



A brief summary of the fisheries for crustaceans in the Cornwall IFCA district



November 2018

Authors: Colin Trundle and Annie Jenkin

This report may be cited as:

Trundle, C., Jenkin, A., Sturgeon, S., Owen, K. and Naylor, H. 2018. A brief summary of the fisheries for crustaceans in the Cornwall IFCA district. Cornwall Inshore Fisheries and Conservation Authority (Cornwall IFCA), Hayle.

This document has been produced by Cornwall Inshore Fisheries and Conservation Authority (Cornwall IFCA)

Cornwall IFCA
Chi Gallos
Hayle Marine Renewables Business Park
North Quay
Hayle
Cornwall
TR27 4DD

Tel: 01736 336842
Email: enquiries@cornwall-ifca.gov.uk

Contents

1. Introduction.....	1
2. Crustacean Fisheries during 2018	1
3. Current Management.....	3
4. Current Monitoring/Research	4
5. Looking Forward.....	5

List of Figures

Figure 1: Pot hauls per km ² in the Cornwall IFCA district during 2016, thematically mapped by statistical area using increments of 500 pot hauls per km ²	2
Figure 2: Pot hauls per km ² in the Cornwall IFCA district during 2017, thematically mapped by statistical area, using increments of 500 pot hauls per km ²	2

List of Tables

Table 1: Comparison of potting effort and landing per unit effort (LPUE) for edible crabs and lobsters within the Cornwall IFCA district 2016 and 2017	3
Table 2: Comparison of European, National and Cornwall IFCA minimum conservation reference sizes for the main commercial crustacean species applicable in the Cornwall IFCA district.	4

1. Introduction

Crustacean fisheries are probably the most important fisheries to the inshore fleet based in ports around the coast of Cornwall. In the last port survey carried out by Cornwall Inshore Fisheries and Conservation Authority (IFCA) in 2017, it was estimated that there were 521 under 10m and 27 over 10m vessels registered that operated static gear. Of those 548 vessels, 320 held permits in 2017 to fish for or take crustaceans within the Cornwall IFCA district.

Data collected through the Lobster, Crawfish and Crab Fishing Permit Byelaw 2016 returns, gave the estimation that 1972.5 tonnes of listed crustacean species were removed from the Cornwall IFCA district during 2017. Female edible crabs made up the majority of the total volume with 1525.3 tonnes removed. Lobsters were the second highest volume fishery with 168.2 tonnes reported to have been removed from the district. If an average price of £9/kg was used to calculate the first sale value of lobsters, it gives a total of £1.52m. For edible crabs, if a first sale price of £1.50/kg was applied then that gives a first sale value of £2.3m. The figures for just those two species demonstrate the financial importance to the inshore mixed fleet directly and can perhaps indicate the importance of the fishery to ancillary industries.

Although entrants to the fishery do not appear to be increasing, there has been a general increase in effort being directed to the crustacean fisheries over the last few years. The availability of European Maritime and Fisheries Funds (EMFF) funding for crustacean traps and declining landing per unit effort (LPUE) in the edible crab fishery have possibly had some influence on the apparent increase in effort.

The increasing effort, the decrease in LPUE for some species and that this fishery has the best dataset are just some of many reasons why Cornwall IFCA is now developing a Crustacean Fisheries Management Plan. This paper briefly describes the fishery in the Cornwall IFCA district and how Cornwall IFCA manages, researches and gathers data for the fishery.

2. Crustacean Fisheries during 2018

2018 appears to have been a quite unusual year for crustacean fisheries within the Cornwall IFCA district. The year began as normal but from February, water temperatures plummeted, dropping to an unheard of 7.3°C by the middle of March. Accordingly, crustacean catches were lower than would have been expected at the beginning of the season.

