



## Fal Native Oyster Fishery



### Season 2021-2022 Permit Statistics Report

Cornwall Inshore Fisheries and Conservation Authority (Cornwall IFCA)

Authors: Stephanie Sturgeon, Kimara Street, Colin Trundle, Annie Jenkin and  
Carly Daniels

## CIFCA Fal Oyster Fishery Permit Returns Statistics 2021-2022

**Document Control**

<b>Title</b>	Fal Oyster Fishery 2021-2022 Season Permit Statistics Report
<b>Author</b>	S Sturgeon
<b>Approver</b>	C Trundle
<b>Owner</b>	Cornwall IFCA
<b>Version</b>	Final
<b>Date of final report</b>	23/01/2023

**Revision History**

<b>Date</b>	<b>Author</b>	<b>Version</b>	<b>Status</b>	<b>Reason</b>
09/11/2022	S Sturgeon	0.1	Draft	Document creation
19/12/2022	C Trundle	0.1_QA	Draft	QA
22/12/2022	C Daniels	0.1_QA	Draft	QA
06/01/2023	A Jenkin	0.1_QA	Draft	QA
11/01/2023	S Sturgeon	0.2	Final	Amendments after QA

CIFCA Fal Oyster Fishery Permit Returns Statistics 2021-2022

This report may be cited as:

Sturgeon, S., Street, K., Trundle, C., Jenkin, A., and Daniels, C. 2022. Fal Oyster Fishery 2021-2022 Season Permit Statistics Report. 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  
Office 2, Chi Gallos  
Hayle Marine Renewables Business Park  
North Quay  
Hayle  
Cornwall  
TR27 4DD

Tel: 01736 336842  
Email: [enquiries@cornwall-ifca.gov.uk](mailto:enquiries@cornwall-ifca.gov.uk)

## CIFCA Fal Oyster Fishery Permit Returns Statistics 2021-2022

## Contents

<b>List of Figures .....</b>	<b>iv</b>
<b>List of Tables .....</b>	<b>iv</b>
<b>List of Appendix Tables .....</b>	<b>iv</b>
<b>1 Introduction .....</b>	<b>1</b>
<b>2 Aims and Objectives .....</b>	<b>1</b>
<b>3 Methodology.....</b>	<b>2</b>
3.1 Data Collection.....	2
3.2 Analysis Methodology.....	2
3.2.1 Overall Statistics .....	2
3.2.2 Hand Gathering.....	3
3.2.3 Dredging .....	3
3.2.4 Lay Areas.....	4
<b>4 Results .....</b>	<b>4</b>
4.1 Overall Statistics.....	4
4.2 Hand Gathering.....	4
4.3 Dredging.....	5
4.3.1 Native oysters.....	5
4.3.2 Queen scallops.....	7
4.4 Lay Areas.....	9
<b>5 Discussion .....</b>	<b>10</b>
5.1 Overall Statistics.....	10
5.2 Hand Gathering.....	10
5.3 Dredging.....	10
5.3.1 Native oysters.....	10
5.3.2 Queen scallops.....	10
5.4 Lay Areas.....	10
5.5 Data Confidence.....	11
<b>6 References .....</b>	<b>12</b>
<b>Appendix 1.....</b>	<b>13</b>
<b>Appendix 2.....</b>	<b>19</b>

## CIFCA Fal Oyster Fishery Permit Returns Statistics 2021-2022

## List of Figures

Figure 1: Fal Fishery Management Areas. ....	2
Figure 2: Landings Per Unit Effort (LPUE) (kg of native oysters for sale/dredge hours) by Areas A, B and C for the 2021-2022 season.....	5
Figure 3: Weight of native oysters removed from the Fal Fishery (thousands of kg, bars) and total dredge hours (thousands of hours, lines) by Areas A, B and C, for the 2021-2022 season.....	6
Figure 4: Landings Per Unit Effort (LPUE) (kg of queen scallops/dredge hours) by Area for the 2021-2022 season.....	7
Figure 5: Weight of queen scallops removed from Fal Fishery (thousands of kg, bars) and total dredge hours (thousands of hours, lines) by Areas A, B and C, for the 2021-2022 season.....	8

## List of Tables

Table 1: 2021-2022 Season (October 2021 to September 2022) totals (kg) of landed shellfish for the whole Fal Fishery, dredge and hand gathered (including all data submitted, no removals for lack of attribute data). * excludes weight of native oysters removed and placed onto lays.....	4
Table 2: Totals of landed shellfish (kg) by hand gathering in the Fal Fishery during October 2021 to September 2022. * excludes weight of native oysters removed and placed onto lays.....	4
Table 3: Total weight of native oysters (kg's) and mussels (kg's) landed by hand gathering from the Fal Fishery (October 2021 to September 2022), total hand gathering hours and Landings Per Unit Effort (LPUE) (kg oysters or mussels/ hand gathering hours) by Management Area. * excludes weight of native oysters removed and placed onto lays. ....	4
Table 4: Totals of landed shellfish (kg) by dredging in the Fal Fishery during October 2021 to March 2022. * excludes weight of native oysters removed and placed onto lays.....	5
Table 5: Total weight of native oysters (kg's) landed by dredging (October 2021 to March 2022), total dredge hours and Landings Per Unit Effort (LPUE) (kg oysters/dredge hours) by Management Area and for the entire Fishery. * excludes weight of native oysters removed and placed onto lays.....	5
Table 6: Total queen scallops landed (kg) by dredging (October 2021 to March 2022), total dredge hours and Landings Per Unit Effort (LPUE) (kg queen scallops/dredge hours) by Management Area and for the entire Fishery.....	7
Table 7: Total weight of native oysters (kg) placed on and removed from lay areas for sale, by dredging and hand gathering, in the Fal Fishery for the 2021-2022 season.....	9

## List of Appendix Tables

Appendix 1 Table 1: Season totals (October to September) of landed shellfish (kg) for the whole Fal Fishery, dredge and hand gathered (including all data submitted, no removals for lack of attribute data). * excludes weight of native oysters removed and placed onto lays. N.B. '–' denotes where data was not recorded. ....	13
Appendix 1 Table 2: Season totals (October to September) of landed shellfish (kg) by hand gathering in the Fal Fishery. * excludes weight of native oysters removed and placed onto lays. N.B. '–' denotes where data was not recorded.....	13
Appendix 1 Table 3: Total weight of native oysters (kg's) and mussels (kg's) removed from the Fal Fishery by hand gathering each season (October to September), total hand gathering hours and Landings Per Unit Effort (LPUE) (kg oysters or mussels/ hand gathering hours). * excludes weight of native oysters removed and placed onto lays. ....	13
Appendix 1 Table 4: Season totals (October to March) of landed shellfish (kg) by dredging in the Fal Fishery. * excludes weight of native oysters removed and placed onto lays. N.B. '–' denotes where data was not recorded.....	14
Appendix 1 Table 5: Total weight of native oysters and queen scallops (kg's) removed from the Fal Fishery by dredging each season (October to March) total dredge hours and Landings Per Unit Effort (LPUE) (kg oysters or queen scallops/dredge hours). * excludes weight of native oysters removed and placed onto lays.....	14
Appendix 1 Table 6: Total weight of slipper limpets (kg) removed by dredging from the Fal Fishery between October to March each season.....	14
Appendix 1 Table 7: Total weight of native oysters (kg) placed on and removed from lay areas in the Fal Fishery, dredge and hand gathered, between October to September each season. ....	15
Appendix 1 Table 8: Weight of native oysters removed from the Fal Fishery (thousands of kg, bars) and total dredge hours (thousands of hours, lines) by Areas A to C, for each season (October to March). ....	16

