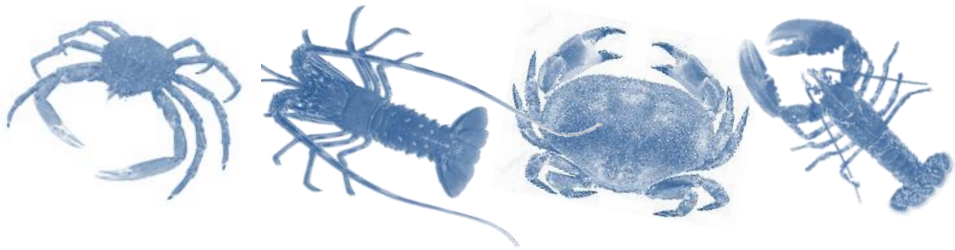
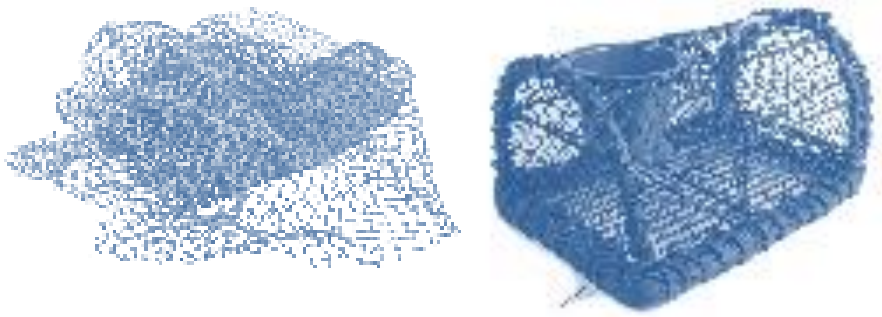
Cornwall IFCA

Inshore Fisheries and Conservation Authority





Monthly Shellfish Permit Statistics Analysis

Summary Statistics 2023

Cornwall IFCA Monthly Shellfish Permit Statistics Analysis

Introduction

Summary Statistics 2023

Cornwall IFCA have presented crustacean fishery data from 2016* to 2023 in three parts:

Part 1- Fishery Effort
Part 2- Species Summary
Part 3- Area Summary

The aim is that by presenting and grouping the data based on these three different focused areas it is possible to quickly and easily visualise the data based on the readers area of interest.
For example, comparison of one species in different analysis areas (Part 2), or comparison of different species within one analysis area (Part 3).

**Thematically mapped data and tabulated data have been presented from 2018.*

Cited as:
Street, K., Sturgeon, S., Jenkin, A., Daniels, C., and Trundle, C. 2025. Cornwall IFCA Monthly Shellfish Permit Statistics Analysis, Summary Statistics 2023. Cornwall Inshore Fisheries and Conservation Authority (Cornwall IFCA), Hayle.

Cornwall IFCA Monthly Shellfish Permit Statistics Analysis
Data Handling Method
Summary Statistics 2023

All Cornwall IFCA shellfish permit holders must submit a monthly shellfish permit return form to Cornwall IFCA detailing their daily fishing activity including; area fished, the type and quantity of gear used (pots or nets) and the weight and species (lobster, edible crab, spider crab or crawfish) of shellfish retained (kg).
This data has been analysed and presented in the '*Cornwall IFCA Monthly Shellfish Permit Statistics Analysis, Summary Statistics 2016-2023*' series as effort (number of pot hauls and meters of nets hauled) per km^2 and landings per unit effort (LPUE).
The method is outlined below and a full method can be found in '*Cornwall IFCA Analysis of 2018 Fishing Activity Returns*' available on the Cornwall IFCA website.

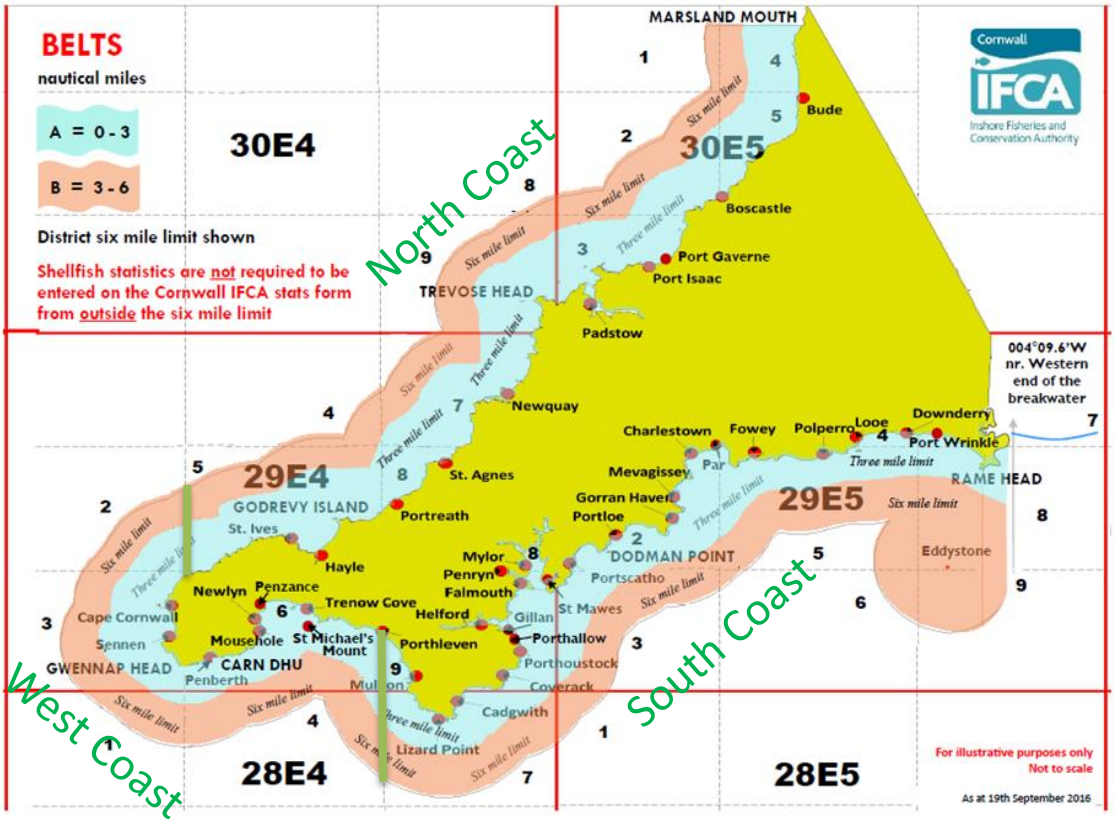


Figure 1: Belted statistical areas within the Cornwall IFCA District and boundaries of the three geographic analysis areas (green lines); *North coast, West coast and South coast*.

Data *Classification*

Spatial

Data is reported to Cornwall IFCA attributed to belted statistical areas (BSA's). For thematic mapping data was maintained at this resolution. For further analysis belted statistical areas have been grouped into three analysis areas; North, South and West coast, which are further split by band A inshore 0-3nm and band B offshore 3-6nm (Fig. 1)

Data *Descriptors*

Effort

Effort, in terms of the number of pot hauls and length of net hauled, has been normalised based on the area in km^2 of the geographic area (either Cornwall IFCA District, analysis area or belted statistical area), resulting in the effort (the number of pot hauls or length of net hauled) per km^2.

Landings per Unit Effort (LPUE)

To estimate landings per unit effort (LPUE), the unit of effort was taken as 100 pot hauls (100Ph) or 100m of net hauled (100m_Nh).

For shellfish retained in pots LPUE was calculated as:

LPUE (kg of shellfish/100Ph) = $(S_x/E_x)*100$

For shellfish retained in nets LPUE was calculated as:

LPUE (kg of shellfish/100m_Nh) = $(S_x/E_x)*100$

Where S is the weight in kg of shellfish landed in category x, and E is the number of pot hauled or length of nets hauled in category x.

Monthly Shellfish Permit
Statistics Analysis

Summary Statistics 2023

Part 1

Fishery Effort

Monthly Shellfish Permit Statistics Analysis

Pot Fishery Effort

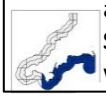
Summary Statistics 2023

Summary

Overall there was a decrease in pot hauls from 397Ph/km^2 in 2022 to 379Ph/km^2 in 2023 in the District (Fig. 3). The biggest decrease was in the north coast analysis area (Fig.4), but there was an increase in the west coast analysis area (Fig. 4), only inshore (Fig. 9). This was the only belted analysis area to show an increase in pot hauls from 2022 to 2023 (Fig. 7, 9 and 11).

North Coast; a decrease in pot hauls in the majority of BSAs in 2023 (Fig 5). In July and August, both inshore and offshore, monthly LPUE was around 50% lower than the previous 5 year average and peak effort occurred two months early (Fig. 8).

West Coast; Increase in effort off Lands End, especially inshore (Fig. 5) where monthly effort was higher than the 5 year average all year. Offshore effort was lower than the 5 year average for much of the year (Fig. 10).



South Coast; From July onwards inshore the monthly effort was lower than the previous 5 year average (Fig. 12a).

Difference in Annual Potting Effort 2019 to 2023

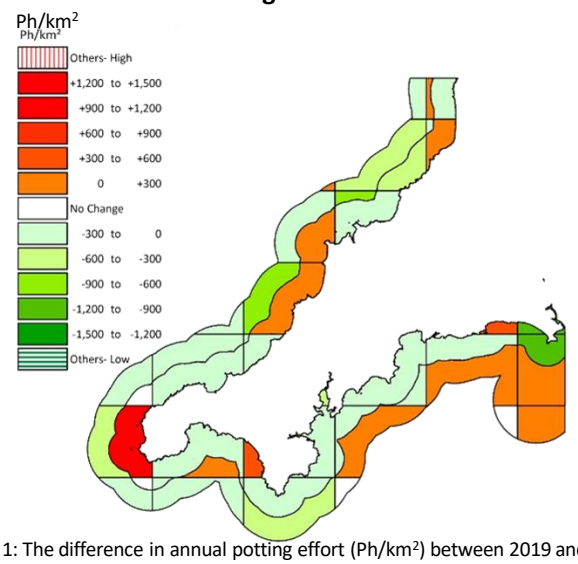


Figure 1: The difference in annual potting effort (Ph/km^2) between 2019 and 2023 in belted statistical areas thematically mapped in 300Ph/km^2 ranges where positive values i.e. increased effort are red and negative values i.e. decreases in effort, are green.

LPUE of retained shellfish

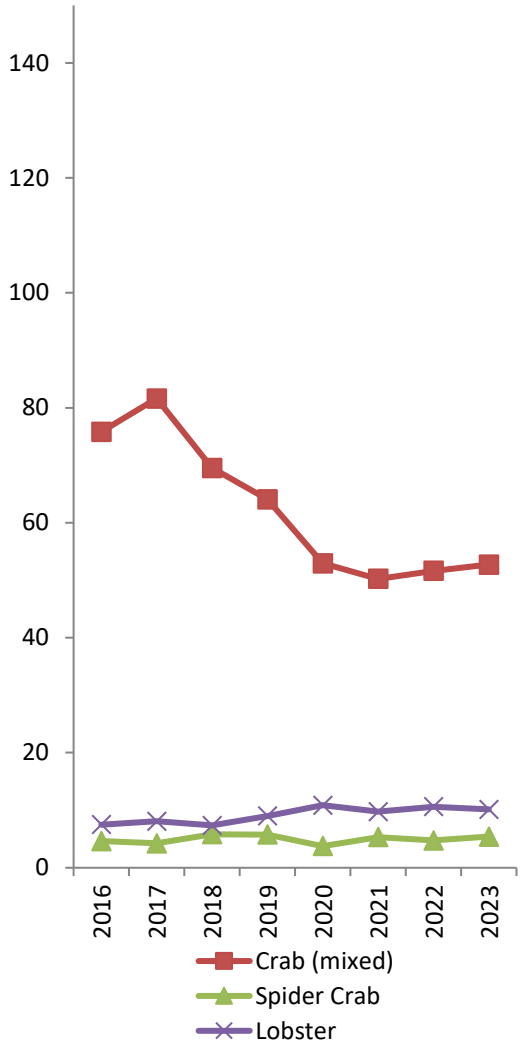


Figure 2: LPUE (kg/100Ph) of the three main commercial species (Crab, Spider Crab and Lobster) retained in pots in the Cornwall IFCA District in from 2016 to 2023.

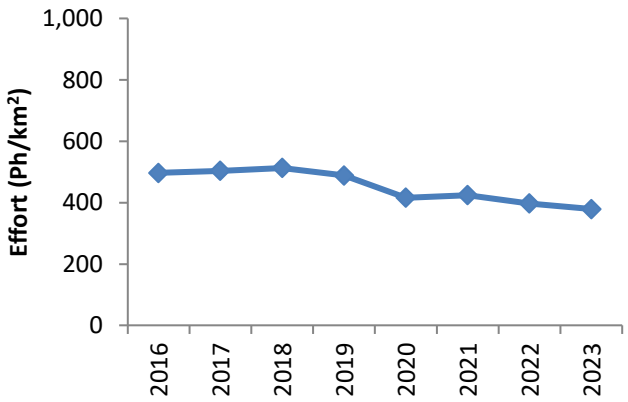


Figure 3: Annual potting effort (Ph/km^2) by year in the Cornwall IFCA District from 2016 to 2023 (blue line).

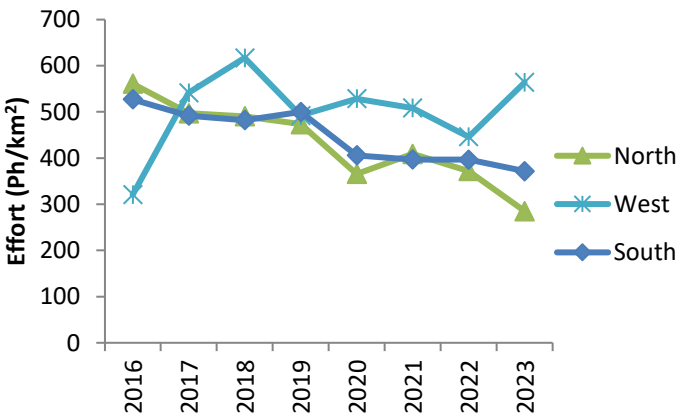


Figure 4: Annual potting effort (Ph/km^2) split by analysis area (north, west and south) from 2016 to 2023.

Cornwall IFCA Monthly Shellfish Permit Statistics Analysis

Pot Fishery Effort

Summary Statistics 2023

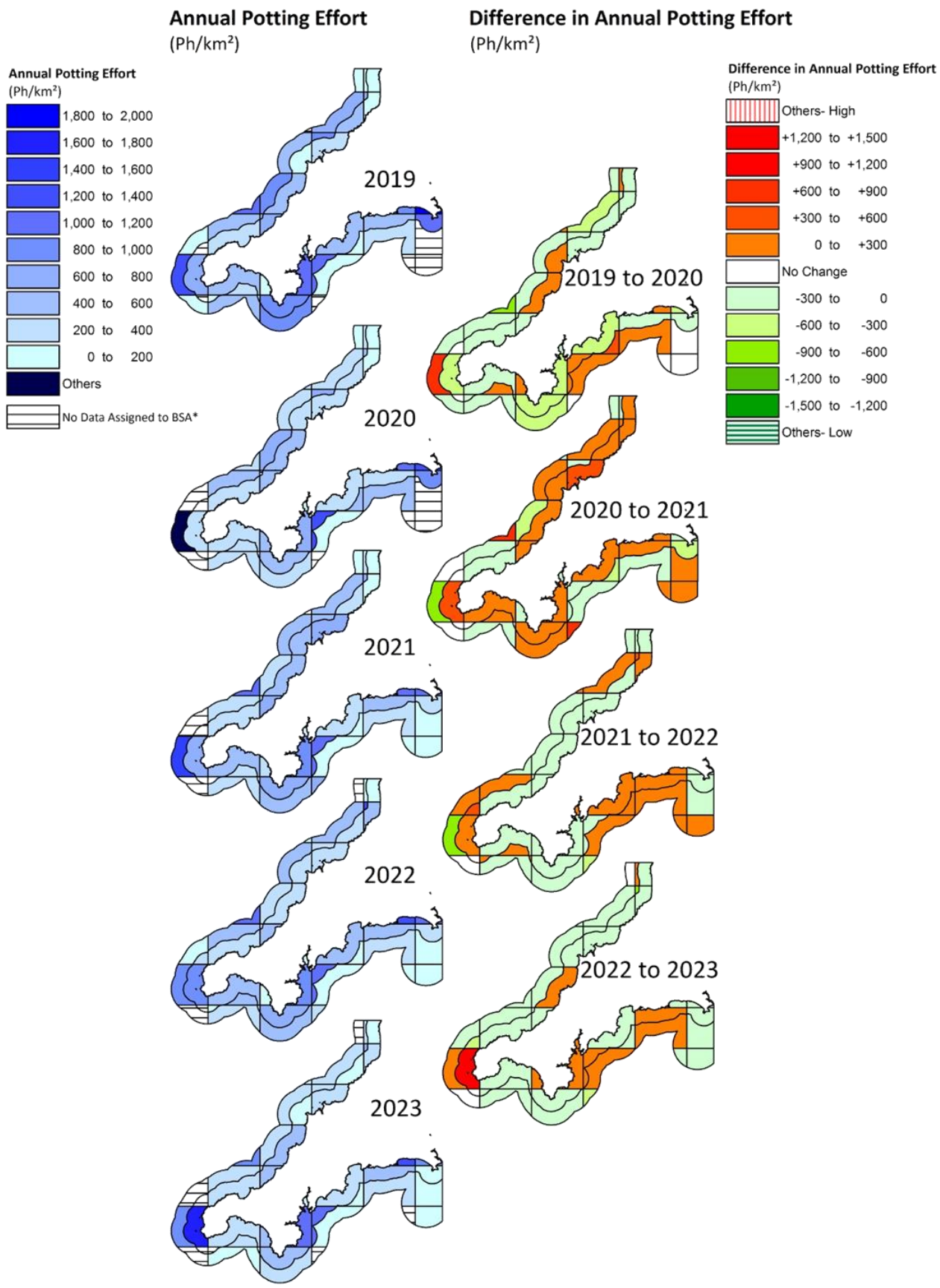


Figure 5: Thematic mapping of annual potting effort (Ph/km²) in belted statistical areas in 200Ph/km² increments (Left). 'Others' refers to 2,029 Ph/km² in 2018 in 29E57A and 2,245Ph/km² in 2020 in 29E43B. And, thematic mapping of difference in potting effort (Ph/km²) in belted statistical areas in ranges of 300Ph/km² (right) where a positive value i.e. increased effort is red and a negative value i.e. a reduction in effort is green. *In some cases this may be an artefact of the data collection method; fishing effort and catch can only be allocated to one BSA per day, therefore where a vessel works in more than one area only one can be reported.

Cornwall IFCA Monthly Shellfish Permit Statistics Analysis

Pot Fishery Effort

Summary Statistics 2023

North Coast

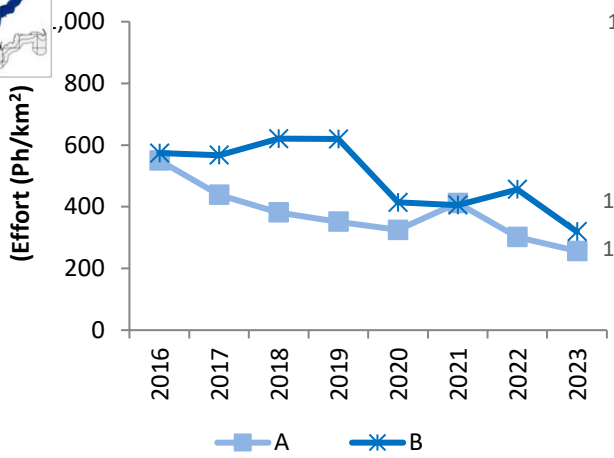


Figure 7: Annual effort (Ph/km²) on the 'North Coast' from 2016 to 2023 split by band A (inshore 0-3nm, light blue squares) and B (offshore 3-6nm, blue stars).

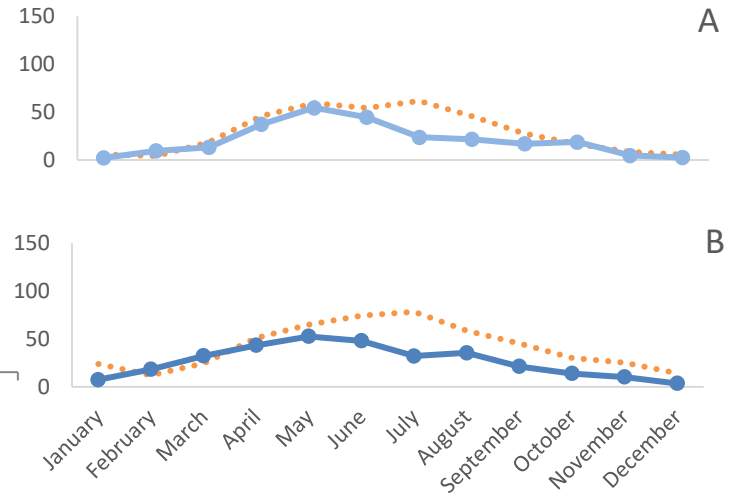


Figure 8: Monthly effort (Ph/km²) on the 'North Coast' in 2023 (blue line) and 5 year average from 2018 to 2022 (Orange dotted line), split by band A (inshore 0-3nm, top) and B (offshore 3-6nm, bottom).

West Coast

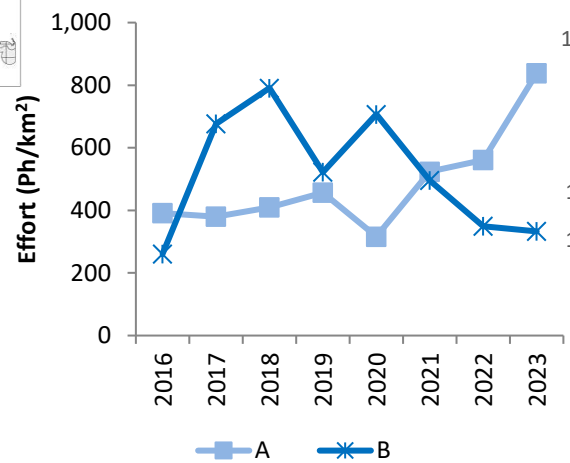


Figure 9: Annual effort (Ph/km²) on the 'West Coast' from 2016 to 2023 split by band A (inshore 0-3nm, light blue squares) and B (offshore 3-6nm, blue stars).

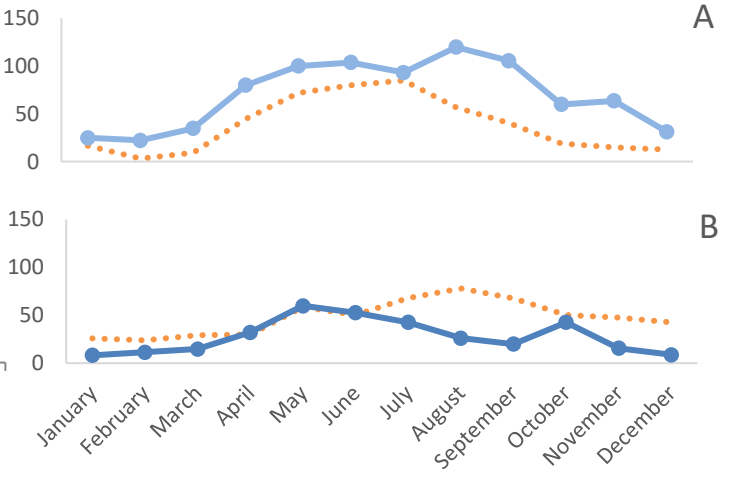
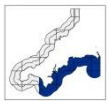


Figure 10: Monthly effort (Ph/km²) on the 'West Coast' in 2023 (blue line) and 5 year average from 2018 to 2022 (Orange dotted line), split by band A (inshore 0-3nm, top) and B (offshore 3-6nm, bottom).