As the year has progressed, comments to the Authority have generally been regarding the low volumes of edible crabs available. This has been a common theme through most of this year and follows on from similar reports from last year. However, the apparent lack of edible crab availability has been countered by reported good catches of lobsters throughout the summer with anecdotal reports of large numbers of pre-recruits being returned to the sea. On the south coast, edible crabs started to be taken in increasing numbers in June but with very few pre-recruits being taken in pots. The apparent upsurge in fishing was short lived with catches dropping away again until mid-October when a combination of big spring tides and lively weather seemed to improve catches again.

The demand for spider crabs has appeared to have dropped off over the last few years with hens rarely, if at all, being taken by merchants and males only being taken infrequently. This has led to an apparent view that spider crabs are a stock under threat so officers have been at pains to demonstrate that the recent decline in landings is more linked with market demand than for other reasons.

One of the most frequently raised concerns has been the apparent increase in effort in the pot fishery over the last two to three years and its implications for management. Figure 1 and Figure 2 below demonstrate

thematically mapped potting effort around the district in 2016 and 2017. The data to create the plots was drawn from the permit returns analysis and describes effort as pot hauls per km². It demonstrates effort has increased in some areas, particularly along the north coast and to the far west of the district.

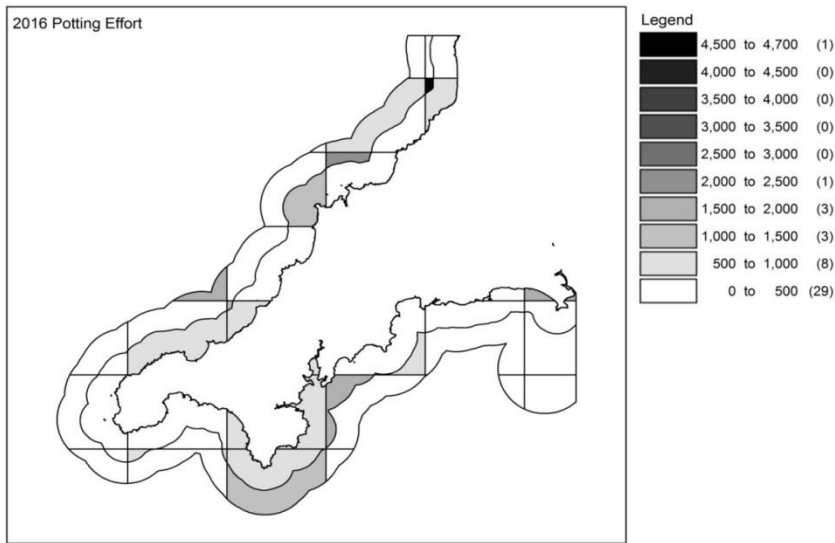


Figure 1: Pot hauls per km² in the Cornwall IFCA district during 2016, thematically mapped by statistical area using increments of 500 pot hauls per km²

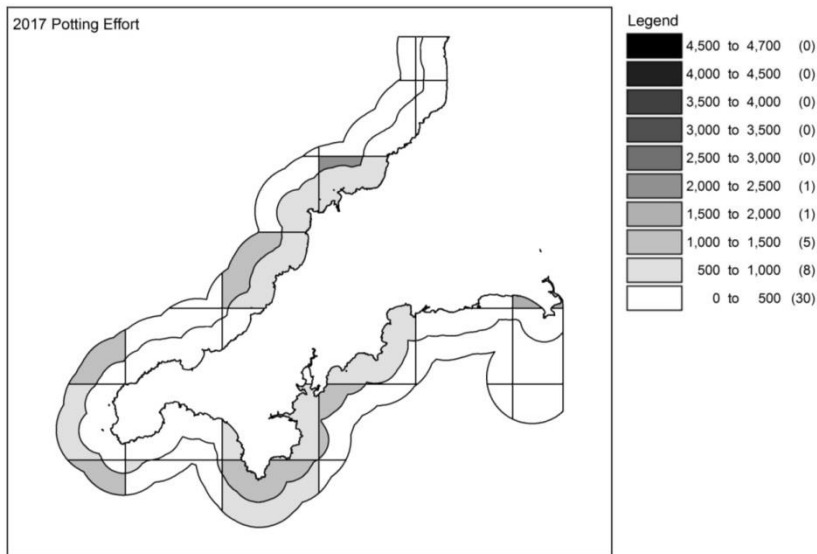


Figure 2: Pot hauls per km² in the Cornwall IFCA district during 2017, thematically mapped by ICES statistical area, using increments of 500 pot hauls per km².

