

# FISHERIES COMMITTEE

08:00, 19<sup>th</sup> December 2013  
Fisheries Department

## AGENDA

### PART 1

1. **Apologies for absence:**
2. **Declarations of interest:**
3. **Confirmation of the Minutes of the meeting held on 19<sup>th</sup> September 2013.** Minutes Attached
4. **Matters arising from the Minutes of the meeting held on 19<sup>th</sup> September 2013.**
5. **Fisheries Committee -Terms of Reference** Item 5 attached
6. **Reallocation of fishing effort between 1<sup>st</sup> & 2<sup>nd</sup> *Doryteuthis gahi* seasons** Item 6 attached
7. **FIFCA Questions** Item 7 attached
8. **Modification to trawl fishing gear for reducing by-catch of undersized Rock Cod** Item 8 attached  
& Presentation
9. **Meeting Schedule & date of next meeting** Item 9 attached

# FISHERIES COMMITTEE

## OPEN MINUTES

**Fisheries Department**  
**Thursday 19<sup>th</sup> September 2013**  
**9.00am**

**These minutes are draft minutes until confirmed by resolutions at the next meeting of this committee**

<b>Present:</b>	The Honourable Gavin Short - Chairman	GS
	Director of Natural Resources – John Barton	DNR
	Attorney General – Mark Lewis	AG
	Head of Policy – Jamie Fotheringham	JF
	Mrs Sheila Stewart	SS
	Mr John Pollard	JP
	Mr Tom Blake	TB

**Minute Taker:** Mrs Katrina Stephenson

**Public:** 3

### PART I

1	Apologies for Absence	ACTION
1.1	Apologies for absence were received from the Chief Executive, Mark Boucher, Drew Irvine and MLA Roger Edwards.	
2	Declarations of Interest	
2.1	SS, JP & TB declared an interest in the whole agenda.	
3	Confirmation of the Minutes of the Meeting held on 5 October 2012	
3.1	The Minutes of the 5 October 2012 were confirmed without amendment.	
4	Matters Arising from the Minutes of the Meeting held on 5 October 2012	
4.1	There were no matters arising.	
5.	Total Allowable Effort & Catch 2014	
5.1	The DNR explained that the paper sets out the	

	recommended limits on catch and effort for all ITQ fisheries for 2014 and contains key recommendations. The paper has already been circulated to the fishing industry and a presentation was held on the paper to allow for discussion and any questions. The DNR has received a couple of submissions on the proposals.	
<b>5.2</b>	The main recommendation for change compared to 2013 is reducing the catch target of rockcod from 65,000 to 60,000 tonnes, or 57,000 tonnes. Two submissions, including one from FIFCA had expressed preference for 60,000 tonnes and this was the proposal here.	
<b>5.3</b>	It is also proposed that the SBW - Pelagic fishery be reduced from 6,000 to 2,000 tonnes. The Southern Blue Whiting is depleted and there is no sign of recovery happening. Catches are at very low levels.	
<b>5.3.1</b>	The closed period of the area for Southern Blue Whiting was also recommended to be implemented earlier from the 1 <sup>st</sup> September to the 15 <sup>th</sup> August to protect SBW spawning areas.	
<b>5.3.2</b>	TB asked if the closed areas were working and if it was having any effect on biomass. He hoped with the date being brought forward there would be more recruitment in the future. He also asked if there had been any communication with Argentina on this issue to see if they were carrying out any measures like the Falklands.	
<b>5.3.3</b>	The DNR said there is no communication with Argentina and the decline in Falklands SBW stocks and catches also seem to be mirrored in the Argentine fishery, where catches are also a shadow of previous levels. The decline in stocks must also be having an impact for Argentine fishermen. SBW had been one of the high priority species on the South Atlantic Fisheries Commission agenda. The Chair lamented the Argentine withdrawal from the SAFC process and emphasised that the current problems in the SBW fishery were exactly the sort of thing that the SAFC process had been intended for.	
<b>5.4</b>	All members agreed for the limits to be gazetted.	
<b>6.</b>	<b>Proposal on terms &amp; conditions for the 2014 <i>Illex</i> fishery</b>	

<b>6.1</b>	The DNR informed members that the basic model for the <i>Illex</i> fishery was unchanged with the fishery remaining as a licensed fishery. There is still ongoing discussion on joining the ITQ system, however that was some way off and would not happen for the forthcoming season. <i>Illex</i> catches have improved so there is some increased confidence at present. The changes proposed largely relate to the refund policy. Currently there are 3 licence periods and it is recommended in the paper that a single licence period be offered for the full season. It is also recommended that high seas catches be included in the license refund calculation. Vessels wishing to access the refund policy will have to comply with this but it is voluntary; they could choose not to access the scheme. The refund policy will only be for vessels that have fished the whole season or a full season equivalent will be calculated. These proposed changes do have the effect of limiting the application of the refund policy however there has been some risk that it could be unduly generous in some cases.	
<b>6.1.1</b>	TB commented that a single licence period is less flexible than at present and it would not be a good move prior the review to go to ITQ. The current system is not overly complicated and operationally is more straight forward.	
<b>6.1.2</b>	JP said that during the consultation it was put forward about allocation policy. It is not worth changing the license allocation policy for a 1 year period. At present partners of the fishing companies understand the system so it should stay as it is. SS suggested that a working group be set including Fisheries to discuss this issue as more consultation is required.	
<b>6.1.3</b>	The DNR agreed that there needs to be more discussion before being sent to ExCo as a lot of the people involved in the <i>Illex</i> industry are currently away.	
<b>6.2</b>	TB said that regarding the high sea catches, this would be very difficult to police and there needs to be a lot of thought on how to verify catches. This would be very complicated so how would you do this.	
<b>6.2.1</b>	In reply the DNR said that reporting from the high seas would be voluntary as the Captain's can't be made to do this. However, they would have to do so if they wished to access the full refund policy.	

<b>7.</b>	<b>Date of next meeting</b>	
<b>7.1</b>	This will be advised at a later date.	
<b>8.</b>	<b>Exclusion of the Press and Public</b>	
<b>8.1</b>	<p>The Chairman moved as follows:</p> <p><i>"I move that the press and public be now excluded on the ground that the next items of business to be considered are likely to disclose exempt information under paragraph(s) 4 &amp; 9 being Economic interest &amp; information about others financial &amp; business affairs of Schedule 3 of the Committees (Public Access) Ordinance 2012."</i></p>	
	<b>PART 2</b>	
<b>9.</b>	<b>Confirmation of the Exempt Minutes of the Meeting held on 5 October 2012.</b>	
	<i>Not for publication by virtue of paragraph 4 &amp; 9 of Part 1 &amp; 2 of Schedule 3 of the Committees (Public Access) Ordinance 2012, relating to 4 &amp; 9 being Economic interest &amp; information about others financial &amp; business affairs.</i>	
<b>9.1</b>	The Minutes of the 5 October 2012 were confirmed without amendment.	
<b>10.</b>	<b>Matters Arising from the Exempt Minutes of the Meeting held on 5 June 2012.</b>	
	<i>Not for publication by virtue of paragraph 4 &amp; 9 of Part 1 &amp; 2 of Schedule 3 of the Committees (Public Access) Ordinance 2012, relating to 4 &amp; 9 being Economic interest &amp; information about others financial &amp; business affairs.</i>	
<b>10.1</b>	There were no matters arising.	
<b>11.</b>	<b>Fishing Access Fees 2014</b>	
	<i>Not for publication by virtue of paragraph 4 &amp; 9 of Part 1 &amp; 2 of Schedule 3 of the Committees (Public Access) Ordinance 2012, relating to 4 &amp; 9 being Economic interest &amp; information about others financial &amp; business affairs.</i>	
<b>11.1</b>	The DNR informed members that this paper is the 'standard' paper which has been presented for discussion around this time of the year. No level of fee has been set as that is for ExCo to decide. The	

