumed to be 10% of the total number discarded for this stock.

In order to ensure the stock in this FU is exploited sustainably, management should be implemented at the functional unit level.

2009	No increase in effort and landings (2007)	< 0.9
2010	Harvest ratio no greater than the lower bound of the range of $F_{0.1}$ for similar stocks	< 0.5
2011	MSY approach	< 0.95
2012	MSY approach	< 1.1
2013	MSY approach (Updated November 2012)	< 0.59
2014	MSY approach	< 0.59

FU19 : SE & SO of Ireland



FU19 : SE & SO of Ireland

Scientific basis

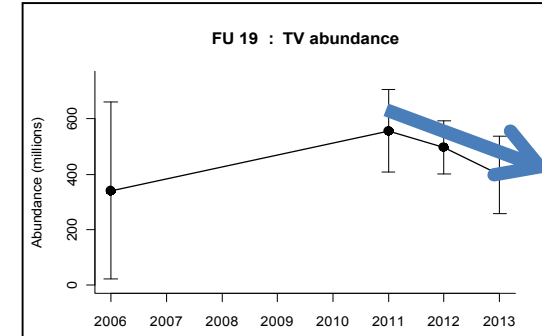
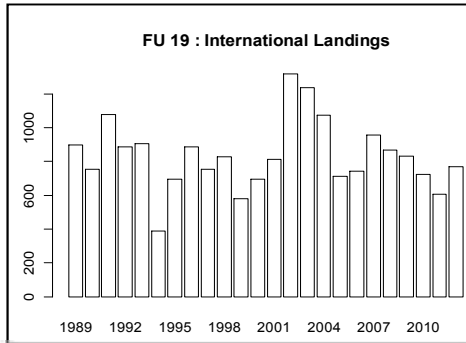
Assessment type	UWTV survey and trends in size structure of catches.
Stock data category	1
Input data	Commercial catches (international landings Ireland, France and UK); length frequencies from catch and discard sampling (Ireland); one UWTV survey indices (UWTV-FU 19); maturity data from commercial catch and survey sampling; fixed natural mortality. Discard survival rate.
Discards and bycatch	Discards included in the assessment from Irish <i>Nephrops</i> -directed fleet.
Indicators	Mean size in landings and bottom trawl survey (IRGFS-WIBTS-Q4). Commercial Irish lpue.
Other information	This stock is scheduled to be benchmarked in 2014.
Working group report	WGCSE (ICES, 2013).

Better survey coverage in 2013

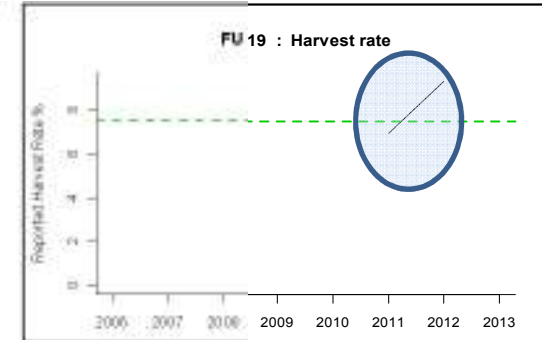
Benchmark planned in 2014

Conservative Fmsy proxy because of all uncertainties

FU19 : SE & SO of Ireland



Stock status			
F (Fishing Mortality)			
	2010	2011	2012
MSY (F_{MSY})	?	✓	✗ Above target
Precautionary approach (F_{pa}, F_{lim})	?	?	?
SSB (Spawning-Stock Biomass)			
	2011-2013		
MSY (B_{MSY})	?	Undefined	
Precautionary approach (B_{pa}, B_{lim})	?	Undefined	
Qualitative evaluation	↘	Decreasing	



Recent harvest rates (removals/UWTV abundance) are around the FMSY proxy. The time-series of reliable abundance estimates is too short to detect a significant trend within the uncertainty bounds, but appears to be decreasing.

