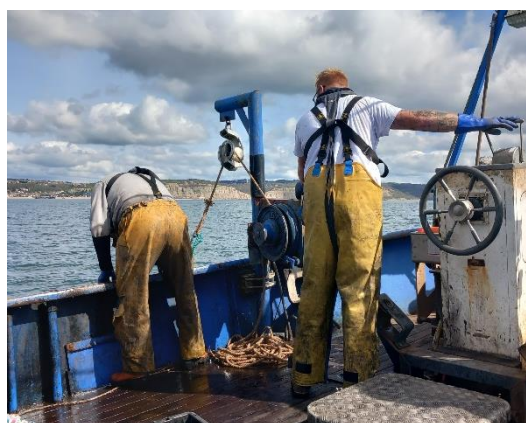


Sussex Inshore Fishing Vessel Effort Analysis 2020 – 2024

May 2025

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Contents

Introduction	3
Methods	3
Statistics	4
All Gear Types	5
Angling	6
Angling - Commercial	7
Angling - Recreational	8
Dredging – Scallop	9
Netting	10
Netting - Drift	11
Netting - Gill	12
Potting	13
Potting – Crab and Lobster	14
Potting - Cuttlefish	15
Potting - Whelk	16
Trawling	17
Trawling - Beam	18
Trawling - Pair	19
Trawling - Stern	20
Technical Annex	21
Map Display	21
Admiralty Map	21

Introduction

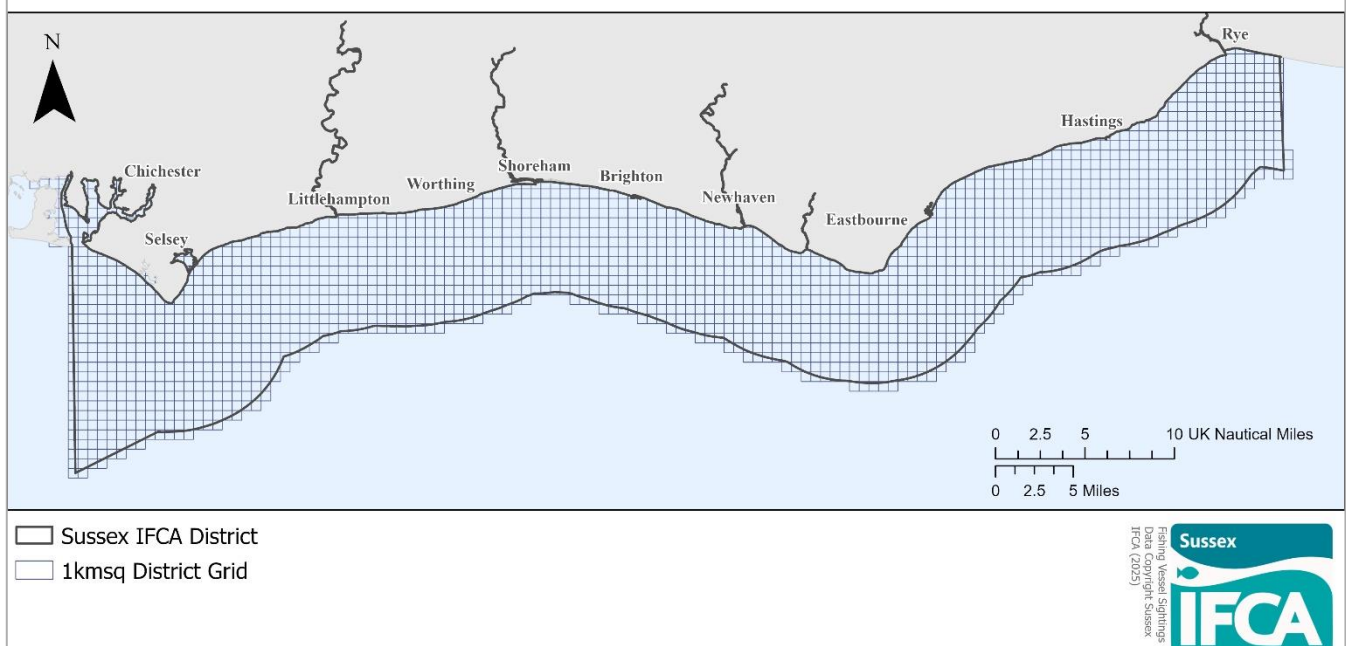
Since 2001, Sussex Inshore Fisheries and Conservation Authority (IFCA) and its predecessor, the Sussex Sea Fisheries Committee, have recorded fishing activity observed during sea patrols. Over 15,000 vessel observations have been recorded in this period, with more than 3,000 sightings recorded between 2020 and 2024—the focus of this report.

Methods

During routine patrols aboard the Fisheries Patrol Vessel (FPV) Watchful, Officers record details of fishing activity, including the date, time, vessel name, port letters and numbers (PLN), location co-ordinates, and gear type. As the FPV is based in Shoreham and operates using a risk-based surveillance approach, patrol frequency varies by location, introducing potential spatial biases.

To account for this, vessel sightings are normalised against patrol effort when calculating fishing effort. Patrol effort is determined by applying a 2km buffer to the FPV's track, representing the maximum distance within which a fishing vessel can be reliably observed, identified, and assessed, in typical conditions. The annual average patrol coverage per 1km² grid cell is then calculated. Fishing effort (sightings per km² patrolled) is then derived by dividing the number of sightings (per 1km² grid cell) by the corresponding patrolled area (within the same 1km² grid cell).

Sussex IFCA District: 1kmsq grid overlay



Statistics

To compare how different fishing methods are distributed across the district, this report uses a consistent statistical framework to understand the spatial differences between gear types. Each gear type is assessed using the same set of 1 km² grid cells, which cover the whole district, this ensures that differences in fishing effort reflect actual variations in activity, rather than the proportion of the district that each gear type occurs across.

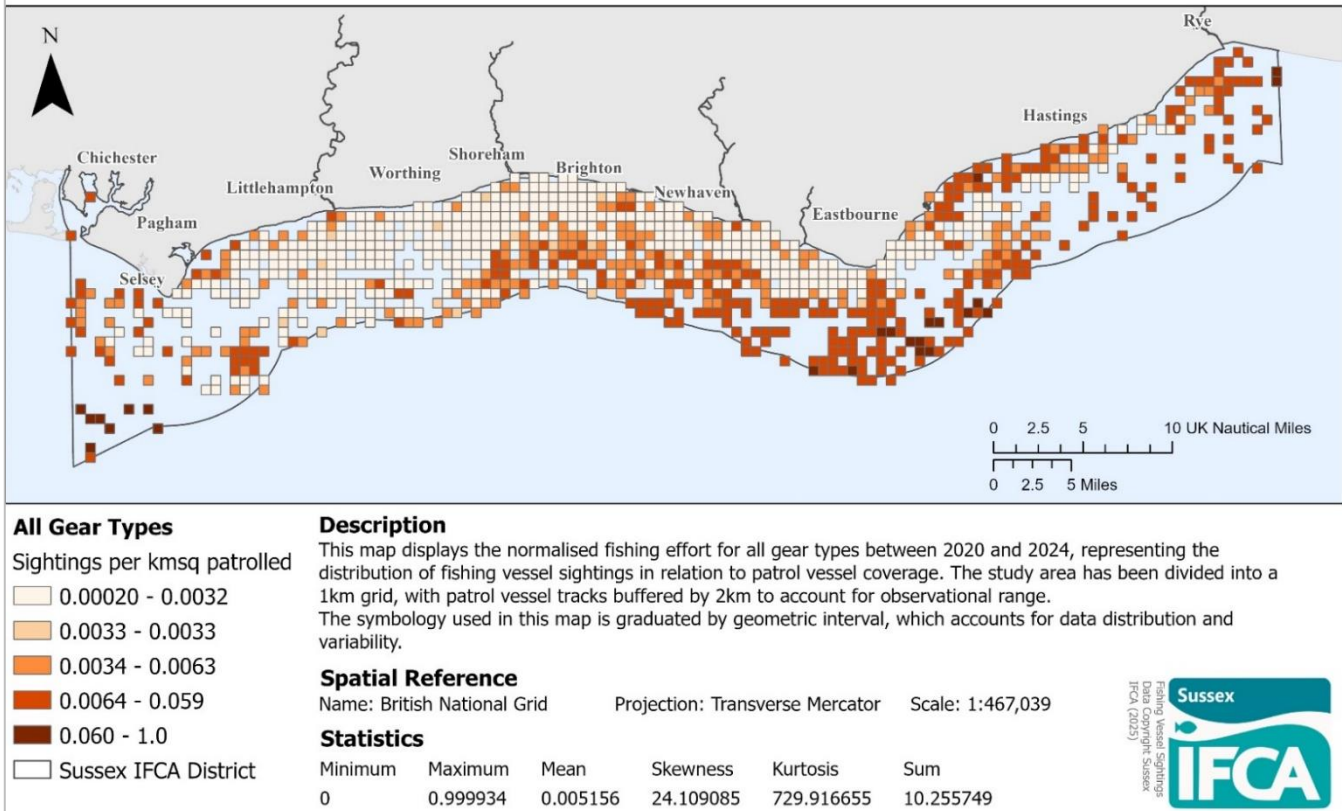
Three key metrics are used to describe fishing effort:

- Total effort represents the sum of fishing effort occurring across the district and allows comparison between different gear types
- Maximum effort highlights areas of highest activity, identifying potential hotspots
- Mean effort, when considered alongside Maximum effort, reflects how evenly fishing pressure is distributed across the district. When the mean and maximum are similar, this indicates that fishing pressure is evenly distributed, or vice versa

Additional map-based metrics, although not discussed in detail, include skewness and kurtosis. Skewness shows whether effort is heavily concentrated in a few areas, while kurtosis measures how uniform the effort distribution is across the district.