South Coast



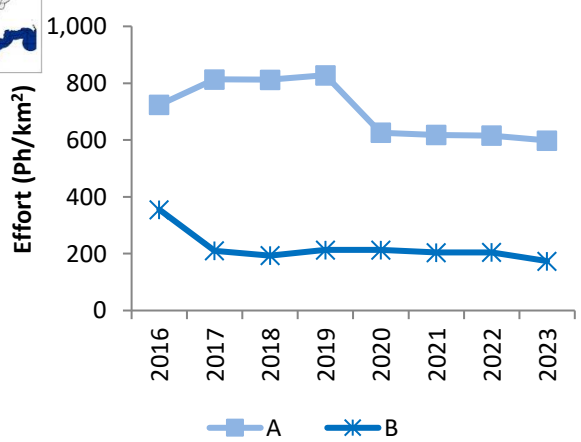


Figure 11: Annual effort (Ph/km²) on the 'South Coast' from 2016 to 2023 split by band A (inshore 0-3nm, light blue squares) and B (offshore 3-6nm, blue stars).

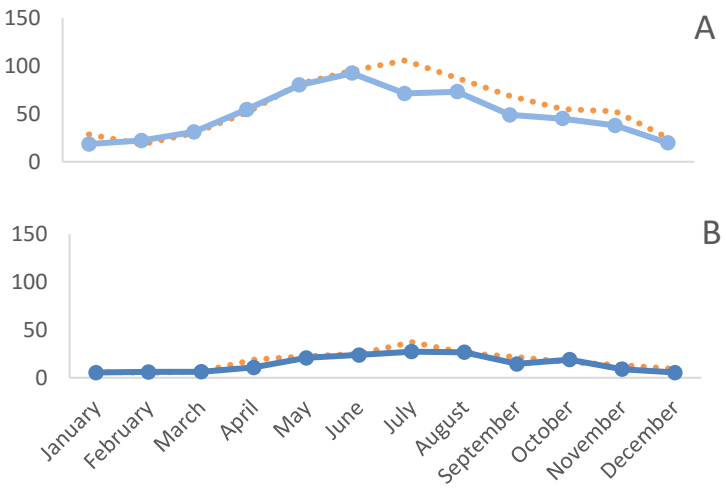
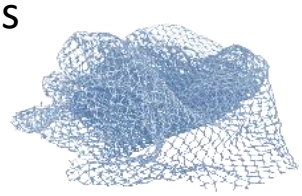


Figure 12: Monthly effort (Ph/km²) on the 'South Coast' in 2023 (blue line) and 5 year average from 2018 to 2022 (Orange dotted line), split by band A (inshore 0-3nm, top) and B (offshore 3-6nm, bottom).

Monthly Shellfish Permit Statistics Analysis

Demersal Net Fishery Effort

Summary Statistics 2023



Summary

Overall annual effort in the District has decreased (773m_Nh/km^2 to 747m_Nh/km^2) from 2022 to 2023 (Fig. 3). Effort remained highest in the south coast analysis area (Fig. 4).

Annual LPUE of all three species reported increases in 2023 (Fig. 2), spider crab remained the species with the highest annual LPUE, but crawfish annual LPUE in 2023 was higher than edible crab (Fig. 2).

North Coast; inshore annual effort increased (Fig. 6) and there was an increase in monthly effort from August to October, the time of year generally associated with higher crawfish landings (Fig.7)

West Coast; annual effort increased inshore (208m _Nh/km^2 to 240 _Nh/km^2) (Fig. 8)

South Coast; in 2023 the BSA with the highest effort in the District was 29E52A around Dodman Point (Fig. 5). Overall there was a decrease in annual effort, both inshore and offshore (Fig. 10). Monthly effort was lower than the 5 year average for much of the year inshore and offshore (Fig. 11).

Difference in Annual Netting Effort 2019 to 2023

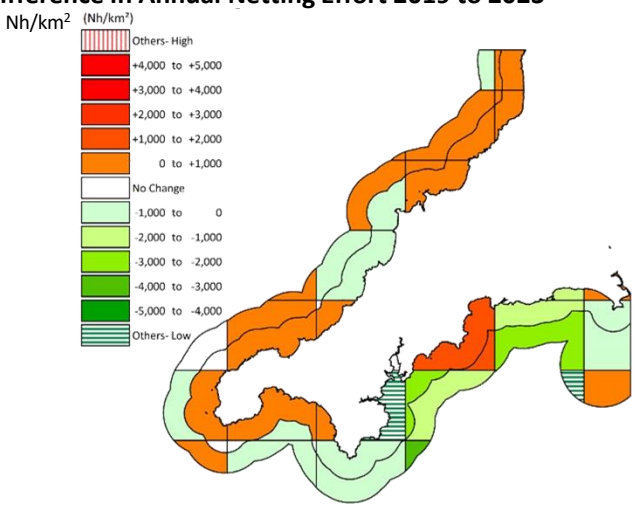


Figure 1: The difference in annual netting effort (Nh/km^2) in belted statistical areas between 2019 and 2023 thematically mapped in 1,000 Nh/km^2 ranges, where positive values i.e. increased effort are red and negative values i.e. decreases in effort, are green. 'Others' refers to -6,290Nh/km2 in 29E56B and -12,177Nh/km2 in 29E49A-E.

LPUE of retained shellfish

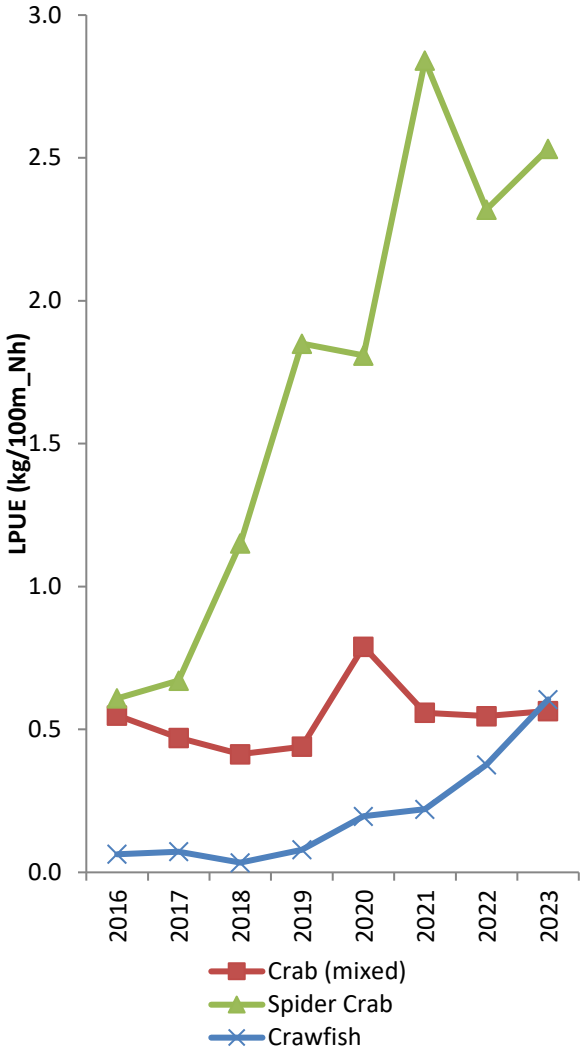


Figure 2: LPUE (kg/100m_Nh) of the three main species (Crab, Spider Crab and Crawfish) retained in nets in the Cornwall IFCA District from 2016 to 2023.

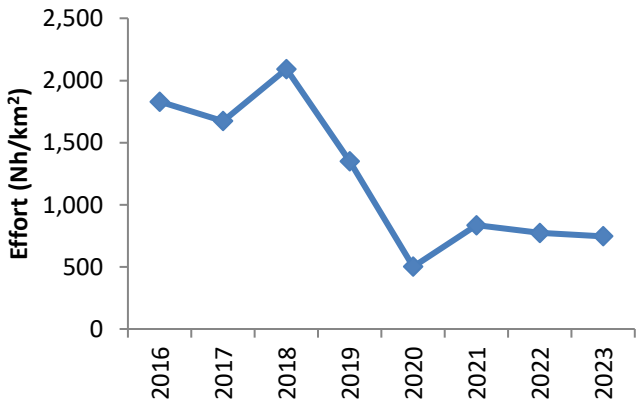


Figure 3: Annual netting effort (Nh/km^2) in the Cornwall IFCA District from 2016 to 2023 (blue line).

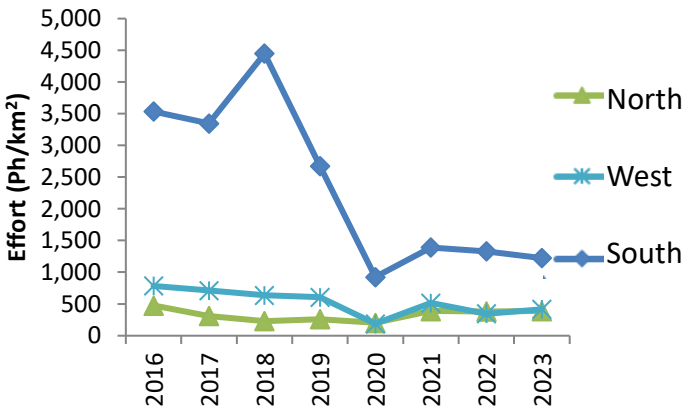
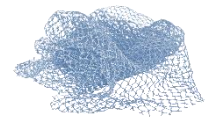


Figure 4: Annual netting effort (Nh/km^2) split by analysis area (North, West and South) from 2016 to 2023.

Cornwall IFCA Monthly Shellfish Permit Statistics Analysis

Demersal Net Fishery Effort

Summary Statistics 2023



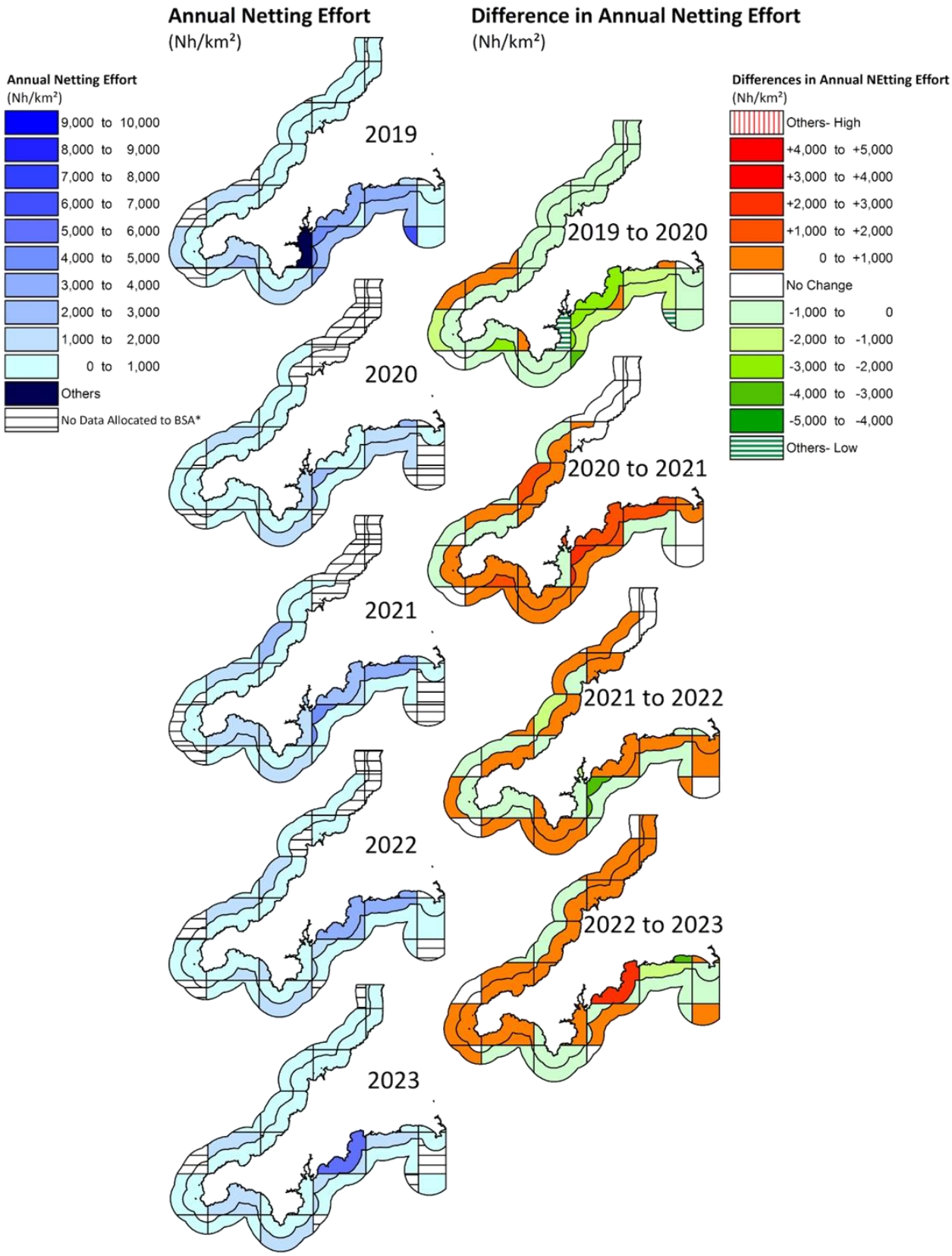


Figure 5: Thematic mapping of annual netting effort (Nh/km²) in belted statistical areas in 1,000Nh/km² increments (left), 'Others' refers to a value of 12,802 in 2019 in 29E49A-East (Falmouth Bay). And, thematic mapping of differences in netting effort (Nh/km²) in belted statistical areas in ranges of 1,000Nh/km² (right) where a positive value i.e. increased effort is red and a negative value i.e. a reduction in effort is green. 'Others' refers to a value of -10,833NH/km² in 29E49A (E) and -6,290Nh/km² in 29E56B from 2019 to 2020.

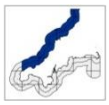
*In some cases this may be an artefact of the data collection method; fishing effort and catch can only be allocated to one BSA per day, therefore where a vessel works in more than one area only one can be reported.

Cornwall IFCA Monthly Shellfish Permit Statistics Analysis

Demersal Net Fishery Effort

Summary Statistics 2023

North Coast



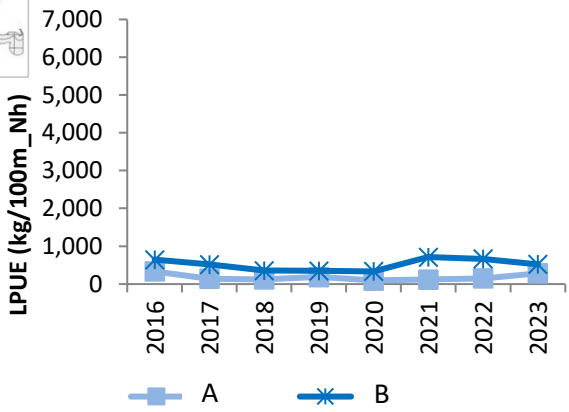


Figure 6: Annual Effort (Nh/km²) on the 'North Coast' from 2016 to 2023 split by band A (inshore 0-3nm, light blue squares) and B (offshore 3-6nm, blue stars).

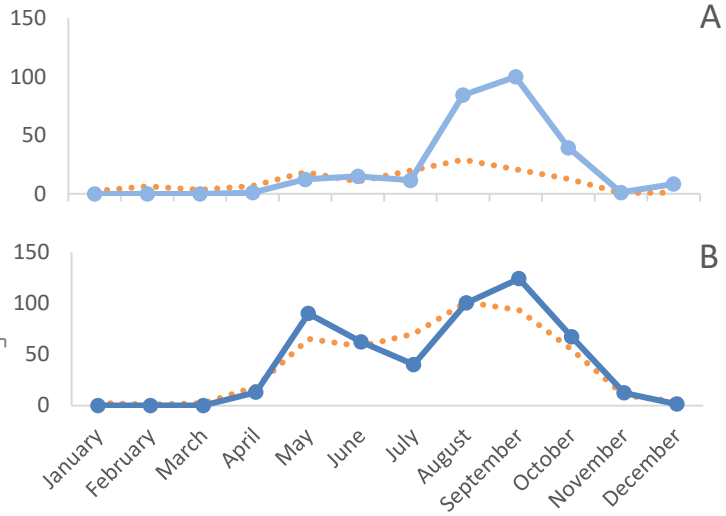


Figure 7: Monthly effort (Nh/km²) on the 'North Coast' in 2023 (blue line) and 5 year average from 2018 to 2022 (Orange dotted line), split by band A (inshore 0-3nm, top) and B (offshore 3-6nm, bottom).

West Coast

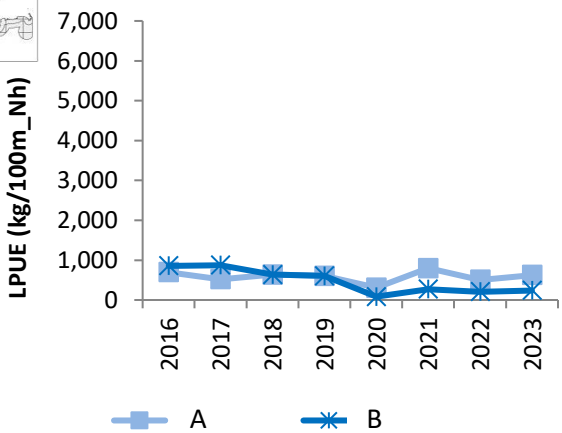


Figure 8: Annual effort (Nh/km²) on the 'West Coast' from 2016 to 2023 split by band A (inshore 0-3nm, light blue squares) and B (offshore 3-6nm, blue stars).

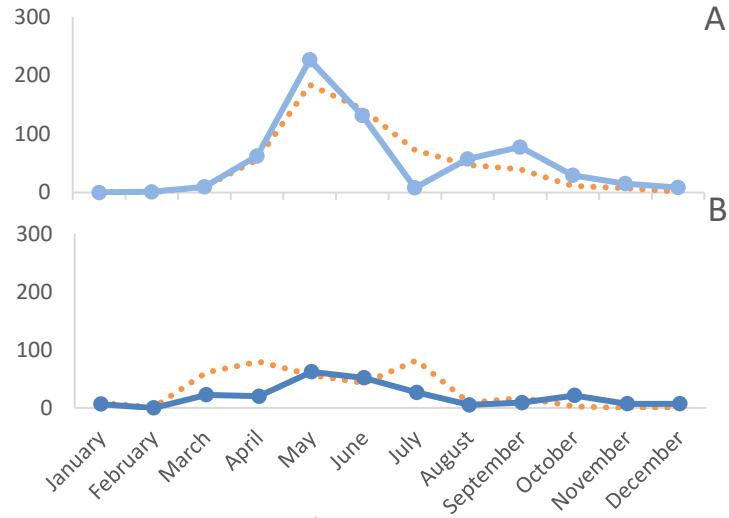
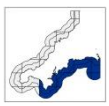


Figure 9: Monthly effort (Nh/km²) on the 'West Coast' in 2023 (blue line) and 5 year average from 2018 to 2022 (Orange dotted line), split by band A (inshore 0-3nm, top) and B (offshore 3-6nm, bottom).

South Coast



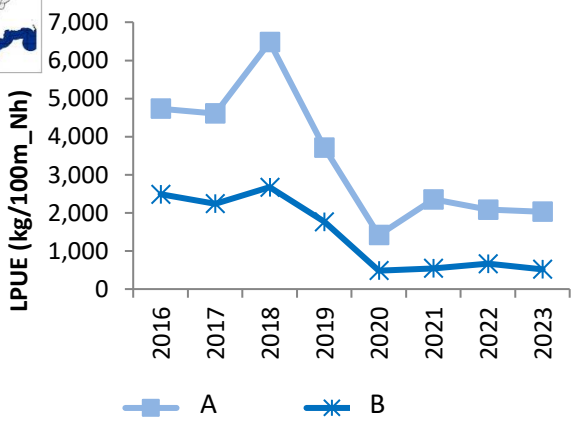


Figure 10: Annual effort (Nh/km²) on the 'South Coast' from 2016 to 2023 split by band A (inshore 0-3nm, light blue squares) and B (offshore 3-6nm, blue stars).

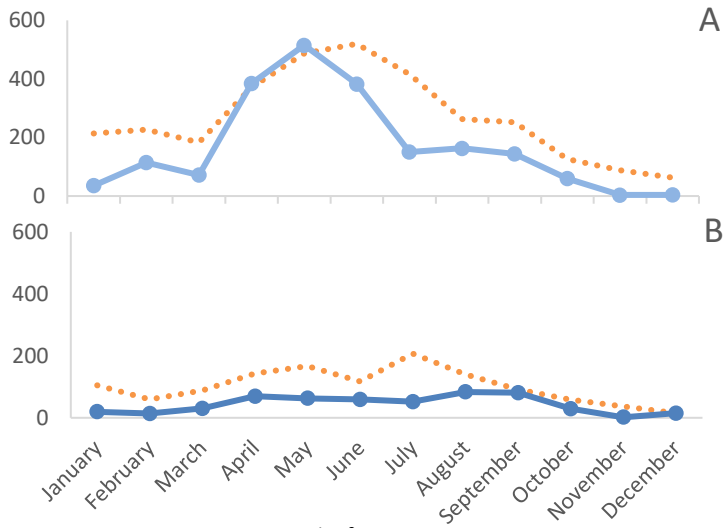


Figure 11: Monthly effort (Nh/km²) on the 'South Coast' in 2023 (blue line) and 5 year average from 2018 to 2022 (Orange dotted line), split by band A (inshore 0-3nm, top) and B (offshore 3-6nm, bottom).

Monthly Shellfish Permit
Statistics Analysis

Summary Statistics 2023

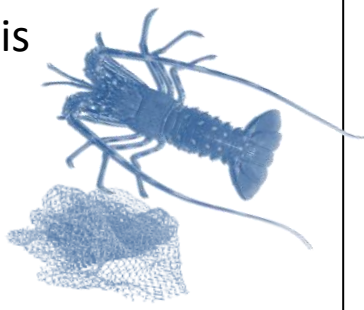
Part 2

Species Summary

Monthly Shellfish Permit Statistics Analysis

Crawfish (*Palinurus elephas*) Net Fishery

Summary Statistics 2023



Summary

Overall annual landings of crawfish in the District increased by around 50% from 2022, and annual LPUE nearly doubled (Table 1, Fig. 2). In the District overall annual LPUE has been increasing from 2018 (Fig. 2). Annual LPUE increased in most belted statistical areas in the District from 2019 to 2023 (Fig. 1). In 2023 the biggest increase in annual LPUE from the previous year was in the west coast analysis area (Fig. 3) however all three analysis areas showed a continued increase in LPUE from 2021 to 2023 (Fig. 3).

North Coast; for much of the reporting period annual LPUE inshore and offshore were at similar values, however in 2023 inshore annual LPUE increased by a greater amount (Fig 5). In this belt the season fishing started earlier with LPUE increasing sharply from June to July, whereas offshore this increase was from July to August (Fig. 6). In both belts monthly LPUE then remained high and declined in November (Fig. 6).

West Coast; annual LPUE increased both inshore and offshore in 2023 (Fig. 7). Offshore remained higher than inshore, and monthly LPUE in October was the highest of all monthly LPUE values in all belted analysis areas (Fig. 6, 8 and 10).

South Coast; the biggest increase in annual LPUE was offshore (Fig. 9). Both inshore and offshore followed a similar pattern in monthly LPUE with the highest monthly values in October and November, slightly later than the other analysis areas (Fig. 6, 8 and 10). Area around the Lizard had the highest LPUE in the south coast analysis area (Fig. 4).