FU19 : SE & SO of Ireland

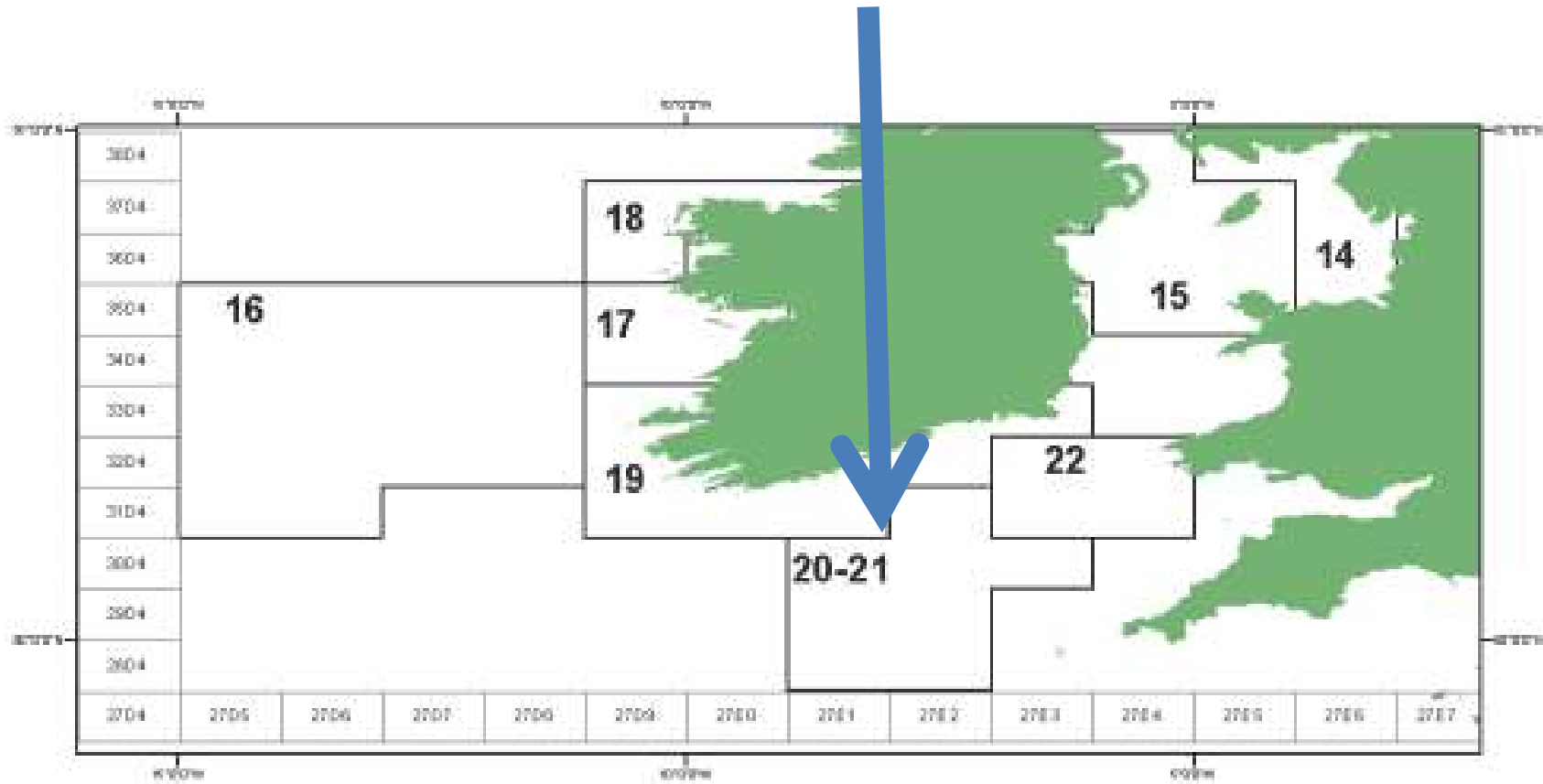
Advice for 2014

ICES advises on the basis of the MSY approach that landings in 2014 should be no more than 521 tonnes. If total discard rates do not change from the average of the last three years (2010–2012), this implies total catches of no more than 618 tonnes. Note that this figure includes discards expected to survive the discarding process – assumed to be 10% of the total number discarded for this stock.