## CIFCA Fal Oyster Fishery Permit Returns Statistics 2021-2022

## 1 Introduction

Cornwall Council (Port of Truro), as the grantee under the Truro Port Fishery Order 1936 (as amended), was responsible for the management of the native oyster (*Ostrea edulis*) fishery in the River Fal until the Order's expiration in July 2014. In 2013, Cornwall Inshore Fisheries and Conservation Authority (IFCA) began the process of applying to the Department for Environment Food and Rural Affairs (Defra) for a new Regulating Order to manage the fishery as the previous Order was due to expire in 2014 and Truro Harbour was not seeking to renew the Order. Cornwall IFCA took over the management of the Fal Oyster Fishery from the start of the 2014 season and the fishery is licenced by Cornwall IFCA through the Fal Fishery Order 2016 and associated Regulations made by Cornwall IFCA, as the grantee of the order.

The Fal Oyster Fishery is one of three known remaining wild capture oyster fisheries in England (Fal, Solent and Thames Estuary) (Long *et al.*, 2017). The Fishery is exploited by hand gathering and dredging from non-powered vessels, either haul tow punts or sailing boats. It is thought to be the last commercial sailing fleet in Europe (Long *et al.*, 2017).

As Grantee of the Regulating Order, Cornwall IFCA has a responsibility for monitoring and managing the stocks of oysters within the Fishery. Monitoring is achieved through annual dredge surveys and monthly catch statistics submitted by all licence holders. Dredge surveys are conducted by Cornwall IFCA in January and describe the catch rates and distribution of native oysters (*O. edulis*) within the Fishery at the time of survey. Monthly catch statistics are completed by every licence holder, as stipulated in the Regulations. Analysis of this data is used to quantify the volume of native oysters and other species that have been removed from the Fishery each season and the total fishing effort.

This report summarises the monthly catch statistics of native oysters (*O. edulis*) from the eighth season of the Fal Fishery as managed by Cornwall IFCA (2021-2022). Previous years monthly catch statistics are presented in Appendix 1 to allow for temporal comparisons. The report also summarises the reported weight of other shellfish species removed from the Fishery over this season.

Since the season of 2016-2017 a market has developed for queen scallops, locally referred to as *queenies*. They have been recorded on the statistical returns forms as 'queens'. Cornwall IFCA officers believe the species identified to primarily be the variegated scallop (*Mimachlamys varia*) as opposed to the more commonly referred to queen scallop (*Aequipecten opercularis*) (Jenkin *et al.*, 2022). For simplicity the term 'queen scallop' has been used to describe this species for the entirety of the report.

## 2 Aims and Objectives

- To describe the fishing effort and removal of native oysters (*O. edulis*) from the Fal Fishery during the eighth season managed by Cornwall IFCA.
- To describe the fishing effort and removal of queen scallops (*M. varia*) from the Fal Fishery during the eighth season managed by Cornwall IFCA.
- To describe the removal of mussels (*Mytilus edulis*) from the Fishery during the eighth season managed by Cornwall IFCA.
- To summarise the total landings of non-target species from the Fishery.

## CIFCA Fal Oyster Fishery Permit Returns Statistics 2021-2022

### 3 Methodology

#### 3.1 Data Collection

All licence holders in the Fal Fishery must complete a monthly statistical returns form to Cornwall IFCA (The Monthly Shellfish Statistics Form is shown in Appendix 2). These returns forms include daily totals of fishing hours, proportion of time spent fishing in each of the Fal Fishery Management Areas (Figure 1) and the weight of each species of shellfish removed from the Fishery per day.

Upon receipt of the returns forms Cornwall IFCA Admin Officers input the data into a Microsoft Excel database for the 2021-2022 season which follows the same format of the Monthly Shellfish Statistics Form (Appendix 2).

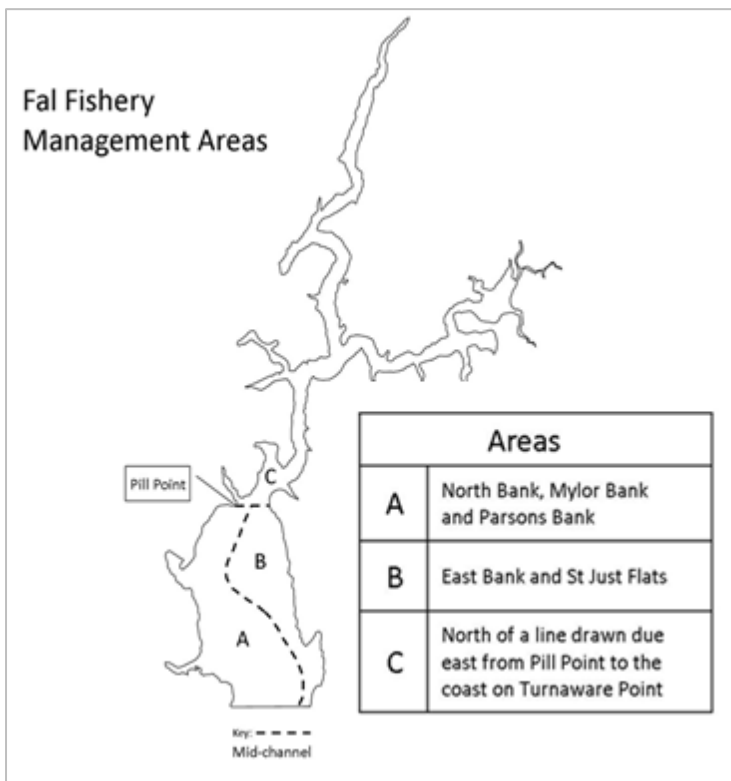


Figure 1: Fal Fishery Management Areas.

#### 3.2 Analysis Methodology

##### 3.2.1 Overall Statistics

The total weight, in kilogrammes (kg), of each shellfish type removed from the Fishery per season (1<sup>st</sup> October to 30<sup>th</sup> September) was summed. The figure included shellfish taken by hand gathering outside of the main dredging season which is 1<sup>st</sup> October to 31<sup>st</sup> March. Also included are records which have been omitted from further analysis due to lack of attribute data, for example hours fished, or number of dredge licences used.

For this study only the native oysters reportedly removed from the Fishery for sale, not lay areas, during the fishery season have been analysed. Oysters placed on and removed from lay areas have been reported separately (Section 3.2.4).