Landing per unit effort (LPUE) within the district has also been estimated for 2016 and 2017 and has shown a decrease in nearly all areas for edible crabs but an increase for lobsters in all areas over the same period. Table 1 summarises the differences in potting effort and LPUE between 2016 and 2017 using random International Council for the Exploration of the Sea (ICES) statistical area examples.

Table 1: Comparison of potting effort and landing per unit effort (LPUE) for edible crabs and lobsters within the Cornwall IFCA district 2016 and 2017.

ICES ¹ area (VII E & F)	Local area	Effort % difference:2016/17	LPUE difference: (male edible crabs) 2016/17	LPUE difference: (female edible crabs) 2016/17	LPUE difference: (lobsters) 2016/17
VIIF_30E5_4	Bude	50% ↓	26% ↓	22% ↓	24% ↑
VIIF_29E4_7	Newquay	82.45% ↑	69.5% ↓	32.7% ↓	12% ↑
VIIF_29E4_3	Lands' End	5% ↓	55% ↓	30% ↓	14.6% ↑
VIIE_29E4_9	Falmouth	25% ↑	19% ↓	0.2% ↓	16.5% ↑
VIIE_29E5_7	Fowey	16% ↑	96% ↑	300% ↑	9.5% ↑

Between 2016 and 2017 there was more effort directed towards what appears to be increasing numbers of crawfish, although these are predominantly targeted by nets rather than pots.

There continues to be low levels of exploitation of velvet crabs in the district. Shore or green crabs are also taken but to the Authority's understanding this is a very limited fishery, with possibly only one person reporting to take them.

3. Current Management

The commercial fishery for crustaceans from Cornwall IFCA district is primarily managed by a permit scheme, the Lobster, Crawfish and Crab Fishing Permit Byelaw 2016. The regulation doesn't provide a permission to fish but rather imposes a restriction on the quantity of shellfish that can be taken by recreational vessels. Only registered and licenced vessels can obtain a permit, enabling them to remove shellfish to their licensed maximums, others are restricted to a maximum of five individuals per day per vessel of which no more than two can be lobsters or crawfish.

A condition of the byelaw is that a permit holder must submit monthly landing statistics to the Authority by the 15th of the following month. Between 2006 and 2015, Monthly Shellfish Activity Returns (MSAR) forms were deemed acceptable as a monthly statistics return to avoid the duplication of data submission. However, Cornwall IFCA were often reliant upon receiving the duplicate MSAR forms from the Marine and Fisheries Agency (M&FA) then later the Marine Management Organisation (MMO) and found that compliance was poor and the data was often unusable. Accordingly, in 2016 Cornwall IFCA took the difficult step of insisting that permit holders submitted statistics directly to the Authority on a bespoke returns form. It was recognised that this placed an administrative burden on the industry but more comprehensive and better quality data was required. Since 2016, returns compliance is now running at c.100%. There is an SMS text reminder system in place which is followed by officers chasing late submissions. One extreme case of non-submission of statistics has led to a successful prosecution.

Cornwall has larger minimum sizes for all of the main commercial species than the existing National and European minimum conservation reference sizes as can be seen in Table 2. These increased sizes are set out in individual byelaws for each species.

Additionally, there has been a prohibition of removing berried lobsters and crawfish from within the district since 2001 and a prohibition of removing V-notched lobsters since 1997.

¹ International Council for the Exploration of the Sea

Table 2: Comparison of European, National and Cornwall IFCA minimum conservation reference sizes for the main commercial crustacean species applicable in the Cornwall IFCA district.