In order to ensure the stock in this FU is exploited sustainably, management should be implemented at the functional unit level.

2009	No increase in effort and landings (2007)	< 0.8
2010	No new advice, same as for 2009	< 0.8
2011	See scenarios	-
2012	Reduce catches	-
2013	MSY approach	< 0.82
2014	MSY approach	< 0.521

FU20-21



FU20-21

Scientific basis

Assessment type

Data-limited method for *Nephrops*.

Stock data category

4.1.4

Input data

Habitat extent, mean size, landings and estimate discard rates from sampling, burrow density estimates.

Discards and bycatch

Discards rates from French and Irish fleets were included in the assessment, but not as a time-series.

Indicators

Trends based on lpue information and mean sizes in the catches (commercial index: French trawlers – threshold 10%, Irish trawlers – threshold: 30%). One UWTV survey (UWTV-FU2021) and two bottom trawl surveys (IGFS-WIBTS-Q4 and EVHOE-WIBTS-Q4).

Other information

This stock is scheduled to be benchmarked in 2014.

Working group report

[WGCSE](#) (ICES, 2013).

Benchmark planned in 2014

Definition of the area is questionable

Quality considerations and scientific basis updated

FU2021

Advice for 2014

The 2012 advice for this stock is biennial and valid for 2013 and 2014 (see [ICES, 2012a](#)): “Based on ICES approach to data-limited stocks, ICES advises that landings should be no more than 2500 tonnes. [...].To protect the stock in this functional unit, management should be implemented at the functional unit level.”