Fishing hours were summed for each Management Areas, per season, with differentiation between fishing methods (hand gathering, Section 3.2.2 and dredging, Section 3.2.3)

## CIFCA Fal Oyster Fishery Permit Returns Statistics 2021-2022

## 3.2.2 Hand Gathering

For each daily record where the fishing method was stated as hand gathering, hand gathering hours (HGh) were calculated by Area ( $x$ ) per day ( $d$ ) as:

$$\mathbf{HGh_{xd} = Fh_{xd} \times Pr_{xd} \times P_d}$$

Where  $Fh_{xd}$  is fishing hours in Area  $x$  reported on day  $d$  by the licence holder,  $Pr_{xd}$  is the proportion of time spent fishing in Area  $x$  on day  $d$  and  $P_d$  is the number of people hand gathering (licences used) on day  $d$ . These values were then summed by month for total monthly hand gathering hours in each Area.

From the data it appears that licence holders target certain species when hand gathering (e.g., mussels or oysters), therefore, hand gathering hours directed towards mussels and oysters was also calculated.

Total shellfish landed (SH) from hand gathering by Area ( $x$ ) per day ( $d$ ) of each species ( $s$ ) was calculated as:

$$\mathbf{SH_{xds} = SH_{sd} \times Pr_{xd}}$$

Where  $SH_{sd}$  is shellfish landed of species  $s$  on day  $d$ , and  $Pr_{xd}$  is the proportion of time spent hand gathering in Area  $x$  on day  $d$ . These values were then summed by month for each species for total shellfish removed from the Fishery by hand gathering in each Area per month.

Monthly Landing per unit effort (LPUE) by species was calculated as:

$$\mathbf{LPUE \text{ (kg's shellfish/ hand gathering hours)}_{ms} = \sum (SH_{xds})_m / \sum (HGh_{xds})_m}$$

Where  $\sum (SH_{xds})_m$  is the sum for month  $m$ , of the daily  $d$  landed weight of the shellfish species  $s$  by hand gathering in Area  $x$ , and  $\sum (HGh_{xds})_m$  is the sum for month  $m$ , of the daily  $d$  hand gathering hours targeting species  $s$ , in Area  $x$ .

## 3.2.3 Dredging

For each daily record where the fishing method was stated as dredging, dredge hours (Dh) were calculated by Area ( $x$ ) per day ( $d$ ) as:

$$\mathbf{Dh_{xd} = Fh_{xd} \times Pr_{xd} \times D_d}$$

Where  $Fh_{xd}$  is fishing hours in Area  $x$  on day  $d$ ,  $Pr_{xd}$  is the proportion of time spent fishing in Area  $x$  on day  $d$  and  $D_d$  is the number of dredges (licences) used on day  $d$ . These values were then summed by month for total monthly dredge hours in each Area.

Total shellfish landed (SH) from dredging by Area ( $x$ ) per day ( $d$ ) of each species ( $s$ ) was calculated as:

$$\mathbf{SH_{xds} = SH_{sd} \times Pr_{xd}}$$

Where  $SH_{sd}$  is shellfish landed of species  $s$  on day  $d$ , and  $Pr_{xd}$  is the proportion of time spent dredging in Area  $x$  on day  $d$ . These values were then summed by month for each species for total shellfish removed from the Fishery by dredging in each Area per month.

Monthly LPUE by species was calculated as:

$$\mathbf{LPUE \text{ (kg's of shellfish landed/ dredge hours)}_{ms} = \sum (SH_{xds})_m / \sum (Dh_{xd})_m}$$

Where  $\sum (SH_{xds})_m$  is the sum for month  $m$ , of the daily  $d$  landed weight of the shellfish species  $s$  by dredging in Area  $x$ , and  $\sum (Dh_{xd})_m$  is the sum for month  $m$ , of the daily  $d$  dredge hours in Area  $x$ .



## CIFCA Fal Oyster Fishery Permit Returns Statistics 2021-2022

## 3.2.4 Lay Areas

For each season the total weight of native oysters reported to be placed on any lay area and removed from any lay area for sale was totalled for the entire year (October 2021 to September 2022).

## 4 Results

## 4.1 Overall Statistics

The weight of all shellfish removed from the Fishery during the 2021-2022 season is presented in Table 1. A total of 903 kg of slipper limpets (*Crepidula fornicata*), a non-native species, were also removed from the Fishery during the 2021-2022 season by licence holders (Appendix 1 Table 6).

Table 1: 2021-2022 Season (October 2021 to September 2022) totals (kg) of landed shellfish for the whole Fal Fishery, dredge and hand gathered (including all data submitted, no removals for lack of attribute data). \* excludes weight of native oysters removed and placed onto lays.

Season	*Native Oysters (kg)	Mussels (kg)	Queen Scallops (kg)	Scallops (kg)	Pacific Oysters (kg)	Cockles (kg)	Winkles (kg)	Whelks (kg)
2021-2022	13,197	4,879	65,458	206	280	0	485	0

## 4.2 Hand Gathering

The totals of shellfish landed by hand gathering from October 2021 to September 2022 can be seen in Table 2 and for previous seasons in Appendix 1 Table 2. The majority of hand gathering time was spent in Area C. Hand gathering hours directed towards oysters and mussels can be seen in Table 3.

Table 2: Totals of landed shellfish (kg) by hand gathering in the Fal Fishery during October 2021 to September 2022. \* excludes weight of native oysters removed and placed onto lays.

Management Area	Hand gathering Hours	*Native Oysters (kg)	Mussels (kg)	Queen Scallops (kg)	Scallops (kg)	Pacific Oysters (kg)	Cockles (kg)	Winkles (kg)	Whelks (kg)
A	24	198	125	30	0	0	0	0	0
B	53	301	185	50	0	0	0	100	0
C	216	70	2,000	10	0	182	0	230	0
<b>Total</b>	<b>293</b>	<b>569</b>	<b>2,310</b>	<b>90</b>	<b>0</b>	<b>182</b>	<b>0</b>	<b>330</b>	<b>0</b>

Table 3: Total weight of native oysters (kg's) and mussels (kg's) landed by hand gathering from the Fal Fishery (October 2021 to September 2022), total hand gathering hours and Landings Per Unit Effort (LPUE) (kg oysters or mussels/ hand gathering hours) by Management Area. \* excludes weight of native oysters removed and placed onto lays.

Management Area	Native Oysters			Mussels		
	Hand gathering Hours	*Native Oysters landed (kg)	LPUE (kg oysters/ hour fished)	Hand gathering Hours	Mussels landed (kg)	LPUE (kg mussels/ hour fished)
A	16	198	12.80	6	125	20.83
B	34	301	8.99	9	185	20.56
C	2	70	35.00	168	2,000	11.90
<b>Total</b>	<b>51</b>	<b>569</b>	<b>11.16</b>	<b>183</b>	<b>2,310</b>	<b>12.62</b>

## CIFCA Fal Oyster Fishery Permit Returns Statistics 2021-2022

## 4.3 Dredging

There were 42 dredge licences issued for the 2021-2022 season. The totals of all shellfish species landed by dredging from October 2021 to March 2022 can be seen in Table 4 and for previous seasons in Appendix 1 Table 4.

Table 4: Totals of landed shellfish (kg) by dredging in the Fal Fishery during October 2021 to March 2022. \* excludes weight of native oysters removed and placed onto lays.