	reducing of catches on rockcod and Southern Blue Whiting will have a knock on effect on fees. Catches of SBW in one fishery should be reduced to a third of previous levels. The Fisheries Department has processed the catch data and the fishing industry has provided the price data.	
<b>11.2</b>	TB commented that on page 3 of the paper it refers to where species are increasing and the TAC is being reduced in the case of rockcod. This requires amending.	
<b>11.2.1</b>	The catch of rockcod is a lot lower due to the Russian market being closed off to Spanish vessels. This has had a big effect and is a slight anomaly in the market	
<b>11.3</b>	When reviewing the licence fees the change in the rockcod quota and A/Y fishery shows that the industry will be paying more for less commented JP. The effort will be reduced but effectively it will be an increase. DNR agreed that the reductions in rock cod catches could result in the fee/revenue ratio increasing. It was more complicated in effort controlled fisheries because as discussed rock cod catches are already reducing but effort may be focused on other species.	
<b>11.4</b>	These views need to be reflected in the paper. FIFCA will submit their views to the DNR to be included in the paper before it goes to ExCo. This will most likely be November at the earliest due to the election.	
<b>11.5</b>	TB said the industry needs to know what is happening for next year as soon as possible and the earlier the better.	

**Minutes confirmed this                      day of                      2013.**

**Chairman**

**Secretary**

## **Fisheries Committee Paper**

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### **Part: 1**

### **Title: Fisheries Committee – Terms of Reference**

### **Agenda Item: 5**

**Date: 19 December 2013**

**Report of: Director of Natural Resources**

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### **1. Introduction**

The purpose of this paper is to provide the opportunity for the Terms of Reference (ToR) for the Fisheries Committee to be considered, and for any recommendations for change to be made. The section of the Fisheries Ordinance 2005 which addresses the setting up of the Fisheries Committee, membership and its purpose is set out in Annex A. By way of comparison the ToR for the period prior to the introduction of the 2005 Ordinance are set out in Annex B.

### **2. Recommendations**

The Terms of Reference to be considered and assessed as to whether they remain 'fit for purpose'.

### **3. Background**

**3.1** The Fisheries Committee has been in existence for many years. The previous ToR set out in Annex B appear to date from 1995. The Fisheries (Conservation & Management) Ordinance 2005 made specific provision for a Fisheries Committee. Section 7 of the Ordinance, reproduced here in Annex A, sets out the membership and purpose of the committee. The function of the committee is set out in a single sentence at S7(4). Whilst this might seem brief for the ToR of a committee it does allow a wide range of issues to come before the committee.

**3.2** Some time ago D/NR queried whether the membership of the committee needed reviewing. Some members have a good attendance record, some less good. The most obvious alternative model might be that of the Agricultural Advisory Committee (AAC) which consists of MLAs, Industry Representatives, and Officers from within the department. At the time it

was considered previously there was no real consensus. There was some feeling that it was a useful forum for the fisheries sector to engage with senior officers. Any change to the AAC model would most likely make the committee more operational than strategic or at least combine the two aspects. However, the ToR already allows a range of operational issues to be considered by the committee. The membership issue is flagged up here again as it has some relevance to the ToR.

#### 4. Annex A

##### **The Committee**

7.—(1) There shall be a Fisheries Committee which shall be constituted by two elected members of the Legislative Council selected by all the members of the Legislative Council, the Director and such other public officers as may be determined by the Governor and by such number of representatives of fishing or other interests selected in such manner as the Governor may determine.

(2) The Chairman of the Committee shall be such of the two members of the Committee selected by the elected members of the Legislative Council as shall be determined by the elected members of the Legislative Council and the other of them shall be the Vice-Chairman of the Committee.

(3) The Committee shall not transact any business at any time when both the Chairman and the Vice-Chairman are absent therefrom.

(4) The function of the Committee shall be to advise the Director as to the exercise of his powers under this Ordinance and as to such other matters on which he consults them.

#### 5. Annex B

##### **FISHERIES COMMITTEE**

##### **Terms of Reference 1995 -2004**

1. The Committee shall be advisory to Executive Council
2. It shall consider all matters referred to it by Executive Council or such matters relating to the fishing industry as it considers fit.
3. In particular the Committee shall consider:
  - a) matters relating to the conservation and management of fish stocks, and the development of new fishing opportunities.
  - b) fisheries licensing policy, and its role in the development of a Falkland Islands fishing industry.
  - c) the development of infrastructure in support of the fishing industry.



- d) The provision of services to the fishing industry, and the encouragement of local companies in providing such services.
- 4. Matters relating to the flagging and regulation of fishing vessels operating in Falklands' waters.
- 5. The economic benefit to the Falkland Islands from the fishing industry, and ways in which this might be improved.

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## Fisheries Committee Paper

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### Part: 1

**Title:** Re-allocation of fishing effort between 1<sup>st</sup> and 2<sup>nd</sup> *D. gahi* seasons

**Agenda Item:** 6

**Date:** 19 December 2013

**Report of:** Stock Assessment Scientist (AW)/ Senior Fishery Scientist/  
Director of Natural Resources

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### 1. Introduction

Currently, the 1<sup>st</sup> season is scheduled for 50 calendar days of fishing (51 in leap years) from February 24 to April 14, and the 2<sup>nd</sup> season is scheduled for 78 calendar days of fishing from July 15 to September 30. During the 1<sup>st</sup> season, squid of the first, autumn-spawning cohort (ASC) are mainly exploited, whereas during the second season squid of the second, spring-spawning cohort (SSC) are mainly exploited. Hence, the exploitation rate for the SSC is greater than for the ASC. As a probable consequence, the 2<sup>nd</sup> seasons have been stopped early four times between 2006 and 2013, whereas the 1<sup>st</sup> seasons have not been stopped early. This suggests that 2<sup>nd</sup> seasons under the current schedule are regularly fished closer to the conservation limit of 10,000 of spawning stock biomass that should be left at the end of each fishing season.

Re-allocating effort from 2<sup>nd</sup> season to 1<sup>st</sup> season would have the immediate consequence of equalizing fishing pressure between the two annual *Loligo* (= *D. gahi*) cohorts. A transfer of 14 days would set both seasons to 64 days.

The advantages to set the same amount of fishing days in each fishing season would be:

- a/ Distribution of the exploitation rate equal to both cohorts
- b/ Relieve the exploitation pressure from the second (SSC) cohort
- c/ Allow squid of the second (SSC) cohort to have two weeks more to grow (and increase their biomass) before exploitation during the 2<sup>nd</sup> season
- d/ Extension of the 1<sup>st</sup> season for 2 weeks until the end of April won't affecting maturation of squid of the first ASC cohort – they mature mainly in May, and also migrate to shallow waters.

### 2. Recommendations

Implement the equalization of the length of both seasons gradually to avoid potential significant changes in fishing vessels schedules. Gradual implementation will also allow any problems with increased catches of more mature squid to be detected and assessed. In 2014 extend the first season by 7 days running from 24 February until 21 April, and cut short the second season by 7 days starting it from 22 July until 30 September. Review the potential problems and results of changes of the lengths of fishing seasons. Implement the rest of changes (by another period of 7 days) in 2015, if no adverse impacts are seen, or at some future point if additional monitoring is required.

