Gouvèrnément d'JÈRRI

MARINE RESOURCES ANNUAL REPORT 2021








INFRASTRUCTURE HOUSING AND ENVIRONMENT
MARINE RESOURCES SECTION
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CONTENTS

PREFACE

As a year, 2021 proved one of the most difficult experienced by our fishing fleet in recent times . A stormy winter combined with ongoing Covid restrictions limited the fleet's ability to operate at sea. Additionally, the fleet had to deal with a shortage of bait and crew, a slow supply on engine parts and challenges accessing foreign markets in a post-Brexit trading framework. The response was to engage the public directly via direct sales from beaches, stalls and boats, a strategy which had the additional advantage of allowing islanders to gain a greater appreciation for local seafood.

Aquaculture exports also encountered market and shipping challenges and in response the temporary holding beds for oysters in Grouville Bay were given an extension to allow farmers to better control the growth of stock. Towards the end of 2021 the export of both farmed and wild seafood improved although direct landings into the EU for some species, such as whelks, remained prohibited.

The effects of Covid-19 and Brexit will be visible in the activities and statistics presented throughout this report. Many areas of reporting will show lower figures for 2021 than for previous years. There is also an effect from not having access to the FPV *Norman Le Brocq* for several months while it was undergoing an extended refit. This meant much of the enforcement work was conducted on the fisheries inshore RIB *Ecrehou* while research was assisted by several fishing vessels that made themselves available to support the team's operations during the absence of the main vessel. The Marine Resources team are very grateful for this cooperation.

At the start of 2021 the Bay of Granville Agreement, which had been central to fisheries management since 2004, was terminated by the signing of the post-Brexit Trade and Cooperation Agreement (TCA). Facilitating the TCA's access requirements proved to be an intensive and time consuming process which occupied the time of several officers for large parts of the year. The TCA requires the Jersey authorities to take responsibility for licencing and fisheries management within the island's territorial seas and so will form a key part of the marine management framework going forwards.

During 2021 several new marine research projects were started or continued to operate from earlier years. This included a tagging and tracking project for Atlantic Bluefin Tuna, a survey for bream nesting areas off Jersey's coast and the initiation of a scallop stock assessment programme. All these projects will need to continue into 2022 and it is hoped that a summary of these projects (and others) will be produced in a science update report towards the end of 2022. Additionally, after finishing fieldwork in 2020, Sam Blampied was in the write up process for her PhD investigating the role of Marine Protected Areas in sustainable fisheries.

Although 2021 was challenging, it was not unproductive and Marine Resources remain grateful to the many stakeholders who have assisted and supported the team during the past twelve months. Some of the issues encountered in 2021 will apply to 2022 and addressing some of these could require persistence and innovative thinking. As ever, we look forward to working with existing colleagues and engaging with new ones during the coming year to achieve the modern, sustainably managed fishery and marine environment that we are tasked with delivering for the people of Jersey.

INTRODUCTION
JERSEY'S MARINE WATERS

The Bailiwick of Jersey consists mostly of marine waters within which reside small parcels of dry land. Jersey's total land area is 120 km^2 but this is dwarfed by the surrounding 2,455 km^2 of territorial sea. This ratio of sea to land sustains the island as it is the oceanographic processes and ecology of the marine environment that underpins our climate, water resources and the key tourism, leisure, agricultural and fisheries economies. To mismanage our seas and oceans is therefore to risk our own well-being.

The island of Jersey has 90 km of coastline which includes dramatic cliffs, wide sandy bays, rocky shores, small harbours and, of course, the port of St Helier. This interface between land and sea has an important influence on Jersey's character and sense of identity. On spring tides the difference between the low and high water marks may be as much as 12 metres. The south, southeast and west coasts have shallow, gently sloping shore profiles, resulting in the island's area expanding by a quarter at low water as up to 35 km^2 of intertidal area becomes accessible by foot. In contrast to this are the north, south-west and north-west coasts which are characterised by steep granite cliffs studded with inlets and caves, and exposed sandy or rocky beaches. Both the inland character of Jersey and its marine environment are much influenced by the great variation in aspect, exposure and ecology of the coastal fringe.

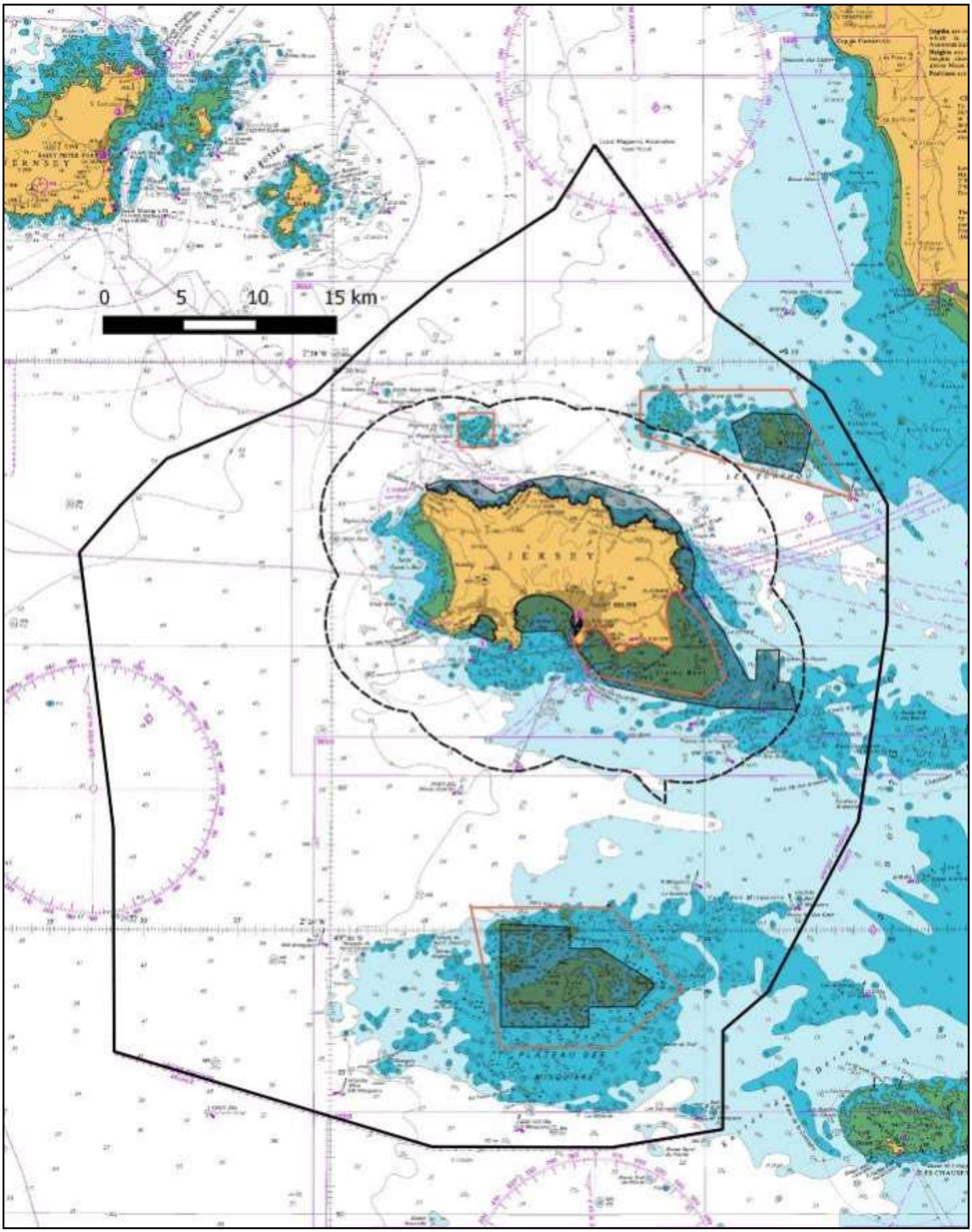
Jersey's marine fauna and flora represents a confluence of northern colder water species and warmer southern ones. Species from the Bay of Biscay reach their northern limit in the Channel Islands and, conversely, there are those found in the UK and North Sea whose southern limit is the Normano-Breton Gulf. The international importance of Jersey's marine ecology is recognised in the 190 km^2 of key habitats that are designated as Ramsar (wetlands of international importance) areas and the 150 km^2 of seabed and marine waters that are Marine Protected Areas under the OSPAR Convention.

The ecology of Jersey's rocky reefs and intertidal sediment flats are unique within Europe. At low water an extensive biologically rich area of seashore is uncovered while subtidally there are kelp forests, seagrass meadows, maerl beds and tide-swept sands and gravels. The offshore reef systems that comprise Les Écréhous, Les Dirouilles, Les Minquiers and Paternosters cover 100s of kilometres and are internationally recognised as productive but sensitive hotspots of biodiversity.

The seas around Jersey are productive, something which is reflected in the cultural and economic importance of fishing and aquaculture. The fishing industry plays a significant role in island life and reflects an Anglo-Norman culture that goes back many centuries. Fisheries and aquaculture directly support around 180 jobs plus many more in associated industries such as engineering, maintenance, retail, etc. Achieving a sustainable fishery is therefore important and in Jersey waters management occurs through measures that are employed locally and via a joint-management agreement with France.

Jersey's marine areas also contain sites of cultural, archaeological and historical significance including prehistoric dwellings, shipwrecks, fortifications, geological exposures, geographic features and fishing artefacts. A number of these are already protected as Sites of Special Interest and currently UK and French archaeologists are studying exciting new finds of possible international significance along the coastline.

Jersey's marine zone can accommodate many activities such as fishing, watersports, tourism, aquaculture, harbours and vital infrastructure. This makes it an area of intense activity especially inshore and at offshore hotspots such as Les Écréhous. To reduce the possibility of conflict or harm to individuals, infrastructure or the environment, close monitoring and management is required. This is a core function of Marine Resources who, in conjunction with other government teams, industry representatives, marine stakeholders and NGOs, oversee the management of Jersey's marine waters. Our objective is to ensure that people can access and enjoy the benefits of Jersey's marine zone without causing harm to themselves, other people, coastal features or to the local marine environment. Pleasing everyone all of the time is never easy but we hope that the balance we maintain between usage, exploitation and conservation of our marine waters is beneficial for the island of Jersey.



Jersey's territorial seas. *The black solid line marks the limit of Jersey's territorial waters. The black dashed line marks the three nautical mile limit from the island's coast. Within this three mile zone Jersey has full control over its marine management; outside of it any measure that may impinge on commercial fishing is subject to the terms of the Trade and Cooperation Agreement (TCA). The hatched zones surrounding Jersey and the offshore reefs are Marine Protected Areas where dredging, trawling and other mobile fishing practices are prohibited. The red solid lines mark the edges of Jersey's four Ramsar (wetlands of international importance) sites.*

MARINE RESOURCES: WORKSTREAMS

OVERVIEW. During 2021 the Marine Resources team expanded to 10 officers whose roles covered a wide range of activities and responsibilities. Some of this work overlaps with other government departments or requires engagement with non-governmental organisations (NGOs). No one role is allocated solely to any individual and all fisheries officers can work across the team's portfolio. While this Annual Report is complied primarily of key results and highlights from 2020, a summary of some of the roles and responsibilities of the Marine Resources team is given below and illustrated on the page opposite.

FISHERIES MANAGEMENT

Officers undertake a range of duties which assist with the management of the local fishing industry. This includes conducting annual assessments on key commercial stocks, inputting and analysing quarterly commercial statistics, and engaging with wider jurisdictions such as the UK and France with regard to Management Agreements.

ENVIRONMENTAL MANAGEMENT

Environmental management is a growing role that is underpinned by a mixture of monitoring and research. This includes water, shellfish and heavy metal sampling, the monitoring of key habitats and species, plus individual research projects on biodiversity, climate change and the effect of anthropogenic behaviour. We also supervise students and work with other government teams.

ENFORCEMENT

Officers are responsible for ensuring fisheries related laws and legislation are enforced both around the coast of Jersey and offshore. This ranges from angling and low water checks at popular fishing locations, to boarding large commercial trawlers many miles from Jersey's coast. Any enforcement action requires appropriate administration, from interviews under caution, to report writing, and attendance at Parish Hall and/or court.

LICENCING

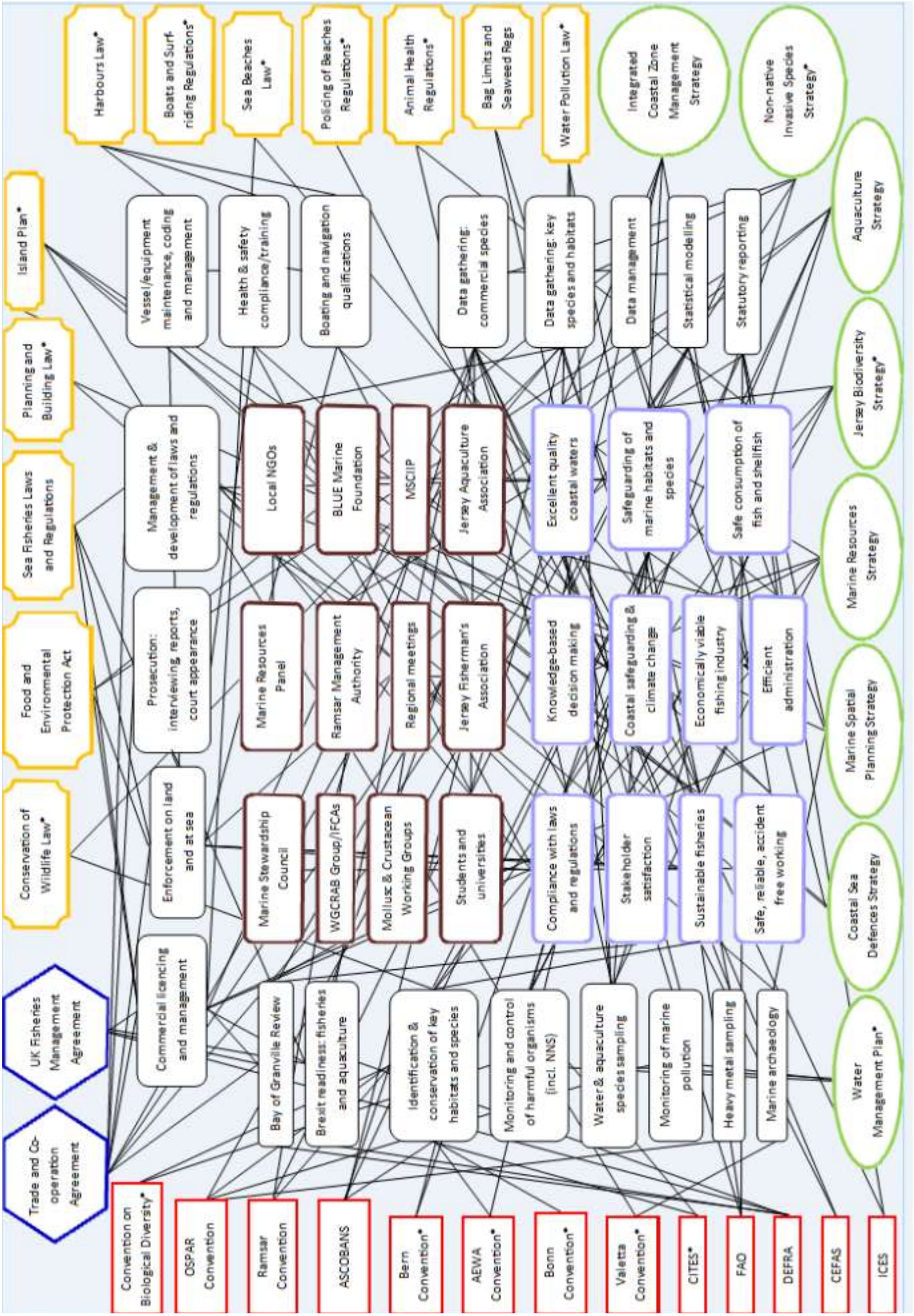
Officers administrate the licensing of fishing activities which includes the construction and updating of licence conditions. This includes the opening and closure of commercial fishing licences, activity specific permits such as beam trawling and scallop diving, licensing of aquaculture businesses, and administration of other miscellaneous permits, such as scientific exemptions.

LAWS & LEGISLATION

In addition to enforcement of local laws and regulations, officers are tasked with ensuring all policy and legislation is appropriately maintained. This includes writing and submitting documentation such as law drafting instructions, Ministerial Decisions, and associated communications such as press releases.

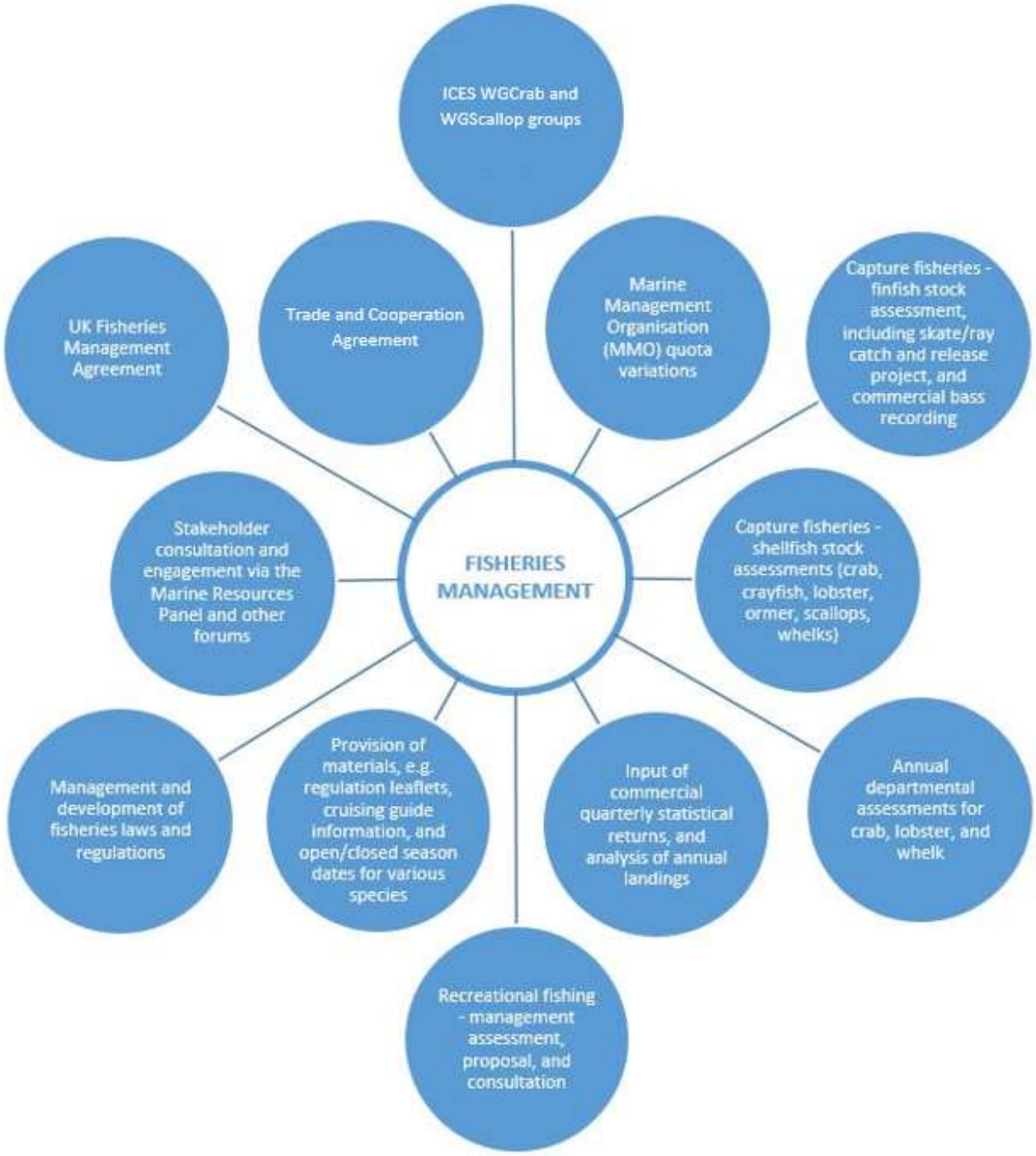
WIDER ENGAGEMENT

Most of the above work areas includes coordination with other government or government teams, non-governmental organisations and local businesses. The team has a close working relationship with local stakeholders both individually and via the Marine Resources Panel. We also liaise with colleagues in France and draw on local expertise within the Jersey Fisherman's Association, Société Jersiaise and others and from the UK via organisations such as the inshore fishing associations (IFCAs), CEFAS, OSPAR, Marine Stewardship Council, various universities and Blue Marine Foundation.