Management Area	Fishing Hours	Dredge Hours	*Native Oysters (kg)	Mussels (kg)	Queen Scallops (kg)	Scallops (kg)	Pacific Oysters (kg)	Cockles (kg)	Winkles (kg)	Whelks (kg)
A	2,067	4,446	5,371	4	26,944	161	7	0	15	0
B	2,200	4,542	5,130	121	35,872	1	2	0	0	0
C	632	688	2,048	292	1,132	8	89	0	20	0
<b>Total</b>	<b>4,898</b>	<b>9,676</b>	<b>12,549</b>	<b>417</b>	<b>63,948</b>	<b>170</b>	<b>98</b>	<b>0</b>	<b>35</b>	<b>0</b>

## 4.3.1 Native oysters

The 2021-2022 season landings of native oysters are presented in Table 5. When split by Management Area, the majority of native oysters removed from the Fishery were from Area A and Area B with LPUE highest in Area C.

Table 5: Total weight of native oysters (kg's) landed by dredging (October 2021 to March 2022), total dredge hours and Landings Per Unit Effort (LPUE) (kg oysters/dredge hours) by Management Area and for the entire Fishery. \* excludes weight of native oysters removed and placed onto lays.

Management Area	*Native Oysters (kg)	Dredge Hours	LPUE (kg oysters/ dredge hour)
A	5,371	4,446	1.21
B	5,130	4,542	1.13
C	2,048	688	2.98
<b>Total</b>	<b>12,549</b>	<b>9,676</b>	<b>1.30</b>

The LPUE of native oysters for sale by month (Figure 2) remained fairly stable throughout the season and consistently higher in Area C.

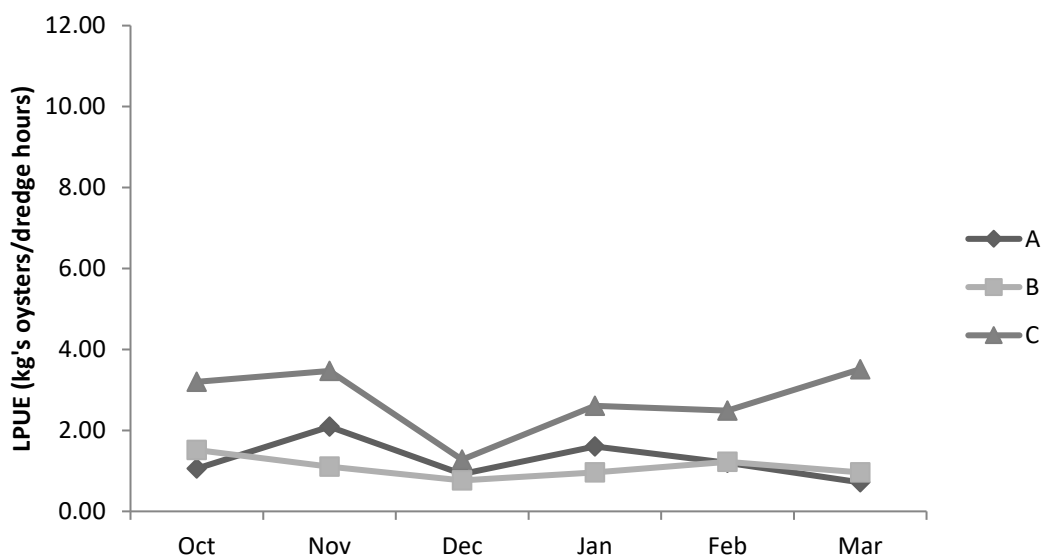


Figure 2: Landings Per Unit Effort (LPUE) (kg of native oysters for sale/dredge hours) by Areas A, B and C for the 2021-2022 season.

CIFCA Fal Oyster Fishery Permit Returns Statistics 2021-2022

Area A varied in effort and oysters removed across the season, with January seeing the highest removal of oysters (Figure 3, A). Area B received the greatest effort early in the season decreasing into January then increasing slightly in March (Figure 3,B). Area C saw the lowest effort and oysters removed across seasons compared to all Management Areas (Figure 3, C). Previous seasons for all three Management Areas can be seen in Appendix 1 Table 8.

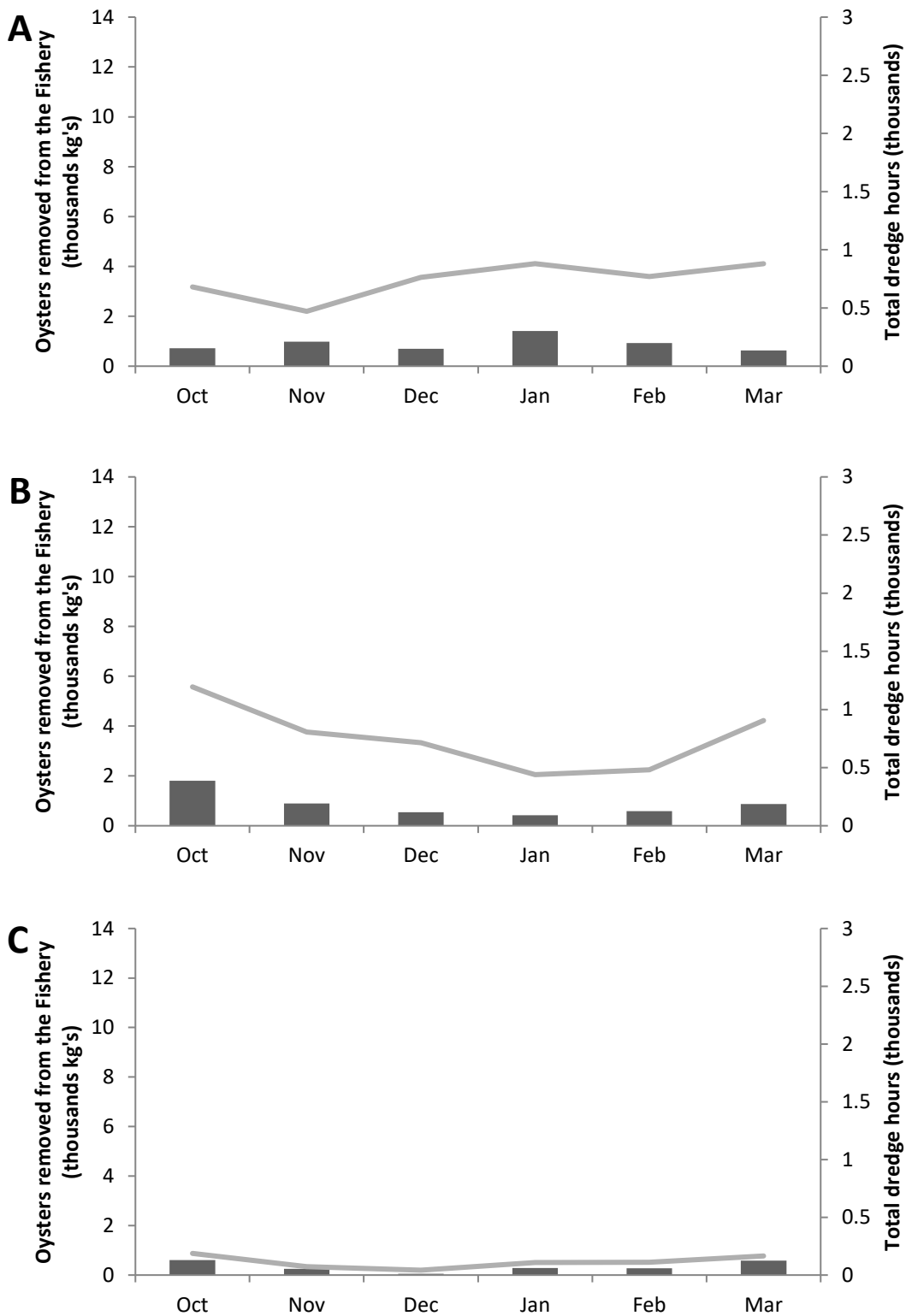


Figure 3: Weight of native oysters removed from the Fal Fishery (thousands of kg, bars) and total dredge hours (thousands of hours, lines) by Areas A, B and C, for the 2021-2022 season.