Annual Data

Table 1: Total kg of crawfish (*Palinurus elephas*) reportedly removed from the Cornwall IFCA District from 2019 to 2023, total gear hauled, and resultant calculated LPUE (kg/100m_Nh)

	2019	2020	2021	2022	2023
Total Gear Hauled(m)	5,390,595	2,004,355	3,338,130	3,089,969	2,984,092
Total Landed (kg)	4,240	3,927	7,359	11,619	18,050
LPUE (kg/100m_Nh)	0.08	0.20	0.22	0.38	0.60

Difference in LPUE 2019 to 2023

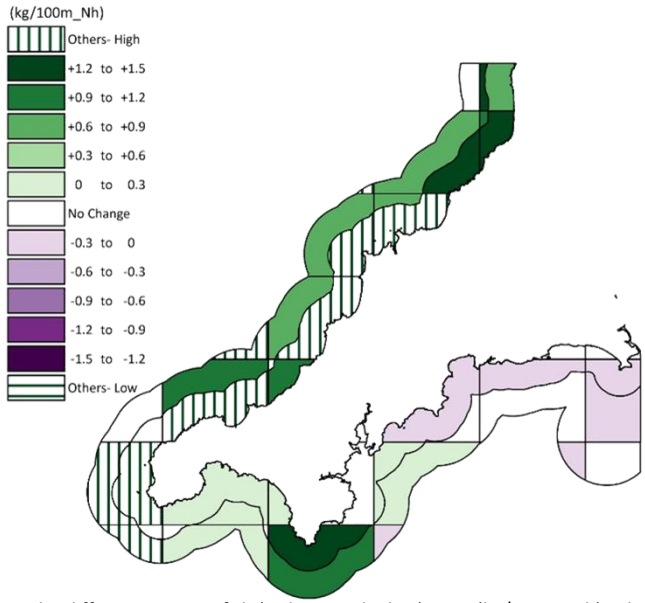


Figure 1: The difference in crawfish (*Palinurus elephas)* LPUE (kg/100m_Nh) in belted statistical areas between 2019 and 2023 thematically mapped in 0.3kg/100m_Nh ranges where positive values i.e. increases in LPUE, are green and negative values i.e. decreases in LPUE are purple. 'Others' refers to 1.71 in 30E53A, 2.00 in 30E48B, 1.77 in 30E49A,1.96 in 29E47A , 4.23 in 29E44B,1.68 in 29E45A, 2.53 in 28E41B, 5.34 in 29E43A and 7.05 in 29E43B.

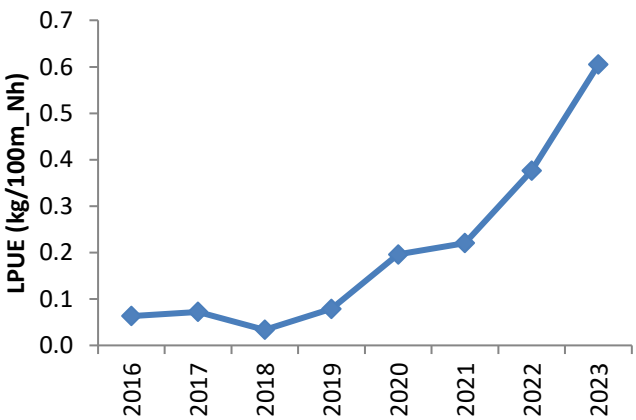


Figure 2: Annual LPUE (kg/100m_Nh) of crawfish (*Palinurus elephas*) in the Cornwall IFCA District from 2016 to 2023.

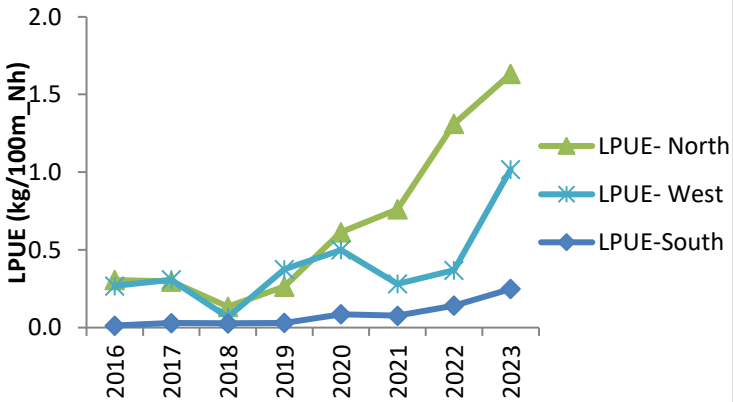


Figure 3: Annual LPUE (kg/100m_Nh) of crawfish (*Palinurus elephas*) in the Cornwall IFCA District split by analysis area (north, west and south) from 2016 to 2023.

Cornwall IFCA Monthly Shellfish Permit Statistics Analysis

Crawfish (*Palinurus elephas*) Net Fishery

Summary Statistics 2023

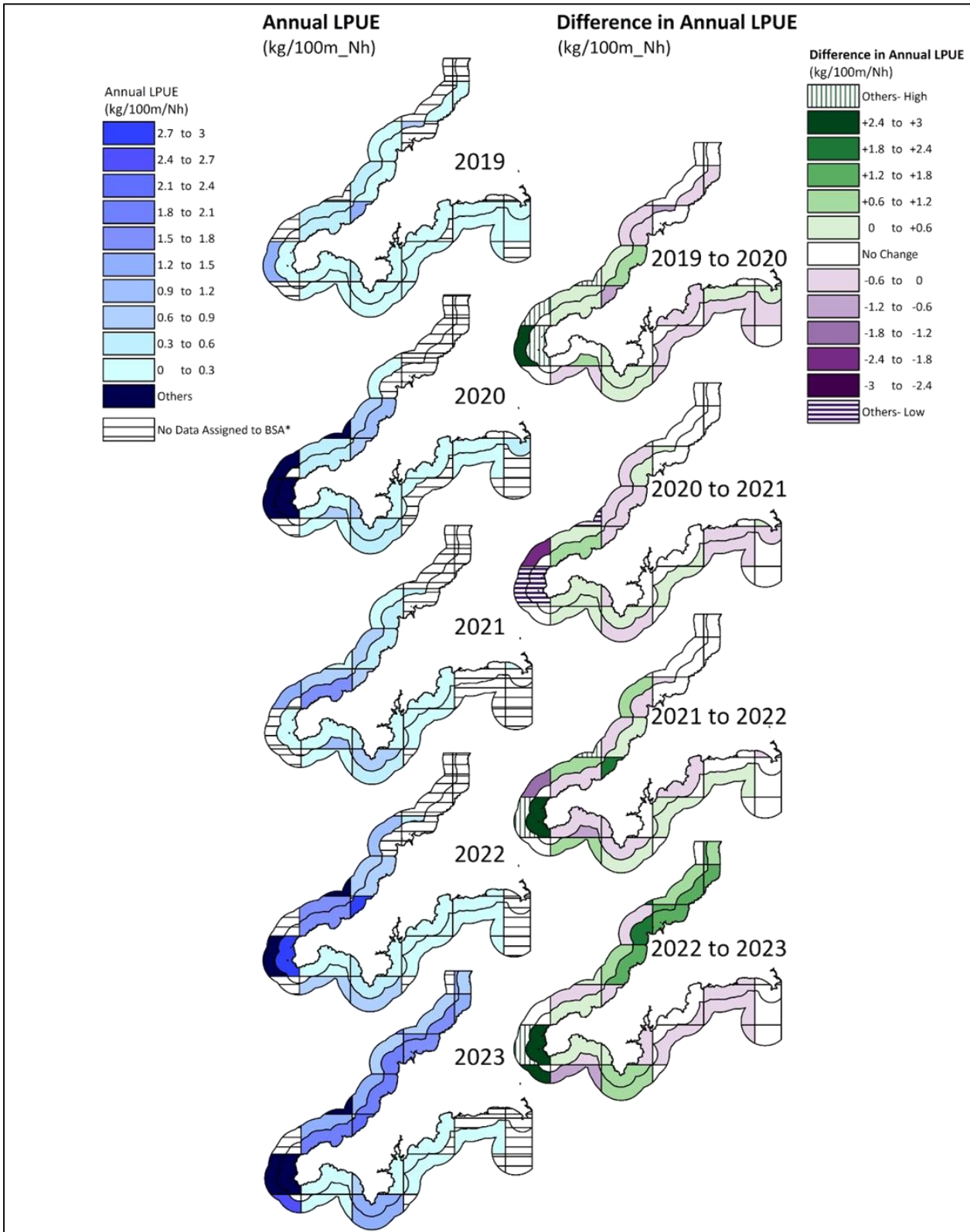


Figure 4: Thematic mapping of annual netting LPUE (kg/100m_Nh) of crawfish (*Palinurus elephas*) in belted statistical areas in 0.15kg/100m_Nh increments (left). 'Others' refers to the following values in 30E51B; 3.4 kg/100m_Nh in 2020, and 5.6 kg/100m_Nh in 2023, in 30E54A; 3.9 kg/100m_Nh in 2020, 5.3 kg/100m_Nh in 2022 and 8.5 kg/100m_Nh in 2023, in 30E54B; 3.2 kg/100m_Nh in 2020, 4.0 kg/100m_Nh in 2022 and 4.2 kg/100m_Nh in 2023, and in 30E52A; 3.5 kg/100m_Nh in 2020.

And, thematic mapping of the difference in annual netting LPUE (kg/100m_Nh) of crawfish (*Palinurus elephas*) in belted statistical areas in ranges of 0.3kg/100m_Nh where a positive value i.e. increased LPUE is green and a negative value i.e. a reduction in LPUE is purple (Right). 'Others' refers to the following values in 30E51B; +4.2 kg/100m_Nh from 2019 to 2020, and -4.2 kg/100m_Nh from 2020 to 2021, in 30E54A; -3.9 kg/100m_Nh from 2020 to 2021, +5.3 kg/100m_Nh from 2021 to 2022, +3.2 kg/100m_Nh from 2022 to 2023, in 30E54B; 3.2 kg/100m_Nh from 2019 to 2020, -3.0 kg/100m_Nh from 2020 to 2021, and +3.96 kg/100m_Nh from 2021 to 2022, and in 30E52A +3.5 kg/100m_Nh from 2019 to 2020.

*In some cases this may be an artefact of the data collection method; fishing effort and catch can only be allocated to one BSA per day, therefore where a vessel works in more than one area only one can be reported.

Cornwall IFCA Monthly Shellfish Permit Statistics Analysis

Crawfish (*Palinurus elephas*) Net Fishery

Summary Statistics 2023

North Coast

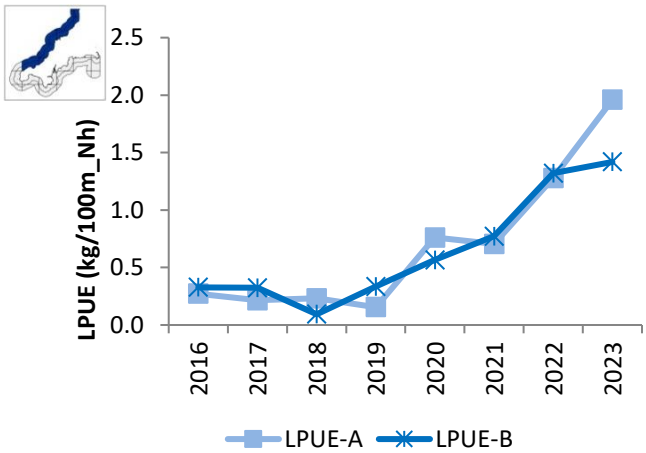


Figure 5: Annual LPUE (kg/100m_Nh) of crawfish (*Palinurus elephas)* on the 'North Coast' from 2016 to 2023 split by band A (inshore 0-3nm, light blue squares) and B (offshore 3-6nm, blue stars).

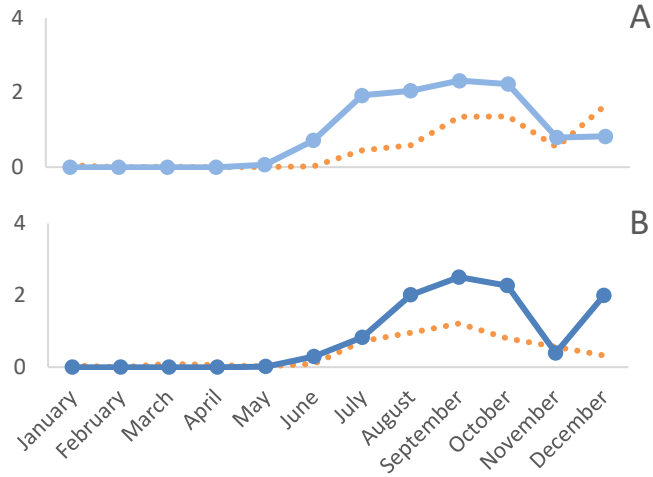


Figure 6: Monthly LPUE (kg/100m_Nh) of crawfish (*Palinurus elephas)* on the 'North Coast' in 2023 (blue line) and 5 year average from 2018 to 2022 (Orange dotted line), split by band A (inshore 0-3nm, top) and B (offshore 3-6nm, bottom).

West Coast

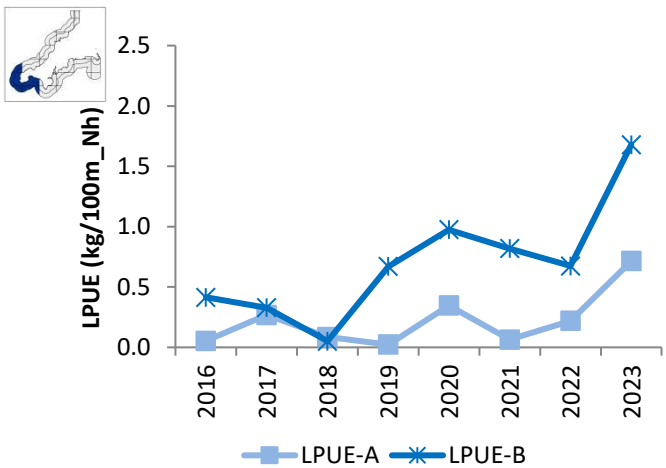


Figure 7: Annual LPUE (kg/100m_Nh) of crawfish (*Palinurus elephas)* on the 'West Coast' from 2016 to 2023 split by band A (inshore 0-3nm, light blue squares) and B (offshore 3-6nm, blue stars).

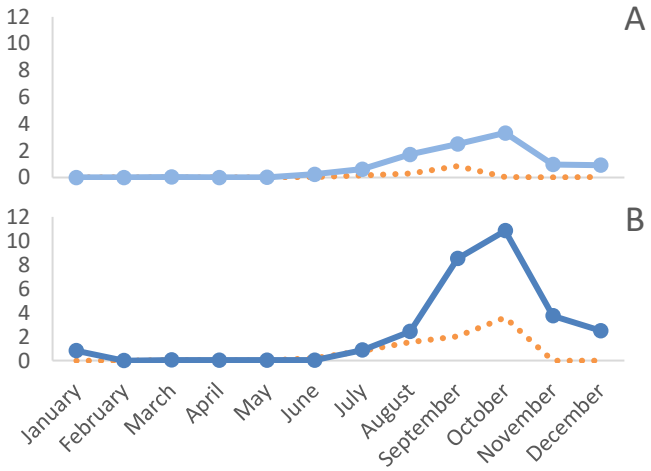


Figure 8: Monthly LPUE (kg/100m_Nh) of crawfish (*Palinurus elephas)* on the 'West Coast' in 2023 (blue line) and 5 year average from 2018 to 2022 (Orange dotted line), split by band A (inshore 0-3nm, top) and B (offshore 3-6nm, bottom).

South Coast

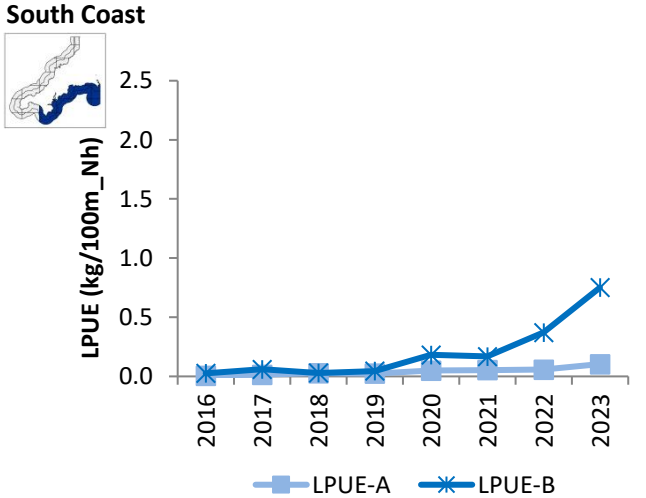


Figure 9: Annual LPUE (kg/100m_Nh) of crawfish (*Palinurus elephas)* on the 'South Coast' from 2016 to 2023 split by band A (inshore 0-3nm, light blue squares) and B (offshore 3-6nm, blue stars).

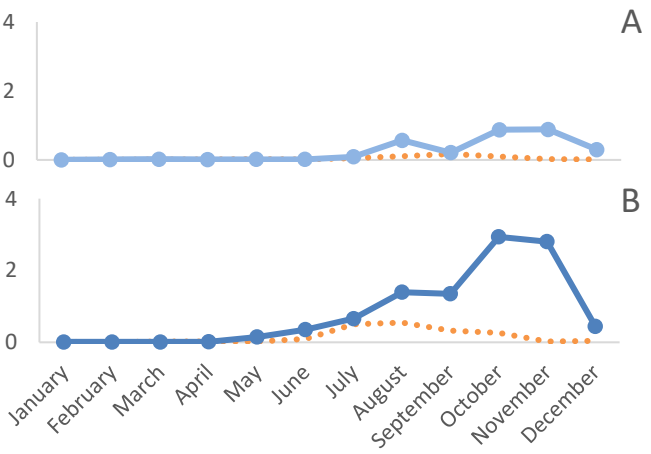
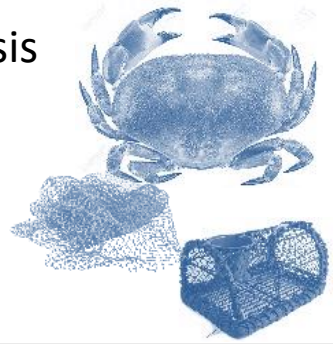


Figure 10: Monthly LPUE (kg/100m_Nh) of crawfish (*Palinurus elephas)* on the 'South Coast' in 2023 (blue line) and 5 year average from 2018 to 2022 (Orange dotted line), split by band A (inshore 0-3nm, top) and B (offshore 3-6nm, bottom).

Cornwall IFCA
Inshore Fisheries and Conservation Authority

Monthly Shellfish Permit Statistics Analysis
Edible crab (*Cancer pagurus*) Pot and Net Fisheries
Summary Statistics 2023



Summary

Overall slight increase in annual LPUE for both fisheries (Table 1, and Fig. 2)

In the pot fishery all three analysis areas remained relatively stable in annual LPUE (Fig. 3, top), but in the net fishery there was a decrease in the west and an increase in the north, therefore all three analysis areas converge to a more similar LPUE value than in previous years (Fig.3 bottom).

North Coast; in the pot fishery, monthly LPUE was similar to the 5 year average for much of the year, but in November monthly LPUE was higher than the previous average inshore and offshore (Fig.6). In the net fishery annual LPUE increased in both belts (Fig. 12), and monthly LPUE increased in December (Fig. 13).

West Coast; offshore monthly LPUE was similar to the 5 year average through the middle of the year, but lower Jan to March, and August onwards (Fig. 8b). Inshore the annual LPUE decreased overall, but unlike in other areas monthly LPUE was higher than average in August and September (Fig. 8 a).

South Coast; all inshore BSAs showed a decrease in potting LPUE from 2022 to 2023 (Fig. 4). Monthly LPUE was lower than average at the beginning of the year in both belts in the pot fishery (Fig. 10). Monthly LPUE in the pot fishery inshore was lower than the monthly 5 year average from August onwards (Fig. 10a), similarly offshore monthly potting and netting LPUE were lower from September onwards (Fig. 10b and 17b).

Annual Data

Table 1: Total kg of edible crabs (*Cancer pagurus*) reportedly removed from the Cornwall IFCA District from 2019 to 2023 from both the pot and net fisheries, total gear hauled, and resultant calculated LPUE (kg/100Ph, or kg/100m_Nh).

		2019	2020	2021	2022	2023
Pots	Gear Hauled (m)	1,951,737	1,662,397	1,695,535	1,588,139	1,514,745
	Landed (kg)	1,250,556	879,849	851,639	820,062	798,559
	LPUE(kg/100Ph)	64.07	52.93	50.23	51.64	52.72
Nets	Gear Hauled (m)	5,390,595	2,004,355	3,338,130	3,089,969	2,984,092
	Landed (kg)	23,689	15,829	18,642	16,887	16,846
	LPUE(kg/100m_Nh)	0.44	0.79	0.56	0.55	0.56

Difference in LPUE 2019 to 2023

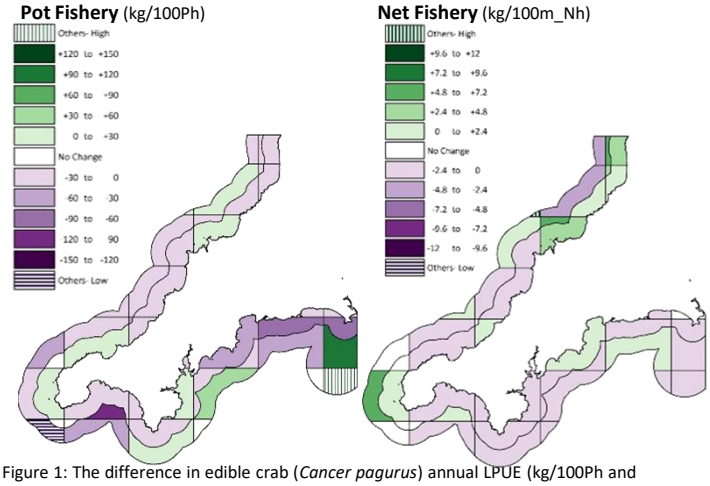


Figure 1: The difference in edible crab (*Cancer pagurus*) annual LPUE (kg/100Ph and kg/100m_Nh) in the pot and net fisheries, in belted statistical areas between 2019 and 2023. Thematically mapped in 30kg/100Ph ranges (pot fishery), and 2.4kg/100m_Nh ranges (net fishery) where positive values indicate an increase in LPUE and negative values a decrease. 'Others' in the pot fishery refers to +169 in 29E59B, and -150 in 28E41B.

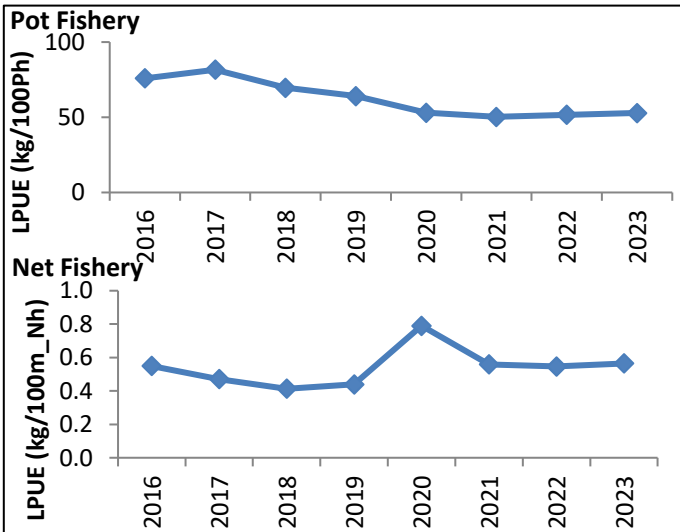


Figure 2: Annual LPUE in the pot fishery (kg/100Ph, top) and annual LPUE in the net fishery (kg/100m_Nh, bottom) of edible crab (*Cancer pagurus*) in the Cornwall IFCA District from 2016 to 2023.

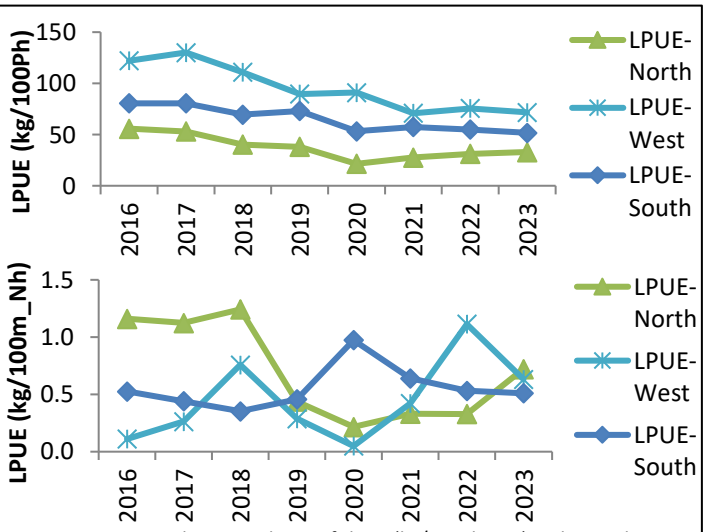
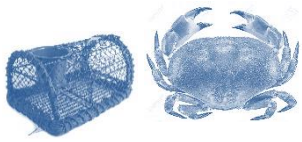


Figure 3: Annual LPUE in the pot fishery (kg/100Ph, top) and annual LPUE in the net fishery (kg/100m_Nh, bottom) of edible crab (*Cancer pagurus*) in the Cornwall IFCA District split by analysis area from 2016 to 2023.