All Gear Types

Fishing Effort 2020 to 2024: All Gear Types



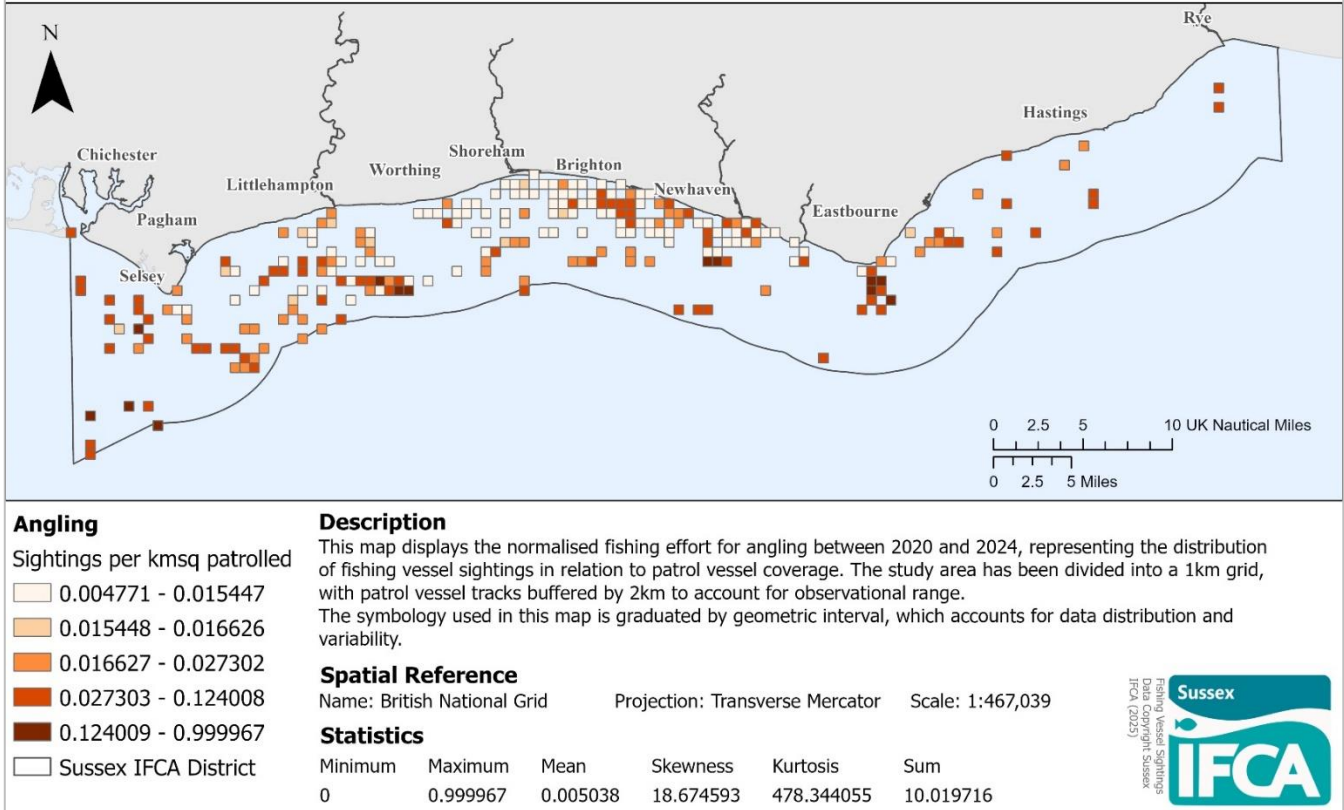
This section presents a spatial overview of all recorded fishing activity from 2020 to 2024 within the Sussex IFCA District. During this period, fishing was observed in 967 km², equivalent to 48.6% of the 1,989 km² grid square area of the district. Fishing methods range from mobile gears (trawling, dredging) to static methods (potting, netting), each associated with specific target species and environmental impacts.

Netting and potting emerge as the most spatially widespread fishing methods, covering 24.3% and 21.1% of the area, respectively. Netting, in particular, stands out with the highest total and mean effort, driven largely by the extensive use of gill nets. Potting also contributes significantly to overall activity, with a total effort of 13.92 and a mean of 0.007, most of which is attributed to the region's active whelk fishery.

Angling, while covering a slightly smaller area (13.2%) records the highest maximum effort (0.99), highlighting pockets of intense commercial activity. Responsible for 14% of the spatial footprint, trawling is primarily sustained by stern trawling and shows a moderate overall effort (8.95 total, 0.0045 mean). In contrast, dredging remains the least prevalent method, occupying just 1.8% of the district, with a relatively low effort. Despite this, its localised intensity may still carry notable ecological implications.

Angling

Fishing Effort 2020 to 2024: Angling

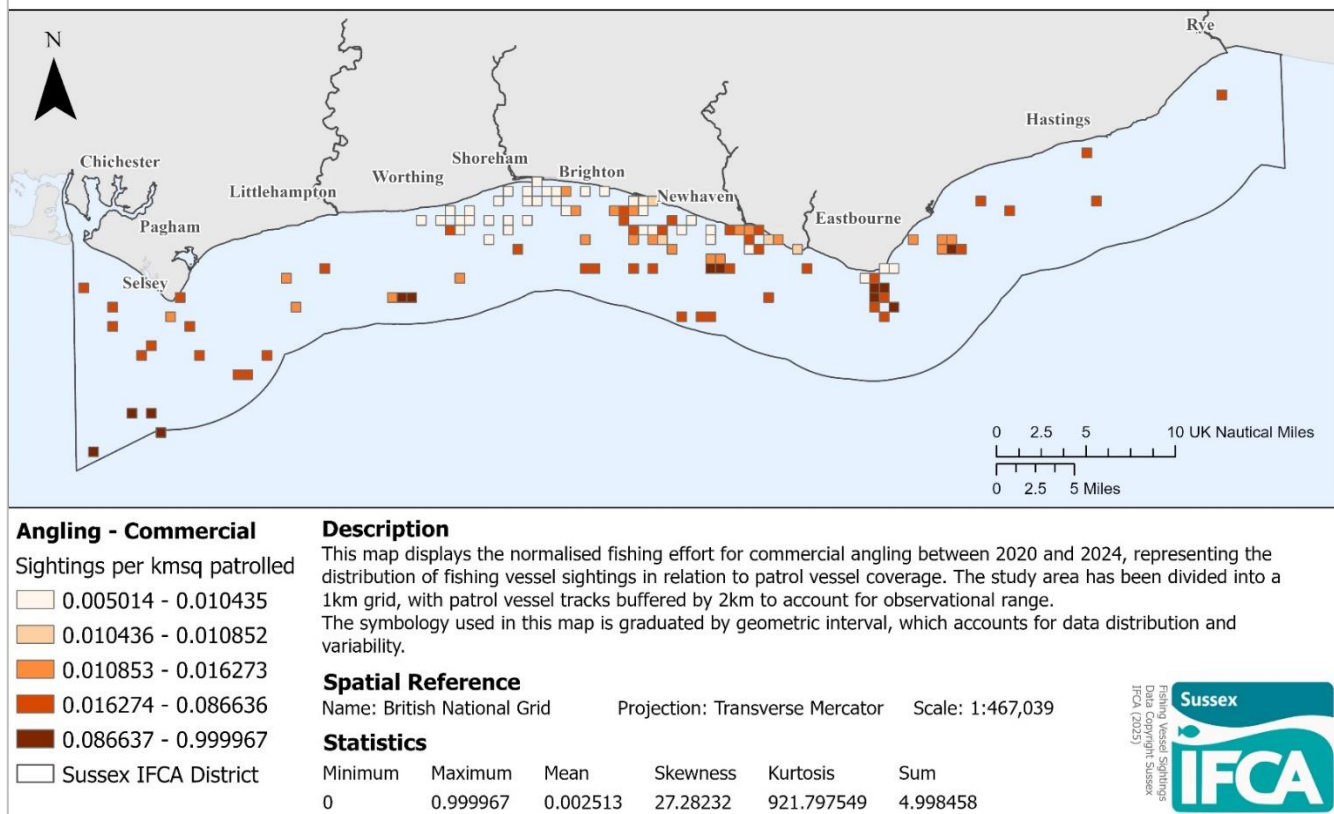


Angling was observed across 13.2% of the district, with the highest maximum effort (0.999) of all gear types, suggesting high pressure in specific locations. However, its low mean effort (0.005) indicates that most areas has a comparatively lower pressure across the district.

Commercial angling occurs across 6.4% of the district and exhibits a lower mean (0.0025) and maximum (0.99) effort compared to recreational angling. Recreational activity is more dispersed (occurring across 8.4%) with a slightly lower mean (0.0023) and considerably lower maximum effort (0.28), suggesting broader spatial coverage but that fishing pressure is generally lower, compared to commercial angling.

