Marine Recreational Fishing Catches in Ireland - 2024

Irish Marine Recreational Angling Survey (IMREC)

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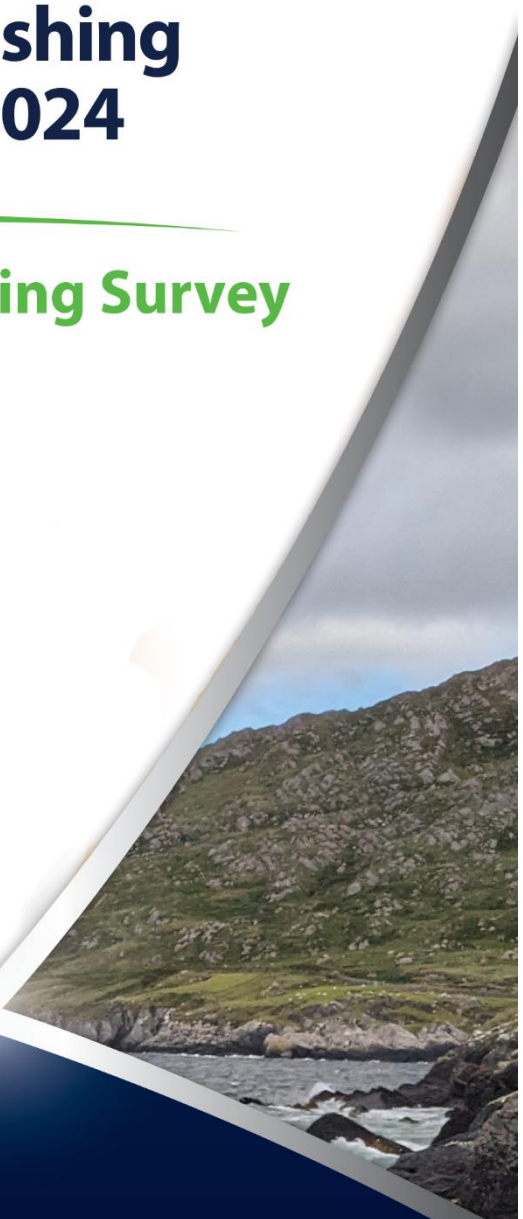

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Irish Marine Recreational Angling Survey (IMREC)

Inland Fisheries Ireland, 3044 Lake Drive, Citywest Business Campus, Dublin 24.

CITATION: Ryan, D., Leonard, E., Heagney, B. and Roche. W. (2024). Marine Recreational Fishing Catches in Ireland - 2023**.** Inland Fisheries Ireland, 3044 Lake Drive, Citywest Business Campus, Dublin 24.

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Abstract

The Irish Marine Recreational Angling Survey (IMREC) provides national estimates of marine recreational fishing (MRF) activity and catch in Ireland. In 2024, data were collected nationally, through on-site surveys (shore, small boat, charter) and off-site angler diaries. A stratified random sampling design was used to ensure representative coverage across regions and seasons. Shore angling accounted for the majority of trips, with mackerel and pollack being the most commonly retained species. Lesser spotted dogfish and pollack were the most frequently released species. Small boat surveys showed high catch rates for mackerel, pollack, and dogfish, with most fish released. Charter vessel surveys recorded high CPUE for pollack and mackerel, with pollack dominating retained biomass. The IMREC Angler Diary captured 371 trips, with 49 species recorded and an overall release rate of 87%. Seabass, whiting, and pollack were the top three species reported in the diary. Catch rates varied by region and season, with summer and west coast trips yielding higher CPUE. Comparisons between on-site and diary data revealed differences in species composition and catch rates. These differences highlight the complementary value of both survey methods. Total estimated annual trips exceeded 2.5 million across all platforms. Pollack remains a key species in Irish MRF, with consistent high catches across all platforms. Concerns about pollack stock sustainability persist, prompting continued monitoring. The report supports Ireland's obligations under the EU Data Collection Framework. Findings inform national and EU-level fisheries management and conservation strategies. Citizen science contributions via the angler diary enhance data coverage and stakeholder engagement. The IMREC programme continues to evolve, refining methods and expanding participation. This report provides a robust evidence base for understanding and managing Ireland's marine recreational fisheries.

1. Introduction

The legal framework for the collection of recreational fisheries data by EU Member States (MS) was given by the EU Data Collection Framework (Council Regulation EU 2017/1004 and Commission Decision EU 1251/2016). Like other MS, Ireland is required to report annual volumes (numbers and weights or lengths) of catches and releases of sea bass, cod, pollack, elasmobranchs and highly migratory ICCAT species in marine recreational fisheries within its waters. As Inland Fisheries Ireland (IFI) is the state agency responsible for the protection, management and conservation of the Republic of Ireland's recreational sea angling resources, it is tasked with collecting these data. To that end IFI initiated the Irish Marine Recreational Angling Survey (IMREC) programme in October 2019.

This report presents the data collected throughout 2024. It continues to apply the knowledge gained through the pilot study of marine recreational fishing (MRF) catches in Ireland (Ryan et al., 2022). On-site random sampling methods continue to be central to the programme, albeit with considerable modifications to account for the constraints associated with a limited budget. Random sampling techniques remain the most reliable for estimating catch rates in diverse and complex fisheries as they reduce fisher selection biases (Lewin et al., 2021; Arlinghaus and Cooke, 2009; Pollock et al., 1994) and often allow direct measurement of retained fish (Jones and Pollock, 2012). Data from these surveys and estimates of total catches are presented in this report.

As on-site sampling methods are expensive to maintain in the long term in terms of staff time and resources, a citizen science based voluntary catch data collection method, the IMREC Angler Diary, was developed primarily to increase data returns and coastline coverage and to engage the angling community. This online angling diary was originally developed and tested during the pilot study. It is well documented that self-selecting survey data collection methods are susceptible to biases (Skov et al., 2021; Venturelli et al., 2017). However, these tools are likely to play a central role in fisheries data collection (Lennox et al., 2021; Gundeland et al., 2020) due to advances in technology and because they are relatively inexpensive to operate. Anglers, as stakeholders, also benefit by being meaningful contributors to a citizen science-based process. This tool allowed anglers to record fishing trips with information regarding location, methods used, time spent fishing, species caught, fish length (cm) and if catches were released. This report presents a year of diary-based angling data which has been collected and analysed.

2. Methods

Ireland is in the Eastern North Atlantic. Its coastline encompasses ICES divisions (VIIa, VIIg, VIIj, VIIb and Via) (Fig. 1). The IMREC survey is designed account for all MRF along the Irish

coastline and within its inshore waters. Ryan et al. (2021 & 2022) characterised the different MRF sectors in Ireland considerable detail.

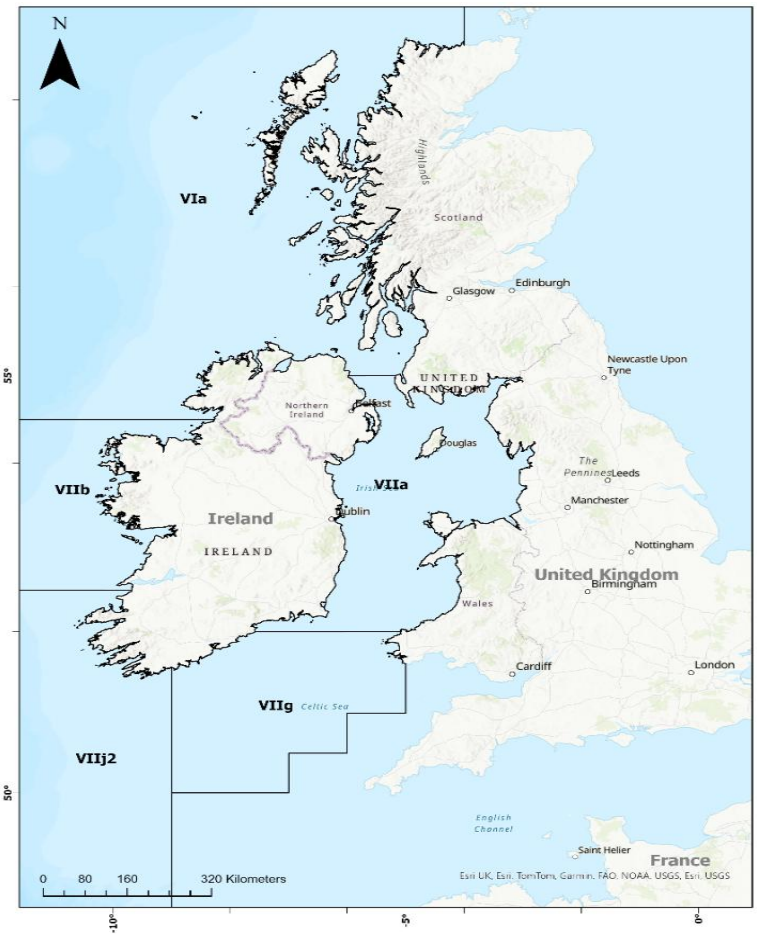

Fig. 1: Ireland's location in a European and ICES region context.

2.1 On-site angling surveys

2.1.1 Roving creel survey of shore anglers

Sampling strata

The IMREC survey of shore anglers utilises a spatio-temporal sampling method to collect catch per unit effort (CPUE) data of sea anglers around the Irish coast. The roving-creel survey approach was applied due to the disparate nature of shore angling around Ireland and the multiple potential access points to the sea (Armstrong et al., 2013; Lockwood, 2000; Pollock et al., 1997). The survey also incorporates spatial and temporal stratification into its final design to maximise sampling efficiency (Jones and Pollock, 2012; Pollock et al., 1997).

Increased sampling effort is allocated to the places and times with greater angling effort (unequal probability sampling) thus increasing the precision of the effort estimates (Hayne, 1991), as well as increasing sampling efficiency (Best and Boles, 1956).

Sampling strata choices for the surveys have been reviewed and amended during the lifetime of the sampling programme to strike a balance between calculating precise estimates and collecting sufficient angler interviews per sampling strata. The spatio-temporal sampling frame consists of two spatial strata: East (VIIa and VIIg) and West (VIIj2, VIIb and Via) (Fig. 1) and two temporal strata: Winter (November to March) and Summer, (April to October). More detail for this decision-making process is presented in Ryan et al. (2022) and Ryan et al. (2023). To increase the likelihood of encountering anglers during sampling, angling activity strata (high and low activity) were also written into the sampling programme (Ryan et al 2022).

Sampling protocol

Sampling took place throughout the country in 2024 (Fig. 2). Sampling was selected sequentially for each sampling week. Prior to each sampling season, a sampling programme for each consecutive week was developed, taking account of each stratum and cluster in the sampling design. Visits to PSUs were heavily weighted towards those designated as high activity (probability = 0.75). For further details on the sampling selection process refer to Ryan et al. (2023).