Cornwall IFCA Monthly Shellfish Permit Statistics Analysis

Edible crab (*Cancer pagurus*) Pot Fishery

Summary Statistics 2023



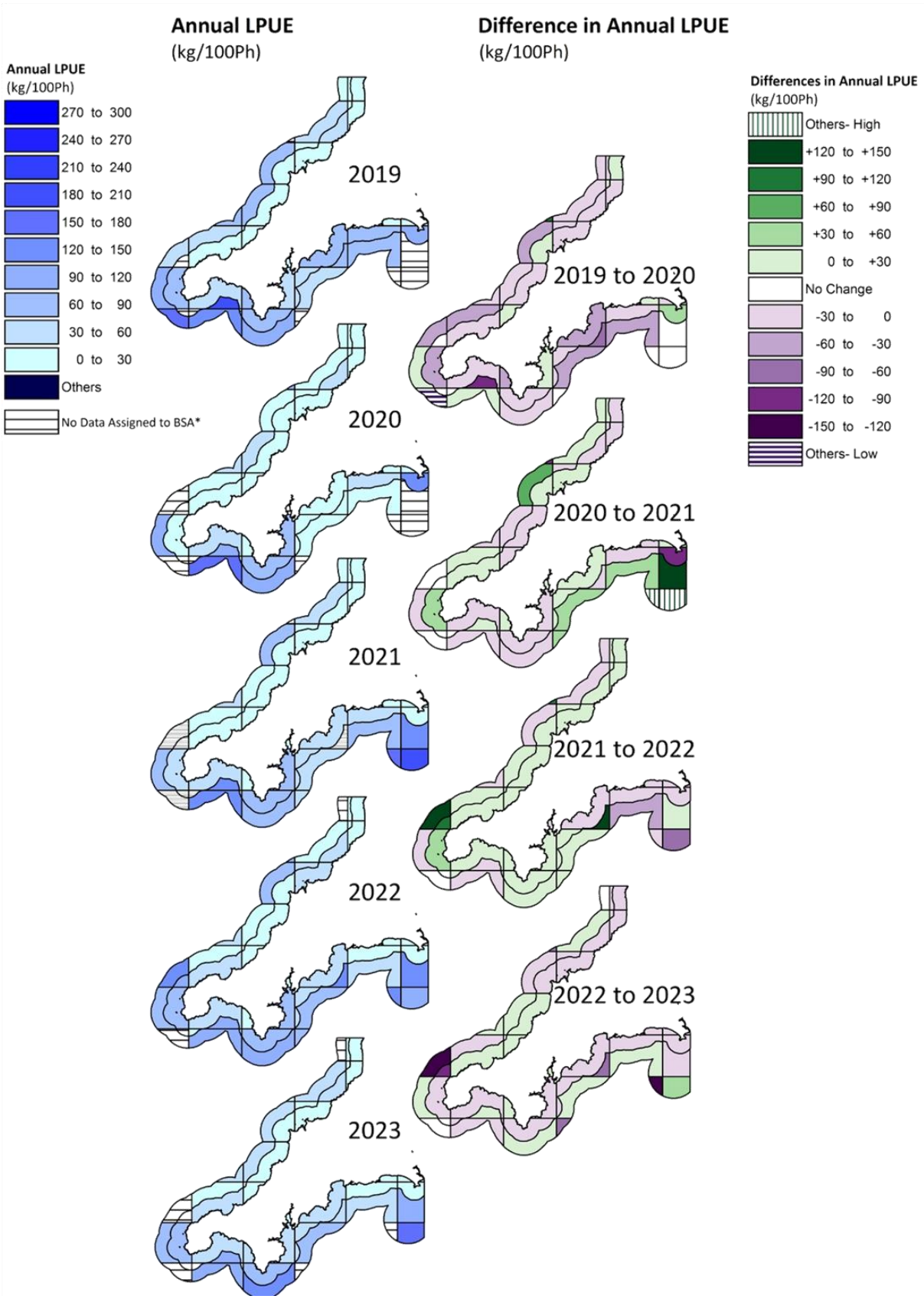


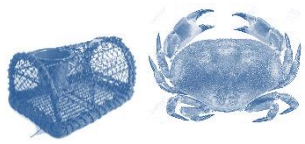
Figure 4: Thematic mapping of annual potting LPUE (kg/100Ph) of edible crab (*Cancer pagurus*) in belted statistical areas in 30kg /100Ph increments (left). And, thematic mapping of the difference in annual potting LPUE (kg/100Ph) of edible crab (*Cancer pagurus*) in belted statistical areas in ranges of 30kg/100Ph (right) where a positive value i.e. increased LPUE is green and a negative value i.e. a reduction in LPUE is purple. 'Others' refers to, -150kg/100Ph from 2019 to 2020, +159kg/100Ph in 29E56B and +181kg/100Ph in 29E59B from 2020 to 2021.

*In some cases this may be an artefact of the data collection method; fishing effort and catch can only be allocated to one BSA per day, therefore where a vessel works in more than one area only one can be reported.

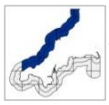
Cornwall IFCA Monthly Shellfish Permit Statistics Analysis

Edible crab (*Cancer pagurus*) Pot Fishery

Summary Statistics 2023



North Coast



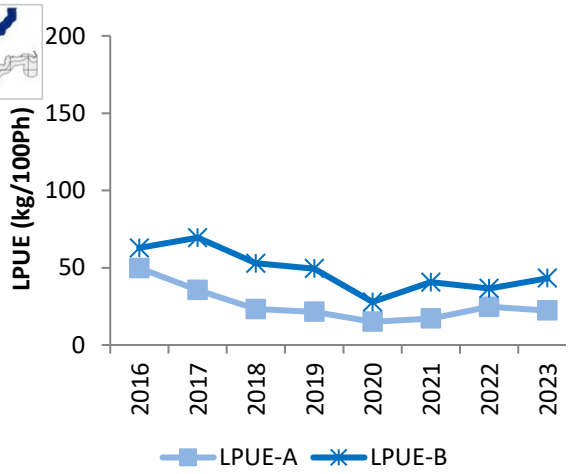


Figure 5: Annual LPUE (kg/100Ph) of edible crab (*Cancer pagurus)* on the 'North Coast' from 2016 to 2023 split by band A (inshore 0-3nm, light blue squares) and B (offshore 3-6nm, blue stars).

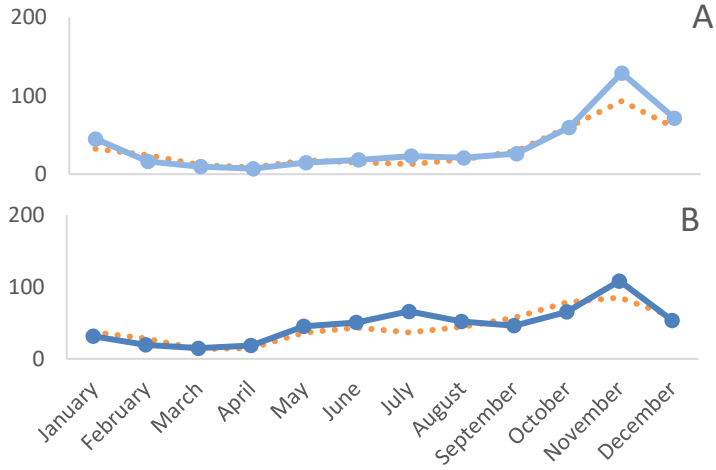


Figure 6: Monthly LPUE (kg/100Ph) of edible crab (*Cancer pagurus)* on the 'North Coast' in 2023 (blue line) and 5 year average from 2018 to 2022 (Orange dotted line), split by band A (inshore 0-3nm, top) and B (offshore 3-6nm, bottom).

West Coast

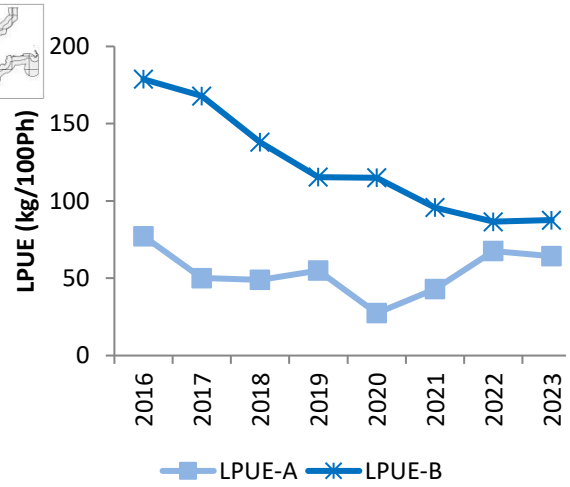


Figure 7: Annual LPUE (kg/100Ph) of edible crab (*Cancer pagurus)* on the 'West Coast' from 2016 to 2023 split by band A (inshore 0-3nm, light blue squares) and B (offshore 3-6nm, blue stars).

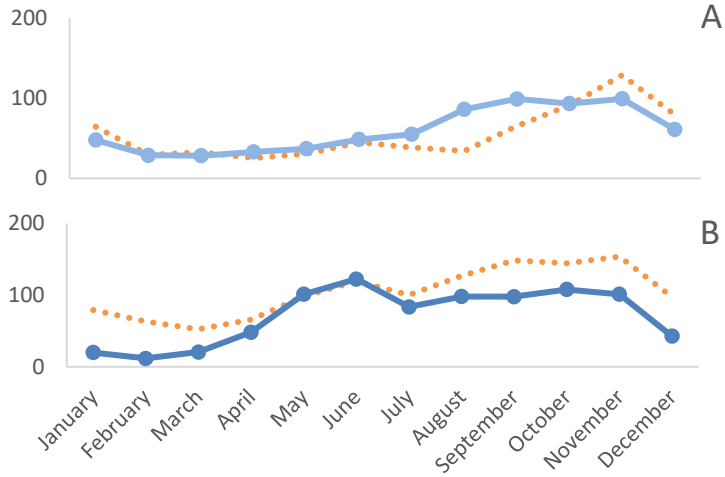


Figure 8: Monthly LPUE (kg/100Ph) of edible crab (*Cancer pagurus)* on the 'West Coast' in 2023 (blue line) and 5 year average from 2018 to 2022 (Orange dotted line), split by band A (inshore 0-3nm, top) and B (offshore 3-6nm, bottom).

South Coast

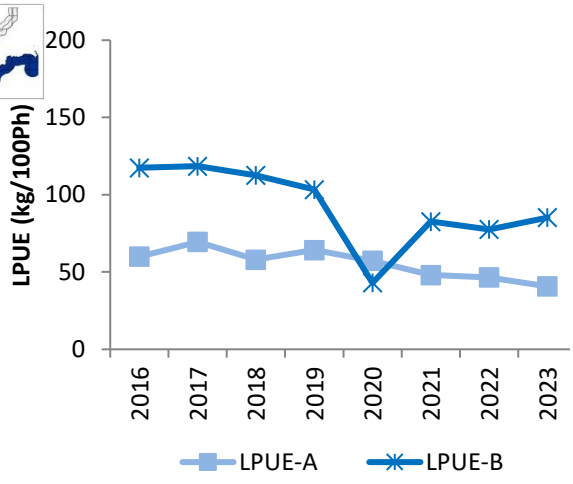


Figure 9: Annual LPUE (kg/100Ph) of edible crab (*Cancer pagurus)* on the 'South Coast' from 2016 to 2023 split by band A (inshore 0-3nm, light blue squares) and B (offshore 3-6nm, blue stars).

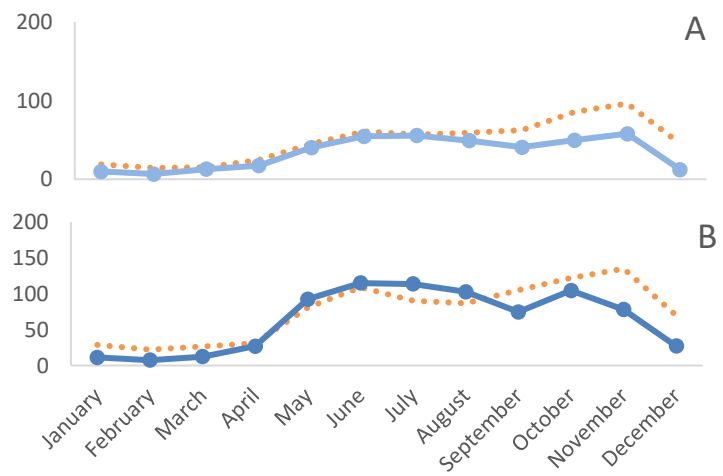


Figure 10: Monthly LPUE (kg/100Ph) of edible crab (*Cancer pagurus)* on the 'South Coast' in 2023 (blue line) and 5 year average from 2018 to 2022 (Orange dotted line), split by band A (inshore 0-3nm, top) and B (offshore 3-6nm, bottom).

Cornwall IFCA Monthly Shellfish Permit Statistics Analysis

Edible crab (*Cancer pagurus*) Net Fishery

Summary Statistics 2023

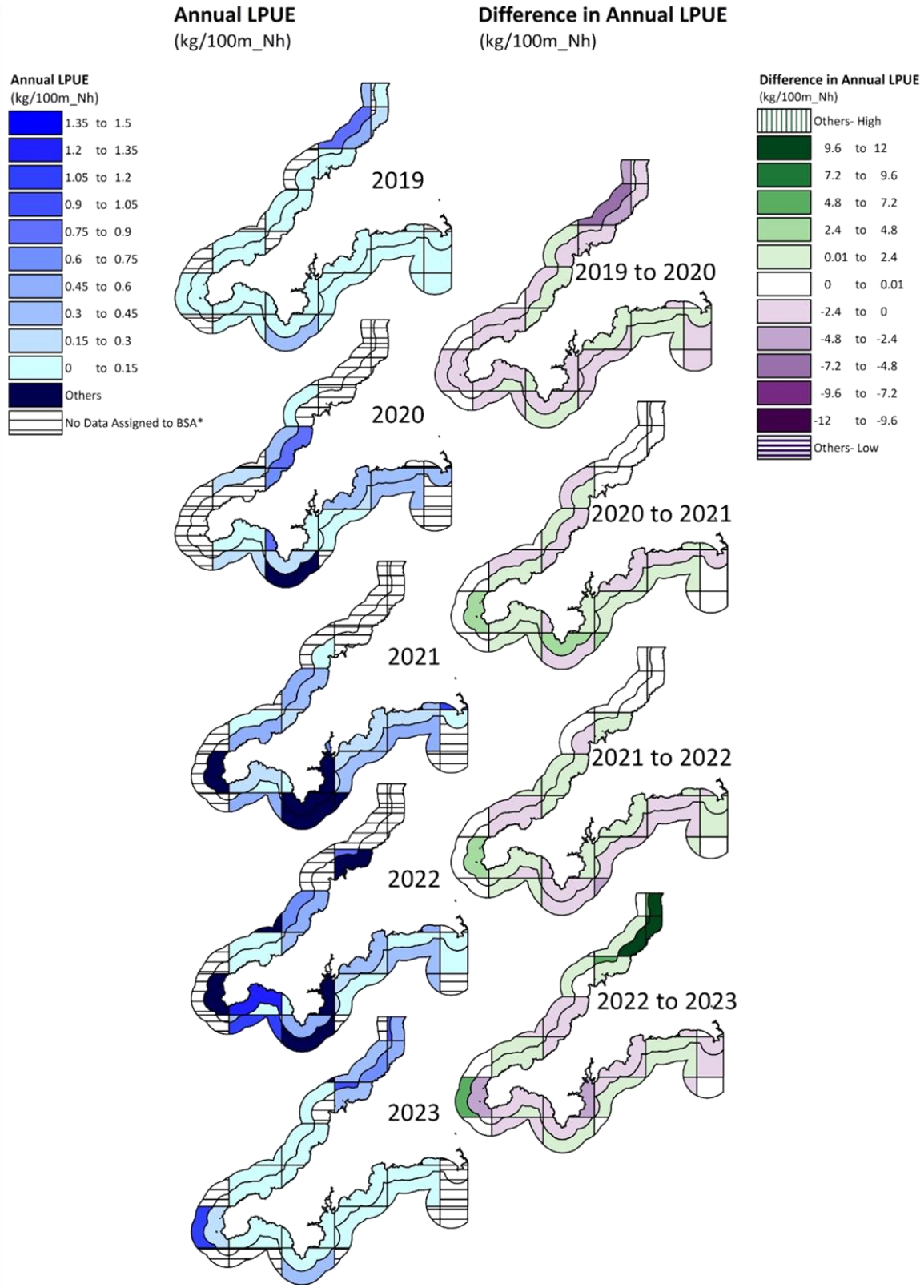


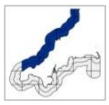
Figure 11: Thematic mapping of annual netting LPUE (kg/100m_Nh) of edible crab (*Cancer pagurus*) in belted statistical areas in 0.15kg /100m_Nh increments (left), 'Others' refers to a value of 4.5kg/100m_Nh and 2.7kg/100m_Nh in 28E47B in 2020 and 2021 respectively, and also in 2021; 2.7kg/100m_Nh in 28E47A, 4.1kg/100m_Nh in 28E51B, 2.7kg/100m_Nh in 29E43A and 1.8kg/100m_Nh in 29E4A(E), and in 2022; 1.54kg/100m_Nh in 29E44B, 5.24kg/100m_Nh in 29E43A, 2.04kg/100m_Nh in 28E47B, 2.65kg/100m_Nh in 29E49A, 1.56kg/100m_Nh in 30E53A.
And, thematic mapping of the difference in annual netting LPUE (kg/100m_Nh) of edible crab (*Cancer pagurus*) in belted statistical areas in ranges of 2.4kg/100m_Nh (right) where a positive value i.e. increased LPUE is green and a negative value i.e. a reduction in LPUE is purple. *In some cases this may be an artefact of the data collection method; fishing effort and catch can only be allocated to one BSA per day, therefore where a vessel works in more than one area only one can be reported.

Cornwall IFCA Monthly Shellfish Permit Statistics Analysis

Edible crab (*Cancer pagurus*) Net Fishery

Summary Statistics 2023

North Coast



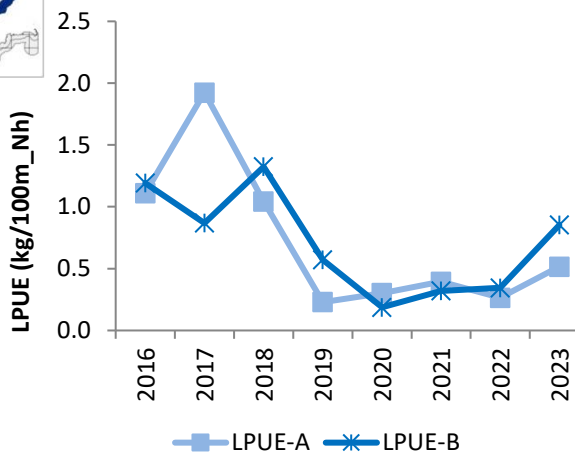


Figure 12: Annual LPUE (kg/100m_Nh) of edible crab (*Cancer pagurus)* on the 'North Coast' from 2016 to 2023 split by band A (inshore 0-3nm, light blue squares) and B (offshore 3-6nm, blue stars).

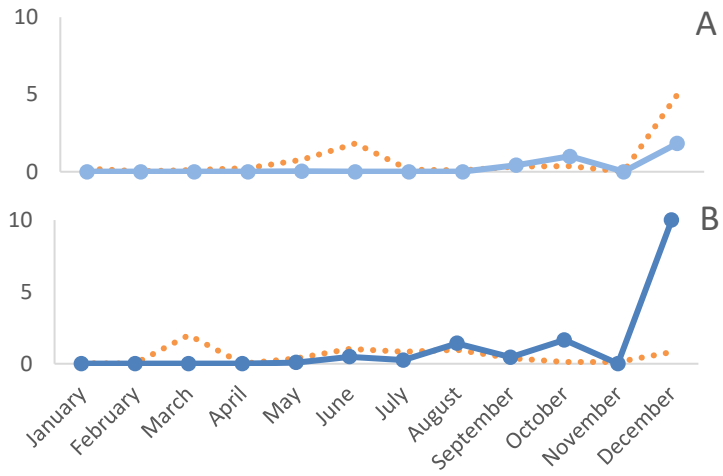


Figure 13: Monthly LPUE (kg/100m_Nh) of edible crab (*Cancer pagurus)* on the 'North Coast' in 2023 (blue line) and 5 year average from 2018 to 2022 (Orange dotted line), split by band A (inshore 0-3nm, top) and B (offshore 3-6nm, bottom).

West Coast

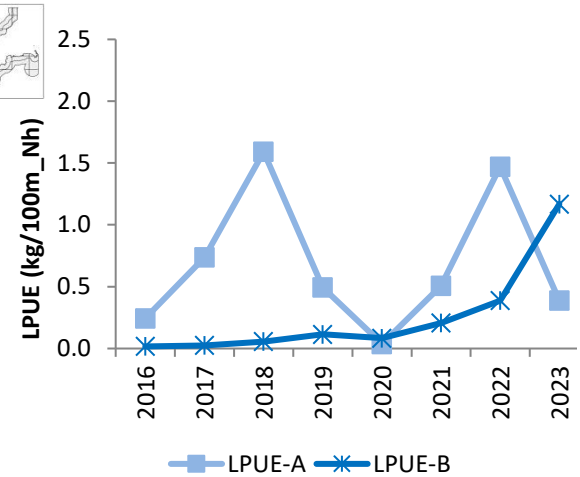


Figure 14: Annual LPUE (kg/100m_Nh) of edible crab (*Cancer pagurus)* on the 'West Coast' from 2016 to 2023 split by band A (inshore 0-3nm, light blue squares) and B (offshore 3-6nm, blue stars).

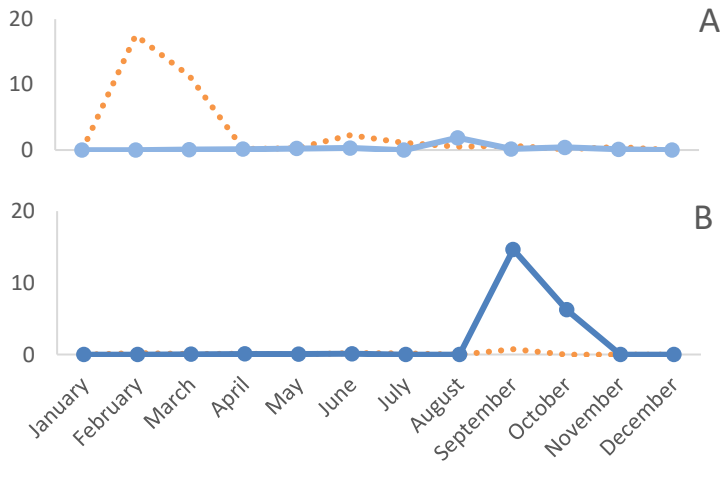


Figure 15: Monthly LPUE (kg/100m_Nh) of edible crab (*Cancer pagurus)* on the 'West Coast in 2023 (blue line) and 5 year average from 2018 to 2022 (Orange dotted line), split by band A (inshore 0-3nm, top) and B (offshore 3-6nm, bottom).