*A 'horrendogram' which illustrates some of the core responsibilities, activities, regulations, strategies and outcomes undertaken by the Marine Resources team. * = Marine Resources contributes to this area rather than directly managing it.*

FISHERIES MANAGEMENT



FISHERIES MANAGEMENT
COMMERCIAL LANDINGS - SHELLFISH

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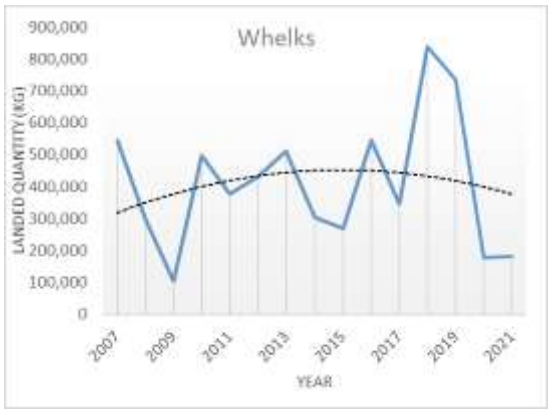

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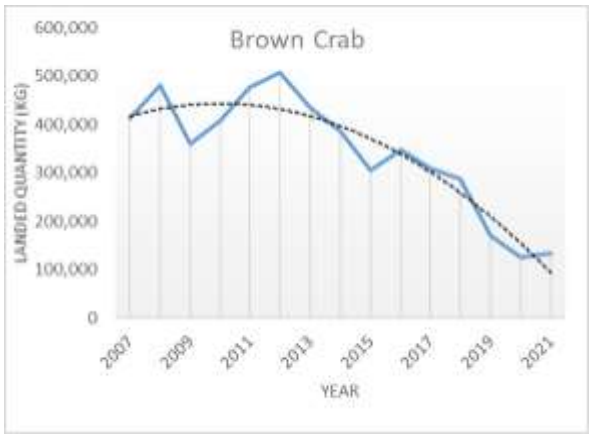

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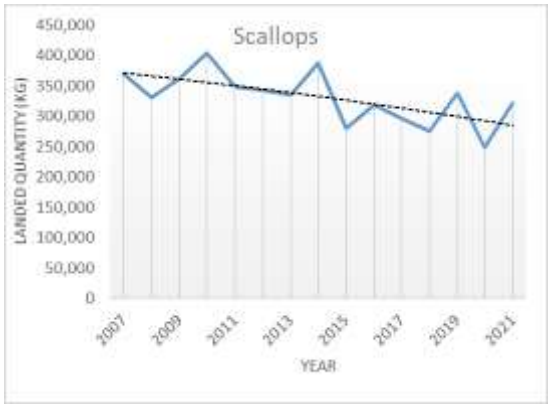

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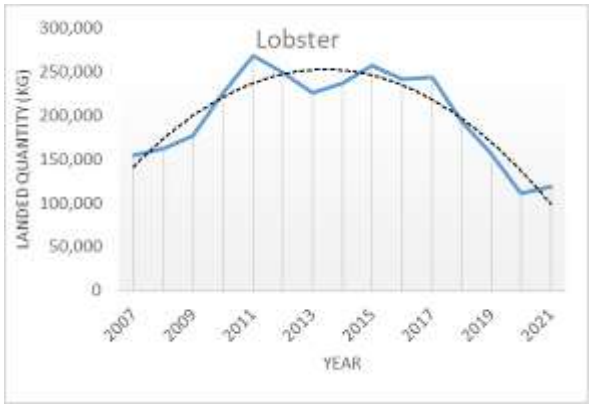

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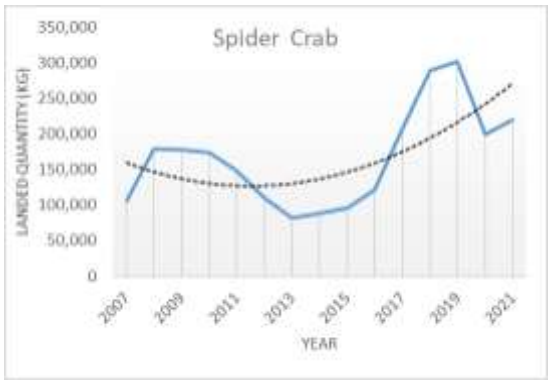

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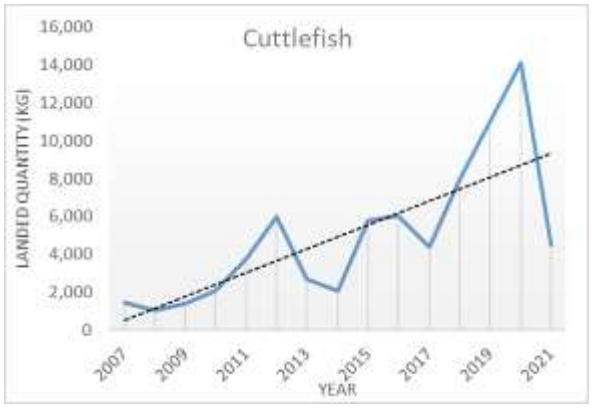


Landed quantities (Kg) of: (A) Whelks; (B) Brown Crab; (C) Scallops; (D) Lobster; (E) Spider crab; (F) Cuttlefish.

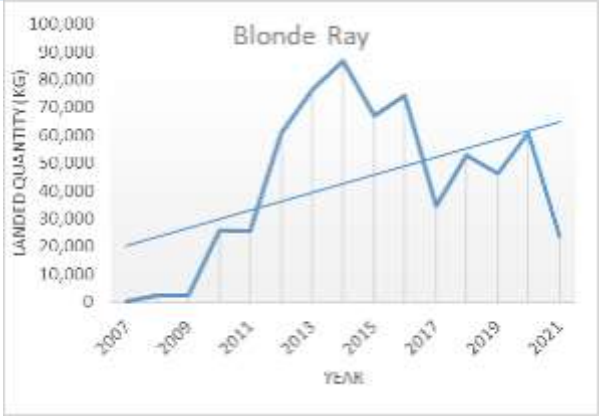
A CLOSER LOOK. Jersey's commercial fishery is economically dominated by shellfish especially lobster and crab which form around 70% (by financial value) of landings. Whelks and scallops are also important at around 22% of landed value with wetfish and other species, such as cuttlefish, forming the remaining 8%.

Recent trends in the species' landed weight are mixed. The annual landed weight for lobster and brown crab is declining which, given their economic dominance, is a major concern. In contrast, spider crab landings have increased steeply due to their abundance and because they are becoming a substitute for picked brown crab meat. Additionally cuttlefish landings have also increased over the last few years, perhaps in response to increased prices and declines in other key stocks.

Lobsters, brown crab, spider crab, and whelks are discussed in more detail later in this section**.** In addition to the main stocks listed above, other species landed by Jersey boats includes: cuttlefish; cockles; lady crab; squid; ormers; queen scallops; crayfish; praire and prawns. See Appendix I for more details**.**

FISHERIES MANAGEMENT
COMMERCIAL LANDINGS - WETFISH

(A)



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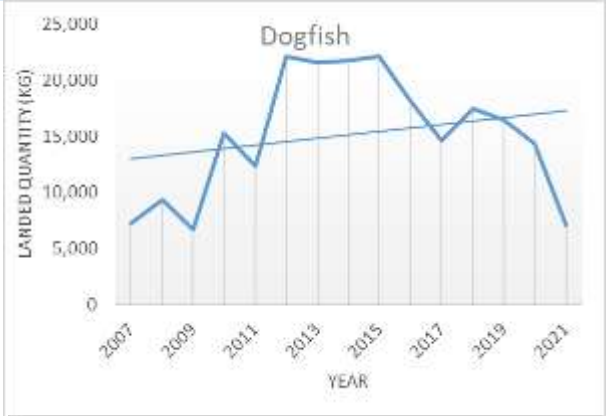

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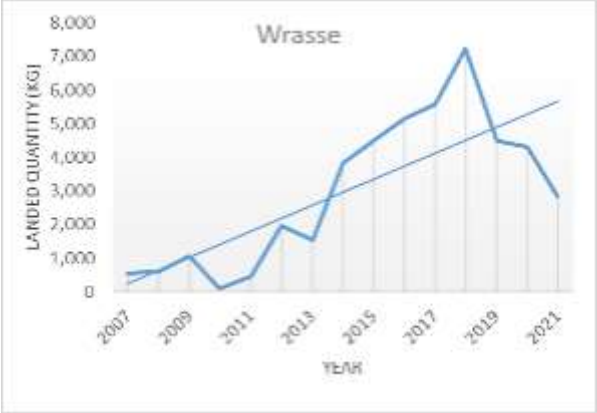

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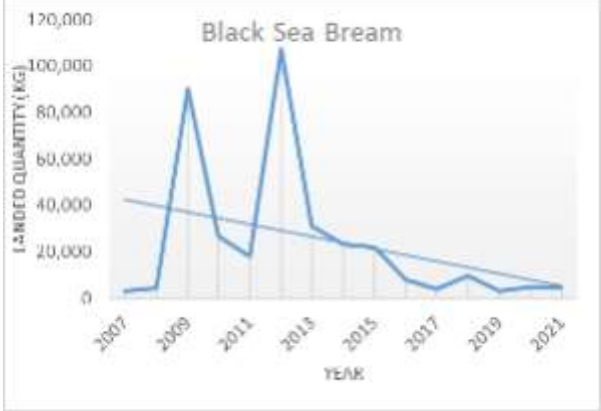

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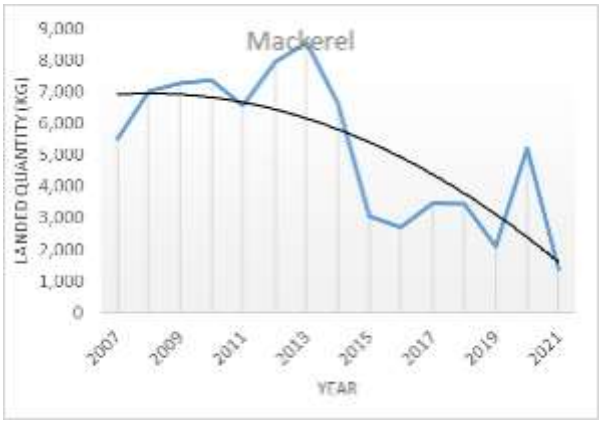

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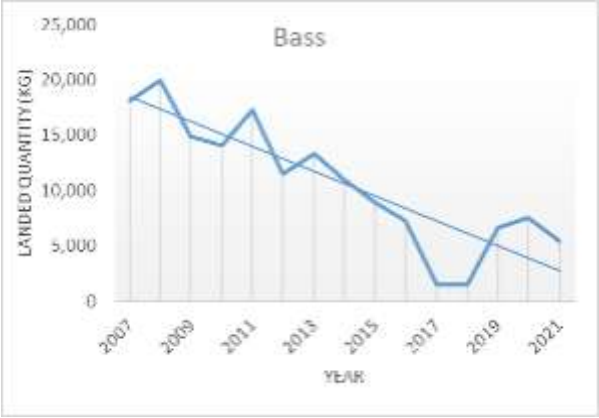


Landed quantities (Kg) from 2007 to 2021 of: (A) Blonde Ray; (B) Dogfish/catsharks (all species)); (C) Wrasse; (D) Black Sea Bream; (E) Mackerel; (F) Bass.

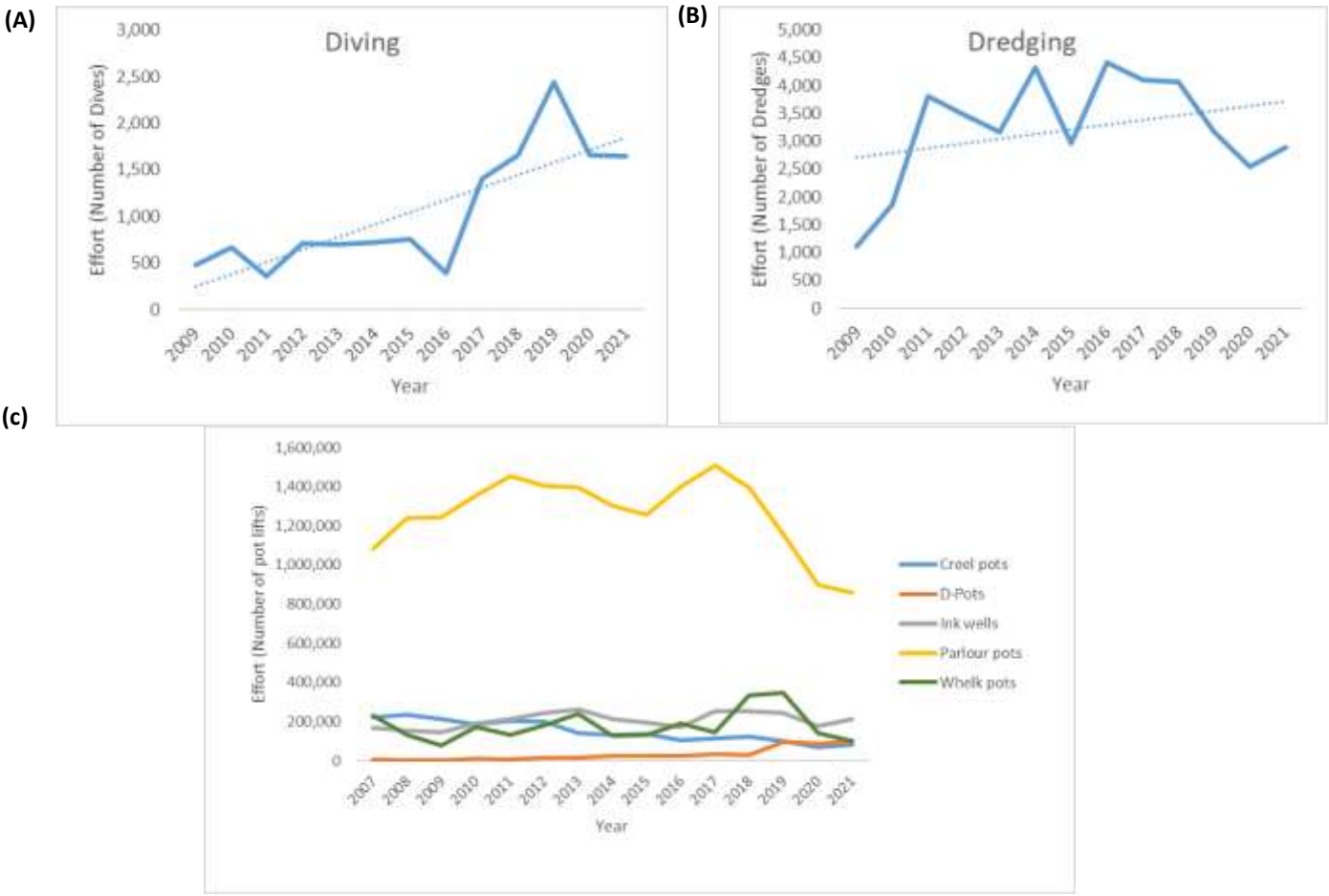
A CLOSER LOOK. Jersey's commercial wetfish industry is relatively small and has recently suffered from problems related to stock health, logistics, markets and designated quota. The local fishery is mostly low impact (hook and line, etc.) and several species are targeted but often in quite low numbers (see Appendix II).

Annual landings are variable often because of individual vessels entering or leaving the fishery or from regional factors (such as overfishing) that occurs outside of Jersey waters. External influences are important to wetfish stocks because of their mobility, migratory patterns and reproductive habitats. Local wetfish trends are monitored by Marine Resources but the island's fishery is dwarfed by that of other fleets within the English Channel and so Jersey often follows guidance issued from external organisations such as ICES, the EU and UK.

Key wetfish species are subject to local research, usually by members of the Marine Resources team. This has included a ray-tagging project, a commercial recording scheme for bass (see 'Bass Stocks' page) and the acoustic tagging of wrasse.

FISHERIES MANAGEMENT
FISHING EFFORT

FISHING METHODS. Jersey's commercial fishing fleet uses a range of fishing techniques with all vessels being obliged to record their effort level in daily logsheets. For example, fishers targeting wetfish such as bass are required to record the number of hours fished (if angling), the number of hooks used (if long lining) or the length of net used (if netting). Knowing the level of effort expended when fishing is important as trends in landed weight will vary due to weather, fleet capacity, regulations, etc., and so catches cannot be used on their own to judge the health of a stock. However, catches combined with fishing effort will give a better indication of the health of individual stocks.



Fishing effort from 2009 to 2021 for selected metiers. A) Diving, measured by number of dives. B) Dredging, measured in number of tows. C) Lobster and crab potting measured by number of lifts for D-pots, ink-wells, creels and parlour pots. Additional measured metiers not illustrated here include angling, netting, long lining, low water fishing and trawling.

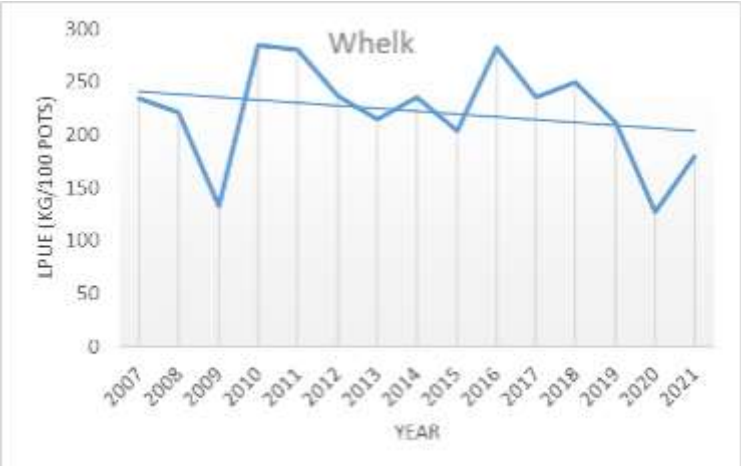
A CLOSER LOOK. Potting remains the dominant metier across the island's commercial fleet. This is to be expected given the importance of crab and lobster to the overall fishery. Although a variety of different pot types are used, parlour pots account for the majority of fishing effort for crab and lobster. The number of pot lifts (and therefore parlour pot usage) has been declining since 2017 which probably reflects stock decreases for both brown crab and lobster plus the economic impact of Covid and poor weather in the winter of 2019/20.