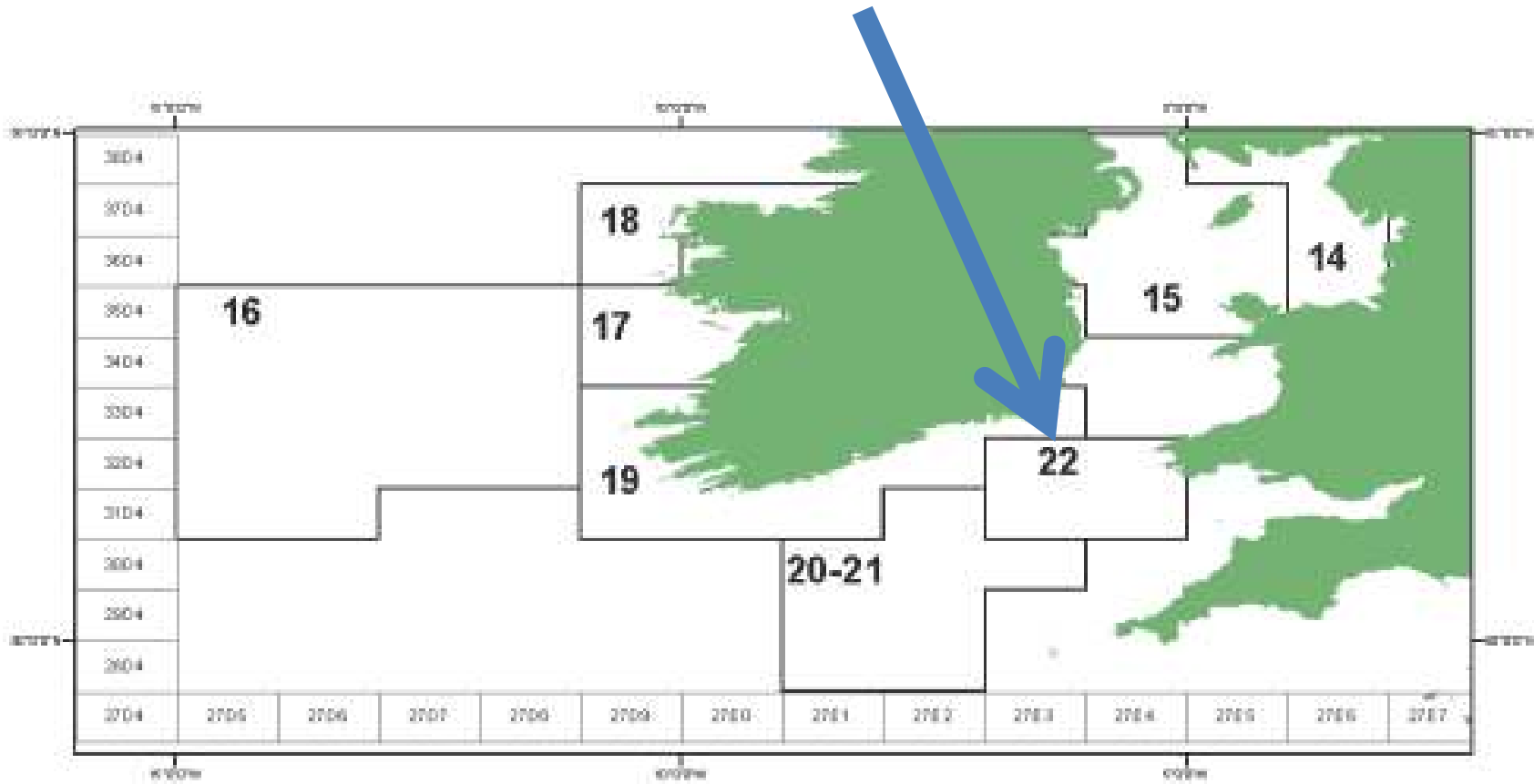
Quality considerations

Discards of *Nephrops* are thought to be extensive, but observations are insufficient to provide a reliable time-series. The data from sampling programmes in France and Ireland are patchy, leading to some uncertainty in the estimation of mean weight in the landings and discard rates.

The area of the *Nephrops* habitat in FUs 20–21 is uncertain. There seems to be a geographically broad distribution of the population (broader than the fishery), but the habitat is particularly complex and heterogeneous; this may lead to problems assessing the actual area.

Very few UWTV observations of density exist although more extensive surveys were carried out in 2012 and 2013. The observed densities are moderate (0.3–0.8 burrow m⁻²) but there is large variability in the density structure.

FU22 : smalls



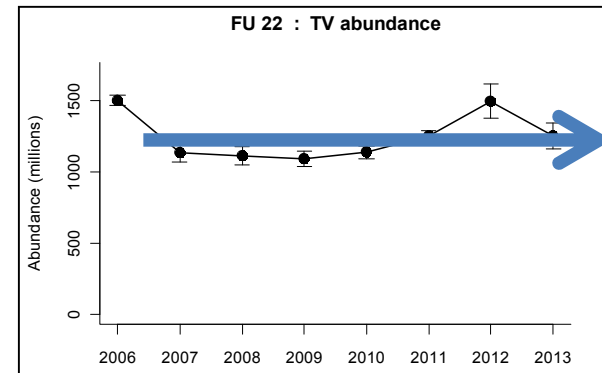
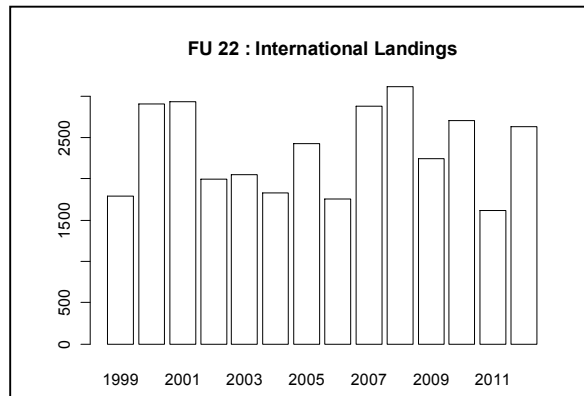
FU22 - Smalls