Data collection and analysis

To allow instantaneous data collection, all surveyors were supplied with a tablet containing the data collection software, Survey123 https://survey123.arcgis.com (ESRI 2020). All anglers are interviewed about their catch on site and all information is uploaded and a follow up

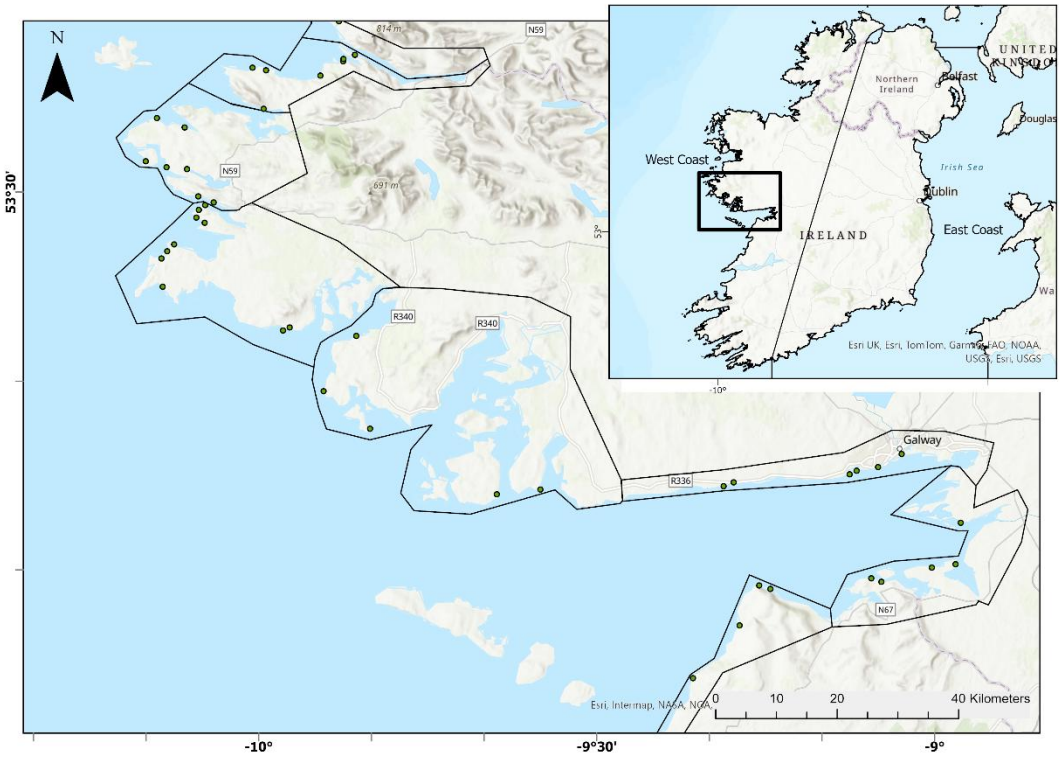

Fig. 2: Map of Ireland identifying PSUs (Black outline) and SSUs (green dots) within a section of the Western region stratum, for the roving creel survey of shore anglers. Inset identifies the East and West strata.

interview is requested to collect a complete picture of their angling trip. The mean catch-per-unit-effort (CPUE) of all MRF species caught during each shore angling trip is estimated where an angling trip is defined as one daily angler trip for shore angling. A ratio of the means estimator (Armstrong et al., 2013; Pollock et al., 1994; Vølstad et al., 2006) was used to calculate average species specific CPUE across all strata for shore and small boat angling, whereby a stratum was defined for each season and high/low activity combination. Retained or released fish of a particular species were considered as a separate catch. For detail on data collection and analysis protocol, refer to Ryan et al. (2023).

The overall CPUE estimates of a selection of species were combined with effort estimates derived from CSO and IPSOS-MRBI surveys, described in Ryan et al. (2022), to calculate total catch of all released and retained species through shore angling (Table 1). Where applicable, CPUE estimates for some species were converted to CPUE biomass estimates using length/weight conversion equations derived during the pilot study (Ryan et al. 2022).

Table 1: Total annual sea angling trip estimates per annum in Ireland. For details refer to Ryan et al. (2022).

Angling type	Angling trips (in 1000's) per year	RSE
Shore	1,637	0.31
Small boat	1,016	0.43

2.1.2 Bus route access point survey of small boat anglers

The IMREC survey of private small private boat anglers also uses a spatio-temporal sampling method to collect catch per unit effort data around the Irish coast. The most appropriate method of collection of catch data for this survey is through a random-access point survey. Unlike the roving-creel type approach, this method captures complete angling trip data as the interview occurs when the angler has completed their fishing trip. This survey also incorporated stratification into its final design to maximise sampling efficiency. Refer to Ryan et al. (2023) for details.

Sampling protocol

Sampling took place throughout the country in 2024 (Fig. 3). Site selection procedures generally followed the steps described in the roving creel survey of shore anglers above. However, in the small boat bus route procedure, each access point/SSU is sub-sampled across the sampling day. The amount of time spent at each SSU depended on the number of SSU within a PSU. Time spent at each SSU was apportioned evenly across the sampling day.

Data collection and analysis

This generally followed the steps described in the roving creel survey of shore anglers above with some exceptions. Refer to Ryan et al. (2023) for details.

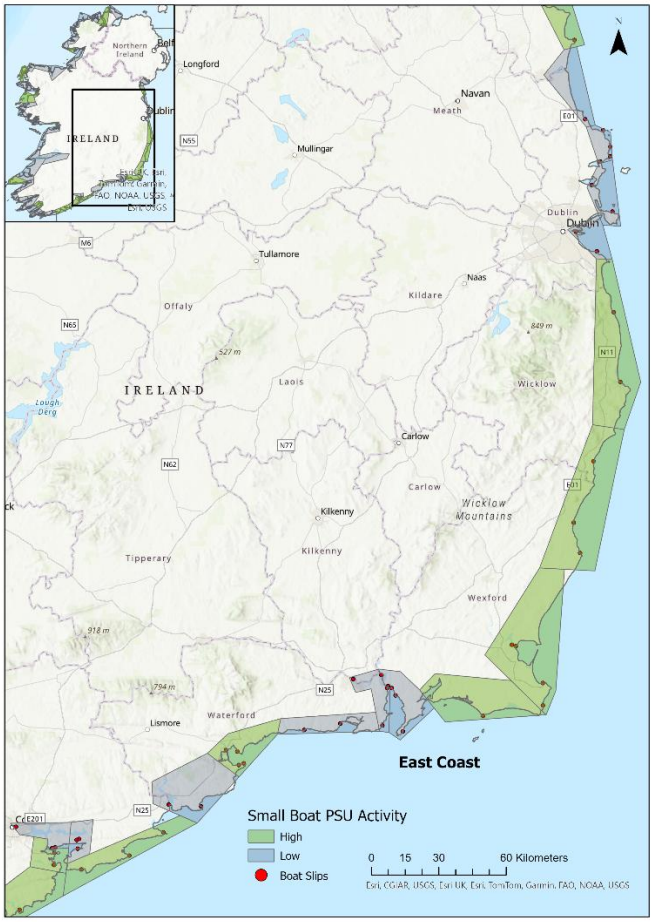

Fig. 3: Map of Ireland identifying PSUs and SSUs within a substantial portion of the Eastern region stratum, for the bus route access point survey of small boat anglers.

2.1.3 Onboard charter vessel catch survey

The charter vessel sampling programme developed by IFI, undertaken by IFI staff and Marine Institute (MI) contractors commenced in summer 2021. This programme sampled randomly designated chartered angling trips to record species numbers, and measure lengths and weights of all captured and released fish (Ryan et al. 2022).

A sampling frame was developed from a subset of charter skippers (Fig. 4) who agreed to participate in the programme. As per the surveys, the sampling frame was stratified spatially (east and west coasts) and temporally (summer and winter). Surveys were selected through a well-defined random sampling frame. When possible, samplers were assigned to a vessel trip to survey to accurately measure and weigh captured fish. Differences between catches during sampling years are compared (Ryan et al. 2024; 2023).

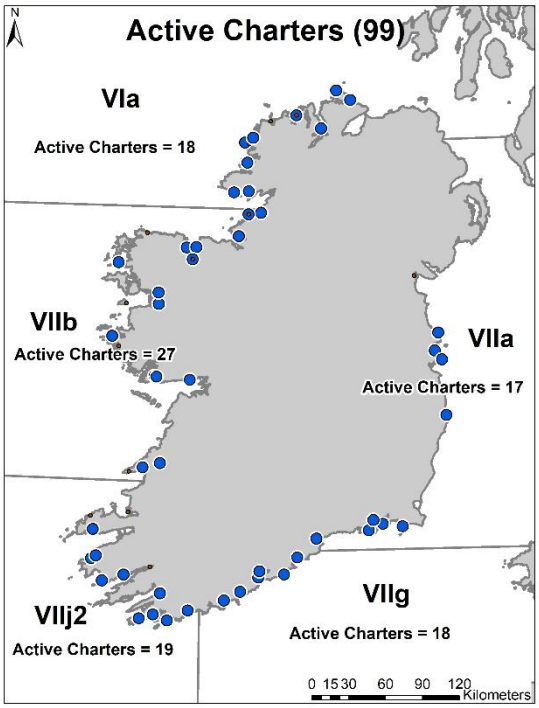

Fig. 4: Map of Ireland identifying the general location of active charter sea angling vessels (2024) by ICES division.

Data collection and analysis

An onboard sampler boards a randomly chosen charter vessel prior to the trip, as agreed with the charter skipper. They record relevant trip information and biometric catch data that allows for the estimation of angler Catch Per Unit Effort (CPUE), total retained biomass, and where possible length-weight relationships for individual species. Priority was given to seabass, cod, pollack, elasmobranchs and highly migratory ICCAT species (Council Regulation (EU) 2017/1004). For further detail refer to Ryan et al. (2021). For information on methods of data analysis. Refer to Ryan et al. (2023).

2.2 Off-site angling surveys

2.2.1 Online angling diary

To recruit diarists for the IMREC Angler Diary, several approaches were used. A call to action for all sea anglers subscribed to a weekly IFI issued 'Irish Angling Update' was released along with recruitment during Face-to-Face angler surveys. Further media pushes of the IMREC

Diary from the IFI marketing department occurred during 2024, leading to an increase in diarist recruitment. Another tactic used is an incentivised strategy aiming to increase recruitment and retention levels of active anglers. This involves entering active anglers into a monthly draw.

Each diarist receives an email with their own login details, user manual and a fish ID guide, giving them the information needed to start recording their fishing trips through the online diary. The requested information for each session included the general fishing location, time spent fishing, type of fishing, methods used and any catch data (species, total caught, retained/released, length (cm)). Each angler can review their own catch data through an online dashboard which provides an overview of all trips the angler has recorded. All data submitted is uploaded to an ArcGIS Online Feature Layer. This is stored on Inland Fisheries Ireland's ArcGIS Enterprise cloud storage. Data can be downloaded for analysis as required.
All personal data was removed from the database before data analysis and no personal data is shared with any agency or official body. All data are aggregated and are presented in the results coming from trips in 2024.

Data collection and analysis

The diary allows for one of 4 types of fishing activity to be selected per session, Shore, Small boat, Kayak and Charter. The fishing type for each session is recorded and allows for catch percentages to be calculated based on catch and effort levels. As with the on-site surveys, data are collated into two regional strata (East and West) and two temporal strata (summer and winter).

Catch Per Unit effort was based on total fish caught and total trips by sector (shore, small boat etc) recorded. All CPUE figures are calculated at species level with further separations to identify seasonal and spatial differences. Due to the broad variety and number of different species recorded in the diary, only the overall top 10 species were included in CPUE calculations. Region/Season strata are based on the total angling trips per Region/Season and number of fish caught per species in each. An example of this would be whiting CPUE in the East coast during Summer = 0.438. This is based on 109 whiting caught in 249 angling trips along the East coast during the summer months. Total diary CPUE figures for whiting is 0.489 based on 314 whiting caught across 642 angling trips across all regions/seasons.

$$CPUEn = \frac{\sum FISHn}{\sum TRIPSn}$$

Where: $CPUEn$ is the number of captured fish (retained or released) for a particular species ($FISHn$) divided by the total number of angling trips recorded (TRIPSn).