Angling - Commercial

Fishing Effort 2020 to 2024: Angling - Commercial



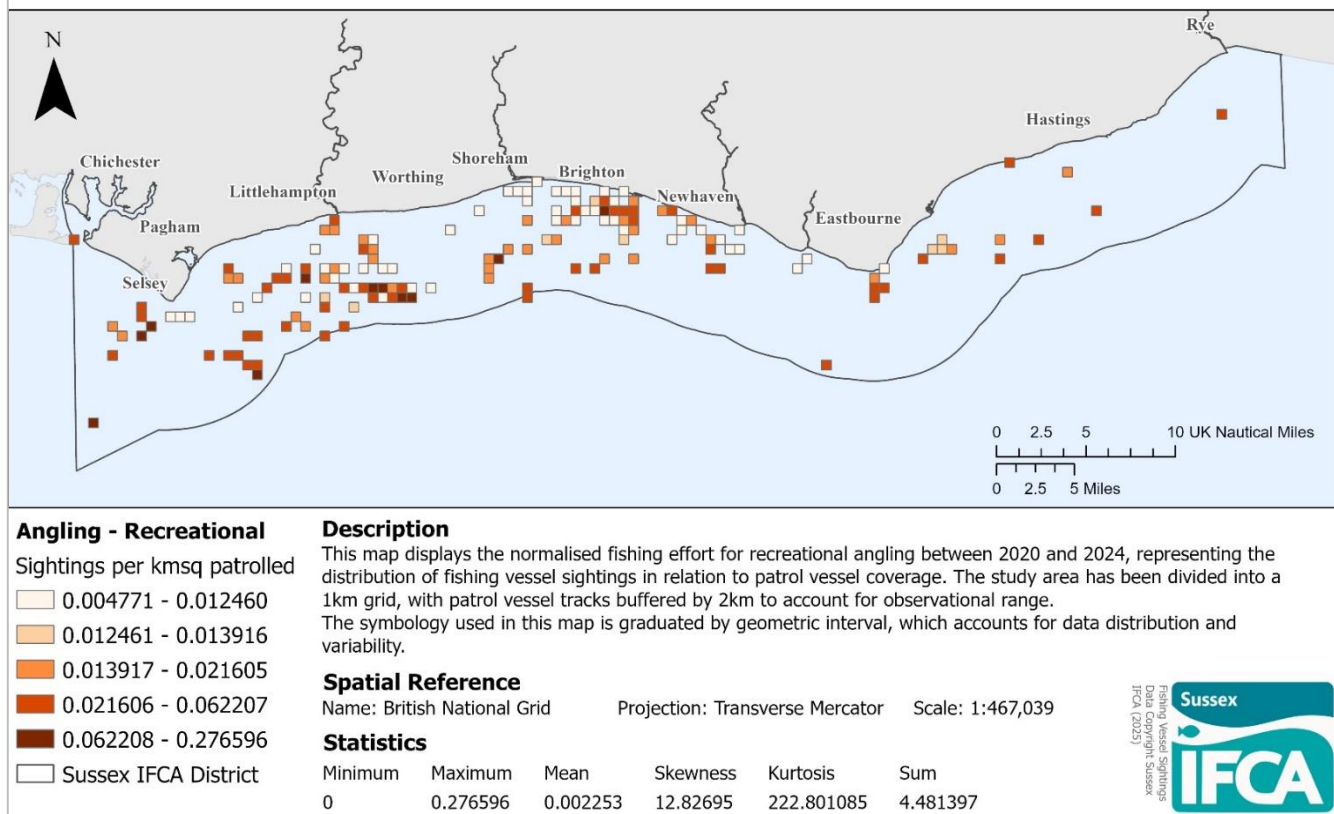
Commercial angling primarily targets high-value species such as bass, pollock, and bream. Unlike larger scale commercial methods like trawling or netting, this gear type uses rod-and-line or handline techniques, allowing for selective fishing with minimal bycatch and limited environmental impact.

Activity is highly seasonal, with bass and pollock more abundant during the warmer months, from spring to autumn, while cod and whiting are targeted offshore during the winter.

Commercial angling is concentrated around key locations such as Beachy Head, the French Banks near Selsey, and Newhaven. Fishing activity for commercial angling occurs across 6.4% of the district. Newhaven is a key port for wreck fishing, where pollock, whiting, and bass are the key species targeted. Brighton is also home to a small fleet of dedicated bass fishing boats.

Angling - Recreational

Fishing Effort 2020 to 2024: Angling - Recreational

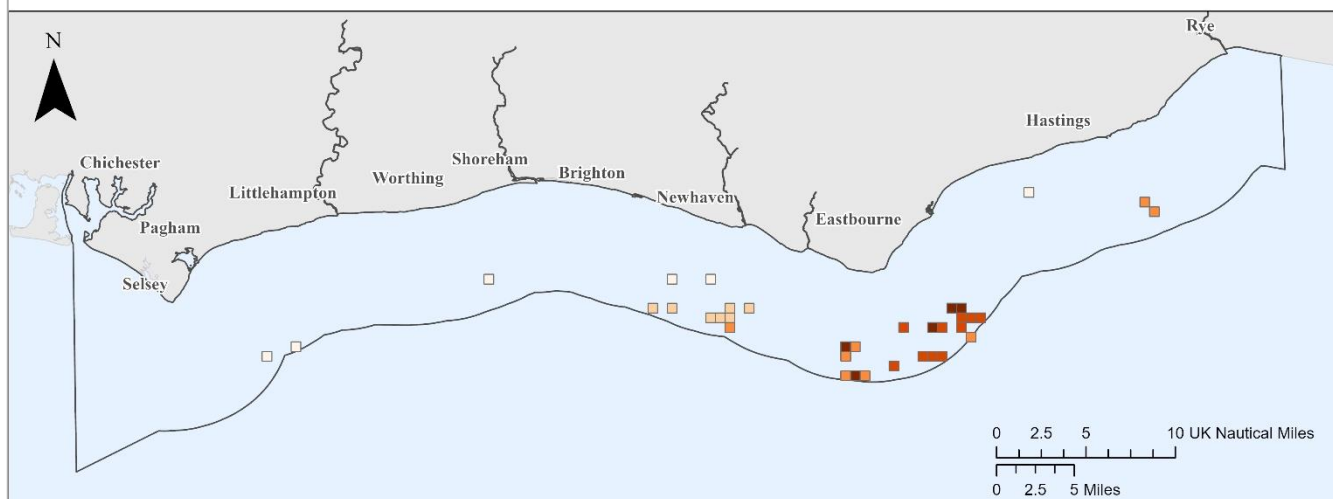


Recreational angling occurs across 8.4% of the district and is often concentrated in nearshore waters and around popular fishing spots. The most popular fishing site for this gear type is Kingmere Marine Conservation Zone (MCZ), as represented by the cluster of high fishing effort off the coast of Littlehampton. Kingmere MCZ attracts bream from April to June, and in the later summer months, mackerel and bass. Selsey Bill is also a hotspot for smooth-hounds, tope, and rays, while bass continue to be a key target off the coast of Beachy Head East.

Recreational angling from vessels includes both private vessels and charter boats. Many recreational anglers engage in catch-and-release fishing, which includes returning undersized or non-target species. Regulations such as minimum landing sizes and catch limits are in place to protect fish populations, with seasonal restrictions on certain species, including bass, to prevent overexploitation.

Dredging – Scallop

Fishing Effort 2020 to 2024: Dredging - Scallop



Dredging - Scallop

Sightings per kmsq patrolled

- 0.019430 - 0.029401
- 0.029402 - 0.045035
- 0.045036 - 0.069546
- 0.069547 - 0.107978
- 0.107979 - 0.168233
- Sussex IFCA District

Description

This map displays the normalised fishing effort for scallop dredging between 2020 and 2024, representing the distribution of fishing vessel sightings in relation to patrol vessel coverage. The study area has been divided into a 1km grid, with patrol vessel tracks buffered by 2km to account for observational range. The symbology used in this map is graduated by geometric interval, which accounts for data distribution and variability.

Spatial Reference

Name: British National Grid

Projection: Transverse Mercator

Scale: 1:467,039

Statistics

Minimum	Maximum	Mean	Skewness	Kurtosis	Sum
0	0.168233	0.001167	10.429321	127.880348	2.320306