CIFCA Fal Oyster Fishery Permit Returns Statistics 2021-2022

4.3.2 Queen scallops

The total weight of queen scallops (kg) landed during the season of 2021-2022 is presented in Table 6. When split by Management Area, the majority of queen scallops landed were from Area B.

Table 6: Total queen scallops landed (kg) by dredging (October 2021 to March 2022), total dredge hours and Landings Per Unit Effort (LPUE) (kg queen scallops/dredge hours) by Management Area and for the entire Fishery.

Management Area	Queen Scallops (kg's)	Dredge Hours	LPUE (kg queen scallops/dredge hour)
A	26,944	4,446	6.06
B	35,872	4,542	7.90
C	1,132	688	1.65
<b>Total</b>	<b>63,948</b>	<b>9,676</b>	<b>6.61</b>

The LPUE of queen scallops varied across the season and Management Area (Figure 4). In Area A LPUE increased over the months, before dropping in March (Figure 4). LPUE decreased in Area B throughout the months, notably dropping in December, whereas Area C saw an increase during December while remaining relatively low through the other months (Figure 4).

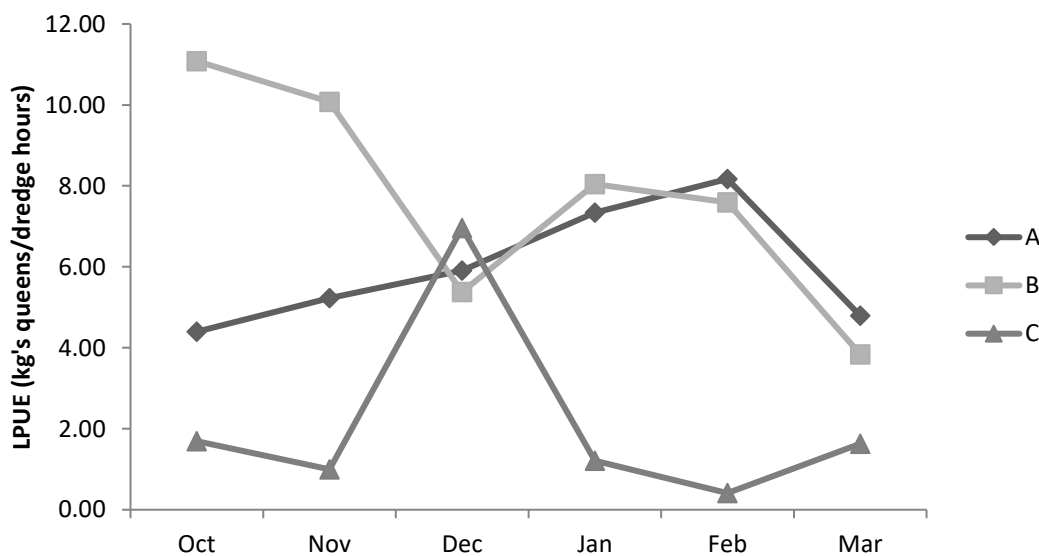


Figure 4: Landings Per Unit Effort (LPUE) (kg of queen scallops/dredge hours) by Area for the 2021-2022 season.

Both the effort and weight of queen scallops removed from the Fishery in season 2021-2022 is shown in Figure 5. The beginning of the season showed the highest effort for Area B (Figure 5, B), with more effort directed in Area A during January and February (Figure 5, A). Effort remained low in Area C throughout the season (Figure 5, C).