Analysis at species level was confined to the top 10 species based on overall total catch (shore and small boat catches combined) and total catch per fishing type.

2.3 Highly Migratory ICCAT Species

In a separate programme, authorised by EU/ICCAT, Ireland operates a limited Atlantic Bluefin Tuna scientific data collection programme (Tuna CHART https://www.fisheriesireland.ie/Fisheries-Research/tuna-chart.html). This programme commenced in 2019. In Q3 and Q4, in each year, a limited number of authorised and trained charter skippers operate a highly controlled catch, tag and release programme. All fish are captured by angling, measured and tagged in the water, and released. The programme is ongoing. Catch data are reported to ICCAT https://www.iccat.int/GBYP/en/overview.asp.

A small-scale Albacore (*Thunnus alalunga*) angling fishery can operate off the southwest coast for a limited number of weeks during the summer months, but only in periods of settled weather.

3. Results

3.1 On-site angling surveys

3.1.1 Roving creel survey of shore anglers

During 2024, IFI surveyors conducted 91 shore surveys (PSU visits) which consisted of 679 SSU visits. During the surveys, 140 shore angler interviews were completed and 526 catches of 25 different species were recorded (Table 2).

Table 2: Primary sampling unit (PSU) survey details during IMREC roving creel shore surveys in 2024.

Region	Season	number PSU visits	number SSU visits	number PSU visits (with ≥1 angler interviewed)	number angler Interviews	Average catch count (±s.d)	Average angling time mins (±s.d)
East	Winter	15	112	6	14	2.9(5.5)	188(81)
East	Summer	31	240	22	56	3.2(8.3)	171(123)
West	Winter	14	92	5	9	9.4(12.4)	228(76)
West	Summer	31	235	17	61	3.6(6.9)	163(106)

Catch per unit effort (CPUE) estimates

CPUE estimates for all shore caught species recorded during the survey have been weighted using the survey design approach and calculated across all survey strata. Mackerel were the most retained species (CPUE 2.9, 0.04 RSE), followed by pollack (CPUE 0.19, 0.06 RSE). Four other retained species were recorded during the survey in 2024 (whiting, flounder, European seabass and greater sandeel) (Table 3). In total 23 species were recorded as caught and released during the onsite shore surveys (Table 3). The most caught and released species were lesser spotted dogfish (CPUE 1.27, 0.05 RSE), and pollack (CPUE 0.9, 0.02 RSE), followed by whiting and dab (Table 3) (Fig. 5).

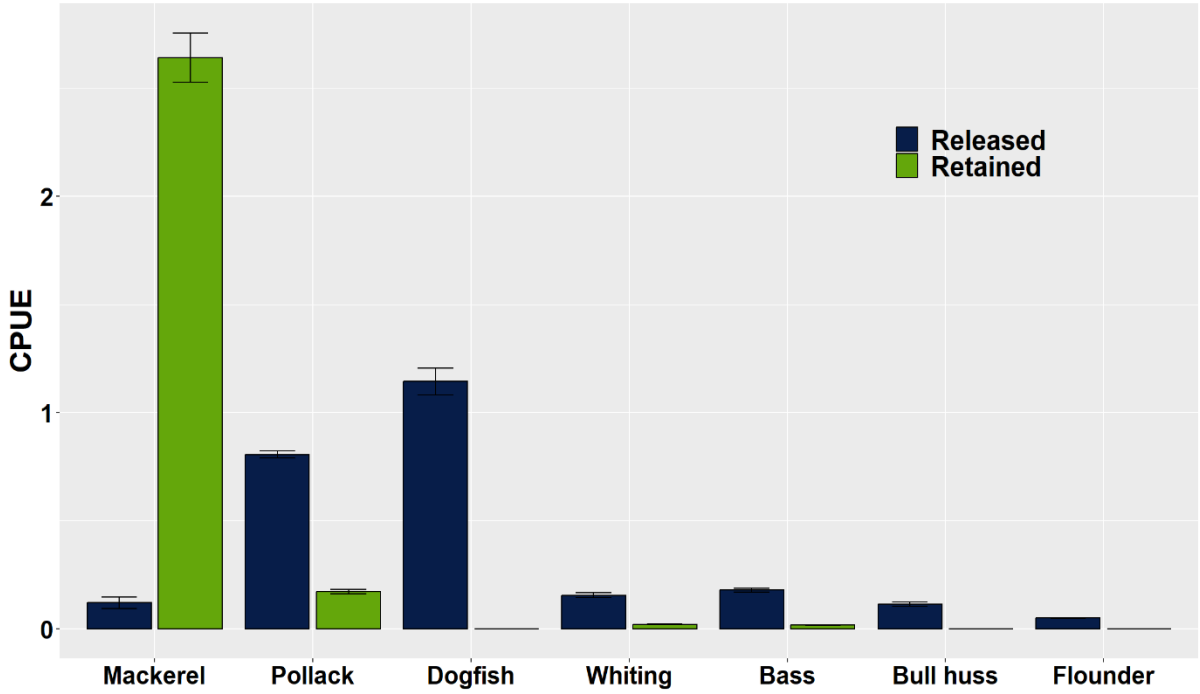

Fig 6. Mean weighted CPUE (catch per angler day) estimates of the seven most commonly shore caught species recorded during on-site surveys Ireland (Jan-Dec 2024).

Fish lengths

Pollack released by anglers interviewed during the survey were slightly longer (31±0.8se) on average than retained pollack (28±0.7se cm). Released catches of European sea bass tended to be smaller than kept catches (Table 3).

Table 3: Weighted CPUE (catch per angler day) estimates and average lengths/weights of **all** fish captures recorded during IMREC national on-site shore surveys (Jan – Dec 2024).

Species	Number of catch records	CPUE(RSE)	CPUE biomass (RSE)	Length (±se) cm	Ave weight (±se) g
Released Catches					
Lesser spotted dogfish	81	1.27 (0.05)	944 (0)	57.1 (0.44)	670 (16.41)
Pollack	37	0.9 (0.02)	227.4 (0)	31.4 (0.84)	438 (22.6)
Whiting	24	0.17 (0.07)	7.3 (0.01)	14.6 (0.07)	32 (0.51)
Dab	19	0.08 (0.06)	NA	22.9 (0.35)	NA
European seabass	17	0.2 (0.05)	121.3 (0)	35.2 (0.23)	507 (8.35)
Bull huss	14	0.13 (0.09)	NA	62.9 (1.43)	NA
Mackerel	13	0.13 (0.22)	19 (0.02)	20.4 (0.2)	94 (3.69)
Flounder	11	0.05 (0.02)	NA	18.3 (0.55)	NA
Bib (Pouting)	10	0.04 (0.06)	NA	15 (0)	NA
Corkwing wrasse	9	0.04 (0.03)	NA	15.6 (0.23)	NA
Painted ray	6	0.07 (0.21)	NA	60 (0)	NA
Ballan wrasse	4	0.04 (0.07)	10.7 (0)	26.3 (0.15)	275 (5.02)
Common Blenny	4	0.02 (0.06)	NA	15 (0)	NA
Herring	3	0.01 (0.06)	NA	25 (0)	NA
Spurdog	2	0.02 (0.11)	NA	50 (0)	NA
Conger eel	1	0 (0.06)	NA	20	NA
Fivebeard rockling	1	0.01 (0.11)	NA	7	NA
Greater Sandeel	1	0.02 (0.04)	NA	30	NA
Plaice	1	0 (0.01)	NA	20	NA
Red gurnard	1	0 (0.37)	NA	25	NA
Stingray	1	0.01 (0.21)	NA	112	NA
Tub gurnard	1	0.01 (0.07)	NA	25	NA
Turbot	1	0.06 (0.06)	NA	28	NA
Retained Catches					
Mackerel	231	2.94 (0.04)	636.7 (0)	27.7 (0.09)	191 (3.53)
Pollack	20	0.19 (0.06)	65.3 (0)	27.5 (0.74)	260 (21.3)
Whiting	5	0.02 (0.06)	0.4 (0.02)	12 (0)	16 (0)
Sea trout	4	0.07 (0.07)	NA	43.5 (0.08)	NA
European seabass	3	0.02 (0.1)	25.3 (0)	50.7 (0.83)	1471 (75.5)
Greater Sandeel	1	0.02 (0.12)	NA	29	NA

Table 4: Shore angling estimates of total catch and weight for **selected** species in Ireland (Jan – Dec 2024).

Species	Total Annual catch (000's) (RSE)	Total Catch Biomass (t) (RSE)
Released Catches		
Lesser spotted dogfish	2079 (0.36)	1545 (0.31)
Pollack	1466 (0.33)	372 (0.31)
Whiting	280 (0.38)	12 (0.32)
Dab	135 (0.37)	NA
European seabass	324 (0.36)	199 (0.31)
Bull huss	206 (0.4)	NA
Mackerel	217 (0.52)	31 (0.33)
Flounder	89 (0.33)	NA
Bib (Pouting)	71 (0.37)	NA
Corkwing wrasse	71 (0.34)	NA
Painted ray	116 (0.52)	NA
Ballan wrasse	70 (0.38)	17 (0.31)
Retained Catches		
Mackerel	4807 (0.35)	1042 (0.31)
Pollack	311 (0.36)	107 (0.31)
Whiting	36 (0.37)	1 (0.32)
European seabass	28 (0.41)	41 (0.31)

Annual shore catch estimates

No catches of cod were recorded during the on-site shore sampling surveys. Mackerel made up the largest proportion of retained fish by shore anglers (Table 4) with an estimated 1042 (0.31 RSE) tonnes retained. Besides mackerel, pollack were the most retained species by number and weight (Table 4). European sea bass were retained, albeit in small numbers; total retention was estimated to be around 28,000 (0.41 RSE) individuals (41 tonnes), whereas around 324,000 (0.36 RSE) individuals were caught and released, according to IMREC survey estimates.

3.1.2 Bus route access point survey of small boat anglers

During 2024, IFI surveyors conducted 29 small private boat surveys (PSU visits) which consisted of 81 SSU (boat access points) visits. 30 small boat interviews were completed (Table 5). Small boat fishing is generally limited in Winter (Oct – March) due to weather conditions but sampling is required during this period to ensure consistency.

Table 5: Primary sampling unit (PSU) survey details during IMREC small boat surveys in 2024.

Region	Season	number PSU visits	number SSU visits	number PSU visits (with ≥1 angler interviewed)	number angler Interviews	Average catch count (±s.d)	Average angling time mins (±s.d)
East	Winter	3	9	1	1	3(0)	162(0)
East	Summer	14	28	6	20	8.3(17.4)	231(124)
West	Winter	2	7	0	0	NA	NA
West	Summer	10	37	4	9	2.4(7.3)	267(45)

Catch per unit effort (CPUE) estimates

CPUE estimates for all small boat caught species recorded during the survey have been weighted using the survey design approach and calculated across all survey strata. Nearly 200 catches of eight different species were recorded. Mackerel were the only species encountered during the surveys which were retained at a notable rate (CPUE, 1.99; 0.09 RSE). Lesser spotted dogfish (CPUE, 1.61; 0.01 RSE), followed by pollack (CPUE, 1.49; 0.01 RSE) were the most released species (Fig. 7, Table 6).