### 3. Background

Two considerations apply to effort redistribution: the effect on catch rates and the effect on maturity distributions of the *Loligo* caught. These were reviewed by examining the catch, effort, and maturity data in the most recent six years in which *Loligo* fishing was allocated in the second half of April (1997 – 2002), and examining catch and effort data in the most recent six years in which *Loligo* fishing was allocated in the second half of July (2008 – 2013). Examining maturity distributions for the second half of July was not relevant as the *Loligo* are known to be young at the start of the season. No recent years had *Loligo* fishing allocated in both the second half of April and the second half of July.

Daily *Loligo* catch totals per vessel in each 1<sup>st</sup> season 1997 – 2002 were taken from the catch reporting database and plotted over the season time series, together with a generalized additive model (GAM) smooth of the average catch per unit effort (CPUE) trend ( $t \text{ vessel}^{-1} \text{ day}^{-1}$ ). Table 1 summarizes the CPUE trends over the second half of April, and the average CPUEs for periods before, after, and including the second half of April. All years except 1999 had an increasing or flat CPUE trend through the period April 15 – April 30. Four of the 6 years had higher average CPUE in the ~2 weeks before the second half of April, and four of the 6 years had higher average CPUE in the ~2 weeks after the second half of April.

Table 1. Average CPUE comparisons between the period proposed for opening in 1<sup>st</sup> season (Apr. 15 – Apr. 30), and same-length periods immediately before and after, in the most recent six 1<sup>st</sup> seasons (1997 – 2002) in which 1<sup>st</sup> season opening extended past mid-April.

1 <sup>st</sup> season	Average CPUE (tonnes / vessel / day)			CPUE trend* Apr 15 – Apr 30
	Mar 31 – Apr 14	Apr 15 – Apr 30	May 1 – May 16	
1997	7.9 ± 2.8	11.7 ± 4.5	14.7 ± 3.3	increasing
1998	18.5 ± 6.0	18.0 ± 2.2	13.7 ± 4.1	flat
1999	11.0 ± 2.5	9.8 ± 1.7	11.3 ± 3.5	flat
2000	17.4 ± 5.2	22.9 ± 4.5	18.1 ± 4.4	decreasing
2001	16.9 ± 9.6	16.1 ± 4.5	25.9 ± 4.4	increasing
2002	6.6 ± 1.7	5.6 ± 1.8	9.6 ± 2.4	increasing

\* According to the criterion that the 95% GAM prediction interval at the end of the period is strictly higher or lower than the 95% GAM prediction interval at the start of the period.

*Loligo* maturity index scores were taken from the observer database for the period in each year 1997 – 2002 corresponding to *Loligo* 1<sup>st</sup> season (C licence), and within the area of the Loligo Box. The maturity stages from 0 (juveniles), immature (1-3), maturing (4), mature (5) and spent (6) were plotted vs. sample day in each year, together with the GAM smooth of the average maturity trend. Average proportions per maturity score (scale 1 to 5) were summarized by week (Figure 2 for females and Figure 4 for males). However, more important than average maturity is the proportions that are very immature (hence commercially low-value and removed with little benefit) or very mature (hence ecologically important as spawners). Maturity scores 2 and 5 were respectively the lowest and highest scores to occur regularly in all years 1997 – 2002. Therefore proportions of 2 and 5 were plotted from all six years combined and also fitted with GAM smooths (Figure 1 for females and Figure 3 for males). For females, the proportion of maturity 2 decreased significantly from its highest level at the start of the season (February 1) to a minimum around the start of the period April 14 – April 30, increased significantly through the period April 14 – April 30, then levelled off. The proportion of maturity 5 had a slight significant increase leading up to the period April 14 – April 30, then a non-significant decrease throughout the period April 14 – April 30. For males, the proportion of maturity 2 decreased significantly from the start of the season to approx. April 14, then increased significantly to the end of the season (May 31). The proportion of maturity 5 increased significantly from the start of the season to the period April 14 – April 30, then decreased significantly to the end of the season.

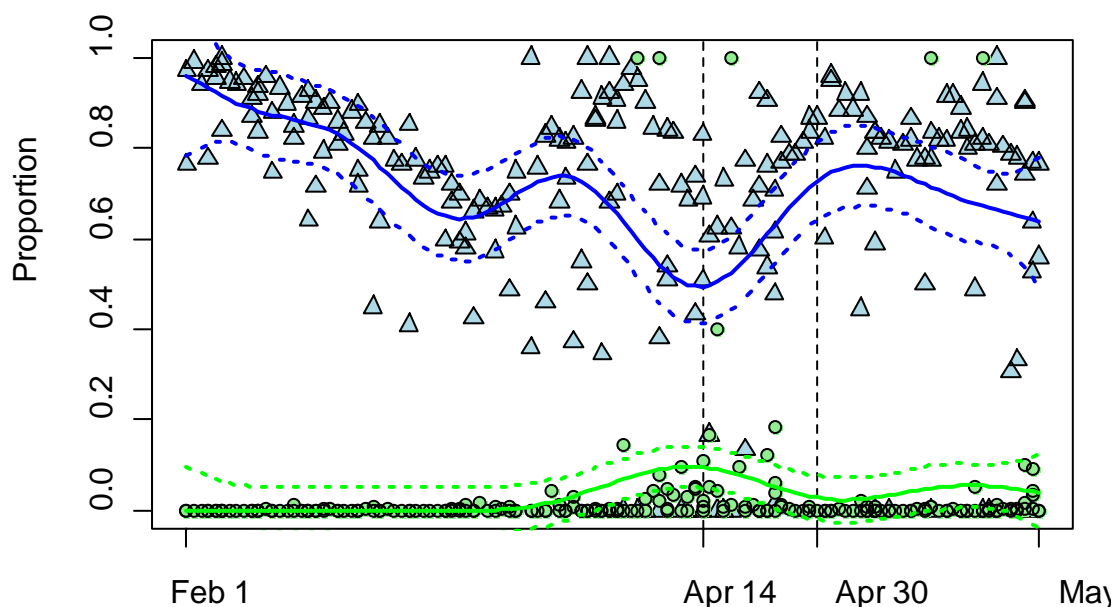


Figure 1. Sample proportions of female *Loligo* that are maturity 2 (blue triangles) and maturity 5 (green circles) cumulatively in the most recent six 1<sup>st</sup> seasons (1997 –

2002) in which 1<sup>st</sup> season opening extended past mid-April. GAM smooths of the respective proportion trends are shown with 95% prediction intervals. The proposed period for opening (Apr. 15 – Apr. 30) is indicated with vertical broken lines.