Scientific basis

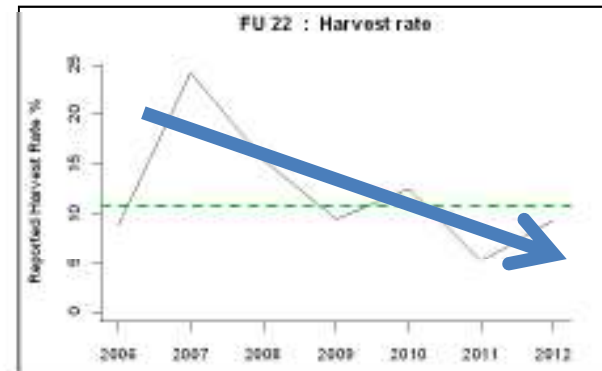
Assessment type	UWTV and trends of the size structure of catches.
Stock data category	1
Input data	One survey index (UWTV-FU 22), commercial catches (international landings (Ireland, France and UK), length frequencies from Irish catch and discard sampling); maturity data (from commercial catch sampling and during surveys), fixed natural mortality. Discard survival rate.
Discards and bycatch	Discards from the Irish <i>Nephrops</i> -directed fleet are included in the assessment.
Indicators	Mean size and lpue.
Other information	None.
Working group report	WGCSE (ICES, 2013).

25% discards survival used for this area based on french estimates in the 80s

FU22 - Smalls



Stock status			
F (Fishing Mortality)			
	2010	2011	2012
MSY (F_{MSY})	✘	✔	✔ Appropriate
Precautionary approach (F_{pa}, F_{lim})	?	?	? Unknown
SSB (Spawning Stock Biomass)			
	2011-2013		
MSY (B_{MSY})	?	Undefined	
Precautionary approach (B_{pa}, B_{lim})	?	Undefined	
Qualitative evaluation	→	Stable	



The FU 22 stock component is considered to be stable. Harvest rates (removals/UWTV abundance) have decreased since 2007 and are below the F_{MSY} proxy

FU22 - Smalls

Advice for 2014

ICES advises on the basis of the MSY approach that landings from FU 22 in 2014 should be no more than 2674 tonnes. If total discard rates do not change from the average of the last three years (2010–2012), this implies total catches of no more than 2937 tonnes. Note that this figure includes discards expected to survive the discarding process – assumed to be 25% of the total number discarded for this stock.

In order to ensure the stock in this FU is exploited sustainably, management should be implemented at the functional unit level.

2008	No increase in effort	< 5.3
2009	No increase in effort	< 5.3
2010	No new advice, same as for 2009	< 5.3
2011	See scenarios	-
2012	FUs 20–21: reduce catch	-
	FU 22: MSY approach	2.3 ³⁾
2013	FU 22: MSY approach (updated November 2012)	3.1 ³⁾
2014	FU 22: MSY approach	2.7 ³⁾

Stock status

F (Fishing Mortality)			
	2010	2011	2012
MSY (F_{MSY})	✓	✓	✗ Above target
Precautionary approach (F_{pa}, F_{lim})	?	?	?

SSB (Spawning-Stock Biomass)			
	2011	2012	2013
MSY ($B_{trigger}$)	✓	✓	✓ Above trigger
Precautionary approach (B_{pa}, B_{lim})	?	?	?

Stock status

F (Fishing Mortality)			
	2010	2011	2012
MSY (F_{MSY})	✓	✓	✗ Above target
Precautionary approach (F_{pa}, F_{lim})	?	?	?

SSB (Spawning-Stock Biomass)			
	2011	2012	2013
MSY ($B_{trigger}$)	✓	✗	✓ Above trigger
Precautionary approach (B_{pa}, B_{lim})	?	?	?