Fish lengths

Small boat caught pollack recorded during the survey were on average 20.8cm. all pollack were released. Released mackerel were on average smaller (10.4 ±0.1se) than retained mackerel (22.6±0.4se) (Table 7).

Table 6: Weighted CPUE (catch per angler day) estimates and average lengths/weights of all fish captures recorded during IMREC on-site small boat surveys (Jan – Dec 2024).

Species	Number of catch records	CPUE(RSE)	CPUE biomass (RSE)	Length (±se) cm	Ave weight (±se) g
Released Catches					
Mackerel	50	0.37 (0.12)	5.9 (0.02)	10.4 (0.1)	7 (0)
Lesser spotted dogfish	20	1.61 (0.01)	669.4 (0)	51.3 (0.2)	486 (0)
Pollack	20	1.49 (0)	104.7 (0)	20.8 (0.2)	81 (0)
Ballan wrasse	5	0.48 (0)	7.2 (0)	10 (0)	15 (0)
Corkwing wrasse	5	0.48 (0)	NA	10 (0)	NA
Dab	5	0.48 (0)	NA	15 (0)	NA
Greater Sandeel	1	0.01 (0.15)	NA	33	NA
Grey gurnard	1	0.1 (0)	NA	15	NA
Retained Catches					
Mackerel	80	1.99 (0.09)	132.7 (0.01)	22.6 (0.4)	96 (6.62)
Greater Sandeel	4	0.38 (0)	NA	35 (0)	NA

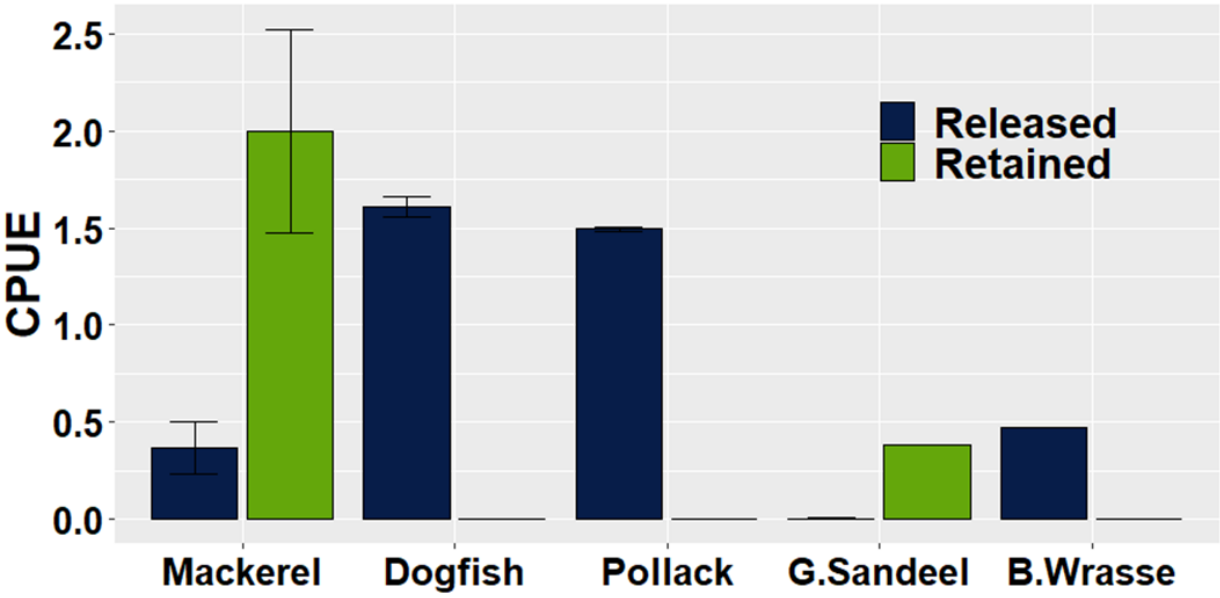

Fig 7. Mean weighted CPUE (catch per angler day) estimates of five selected small boat caught species recorded during on-site surveys in Ireland (Jan-Dec 2024).

Annual small boat catch estimates

The data collected during the pilot study estimated that small boat anglers retain 135 (0.45 RSE) tonnes of mackerel over the course of a year (Table 7). Although, no small boat anglers interviewed reported retained pollack, caught and released pollack were common. It is estimated that over 1.5 million, mainly small pollack were caught and released by small boat anglers in Ireland in 2024 (Table 7).

Table7: Total Catch Small Boat Surveys (Jan – Dec 2024).

Species	Total Annual catch (000's) (RSE)	Total Catch Biomass (t) (RSE)
Released Catches		
Mackerel	378 (0.55)	6 (0.45)
Lesser spotted dogfish	1636 (0.45)	680 (0.44)
Pollack	1517 (0.44)	106 (0.44)
Ballan wrasse	484 (0.43)	7 (0.43)
Retained Catches		
Mackerel	2026 (0.52)	135 (0.45)
Greater Sandeel	387 (0.43)	NA

3.1.3 Onboard charter vessel catch survey

The 2024 onboard charter catch survey (237 anglers aboard 37 charter trips) around the coast collected data on 33 species (4018 fish). Most sampling trips took place in the western regional stratum, reflecting spatial variation in Irish charter angling effort (Fig. 8).

Across the charter boat fishery in 2024, pollack had the highest rate of retention by catch count (CPUE 3.1, RSE 0.23), closely followed by mackerel (CPUE 3.0, RSE 0.27). Pollack also had the highest retention rate by biomass (CPUE biomass (Kg), 3.0, RSE 0.23 (Fig. 9, Table 7). Coalfish was the only other species caught and retained at substantial rates (CPUE 1.4, RSE 0.44). In 2024, Ballan wrasse were caught relatively frequently within the Irish charter fishery, however, all caught fish were released, according to the survey (Fig. 9, Table 8). Retained pollack were on average longer than released fish. This was the same for most species (Fig. 10). Lesser spotted dogfish were the most caught elasmobranch species by charter boats in 2024, followed by bullhuss (Fig. 11). All 125 recorded elasmobranch catches were released.

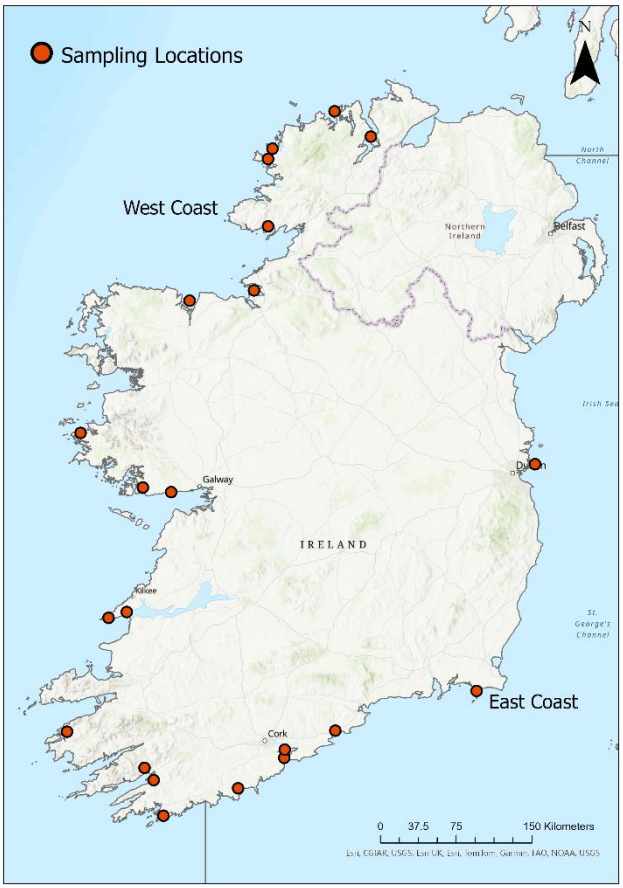

Fig. 8: Sampling Trips locations during IMREC onboard Charter vessel angling survey (Jan-Dec 2024).

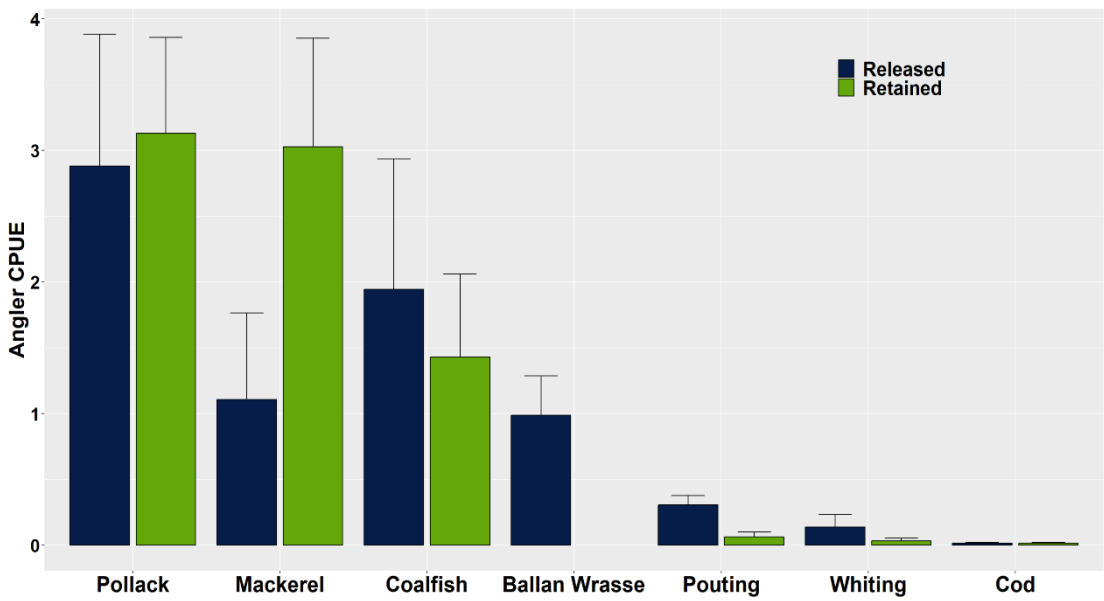

Fig 9. Mean weighted CPUE (catch per angler day) estimates of the seven commonly charter caught species recorded during the national IMREC onboard charter survey (Jan-Dec 2024).

Table 7: CPUE (catch per angler day) **ranked** estimates and average lengths/weights of all fish **caught and retained** during national IMREC on-board charter surveys throughout Ireland (Jan – Dec 2024). CPUE estimates weighted according to sampling design.