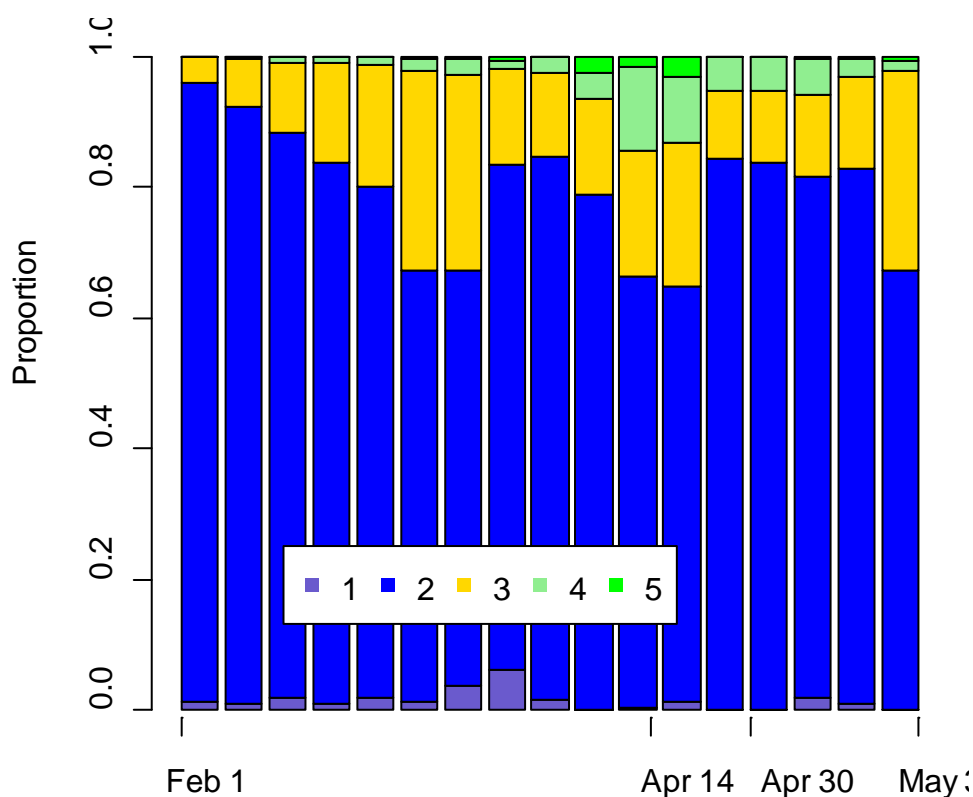


Figure 2. Weekly female *Loligo* maturity proportions (from 1 to 5) cumulatively in the most recent six 1<sup>st</sup> seasons (1997 – 2002) in which 1<sup>st</sup> season opening extended past mid-April.

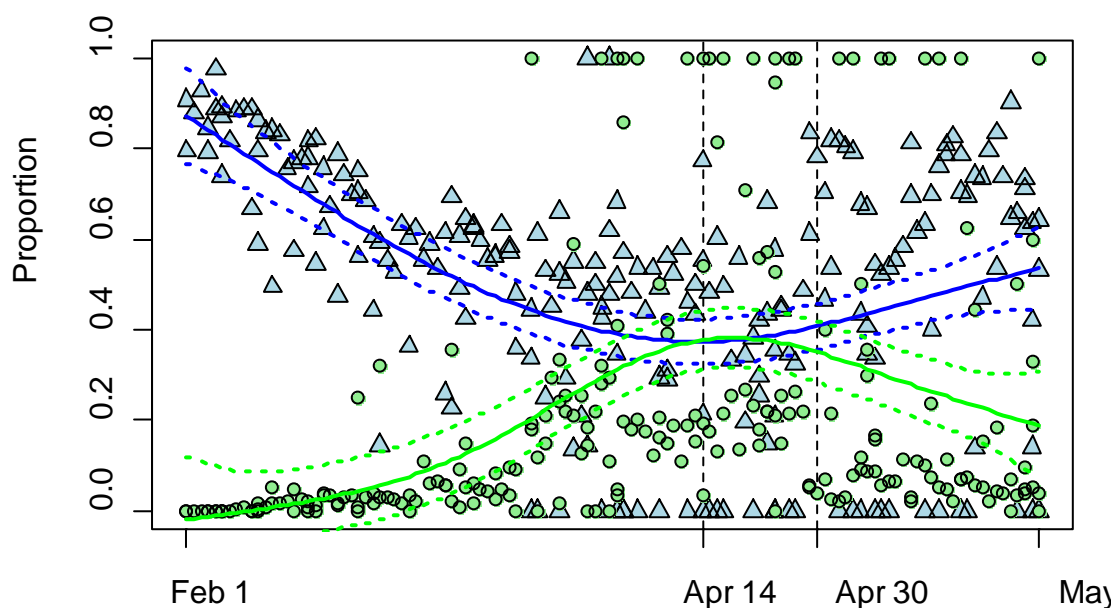


Figure 3. Sample proportions of male *Loligo* that are maturity 2 (blue triangles) and maturity 5 (green circles) cumulatively in the most recent six 1<sup>st</sup> seasons (1997 – 2002) in which 1<sup>st</sup> season opening extended past mid-April. GAM smooths of the respective proportion trends are shown with 95% prediction intervals. The proposed period for opening (Apr. 15 – Apr. 30) is indicated with vertical broken lines.

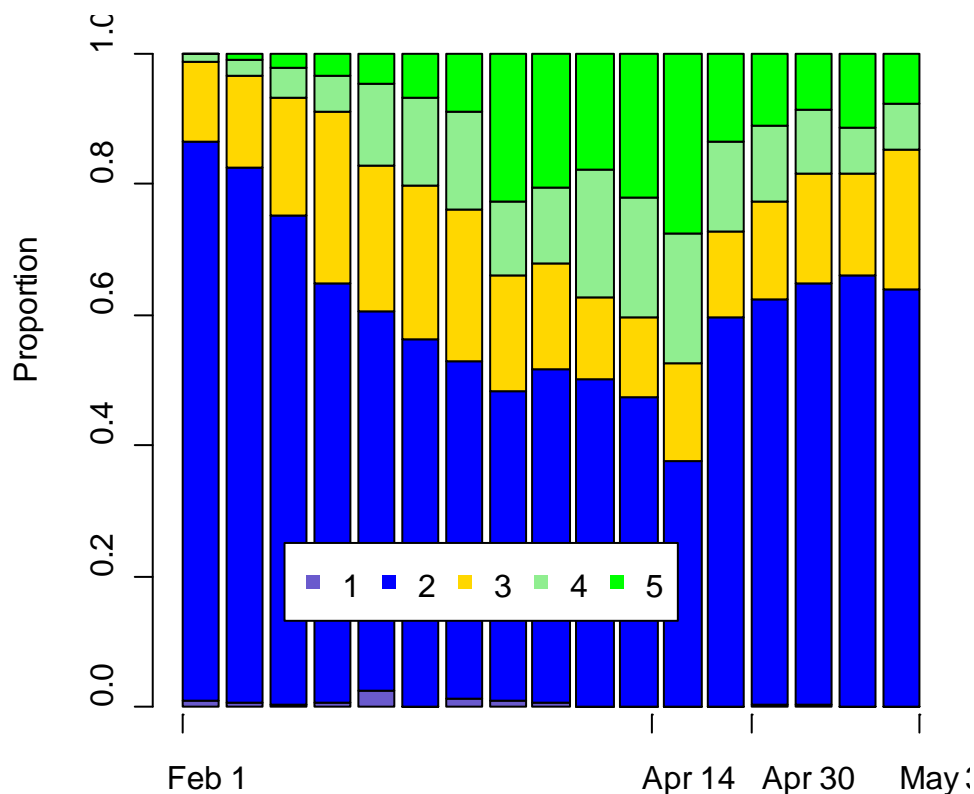


Figure 4. Weekly male *Loligo* maturity proportions (from 1 to 5) cumulatively in the most recent six 1<sup>st</sup> seasons (1997 – 2002) in which 1<sup>st</sup> season opening extended past mid-April.

Daily *Loligo* catch totals per vessel in each 2<sup>nd</sup> season 2008 – 2013 were plotted over the season time series, together with the GAM smooth of the average CPUE trend ( $t \text{ vessel}^{-1} \text{ day}^{-1}$ ). Table 2 summarizes the CPUE trend over the second half of July, and the average CPUEs for the periods before and during the second half of July. Two years had an increasing CPUE trend and four years had a flat CPUE trend through the period July 15 – July 31. Four of the 6 years had lower average CPUE in the ~2 weeks after the second half of July.

Table 2. Average CPUE comparisons between the period proposed for closing in 2<sup>nd</sup> season (Jul. 15 – Jul. 31), and same-length period immediately after, in the most recent six 2<sup>nd</sup> seasons (2008 – 2013).