South Coast

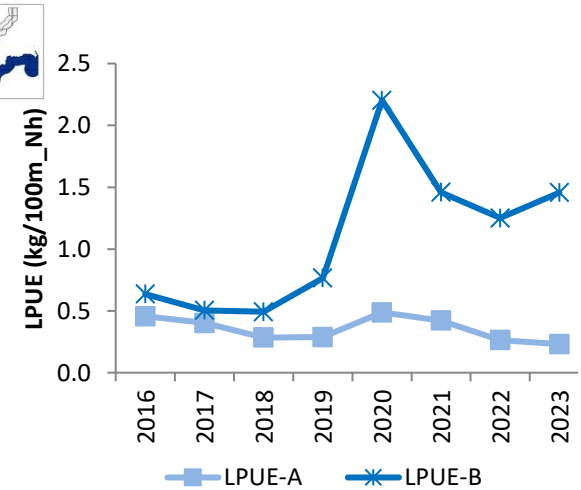


Figure 16: Annual LPUE (kg/100m_Nh) of edible crab (*Cancer pagurus)* on the 'South Coast' from 2016 to 2023 split by band A (inshore 0-3nm, light blue squares) and B (offshore 3-6nm, blue stars).

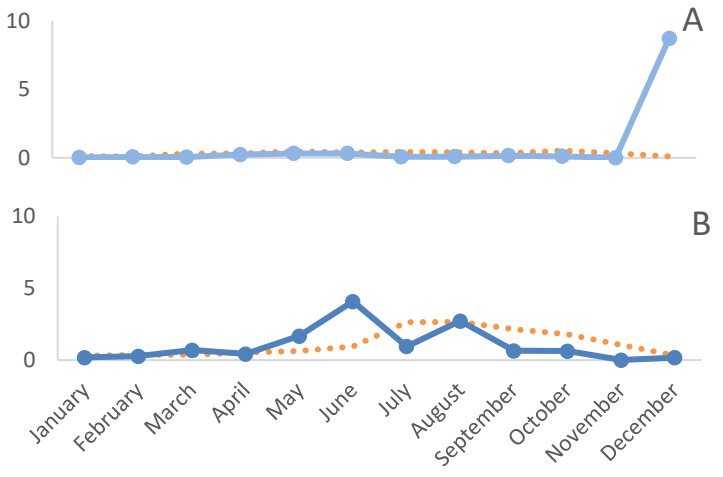


Figure 17: Monthly LPUE (kg/100m_Nh) of edible crab (*Cancer pagurus)* on the 'South Coast in 2023 (blue line) and 5 year average from 2018 to 2022 (Orange dotted line), split by band A (inshore 0-3nm, top) and B (offshore 3-6nm, bottom).

Monthly Shellfish Permit Statistics Analysis

Lobster (*Homarus gammarus*) Pot Fishery

Summary Statistics 2023

Summary

Overall, in 2023 there was a decrease in landed weight of lobster and annual LPUE in the District (Fig. 2, Table 1). When split by analysis area both the north and west coast annual LPUE declined in 2023 from 2022, however the south coast continued to increase as it has annually from the beginning of the reporting period (Fig. 3), with the majority of BSA's increasing in LPUE from 2019 to 2023 (Fig. 1).

North Coast; annual LPUE remained higher inshore than offshore, both belts decreased in 2023 (Fig. 5). Offshore monthly LPUE largely similar to previous average, inshore monthly LPUE was lower than the 5 year average for much of the year other than March, April and September (Fig. 6). The BSAs off St Ives and Hayle consistently had the highest annual LPUE of the north coast BSAs across the reporting period (Fig. 4).

West Coast; overall in 2023 there was a decrease in annual LPUE (Fig. 3), both inshore and offshore, though more pronounced inshore (Fig. 7) where monthly LPUE was lower than the 5 year average for much of the year other than May and June (Fig. 7). From 2019 to 2023 annual LPUE decreased in many of the belted statistical areas to the west of Lands End (Fig. 1). However, inshore around Mounts Bay, annual LPUE increased annually from 2021 to 2023 (Fig. 4) with an overall increase from 2019 to 2023 (Fig. 1).

South Coast; annual LPUE increased inshore and offshore (Fig. 9), and monthly LPUE was consistently higher than the previous average throughout the year in both belts (Fig. 10).

Annual Data

Table 1: Total kg of lobsters (*Homarus gammarus*) reportedly removed from the Cornwall IFCA District from 2019 to 2023, total gear hauled, and resultant calculated LPUE (kg/100Ph)

	2019	2020	2021	2022	2023
Total Gear Hauled	1,951,737	1,662,397	1,695,535	1,588,139	1,514,745
Total Landed (kg)	175,141	180,418	166,257	168,385	153,127
LPUE (kg/100Ph)	8.97	10.85	9.81	10.60	10.11

Difference in LPUE 2019 to 2023

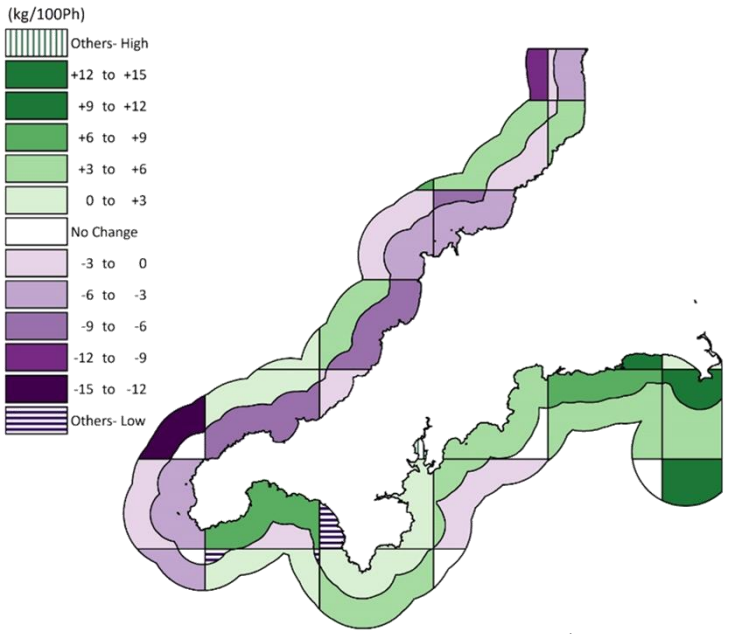


Figure 1: The difference in lobster (*Homarus gammarus)* LPUE (kg/100Ph) in belted statistical areas between 2019 and 2023 thematically mapped in 3kg/100Ph ranges where positive values i.e. increases in LPUE are green and negative values i.e. decreases in LPUE are purple. 'Others' refers to -22.5 in 29E49A-W and -16.36 in 28E44A.

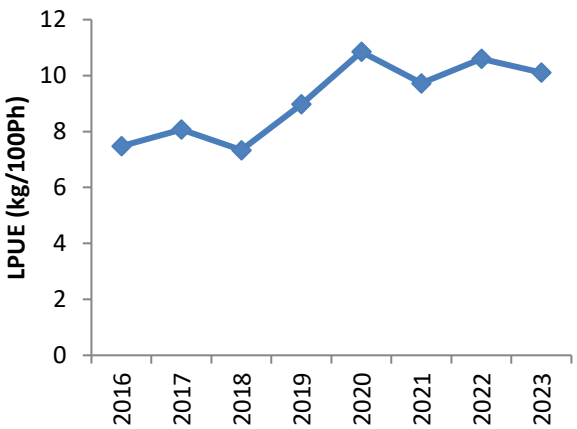


Figure 2: Annual LPUE (kg/100Ph) of lobster (*Homarus gammarus)* in the Cornwall IFCA District from 2016 to 2023.

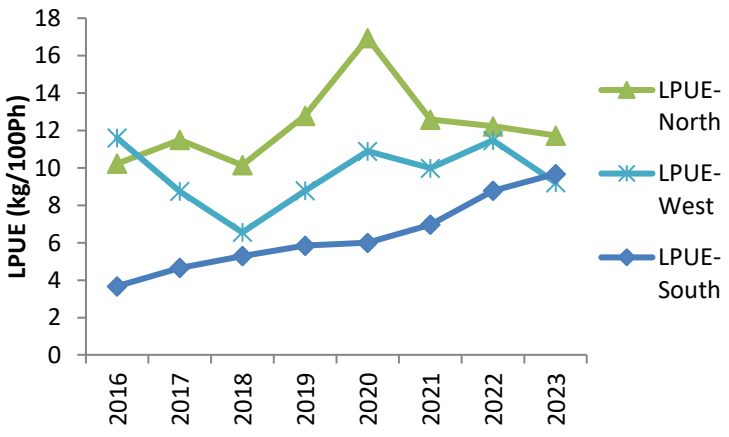
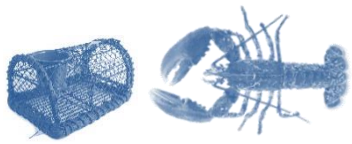


Figure 3: Annual LPUE (kg/100Ph) of lobster (*Homarus gammarus)* in the Cornwall IFCA District split by analysis area from 2016 to 2023.

Cornwall IFCA Monthly Shellfish Permit Statistics Analysis

Lobster (*Homarus gammarus*) Pot Fishery

Summary Statistics 2023



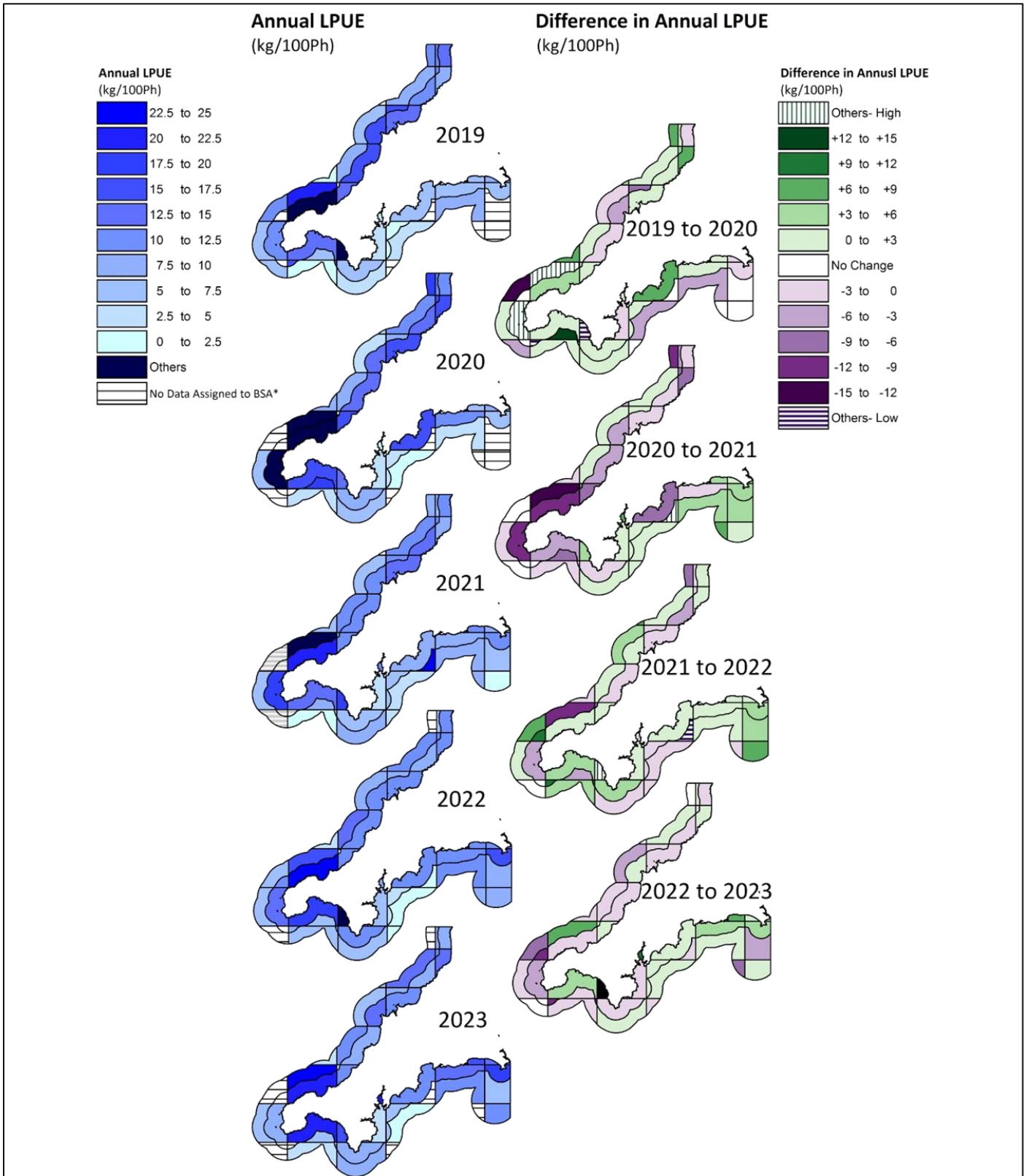


Figure 4: Thematic mapping of annual potting LPUE (kg/100Ph) of lobster (*Homarus gammarus*) in belted statistical areas in 2.5kg /100Ph increments (left) 'Others' in 2019 37.6kg/100Ph in 29E49A(W) and 29.4kg/100Ph in 29E45A, in 2020 34.2kg/100Ph in 29E45A, 41.3kg/100Ph in 29E45B, and 26.96kg/100Ph 29E43A, in 2021 28.3kg/100Ph in 29E45B, and in 2023 41.1kg/100Ph in 29E49A(W)

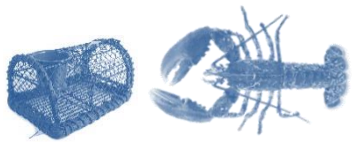
And, thematic mapping of the difference in annual potting LPUE (kg/100Ph) of lobster (*Homarus gammarus*) in belted statistical areas in ranges of 3kg/100Ph (right) where a positive value i.e. increased LPUE is green and a negative value i.e. a reduction in LPUE is purple. 'Others' refers to +19.4kg/100Ph in 29E45B, -16.4kg/100Ph in 28E44A, +15.2kg/100Ph in 29E43A and -24.1kg/100Ph in 29E49A(W) from 2019 to 2020, and 22.6kg/100Ph in 29E52B from 2020 to 2021. From 2021 to 2023; -20.89kg/100Ph in 29E52B, and +23.35kg/100Ph in 29E49A(W).

*In some cases this may be an artefact of the data collection method; fishing effort and catch can only be allocated to one BSA per day, therefore where a vessel works in more than one area only one can be reported.

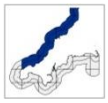
Cornwall IFCA Monthly Shellfish Permit Statistics Analysis

Lobster (*Homarus gammarus*) Pot Fishery

Summary Statistics 2023



North Coast



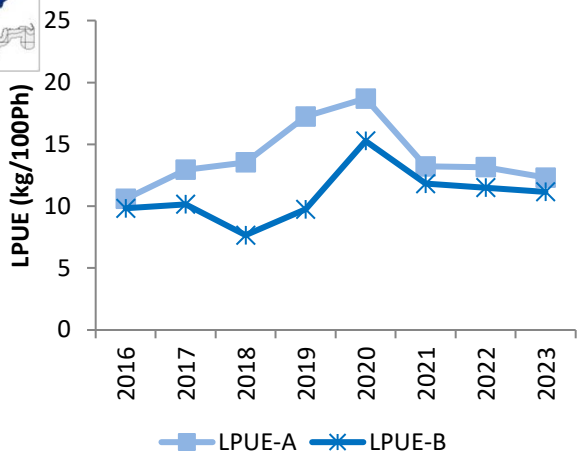


Figure 5: Annual LPUE (kg/100Ph) of lobster (*Homarus gammarus)* on the 'North Coast' from 2016 to 2023 split by band A (inshore 0-3nm, light blue squares) and B (offshore 3-6nm, blue stars).

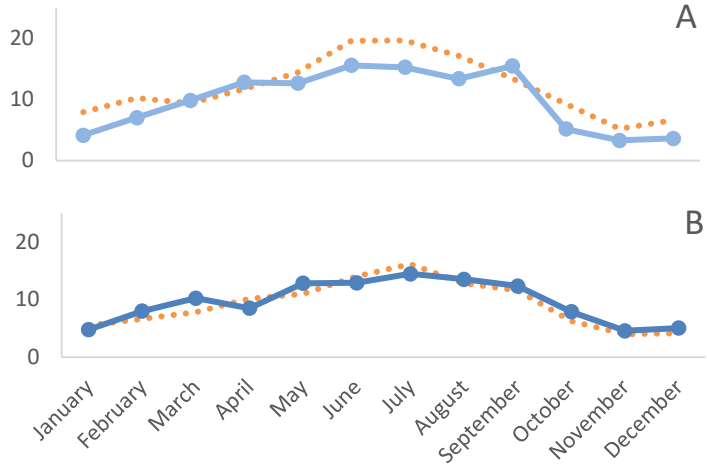


Figure 6: Monthly LPUE (kg/100Ph) of lobster (*Homarus gammarus)* on the 'North Coast' in 2023 (blue line) and 5 year average from 2018 to 2022 (Orange dotted line), split by band A (inshore 0-3nm, top) and B (offshore 3-6nm, bottom).

West Coast

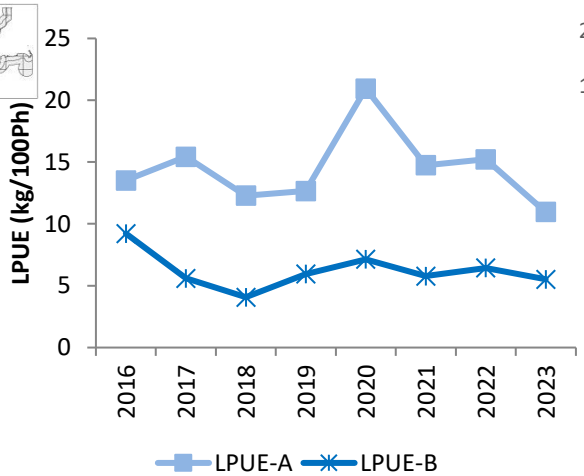


Figure 7: Annual LPUE (kg/100Ph) of lobster (*Homarus gammarus)* on the 'West Coast' from 2016 to 2023 split by band A (inshore 0-3nm, light blue squares) and B (offshore 3-6nm, blue stars).

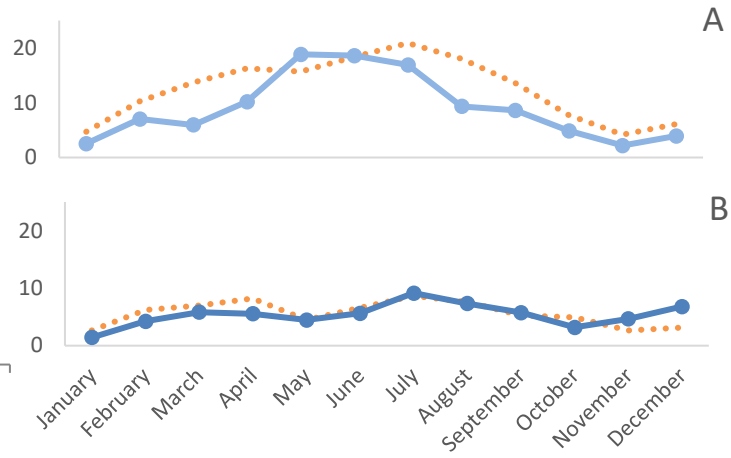
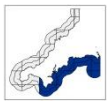


Figure 8: Monthly LPUE (kg/100Phof lobster (*Homarus gammarus)* on the 'West Coast' in 2023 (blue line) and 5 year average from 2018 to 2022 (Orange dotted line), split by band A (inshore 0-3nm, top) and B (offshore 3-6nm, bottom).

South Coast



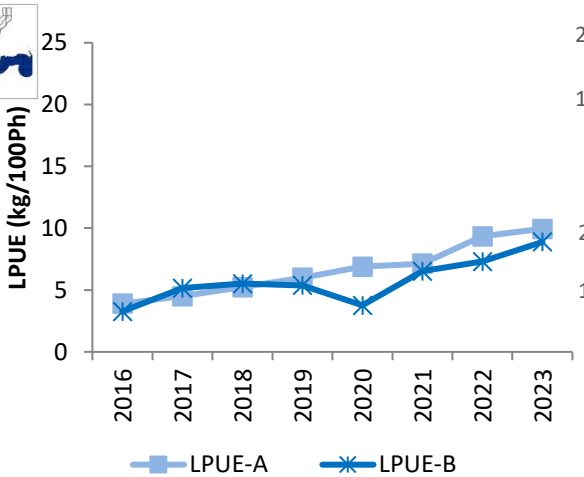


Figure 9: Annual LPUE (kg/100Ph) of lobster (*Homarus gammarus)* on the 'South Coast' from 2016 to 2023 split by band A (inshore 0-3nm, light blue squares) and B (offshore 3-6nm, blue stars).

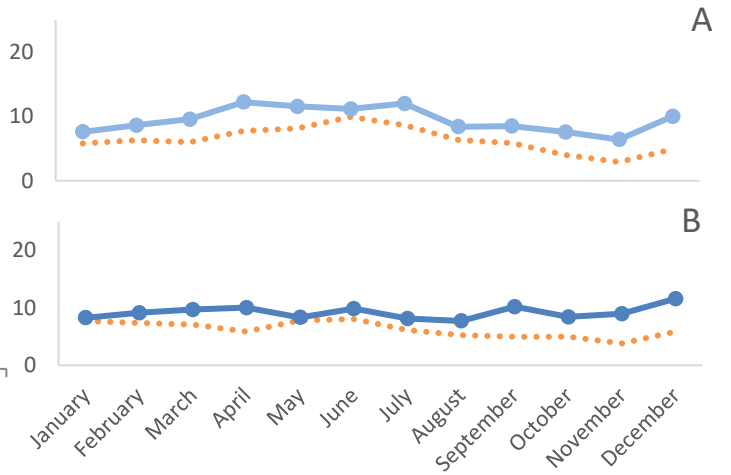
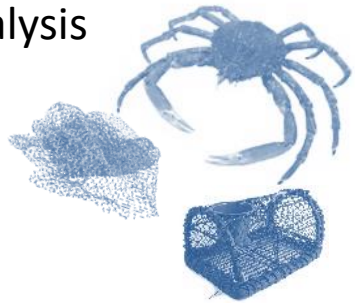


Figure 10: Monthly LPUE (kg/100Ph) of lobster (*Homarus gammarus)* on the 'South Coast' in 2023 (blue line) and 5 year average from 2018 to 2022 (Orange dotted line), split by band A (inshore 0-3nm, top) and B (offshore 3-6nm, bottom).

Cornwall IFCA
Inshore Fisheries and Conservation Authority

Monthly Shellfish Permit Statistics Analysis
Spider crab (*Maja* spp.) Pot and Net Fisheries
Summary Statistics 2023



Summary

The spider crab fishery in the Cornwall IFCA District is mainly dictated by market demand, therefore LPUE is unreliable as a proxy or indicator of species abundance or population density.

In 2023 there was an increase in landings of spider crab in both net and pot fisheries (Table 1), and an increase in annual LPUE in both net and pot fisheries (Fig. 2, Table 1). In the south coast analysis area there was a decrease in annual LPUE in both pot and net fisheries, but both increased in the north coast analysis area (Fig. 3).

North Coast; in the pot fishery offshore annual LPUE increased to over double the LPUE in 2022 (Fig. 5) to a very similar value to the inshore belt. Monthly LPUE peaked in June in both belts though at a higher value offshore, which was also far higher than the 5 year average for the offshore belt (Fig. 6). Monthly LPUE in the net fishery peaked a month earlier than the pot fishery, in May in both belts (Fig 13).

West Coast; in both fisheries annual LPUE inshore remained higher than the offshore belt (Fig. 7 and 14). In the net fishery monthly LPUE followed a similar pattern to the previous 5 year average in both belts, though noticeably in February inshore the LPUE values were far higher than average (Fig. 15).

South Coast; the area around the Lizard remained the area with the highest LPUE in the net fishery in the south coast analysis area (Fig. 11). Offshore in May and June monthly LPUE values in the net fishery were higher than the 5year average (Fig. 17).

Annual Data

Table 1: Total kg of spider crabs (*Maja* spp.) reportedly removed from the Cornwall IFCA District from 2019 to 2023 from both the pot and net fisheries, total gear hauled, and resultant calculated LPUE (kg/100Ph, or kg/100m_Nh).