CIFCA Fal Oyster Fishery Permit Returns Statistics 2021-2022

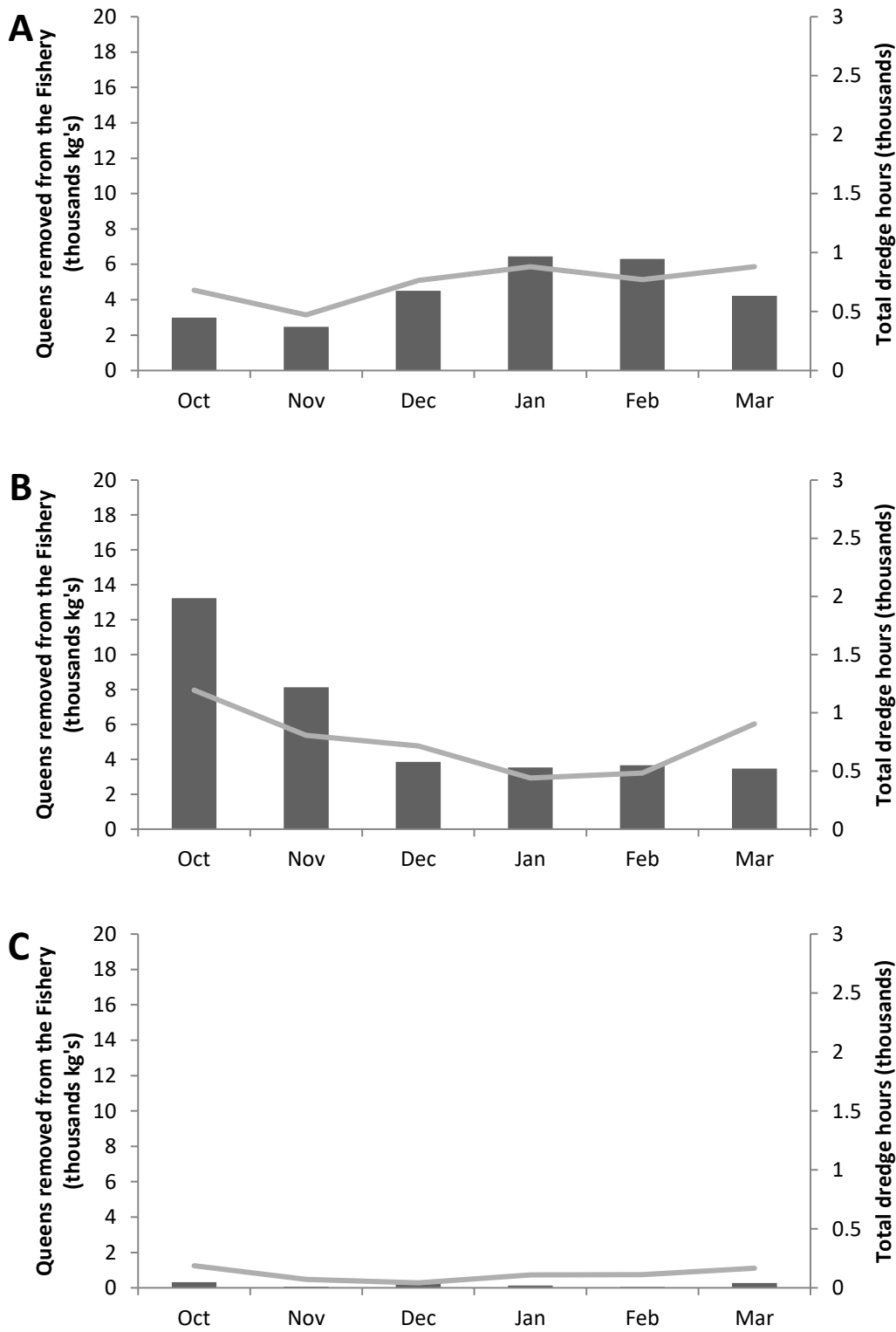


Figure 5: Weight of queen scallops removed from Fal Fishery (thousands of kg, bars) and total dredge hours (thousands of hours, lines) by Areas A, B and C, for the 2021-2022 season.

## CIFCA Fal Oyster Fishery Permit Returns Statistics 2021-2022

## 4.4 Lay Areas

The weight of native oysters fished (by both dredging and hand gathering) and placed on lay areas were kept separate as these remained within the Fal Fishery.

Dredging for native oysters within the Fishery is restricted to the 1<sup>st</sup> October to 31<sup>st</sup> March in any year. Additionally, limited amounts of year-round intertidal handpicking by holders of dredge licenses can occur while the dredge is not in use and are also permitted to hand gather from 1<sup>st</sup> April to 30<sup>th</sup> September. It is, however, an offence under the Shellfish Act 1967 to sell native oysters between 14<sup>th</sup> of May and the 4<sup>th</sup> of August in any year.

The weight of native oysters placed onto lays can be seen in Table 7, the total weight of oysters reportedly placed onto the lays was similar to that removed from the lays for sale. Totals for previous seasons can be seen in Appendix 1 Table 7.

**Table 7: Total weight of native oysters (kg) placed on and removed from lay areas for sale, by dredging and hand gathering, in the Fal Fishery for the 2021-2022 season.**

<b>Month</b>	<b>Native oysters placed on lays (kg)</b>	<b>Native oysters removed from lays (kg)</b>
October	1,118	390
November	533	30
December	334	198
January	550	52
February	448	50
March	529	654
April	0	565
May	0	0
June	0	0
July	0	0
August	0	0
September	0	1,190
<b>Total</b>	<b>3,511</b>	<b>3,129</b>

## CIFCA Fal Oyster Fishery Permit Returns Statistics 2021-2022

### 5 Discussion

Cornwall IFCA has received monthly catch statistics submitted by all licence holders since taking over the management of the Fal Fishery from the beginning of the 2014 fishery season. The data has allowed assessments of the fishing effort as well as removal of shellfish from the fishery to be made.

No differentiation was made between sail and haul tow boats in the calculations in this report. It could be assumed that punts would have a relatively consistent towing speed and catch rate due to the nature of the fishing activity. Conversely, sail boats are affected by multiple factors; the wind speed and direction can have considerable impact on towing speeds and efficiency (Street *et al.*, 2017).

#### 5.1 Overall Statistics

As with the past four seasons, the weight of queen scallops removed from the Fishery during the 2021-2022 season was considerably greater than all other shellfish species (Table 1). The weight of native oysters and mussels removed from the Fishery increased compared to the 2020-2021 season (Appendix 1 Table 1). However, marketing issues for native oysters since the 2019-2020 season continued into this season.

#### 5.2 Hand Gathering

Alongside native oysters and mussels, other species are hand gathered from the Fal Fishery which include cockles, winkles and pacific oysters (*Magallana gigas*). Hand gathering hours, along with the total weight of oysters and mussels landed increased this season compared to the last two seasons (Appendix 1 Table 2).

#### 5.3 Dredging

##### 5.3.1 Native oysters

The 2021-2022 season was fairly similar to the previous season in terms of quantity of oysters removed from the Fishery (999 kg more this season), along with effort in terms of dredging hours (1,169 less hours) (Appendix 1 Table 5). The general trend for LPUE in all Management Areas was relatively stable. Unlike in previous seasons there was no clear pattern in dredge hours between October and March (Appendix 1 Table 8).

##### 5.3.2 Queen scallops

Since queen scallops were removed from by-catch limitations in 2017, the quantity of queen scallops landed has increased with each subsequent season, however the 2021-2022 season saw the lowest quantity landed since 2017-2018 season (Appendix 1 Table 5). This is likely due to the reduction in effort (dredge hours) directed towards the Fishery this season. A major wholesale buyer of queen scallops from the Fal Fishery has closed (as of October 2022) which will likely impact the catch statistics for the 2022-2023 season.

#### 5.4 Lay Areas

Since 2017-2018 season a greater weight of native oysters has been placed onto the lays than removed from the lays, however this was not seen during the 2021-2022 season, with a reduced weight of native oysters compared to previous seasons. Generally, oysters are put onto lays when demand is low or if a licence holder intends to keep them to be removed at a later date. The ratio of oysters laid to those removed from the lays during the 2017-2018 to 2020-2021 seasons (Appendix 1 Table 7) were likely influenced by recent difficulties in marketing and export. This trend differs from

## CIFCA Fal Oyster Fishery Permit Returns Statistics 2021-2022

previous seasons; from 2014-2015 to 2016-2017, where the reported weight of oysters removed from the lays for sale was consistently higher than that reported to be placed onto the lays (Appendix 1 Table 7).

### 5.5 Data Confidence

Dredging and hand gathering data totals from seasons 2016-2017 to 2019-2020 are a slight under representation of the actual returns data due to missing attribute data on some of the submitted forms. This is from where gear type, number of licences or hours fished were not advised on the returns. Therefore, LPUE has been calculated on the remaining data. Table 1 in this report contains all data submitted for total (kg) of shellfish, with no removals for lack of attribute data.

All monthly returns data submitted to Cornwall IFCA were entered into a Microsoft Excel database by Cornwall IFCA Administrative and Scientific Officers. Quality assurance was also carried out a Scientific Officer reviewing a minimum of 10% of all data entered. An example of a blank monthly return form is shown in (Appendix 2). Officers have made considerable efforts to ensure all returns are submitted.



## CIFCA Fal Oyster Fishery Permit Returns Statistics 2021-2022

## 6 References

Jenkin, A., Trundle, C., Daniels, C., Sturgeon, S. and Street, K. 2022. Fal Oyster Survey. Cornwall Inshore Fisheries and Conservation Authority (Cornwall IFCA), Hayle.

Long, S., French-Constant, R., Metacalfe, K., and Witt, M.J., 2017. Have Centuries of Inefficient Fishing Sustained a Wild Oyster Fishery: a Case Study. Fisheries and Aquaculture Journal, 8: 2.

Street, K., Davies, S., Trundle, C., Jenkin, A. and Naylor, H. 2017. Fal Oyster Fishery 2016/2017 Season Permit Statistics Report. Cornwall Inshore Fisheries and Conservation Authority (Cornwall IFCA), Hayle.