Stock status

Firth of Clyde

F (Fishing Mortality)			
	2010	2011	2012
MSY (F_{MSY})	✗	✗	✗ Above target
Precautionary approach (F_{pa}, F_{lim})	?	?	?

SSB (Spawning-Stock Biomass)			
	2011	2012	2013
MSY ($B_{trigger}$)	✓	✓	✓ Above trigger
Precautionary approach (B_{pa}, B_{lim})	?	?	?

Sound of Jura

F (Fishing Mortality)			
	2010	2011	2012
MSY (F_{MSY})	✓	✓	✓ Below target
Precautionary approach (F_{pa}, F_{lim})	?	?	?

SSB (Spawning-Stock Biomass)	
	2011-2013
MSY ($B_{trigger}$)	?
Precautionary approach (B_{pa}, B_{lim})	?
Qualitative evaluation	↔ Decreasing

Stock status

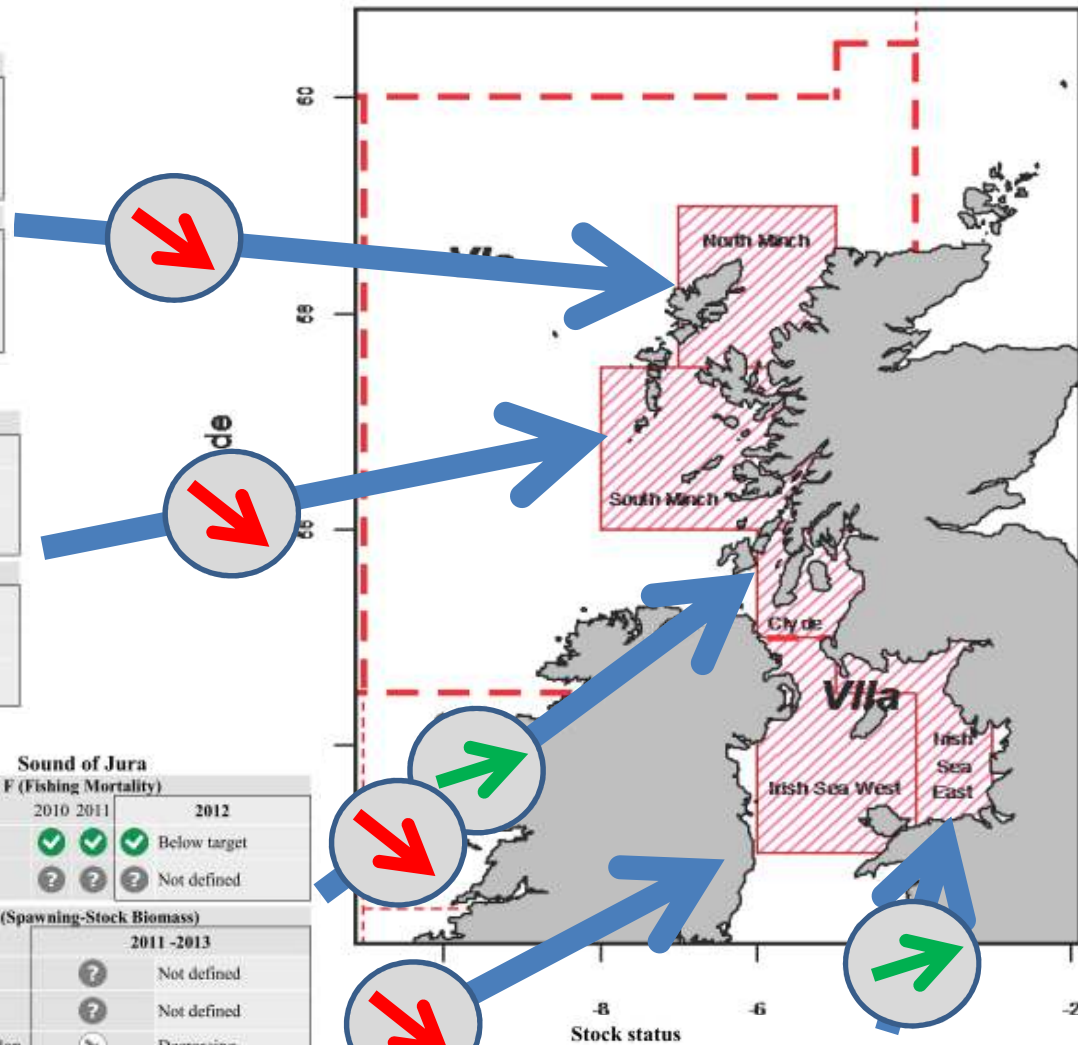
F (Fishing Mortality)			
	2010	2011	2012
MSY (F_{MSY})	✓	✗	✗ Above target
Precautionary approach (F_{pa}, F_{lim})	?	?	?