Species	Total Caught	CPUE (RSE)	CPUE Biomass (kg) (RSE)	Average length (cm) (±s.d)	Average weight (Kg) (±s.d)
Pollack	739	3.13 (0.23)	2.99 (0.23)	47.4 (6.8)	0.97 (0.4)
Mackerel	757	3.03 (0.27)	0.72 (0.28)	29.5 (3.3)	0.24 (0.1)
Coalfish	253	1.43 (0.44)	1.12 (0.44)	44.4 (4.3)	0.78 (0.17)
Sandeel	40	0.15 (0.92)	NA	26.2 (3.2)	NA
Ling	21	0.08 (0.3)	0.11 (0.25)	61.5 (14.4)	1.5 (0.7)
Scad	18	0.07 (0.84)	0 (0.48)	31.6 (3.3)	NA
Pouting	16	0.06 (0.53)	0.03 (0.61)	33.5 (4.4)	0.6 (0.21)
Whiting	8	0.03 (0.68)	0.01 (0.66)	35.8 (3)	0.37 (0.08)
Red Gurnard	6	0.03 (0.79)	0.02 (0.79)	36 (4.2)	0.52 (0.2)
Cod	3	0.01 (0.52)	0.01 (0.58)	43.7 (2.1)	0.79 (0.12)
Launce	3	0.02 (0.71)	0 (0.71)	29.7 (2.1)	0.06 (0.01)
Blue Whiting	2	0.03 (0.36)	0 (0.36)	26 (0)	0.07 (0)
Dab	2	0.01 (0.79)	NA	32.8 (3.9)	NA
Haddock	2	0.01 (0.55)	0 (0.4)	38.4 (2.3)	NA
Megrim	1	0.01 (1.06)	NA	NA	NA
Turbot	1	0.01 (0.79)	NA	NA	NA

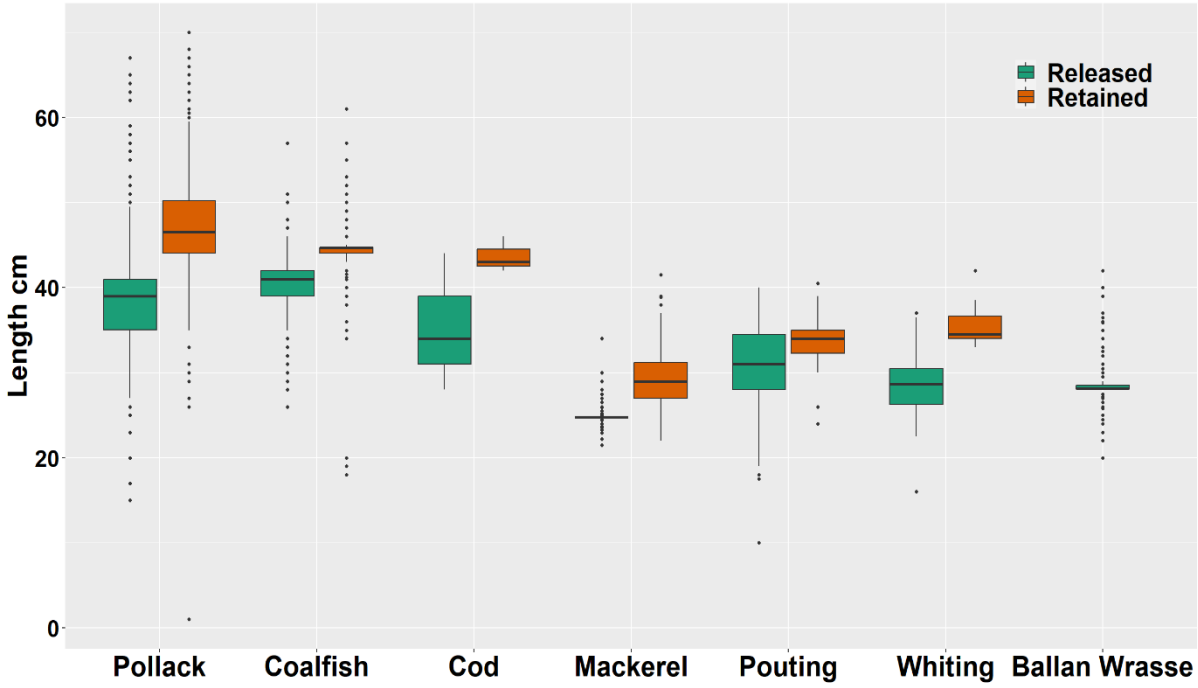

Fig 10. Box plots of the lengths of the seven commonly charter caught species recorded during the national IMREC onboard charter survey (Jan -Dec 2024).

Table 8: CPUE (catch per angler day) **ranked** estimates and average lengths/weights of all fish **caught and released** during national IMREC on-board charter surveys throughout Ireland (Jan – Dec 2024). CPUE estimates weighted according to sampling design.

Species	Total Caught	CPUE (RSE)	CPUE Biomass (kg) (RSE)	Average length (cm) (±s.d)	Average weight (Kg) (±s.d)
Pollack	700	2.88 (0.35)	1.56 (0.33)	38.6 (6.1)	0.54 (0.3)
Coalfish	506	1.94 (0.51)	1.16 (0.53)	40.2 (3.7)	0.6 (0.14)
Mackerel	196	1.11 (0.59)	0.15 (0.55)	25.3 (1.7)	0.14 (0.04)
Ballan Wrasse	194	0.99 (0.3)	0.7 (0.05)	28.7 (3.2)	0.52 (0.27)
Cuckoo Wrasse	86	0.38 (0.28)	0.06 (0.24)	25.1 (2.7)	0.19 (0.06)
Lesser Spotted Dogfish	71	0.31 (0.37)	0.11 (0.1)	63.6 (6)	0.64 (0.08)
Pouting	67	0.3 (0.24)	0.13 (0.21)	30.3 (6.3)	0.46 (0.22)
Blue Mouth	42	0.24 (0.79)	0.03 (0.79)	18.4 (2.3)	0.11 (0.07)
Red Gurnard	41	0.23 (0.52)	0.07 (0.46)	29.4 (3.1)	0.28 (0.1)
Bull Huss	35	0.2 (0.47)	0.53 (0.28)	85.8 (12.6)	2.69 (0.86)
Whiting	35	0.14 (0.7)	0.03 (0.69)	28.3 (4.1)	0.19 (0.08)
Grey Gurnard	34	0.16 (0.3)	0.01 (0.55)	22.1 (4.8)	0.09 (0.09)
Dab	33	0.15 (0.75)	0.01 (1.21)	21.7 (4.3)	0.07 (0.07)
Scad	21	0.08 (0.91)	NA	29 (5.4)	NA
Tub Gurnard	15	0.08 (0.77)	0.03 (0.18)	30.6 (4.8)	0.39 (0.13)
Haddock	12	0.07 (0.49)	0.02 (0.31)	33.1 (2.3)	0.33 (0.09)
Ling	10	0.05 (0.33)	0.02 (0.17)	41 (12.2)	0.48 (0.11)
Spurdog	9	0.04 (0.67)	0.05 (0.13)	79.3 (13.4)	NA
Poor Cod	7	0.04 (0.49)	0 (0.11)	18 (2.1)	NA
Sandeel	6	0.03 (0.89)	NA	24.3 (5.4)	NA
Thornback Ray	6	0.03 (0.53)	0.04 (0.51)	57.3 (14.3)	1.86 (1.14)
Conger	5	0.02 (0.52)	NA	80.8 (9)	NA
Cod	3	0.01 (0.38)	0.01 (0.36)	35.3 (8.1)	0.48 (0.11)
Megrim	2	0.01 (0.79)	0 (0.79)	35 (4.2)	0.3 (0.11)
Homelyn Ray	1	0.01 (1.27)	NA	NA	NA
Blue Shark	1	0.02 (0.36)	0.33 (0.36)	NA	NA
Dragonet	1	0.02 (0.27)	NA	NA	NA
John Dory	1	0.01 (1.27)	0.01 (1.27)	NA	NA
Launce	1	0.01 (1.27)	0 (1.27)	NA	NA
Smoothound	1	0.02 (1.08)	NA	NA	NA
Tope	1	0.02 (0.72)	NA	NA	NA

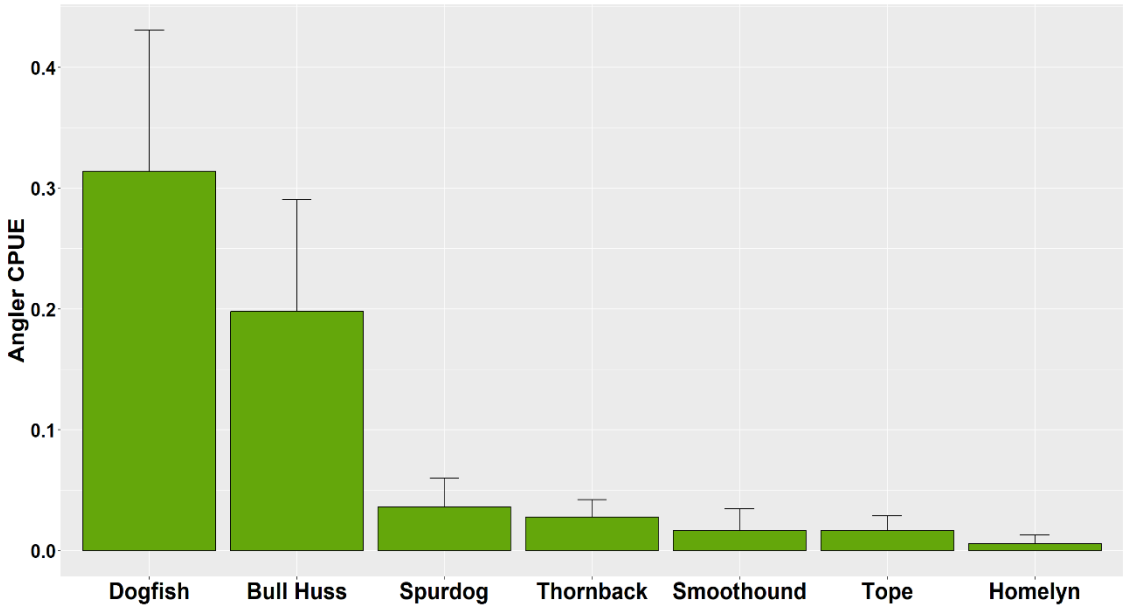

Fig 11. CPUE (catch per angler day) of charter caught elasmobranch species recorded during the IMREC onboard charter survey (Jan-Dec 2024). All fish were caught and released.

Annual charter catch estimates

The collated IFI historical charter effort data (1976-2008) determined that, on average, charter vessels undertook 62 (±0.9 s.e) angling trips per year (Ryan et al., 2023). The 2024 survey found that 6.4 anglers were aboard for the average charter trip. According to most recent data, the highest possible size of the active charter fleet in Ireland is 99. Applying these data points scales up to an estimated 39,363 (±781 se) charter angler days in Ireland, per year.

Using CPUE data for the two most popular species and charter angler days it is estimated that 123 tonnes of pollack and 104 tonnes of mackerel were retained by charter anglers in Ireland in 2023 (Table 9). For all other species overall harvest is low and most catches are returned alive.

Table 9: Charter vessel angling estimates of total annual catch and weight for the most common caught species throughout the coast of Ireland in 2024.