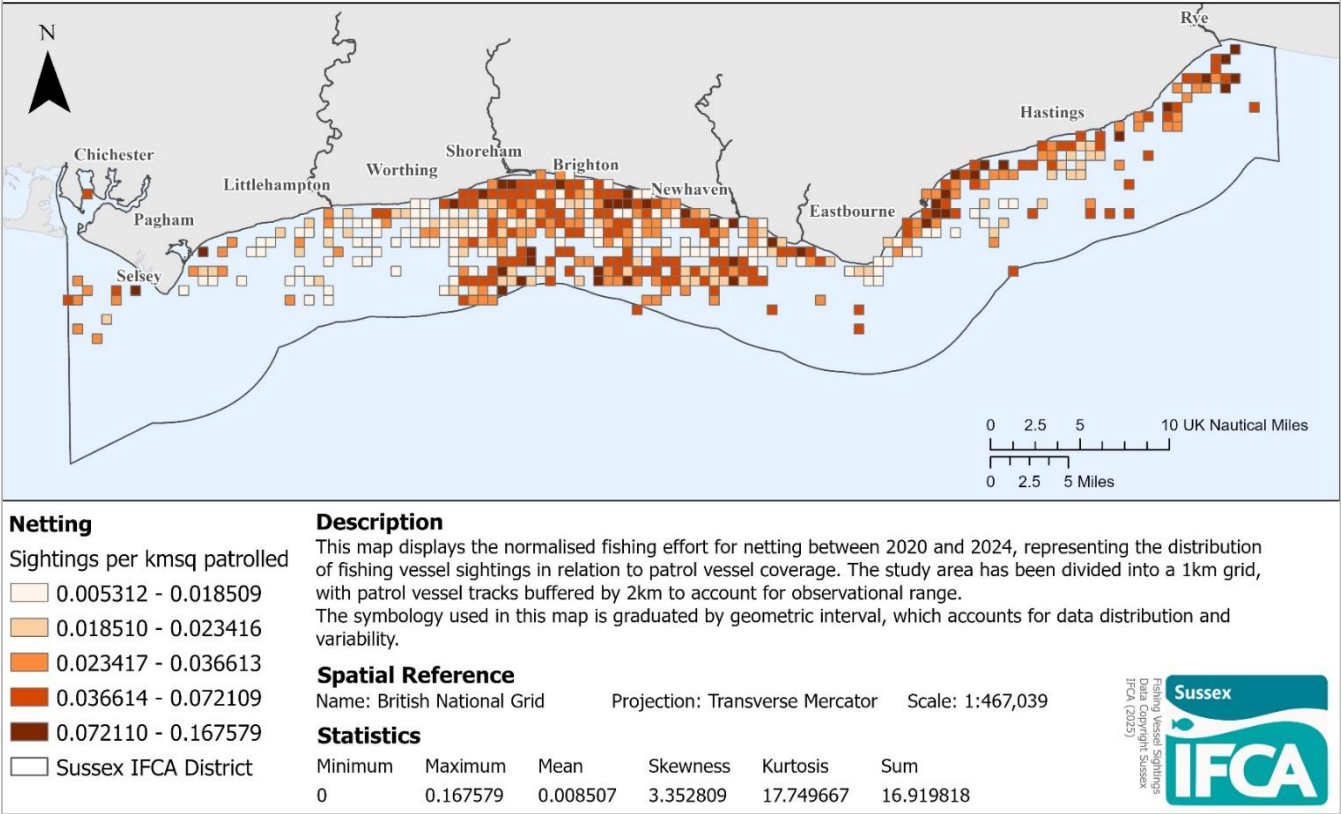
Scallop dredging is a commercially significant fishery within Sussex, targeting king scallops (*Pecten maximus*). The method involves towing metal-framed dredges fitted with spring loaded teeth and chainmail bags along the seabed to collect scallops. While this method is highly efficient for capturing large quantities, it is associated with seabed disturbance, sediment displacement, and potential damage to benthic habitats.

Although scallop dredging occurs across only 1.8% of the district, the fishery's marginal footprint (total effort: 2.32, mean: 0.0012) maintains a modest impact with a low maximum effort (0.17). This indicates that scallop dredging, though spatially limited, has a concentrated area of fishing activity.

Most operations are based out of Newhaven, Eastbourne, and Rye. Due to high levels of gear conflict near Beachy Head, vessels typically operate closer to the 6-nautical-mile (nm) boundary. The fishery is most active from November and April, and focuses its efforts over coarse seabed substrates, which are preferred by scallops.

Netting

Fishing Effort 2020 to 2024: Netting

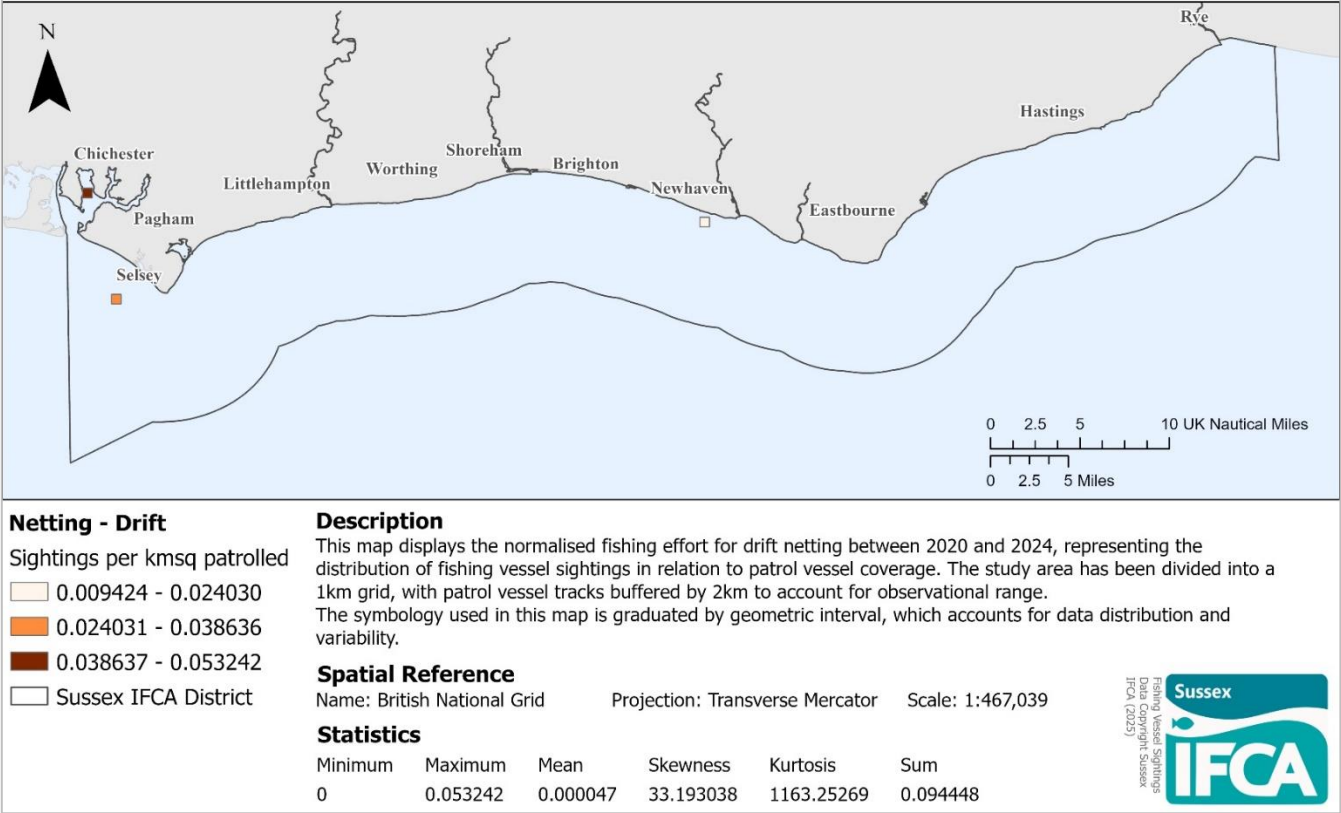


Netting is the most spatially extensive fishing method of all the gear types, occurring across 24.28% of the Sussex IFCA District. Netting includes both static and mobile gear types, with gill netting accounting for 99.17% of total netting activity and a total effort of 16.79, whereas drift netting is negligible, occurring across just 0.2% of the district with a minimal total effort (0.09). This reinforces that most netting impact comes from static gill nets rather than mobile drift nets.

The spatial coverage of netting highlights the importance of several Sussex IFCA byelaws designed to manage the fishery sustainably. This includes minimum mesh size regulations to protect juvenile fish, as well as seasonal and spatial closures designed to safeguard spawning stocks.

Netting - Drift

Fishing Effort 2020 to 2024: Netting - Drift

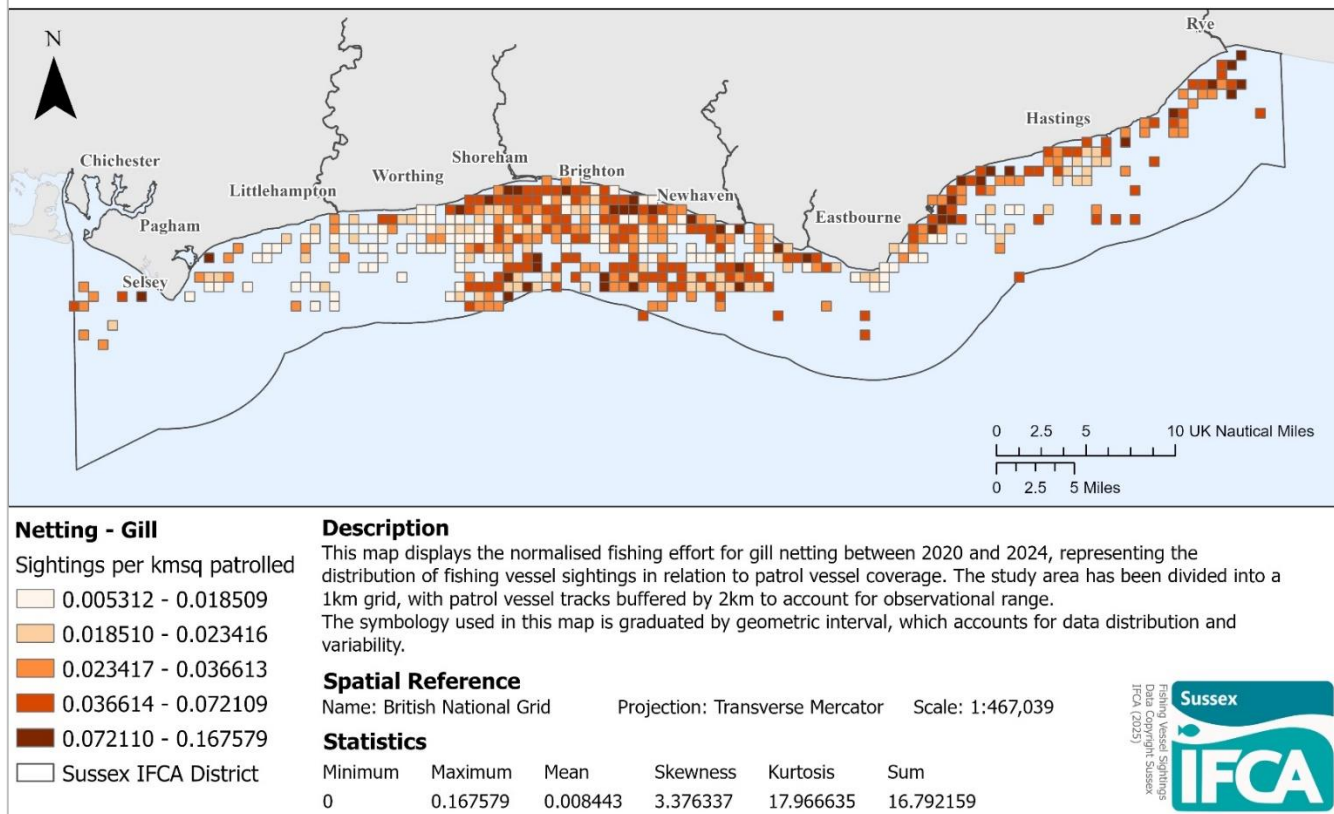


Drift netting represents the least spatially extensive gear type occurring across only 0.2% of the district. Drift nets are free-floating and move with the current, making them an effective fishing method.