Although not displayed here, netting for fish has also decreased in recent years. This is probably a reflection of bass fishing restrictions, this being a target species for netters. Overshadowing all fisheries activity has been the Covid-19 pandemic which resulted in key markets closing with a corresponding decrease in fishing effort for key species such as crab, lobster, whelks and scallops. However, a local demand for fresh fish, often sold direct from the boat, seems to increased the use of longlines and rod angling.

The full data set can be found in Appendix III**,** which contains further details on metiers such as dredging, low water fishing, long lining, and trawling.

FISHERIES MANAGEMENT
LANDING PER UNIT EFFORT

LANDING PER UNIT EFFORT (LPUE) is a commonly used index for assessing the relative health of commercial fisheries. Landings may change for reasons other than a decrease in stock such as market variability, number of active vessels (particularly so for a small fleet) or individual fishing preferences. By taking into account the effort required to catch a given weight for a species, an index of the stock performance is achievable. For example, in 2015 100 pots deployed off the Jersey coast would catch approximately 15 kg of lobster but by 2020 the same 100 pots could only catch 9 kg. This suggests that the density of legally-sized lobster has decreased and that the underlying stock may have decreased. Although somewhat crude, LPUE is widely used as a ready means of monitoring stocks. Closure of markets led to lower landings and less effort in 2020 and 2021.

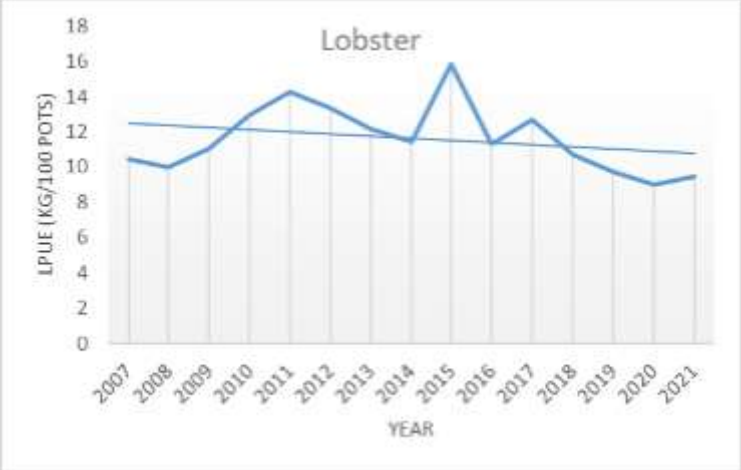


Whelk Peak year (2010): 284 kg/100 pots.

Lowest year (2020): 126 kg/100 pots.

Change: -42%

Status: Steep decline since 2016.

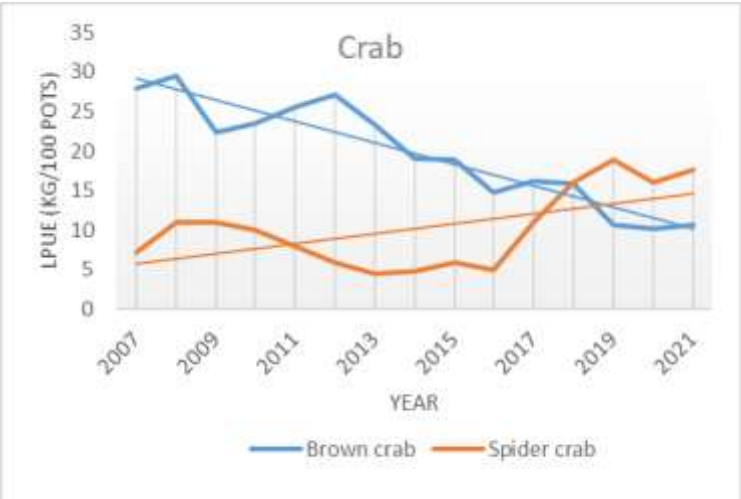


Lobster Peak year (2015): 15.8 kg/100 pots.

Lowest year (2020): 8.99 kg/100 pots.

Change: -43%

Status: Moderate to steep decline since 2015. LPUE has begun to level of over last several year.



Brown Crab Peak (2008): 29 kg/100 pots.

Lowest year (2020): 10.2 kg/100 pots.

Change: -65%

Status: Severe decline since 2012.

Spider Crab Peak (2019): 18.9 kg/100 pots.

Lowest year (2013): 4.46 kg/100 pots.

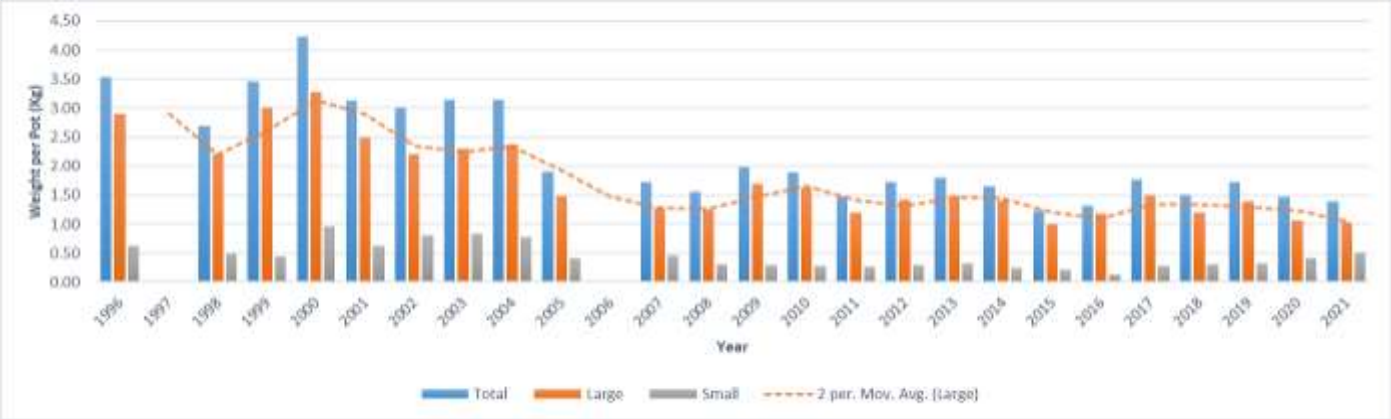
Change: +424%

Status: Steep rise since 2013, over the last several years LPUE has remained constant.

Landing Per Unit Effort (LPUE) for A) Whelk, B) Lobster, C) Brown Crab, D) Spider Crab. LPUE of crab and lobster is calculated using a combined total for creels, D-pots, ink wells, and parlour pots. LPUE for whelk is calculated using just whelk pots.

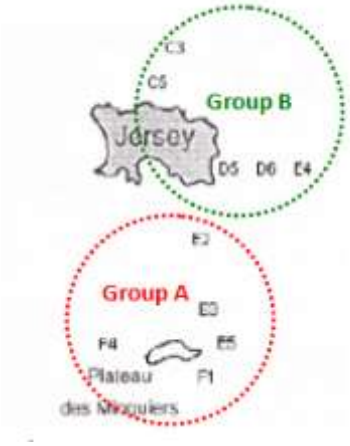
FISHERIES MANAGEMENT
WHELK STOCKS

WHELK TRIALS. An annual study of whelk (*Buccinum undatum*) catch per unit effort (CPUE*) is conducted each February. Several strings of baited whelk pots are deployed for 24 hours to the north, east and south of Jersey. When the pots are hauled the whelks are graded into 'small' (under 50 mm minimum size) and 'large' (above minimum size) and then weighed. The results are used to measure changes in whelk density at key locations. These trials have been run annually since 1996 and represent a valuable dataset. * CPUE differs to LPUE as all sizes of animals caught are recorded rather than those landed that are above MLS only.



CPUE (Weight (Kg) whelks per pot) from 1996 to 2021 with a two year moving average trend line on the 'large' (> MLS) group.

Weight (Kg) of whelks per pot, 2021. Results for Total, Large (above 50mm MLS) and Small (below 50mm MLS).



Location of sample sites.

RESULTS. Overall, the CPUE in 2021 was 1.4 kg per pot. This was a 0.1 kg decrease on the CPUE recorded in 2020. The 'large' size group in 2021 was 1 kg, remaining the same as in 2020. but significantly below the 1998–2002 average of 2.64 kg. The 'small' size group increased from 2020 to 0.5 kg per pot, the highest result since 2007.

A CLOSER LOOK. Compared with 1996 to 2007, the recent CPUE level is low but comparable with recent years. The whelk fishery is intensively fished and the local stock is subject to certification (through Normandy) by the Marine Stewardship Council. Their audit for 2019 (and a 2018 Ifremer assessment) raised concern around the long-term sustainability of the local fishery. This concern is justified, as slight decreases in the two year moving average can be observed since 2017. This is the subject of joint research with Normandy and discussion within the Mollusc Working Group.

Whelks ready for measuring

FISHERIES MANAGEMENT
LOBSTER STOCKS

LOBSTER TRIALS. Since 2004 an annual survey has been conducted to monitor changes in the size and structure of the lobster population in Jersey waters. The trials are conducted in May and June at three different locations using parlour pots without escape gaps to retain juveniles. The equipment used and sites sampled remain the same, allowing comparison over time. Other data are collected through quay-side measurements and via the submission of catch log sheets.

RESULTS

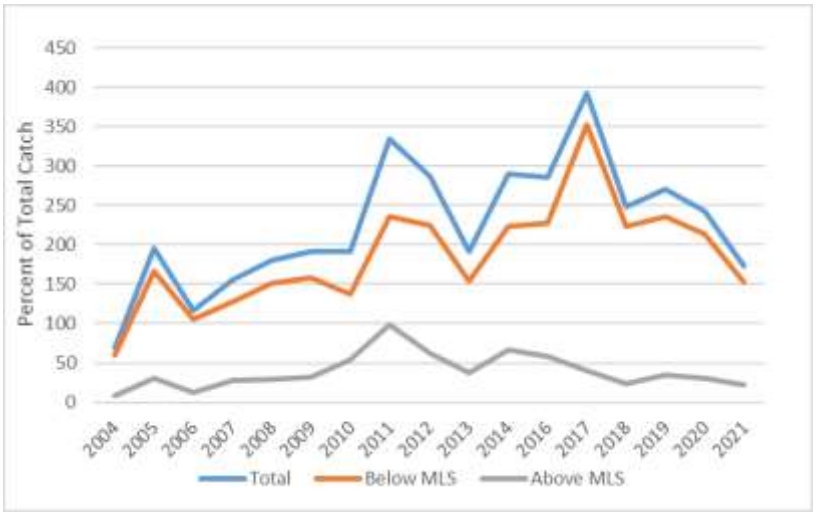
For 2021, 150 pot hauls were conducted, giving a total of 174 lobsters caught. This equated to an average of 1.16 lobsters per pot.

When broken down into above and below MLS, the 2021 MLS results produced 22 above minimum landing size (MLS: 87 mm), with 152 individuals below MLS.

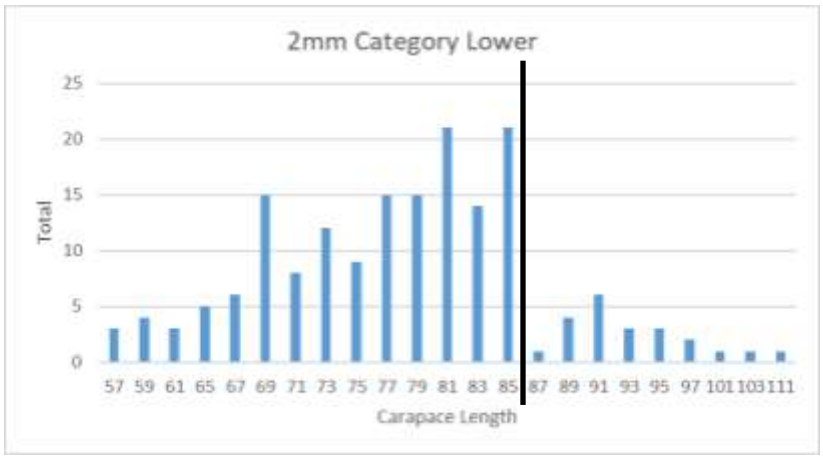
The largest lobster landed measured 111 mm carapace length, with an average size of 78.5 mm.

A total of 94,470 Kg of lobster was landed commercially. When number of pot lifts (1,014,943* for 2021) is taken into account, this equates to 9.3 Kg of sized lobster per 100 pots.*

* Pot types included in this total are creels, D-pots, ink-wells, and parlour pots.



Number of lobsters year. Total, above MLS (87mm) and below MLS.



Carapace length frequency distribution for 2021 in rounded 2 mm classes. The black line indicates the minimum landing size of 87 mm.

A CLOSER LOOK. There is concern about declining lobster landings and since 2018 an enhanced monitoring regime has been in place with 100s more measurements being taken annually.

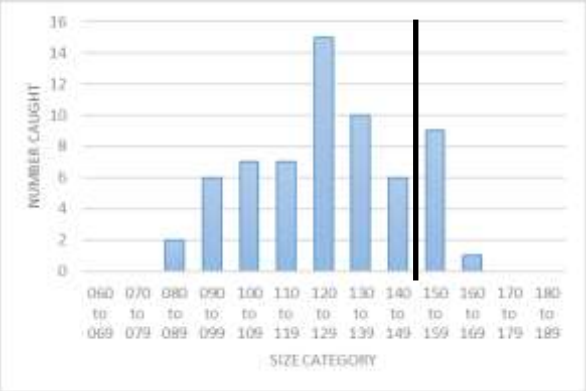
In 2019 a Lobster Working Group was formed through the Marine Resources Panel which included fishers, merchants and Marine Resources. The group proposed new management measures such as increasing the minimum size, reducing pot allocations, mandatory escape gaps and recreational bag limits. These proposed measures have been accepted by the Marine Resources Panel but were placed on hold in 2020 following the arrival of Covid-19. The situation will be reappraised in 2022.

Measuring a lobster

FISHERIES MANAGEMENT
BROWN CRAB STOCKS

CRAB TRIALS. During the annual lobster trials, details and measurements are taken for all crab species caught in the pots. This is primarily brown crab (*Cancer pagurus*) and spider crab (*Maja brachydactyla*) but other smaller species may also be caught.

A CLOSER LOOK



Size distribution (in 10 mm classes) for brown crab carapace width in 2021. Black line = MLS of 150 mm.

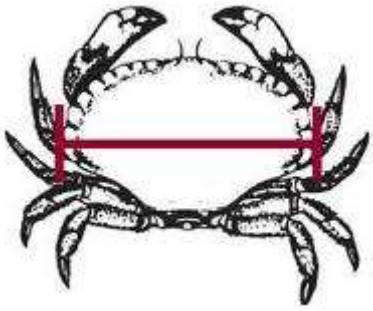
The commercial fishery for brown crab has seen landings decrease severely since 2012. This is also reflected in Jersey's trial data with the decline in CPUE since 2014 continuing. The lowest ever recorded CPUE was in 2020 at 0.3 kg per pot.

The decline in brown crab catches is also being experienced in France, Guernsey and the southern UK. This phenomenon is of regional concern and is being jointly investigated by marine managers in Jersey, France and the UK. Jersey has also joined a UK Brown crab working group and is a member of the ICES Crab Working Group.

ADDITIONAL MANAGEMENT MEASURES

COMMERCIAL. The 150 mm MLS (previously 140 mm) came into force in 2019. This has now also been reflected across the recreational sector.

RECREATIONAL. Brown crab above legal size are rarely caught onshore but are still caught in pots by recreational fishers. During 2020, a recreational bag limit of five brown crabs per person or, if fishing from a recreational vessel, five brown crabs per boat came into force. These measures mirror those of other European countries and are part of a range of bag limits designed to safeguard recreational stocks for future generations.



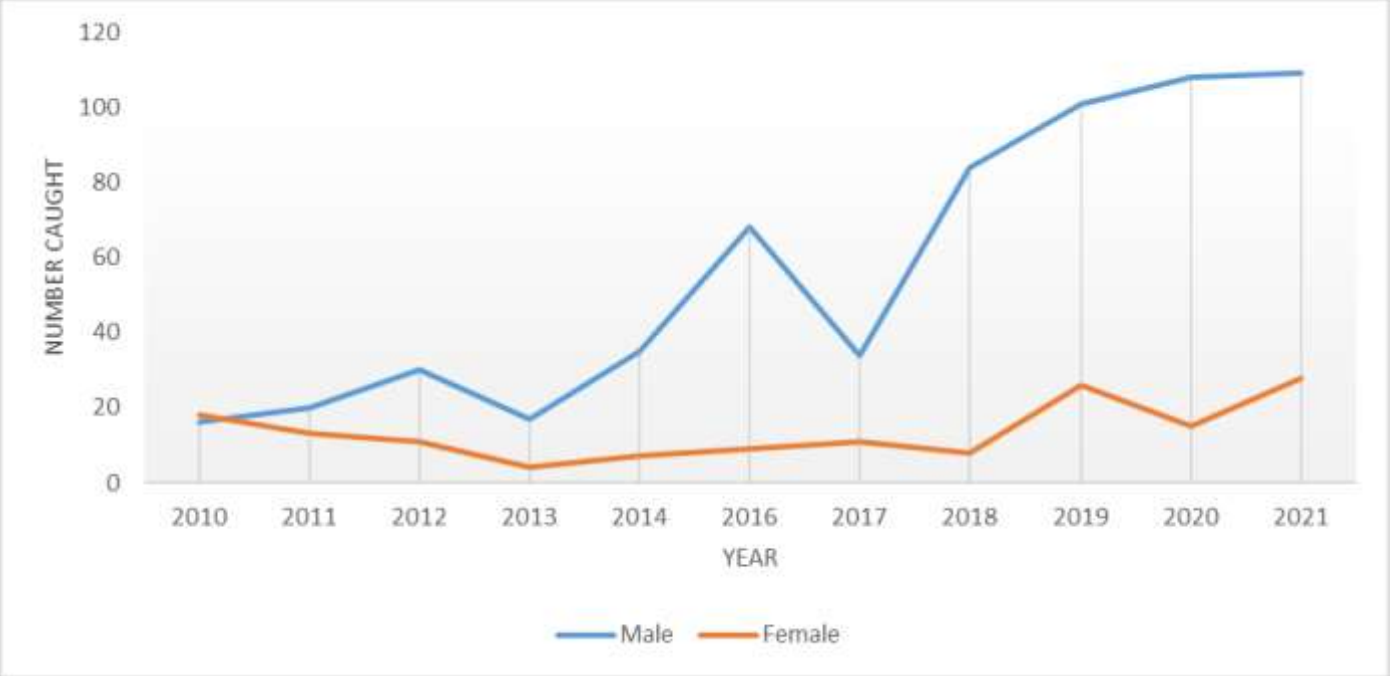
ICES WGCRAB

In 2020 the annual ICES WGCRAB meeting was held online due to Covid-19. It was attended by representatives from Jersey, France, England, Ireland, Scotland, Norway, Greenland, Newfoundland, Isle of Man, and the Orkney Islands.

The meeting allows fisheries managers to compare their landings and other datasets and to discuss the latest trends, research and management measures. It is a useful forum in which to exchange and compare information and to learn about North Atlantic fisheries.

Discussions and presentations in 2020 focused stock assessment methodologies and the reaction of species to changes in environmental conditions such as sea temperature. The ongoing brown crab recruitment crisis continued to be a topic of interest with evidence of its effects now being felt in the southern Irish Sea. The theory of this being linked to warming seas (possibly through disease or breeding) remains the subject of active research including on Jersey.

