Quarterly Logbook Report

January – March 2015

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Orkney Sustainable Fisheries Ltd. Quarterly Logbook Report:
January - March 2015

1. Overview

A total of 3 boats <10m submitted logbooks from January – March 2015, representing 3% of the Orkney inshore creel fleet of approximately 80 active vessels. Over this time period 49 out of 90 days at sea were fishable with a total of 16,575 creels hauled and redeployed. The average breakdown of creel deployment can be seen in Table 1.

	Per Trip	Per Week	Per Month
Average Total Creels Hauled[1]	251	1,004	4,016

Table 1. Average number of reported creels deployed per week and per month by logbook index fleet from January–March 2015

2. Catch Per Unit Effort & Undersize Catch Composition

2.1 Catch Per Unit Effort (CPUE)

Brown crab *Cancer pagurus* represented 57% of landed crustacea weight (Table 2), European lobster *Homarus gammarus* 1%, Velvet Crab *Necora puber* 32% and Green crab *Carcinus maenas* 10%.

Catch composition is seen to differ from other quarters in relation to species specific percentage contribution. Brown crab is still seen to represent >50% of catch composition and is in line with previous observations (58% April – June, OSF 2014a; 69% July – September, OSF 2014b).

Lobster catch composition is low, comprising only 1% of all landed crustacea. This is similar however to low catch composition observed within this species in April – June 2014 (3%) but is significantly lower than the observed summer catch compositions in July – September 2014 (11%). Lower interaction rates can be linked to low SST temperatures, which are known to effect lobster movements and subsequent creel interaction. Velvet crabs are responsible for a continued high level of catch composition (32%) and is in line with previous recorded landings (38% April – June 2014, 20% July – September 2014). Green crabs are demonstrated as forming an important component of winter catch composition, accounting for 10% of total landed crustacea. This is in line with previous reported landings (October – 300kg, November 690kg, December – 700kg, OSF 2014c) highlighting its importance with the winter fishery and offset the reduced interaction of Lobster.

Though catch composition is seen to remain constant throughout the year volume of landings different significantly between quarters (Table 2.). Average total crustacea monthly landed weight decreases by 68% between 1st half of the year, with average total landed weight of

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[1] *Average weekly creel deployment base on 4 days at sea per week and average monthly creel deployment based on16 days at sea per month during the time period of January – March 2015.*

12,086kg (1st quarter: Jan – March; 2nd Quarter: April – June) and 2nd half of the year, with monthly average landings of 38,586kg (3rd Quarter: Jul- September; 4th Quarter: October – December).

Species	Total Weight Landed (kg)	Average Weekly Landed Weight (kg)	Average Monthly Landed Weight (kg)	Average Monthly Landed Weight (kg) April – June 2014	Average Monthly Landed Weight (kg) July – September 2014	Average Monthly Landed Weight (kg) October – December 2014
Brown Crab *Cancer pagurus*	6,271	522.5	2,090	2,528.3	7,574	8,227.6
European Lobster *Homarus gammarus*	160.5	13.3	53.2	120	1,175	450
Velvet Crab *Necora puber*	3,760	313	1,252	1,612	2,228	6,070
Green Crab *Carcinus maenas*	1,200	100	400	0	0	495

Table 2. Breakdown of commercially important crustacea landed by the logbook index fleet from January – March 2015

Observed CPUE (Table 3) for brown crab illustrates an average of one crab per two creels based on an average weight of 480g per crab at minimum landing size(MLS) (MLS: Male - 140mm, Female -150mm). Lobster CPUE illustrates 0.009 per creel, providing on average one lobster every 45 creels, based on average weight of 400g at MLS of 87mm, and within current select weight bracket of 400 – 1.5kg imposed by Orkney Fisherman Society (OFS, 2014c). Velvet crab CPUE demonstrates 2 every creel based on an average weight of 100-116g. Currently there is no weight- length relationship data collected on green crabs inhibiting the estimation of marketable number per kg.

Species	CPUE (kg)[2]
Brown Crab *Cancer pagurus*	0.378
European Lobster *Homarus gammarus*	0.009
Velvet Crab *Necora puber*	0.226
Green Crab *Carcinus maenas*	0.072

Table 3. CPUE breakdown in kilograms of reported retained commercially exploited crustacea from January – March 2015.

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[2] $CPUE\ (kg) = \dfrac{Total\ Weight\ Landed\ (kg)}{Totla\ No.Creels\ Hauled}$

2.2 Discard Catch Composition

Discard catch compositions (Fig 1.) demonstrates an average discard interaction rate of 15% in brown crab, <2% lobster and 10% in velvet crab. Brown crab discard interaction rate is low at 15%, however there is high variability around the mean (fig1.) with high levels of interaction still occurring. Brown crab discard interaction would be expected to be higher due to the fishing or inshore sheltered areas, associated with juvenile nursery grounds (Heraghty, 2013). This lower observed interaction rate could be attributed to reduced gear deployment and number of days at sea. Reported higher periods of interaction could occur over consecutive "good weather" days in which more gear is hauled, accounting for variability in discard interaction.