Drift netting activity is limited, largely due to restrictions on targeting bass. The fishery primarily focuses on mackerel and herring during the summer months, though overall participation remains low. In Chichester Harbour, for example, only a select number of individuals actively use drift nets to target mullet, highlighting the limited scale of this method.

Netting - Gill

Fishing Effort 2020 to 2024: Netting - Gill



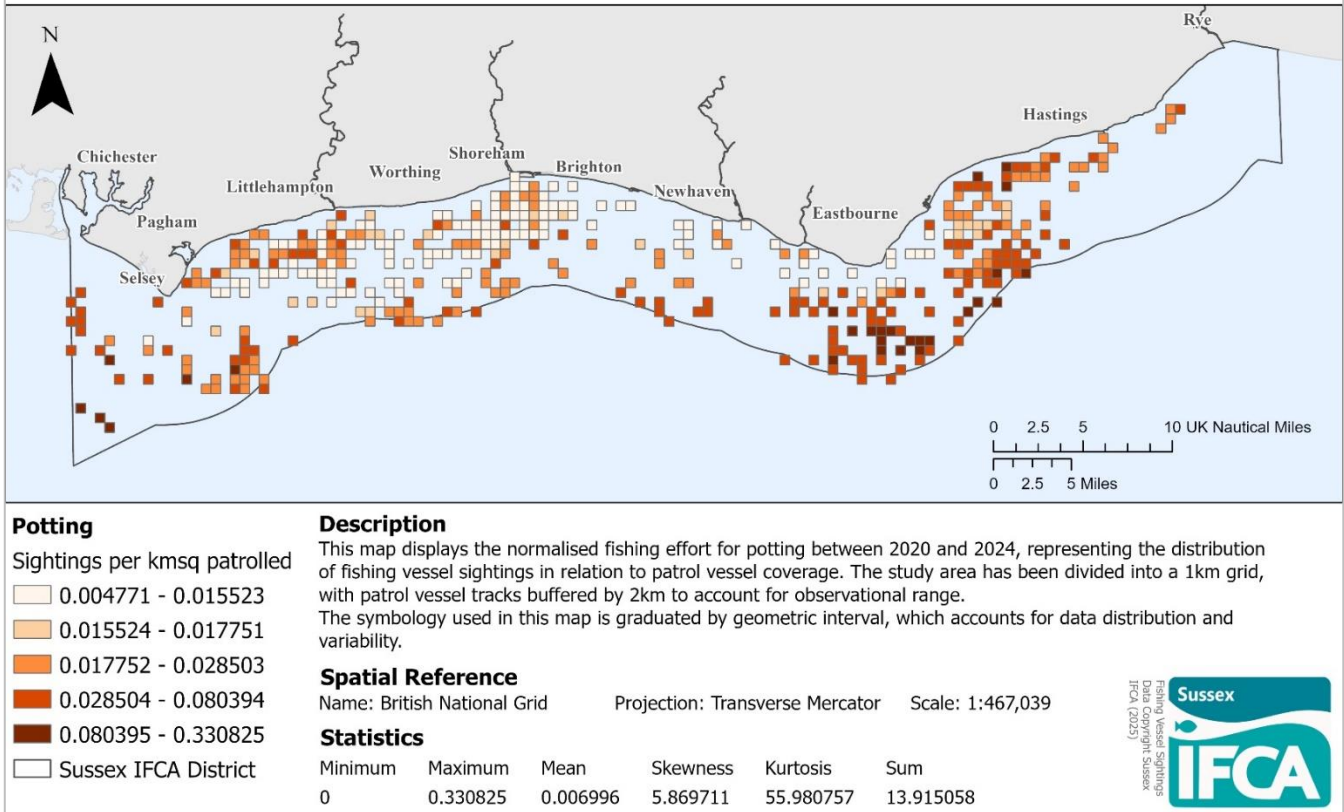
Gill nets are stationary mesh nets that entangle fish by their gills as they swim through. This gear type dominates the netting sector in Sussex, occurring across 24.18% of the district.

Gill netting primarily targets Dover sole, plaice, skates, and rays—especially during winter and spring, when these species are more commercially valuable. Cuttlefish and bream are also caught seasonally, particularly between March and June.

Most gill netting occurs within the 3 nm zone, where many target species migrate to feed and breed. These inshore waters also offer shelter for smaller vessels and reduce the risk of gear conflict. Key fishing areas include wrecks between 3 and 6 nm offshore from Shoreham, Brighton, and Newhaven. Activity declines beyond 3 nm around Beachy Head and Selsey due to greater depth and stronger currents.

Potting

Fishing Effort 2020 to 2024: Potting



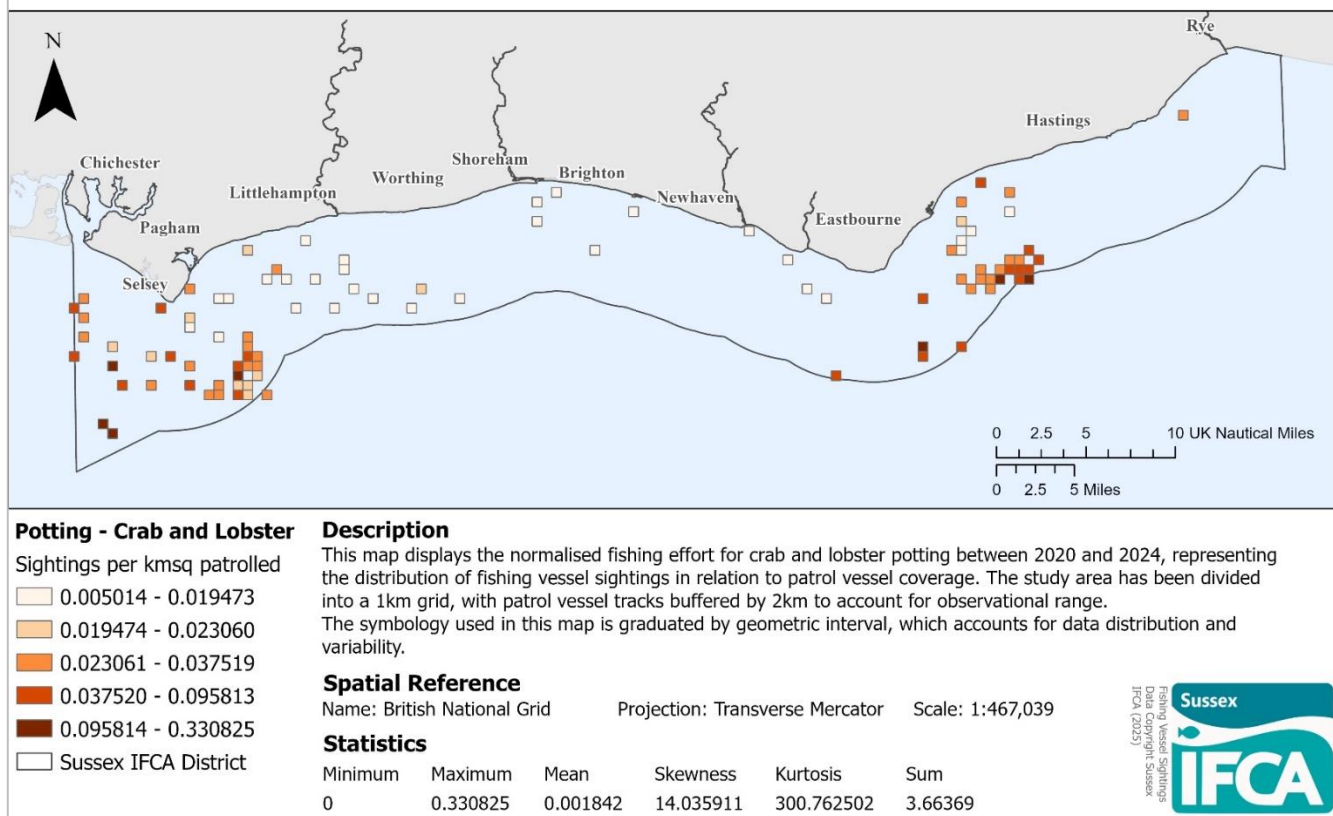
Potting is one of the most widespread fishing methods in Sussex, occurring across 21.1% of the district. It involves deploying baited traps (pots) on the seabed to capture species such as whelks, crabs, lobsters, and cuttlefish.

Potting is divided into whelk, crab and lobster, and cuttlefish fisheries. Whelk potting dominates in both extent (occurring across 14.9% of the district) and intensity (mean effort: 0.0045, total: 8.88). Crab and lobster potting is more restricted (occurring across 4.9% of the district), with a mean effort of 0.0018 and total effort of 3.66. Cuttlefish potting, the smallest component, occurs across just 3.1% of the district and records the lowest effort levels (mean: 0.0007, total: 1.37).