FISHERIES MANAGEMENT
SPIDER CRAB STOCKS

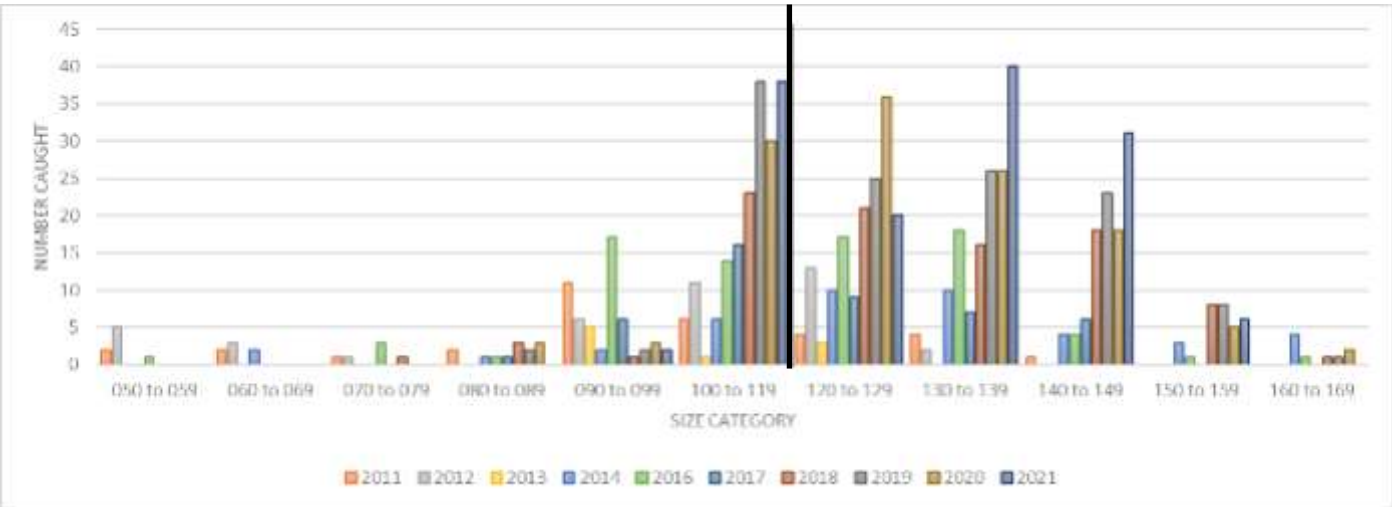


Spider crab annual potting survey results displaying the number of male and female spider crabs caught annually since 2010.

THE JERSEY SPIDER CRAB fishery has been highly variable between years due to changes in stock abundance and density. For example, in 2013 landings totalled 81 tonnes but by 2019 this had increased to over 310 tonnes. However, for 2020 this decreased to just under 200 tonnes, perhaps due to Covid-19. Around 75% of the Jersey catch comes from lobster pots with the remainder being primarily from netting. The Bay of Granville area produces over half of all European spider crab landings especially by French vessels operating to the south and west of the island using benthic tangle nets.

The spider crab has a complex life cycle and during the spring and summer animals will migrate from deeper to shallower waters. The English Channel is at the northern edge of its range and so colder winters are thought to markedly affect the summer population. It is therefore possible that a series of milder winters since 2013 have led to increased landings.

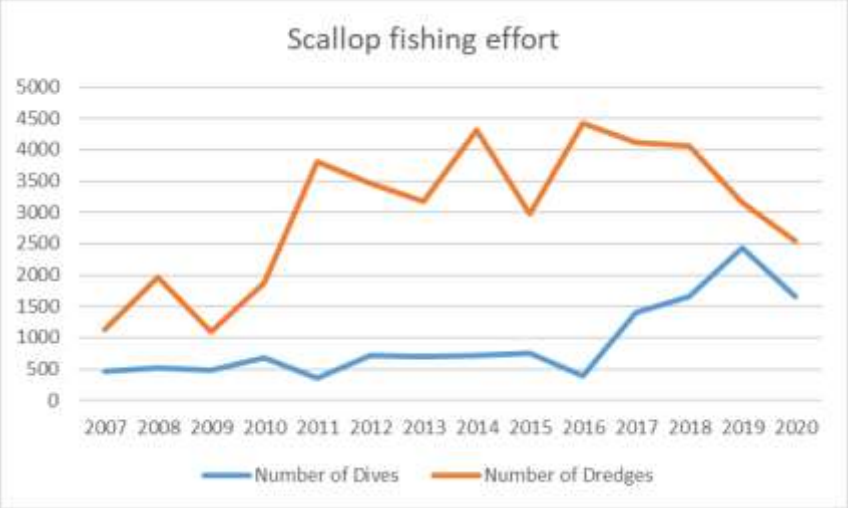
Spider crab are less economically important than lobster but will occupy the same pots as they are attracted to the same bait. Local data suggest that spider crab abundance is not correlated with lobster catches but nonetheless the recent upsurge in the local spider crab population is being monitored in relation to the local environment and potting industry.

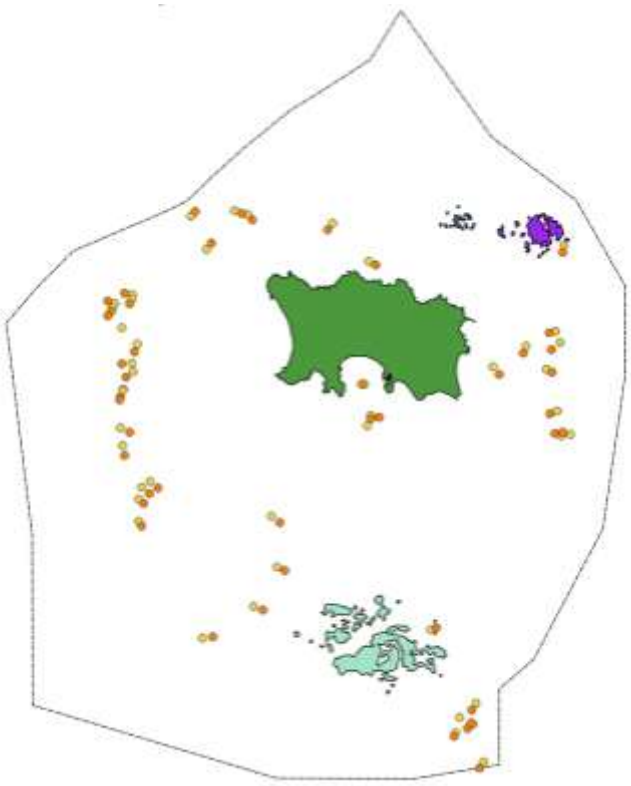


The size distribution (in 10 mm classes) of spider crab carapace length since 2011. The black line = MLS of 120 mm.

FISHERIES MANAGEMENT
SCALLOPS

THE SCALLOP FISHING INDUSTRY represents around 8% of Jersey's annual fishing economy with annual landings (combined for diving and dredging) usually being between 250 and 350 tonnes. In recent years catches from diving have increased substantially with annual totals beginning to approach those obtained by the more traditional dredging metier.





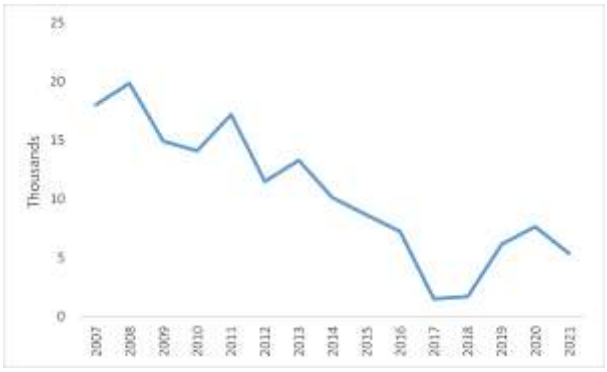
Historically, scallops have not been subject to the same degree of monitoring as whelk, crab and lobster in Jersey waters. To address this an initial broad scale scallop survey was carried out in the spring of 2021 to build a baseline picture across Jersey waters and to inform the future regular survey.

The survey sampled 40 sites using a method matched to that of the Normandy survey. Juvenile and mature scallops were counted and measured from each tow with shell damage and bycatch also recorded. The survey results along with a bycatch assessment will be published in an upcoming scallop species report.

Building on this baseline, an annual survey using both fixed monitoring points and randomised sampling will be conducted each autumn in line with French studies to provide a comparable dataset for the region. The output of this study will, over time allow for population modelling and more informed fishery management.

The management of scallop stocks is complex partly due to its varied stakeholders who have differing needs and objectives. Modelling stocks includes quantifying, managing and balancing levels of fishing effort by vessels from Jersey, Normandy and Brittany as well as between dredgers and divers to ensure that the resource is being fish at sustainable levels and with appropriate access for different sectors of the fleet. A recent additional factor for consideration is the increased popularity of dived scallops which reflects a general trend towards sustainably sourced seafood. Many scallop divers now display the Jersey Hand Dived logo on their boats and product packaging.

FISHERIES MANAGEMENT
BASS FISHING



Landed weight (kg) of Bass by Jersey vessels between 2007 and 2021 showing a decline overtime.

REGIONAL ADVICE. For several years the International Council for the Exploration of the Seas (ICES) has been warning of a Europe-wide decline in bass stocks. Over recent years increasingly stringent measures have been put in place by the EU following scientific stock analyses. These range from winter pelagic trawling bans to bag limits for anglers. An increase of 105% in catch advice has been issued for 2019 compared with the advice for 2018. This is mainly due to the above-average recruitment in 2013 and 2014, low fishing mortality and increase in stock size. Based on this advice, together with considerations for the commercial and recreational fishing sectors, the European Union has proposed various measures to its member states.

RECREATIONAL

Jersey introduced a zero bag limit for recreational anglers in April 2017 after data from the International Council for the Exploration of the Seas (ICES) showed that the number of bass would soon fall below the lowest viable breeding limit. Recreational anglers were only able to target bass on a 'catch and release' basis.

In September 2018, ICES announced that it would now be appropriate to increase the bag limit for bass to one fish per day for recreational fishers. The council's advice was based on new research which showed that a lower number of fish died from recreational fisheries than estimated. The survival rate of bass from 'catch and release' practices was also higher than expected.

In 2019, the recreational daily bag limit was increased from one fish per person per day to two. This was put in place following an EU change to two fish per day. The season start was also brought forward from April 1st to March 1st.

During 2020, the Covid-global pandemic meant commercial netting of bass was opened earlier in mid march in response to a collapse in shellfish export and to meet demand for local seafood.

The local bass measures have been controversial with strong opinions being expressed on all sides. Appropriate management of a threatened fishery is vital as poor decision-making can lead to stock collapse. Even the limited local data concerning bass suggests that close management of the species is vital to turn around what has been a persistent and steep decline in the local population. This situation is not unique to Jersey and is being repeated across northern Europe. We are grateful to Jersey's recreational angling community for their patience and assistance with the bass stock recovery measures.

COMMERCIAL

In 2018, the Jersey Fishermen's Association put forward a proposition to allow a limited reintroduction of a targeted net fishery for Bass. This was considered and recommended for approval by the Marine Resources Panel and, following further work, a trial scheme was introduced by the Minister for December 2018. The scheme focused on gathering data relating to the impacts (including bycatch) of net fishing. Due to prolonged poor weather in December the scheme was extended to the end of January 2019 to allow more data to be collected.

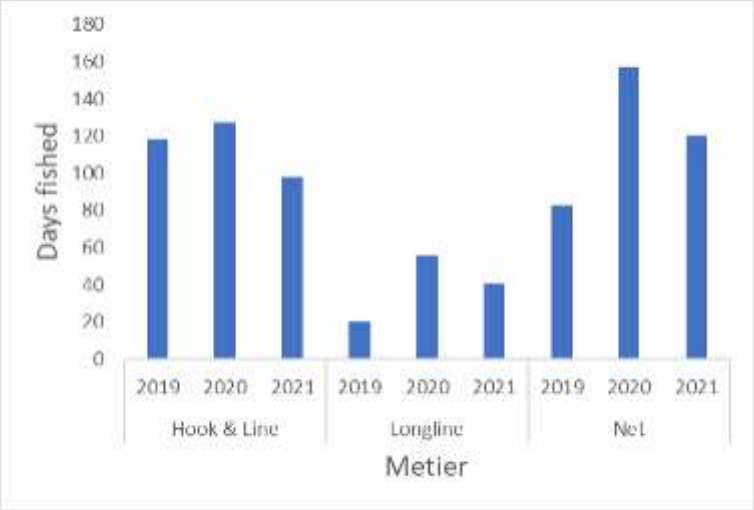
Scientific netting has been expanded to the ten active permits who were previously involved in the hook and line scheme, although not all have decided to use this fishing technique.

During 2020 and 2021, Marine Resources conducted a separate scientific netting study to better understand catch compositions with varying mesh sizes. This was undertaken with help from the industry. The study focuses on parameters such as post release mortality, seasonal morphology changes, and the effect of varying netting techniques. By undertaking this study in local waters a better understanding will be made for local marine resource managers as to the appropriate mesh size for the Jersey Bass fishery. A final report for this will be published in 2022 after two years of data gathering.

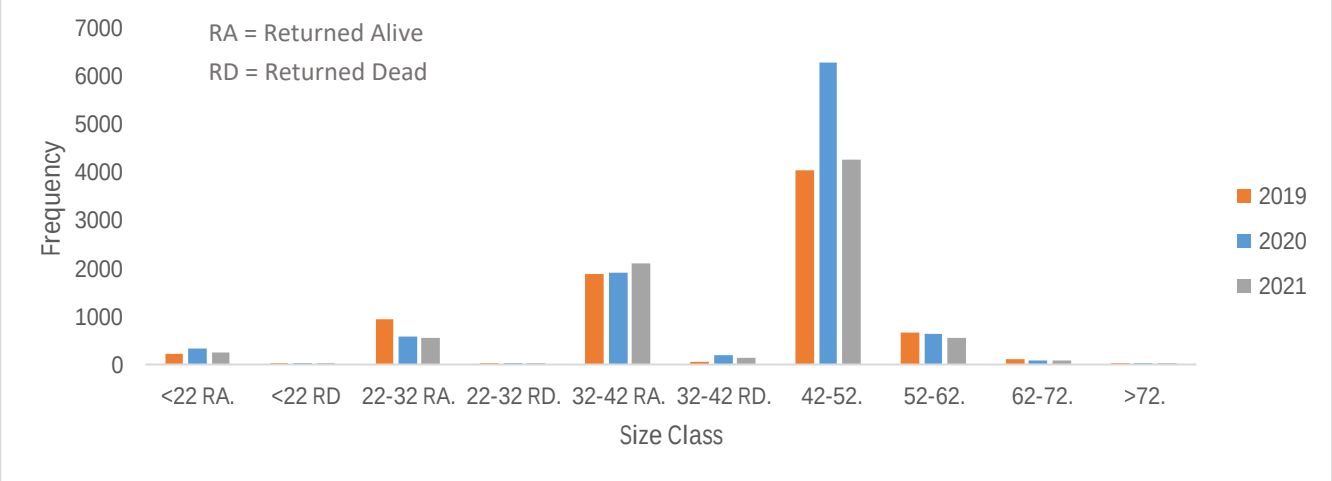
FISHERIES MANAGEMENT
BASS STOCKS

BASS SURVEY. Currently there are nine active bass fishing vessels. Permits were issued based on a track record of catching bass in the years 2015 and 2016. Permitted vessels can either net, longline or rod and line fish for bass. They are capped at a maximum of 1.5 tonnes per fishing year (April to April). Permitted fishers are required to complete daily bass catch sheets, tallying fish catch into 10 cm size brackets and noting if the fish were retained for sale, returned alive, or discarded dead. It was also a requirement to log all bycatch species caught and to note mortality and whether they were retained or not. Information regarding the size of mesh, length of net and hours fished were also required.

Overall, net and hook and line fishing was most popular when fishing for bass although netting days dropped 24% in 2021. The 42-52 cm size class is the most frequently caught bass size when using nets with a minimum mesh size of 100 mm. 52-62 cm fish were seen to increase in frequency during 2021 especially with the use of mesh sizes above 105mm. Netting showed high levels of by-catch with more being caught per kg than bass for 2020 and 2021. High levels of by-catch include species such as the Lesser spotted catshark (3394kg) and Mullet spp.(5463 kg).



Days fished per metier and year.



Size distribution (in 10 cm length classes) of bass caught by commercially licenced fishers between 2019-2021.

RESULTS. In total, 7,973 bass were caught in the 2021 season. This is a decrease from 10,097 in 2020 (27% decrease). Similarities can be seen in the catch composition from all metiers used in the 2020 and 2021 season. Total landed catch has risen from 6.2t in 2019 to 7.55t in 2020. Jersey's bass fishery increased to a value of approximately £91,000 in 2020. This has been acquired with an estimation of the price attained by fishers throughout the year (£12 per kilo).

FISHERIES MANAGEMENT
MARINE STEWARDSHIP COUNCIL

THE MARINE STEWARDSHIP COUNCIL (MSC) was founded by the World Wildlife Fund in 1996 following the collapse in cod stocks off the Canadian Grand Banks. Its aim is to encourage sustainable fishing and to raise the general awareness and standards in relation to fisheries and environmental management. Since 1999 the MSC has been run as a financially independent organisation.

The MSC manages a certification system which assesses individual fisheries using scientific criteria relating to general management, traceability and sustainability. Compliant fisheries have the right to use the MSC's ecolabel to certify that their seafood is traceable to a fishery that meets MSC sustainability criteria.

In 2009 Jersey and Normandy applied to the MSC to have their joint lobster fishery assessed and, in 2011, it was certified as being sustainable. The MSC described the Jersey-Normandy lobster fishery as being:

'*… a great example of collaborative management of a shared resource. Achieving MSC certification for the fishery recognizes that management and ensures continued improvement for the future. The lobster from Granville Bay, already renowned for its high quality, can now also be proudly recognized for its sustainability*.'

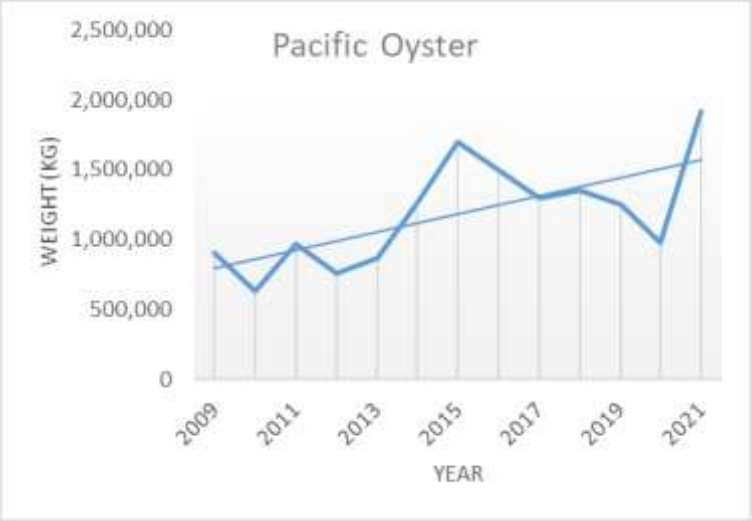
Since its certification the joint lobster fishery has passed eight MSC audits allowing local fishers, merchants and restaurants to continue to display the MSC ecolabel on locally sourced lobsters. The fishery was recertified in November 2016 and audits are held annually which bring together the MSC assessors and the managers from the Jersey and Normandy fisheries. These meetings are used to share data, discuss current and future stock management and highlight any perceived issues.

The audit for 2021 coincided with the reassessment year where the standard of assessment would also be upgraded to MSC 2.0. Due to the limitations of the Covid-19 pandemic and the impacts of Brexit causing uncertainty in the future of fisheries management for the joint fishery it was agreed with the MSC that a one year extension would be permitted to the current certification. Beyond a basic data submission there was no further requirement for the MSC certification in 2021.