2 <sup>nd</sup> season	Average CPUE (tonnes / vessel / day)		CPUE trend* Jul 15 – Jul 31
	Jul 15 – Jul 31	Aug 1 – Aug 17	
2008	20.7 ± 8.0	21.9 ± 4.6	flat
2009	29.8 ± 8.1	20.4 ± 6.1	increasing
2010	40.4 ± 8.0	38.5 ± 7.7	increasing
2011	24.9 ± 10.2	20.2 ± 6.7	flat
2012	22.9 ± 4.0	38.8 ± 14.9	flat
2013	18.0 ± 5.9	16.4 ± 3.3	flat

- According to the criterion that the 95% GAM prediction interval at the end of the period is strictly higher or lower than the 95% GAM prediction interval at the start of the period.

## **Fisheries Committee Paper**

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### **Part: 1**

### **Title: Questions from FIFCA**

### **Agenda Item: 7**

### **Date: 19 December 2013**

### **Report of: Director of Natural Resources**

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## **1. Introduction**

FIFCA have submitted the following questions and observations for the December 2013 meeting of the Fisheries Committee. The questions are repeated with answers below.

As mentioned this afternoon, please see below the 6 questions that we would like discussed at the next Fisheries Committee if possible please. We see these as a good starting point in a discussion about the policing of the zone generally, something that will also be good background for the two new MLAs on the Committee too.

1. How is the total level of observer coverage within the total FI zone agreed? When was this last reviewed?
2. How are observers assigned between license types and what is the rationale for this split?
3. How many days of the year on average are covered by the Fisheries Protection Vessel and how does it decide upon on its broad inspection programme?
4. Has consideration been given by the Fisheries Department to augmenting the current protection vessel by utilising MoD vessels and/or helicopters for random checks of vessels?
5. Where does the Director of Natural Resources feel that the largest potential risk areas are in the fishery? How are these risks mitigated currently?
6. What proportion of total license fee revenue is currently dedicated to fisheries policing?

## **2. Questions & Answers**

- 2.1 How is the total level of observer coverage within the total FI zone agreed? When was this last reviewed?



**A:** The primary function of Fisheries Observers is the collection of fisheries and scientific data which ‘feeds’ the stock assessment models which are key to the management of fisheries. These models provide assessments of stock status and provide for recommendations on total allowable catches or effort. As such the level of observer coverage is dictated by considerations of the volume and variety of fish and squid which need to be sampled and at what frequency. For example one observer can generally sample sufficient squid in the Loligo fishery across the fleet of 16 vessels (6.25% fleet coverage). However if the fleet splits between north and southern areas it would be preferable to have an observer in each area. If 2 observers are deployed they may still be in one area leaving the other uncovered.

Enforcement of Fisheries Legislation is a secondary function. There was a time when it was stated that Observers did not have a role in enforcement, but that has changed and they do undertake that role. However as it is a secondary function it has no real bearing on the number of observers. They will undertake an enforcement role wherever they are placed and provide a contribution to fishery protection. It is not current policy or practice to deliver full fishery protection through the observer programme. One vessel was prosecuted earlier in the year on the basis of information provided by an Observer.

Observer numbers have been reviewed and adjusted periodically but again entirely to meet scientific requirements. The current total complement of 7 observers (with one of these dedicated to seabird interactions and monitoring) dates back to 2010. Observers typically cost of the order of £30K per annum. So 100% observer coverage might cost £ 3 million as a rough approximation (that does not address any of the logistical issues of accommodation, etc).

## 2.2 How are observers assigned between license types and what is the rationale for this split?

**A.** The pattern of deployment of observers is again largely dictated by scientific requirements. In part this will reflect license activity. In part it will reflect the requirement to achieve a required level of fish/squid samples by species and by month, quarter or season. Gaps can appear in that some fishing operations can start up at relatively short notice. The system allows that flexibility but there are not always observers available for instant deployment, and a stipulation along the lines of giving 2 weeks notice before changing license type or species would not be welcomed by the industry.

Again whilst the deployment of observers is primarily dictated by the scientific requirement, some consideration is given to enforcement. There are periods and fisheries which are identified as ‘higher risk’ and they will be put down as a priority for observer tasking.

## 2.3 How many days of the year on average are covered by the Fisheries Protection Vessel and how does it decide upon on its broad inspection programme?

- A. In 2012 “FPV Protegat” spent 294 days at sea, 21 Days were spent on CTDs, 30 Days on Observer transfers only (more Observer transfers did take place but if inspections were also conducted on the same days these are not treated as Observer Transfer only days). This is a typical annual pattern

Protegat spends significantly more time at sea than RN vessels engaged in similar activity. The Owners of the vessel are permitted up to 20 maintenance days per year, if they choose to use them all each year the vessel would be available for 308 days per year. (365 – 20 maintenance – 37 port call).

The Inspection program is dictated by what fishing activity is occurring during each patrol, where & what vessels are catching at the time & whether there are identified issues with individual ships or fisheries. The Fishery officer embarked on the FPV will set off with a set of objectives for the patrol. The duty officer in ‘Fishops’ is responsible for updating tasking in response to new and changing information; VMS data, aerial surveillance, catch reports, observer reports etc.

At sea inspections:

2012				2013			
	<u>ILL</u>	<u>LOL</u>	<u>FIN/RAY</u>		<u>ILL</u>	<u>LOL</u>	<u>FIN/RAY</u>
JAN				JAN			3
FEB	11		4	FEB			6
MAR	14		2	MAR	28		
APR	20			APR	13		2
MAY			2	MAY	8		5
JUN			2	JUN			3
JUL			5	JUL			3
AUG			8	AUG		3	4
SEP			2	SEP		1	11
OCT			8	OCT			4
NOV			5	NOV			
DEC			2	DEC			2
	45	0	40		49	4	43*

**Factors to be considered: weather, when vessels are actually fishing, Observer transfers etc.**

\* to date

2.4 Has consideration been given by the Fisheries Department to augmenting the current protection vessel by utilising MoD vessels and/or helicopters for random checks of vessels?

A. The options of using MoD assets and/or the use of helicopters were considered as part of a major review of fisheries protection some 5 years ago. Any augmentation suggests additional costs to what is already regarded as an expensive operation in some quarters. Significant use is made of BFSAI aerial surveillance. Helicopter winching on and off a heaving fishing vessel is not straightforward and would require trained personnel. It is likely to be an expensive operation as would require a ‘substantial’ helicopter in view of the distances involved. Use of a MoD vessel would incur additional cost, and is more

likely to be considered in the event of non-availability of FIG assets. Introducing a more random element might be better achieved through catch verification at FIPASS or elsewhere; whether done on a 100% basis or a sample basis; 10% of vessels.

**2.5 Where does the Director of Natural Resources feel that the largest potential risk areas are in the fishery? How are these risks mitigated currently?**

- A.** Illegal, Unregulated and Unreported (IUU) fishing activity has changed over the years. Up to 2001 the threat of poaching from completely unlicensed vessels was a significant issue. Since then it has been less of an issue, although could arise if specific conditions apply in the Illex fishery. The more constant risk and the main risk at present relates to the likelihood of licence vessels contravening their licence conditions, and catching fish/squid to which they are not entitled. It can also extend to infringements such as non compliance with measures intended to mitigate against seabird mortalities.

These risks should be mitigated through the use of boardings and inspections at sea, the judicious use of observers, aerial surveillance and other sources of information. In some cases technical measures such as closed areas and gear restrictions are applied.

Fisheries protection is an important aspect in maintaining sustainability of marine resources. Fisheries science is also important as unless the figures are correct the impact from incorrect stock estimations can also be very significant.