SSB (Spawning-Stock Biomass)			
	2011	2012	2013
MSY ($B_{trigger}$)	✓	✓	✓ Above trigger
Precautionary approach (B_{pa}, B_{lim})	?	?	?

Stock status

F (Fishing Mortality)			
	2010	2011	2012
MSY (F_{MSY})	✓	✓	✓ Below target
Precautionary approach (F_{pa}, F_{lim})	?	?	?

SSB (Spawning-Stock Biomass)	
	2011-2013
MSY ($B_{trigger}$)	?
Precautionary approach (B_{pa}, B_{lim})	?
Qualitative evaluations	↔ Stable

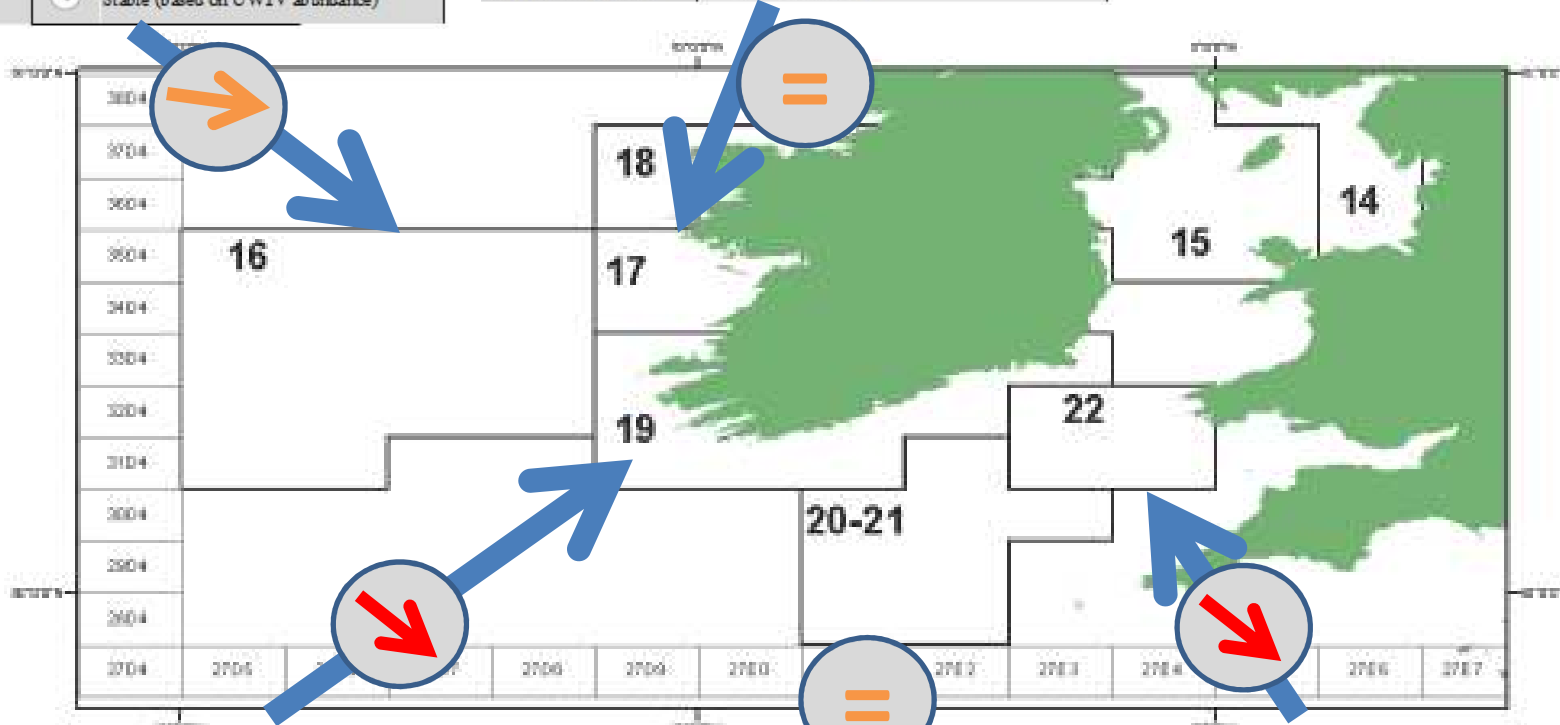


F (Fishing Mortality)			
	2010	2011	2012
MSY (F_{MSY})	?	?	✓ Appropriate
Precautionary approach (F_{pa}, F_{lim})	?	?	? Undefined

SSB (Spawning-Stock Biomass)	
2012-2013	
MSY (B_{MSY})	? Undefined
Precautionary approach (B_{pa}, B_{lim})	? Undefined
Qualitative evaluation	→ Stable (based on UWIV abundance)

F (Fishing Mortality)			
	2010	2011	2012
MSY (F_{MSY})	✓	✓	✗ Above target
Precautionary approach (F_{pa}, F_{lim})	?	?	? Undefined

SSB (Spawning-Stock Biomass)	
2011-2013	
MSY (B_{MSY})	? Undefined
Precautionary approach (B_{pa}, B_{lim})	? Undefined
Qualitative evaluation	↘ Decreasing



F (Fishing Mortality)			