High-effort areas are located off Beachy Head, Eastbourne, and Selsey. Potting is generally considered a low-impact, selective method due to its minimal seabed disturbance and bycatch, making it a key component of the sustainable inshore fleet operating from Shoreham, Newhaven, and Littlehampton.

Potting – Crab and Lobster

Fishing Effort 2020 to 2024: Potting - Crab and Lobster

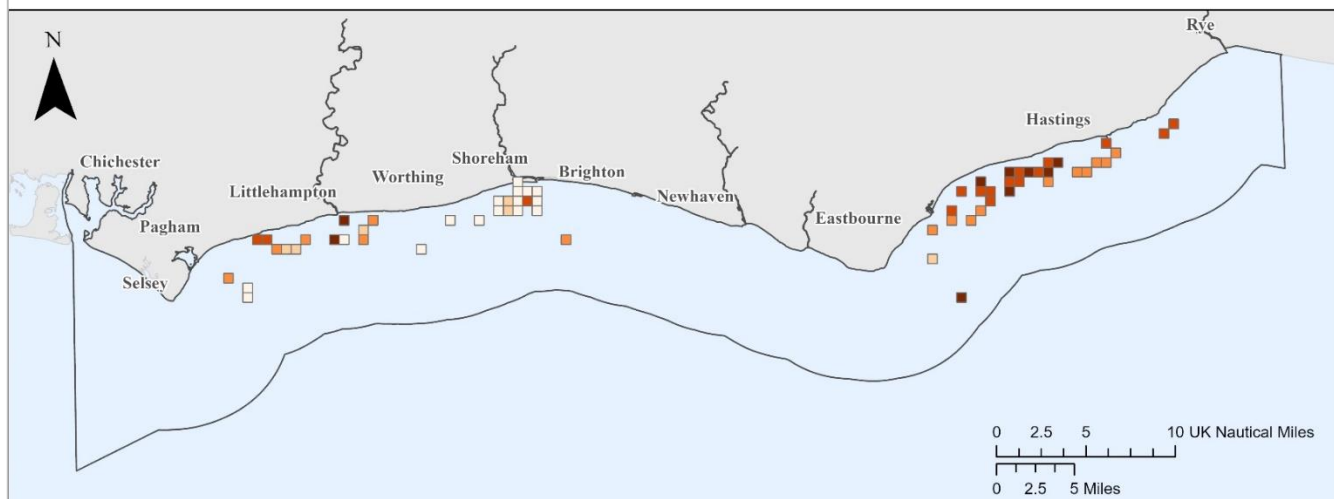


Within the Sussex IFCA District, potting primarily targets brown crab (*Cancer pagurus*) and European lobster (*Homarus gammarus*) using baited traps. These pots allow crabs and lobsters to enter but prevent their escape, with built-in escape gaps to reduce bycatch of juveniles and non-target species.

This activity occurs across 4.9% of the district, with concentrations around Selsey and Beachy Head, particularly beyond the 3-nautical mile (nm) limit. Notable fishing grounds include Hooe Bank and Pullar Bank off Selsey, and areas of harder bedrock near the Royal Sovereign Light, which provide suitable habitat for both species

Potting - Cuttlefish

Fishing Effort 2020 to 2024: Potting - Cuttlefish



Potting - Cuttlefish

Sightings per kmsq patrolled

- 0.005189 - 0.011695
- 0.011696 - 0.014463
- 0.014464 - 0.020969
- 0.020970 - 0.036259
- 0.036260 - 0.072192
- Sussex IFCA District

Description

This map displays the normalised fishing effort for cuttlefish potting between 2020 and 2024, representing the distribution of fishing vessel sightings in relation to patrol vessel coverage. The study area has been divided into a 1km grid, with patrol vessel tracks buffered by 2km to account for observational range. The symbology used in this map is graduated by geometric interval, which accounts for data distribution and variability.

Spatial Reference

Name: British National Grid

Projection: Transverse Mercator

Scale: 1:467,039

Statistics

Minimum	Maximum	Mean	Skewness	Kurtosis	Sum
0	0.072192	0.000689	8.862597	96.819961	1.369813

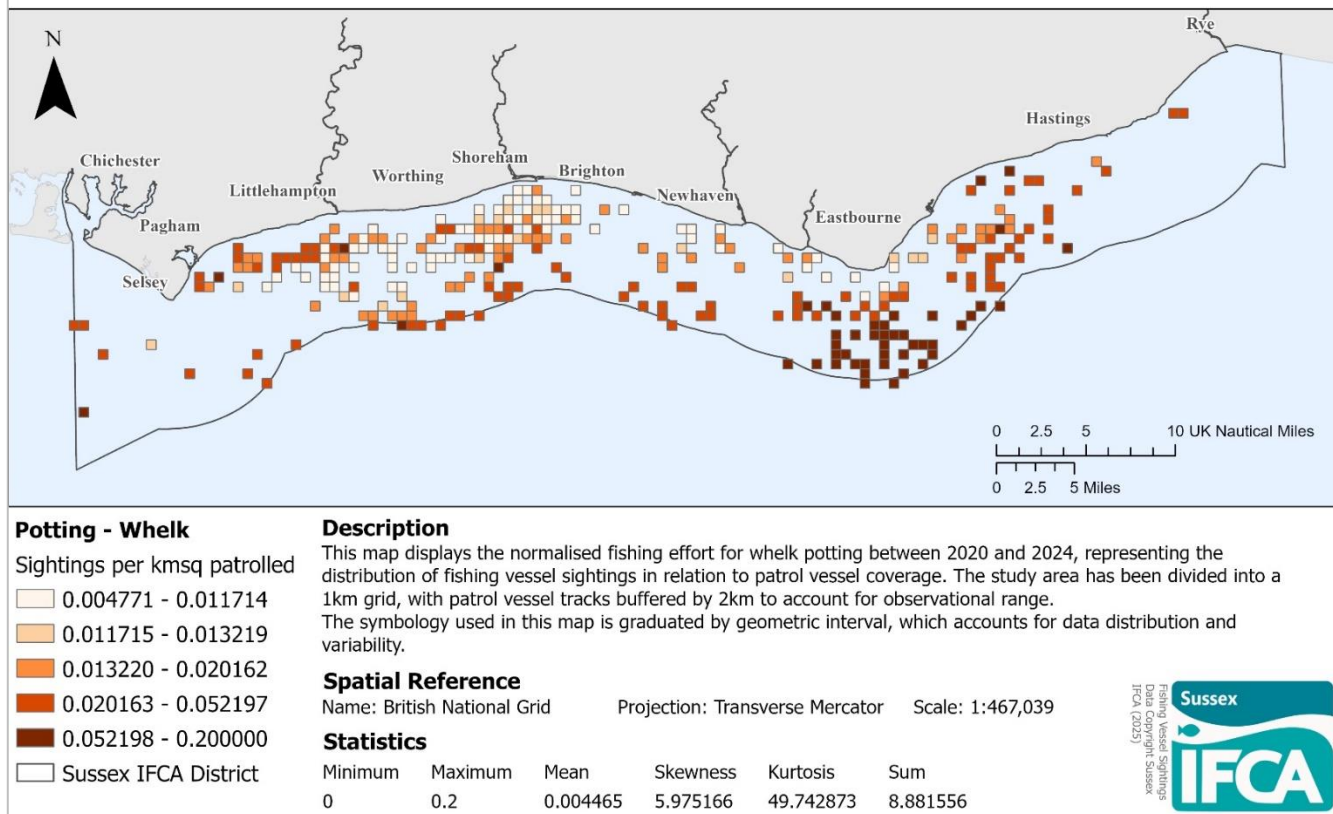


Cuttlefish (*Sepia officinalis*) potting is a seasonal and small-scale fishery within Sussex, targeting spawning aggregations during the warmer months. Cuttlefish migrate inshore to breed, making shallow coastal waters productive fishing grounds.

Activity is concentrated within 3 nm of the coast and occurs across just 3.1% of the district. The main areas of operation are off Hastings and Eastbourne, with limited activity from vessels based in Littlehampton. Given its restricted spatial and temporal scope, this fishery represents a modest component of the overall potting effort.