**2.6 What proportion of total license fee revenue is currently dedicated to fisheries policing?**

- A.** License revenue is quite variable due to the Illex fishery. The fishery protection budget (ship and air surveillance, staff and ancillary items) is c, £ **2.96** Million. At £ **20** million that is 14.8% at £ **12** Million it is 24.6%.

## Fisheries Committee Paper

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### Part: 1

**Title: Modification to trawl fishing gear for reducing by-catch of undersized rock cod *Patagonotothen ramsayi* in finfish fisheries.**

**Agenda Item: 8**

**Date: 19 December 2013**

**Report of: Stock Assessment Scientists (MJR and AW)**

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### 1. Introduction

Rock cod *Patagonotothen ramsayi* has been the most important target species in finfish fisheries since 2008. Total annual catches averaged 63,000 t in 2008-2012, making the species third in importance (by weight) behind *Illex* and *Loligo* squid in the Falkland fishery (FIG 2013).

The rapid development of rock cod fisheries caused a reduction in the mean size of fish harvested under finfish licences and a corresponding increase in discarding of juvenile fish. Rock cod is now the highest volume discard species in the Falklands – accounting for 88%-96% of reported discards in 2010-2012. In finfish fisheries, reported discards of undersized rock cod have ranged from 3 thousand to 14 thousand tonnes per year in 2008-2012, corresponding to an average by-catch of 15% (FIG, 2013). Research surveys however, demonstrated by-catch proportions as high as 50% using the standard trawl gear (90 mm diamond mesh codend) (Roux et al 2012a; 2012b).

Incidental catches of small, immature rock cod have been occurring at a rate that may impact fishery sustainability. Estimated proportions of immature rock cod in commercial catches in 2007-2012 ranged 40-60% (FIFD, 2013). To ensure stock conservation, a precautionary target of 75% mature fish in the catch was recommended for 2014-2016 (FIFD, 2013). In order to achieve this target, modifications to trawl fishing gear are required to reduce by-catch of juvenile fish.

### 2. Recommendations

The recommendations set out here are based on the analysis of the data. They are for discussion but not for immediate decision. Comments on this paper and the recommendations should be submitted to the Director of Natural Resources by 31 January 2014.

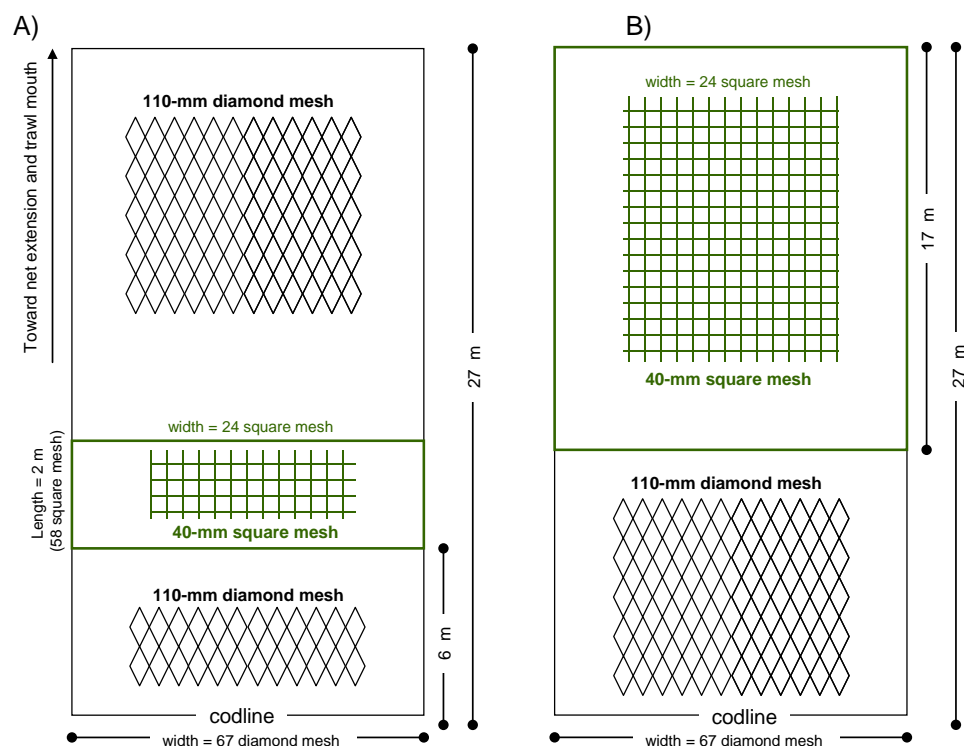
- Increase the minimum allowable codend diamond mesh size from 90 mm to 110 mm in all finfish fisheries.

- Implement the use of a mandatory window of 40-mm square mesh (SMP) inside the top panel of the codend in finfish trawls. Minimum SMP length should be 2-m. SMP should be inserted no closer than 6-m from the codline and beginning no further than 8 m. This may be applied throughout the year, on a seasonal basis (i.e. October 1<sup>st</sup> – April 1<sup>st</sup>) or under certain licence types (i.e. for vessels fishing under restricted finfish (W) licence).
- Prohibit the use of ‘top chafers’ under all finfish licences, as these can further reduce the escapement of juvenile fish.

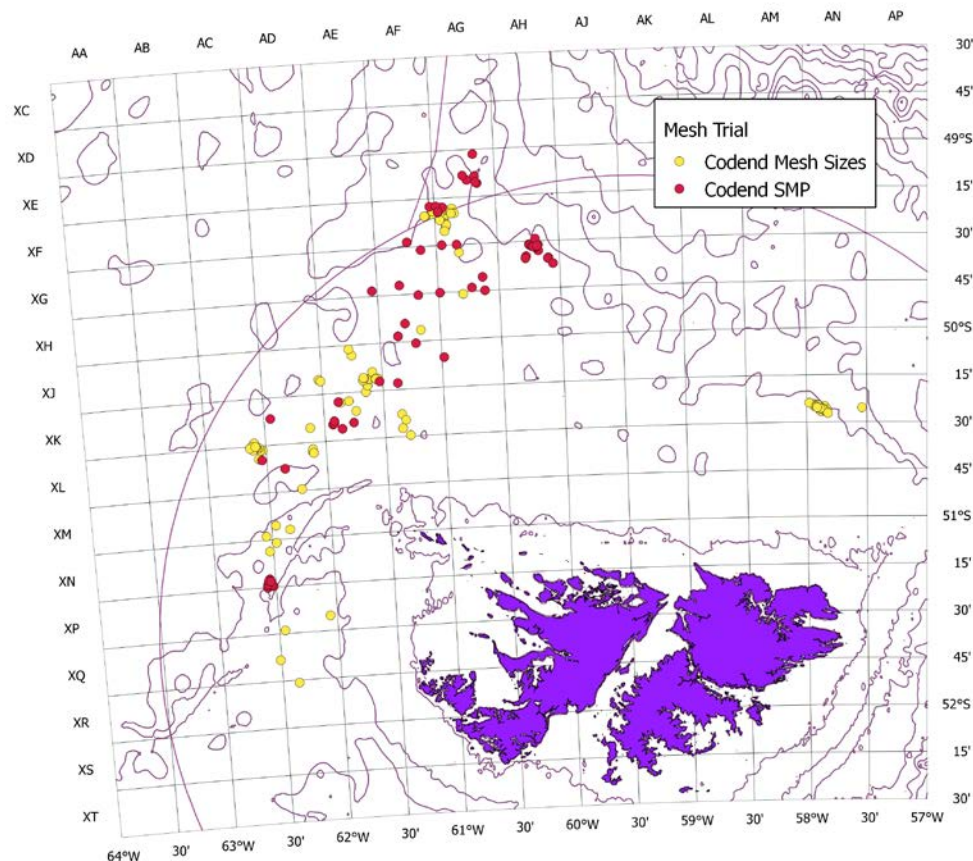
### 3. Background

A series of six experimental trials evaluating the performance of increasing codend diamond mesh sizes and the use of square mesh panels (SMP) for reducing by-catch of undersized rock cod were carried out between November 2011 and October 2013.