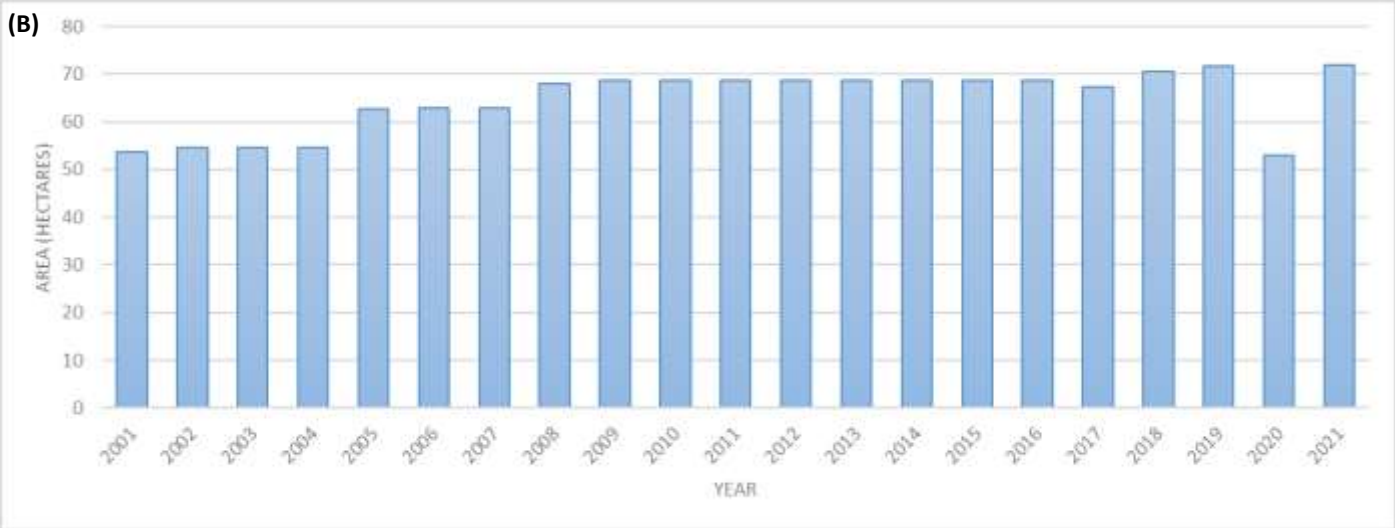
FISHERIES MANAGEMENT
AQUACULTURE PRODUCTION

JERSEY'S AQUACULTURE INDUSTRY. Production remains focused on the Pacific oyster (*Crassostrea gigas*) and mussels. King scallops are farmed subtidally at one site. Production has remained steady over recent years as has the area of seashore occupied by aquaculture concessions. The island's main aquaculture area is in Grouville Bay (224 hectares) and is covered by a single planning consent held by the Government of Jersey. In 2020, an emergency holding bed was established on the upper shore of Grouville bay to allow oysters that were nearing market size to be held for longer at slower growing speeds while markets were depressed due to Covid restrictions.

(A)



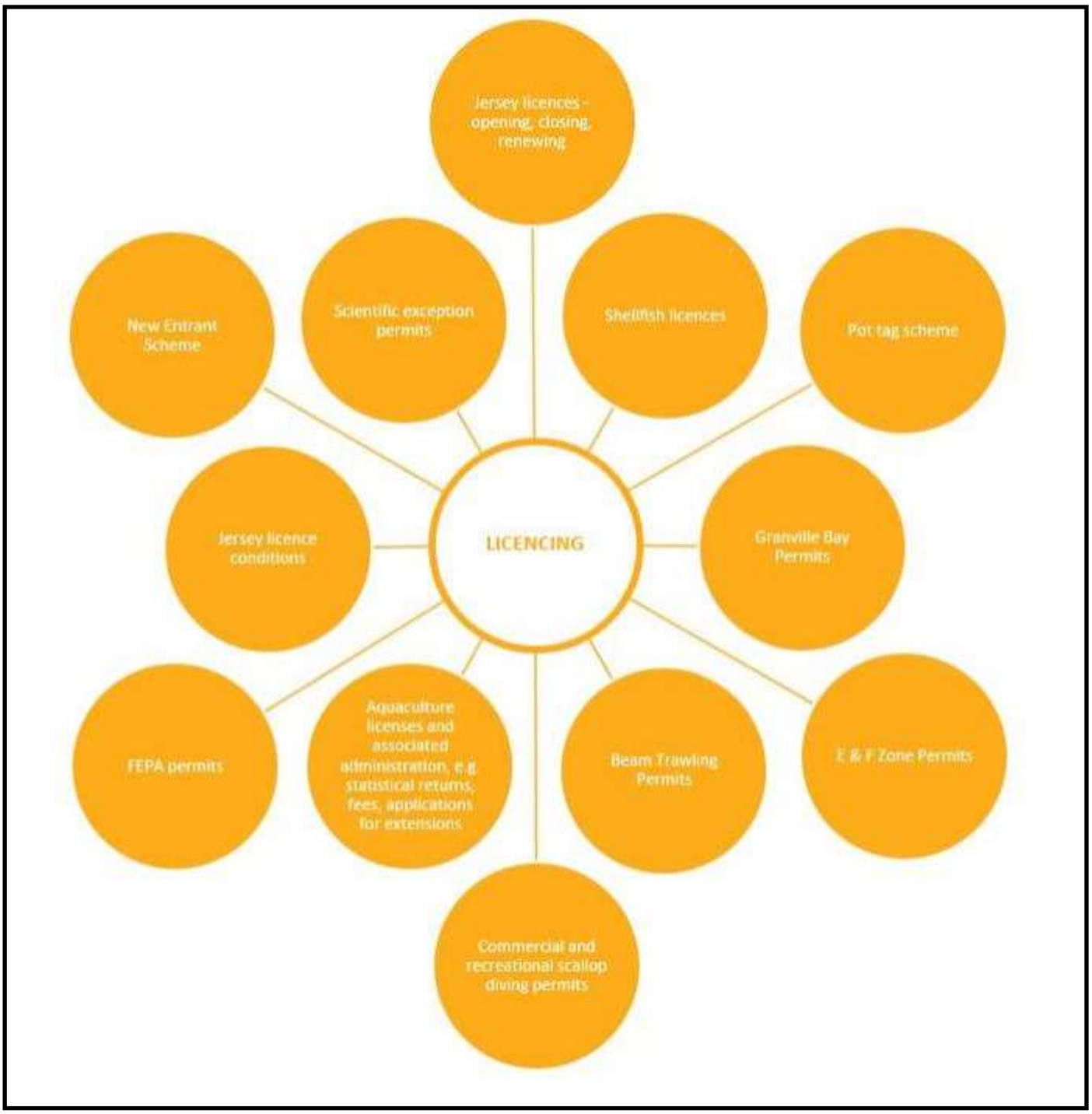
(B)



(A) Production weight (Kgs) of farmed Pacific Oyster. (B) Intertidal aquaculture areas (hectares).

Oyster beds in Grouville Bay

LICENCING


Jersey licences - opening, closing, renewing
Scientific exception permits
Shellfish licences
Pot tag scheme
New Entrant Scheme
Jersey licence conditions
LICENCING
Granville Bay Permits
FEPA permits
Aquaculture licenses and associated administration, e.g. statistical returns, fees, applications for extensions
Beam Trawling Permits
E & F Zone Permits
Commercial and recreational scallop diving permits

LICENCING
JERSEY FISHING VESSELS

JERSEY'S FISHING FLEET. Any vessel exploiting fish or shellfish stocks in local waters on a commercial basis requires a fishing licence. The Jersey fishing vessel licensing system is aligned directly with that of the UK and as such contributes to the stabilisation of fishing effort at a European wide level.

2021 SUMMARY

During 2021, 7 licences opened and 14 closed.

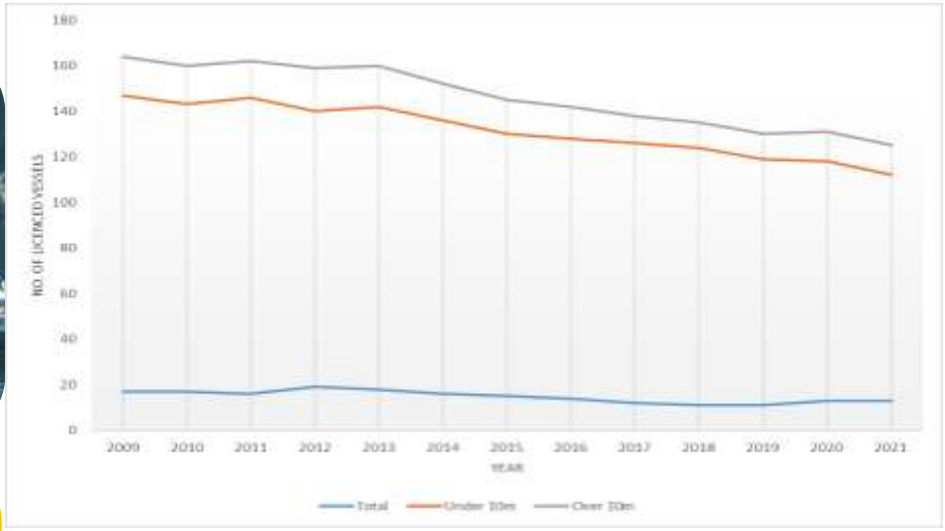
There was a loss of 7 licenced fishing vessels taking the total for 2021 to 124.

There are 12 over 10 metre vessels and 112 under 10m vessels.

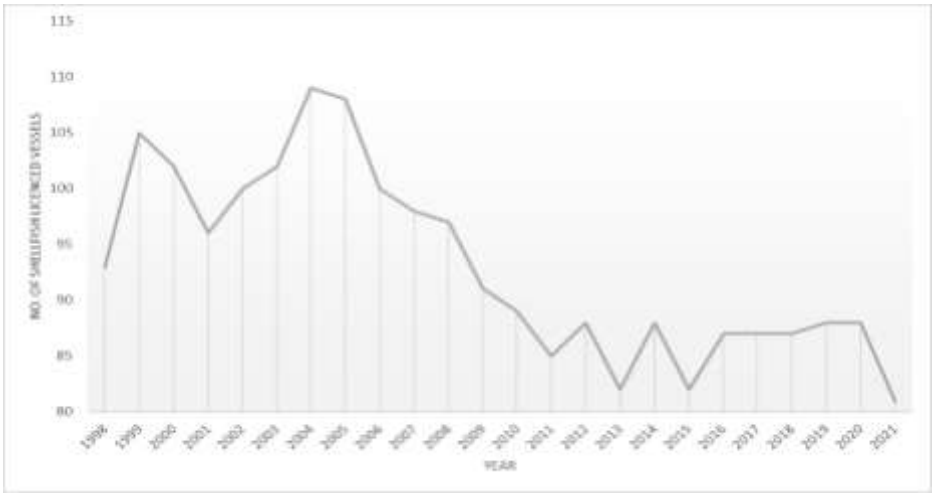
The number of shellfish entitled vessels remaining decreased by 8 to 80.

Combined engine capacity is 10,324kw and tonnage 514.

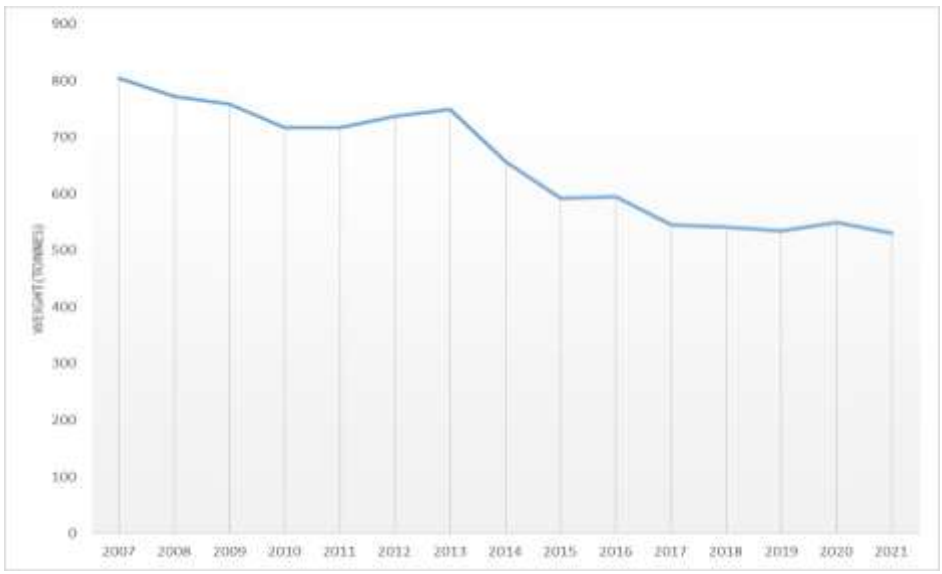
In addition to Jersey licenses, at the end of 2021 125 French licenses had also been issued. 82 over 10m vessels and 43 under 10m vessels. A combined engine capacity of 21,152 and tonnage of 2,498.



Above: The number of licenced Jersey vessels (by length (m)) between 2009 and 2021.



Above: The annual number of shellfish entitled vessels between 1998 and 2021.



Right: The total engine power and tonnage of the Jersey fleet between 2006 and 2021.

LICENCING
FOOD AND ENVIRONMENTAL PROTECTION

The deposition of any material below the mean high water mark requires a licence (or exemption) issued under the Food and Environment Protection Act (FEPA) 1985 (Jersey) Order 1987. This covers inert, artificial and natural materials but deposition in connection with certain activities and circumstances are exempt. Anyone wishing to deposit any material at sea or on the seashore (no mater how apparently innocuous it may seem) should seek advice from Marine Resources.

FEPA licence applications are submitted to Marine Resources and are then subject to evaluation by a panel with representatives from key sectors of marine regulation and management. The panel will sometimes request further information about an application which may include physical or chemical testing, materials lists or the submission of pollution plans, etc.

If no serious objections are raised to the application then the licence is drafted and presented to the Minister for the Environment to sign. Most licences will come with a list of standard conditions plus and additional conditions requested by the panel. Licences are subject to a fee.

Marine Resources issue around five to ten licences a year, mostly in connection with seaweed and sandbank removal. New licences are usually valid for a year but scope exists for them to be renewed for up to two years. Details concerning issued FEPA licences are submitted annually to DEFRA as part of Jersey's commitment to the OSPAR Convention.

The following FEPA licences were issued during 2021:

LICENCE NO.	APPLICANT	PROJECT	DATE OF ISSUE	DATE OF EXPIRY
2021/01	DfI	Creation of temporary rock armour to control flooding in Simon Sand; exemption under Article 19.	N/A	N/A
2021/02	PoJ	St Aubin's harbour sandbar removal	07/05/2021	07/05/2023
2021/03	DfI	Offshore seaweed disposal	13/05/2021	13/05/2023
2021/04	DfI	Deposit of green seaweed	13/05/2021	13/05/2023

LICENCING
OTHER LICENCING ACTIVITIES

Removal of Pebbles

The removal of sand, pebbles and other material from the seashore is prohibited by the Sea Beaches (Removal of Sand and Stone) (Jersey) Law 1963. This law was enacted to prevent the commercial exploitation of beach sand, etc., for building and other trades. However, it has the side-effect of requiring anyone that wishes to remove pebbles from the seashore to apply to the Minister for the Environment for an exemption. Marine Resources manages these exemptions.

The number of applications has risen in recent years as word of the need for a licence has spread and also because of an increased desire to sell decorated local pebbles at markets and on the internet. The removal of beach pebbles is not encouraged as they fulfil an important ecosystem service by protecting our coastal areas and seawalls from tidal and storm damage. It can take decades/centuries for new pebbles to form and be recruited to a shingle bank. Rather than take pebbles from Jersey's beaches, we would prefer that people obtained them from garden centres or other more sustainable sources.

However, those wishing to take small quantities of pebbles from local beaches may apply to the Minister for an exemption. Such applications should be made via Marine Resources; please contact us for details.

During 2021, 3 applications were received and approved.

Scientific Survey Exemptions

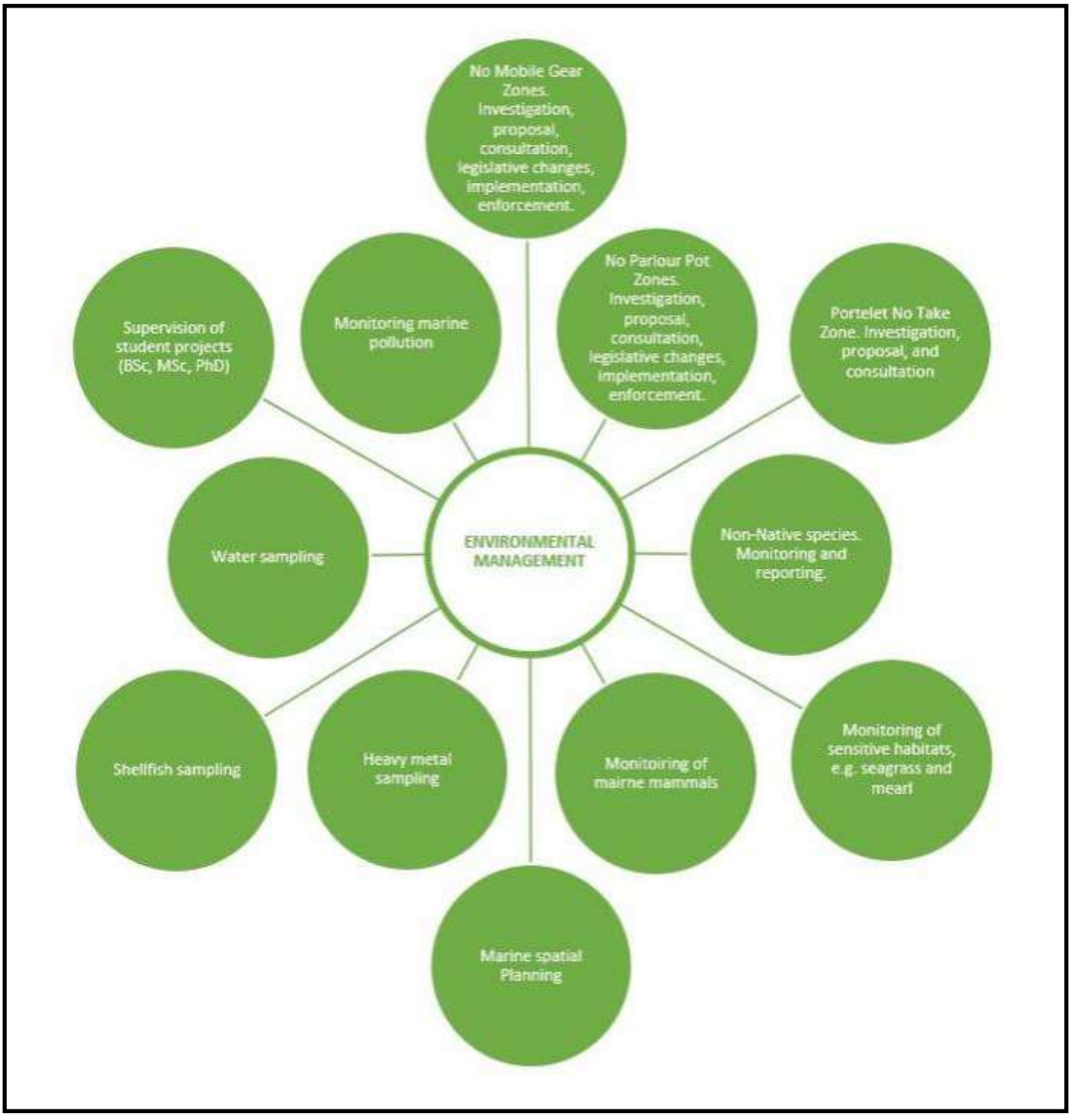
Those wishing to conduct scientific studies in Jersey waters that may impinge on local fisheries can apply to Marine Resources for an exemption to the Sea Fisheries (Jersey) Law 1994. A small number of exemptions are issued annually including for a regular trawl survey by CEFAS and a French algal survey at Les Écréhous. Other exemptions have been issued to permit the study of individual species (for example, crawfish) or to facilitate studies of the wider marine environment.