Potting - Whelk

Fishing Effort 2020 to 2024: Potting - Whelk

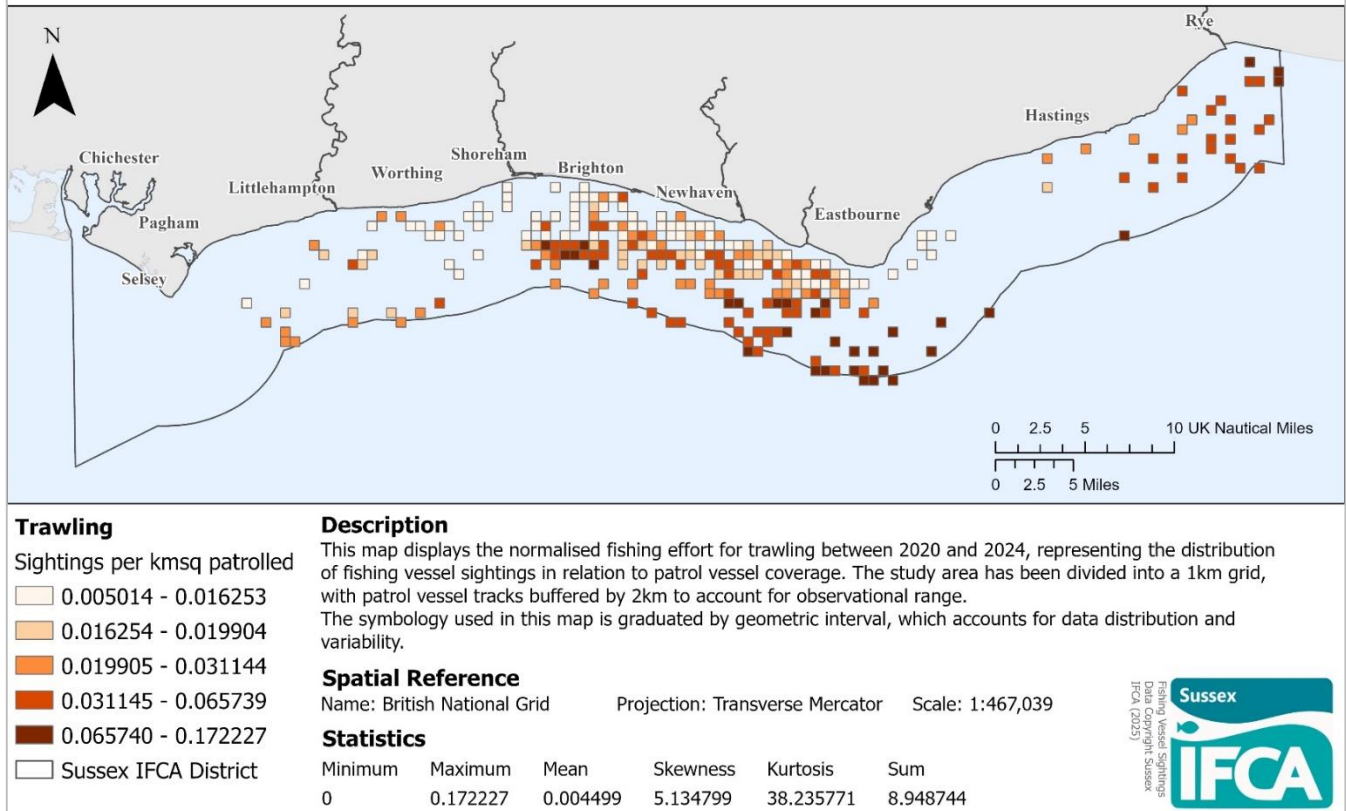


Whelk (*Buccinum undatum*) potting has grown significantly in economic importance and now constitutes the most valuable shellfish fishery in the Sussex IFCA District. By 2023, whelks accounted for 78% of total shellfish landings.

This fishery covers 14.9% of the district, with effort concentrated off Beachy Head, particularly by Eastbourne-based vessels. The peak fishing season runs from January to April or May, after which activity shifts offshore. Shoreham-based boats typically operate in central district waters, adding to the overall effort. The scale and consistency of whelk potting make it a key driver of inshore fishing pressure.

Trawling

Fishing Effort 2020 to 2024: Trawling

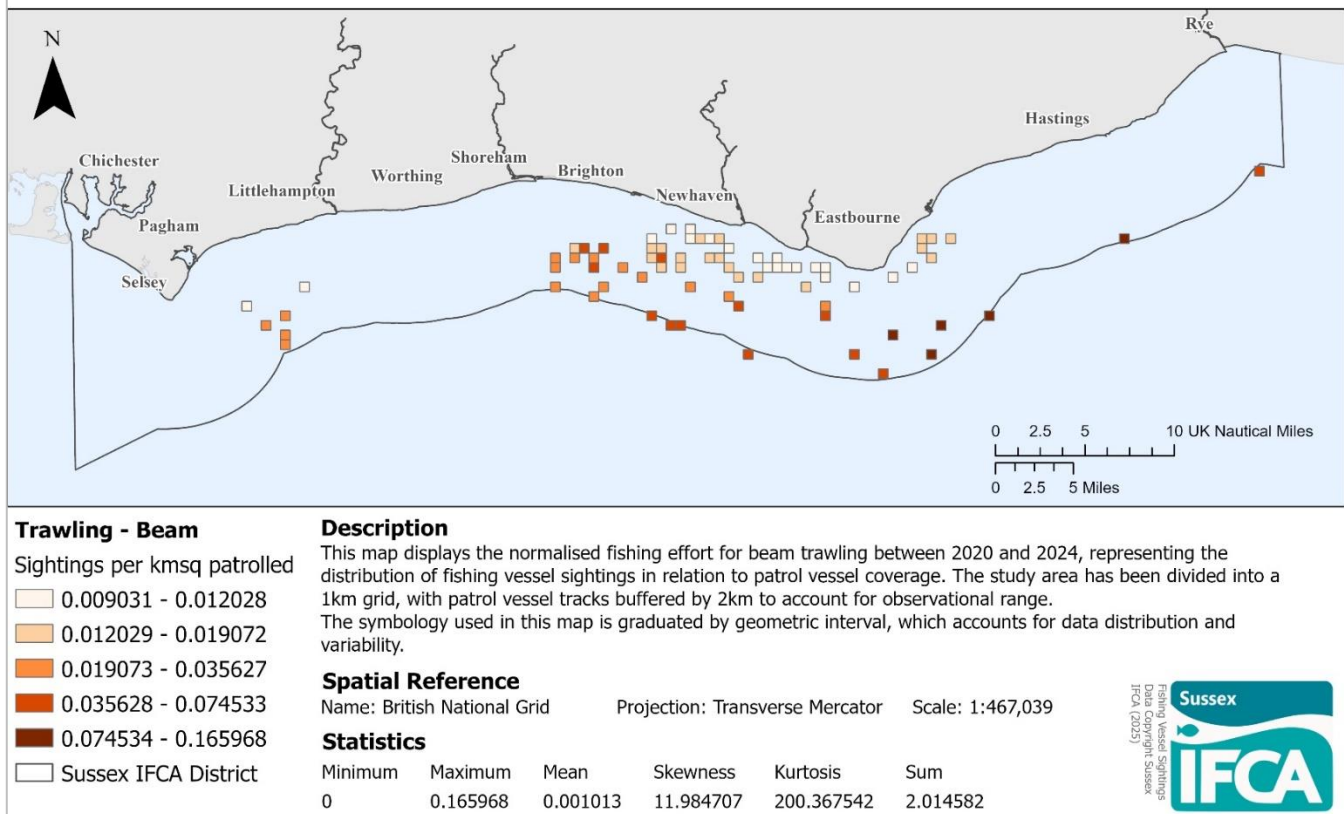


Trawling involves towing a net through the water or along the seabed and is recognised for its efficiency but also its high-impact. In Sussex, trawling occurs across 14% of the district, with effort primarily concentrated between Shoreham and Beachy Head.

Stern trawling is the dominant sub-type, occurring across 10.6% of the district and accounting for the highest total effort (6.60). Beam trawling is less extensive (occurring across 3.8% of the district) but shows similar peak intensity, with a maximum effort value of 0.17, albeit with a lower mean and total effort. Pair trawling, which uses two vessels to tow a single net, occurs across the least amount of the district (1.4%) and records the lowest overall intensity.

Trawling - Beam

Fishing Effort 2020 to 2024: Trawling - Beam



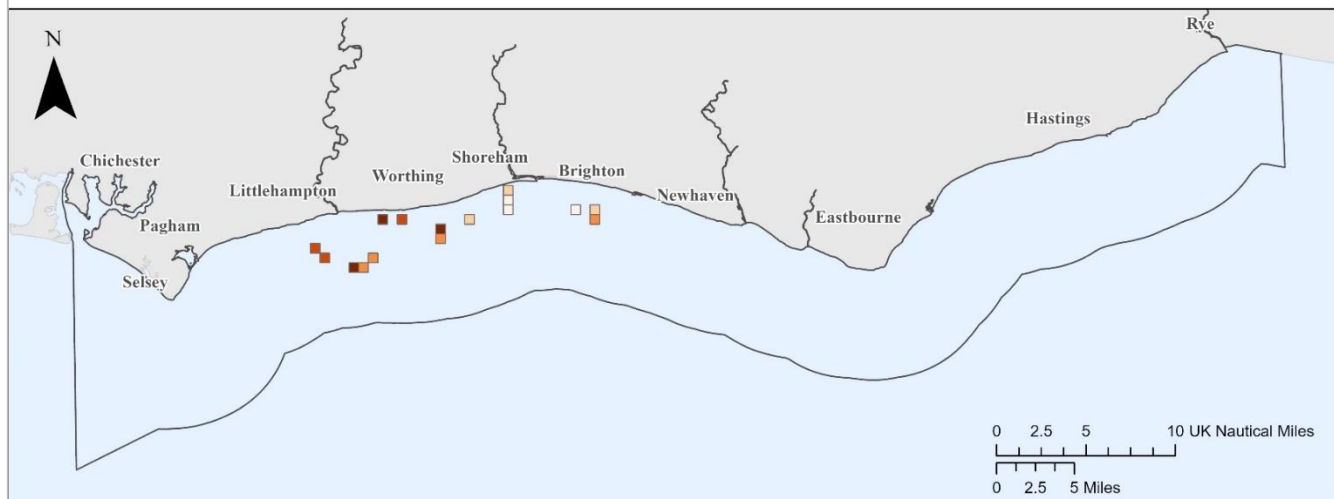
Beam trawling uses a rigid metal beam to hold the trawl net open as it is dragged across the seabed, targeting primarily flatfish species such as sole and plaice. However, the gear's direct contact with the seabed means it can disturb habitats and is therefore restricted in some sensitive areas.

This method is most effective over soft or chalky substrates and is generally avoided in rocky or reef-dominated areas. Within Sussex, Beam trawlers typically follow established lines, visible on the effort grid, running parallel to the coast between Brighton and Beachy Head.