		2019	2020	2021	2022	2023
Pots	Gear Hauled	1,951,737	1,662,397	1,695,535	1,588,139	1,514,745
	Landed (kg)	112,277	62,416	89,969	75,043	81,732
	LPUE(kg/100Ph)	5.75	3.75	5.31	4.73	5.40
Nets	Gear Hauled (m)	5,390,595	2,004,255	3,338,130	3,089,969	2,984,092
	Landed (kg)	99,723	36,247	94,827	71,662	75,549
	LPUE(kg/100m_Nh)	1.85	1.81	2.84	2.32	2.53

Difference in LPUE 2019 to 2023

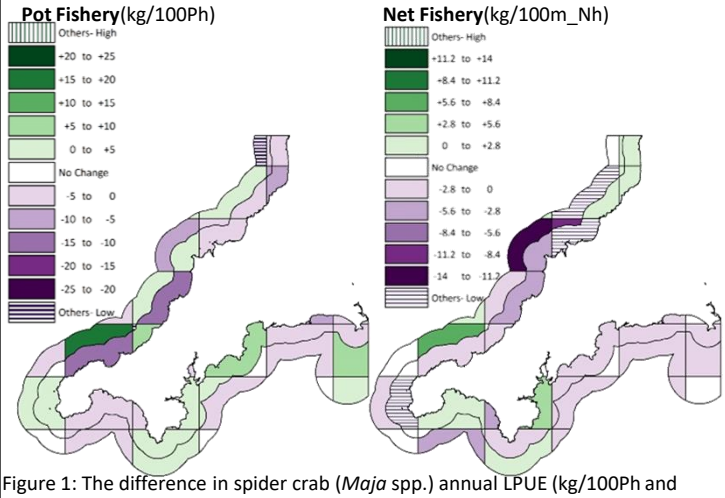


Figure 1: The difference in spider crab (*Maja* spp.) annual LPUE (kg/100Ph and kg/100m_Nh) in the pot and net fisheries, in belted statistical areas between 2019 and 2023. Thematically mapped in 5kg/100Ph (pot fishery), and 2.8kg/100m_Nh (net fishery) ranges, positive values indicate and increase in LPUE and negative values a decrease. 'Others' in the pot fishery -29kg/100m_Nh in 30E51B and in the net fishery -44 and -19 in 30E52B and 30E53A respectively and -15 in 29E43A.

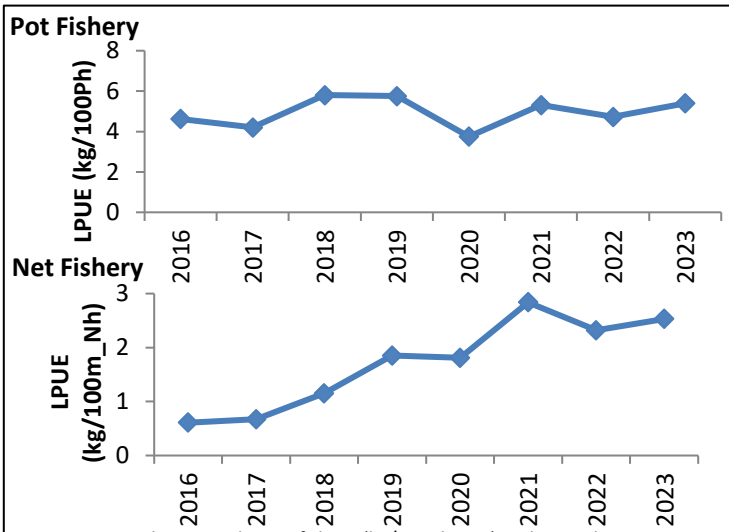


Figure 2: Annual LPUE in the pot fishery (kg/100Ph, top) and annual LPUE in the net fishery (kg/100m_Nh, bottom) of spider crab (*Maja* spp.) in the Cornwall IFCA District from 2016 to 2023.

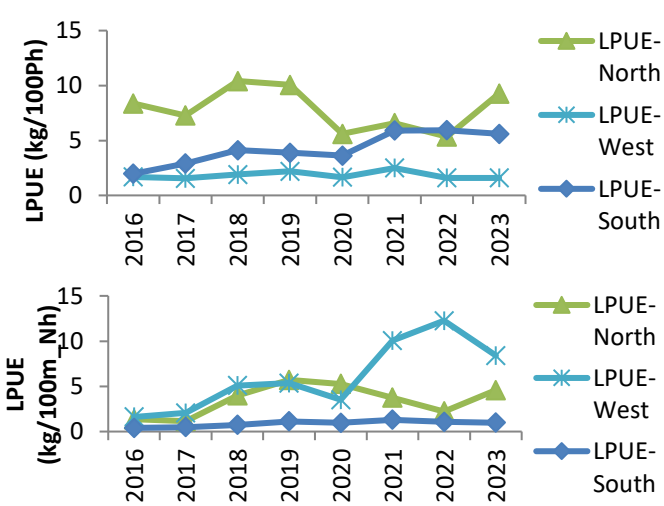


Figure 3: Annual LPUE in the pot fishery (kg/100Ph, top) and annual LPUE in the net fishery (kg/100m_Nh, bottom) of spider crab (*Maja* spp.) in the Cornwall IFCA District split by analysis area from 2016 to 2023.

Cornwall IFCA Monthly Shellfish Permit Statistics Analysis

Spider crab (*Maja* spp.*)* Pot Fishery

Summary Statistics 2023

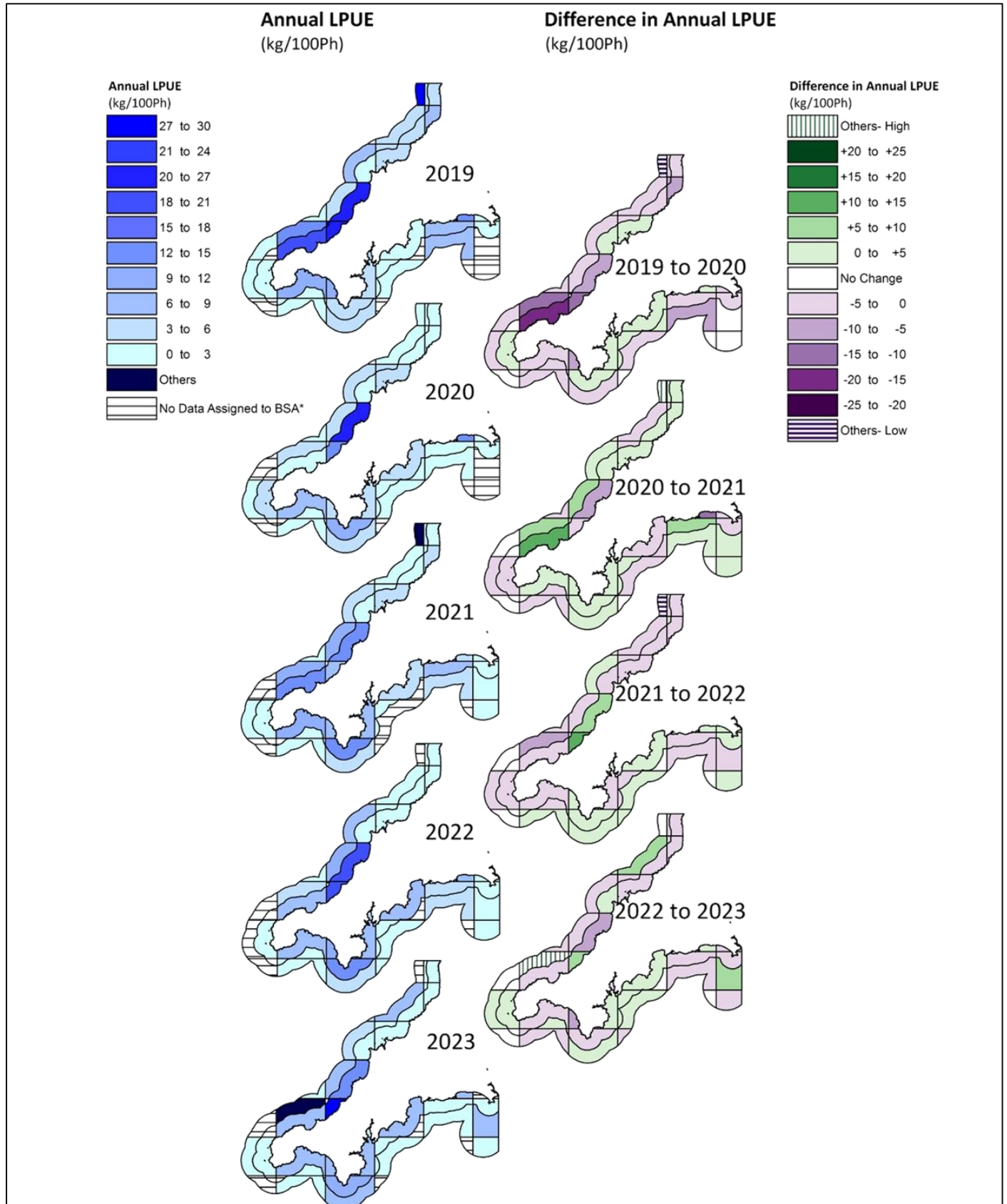


Figure 4: Thematic mapping of annual potting LPUE (kg/100Ph) of spider crab (*Maja* spp.*)* in belted statistical areas in 3kg /100Ph increments (left). 'Others' refers to 52.1kg/100Ph in 2021 in 30E51B, and 31.6kg/100Ph in 29E45B in 2023. And, thematic mapping of the difference in annual potting LPUE (kg/100Ph) of spider crab (*Maja* spp.*)* in belted statistical areas in ranges of 5kg/100Ph (right) where a positive value i.e. increased LPUE is green and a negative value i.e. a reduction in LPUE is purple. 'Others' refers to -28.0kg/100Ph and +50.7kg/100Ph in 30E51B from 2019 to 2020 and 2020 to 2021 respectively, and -5212kg/100Ph in 30E51B in 2021 to 2022, and +27.6kg/100Ph in 29E45B.

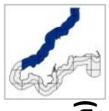
*In some cases this may be an artefact of the data collection method; fishing effort and catch can only be allocated to one BSA per day, therefore where a vessel works in more than one area only one can be reported.

Cornwall IFCA Monthly Shellfish Permit Statistics Analysis

Spider crab (*Maja* spp.) Pot Fishery

Summary Statistics 2023

North Coast



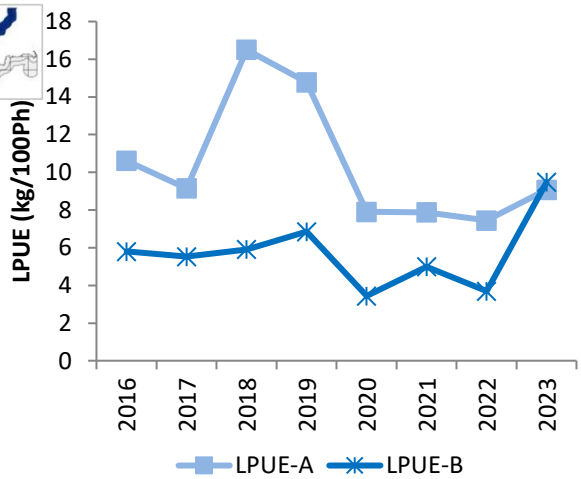


Figure 5: Annual LPUE (kg/100Ph) of spider crab (*Maja* spp.) on the 'North Coast' from 2016 to 2023 split by band A (inshore 0-3nm, light blue squares) and B (offshore 3-6nm, blue stars).

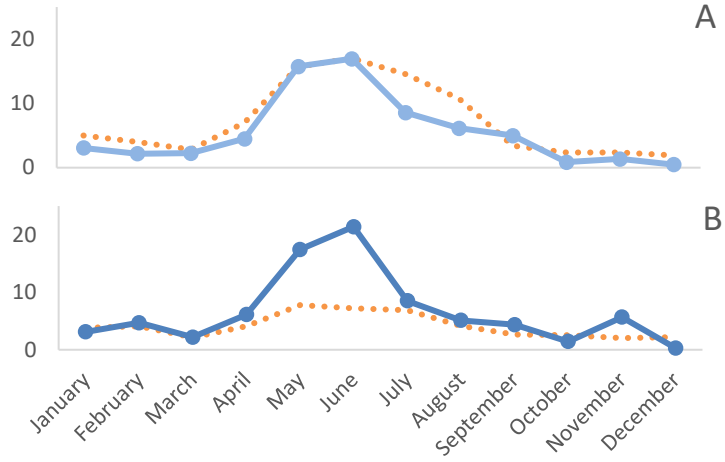


Figure 6: Monthly LPUE (kg/100Ph) of spider crab (*Maja* spp.) on the 'North Coast' in 2023 (blue line) and 5 year average from 2018 to 2022 (Orange dotted line), split by band A (inshore 0-3nm, top) and B (offshore 3-6nm, bottom).

West Coast

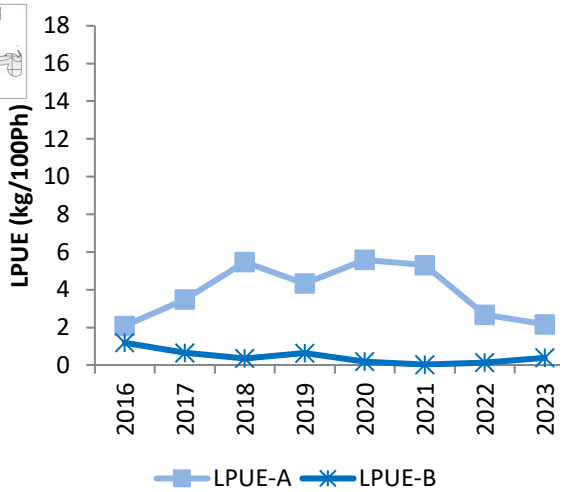


Figure 7: Annual LPUE (kg/100Ph) of spider crab (*Maja* spp.) on the 'West Coast' from 2016 to 2023 split by band A (inshore 0-3nm, light blue squares) and B (offshore 3-6nm, blue stars).

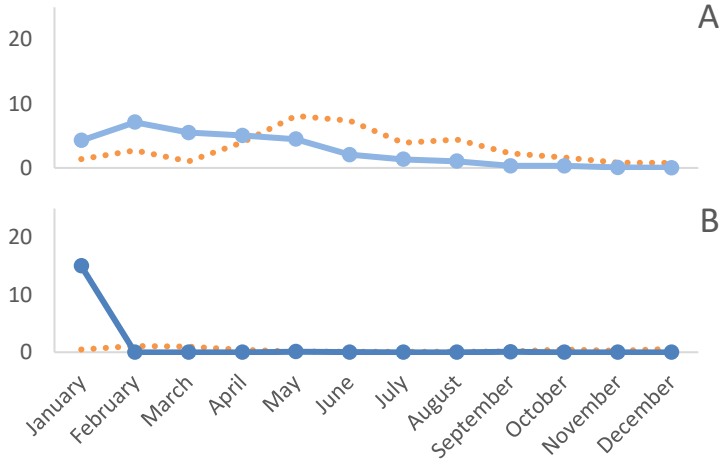
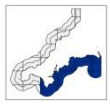


Figure 8: Monthly LPUE (kg/100Ph) of spider crab (*Maja* spp.) on the 'West Coast in 2023 (blue line) and 5 year average from 2018 to 2022 (Orange dotted line), split by band A (inshore 0-3nm, top) and B (offshore 3-6nm, bottom).

South Coast



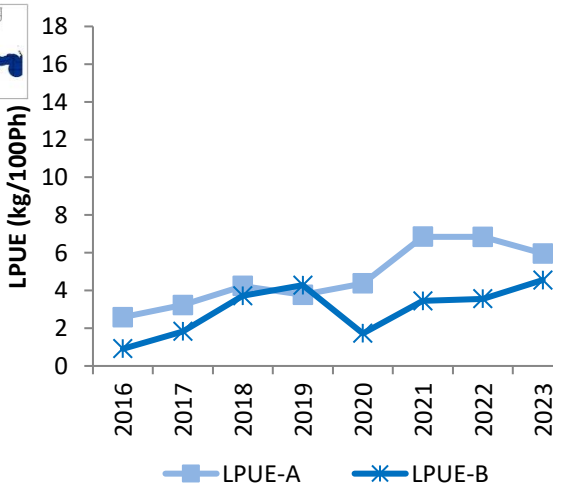


Figure 9: Annual LPUE (kg/100Ph) of spider crab (*Maja* spp.) on the 'South Coast' from 2016 to 2023 split by band A (inshore 0-3nm, light blue squares) and B (offshore 3-6nm, blue stars).

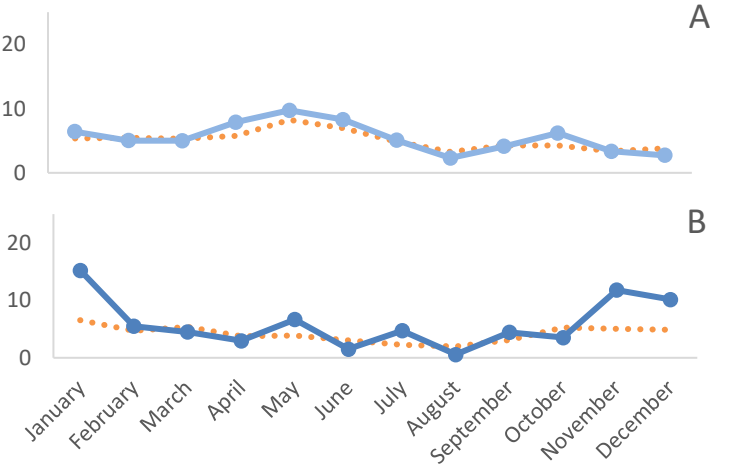
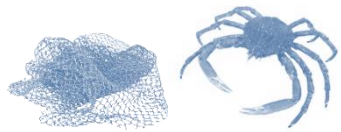


Figure 10: Monthly LPUE (kg/100Ph) of spider crab (*Maja* spp.) on the 'South Coast' in 2023 (blue line) and 5 year average from 2018 to 2022 (Orange dotted line), split by band A (inshore 0-3nm, top) and B (offshore 3-6nm, bottom)

Cornwall IFCA Monthly Shellfish Permit Statistics Analysis

Spider crab (*Maja* spp.) Net Fishery

Summary Statistics 2023



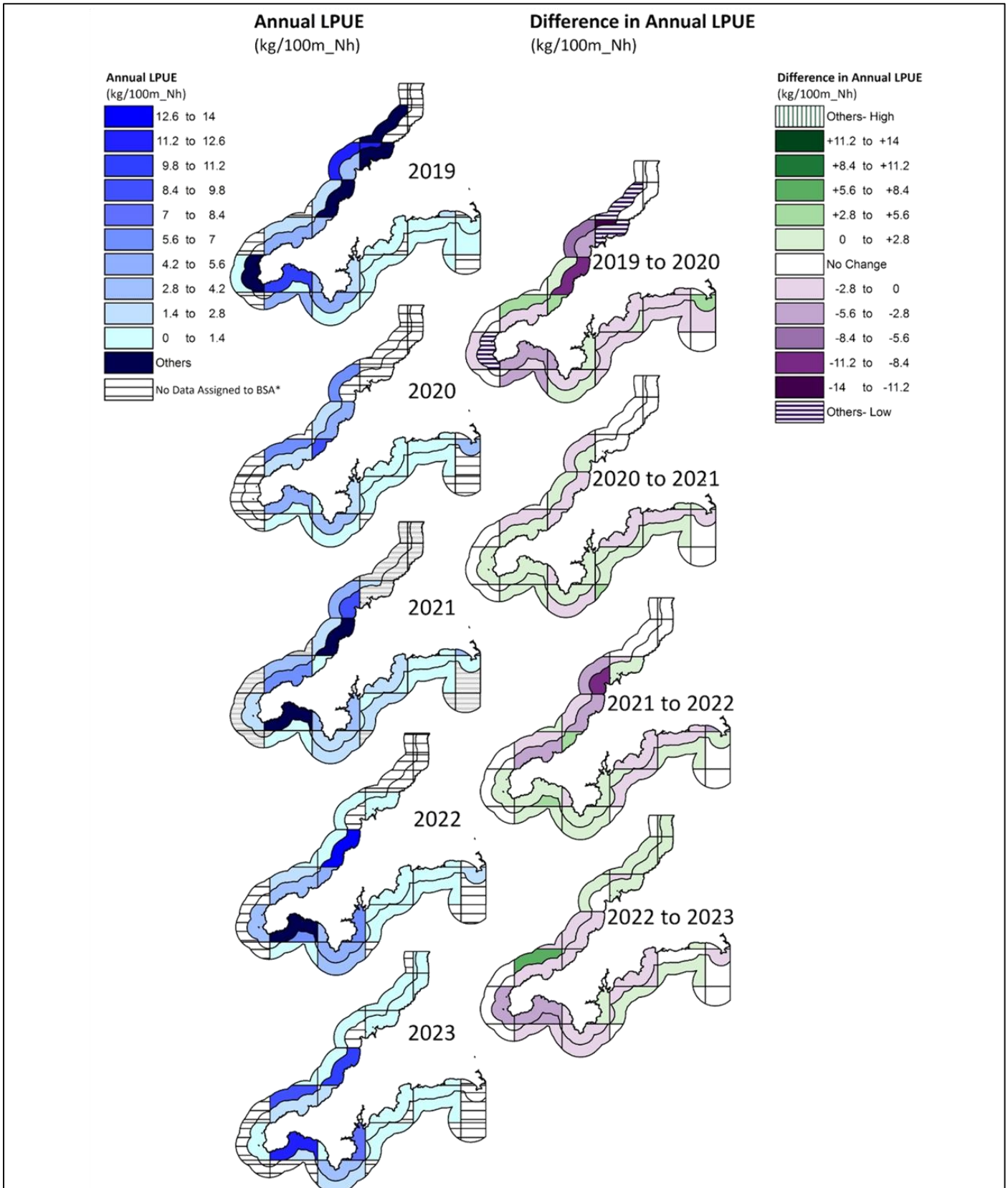


Figure 11: Thematic mapping of annual netting LPUE (kg/100m_Nh) of spider crab (*Maja* spp.) in belted statistical areas in 1.4kg /100m_Nh increments (left). 'Others' refers to 16.2kg/100m_Nh in 30E49A in 2018, in 2019; 45.0kg/100m_Nh in 30E52B, 20.0kg/100m_Nh in 30E53A, 15.0kg/100m_Nh in 29E47A and 15.3kg/100m_Nh in 29E43A , in 2021 17.64kg/100m_Nh in 29E47A and 15.5kg/100m_Nh in 29E46A and in 2022 17.64kg/100m_Nh in 29E46A. And, thematic mapping of the difference in annual netting LPUE (kg/100m_Nh) of spider crab (*Maja* spp.) in belted statistical areas in ranges of 2.8kg/100m_Nh (right) where a positive value i.e. increased LPUE is green and a negative value i.e. a reduction in LPUE is purple. 'Others' refers to; -15.3kg/100m_Nh in 29E43A, -45.0kg/100m_Nh in 30E52B and -20.0kg/100m_Nh in 30E53A between 2019 and 2020.

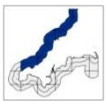
*In some cases this may be an artefact of the data collection method; fishing effort and catch can only be allocated to one BSA per day, therefore where a vessel works in more than one area only one can be reported.

Cornwall IFCA Monthly Shellfish Permit Statistics Analysis

Spider crab (*Maja* spp.) Net Fishery

Summary of Statistics 2023

North Coast



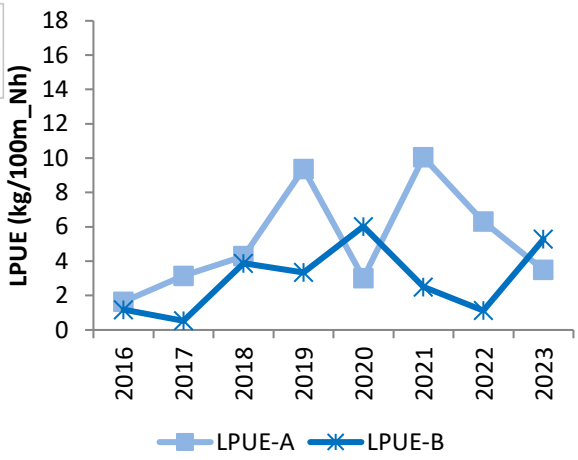


Figure 12: Annual LPUE (kg/100m_Nh) of spider crab (*Maja* spp.) on the 'North Coast' from 2016 to 2023 split by band A (inshore 0-3nm, light blue squares) and B (offshore 3-6nm, blue stars).