Aquaculture Concessions

The Minister of the Environment may issue aquaculture licences which gives the holder the right to exploit specific species within a set beach or sea area. If equipment is required then the licences are also subject to Planning approval and so may require an environmental impact assessment. A recent reorganisation of intertidal aquaculture saw the creation of a defined aquaculture area in the south of Grouville Bay to which the Government of Jersey holds exclusive planning permission. This removes potential hurdles for new applicants and facilitates the management of existing concession areas.

During 2021, one new aquaculture licence was granted in Grouville Bay and the boundaries were added/moved for two existing concession areas. These applications were considered by the Marine Resources Panel and were subject to public consultation before being granted. On Jersey the area of seashore/seabed that is suitable for aquaculture is limited and anyone interested in applying for an aquaculture concession should first speak with Marine Resources.

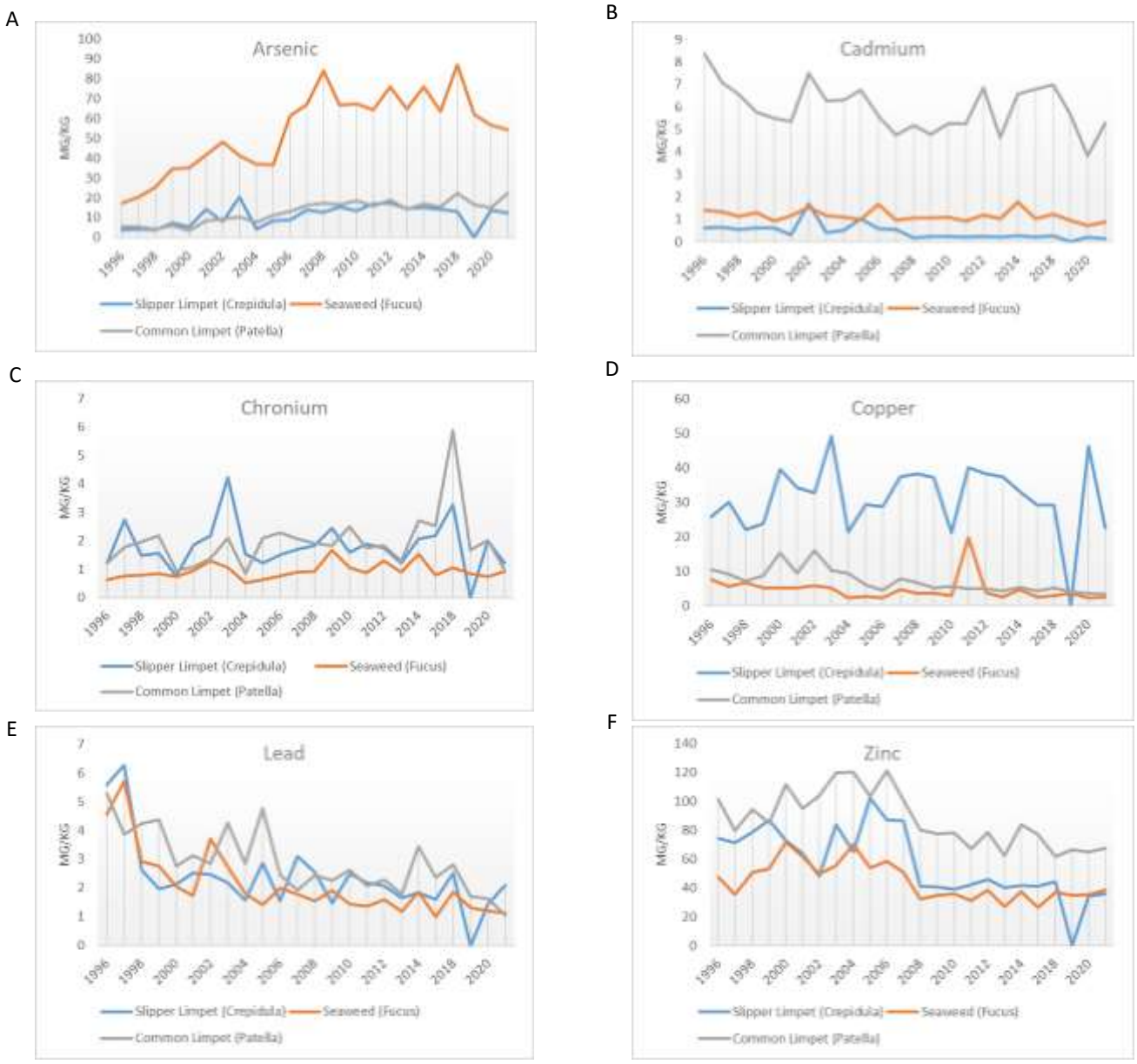
ENVIRONMENTAL MANAGEMENT



ENVIRONMENTAL MANAGEMENT
HEAVY METAL MONITORING

Since 1993 monitoring has been conducted to assess heavy metal concentrations within marine species both onshore and offshore. The common limpet (*Patella vulgata)*, the slipper limpet (*Crepidula fornicata),* and a serrated seaweed (*Fucus serratus)* are used as bio-monitors.

The limpet and seaweed samples are taken from five locations around Jersey's coast (Elizabeth Castle, Harve de Pas, St Aubin's Fort, Corbière Lighthouse, and Gorey Castle) and slipper limpet samples from four locations (Elizabeth Castle, Harve de Pas, St Aubin's Bay, and Horn Rock (Gorey)). The programme has recently been extended to also include a full suite of samples from the offshore reefs (Les Écréhous and Les Minquiers). Samples are taken bi-annually and analysed on island. Note that the slipper limpet figures drop to zero in 2019 as no samples could be collected.



Concentrations (mg/g) of various heavy metals in slipper limpets (blue), seaweed (orange), and common limpet (grey). (A) Arsenic; (B) Cadmium; (C) Chromium; (D) Copper; (E) Lead; (F) Zinc.

RESULTS. While there is variation between metals, the overall analysis suggests that there is a general correlation between sites indicating that trends are consistent around the locations sampled and therefore not indicative of a point source for these metals. If you wish to view site-specific data, please contact the Department.

ENVIRONMENTAL MANAGEMENT
MICROBIAL CONTAMINATION

SHELLFISH PRODUCTION CLASSIFICATION AREAS. Bivalve mollusc production areas are classified as A, B or C according to bacteriological criteria (levels of *E.coli* found in samples from the site). This is in accordance with the requirements in EC Regulation 854/2004, Annex II, Chapter II, A.

BED NAME	PRODUCTION AREA	SPECIES	GRADE
Holding Bed, Grouville	6, 27, and 29	*C. gigas*	B
	27	*M. edulis*	B
Main Bed South, Grouville	1 and 21	*C. gigas*	B
Main Bed North, Grouville	24 and 28	*C. gigas*	B
		M. edulis	B
La Hocq	8 and 25	*C. gigas*	B
Green Island	12	*O. edulis*	B

Classifications of Bivalve Mollusc Production Areas in Jersey. Effective 1 April 2020 to 31 March 2021.

WHAT DO THESE GRADES MEAN?

Grade A = Can be harvested for direct human consumption. 80% of samples collected must not exceed 230 *E. coli* per 100 g of flesh and intravalvular liquid. The remaining 20% of samples must not exceed 700 *E. coli* per 100 g of flesh and intravalvular liquid.

Grade B = Can go for human consumption after purification in an approved plant or after relaying in an approved Class A relaying area or after an EC approved heat treatment process. 90% of sampled molluscs must contain less than 4,600 *E. coli* per 100 grams of flesh; 10% of samples must not exceed 46,000 *E. coli* per 100 grams of flesh.

Grade C = Can go for human consumption only after relaying for at least two months in an approved relaying area followed, where necessary, by treatment in a purification centre, or after an EC approved heat treatment process. Molluscs must contain less than 46,000 *E. coli* per 100 grams of flesh.

OTHER ENVIRONMENTAL MONITORING

In addition to the work by Marine Resources some marine monitoring isundertaken by other Government of Jersey teams or non-government organisations, This includes:

Sea Water Monitoring (Bathing Water Quality)
www.gov.je/Environment/ProtectingEnvironment/SeaCoast/Pages/SeawaterMonitoring.aspx

Radioactivity Monitoring
www.food.gov.uk/research/radioactivity-in-food-and-the-environment

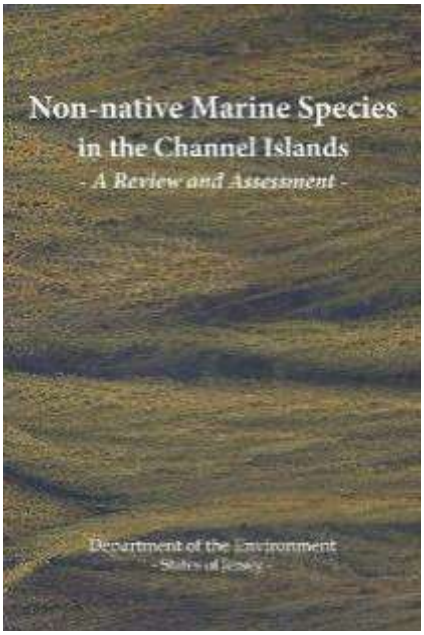
Sea Lettuce Monitoring (St Aubin's Bay)
www.gov.je/Environment/ProtectingEnvironment/SeaCoast/Pages/SeaLettuce.aspx

ENVIRONMENTAL MANAGEMENT
NON-NATIVE SPECIES

Non-native species can have significant impacts on marine ecosystems, from competition to biodiversity loss. Entry routes include ballast waters, fouling on ships hulls and aquaculture. Eradication of non-native species in the marine environment, once established, is considered virtually impossible due to logistic and resource issues.

During 2017 the Marine Resources Section undertook a full review of the non-native marine species situation in Channel Island waters. A total of 43 non-native species had been reported from the islands with another 25 probably being present but not yet recorded. Regionally there are possibly 134 species which have the potential to reach the islands within the next twenty years.

Almost all non-native marine species had been transported to Jersey via shipping or are carried here from other parts of the English Channel via tidal currents. A threat assessment made for each non-native species highlights several that are or have the potential to cause problems in local waters. The highest ranking species include the American Slipper Limpet (*Crepidula fornicata*), and Wireweed (*Sargassum muticum*).



The monitoring of non-native marine species continued during 2020 via general seashore monitoring and targeted surveying of the marinas in St Helier. This resulted in the discovery of the invasive Purple Acorn Barnacle (*Amphibalanus amphitrite*) in La Collette marina. This was attached to one of the pontoons and had probably been resident in the harbour for some years.

In August a member of the Société Jersiaise discovered a sea squirt in Elizabeth Marina that had many of the characteristics of the Carpet Sea Squirt (*Didemnum vexillum*). The Carpet Sea Squirt presents a significant threat to the local marine environment but with help from Marine Scotland we were able to determine that the specimens in the marina were a native species. However, the Carpet Sea Squirt is expected to arrive in the region within the next few years and Jersey is working with agencies in the UK (including via the British-Irish Council) in assessing the impact and response to this species.

The results from two student projects on non-native species were received in 2019. The first, from Charlotte Hooper, reported the results of a study of the Asian shore Crab (*Hemigrapsus sanguineus*) on Jersey. This suggests that the crab was only recently established and that in future the island should expect the population to increase with a resulting negative impact including a reduced abundance of the Shore Crab (*Carcinus maenas*).

The second project, by Max Jouault, looked at the ecology of Slipper Limpet beds from the south and east coasts. This found reduced species diversity and abundance in Slipper Limpet areas in comparison with neighbouring habitats such as maerl and sandmason worm beds. This effect was particularly noticeable on molluscs and larger crustacean species with the conclusion being that any expansion of Slipper Limpet beds will present a future ecological and economic risk to the island.

For more information and a species list see the following report which available on the GoJ website:

Non-native Marine Species in the Channel Islands.
Department of the Environment, 2017
www.gov.je/Government/Pages/StatesReports.aspx?ReportID=3366

ENVIRONMENTAL MANAGEMENT
Marine Protected Areas (MPAs) and OSPAR

AN OVERVIEW. To protect areas of fragile habitat and high biodiversity in Jersey's territorial waters, three MPAs (one designated around the southeast of Jersey in 2010 and later expanded in 2014, and another two designated around the Ecrehous and Minquiers offshore reefs in 2017) were established. These MPAs, along with several other previously established inshore MPAs, resulted in 6.5% (150 km^2) of Jersey's territorial waters protected from mobile gear (both bottom-towed gear and mid-water trawls) under the Sea Fisheries Law. These areas were closed in order to protect key habitats such as seagrass, maerl and kelp. The MPAs are important nursery grounds for fish and shellfish, including many commercial species, so protection not only benefits the local marine environment but also the fishing industry by increasing the resilience and size of local stocks. The area protected fell short of the 10% suggested by the Convention on Biological Diversity, and currently falls short of IUCN recommendations for 30% coverage by 2030. However, Jersey is ahead of the global total (2.4%, Marine Protection Atlas) of waters protected from mobile gear.

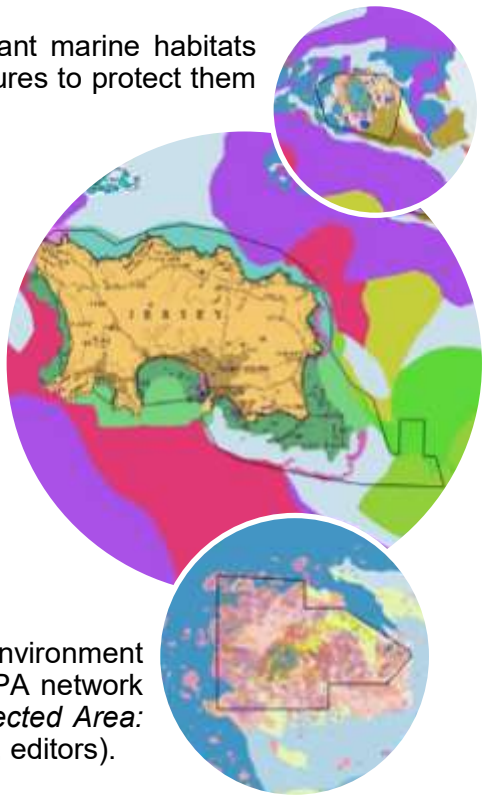
OSPAR: *The mechanism by which 15 Governments & the EU cooperate to protect the marine environment of the North-East Atlantic.*

In 2010 the UK extended ratification of the OSPAR Convention to Jersey, with the exception of Annex V which covers the conservation of important marine habitats. In 2017 the Joint Nature Conservation Committee (JNCC) invited Jersey to nominate the 150 km^2 of 'no mobile gear zones' for inclusion within OSPAR's register of marine protected areas (MPAs). To be included on the OSPAR register a protected marine area must meet with IUCN MPA guidelines. Over several years Jersey had undertaken the survey work necessary to meet the requirements of Annex V including identifying and assessing important marine habitats and establishing a network of MPAs to conserve these. The island's MPAs therefore qualified for registration with OSPAR but the application could not proceed without Jersey having had ratification of Annex V extended to it.

Annex V requires contracting parties to identify and assess important marine habitats and ecosystems within their area and to implement necessary measures to protect them from the adverse effects of human activity. Jersey has two key habitats designated under OSPAR: maerl beds and *Zostera* spp. (Seagrass) meadows. Both are high biodiversity habitats which are associated with beneficial ecosystem service functions including sediment stabilisation and carbon sequestration.

Survey work was undertaken by Marine Resources but a major contribution was also made by NGOs, principally Société Jersiaise, Seasearch and Jersey Marine Conservation. Important marine habitats were identified, mapped and assessed for their health, biodiversity, ecosystem service value and for any impact by human activities. Several measures were enacted to conserve and monitor these habitats including no mobile gear zones and monitoring and health assessments.

Assessment work inside and outside the MPA network has continued into 2021 as part of a wider review of the island's marine habitats. Jersey is also an active participant within the OSPAR Marine Environment Subcommittee for the British Isles. The establishment of Jersey's MPA network was included as a chapter in the recent Elsevier book *Marine Protected Area: Science Policy and Management* (John Humphreys and Robert Clark, editors).



Sections of a map showing seabed habitats within Jersey's territorial waters. The protected seabed areas are outlined in black.

OSPAR COMMISSION

ENVIRONMENTAL MANAGEMENT
RAMSAR SITES

AN OVERVIEW. The Ramsar Convention is an intergovernmental treaty that provides the framework for the conservation and wise use of wetlands and their resources. Jersey has four designated Ramsar sites which have been in place since 2000 (Jersey South-east Coast) and 2005 (Les Écréhous, Les Minquiers and the Paternosters). Each site is subject to a Ramsar Management Plan (RMP) which were devised in 2011 following consultation with the Ramsar Management Authority (RMA) - a steering group formed from a range of local stakeholders.

JERSEY'S RAMSAR MANAGEMENT AUTHORITY.
Throughout 2021 Jersey's Ramsar Management Authority (RMA) met on five occasions to continue working towards the objectives set out within the Ramsar management plans. Minutes for these meetings can be found here.

The RMA is chaired and managed independently but the Government of Jersey provides logistical and other support to the group. Due to Covid-19, most of 2021 RMA meetings took place via video link. The RMA's achievements for 2021 included:

- Participation in Jersey's RAMSAR site's ' World Wetlands Day', event, organised by Jersey Marine Conservation.

- Delivery of the Channel Islands' Ramsar Code of Conduct for publication in 2020.

- Deployment new signage for the Ramsar Sites based on the Code of Conduct.

- Consultation on usage and potential pollution issues in association with Ramsar sites.

- Review and update of Ramsar site management plans. This has progressed to the drafting stage.

- Sign placement at St Catherine's Breakwater to ensure appropriate behaviour is followed when visiting Les Écréhous. Additional signage was made for La Rocque area also.

- Consulted under formation of new Wildlife (Jersey) Law 2021 – Marine mammal and other wildlife disturbances.

Wildlife Safe (WiSe) Logo

There are eight Ramsar sites within the Channel Islands four of which are in Jersey waters.

ENVIRONMENTAL MANAGEMENT
MARINE MAMMALS

AN OVERVIEW. Jersey is home to large resident pods of bottle-nosed dolphins as well as colonies of grey seals, and other rarer visitors such as common dolphins and even whales. Marine Resources, in conjunction with the Société Jersiaise and others, has several different projects which document marine mammals with the aim of better understanding the local distribution, biology and behaviour.

DOLPHIN SIGHTINGS

All marine mammal sightings are recorded through 'Dolphin Watch' which is a smartphone app, hosted on Epicollect5. The app is open to the public and is used in the field while the encounter is happening. All records submitted are then publicly accessible via the Société Jersiaise website. Since launching in April 2017 over 1,700 dolphin sightings were made via the app including major contributions from local companies Jersey Seafaris and Island RIB Voyages. This dataset is already outlining the abundance and distribution of our dolphin, porpoise and seal species.