Four diamond mesh sizes were investigated: 90 mm (currently the standard, and minimum allowable codend mesh size in finfish trawlers), 110 mm, 120 mm and 140 mm. Two SMP configurations were assessed in the context of mixed species and high rock cod volume catches (Fig 1). All trials were performed on finfish fishing grounds onboard the chartered commercial trawler *Castelo* (Fig 2).



**Figure 1.** Codend-square mesh panels (SMP) configurations (modified top panels) tested during the trials. A) ‘Ventana-2’ configuration: 2-m long 40-mm square mesh panel inserted between 6-8 m from the codline. B) ‘Ventana-17’ configuration: 17-m of 40-mm square mesh beginning 10-m from the codline. The codline is effectively the rearmost end of the codend.

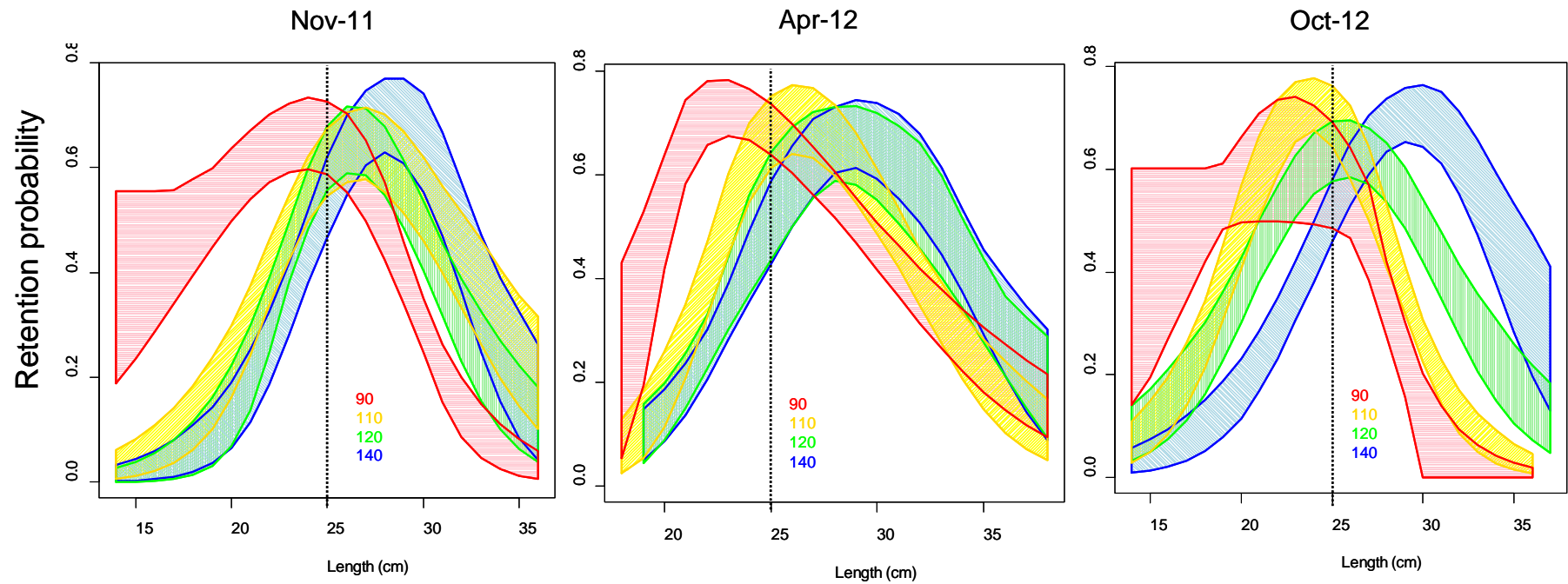


**Figure 2.** Geographic position of trawl stations performed during codend mesh size trials (yellow) and codend- SMP trials (red).

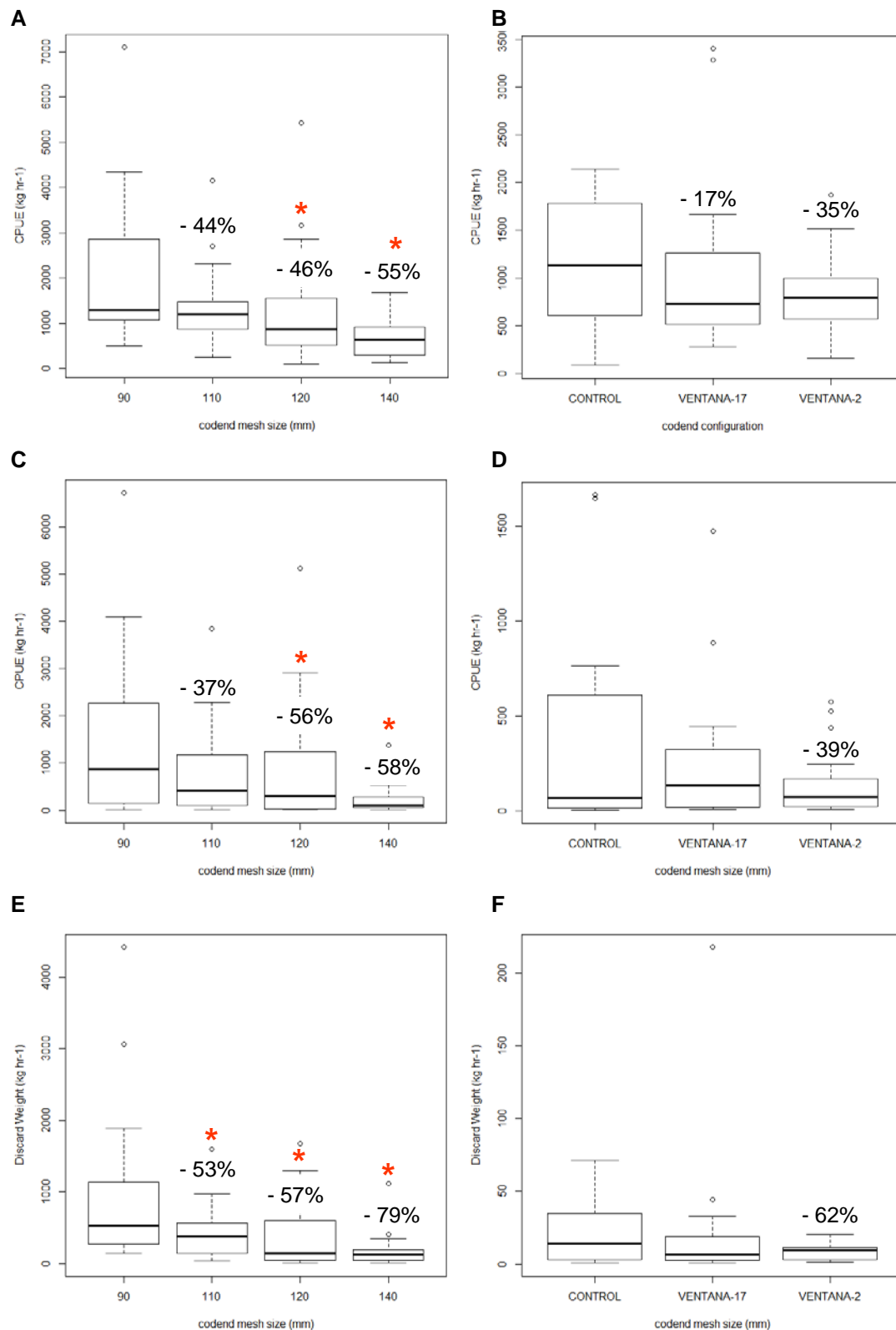
An increase in codend diamond mesh size to 110 mm yielded lower probabilities of retaining undersized (< 25 cm) rock cod (Fig 3). The selectivity of the 120 mm mesh was relatively similar to the 110 mm (Fig 3). However a 120 mm mesh codend caused a significant reduction in total catch and in catch rates of rock cod (Fig 4A and 4C).