## CIFCA Fal Oyster Fishery Permit Returns Statistics 2021-2022

## Appendix 1

Appendix 1 Table 1: Season totals (October to September) of landed shellfish (kg) for the whole Fal Fishery, dredge and hand gathered (including all data submitted, no removals for lack of attribute data). \* excludes weight of native oysters removed and placed onto lays. N.B. ' - ' denotes where data was not recorded.

Season	*Native Oysters (kg)	Mussels (kg)	Queen Scallops (kg)	Scallops (kg)	Pacific Oysters (kg)	Cockles (kg)	Winkles (kg)	Whelks (kg)
2014-2015	90,641	14,767	1,047	359	-	36	-	-
2015-2016	67,595	10,811	180	33	-	86	-	-
2016-2017	68,341	20,626	7,078	525	50	60	-	-
2017-2018	50,220	22,069	71,488	704	64	725	1,642	0
2018-2019	36,076	4,443	82,335	843	2,101	225	702	20
2019-2020	19,244	1,840	91,731	1,038	10,213	0	594	0
2020-2021	12,332	686	87,876	331	492	0	639	0
2021-2022	13,197	4,879	65,458	206	280	0	485	0

Appendix 1 Table 2: Season totals (October to September) of landed shellfish (kg) by hand gathering in the Fal Fishery. \* excludes weight of native oysters removed and placed onto lays. N.B. ' - ' denotes where data was not recorded.

Season	Hand gathering Hours	*Native Oysters (kg)	Mussels (kg)	Queen Scallops (kg)	Scallops (kg)	Pacific Oysters (kg)	Cockles (kg)	Winkles (kg)	Whelks (kg)
2016-2017	330	4,256	6,443	13	0	0	1	-	-
2017-2018	842	3,588	20,518	5	241	455	0	225	0
2018-2019	375	1,934	3,674	167	0	1,538	50	126	0
2019-2020	141	881	1,228	50	0	10,199	0	230	0
2020-2021	60	382	349	0	0	232	0	0	0
2021-2022	293	569	2,310	90	0	182	0	330	0

Appendix 1 Table 3: Total weight of native oysters (kg's) and mussels (kg's) removed from the Fal Fishery by hand gathering each season (October to September), total hand gathering hours and Landings Per Unit Effort (LPUE) (kg oysters or mussels/ hand gathering hours). \* excludes weight of native oysters removed and placed onto lays.

Season	Native Oysters			Mussels		
	Hand gathering Hours	*Native Oysters landed (kg)	LPUE (kg oysters/ hour fished)	Hand gathering Hours	Mussels landed (kg)	LPUE (kg mussels/ hour fished)
2016-2017	100	946	9.43	214	6,243	29.17
2017-2018	260	3,588	13.79	570	20,518	36.00
2018-2019	107	1,934	18.12	130	3,674	28.26
2019-2020	53	881	16.78	40	1,228	30.51
2020-2021	26	382	14.70	15	349	23.27
2021-2022	51	569	11.16	183	2,310	12.62

## CIFCA Fal Oyster Fishery Permit Returns Statistics 2021-2022

Appendix 1 Table 4: Season totals (October to March) of landed shellfish (kg) by dredging in the Fal Fishery. \* excludes weight of native oysters removed and placed onto lays. N.B. '-' denotes where data was not recorded.

Season	Fishing Hours	Dredge Hours	*Native Oysters (kg)	Mussels (kg)	Queen Scallops (kg)	Scallops (kg)	Pacific Oysters (kg)	Cockles (kg)	Winkles (kg)	Whelks (kg)
2014-2015	7,605	15,728	87,298	1,322	1,047	359	-	36	-	-
2015-2016	7,638	14,068	66,023	1,290	140	33	-	86	-	-
2016-2017	8,239	15,170	56,792	3,604	4,040	117	0	10	-	-
2017-2018	7,785	17,234	44,605	414	69,220	462	151	64	381	0
2018-2019	6,907	16,545	30,896	359	74,472	841	318	175	469	20
2019-2020	5,271	11,897	16,491	419	71,408	1,008	14	0	220	0
2020-2021	5,271	10,845	11,550	282	85,721	231	60	0	375	0
2021-2022	4,898	9,676	12,549	417	63,948	170	98	0	35	0

Appendix 1 Table 5: Total weight of native oysters and queen scallops (kg's) removed from the Fal Fishery by dredging each season (October to March) total dredge hours and Landings Per Unit Effort (LPUE) (kg oysters or queen scallops/dredge hours). \* excludes weight of native oysters removed and placed onto lays.

Season	Dredge Hours	*Native Oysters (kg)	LPUE (kg oysters/dredge hour)	Queen Scallops (kg)	LPUE (kg queens/dredge hour)
2014-2015	15,728	87,298	5.55	1,047	0.07
2015-2016	14,068	66,023	4.69	140	0.01
2016-2017	15,170	56,792	3.74	4,040	0.27
2017-2018	17,234	44,605	2.59	69,220	4.02
2018-2019	16,545	30,896	1.87	74,472	4.50
2019-2020	11,897	16,491	1.39	71,408	6.00
2020-2021	10,845	11,550	1.06	85,721	7.90
2021-2022	9,676	12,549	1.30	63,948	6.61

Appendix 1 Table 6: Total weight of slipper limpets (kg) removed by dredging from the Fal Fishery between October to March each season.

Season	Slipper limpets removed (kg's)
2014-2015	5,111
2015-2016	2,363
2016-2017	1,863
2017-2018	2,429
2018-2019	2,497
2019-2020	1,045
2020-2021	1,391
2021-2022	903