Species	European (mm)	National (mm)	Cornwall IFCA (mm)
Crawfish	95		110
Lobster	87	87 (landed)	90
Male Edible Crab	140	160 (landed)	160 (removed)
Female Edible Crab	140	140	150 (removed)
Male Spider Crab	120	130 (landed)	130 (removed)
Female Spider Crab	120	120	130 (removed)

4. Current Monitoring/Research

Monitoring of the fisheries, albeit at varying levels of intensity/frequency, has been undertaken within the district for several years. Cornwall Sea Fisheries Committee (SFC) carried out a three year study between 2003 and 2006 of all stocks within the district. This was carried out by catch sampling aboard 7 vessels based around the county. The result was a range of data from 76,739 individual shellfish sampled from 18,884 pots over the three years of the project. That project provided a baseline of information of crustaceans around the district. Unfortunately, due to the time and financial resources required to carry out such a study Cornwall IFCA haven't been able to repeat it.

Cornwall SFC were very fortunate to receive funding which enabled a spin off smaller project of lobster tagging to try to assess the growth and movement of lobsters in two very separate areas. Although the project was mostly a success in terms of its aims and objectives, the reporting of recaptured individuals was quite low.

Catch sampling was also used to provide data for the Cornwall Sea Fisheries District Spider Crabs Byelaw 2010.

From 2009, in the absence of a repeat catch sampling project, Cornwall SFC carried out monitoring at landings in an attempt to have some data from the fishery. Exemplar ports were chosen where it was known that vessels based at those ports targeted shellfish over a wide area. At landings, biometric data is collected for all species along with area taken and the weights of both samples and overall landings. The monitoring protocol was put in place in 2012 to mirror Centre for Environment, Fisheries and Aquaculture Science's (CEFAS) shellfish data collection protocol so that the data could be passed over to CEFAS to feed into their stock assessment work.

These exemplar ports are still used and currently the biometric data is being used in conjunction with the returns statistics to hopefully allow us to describe the populations of shellfish in the fishery. It is recognised that this assessment work will only describe the recruited stock once removed. A gold standard would be to repeat the 2003/06 study and be able to include pre-recruits in the assessments

Data from the permit returns is entered into a database and then analysed using the same 41 geographical areas within the district that were used in the MSAR system. The consistency of using those areas should enable comparisons to be made with previous year's data. Since 2016 Cornwall IFCA has produced annual reports of the statistics which provide information of reported fishing effort, quantities and LPUE for each species by potting and netting. Examples of the outputs can be seen in Figures 1 and 2.

5. Looking Forward

The Fishery Improvement Project for the Southwest edible crab and lobster fishery has led officers to investigate the potential for developing a Crustacean Fisheries Management Plan for the Cornwall IFCA district. The Marine Stewardship Council (MSC) pre-application process highlighted that the current management of the fisheries was a hold up to the fisheries gaining eco-label accreditation. With the major UK retailers imposing what appear to be increasingly stringent sourcing policies, officers do not want the Authority to be in a position where its management is a choke to the industry having access to these sections of the UK market. The development of the Crustacean Fisheries Management Plan will hopefully enable the Authority to work towards implementing a harvest strategy and possibly even harvest control rules.

It is predicted that crawfish will be an up and coming management challenge. Increasing numbers of the species are being seen with what appears to be a very large number of pre-recruits about to enter the fishery. This is a fishery that has been massively over exploited in Cornwall in the past so it is incumbent on the Authority to ensure such a boom and bust fishery isn't repeated. Work has already been carried out looking into the populations of pre-recruits using citizen science programs with further fishery dependant catch sampling work being planned for 2019.

A concern of the Authority is the developing market for 'white' edible crab which occurs when the crab is soft after moulting and this meat is used for bait. Although local merchants are at pains to ensure that low quality, white crab isn't taken, we have been informed that there are companies that will take white crab where it is then sold on for whelk bait. Although the removal of white crab for bait doesn't constitute an offence under the Shellfish Act 1967, the practice is adding an additional pressure to what appears to be an already highly exploited stock. It is hoped that a way forward can be found to limit this added low value pressure on the stocks.