Map showing location of marine mammal sightings since Jan 2017 using Epicollect app. Available online at: **www.jerseycoast.co.uk**

C-POD

Fisheries Officers exchanging batteries and the SD card from a C-Pod after a successful 3 month deployment.

C-PODs are passive acoustic monitoring instruments that detect toothed whales, dolphins, and porpoises by identifying echo-location sounds that they produce. Working with the Société Jersiaise Marine Biology Section, there were twelve C-PODs deployed around Jersey's coast during 2021. These operate for 24 hours a day for several months at a time and provide information about the occurrence and behaviour of dolphins and porpoises as well as the seabed environment.

By the end of 2021 the CPODs had been operational for over 4,000 days and had collectively recorded over 5,500 dolphin and porpoise encounters. The first phase of study finishes in 2022 after which the dataset will be processed and written up as a government report. Early results suggest it will shed much light on the behaviour and habits of our marine mammals.

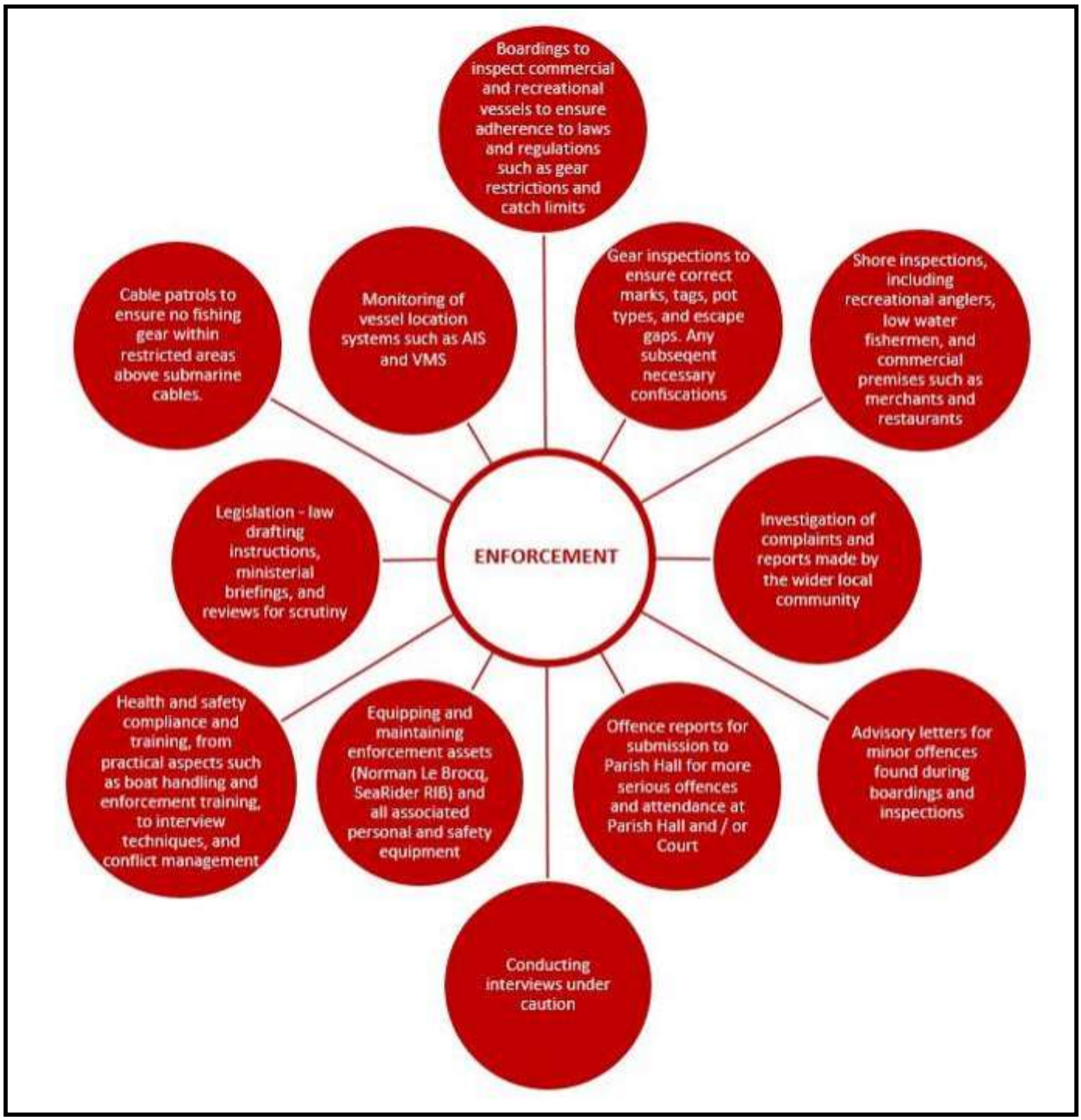
STRANDINGS

Species	Number
Bottle-nose Dolphin	0
Common Dolphin	2
Porpoise	1
Unidentified Dolphin	1
Grey Seal	0

Species and number of marine mammal strandings in Jersey in 2021.

Measurement data and other information (such as species, location, etc.) are collected from stranded dead marine mammals. To obtain these data Marine Resources coordinates with British Divers Marine Life Rescue, the Department for Infrastructure, Société Jersiaise and Jersey Coastguard. In 2021 there were just four marine mammals stranded recorded although it suspected that others may not have been reported due to Covid restrictions disrupting reporting chains. Personal inspections could not be made and so the cause of death could not be determined. Our data is shared with the Natural History Museum (London).

ENFORCEMENT



ENFORCEMENT
INSPECTION AND OFFENCES

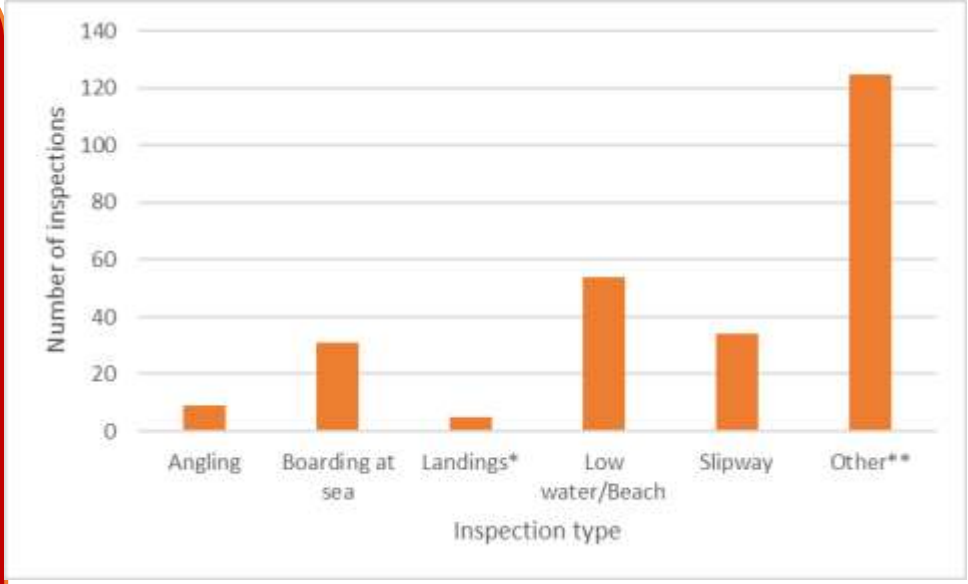
OUR ROLE. Fisheries officers carry out routine inspection checks along our island's coast, from piers and low water areas on-island, to offshore reefs, and to the limits of our shared fishing zones. Officers regularly board local and French vessels, both recreational and commercial. Checks are conducted to ensure fishing regulations are adhered to, such as minimum landing sizes, open/closed seasons, and compliance with fishing zones. (See also 'Offences'.)

In 2017 inspection recording moved from a paper-based system to the use of smartphone apps. This increased the accuracy of inspection records (especially location data, which is taken using GPS) and removed the need to type in paper records. A review of all historical inspection records was undertaken so that Marine Resources now has a single continuous database of inspections back to the start of 1997. This dataset provides otherwise difficult to obtain information such as catches from recreational fishers and foreign vessels.


Officers boarding Cap Pillar

IN NUMBERS. In 2021 a total of **258** inspection checks were conducted by Marine Resources officers. This is below average, the decreased number of boardings at sea is a reflection of the Covid pandemic impacting patrols.

Of these inspections, **88%** were shore based, including angling inspections and low-water checks on the beach. **31** boardings at sea were conducted (excluding gear checks). A majority of our checks were conducted during work hours whilst a small minority (**5**%) took place outside of government core work hours (09:00 - 16:00) or at weekends.



The number of inspections, separated by type. The checks are dominated by boardings at sea, low water and slipway checks and angling checks, usually on piers or headlands.

** 'Landings' including both at St Helier, and across other outlaying harbours such as those along the north coast.*

*** 'Other' includes activities such as gear inspections and premises checks.*

OFFENCES. The year 2021 produced 34 recorded offences against Jersey and French fishers from the recreational and professional sectors. Offences included fishing out of season, undersized animals and unmarked fishing gear. Outcomes varied from written warnings to fines**.** Several cases were still being processed at the start of 2022.

ENFORCEMENT
FISHERY PATROL VESSEL *NORMAN LE BROCQ*

THE BOAT. The *Norman Le Brocq*, built in 1997 with an overall length of 15.1m and a cruising speed of 20-22 knots, has a primary role in fisheries patrols, enforcement, and research work. As a Government of Jersey asset, she is also available for tasks by other departments, such as Customs and Immigration, Police, and the Ambulance Service. She carries an additional vessel - the 'SeaRider' - an Avon 5.4m RIB used for close operations such as boarding commercial vessels.

During 2021 the FPV *Norman Le Brocq* clocked up 252 hours at sea across 57 days and a total of 2,499 nautical miles. This figure excludes a period at the beginning of the year (January to March) when the vessel was away for its refit. During this time, the patrol responsibilities were taken over by the FPV *Ecrehou.* Duties at sea included:

TASK*	COUNT	NOTES
Patrol	15	Patrols can range from round-island inshore patrols of local vessels, to offshore patrols of local and French vessels, to joint patrols with French authorities in local and French waters. Also included in this count are cable patrols.
Research	34	The large number of research trips was a combination of Departmental annual research projects in addition to assisting masters research.
Delivery	8	Delivery trips this year were made to facilitate the refit tenure and included final delivery to the boatyard
Training	6	Regular training requirements include man overboard situations, on-board fire drills, and practice of salvage pump scenarios.

* note that often multiple tasks are combined in one trip. E.g. patrols will usually be undertaken before and / or after deliveries or research.

Fishery Patrol Vessel 'Norman le Brocq'

ENFORCEMENT
FISHERY PATROL VESSEL *ECREHOU*

THE BOAT. The Ecrehou, built in 2020 with an overall length of 6.8m and a crusing sped of 25-30 knots has an important role within the fisheries team in fisheries patrols and enforcement. As part of the Goverments of Jersey's assets she is available to other departments including Customs and Immigration and the Police. Her primary purpose is to act as a rapid response vessel to allow officers to quickly reach anywere within Jersey territorial waters.

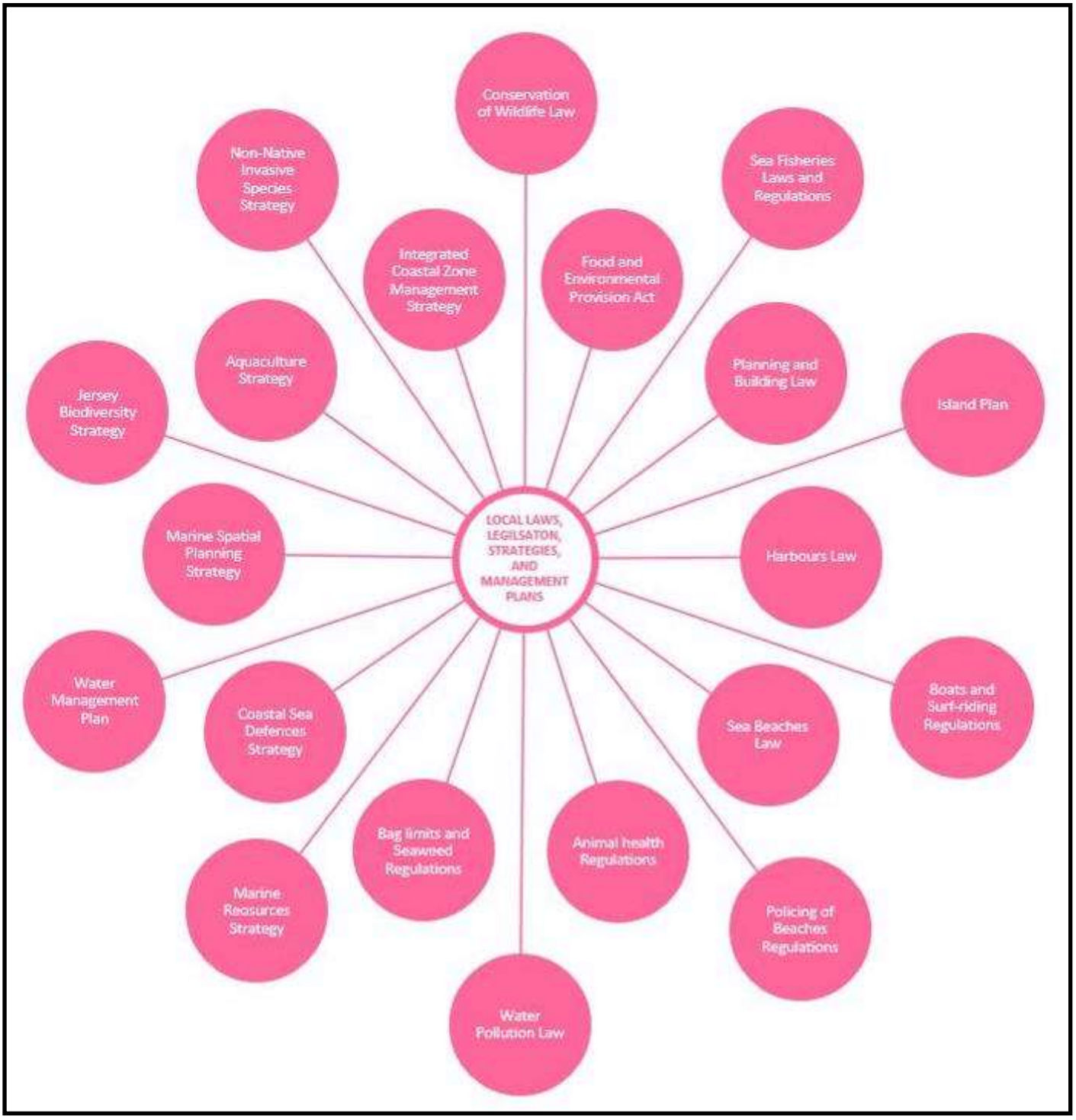
In July 2020, the marine resources team took delivery of the FPV *Ecrehou.* In 2021, the Ecrehou clocked up 124.7 hours at sea across 33 days.

TASK*	COUNT	NOTES
Patrol	24	Patrols can range from round-island inshore patrols of local vessels, to offshore patrols of local and French vessels, to joint patrols with French authorities in local and French waters. Also included in this count are cable patrols.
Research	4	The large number of research trips was a combination of Departmental annual research projects in addition to assisting masters research.
Delivery	5	Delivery trips entailed drop off and pick up of Officers attending meetings in Granville and St Malo. They are often combined with patrols, both local and joint.
Training	3	Regular training requirements include familiarisation and routine training.

* note that often multiple tasks are combined in one trip. E.g. patrols will usually be undertaken before and / or after deliveries or research.

Fishery Patrol Vessel 'Ecrehou'

LEGISLATION



LEGISLATION
LAWS AND REGULATIONS

Minimum size changes

Following an extensive review in 2018 that saw the introduction of bag limits for the recreational fishing sector, several species were found to lack appropriate minimum landing sizes. There was either no minimum landings size or a landing size below the average breeding size.

A desktop study was conducted to identify known size at sexual maturity from research into local or regional populations and to check minimum landing sizes currently in place on the adjacent French and UK coasts. Also considered were species that are subject to a larger MLS through the commercial fishermen license conditions.

21 proposed landing sizes had been selected to represent an increase to at least the breeding size or, where greater, to landing sizes already in place in Brittany, Normandy or the UK.

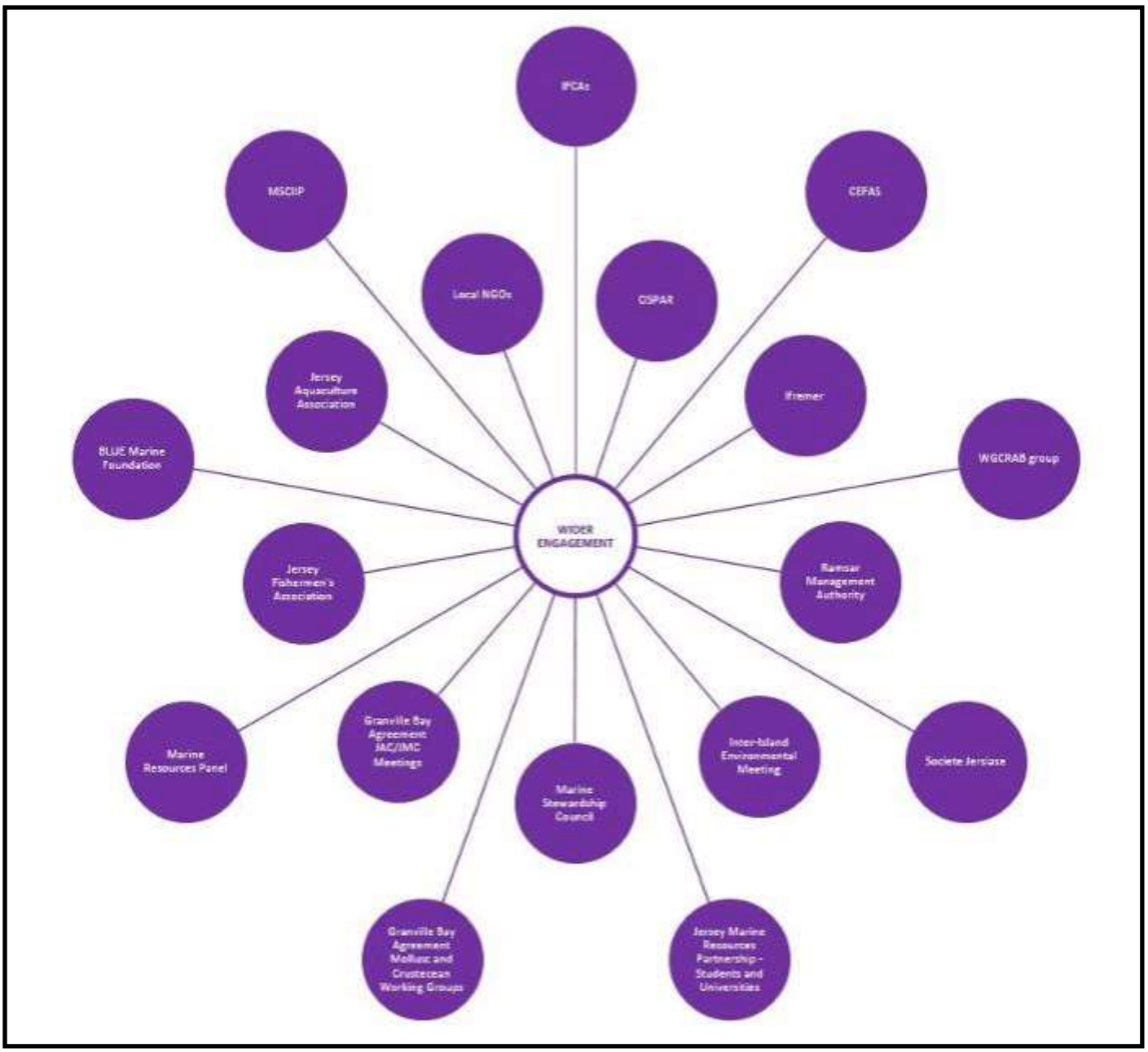
The following table details the changes:

SPECIES Common name	**SPECIES** Latin name	**Measured**	**SIZE LIMIT** (mm)	**Matched to standards:**
Common Cockle	*Cerastoderma edule*	**Shell width**	**30**	**France**
PALOURDE Spp. **Golden Paloudre,** **Pullet Paloudre,** **Banded Paloudre**	*Tapes aurea* *Venerupis corrugata* *Polititapes rhomboides*	**Shell width**	**40**	**France**
Dog Cockle	*Glycymeris glycymeris*	**Shell width**	**40**	**France**
OYSTERS: **Native Oyster** **Pacific Oyster**	*Ostrea edulis* *Crassostrea gigas*		**60**	
Praire	*Venus verrucosa*	**Shell width**	**43**	**France**
Surf Clam	*Spisula solida*	**Shell width**	**30**	**France**
LIMPETS: **Black-footed Limpet,** **China Limpet,** **European Limpet,**	*Patella depressa* *Patella ulyssiponensis* *Patella vulgata*	**Shell width**	**25**	
Black Winkle	*Littorina littorea*	**Shell width**	**16**	**UK**
Common Whelk	*Buccinum undatum*	**Shell length**	**50**	**JSY Commercial**
Common Shrimp	*Crangon crangon*	**Total length**	**30**	**France**
Monkfish	*Lophius piscatorius*	**Total length**	**500**	**Brittany**
Coley / Coalfish	*Pollachius virens*	**Total length**	**350**	**EU**
Herring	*Clupea harengus*	**Total length**	**200**	**EU**
Sardine	*Sardina pilchardus*	**Total length**	**110**	**EU**

Spider Crab

The Bay of Granville Agreement oversaw a seasonal management measure which prohibited the targeting of new shelled spider crab during the autumn months. This is now undertaken based on legislation. Start and end dates for this closed season are yet to be decided. Should dates remain undecided then the default closure is from the 1 September to 15 October.
For 2020 the closed season was set to the default dates of 1 September to 15 October.