In the case of lobster the low discard rate is to be expected with corresponding limited gear deployment and associated low seasonal SST effecting crustacea movement. This trend of low overall interaction follows previous observations, with limited discard interaction occurring outside of the peak lobster fishery (OSF 2014b)

Velvet crabs demonstrates an average discard catch interaction of 15%. This low level of could be associated to the rapid growth of this species and recruitment into the fishery. This level of interaction is in line with previous observations (OSF, 2104c), with reduced discards occurring from August –December during peak fishery times, with this trend seen to continue until March when body condition deteriorate with the onset of moulting and subsequent increase in discards (Hearn, 2004; Pers. Observation; OSF 2014c).

Green Crab landings are currently reported on a voluntary basis only and there is no MLS for green crabs within the Orkney Inshore Fishery. A MLS consultation is currently underway with aims to bring green crab MLS in line with current velvet crab legislation. The 2015 iteration of Orkney Sustainable fisheries logbook now includes green crab and discards rates, with aims to fill in these identified knowledge gaps.

3. Non- Target Species
Non target species are comprised of 6 demersal fish species (Table 4). The description of these species as non-target species is a result of their retention on board as bait. Non target species catch composition differs from previously reported species, with the first reporting of Comper *serranus cabrilla* and Monkfish *Lophius piscatorius*. Of reported species Comper has the highest interaction rate followed by ling. Reason for these species interaction with creels can be linked to crustacean forming a significant part of their diet and attraction to bait.

Differing from previous reports is the reduced interaction of cod *Gadus morhua* and absence of common dogfish *Scyliorhinus caniculus* (OSF 2014c). This can be attributed to the movement of fishing activity into sheltered areas which are typically low wave energy resulting in increased sandy substrate, restricting the growth of kelp forest due its requirements for high energy, rocky

substrate. The absence of this important habitat for foraging and protection would account for the limited interaction of such species.

A lack of v-notched lobsters within catches is also observed. However this low interaction rate can be attributed to low SST and resulting limited movement of this species.
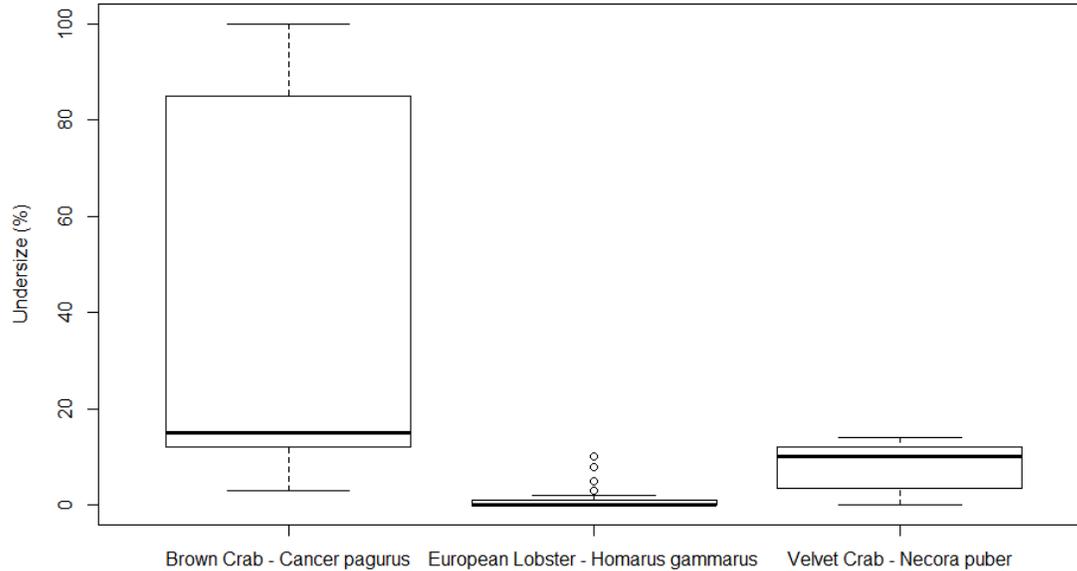

Figure 1. Percentage of Discarded commercially Exploited Species caught from January – March 2015

Species	CPUE	Catch Per Trip	Catch Per Week	Catch Per Month	Estimated Total Catch January – March 2015
Wrasse *Labridae sp.*	0.00006	0.01	0.04	0.16	0.64
Cod *Gadus morhua*	0.0006	0.1	0.4	1.6	6.4
Conger Eel *Conger conger*	0.0006	0.1	0.4	1.6	6.4
Comper *Serranus cabrilla*	0.002	0.5	2	8	32
Monkfish *Lophius piscatorius*	0.00006	0.01	0.04	0.16	.64
Ling *Molva molva*	0.001	0.251	1	4	16

Table 4. CPUE breakdown in numbers of individual non-target species reported from January – March 2015.

4. Conclusion

This report highlights the seasonal changes in fishing patterns undertaken within the Orkney logbook fleet, demonstrating the diversification into smaller commercial crustacea such as green crab to offset reduced landings of brown crab and high value lobster. It re-affirms the necessity to understand the commercial value and level of exploitation directed at green crab within the inshore fishery. Further research into size at maturity and catch composition of this species will be undertaken in summer 2015.

Reference:

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