Species	Total Annual catch (000's) (RSE)	Total Catch Biomass (t) (RSE)
Released Catches		
Pollack	113 (0.35)	61 (0.33)
Coalfish	76 (0.51)	45 (0.53)
Mackerel	43 (0.59)	6 (0.55)
Ballan Wrasse	39 (0.3)	27 (0.05)
Cuckoo Wrasse	15 (0.28)	2 (0.24)
Lesser Spotted Dogfish	12 (0.37)	4 (0.1)
Pouting	12 (0.24)	5 (0.21)
Blue Mouth	9 (0.79)	1 (0.79)
Red Gurnard	9 (0.52)	3 (0.46)
Bull Huss	8 (0.47)	21 (0.28)
Whiting	5 (0.7)	1 (0.69)
Grey Gurnard	6 (0.3)	0 (0.55)
Dab	6 (0.75)	0 (1.21)
Scad	3 (0.91)	NA
Tub Gurnard	3 (0.77)	1 (0.18)
Haddock	3 (0.49)	1 (0.31)
Retained Catches		
Mackerel	118 (0.27)	28 (0.28)
Pollack	122 (0.23)	117 (0.23)
Coalfish	56 (0.44)	44 (0.44)
Sandeel	6 (0.92)	NA
Ling	3 (0.3)	4 (0.25)
Scad	3 (0.84)	0 (0.48)
Pouting	3 (0.53)	1 (0.61)

3.2 Off-site angling surveys

3.2.1 Online angling diary

Angling type

Shore angling represented 93.5% of all recorded trips (Fig. 12), accounting for 66.5% of all fish caught. Small boat angling accounted for 22.5% of catches, charter angling for 10%, and kayak angling for 1%. Catch rates were higher for charter, small boat, and kayak angling compared to shore angling.

Small boat and charter angling represented a smaller portion of total recorded trips at 3.8% and 1.6% respectively, while shore angling accounted for the largest number of trips (93.5%). Kayak angling represented 1% of trips.

Angling trips by strata

Across regions, diarists recorded 131 trips in the East Region and 240 trips in the West Region (Fig. 13). A greater proportion of trips occurred during the summer months, with 65% of East Region trips and 67% of West Region trips recorded in summer, compared to 35% and 33% in winter respectively.

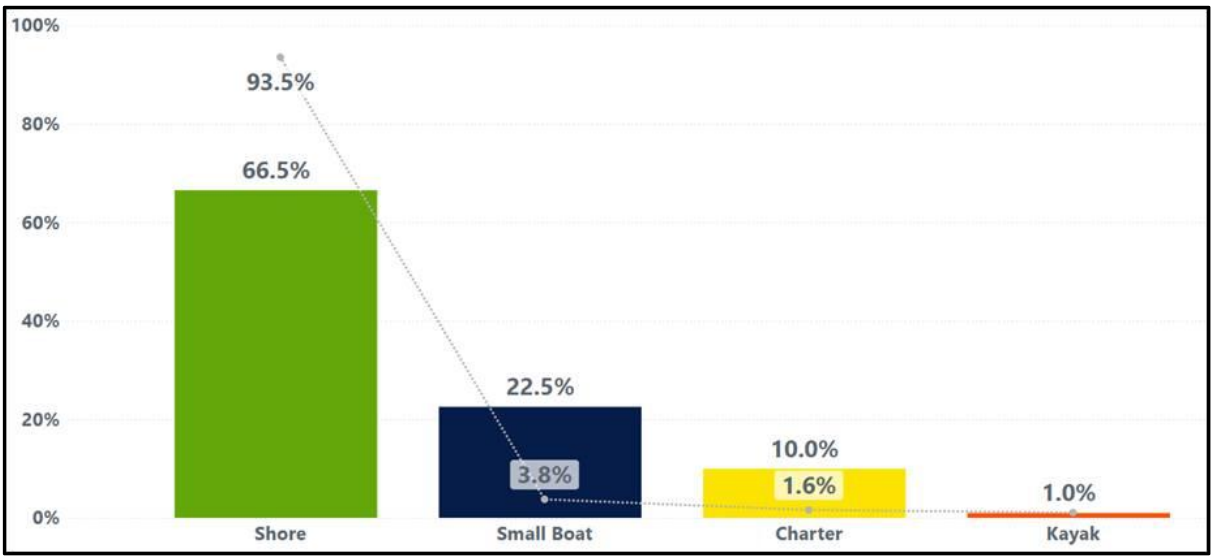

Fig 12: Percentage of angling records by angling type (dotted line) and percentage of catch by angling type (bars), recorded on the IMREC angling diary, 2024.

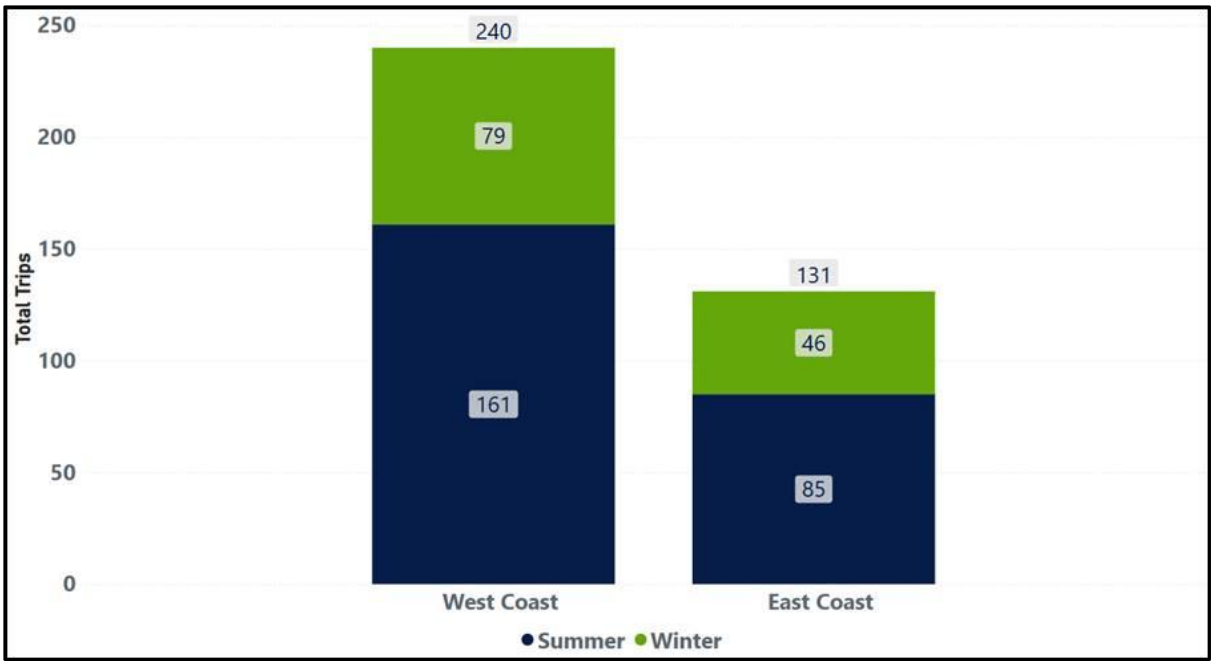

Fig 13: Total angling trips recorded by sampling strata on the IMREC angling diary 2024.

Number of angling trips by angling type

A total of 371 trips were recorded in 2024. Of these, 347 were shore angling trips (Fig. 14), with 64% logging at least one fish capture (Table 10). Only four kayak trips were recorded, while small boat and charter trips accounted for a small proportion of total activity. The charter sector recorded one day with no fish captured.

Table 10: Percentage of successful angling trips by angling type.

	Total	Fish Caught	No Fish Caught
Shore	347	64%	36%
Kayak	4	75%	25%
Small Boat	14	86%	14%
Charter	6	83%	17%

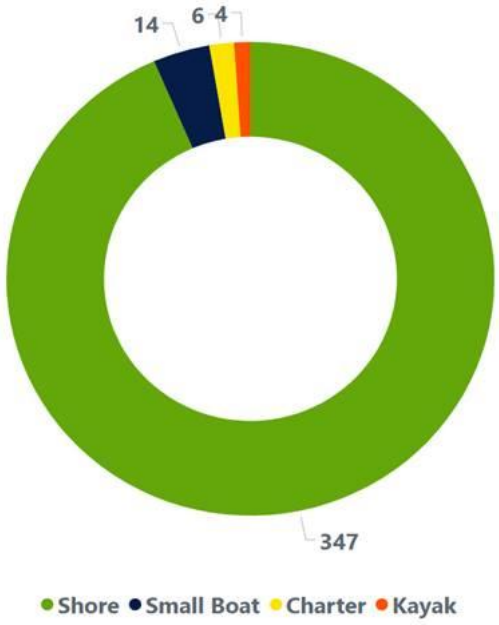

Fig 14: All angling trips recorded by angling type on the IMREC angling diary 2024.

Angling trips by angling type – across strata

Seasonal variation was evident, with the winter months representing 12% and 21% of total trips in the East and West respectively. The summer months accounted for nearly twice as many trips (East: 23%, West: 43%).

Shore angling dominated across all strata, representing over 90% of all logged trips. On the east coast, summer activity included four small boat trips, two kayak trips, and two charter trips. Anglers fishing on the west coast recorded eight small boat, two kayak, and one charter trip. During winter, Anglers on the east coast logged two small boat and three charter trips, while only shore angling was recorded along the west coast (Fig. 15).

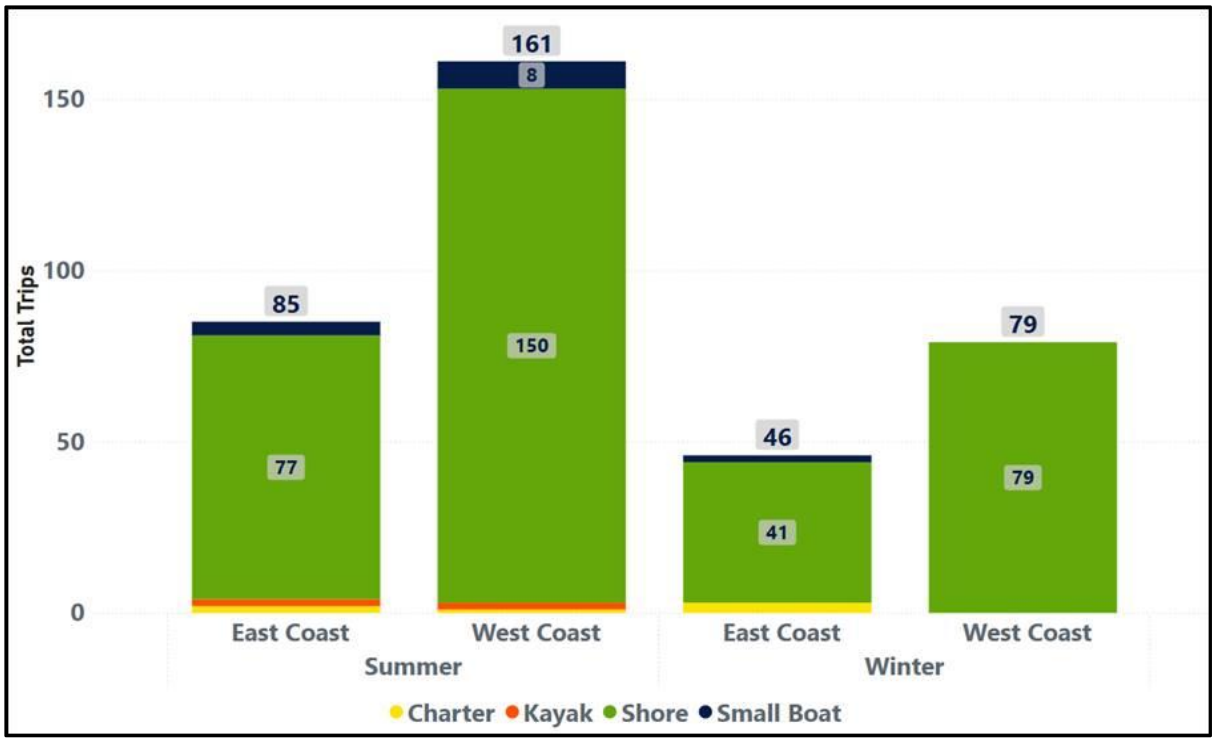

Fig 15: All angling trips recorded by angling type across regional and temporal strata on the IMREC angling diary 2024.