WIDER ENGAGEMENT



WIDER ENGAGEMENT
MARINE RESOURCES PANEL

OVERVIEW. The Sea Fisheries Advisory panel was set up in the 1970s to address fishers concerns about overexploitation, neighbourhood agreements with France and local conservation issues. From the beginning its membership included key professional and amateur stakeholders with an interest in the marine environment. This diverse membership encouraged a holistic approach to management. Today the since renamed Marine Resources Panel continues to offer advice, knowledge and opinion on a range of maritime issues. Membership includes representatives from:

- The boat owning communities
- Jersey Aquaculture Association (JAA)
- Jersey Fishermen's Association (JFA)
- Jersey Recreational Fishermen Association
- Société Jersiaise
- Jersey Inshore Fishermen's Association (JIFA)
- Jersey merchants
- Marine Resources team

The following were matters handled by the MR Panel during 2021:

AQUACULTURE

Holding beds	Discussion of temporary holding beds to accommodate changes in market uptake due to Covid and Brexit situation.

CAPTURE FISHERIES

Research projects	The Panel received an update regarding 2021 research projects including habitat sampling, cetacean monitoring, eDNA sampling, blue carbon assessment and individual species assessments (brown crab, scallops, bream, bass and lobster).
Permits	Discussions were ongoing regarding a permitting scheme In relation to effort control.
Bass	Bag limits for commercial fishing vessels were queried, offices would continue to monitor the situation.
Blue fin tuna	A draft blue fin tuna report was circulated. Discussions were made about the nature of the proposed research and possibilities of commercial and/or catch and release fishery.
MSC accreditation	Lobster under going reviews, whelk and spider crab secured funding for potential MSC accreditation review of data is ongoing.

ENVIRONMENT

Brexit	Continued updates were delivered throughout the year on progress with the Trade and Cooperation Agreement.

Safety at sea

Safety at sea	Ports of Jersey decided to delay the implementation of the Jersey Fishing Vessel Code due to the pandemic. To aid in costs it was suggested that the Rural Economic Strategy could support this. The code was required to aid in preventing fatalities at sea.

Minutes of all meetings are available online at gov.je.

WIDER ENGAGEMENT
STUDENT PROJECTS

Every year Marine Resources has been approached by local and UK students in search of marine-related projects as part of their undergraduate or postgraduate qualifications. In response to this Marine Resources produces an annual list of potential student projects. Some of these are repeat projects (usually based around monitoring habitats or species) while others are devised in repose to identified knowledge gaps or data needs. No funding can be offered but we can offer advice and limited supervision in addition to access to laboratory and other facilities. In return we request a copy of the dissertation and any raw data generated.

2021 STUDENT PROJECTS

In recent years Marine Resources have helped with a range of student projects that have included studies on local seagrass ecology, the biology of Asian shore crabs, climate-change and barnacles and studies of local fish populations using baited video stations. The quality of all these projects was exceptionally high and this was reflected in the high grades received by the students. Additionally, their studies have helped to shed light on several areas which have been previously understudied.

During 2021, dissertations were finalised for a variety of projects including Baited Remote Underwater Video systems (BRUV's) comparing species assemblages in seagrass, ray and shark egg cases findings and marine mammals sightings. Unfortunately due to Covid-19 restrictions, field work was not possible until late in the summer. This hindered the development of practical research projects, in its place desk based statistical research was undertaken. In addition to this, the department took on a number of interns, locally and abroad, to supplement placements which had fallen through due to Covid.

Additionally, links have continued to be cemented with the University of Portsmouth with regard to the processing and analysis of some of our larger datasets including a sizable one generated by the dolphin hydrophone (C-POD) study.

As well as generating valid scientific data and offering insights into local marine biology, assisting students with their studies has allowed Marine Resources to forge links with universities and talented individuals, many of whom keep in touch with us and have, in turn, assisted us with queries or information provision. In this way it is hoped that the island of Jersey, the students and their universities benefit from this small but important part of our management of and desire to better understand aspects of our marine environment.

Crew on the *Norman Le Brocq* assisting students with seabed survey work off Jersey's east coast during the summer of 2018.

WIDER ENGAGEMENT
PhD RESEARCH

SUMMER RESEARCH

THE PROJECT. Marine Resources assisted with fieldwork for a PhD study between 2018 and 2020 to monitor changes following the establishment of local MPAs in 2017. In 2021 the write up of results began. This research was supervised by Plymouth University and forms part of a wider study being run by the Blue Marine Foundation to better understand the ecological and socio-economic aspects of MPAs. Although the research was run independently of the Government of Jersey some of the data and results will contribute to the stock and habitat assessment work being undertaken by Marine Resources. Additionally, both the baited video and potting studies were continued by Marine Resources in 2021 as part of the ongoing monitoring of the MPAs.

VIDEO SURVEYS. Underwater towed video surveys were used to pinpoint the location of key habitats (such as maerl, seagrass, tubeworm communities and sediments) for further investigation regarding the health of habitat and associated species. Results showed the coverage of structure forming organisms to be greater inside the MPAs. Baited videos were also used to understand differences in mobile species inside and outside the MPAs on comparable habitat. The diversity of species was shown to be greater inside the MPAs and the results are published in Estuarine, Coastal and Shelf Science: “Removal of bottom-towed fishing from whole-site Marine Protected Areas promotes mobile species biodiversity”.

SEDIMENT SAMPLING. A Van-Veen grab was used to take grab samples of marine sediment. This was to assess the infaunal component of the sedimentary habitats at the offshore reefs both inside and outside the protected areas. Results indicate that infaunal diversity was greater inside the MPAs but MPA age was an important factor in this as species diversity was only significantly greater in the older southeast MPA.

POTTING STUDIES. In early autumn each year, experimental pots were deployed at Les Écréhous and Minquiers to help gain an understanding of the crab and lobster stocks. Overall, lobster abundance showed declines both inside and outside the MPAs across the three years. Brown crab abundance was low across all years, and spider crab abundance was varied between treatments.

SOCIO-ECONOMIC STUDIES. In addition to field studies, interviews were carried out with fishers to understand their perceptions of the MPAs. And lastly, an economic assessment was carried out in which the habitat requirements across fishery species lifecycles were used to calculate a habitat value per species and per the whole fishery. The results showed the importance of an ecosystem based approach when considering the economics of a fishery. The full write up is published in Fisheries Management and Ecology: “Value of coastal habitats to commercial fisheries in Jersey, English Channel, and the role of marine protected areas”.

APPENDIX I
COMMERCIAL LANDINGS: SHELLFISH

These figures are for commercial landings by Jersey vessels and are in kilogrammes. They are correct as of March 2021.

SPECIES	Latin name	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Dog cockles	*Glycymeris glycymeris*	1610	1395	1370	1338	0	0	0	0	80	137	61
Brown Crab	*Cancer pagurus*	478533	507056	436120	386031	305807	348500	310353	287252	170941	126424	133691
Crayfish	*Palinurus elephas*	5	47	7	33	46	121	2	11	6	4	22
Cuttlefish	*Sepia officinalis*	3772	5989	2689	2065	5773	6053	4372	7934	10971	14104	4494
Green Crab	*Carcinus maenus*	0	0	0	0	0	0	0	20	1236	0	0
Velvet Crab	*Necora puber*	296	247	319	297	258	218	296	287	317	180	112
Lobster	*Homarus gammarus*	268218	249163	225994	237229	256921	241460	243150	193503	155374	111289	118344
Octopus	*Octopus vulgaris*	0	0	0	0	0	22	2	2	0	3	30
Ormer	*Haliotis tuberculata*	242	230	89	10	23	277	0	7	643	809	633
Praires	*Venus verrucosa*	0	0	0	0	0	210	0	0	0	2960	6528
Prawns	*Palaemon serratus*	63	69	1	116	0	26	3	29	0	24	6
Queen Scallops	*Aequipecten opercularis*	0	0	0	0	0	300	150	0	0	0	0
Scallops [1, 2]	*Pecten maximus*	349658	342786	335332	387331	280018	319731	296741	275021	337986	249203	322505
Spider Crab	*Maja squinado*	148556	110298	81645	87727	95519	121751	208828	289229	301743	199293	220288
Squid	*Loligo vulgaris*	123	63	421	239	631	480	498	631	389	297	1356
Whelks	*Buccinum undatum*	377622	430368	512058	303701	268921	544237	345980	838926	735443	179440	182095

Notes:

1. Includes dredged and commercially dived scallops.

2. Includes 1,020 kg of queen scallops for the year 2010.

3. Marine resources have become aware of a potential error in one of the databases. This may lead to minor variations in some of these figures. These have been corrected and any differences were minor.

APPENDIX II
COMMERCIAL LANDINGS: WETFISH

These figures are for commercial landings by Jersey vessels and are in kilogrammes. They are correct as of March 2021.

Species	Latin name	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Blonde Ray	*Raja brachyura*	25573	60657	76488	86747	66848	74170	34370	52655	46343	60801	23685
Dogfish	*Scyliorhinus* spp.	10126	11761	10104	8525	2367	6354	9730	7154	6634	7769	4315
Wrasse	*Labridae spp.*	454	1957	1543	3823	4485	5169	5588	7248	4502	4321	2825
Black Sea Bream	*Spondyliosoma cantharus*	17954	107173	31253	23141	21858	7869	3823	9847	3052	4796	4328
Lesser Spotted Dogfish	*Scyliorhinus canicula*	800	10258	11443	12796	19494	10735	3600	9500	7590	4860	2410
Mackerel	*Scomber scombrus*	6550	7945	8564	6639	3077	2714	3476	3436	2100	5227	1388
Conger Eels	*Conger conger*	3276	2093	1979	1635	1075	2550	2753	3194	2069	1649	1301
Pollack	*Pollachius pollachius*	21059	9227	8445	6327	4663	2452	2300	1689	1066	1673	677
Smooth Hound	*Mustelus* spp.	612	14636	17587	10927	25200	8280	1803	5070	3340	2178	3635
Whiting	*Merlangius merlangus*	117	252	495	3024	2804	1012	1624	1391	787	746	549
Brill	*Scophthalmus rhombus*	6610	2336	3414	4172	3971	1843	1584	1393	1629	1711	654
Bass	*Dicentrarchus labrax*	17324	11537	13366	10929	8960	7306	1483	1476	6649	7542	5421
Bull Huss/Greater Spotted Dogfish	*Scyliorhinus stellaris*	1445	139	46	426	223	1042	1323	859	2238	1700	343
Plaice	*Pleuronectes platessa*	5016	2421	2702	2159	2156	1427	1245	803	936	647	362
Turbot	*Scophthalmus maximus*	3029	2070	2468	2035	2331	924	1186	680	543	652	234
Grey Mullet	*Mugil cephalus*	2202	1527	2552	2378	2199	2416	789	932	2154	2975	1899
Dover Sole	*Solea solea*	1768	1279	2382	1093	1007	951	755	1594	696	672	504
Angler Fish/Monkfish	*Lophius piscatorius*	1170	41	348	844	1226	576	477	258	466	601	253
Red Gurnard	*Chelidonichtys cuculus*	855	2707	2839	2899	2683	2866	438	1940	1243	1304	179
Sand Sole	*Pegusa lascaris*	910	706	595	1052	1192	831	434	379	234	1109	158
Tope	*Galeorhinus galeus*	270	660	429	290	345	2599	280	181	40	306	153
Pouting	*Trisopterus luscus*	1150	1085	1480	850	1100	910	261	870	332	469	977
Red Mullet	*Mullus surmuletus*	430	698	323	235	128	182	194	133	254	235	235
Snipe / Garfish	*Belone belone*	1	1	100	4	13	35	138	42	18	0	1
Horse Mackerel	*Trachurus trachurus*	0	185	190	148	269	0	114	191	28	280	92
Undulate Ray	*Raja undulata*	0	0	0	0	0	40	65	960	1702	95	159
Lemon Sole	*Microstomus kitt*	0	11	0	1	0	0	61	57	0	31	11
Grey Gurnard	*Eutrigla gurnardus*	85	0	0	0	0	26	46	48	6	51	815
Trigger Fish	*Balistes capriscus*	0	1	0	5	3	3	43	0	2	3	5
Ling	*Molva molva*	478	572	374	331	184	37	30	0	3	93	20
Sand Eels	*Ammodytidae* spp	15	13	19	17	5	30	22	31	8	31	43
Cod	*Gadus morhua*	302	8	2	459	28	55	20	25	194	10	1
Gilt-head Bream	*Sparus aurata*	0	550	7	0	0	120	18	20	254	562	266
Thornback Ray	*Raja clavata*	62	238	25	13	10	190	10	21	76	0	650
Sea Trout	*Salmo trutta*	0	2	0	6	0	1	1	0	0	1	6
Historic - Skate/Ray	*Raja* spp.	14594	0	0	13	0	0	0	0	0	0	0
Small-eyed Ray	*Raja microocellata*	1071	1478	823	489	1187	0	0	10	5	0	0
Porbeagle Shark	*Lamna nasus*	0	0	0	0	0	0	0	0	0	0	0
John Dory	*Zeus faber*	11	5	65	5	6	28	0	64	49	433	50
Shad	*Alosa sapidissima*	0	0	0	0	0	135	0	0	5	0	46
Spurdog	*Squalus acanthias*	37	0	8	5	0	0	0	0	0	0	0
Herring	*Clupea harengus*	0	40	0	0	0	0	0	0	2	4	5
Flounder	*Paralichthys dentatus*	0	3	0	0	0	2	0	0	0	0	0
Haddock	*Melanogrammus aeglefinus*	0	0	0	0	0	0	0	44	0	0	0
Saithe	*Pollachius virens*	0	0	0	0	0	0	0	0	0	0	0

APPENDIX III
COMMERCIAL FISHING EFFORT

These effort figures are for commercial landings by Jersey vessels . They are correct as of March 2021. Nets are measured in metres, angling in hours, static gear and dredges in number of and trawls measured in length of foot rope/beam.

GEAR NAME	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Diving	357	711	700	723	758	393	1407	1659	2436	1656	1653
Dredge	3801	3472	3171	4318	2970	4418	4106	4058	3164	2539	2891
Angling	4233	3845	6400	2752	2768	2042	2403	2818	2105	2950	2317
Long Lines	14470	9911	7491	1168	2200	3972	909	2518	8200	13000	6910
Low Water	0	0	0	2	2	0	0	0	40	100	74
Gillnet 090 - 099	85827	132240	191278	141060	109196	106245	32703	21165	1571	7884	4325
Gillnet 100 - 119	19954	24756	11700	15820	6570	8140	22322	16100	51095	85545	66806
Gillnet 120 - 219	11410	6640	6750	2200	8360	11800	3574	5900	3400	1000	4140
Historic Gill Net	7504	0	0	0	0	0	0	0	0	0	0
Historic Mesh	4050	0	0	0	0	0	0	0	0	0	0
Historic Tangle 100	12	0	0	3	0	0	0	0	0	0	0
Historic Tangle 120	3300	0	0	0	0	0	0	0	0	0	0
Historic Tangle 130	640	0	0	0	0	0	0	0	0	0	0
Historic Tangle 90	0	0	0	0	0	0	0	0	0	0	0
Historic Trammel	2550	0	0	0	0	0	0	0	0	0	0
Seine Netting 080 - 099	0	0	1500	0	0	0	0	0	0	0	0
Tangle 220+	61048	31630	55521	82040	113070	60720	50232	76579	56570	62249	106931
Trammel 090 - 099	4900	6150	37450	1704	8136	9600	11173	360	0	0	5159
Trammel 100 - 119	4340	14000	9800	20800	28900	19301	13009	7500	6791	8102	0
Trammel 120 - 219	2000	23060	0	11060	1000	2638	416	1190	13001	11493	4012
Trammel 220+	0	3800	5300	24202	6640	0	8117	13600	19142	2100	3700
Cuttlefish Pots	588	837	626	653	1080	1131	972	3648	4626	3959	1834
Fish Traps	0	235	320	268	437	331	143	0	18	0	0
Green Crab Pots	0	0	0	0	0	0	0	0	0	0	0
Prawn Pots	0	0	440	0	0	24	96	631	0	75	
Whelk Pots	134748	181775	238773	129053	131786	192215	146561	336190	348213	141444	101055
Creels	205896	200393	141078	133786	139041	105776	114810	122412	99435	72015	83260
D Pots	8445	14934	15768	25037	26584	24206	33357	29148	95069	89472	100629
Ink-Wells	211200	245721	261830	211559	195921	174760	254333	255074	242795	177773	21223
Parlour Pots	1452853	1403837	1397155	1300286	1258174	1398436	1509818	1397108	1157461	898472	856808
Beam Trawl 080 - 099	12	0	0	0	12	60	0	0	0	0	0
Otter Trawl Bottom 080 - 099	3797	3090	2062	1262	3320	2040	994	1335	1206	1415	606
Otter Trawl Mid-water 080 - 099	0	0	1036	555	1245	585	12	28	0	0	16
Pair Trawling Bottom 080 - 099	0	0	44	0	0	0	0	0	0	0	0
Pair Trawling Mid-water 080 - 099	801	4140	0	909	340	0	0	0	0	0	0