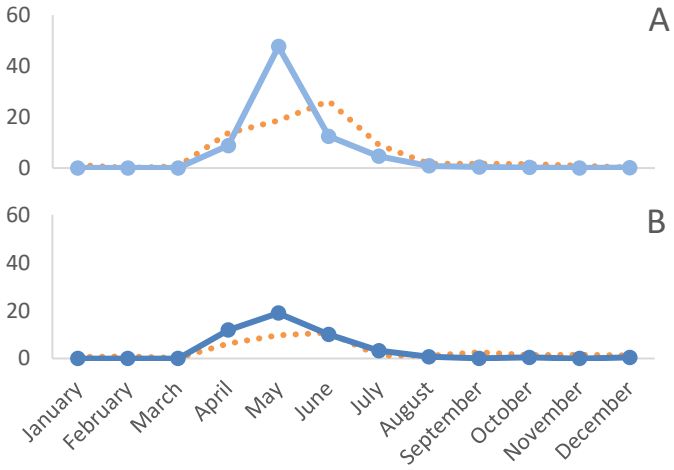


Figure 13: Monthly LPUE (kg/100m_Nh) of spider crab (*Maja* spp.) on the 'North Coast' in 2023 (blue line) and 5 year average from 2018 to 2022 (Orange dotted line), split by band A (inshore 0-3nm, top) and B (offshore 3-6nm, bottom).

West Coast

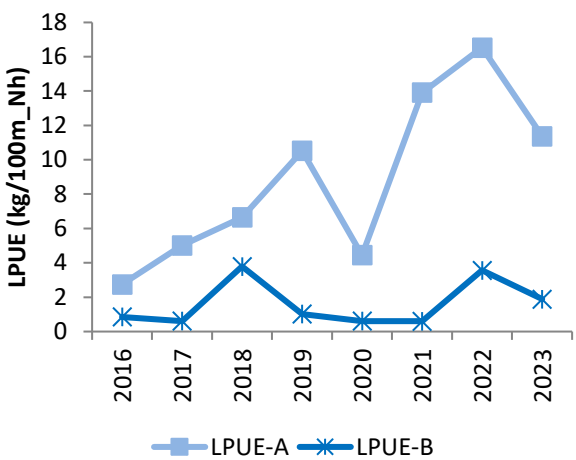


Figure 14: Annual LPUE (kg/100m_Nh) of spider crab (*Maja* spp.) on the 'West Coast' from 2016 to 2023 split by band A (inshore 0-3nm, light blue squares) and B (offshore 3-6nm, blue stars).

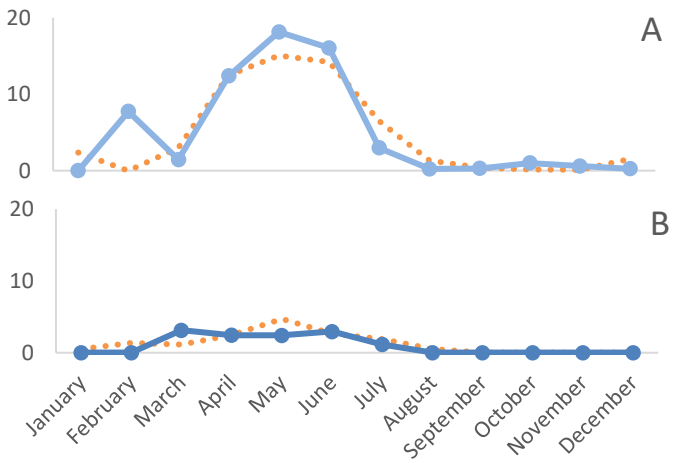


Figure 15: Monthly LPUE (kg/100m_Nh) of spider crab (*Maja* spp.) on the 'West Coast' in 2023 (blue line) and 5 year average from 2018 to 2022 (Orange dotted line), split by band A (inshore 0-3nm, top) and B (offshore 3-6nm, bottom).

South Coast

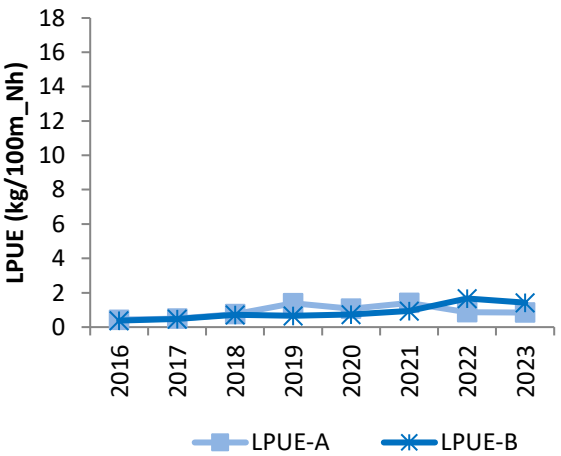


Figure 16: Annual LPUE (kg/100m_Nh) of spider crab (*Maja* spp.) on the 'South Coast' from 2016 to 2023 split by band A (inshore 0-3nm, light blue squares) and B (offshore 3-6nm, blue stars).

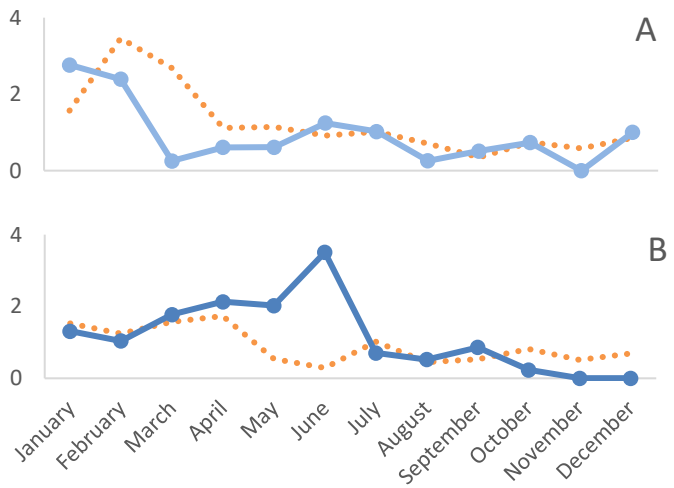
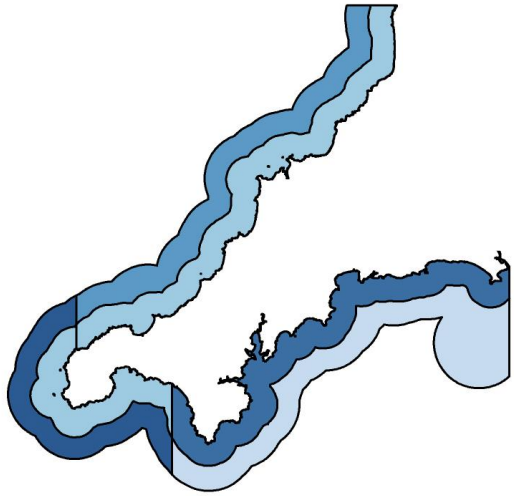


Figure 17: Monthly LPUE (kg/100m_Nh) of spider crab (*Maja* spp.) on the 'South Coast' in 2023 (blue line) and 5 year average from 2018 to 2022 (Orange dotted line), split by band A (inshore 0-3nm, top) and B (offshore 3-6nm, bottom).

Monthly Shellfish Permit
Statistics Analysis

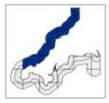
Summary Statistics 2023



Part 3

Area Summary

Cornwall IFCA Monthly Shellfish Permit Statistics Analysis
North Coast Pot Fisheries
Summary Statistics 2023



- Annual potting effort declined from 2022 to 2023 to the lowest in the reporting period (NP1, left). The decrease was mostly from May onwards where monthly effort was consistently lower than the previous 5 year average (NP1, right).
- In 2023 there was an increase in crab LPUE (NP2, left) with higher-than-average LPUE in July and November (NP3, top).When split by belt, this trend was only observed offshore, inshore LPUE decreased (24 to 22kg/100Ph 2022 to 2023, NP2, top).
- Spider crab LPUE increased both inshore and off (NP2) with higher-than-average monthly LPUE in May and June (NP3, mid).
- Lobster decrease in annual LPUE, with peak monthly LPUE in July as previous years, but at a lower value (Fig. NP3).

Effort

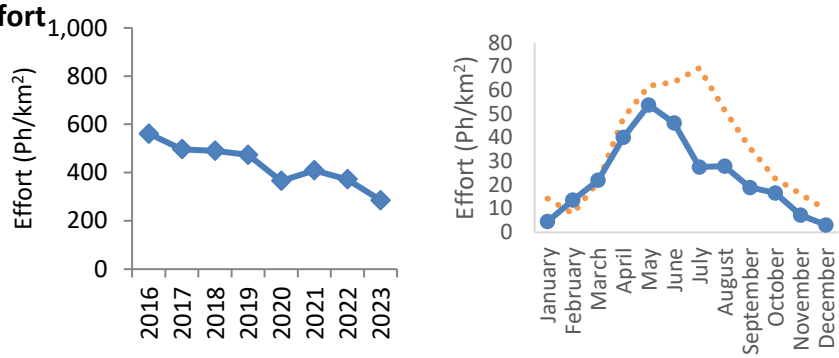


Figure NP1: (left) Annual potting effort (Ph/km²) in the north coast analysis area from 2016 to 2023 and (*right*) monthly potting effort (Ph/km²) in the north coast analysis area in 2023 (blue line) and 5 year average monthly potting effort from 2018 to 2022 (orange dotted line).

Annual LPUE

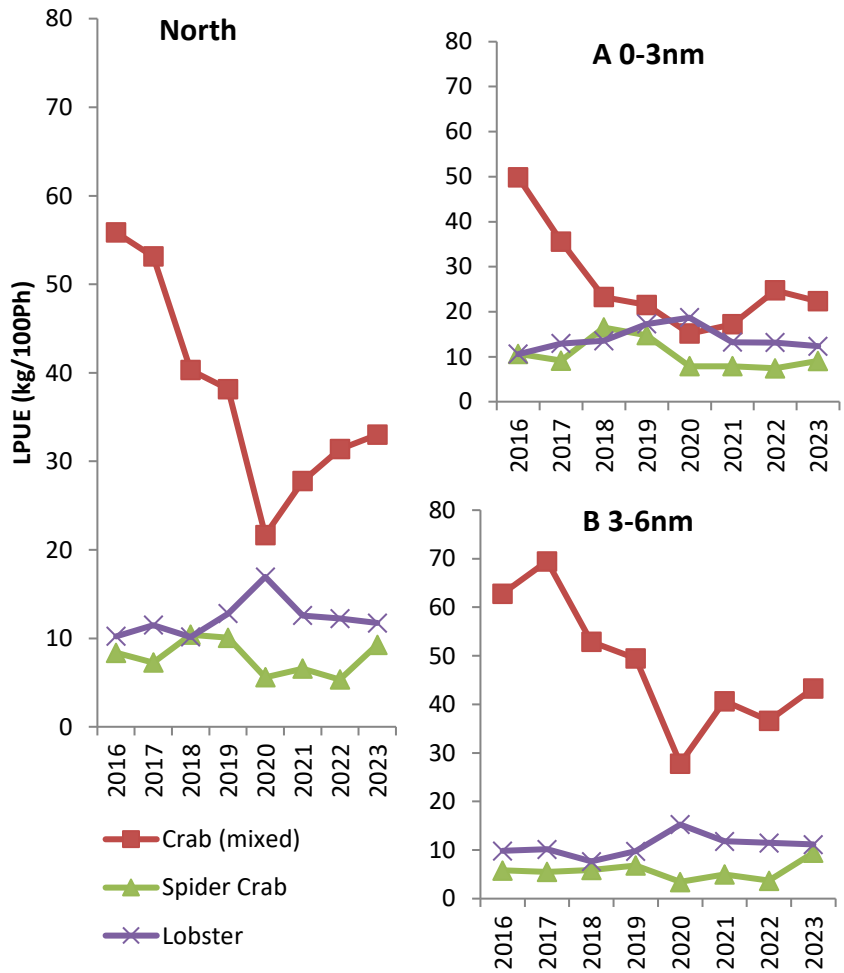
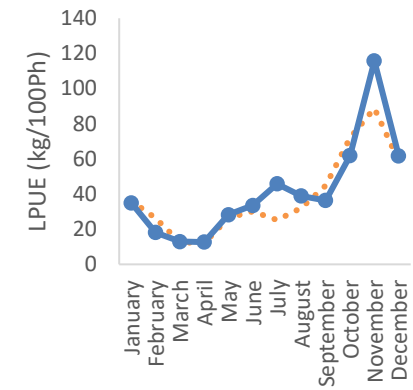


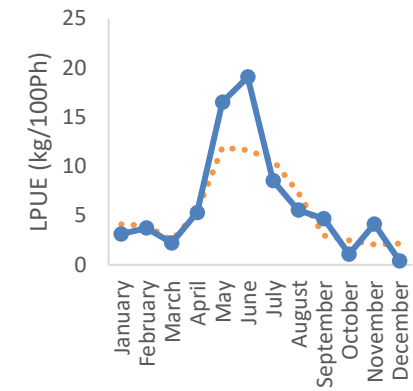
Figure NP2 : (left) annual LPUE (kg/100Ph) of edible crab, spider crab and lobster from 2016 to 2023 in the north coast analysis area, further split by band; inshore A (*top right*) and offshore B (*bottom right*).

Seasonality

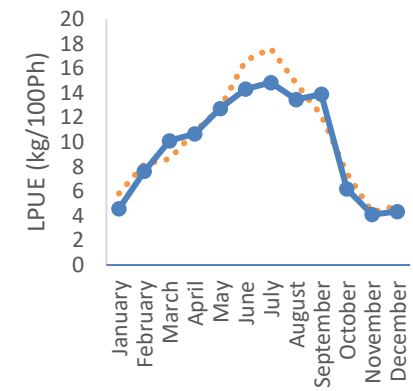
Edible Crab



Spider Crab



Lobster



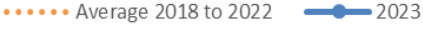


Figure NP3: monthly LPUE (kg/100Ph) in the north coast analysis area in 2023 (blue line) and the five year monthly average from 2018 to 2022 (orange dotted line) of edible crab *(top)*, spider crab *(middle)* and lobster *(bottom).*

Cornwall IFCA Monthly Shellfish Permit Statistics Analysis

North Coast Demersal Net Fisheries

Summary Statistics 2023

- In 2023 there was a slight increase in netting effort (NN1, left). In September monthly effort was over double the previous 5 year average (NN1, right), this also coincided with the increase in monthly LPUE of crawfish (NN3, bottom).
- In May 2023 monthly effort was also higher than the 5 year average (NN1, right), in the same month spider crab monthly LPUE peaked at nearly twice the value of the previous 5 year average (NN3, mid).
- Overall spider crab LPUE increased in 2023, but when split by belt this increase was only offshore, there was a decrease inshore (NN2). Crawfish LPUE increased both inshore and offshore, but more pronounced inshore (NN2).

Effort

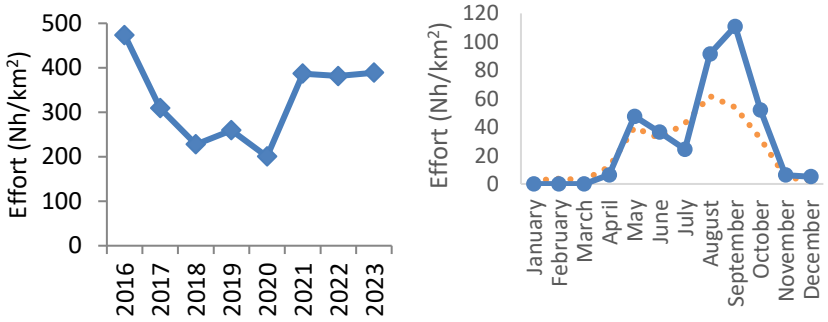


Figure NN1: (left) Annual netting effort (Nh/km^2) in the north coast analysis area from 2016 to 2023, and *(right)* monthly netting effort (Nh/km^2) in the north coast analysis area in 2023 (blue line) and 5 year average monthly potting effort from 2018 to 2022 (orange dotted line).

Annual LPUE

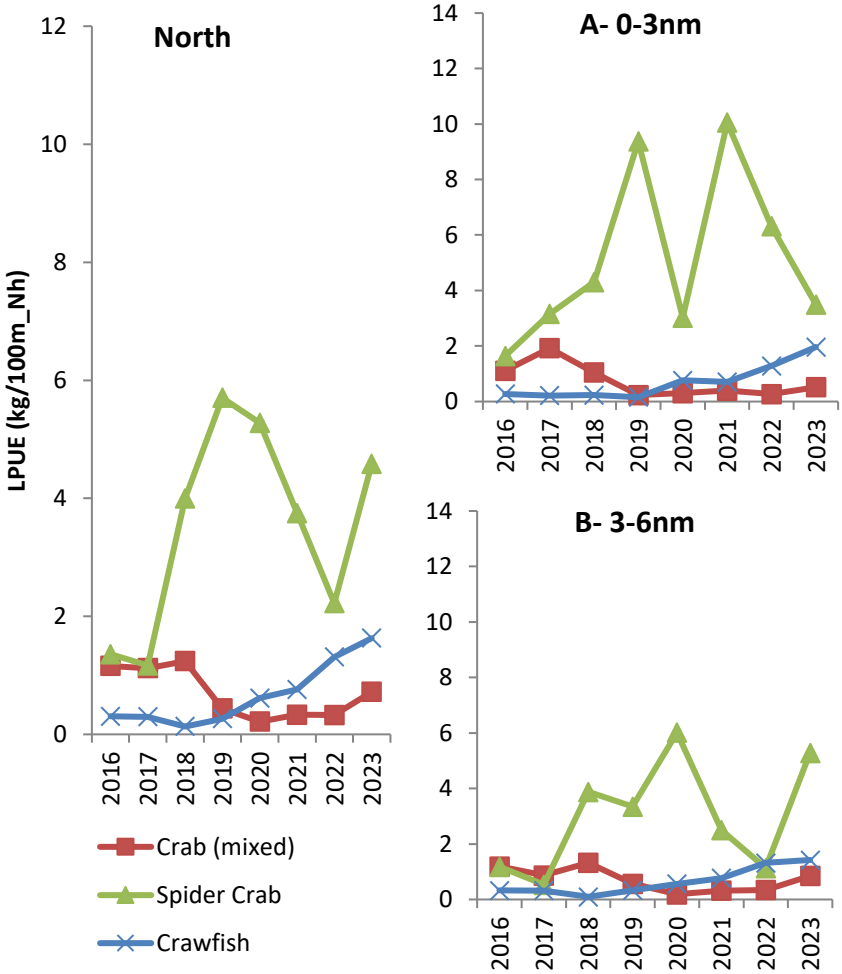
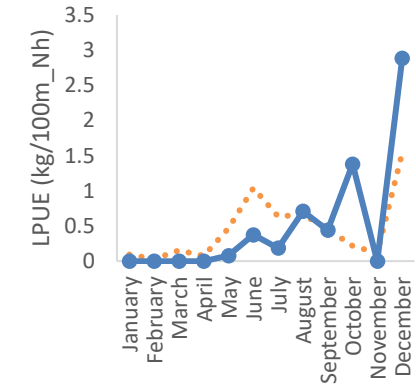


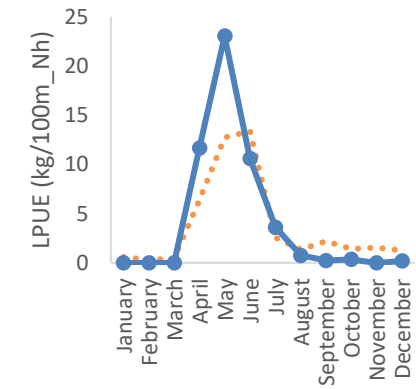
Figure NN2: (left) annual LPUE (kg/100m_Nh) of edible crab, spider crab and crawfish from 2016 to 2023 in the north coast analysis area, further split by band; inshore A (*top right*) and offshore B (*bottom right*).

Seasonality

Edible Crab



Spider Crab



Crawfish

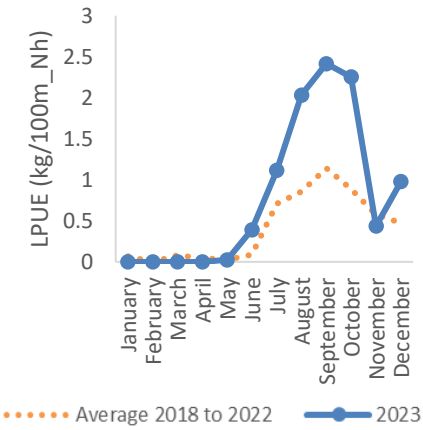


Figure NN3: monthly LPUE (kg/100Ph) in the north coast analysis area in 2023 (blue line) and the five year monthly average from 2018 to 2022 (orange dotted line) of edible crab *(top)*, spider crab *(middle)* and crawfish *(bottom).*

Cornwall IFCA Monthly Shellfish Permit Statistics Analysis
West Coast Pot Fisheries
Summary Statistics 2023

- Annual potting effort increased to 563Ph/km^2 in 2023 (WP1,left), slightly lower than the peak in 2018 of 617Ph/km^2.
- Annual LPUE of crab decreased overall in 2023 (WP2, left), but when split by belt there was a slight increase offshore (Fig. WP2). Monthly LPUE of crab was consistently lower than the 5 year average, though most pronounced from January to March, and September onwards (Fig. WP3, top).
- Spider crab monthly LPUE was different to the 5 year average (WP3,mid), though annual LPUE was similar to 2022 (WP2).
- Annual LPUE of lobster decreased overall (WP2), but peak monthly LPUE was similar to the 5 year average (WP3).

Effort

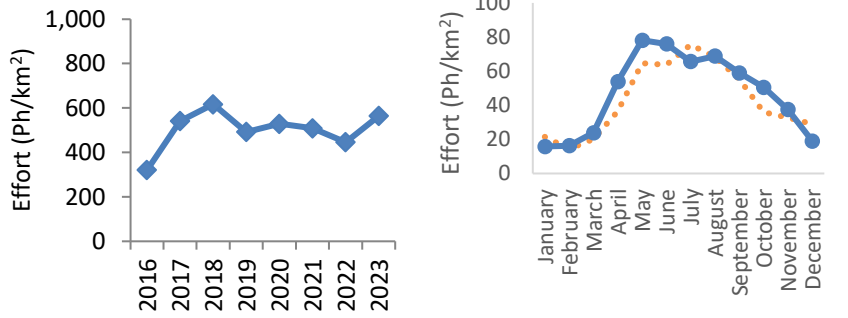


Figure WP1: (left) Annual potting effort (Ph/km^2) in the west coast analysis area from 2016 to 2023 and (*right*) monthly potting effort (Ph/km^2) in the west coast analysis area in 2023 (blue line) and 5 year average monthly potting effort from 2018 to 2022 (orange dotted line).