Species catch records

In total, 1,508 fish were caught across 49 species in 2024. European sea bass was the most frequently caught species, representing 19% of all captures, followed by whiting (18.7%) and pollack (13.3%) (Fig. 16).

The overall release rate was 87% across all captures. Excluding mackerel, which had a low release rate (~2% released), the adjusted release rate rises to over 95%. Whiting had a 98% release rate, pollack 89%, and ballan wrasse 100%. Dogfish accounted for just over 5% of all catches, with a 99% release rate. Other key species included coalfish (3.7%), flounder (3.3%), dab (2.2%), and corkwing wrasse (2%), all showing near-total release rates. Notable additional catches included 17 turbot (100% released), 9 smooth hound (100% released), and single captures of tope and topknot, both released.

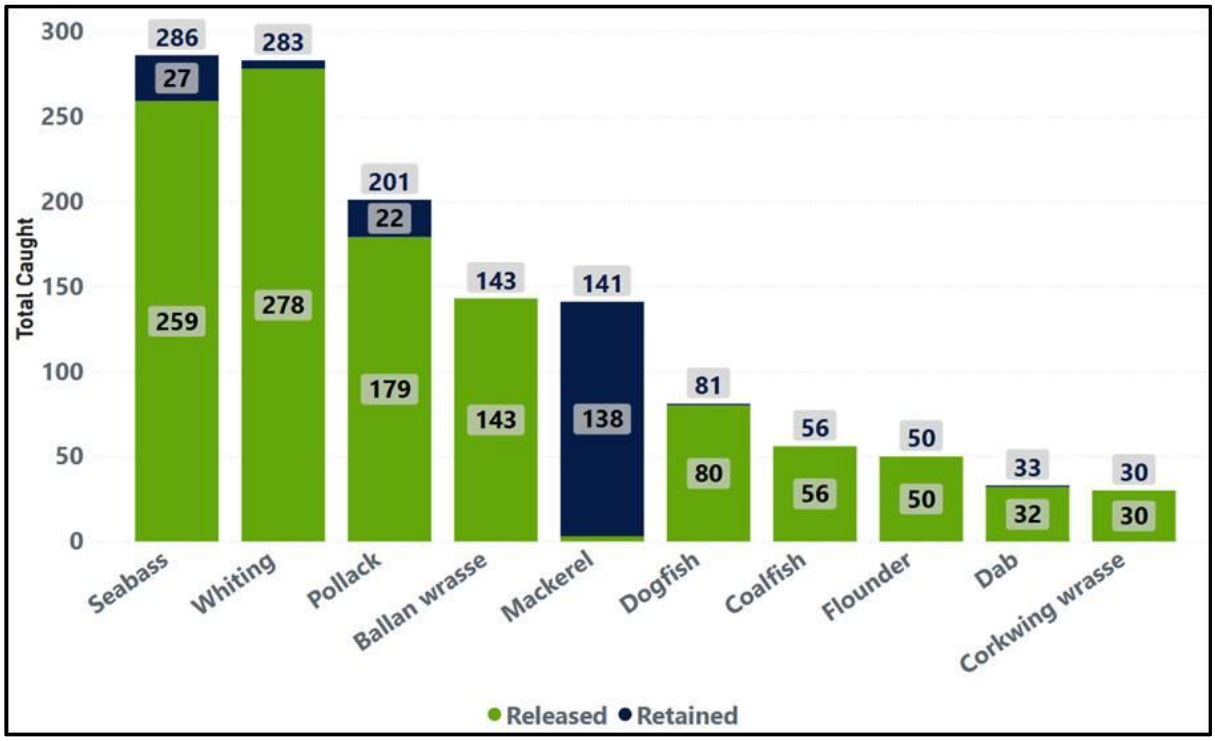

Fig 16: Top ten species catches (retained & released) recorded on the IMREC angling diary 2024.

Top 10 species by fishing type

Over 98% of seabass were caught from shore angling trips, with the remainder from small boats. Whiting were primarily caught from small boats (52.7%), followed by charter (27.6%), and shore (19.7%). Pollack were mainly caught from the shore (57.7%), followed by small boats (32.8%), charter (6.4%), and kayak (3%). Ballan wrasse catches were overwhelmingly from shore (93%), with small boats (4.9%), charter (1.4%), and kayak (0.7%) contributing smaller proportions. Mackerel were primarily caught from small boats (63.8%), followed by shore (21.3%), charter (10.6%), and kayak (4.3%). Dogfish catches were dominated by shore angling (80.3%), with charter (13.6%), small boat (3.7%), and kayak (2.8%) accounting for the remainder. Coalfish showed an even split between small boat and shore (41.1% each), with 17.8% from charter trips. Flounder and corkwing wrasse were almost entirely shore-based (100% and 96%, respectively). Dab catches were divided between shore (51.5%), charter (45.5%), and small boat (3%) (Fig. 17).

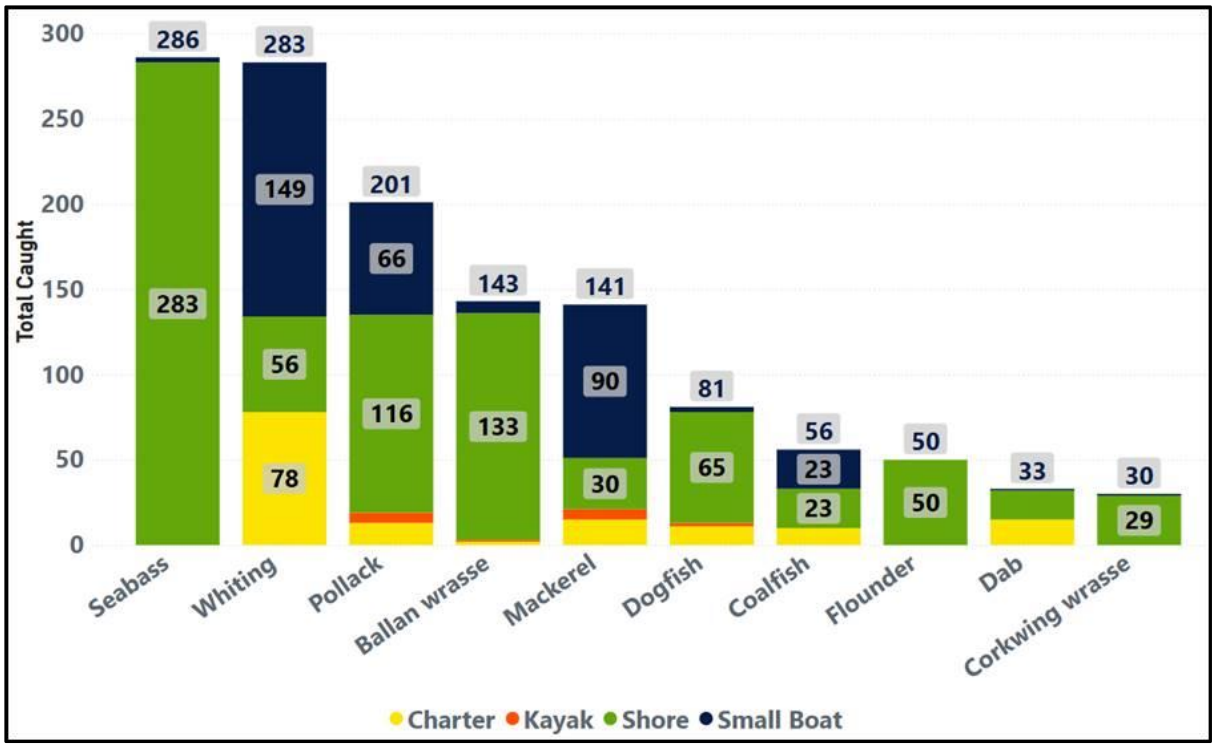

Fig 17: Top ten species catch by fishing type recorded on the IMREC angling diary 2024.

Species Catch Counts by Region and Season

In total, 618 catch records were logged by anglers fishing on the East coast, and 890 on the West coast in 2024. Of the top 10 species, 570 were recorded along the East and 734 along the West (Table 11). On the East coast, anglers recorded 150 seabass (52.3%), while 136 were caught on the West coast. Whiting catches were predominantly from the East (274; 96.8%), while pollack catches were largely from the West (181; 90%). The West also dominated catches of ballan wrasse (126; 95.8%), mackerel (126; 89.3%), coalfish (45; 80.4%), flounder (34; 60%), and corkwing wrasse (29; 97%). The East recorded higher catches of dogfish (53; 65.4%) and dab (24; 72.7%). Overall, summer months accounted for 66.3% of all trips (West: 43.4%, East: 22.9%), while winter months accounted for 33.7% (West: 21.3%, East: 12.4%).

Species-level seasonal variation followed expected trends. Mackerel catches occurred exclusively during summer. Seabass were mainly caught in summer (East: 81.3%, West: 79.4%). Pollack catches were summer-dominant in the West (81.7%) but more balanced in the East (60% summer). Ballan wrasse were caught only in summer on both coasts. Dogfish catches were more evenly split between seasons (East: 50.9% summer, West: 57.1% summer). Coalfish were mainly caught in winter along the East (90.9%) and summer along the West (66.6%). Flatfish species showed stronger winter activity: flounder catches were primarily winter-based (East: 75%, West: 67.6%), and dab were almost entirely winter catches (East: 91.6%, West: 88.8%).

Across both coasts, the West accounted for 56.3% of total catches and the East for 43.7%. The top 10 species by region and season show seabass dominating summer catches, particularly on the West coast. Pollack were the most frequently caught species across both seasons on the West, while whiting dominated East coast winter catches. Other winter species included flounder, dab, and seabass, with additional notable catches such as turbot, black goby, and pouting in the West, and poor cod, five beard rockling, and thornback ray in the East (Fig. 18).

Table 11: Top ten species catch records by regional and temporal strata recorded on the IMREC angling diary in 2024.