Predicted reductions in CPUE in 110 mm mesh lacked statistical significance (Fig 4A and 4C). This means that intrinsic variability in catch between 90-mm and 110-mm mesh was greater than mesh size effects. A 110 mm mesh codend however significantly reduced discard weights of rock cod by more than half (Fig 4E).

A 2-m long, 40 mm square mesh panel (Ventana-2) inserted in a 110-mm diamond mesh codend further reduced retention probabilities for undersized rock cod (Fig 5). SMP use also enhanced the retention of commercial-size rock cod where the species dominated the catch (Fig 5). Predicted reductions in CPUE in a trawl equipped with a 2-m SMP (Ventana-2) lacked statistical significance and essentially reflected an important reduction in catches of undersized rock cod (Fig 4B-D-F). Significant reductions in rock cod CPUE linked to significant reductions in discard weights were observed only when rock cod was >50% of the catch (Roux et al. 2013c).

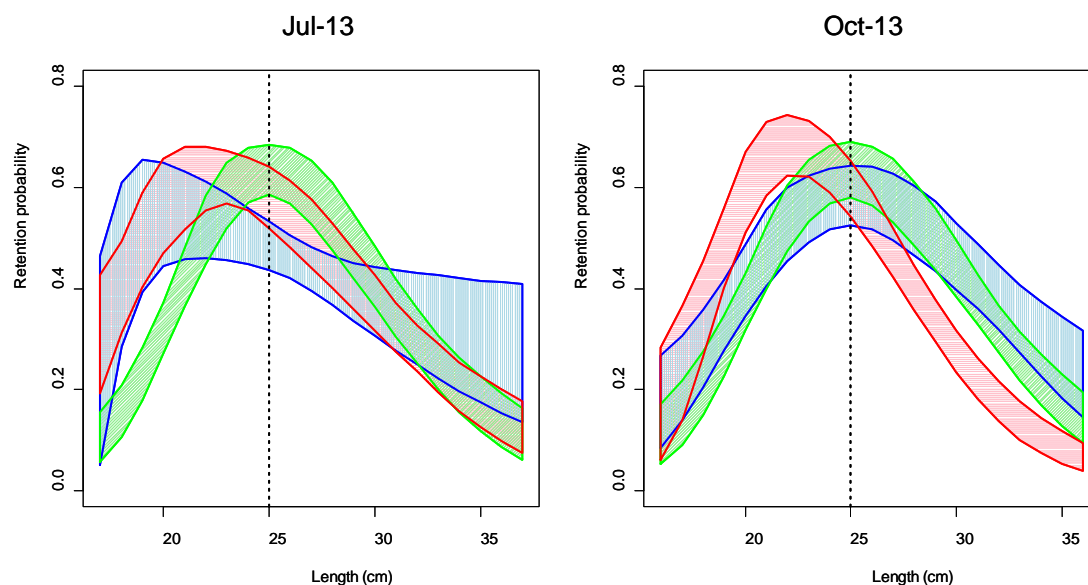


**Figure 3.** Fitted retention probability curves (95% confidence intervals) for rock cod among codend diamond mesh sizes in each of three mesh size trials. Mesh sizes include the standard 90 mm mesh (red) and the larger 110 mm (yellow); 120 mm (green) and 140 mm (blue). Vertical lines indicate the 25-cm length threshold distinguishing between undersized (< 25 cm) and commercial size ( $\geq$  25 cm) rock cod.



**Figure 4.** Total catch rates (A-B), catch rates of rock cod (C-D) and predicted discard weights of rock cod (E-F) among codend mesh sizes (left) and SMP-codend configurations (right). Boxes are defined by the 25<sup>th</sup> and 75<sup>th</sup> percentiles (lower and upper quartile). The thick horizontal line is the median. Dots are data points lying outside the range corresponding to 1.5 times the difference between the lower and upper quartile. Percentages are predicted reductions in average CPUE/Discard weights after removing the effects of all extraneous variables. The asterisk (\*) indicate a statistically significant difference in means. The control in B/D/F is 110mm diamond mesh, no SMP.





**Figure 5.** Fitted retention probability curves (95% confidence intervals) for rock cod between a 110-mm diamond mesh codend (CONTROL- in red) and the same codend equipped with a 2-m SMP (VENTANA-2 - green); and a 17-m SMP (VENTANA-17 - blue). Vertical lines indicate the 25-cm length threshold distinguishing between undersized (< 25 cm) and commercial size ( $\geq$  25 cm) rock cod. Jul-13 trials were performed in the context of generally small volume, mixed species catches. Oct-13 trials were performed in the context of relatively small volume, rock cod dominant catches.

Results from all surveys indicate that a 110 mm diamond mesh codend with a 2-m SMP is the trawl configuration that most effectively reduced by-catch of undersized rock cod with limited impacts on total catch and on catch rates of other commercial finfish species (Roux and Winter 2013, in prep.).

#### 4. References

FIFD (2013). Vessel Units, Allowable Effort, and Allowable Catch 2014. Fisheries Department, Directorate of Natural Resources, Falkland Islands Government.

Roux et al (2012a). Scientific Report, Fisheries Research Cruise ZDLT1-04-2012. Stanley, Fisheries Department, Directorate of Natural Resources, Falkland Islands Government.

Roux et al (2012b). Scientific Report, Fisheries Research Cruise ZDLT1-10-2012. Stanley, Fisheries Department, Directorate of Natural Resources, Falkland Islands Government.

Roux et al (2013c). Scientific Report, Fisheries Research Cruise ZDLT1-10-2013. Stanley, Fisheries Department, Directorate of Natural Resources, Falkland Islands Government.

## Part 1

**FOR PUBLIC DISTRIBUTION**

**Title of Report:** 2014 Fisheries Committee Meeting Schedule

**Report of:** Director of Natural Resources

**Meeting:** Fisheries Committee

**Date:** 19 December 2013

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**1. Purpose**

- 1.1 The purpose of this paper is to set the broad meeting schedule of the Fisheries Committee for 2014.

**2. Recommendation**

The schedule be discussed and any adjustments noted. Dates will then be identified with Gilbert Ho. and committee members.

**3. Background**

- 3.1 It is proposed that meetings of the Fisheries Committee be scheduled as follows:

Date	Reason for Timing
Late March	
Late June	
Mid September	TAE/TAC, licence conditions, Fees?
Early December	Any issues on budget submission, new year issues

- 3.2 The intent is to set dates for Fisheries Committee meetings for 2014 as otherwise it can be difficult to find suitable times. Additional meetings can be arranged if required. In the unlikely event of no or no pressing agenda items then a meeting could be cancelled. Definite dates will be consulted on and circulated once the above is agreed or amended as may be the case. The frequency of meetings in the last 2 years has varied with 4 meetings in 2012 and 2 in 2013.