Beam trawling accounts for 3.8% of the district's spatial coverage. Most vessels are based in Newhaven, although nomadic trawlers and Rye-based boats also contribute to the fishery, particularly in the easternmost areas.

Trawling - Pair

Fishing Effort 2020 to 2024: Trawling - Pair



Trawling - Pair

Sightings per kmsq patrolled

- 0.011993 - 0.013161
- 0.013162 - 0.015255
- 0.015256 - 0.019013
- 0.019014 - 0.025757
- 0.025758 - 0.037857
- Sussex IFCA District

Description

This map displays the normalised fishing effort for pair trawling between 2020 and 2024, representing the distribution of fishing vessel sightings in relation to patrol vessel coverage. The study area has been divided into a 1km grid, with patrol vessel tracks buffered by 2km to account for observational range. The symbology used in this map is graduated by geometric interval, which accounts for data distribution and variability.

Spatial Reference

Name: British National Grid

Projection: Transverse Mercator

Scale: 1:467,039

Statistics

Minimum	Maximum	Mean	Skewness	Kurtosis	Sum
0	0.037857	0.000155	13.554682	207.578894	0.308441

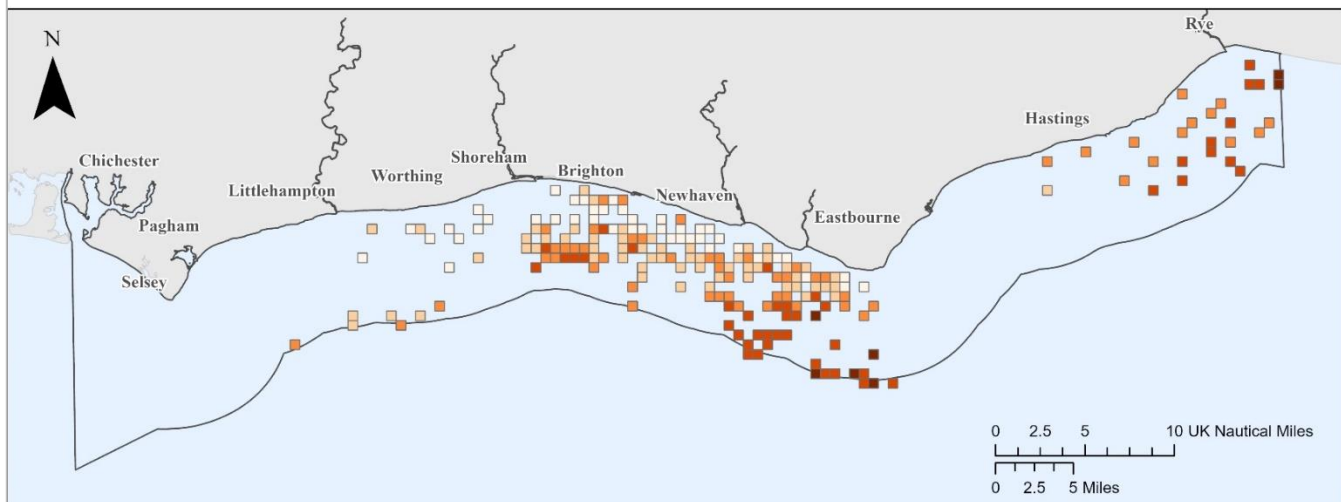


Pair trawling involves two vessels towing a single, large net between them. primarily targeting pelagic species such as bass, mackerel, and herring. This approach is typically used to target pelagic species such as bass, mackerel, and herring. By spreading the net across a wide area, the method improves efficiency and reduces fuel use per catch. However, it requires precise coordination between vessels and is subject to seasonal restrictions in some areas.

Within the Sussex IFCA District, pair trawling is primarily used during the spring to target black bream, especially from April to June. Shoreham and Newhaven are the main ports for vessels involved in this fishery, with effort typically concentrated between Pagham and Brighton.

Trawling - Stern

Fishing Effort 2020 to 2024: Trawling - Stern



Trawling - Stern

Sightings per kmsq patrolled

- 0.005014 - 0.010733
- 0.010734 - 0.021960
- 0.021961 - 0.044001
- 0.044002 - 0.087274
- 0.087275 - 0.172227
- Sussex IFCA District

Description

This map displays the normalised fishing effort for stern trawling between 2020 and 2024, representing the distribution of fishing vessel sightings in relation to patrol vessel coverage. The study area has been divided into a 1km grid, with patrol vessel tracks buffered by 2km to account for observational range. The symbology used in this map is graduated by geometric interval, which accounts for data distribution and variability.

Spatial Reference

Name: British National Grid

Projection: Transverse Mercator

Scale: 1:467,039

Statistics

Minimum	Maximum	Mean	Skewness	Kurtosis	Sum
0	0.172227	0.003318	6.120795	54.359997	6.599614



Stern trawling, the most common form of trawling in Sussex, covers 10.6% of the district. This method involves towing a net from the stern of the vessel and is suitable for targeting a variety of demersal species.

Key target species include demersal species such as sole, turbot, brill, skates, tope, squid, and lemon sole. Stern trawling effort is concentrated between Shoreham and Beachy Head, supported by approximately 12 vessels operating from Shoreham, Newhaven, and Brighton. An additional eight boats—six from Rye and two from Hastings—contribute to effort in the eastern part of the district. Activity is limited around Beachy Head East due to unsuitable seabed conditions and gear conflict, which explains a visible gap in trawling coverage between central and eastern zones.

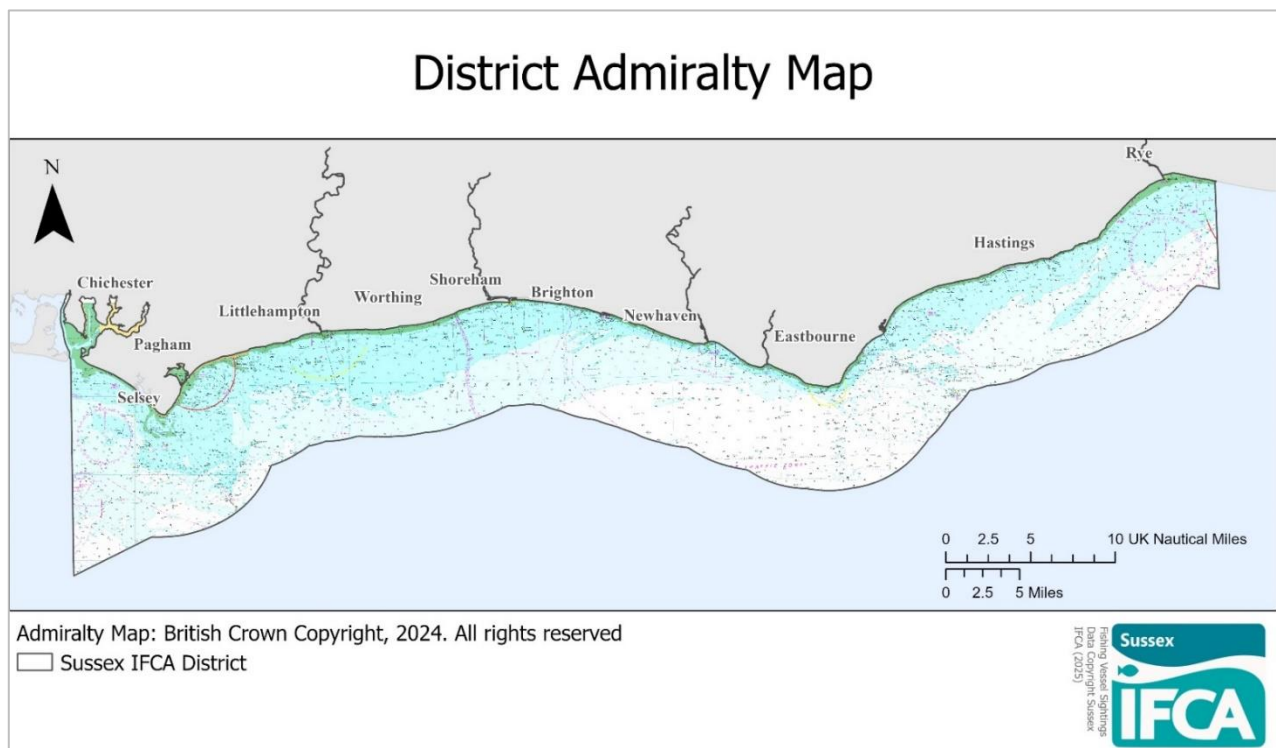
Technical Annex

Map Display

When the fishing effort data is visualised on maps, the data is displayed in a way to enhance interpretability. Unlike with the statistics, grid cells with zero recorded effort are filtered from the data to focus attention on areas where fishing activity has occurred. This exclusion helps to reduce visual clutter and highlight spatial patterns of effort more effectively for each individual gear type.

Furthermore, fishing effort is classified using a geometric interval scheme. This method groups data into classes that increase exponentially, which is particularly well-suited to datasets with a highly skewed distribution, such as with fishing effort data where a small percentage of the district experience very high effort, and most experience low effort. Geometric intervals ensure that both low and high values are meaningfully represented, providing a balanced visual impression and interpretation of fishing intensity across the district.

Admiralty Map



The accompanying Admiralty chart provides a detailed nautical representation of the Sussex IFCA District, displaying key maritime features such as depth contours, navigational hazards, shipping lanes, and designated fishing areas. Produced by the UK Hydrographic Office (UKHO), these charts are essential navigational tools for mariners, offering accurate hydrographic data to support safe passage and operational planning.