Annual LPUE

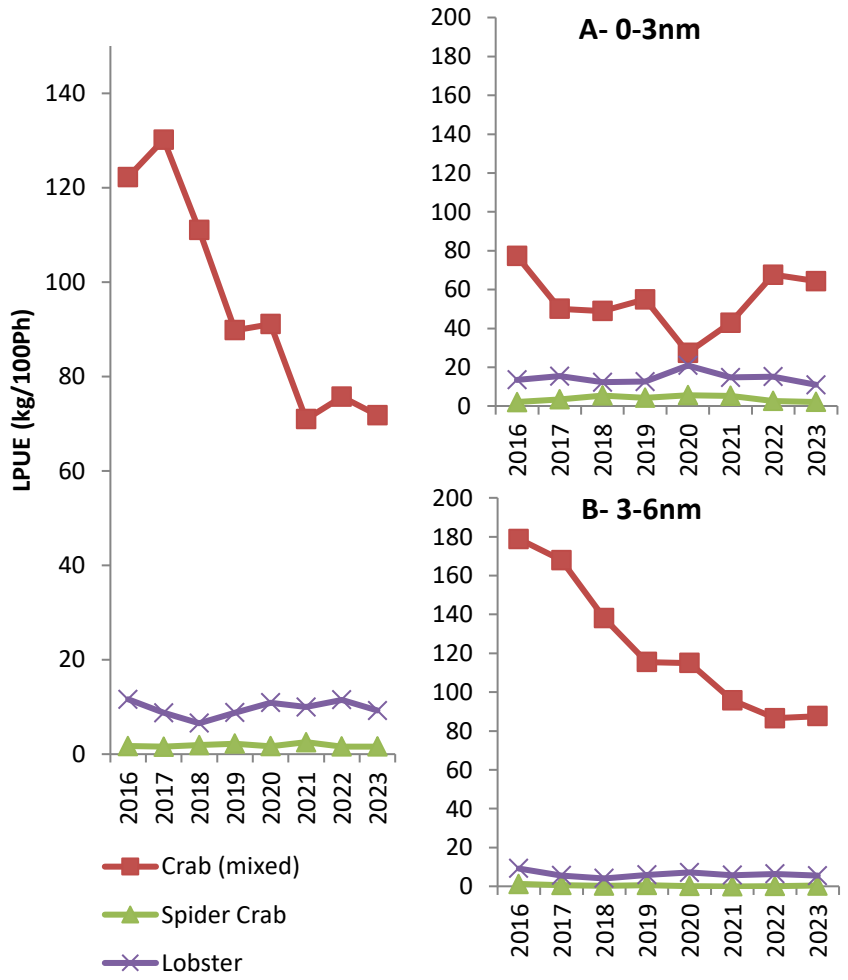
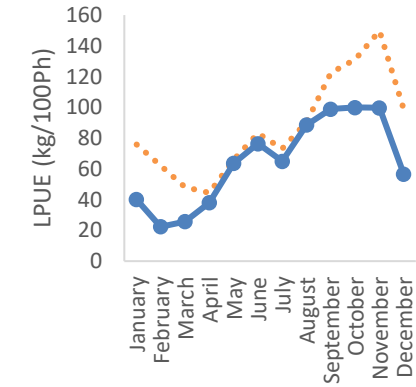


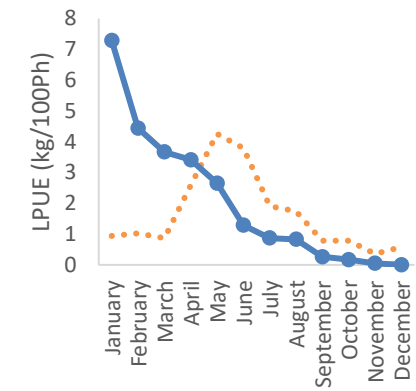
Figure WP2: (left) annual LPUE (kg/100Ph) of edible crab, spider crab and lobster from 2016 to 2023 in the west coast analysis area, further split by band; inshore A (*top right*) and offshore B (*bottom right*).

Seasonality

Edible Crab



Spider Crab



Lobster

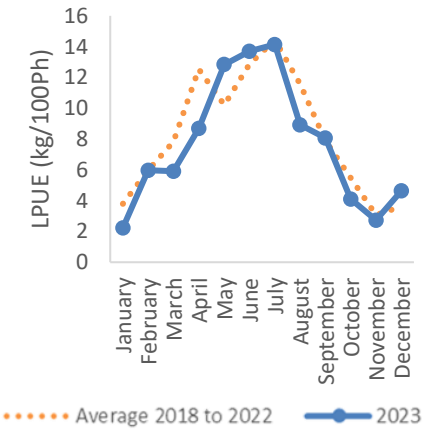


Figure WP3: monthly LPUE (kg/100Ph) in the west coast analysis area in 2023 (blue line) and the five year monthly average from 2018 to 2022 (orange dotted line) of edible crab *(top)*, spider crab *(middle)* and lobster *(bottom).*

Cornwall IFCA Monthly Shellfish Permit Statistics Analysis

West Coast Demersal Net Fisheries

Summary Statistics 2023

- Annual demersal netting effort increased in 2023 (WN1). Effort peaked in May as with the previous five year average, though was at a higher value (Fig. WN1) when there was also a peak in spider crab LPUE in the same month (Fig. WN3).
- Effort was also higher-than-average from September to the end of the year (Fig. WN1) when there was also a higher-than-average LPUE of edible crab and crawfish (Fig WN3).
- Crawfish annual LPUE increased both inshore and offshore (WN2). Annual LPUE of spider crab dropped in 2023, as did edible crab overall though when split by belt there was a slight increase offshore (WN2).

Effort

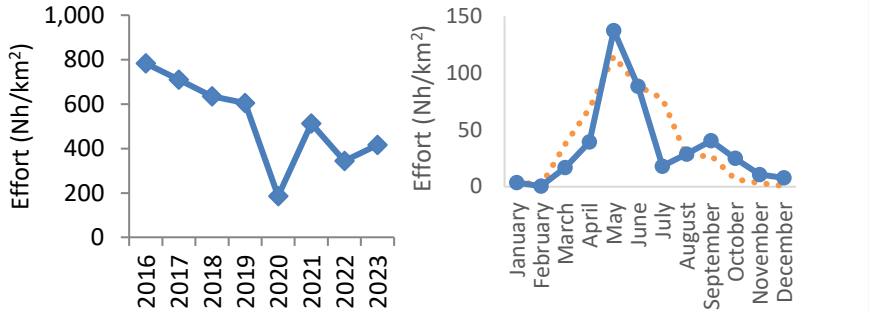


Figure WN1: (left) Annual netting effort (Nh/km²) in the west coast analysis area from 2016 to 2023, and *(right)* monthly netting effort (Nh/km²) in the west coast analysis area in 2023 (blue line) and 5 year average monthly potting effort from 2018 to 2022 (orange dotted line).

Annual LPUE

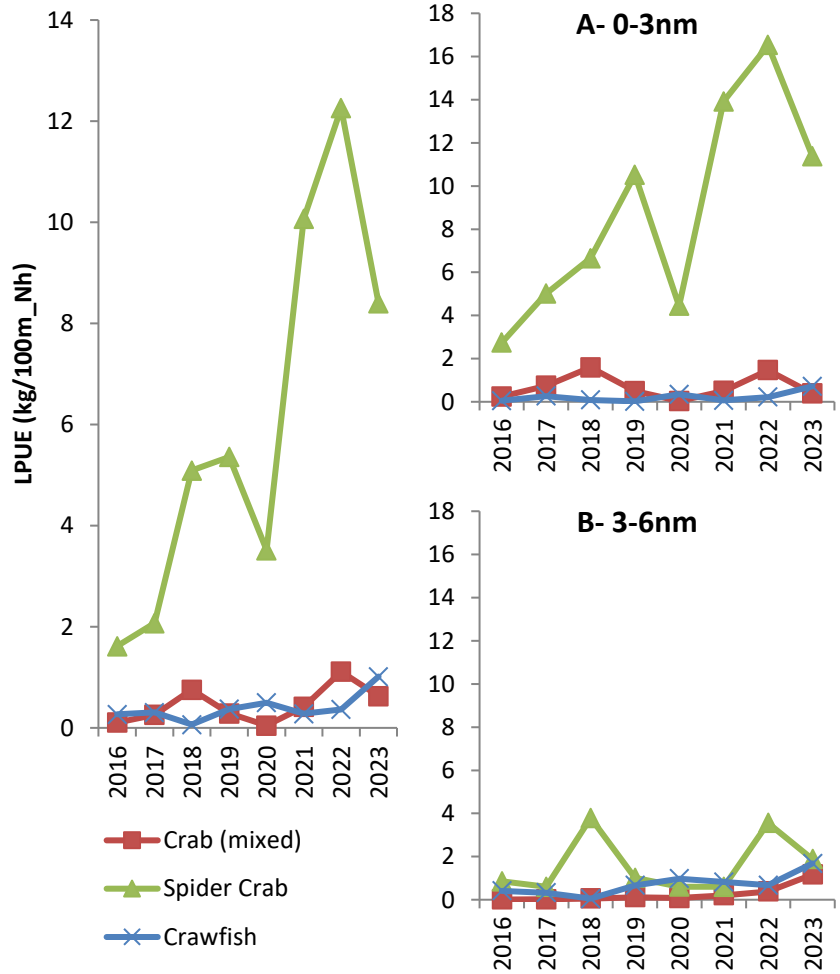
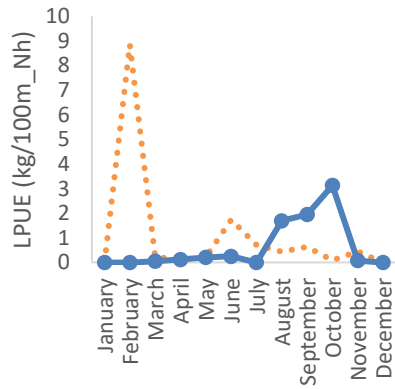


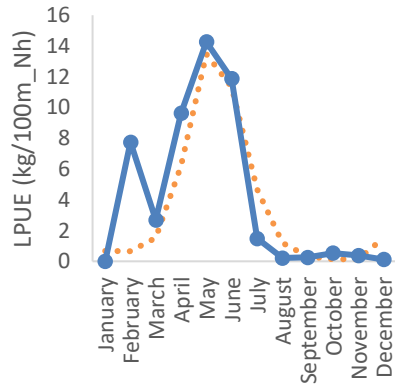
Figure WN2: (left) annual LPUE (kg/100m_Nh) of edible crab, spider crab and crawfish from 2016 to 2023 in the west coast analysis area, further split by band; inshore A (*top right*) and offshore B (*bottom right*).

Seasonality

Edible Crab



Spider Crab



Crawfish

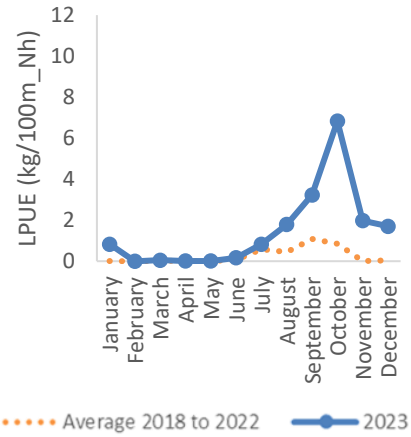
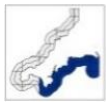


Figure WN3: monthly LPUE (kg/100Ph) in the west coast analysis area in 2023 (blue line) and the five year monthly average from 2018 to 2022 (orange dotted line) of edible crab *(top)*, spider crab *(middle)* and crawfish *(bottom).*

Cornwall IFCA Monthly Shellfish Permit Statistics Analysis
South Coast Pot Fisheries
Summary Statistics 2023



- Overall the decrease in annual potting effort continued in 2023, especially from June onwards (Fig. SP1)
- Edible crab annual LPUE continued to decrease in 2023 (SP2) with a lower-than-average monthly LPUE from January to March, and from September to the end of the year (also observed on the west coast) (SN3).
- In 2023 there was a slight decrease in spider crab annual LPUE (SN2), with monthly LPUE higher than average in peaks in January, May and October (SP3, mid).
- Annual lobster LPUE continued to increase (SP2), and monthly LPUE was consistently higher-than-average (SP3).

Effort

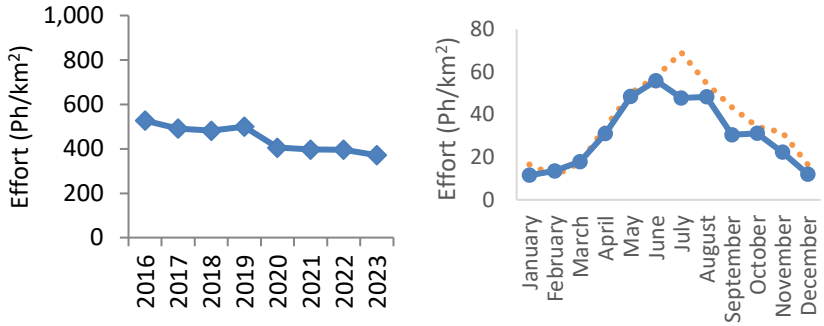


Figure SP1: (left) Annual potting effort (Ph/km²) in the south coast analysis area from 2016 to 2023 and (*right*) monthly potting effort (Ph/km²) in the south coast analysis area in 2023 (blue line) and 5 year average monthly potting effort from 2018 to 2022 (orange dotted line).

Annual LPUE

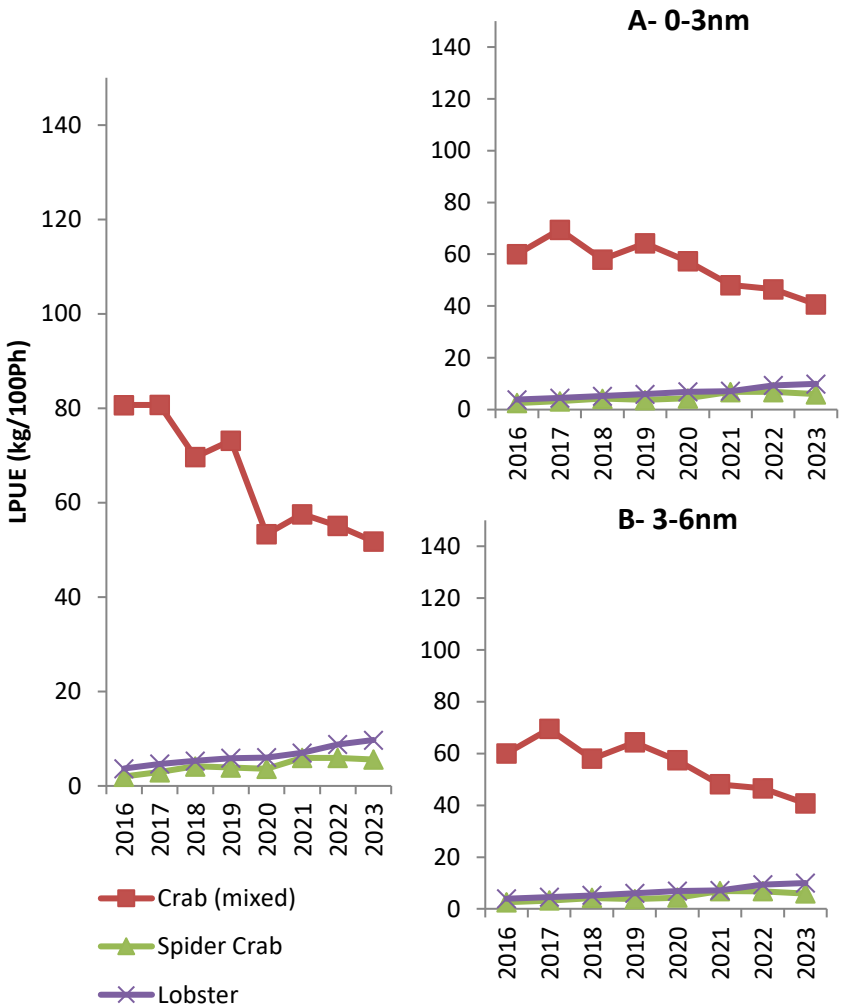
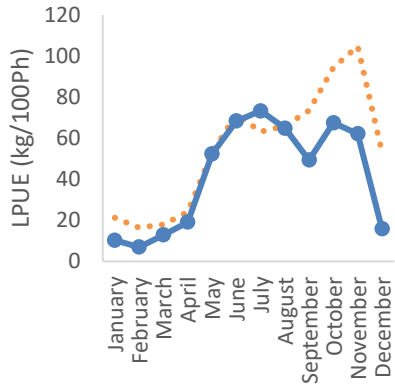


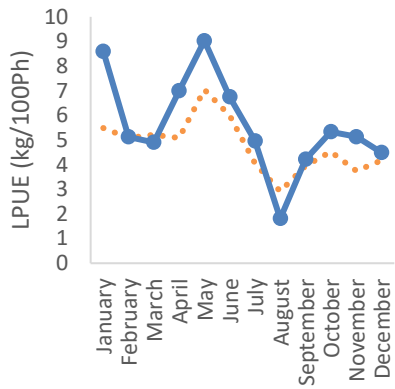
Figure SP2: (left) annual LPUE (kg/100Ph) of edible crab, spider crab and lobster from 2016 to 2023 in the south coast analysis area, further split by band; inshore A (*top right*) and offshore B (*bottom right*).

Seasonality

Edible Crab



Spider Crab



Lobster

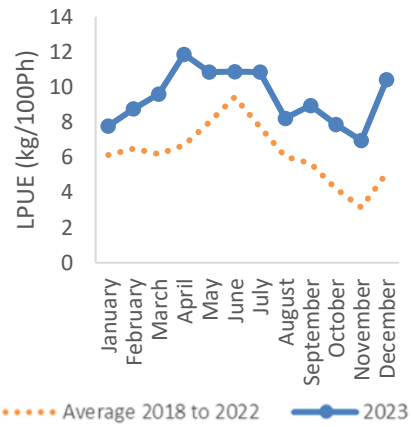
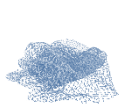


Figure SP3: monthly LPUE (kg/100Ph) in the south coast analysis area in 2023 (blue line) and the five year monthly average from 2018 to 2022 (orange dotted line) of edible crab *(top)*, spider crab *(middle)* and lobster *(bottom).*

Cornwall IFCA Monthly Shellfish Permit Statistics Analysis
South Coast Demersal Net Fisheries
Summary Statistics 2023



- Annual demersal netting effort continued to decrease in 2023 (SN1, left), with monthly effort consistently lower than the previous 5 year average (SN1, right).
- Edible crab monthly LPUE fluctuated greatly from June onwards (SN3, top), resulting in annual LPUE declining overall (SN2, left) despite an increase offshore (SN2, bottom right).
- Spider crab annual LPUE decreased both offshore and inshore (SN2).
- Crawfish LPUE increased inshore and offshore (SN2), the highest monthly LPUE values were in October and November (SN3).

Effort

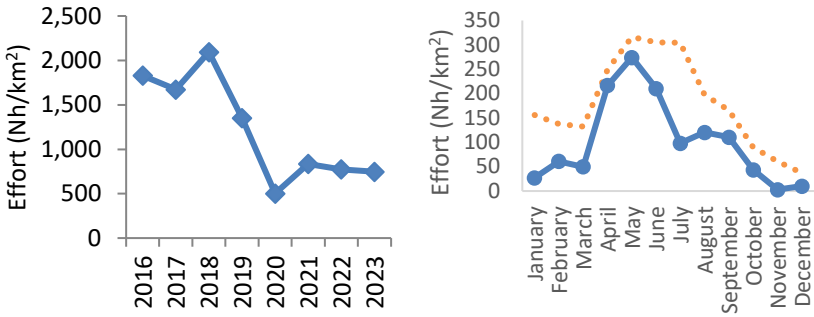


Figure SN1: (left) Annual netting effort (Nh/km²) in the south coast analysis area from 2016 to 2023, and *(right)* monthly netting effort (Nh/km²) in the south coast analysis area in 2023 (blue line) and 5 year average monthly potting effort from 2018 to 2022 (orange dotted line).

Annual LPUE

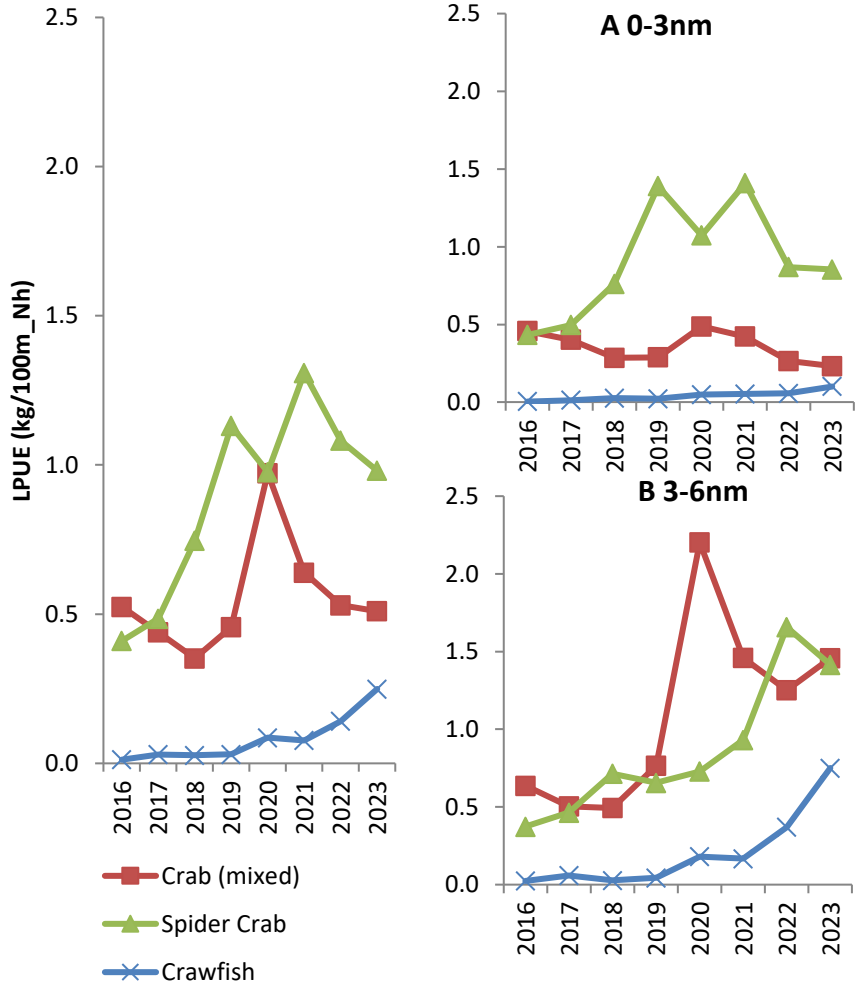
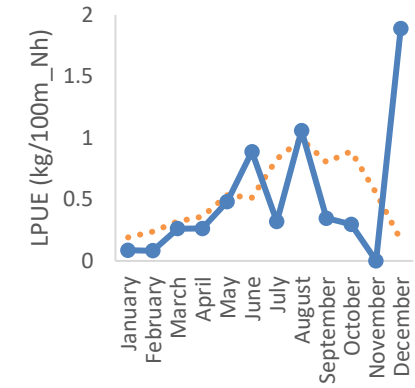


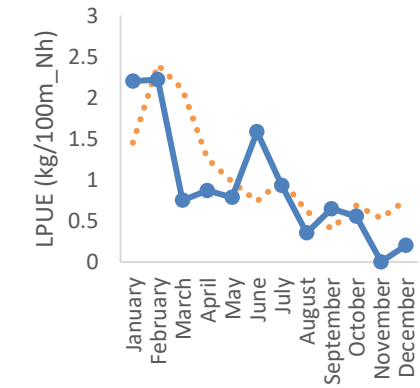
Figure SN2: (left) annual LPUE (kg/100m_Nh) of edible crab, spider crab and crawfish from 2016 to 2023 in the south coast analysis area, further split by band; inshore A (*top right*) and offshore B (*bottom right*).

Seasonality

Edible Crab



Spider Crab



Crawfish

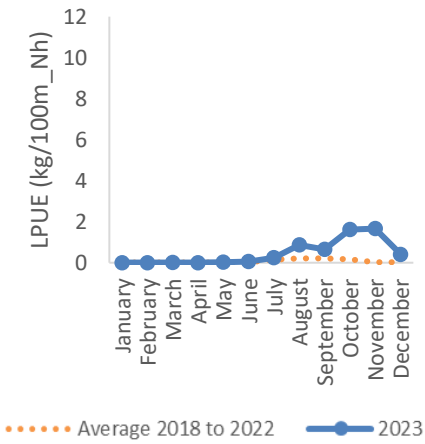


Figure SN3: monthly LPUE (kg/100Ph) in the south coast analysis area in 2023 (blue line) and the five year monthly average from 2018 to 2022 (orange dotted line) of edible crab *(top)*, spider crab *(middle)* and crawfish *(bottom).*

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