	2010	2011	2012
MSY (F_{MSY})	?	✓	✗ Above target
Precautionary approach (F_{pa}, F_{lim})	?	?	? Undefined

SSB (Spawning-Stock Biomass)	
2011-2013	
MSY (B_{MSY})	? Undefined
Precautionary approach (B_{pa}, B_{lim})	? Undefined
Qualitative evaluation	↘ Decreasing

F (Fishing Mortality)			
	2010	2011	2012
MSY (F_{MSY})	✗	✓	✓ Appropriate
Precautionary approach (F_{pa}, F_{lim})	?	?	? Unknown

SSB (Spawning-Stock Biomass)	
2011-2013	
MSY (B_{MSY})	? Undefined
Precautionary approach (B_{pa}, B_{lim})	? Undefined
Qualitative evaluation	→ Stable

Summary

Stock	ICES advice for 2013	ICES advice for 2014	Change to advice
Nephrops (FU11)	4 200	3 485	-17%
Nephrops (FU12)	5 800	5 211	-10%
Nephrops (FU13)	6 400	6 265	-2%
Other rectangles	250	326	+30%
Total (VI)	16 650	15 287	-8%
Nephrops (FU14)	880	951	8%
Nephrops (FU15)	9 300	8 244	-11%
Nephrops (FU16)	1 800	1 848	3%
Nephrops (FU17)	590	591	0%
Nephrops (FU19)	820	521	-36%
Nephrops (FU20-21)	2 500	2 500	0%
Nephrops (FU22)	3 100	2 674	-14%
Other rectangles	200	235	18%
Total (VII)	19 190	17 564	-8%

Summary for div. VII