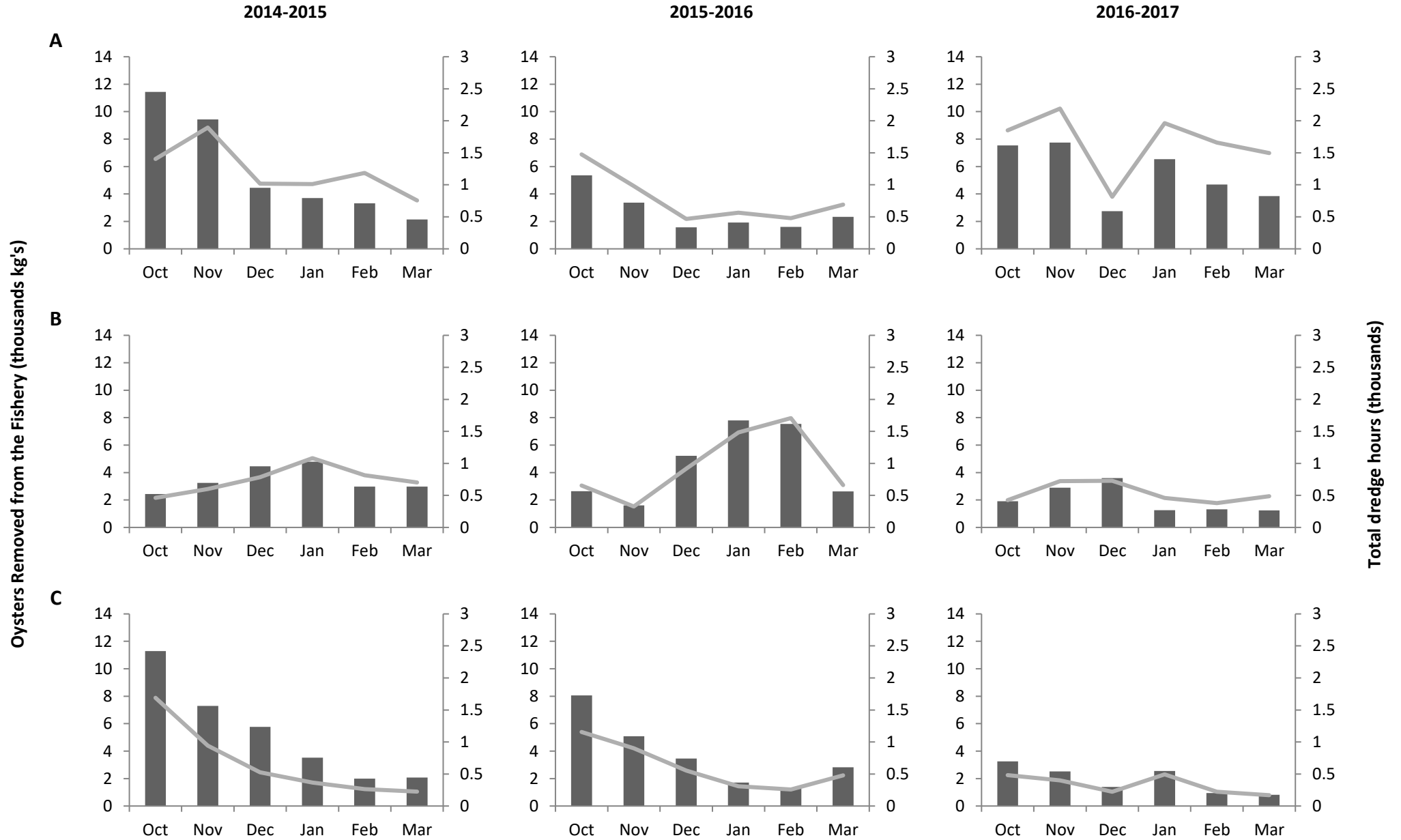
## CIFCA Fal Oyster Fishery Permit Returns Statistics 2021-2022

Appendix 1 Table 7: Total weight of native oysters (kg) placed on and removed from lay areas in the Fal Fishery, dredge and hand gathered, between October to September each season.

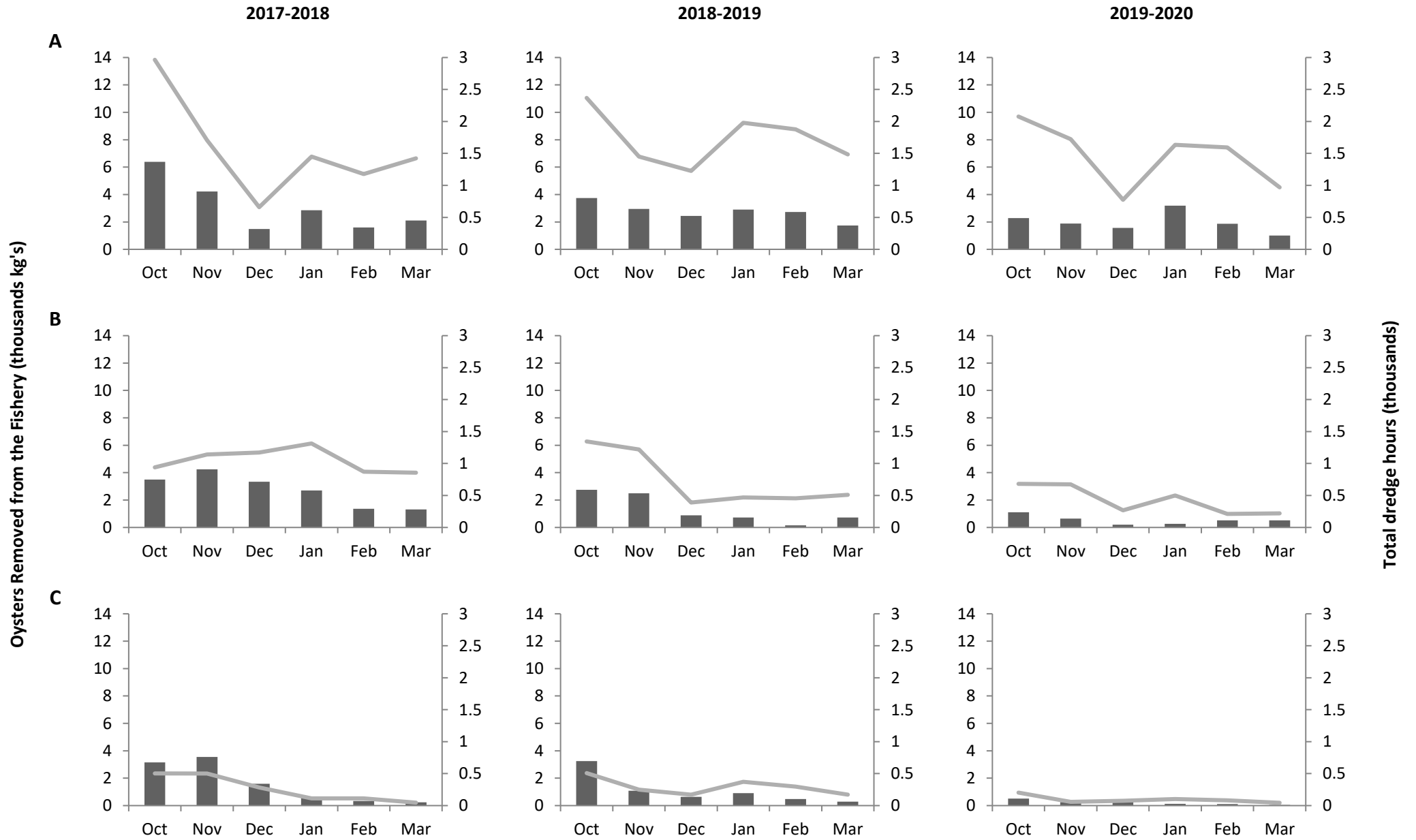
<b>Season</b>	<b>Native oysters placed on lays (kg)</b>	<b>Native oysters removed from lays (kg)</b>
2014-2015	15,377	20,594
2015-2016	2,758	5,590
2016-2017	6,641	7,818
2017-2018	11,268	5,103
2018-2019	11,329	4,074
2019-2020	7,444	5,294
2020-2021	8,687	4,413
2021-2022	3,511	3,129

CIFCA Fal Oyster Fishery Permit Returns Statistics 2021-2022

Appendix 1 Table 8: Weight of native oysters removed from the Fal Fishery (thousands of kg, bars) and total dredge hours (thousands of hours, lines) by Areas A to C, for each season (October to March).



CIFCA Fal Oyster Fishery Permit Returns Statistics 2021-2022



CIFCA Fal Oyster Fishery Permit Returns Statistics 2021-2022