	East		West		
	Summer	**Winter**	**Summer**	**Winter**	**Total**
Seabass	122	28	108	28	286
Whiting	13	261	1	8	283
Pollack	12	8	148	33	201
Ballan wrasse	6	NA	137	NA	143
Mackerel	15	NA	126	NA	141
Dogfish	27	26	16	12	81
Coalfish	1	10	30	15	56
Flounder	4	12	11	23	50
Dab	2	22	1	8	33
Corkwing wrasse	1	NA	29	NA	30
Total	203	367	607	127	1304

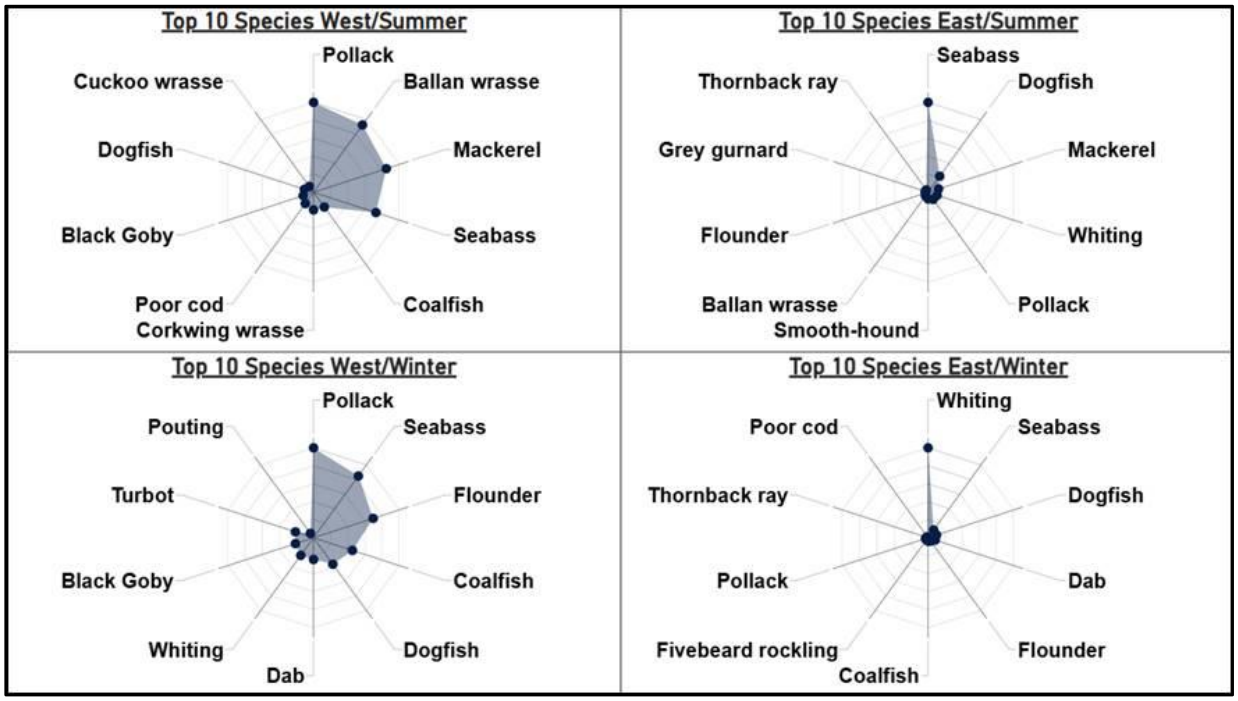

Fig 18: Top 10 species across regional and temporal strata. Each point represents the total catch per species recorded on the IMREC angling diary in 2024. A point located near the outer edge indicates a high catch rate.

Shore Angling Catch per Unit Effort

Based on IMREC diary data, the overall Catch per Unit Effort (where the unit of effort is an angling trip record) for shore-caught seabass in 2024 was 0.82 (Table 12). East coast anglers recorded a CPUE for released European sea bass of 2.12, compared to the west coast CPUE of 0.76 for both released and retained fish. Ballan wrasse CPUE was 0.38, with a 100% release rate, including 0.07 on the east and 0.89 on the west. Total Pollack CPUE was 0.33. All pollack caught on the east cost were released, while the west recorded release and retained CPUEs of 0.67 and 0.53 respectively. Dogfish had an overall CPUE of 0.19. Shore angling diarists recorded a whiting CPUE of 0.16. East coast CPUE for whiting was substantially higher than the west coast (Table 12). All flounder caught by shore angling diarists in 2024 were released (Table 12). All mackerel caught on the east coast were retained (0.33 CPUE), while shore anglers in the west coast recorded a release CPUE of 0.02 and retained CPUE of 0.74 (Table 12).

Table 12: IMREC angling diary 2024: Released and Retained CPUE figures of the 10 most commonly caught shore angling species by region.

Species	**Total CPUE**	**East Coast CPUE**		**West Coast CPUE**	
		Released	Retained	Released	Retained
Seabass	0.82	2.12	0.17	0.76	0.76
Ballan wrasse	0.38	0.07	NA	0.89	NA
Pollack	0.33	0.03	NA	0.67	0.53
Dogfish	0.19	0.54	0.17	0.19	NA
Mackerel	0.16	NA	0.33	0.02	0.74
Whiting	0.16	0.65	0.50	0.04	0.06
Flounder	0.14	0.23	NA	0.24	NA
Corkwing wrasse	0.08	NA	NA	0.20	NA
Black Goby	0.07	NA	NA	0.16	0.06
Coalfish	0.07	0.03	NA	0.15	NA

Small Boat Angling Catch per Unit Effort

All species caught by small boat angling diarists in 2024 were released, except mackerel and pollack (Table 13). Whiting recorded an overall CPUE of 8.28, with all catches occurring on the east coast, giving an east coast release CPUE of 21.29. Mackerel had an overall CPUE of 5.33, with all fish retained. CPUE along the east coast was higher than the west coast (Table 13). Small boat diarists recorded an overall pollack CPUE of 4.0. All pollack caught along the east coast were released (CPUE 0.86), while small boat diarists along the west coast recorded a retained CPUE of 0.50 and a release CPUE of 10.33. Total Coalfish CPUE was 1.28, with no catches recorded along the east coast. Ballan wrasse catch rates were higher along the west coast (CPUE 1.17) than the east, while cuckoo wrasse had an overall CPUE of 0.39, with east and west CPUEs of 0.29 and 0.83, respectively. Lesser spotted dogfish recorded an overall CPUE of 0.28. All dogfish records were from the east coast. Thornback ray had an overall CPUE of 0.28, with all catch records on the west coast (Table 13). Grey gurnard showed an overall CPUE of 0.22, all from the east coast. Seabass recorded an overall CPUE of 0.17, with all fish caught and released on the east (release CPUE 0.43). As with shore-based catches, release rates were generally high, with the exception of mackerel.

Table 13: IMREC angling diary 2024: CPUE by regional and temporal strata of the 10 most caught small boat & kayak angling species.

Species	Total CPUE	East Coast CPUE		West Coast CPUE	
		Released	Retained	Released	Retained
Whiting	8.28	21.29	NA	NA	NA
Mackerel	5.33	NA	6.50	NA	10.38
Pollack	4.00	0.86	NA	10.33	0.50
Coalfish	1.28	NA	NA	3.83	NA
Ballan wrasse	0.44	0.14	NA	1.17	NA
Cuckoo wrasse	0.39	0.29	NA	0.83	NA
Dogfish	0.28	0.71	NA	NA	NA
Thornback ray	0.28	NA	NA	0.83	NA
Grey gurnard	0.22	0.57	NA	NA	NA
Sea bass	0.17	0.43	NA	NA	NA

4. Discussion

This report provides countrywide MRF catch estimates around Ireland in 2024, using sampling programmes developed and refined during a pilot study which ran from 2019-2021 (Ryan et al. 2022). Achievements and some limitations of the sampling programmes (largely due to lack of resources) are discussed below.

On-site surveys 2024 overview

Shore angling catches

Surveyors conducted 140 interviews with shore anglers during their sea angling trips. Interview refusals continued to be low, indicating that anglers are willing to engage with survey programmes. Unlike previous years, the whole coast was sampled and sampling effort was evenly apportioned in the East and West coast. Regardless of sampling region, samplers interviewed on average 1.5 anglers per sampling day, indicating angling effort is similar between regions. As expected, angling is more common in the summer months (April to September) than the winter. Samplers encounter less than 1 angler per sampling trip in winter, compared to nearly 2 (1.9) anglers per sampling trip in the summer, validating the stratification and weighting decisions taken during sampling design.

Like previous years, mackerel and pollack were the most caught and retained species (Ryan et al. 2023; 2024). Confirming that these species are both common and popular among Irish shore anglers, lesser spotted dogfish was the most caught and released fish (CPUE 1.3) by Irish shore anglers in 2024, indicating, their ubiquitous presence throughout Irish inshore waters. Pollack were the second most caught and released fish (CPUE 0.9). Released pollack were on average smaller than retained pollack, indicating that anglers tend to release small fish. Although European Sea bass are a prized catch among shore anglers, they are released at far higher rate than they are kept (CPUE 0.2, 0.02 respectively). This is likely due to a combination of the bag and length limit legislation in place and that more specialised anglers tend to target bass for sport, rather than food.

Small boat angling catches

Due to the difficulty in interviewing small boat anglers at sufficient rates to make confident catch estimates over previous sampling years, the sampling frame was reviewed for 2024. This review focused on increasing sampling effort in known high activity small boat sites. This approach was successful insofar as interview per PSU visit ratios increased. In 2024 samplers visited 29 PSUs and interviewed 30 anglers. In 2023, six small boat angler interviews were completed across 24 PSU visits. It should be noted that small boat angler encounters were more common on the East Coast than on the West Coast.

Mackerel, pollack and dogfish were the most caught species by small boat anglers in Ireland. However, mackerel were the only species kept in substantial numbers, according to the survey data. These results highlight the need to better understand pollack post release mortality in the small boat angling sector. Otherwise, continuing to refine the small boat angling sampling frame remain a priority for the IMREC programme.

Charter vessel catches

Due to engagement within the sector, a new cohort of charter skippers was recruited to take part in the onboard charter sampling programme in 2024. Sampling on additional boats in the East Region provided a more general view of the charter angling sector in Ireland.

Since the IMREC survey commenced in 2021, pollack have been by far the most caught fish in the charter fishery in Ireland. In 2024 total pollack removals (not including post release mortality) in 2024 was 117t (0.23 RSE). This value as remained relatively consistent between sampling years (Ryan et al. 2024, 2023, 2022).

Current estimates of total charter catch assume the charter fleet comprises 99 active vessels. Expert opinions from within the sector suggest this number may be overestimated. However, until further data are gathered, it is prudent to include the maximum potential effort (i.e., all probable vessel activity) in estimating recreational catches. Ongoing consultations with stakeholders by IFI are positive and should result in a slightly more refined charter vessel sampling frame.

Diary reported catches versus creel survey data

The shore-based datasets for on-site (IMREC Survey) and off-site (IMREC Diary) catches highlight some substantial differences in CPUE figures for some species. Dogfish CPUE for on-site shore surveys was relatively high at 1.27 compared to 0.19 in the diary. Other species that displayed higher on site CPUE figures were pollack (Survey = 0.9, Diary = 0.3) and mackerel (Survey = 2.94, Diary = 0.09). These figures may show the differences in angler skill levels as each species listed with higher catch rates in the survey data has a wide distribution and high catchability. Under-reporting of such species in the diary could also be a factor leading to such differences within both datasets.

Seabass attracts a specialised cohort of anglers that predominantly target this species (Grilli et al, 2019). This targeted approach from a handful of skilled diarists led to a high CPUE in the diary data (0.82) compared to the on-site survey (0.2). This, along with a more diverse species catch list, may indicate diary anglers as having a higher level of expertise. Both datasets

showed high levels of release rates, demonstrating an awareness of regulations for seabass across both sets of anglers.

Small boat comparisons followed a similar pattern to the shore findings with a wider range of species being caught by diary than on-site anglers. Off-site diaries reported higher CPUE for species such as whiting (8.3) and mackerel (5.3) and captured a broader species range, including thornback ray, coalfish, and cuckoo wrasse. These species were not observed in on-site surveys. In contrast, on-site surveys provided more catch data for commonly encountered species like dogfish, pollack, and mackerel.

The integration of on-site and off-site datasets provides a comprehensive overview of both shore and small boat recreational angling activity, with each method addressing distinct data gaps inherent in the other. Further on-site boat surveys, along with increased diary participation would lead to a more robust outlook on recreational angling along the Irish coast.

5. References

Arlinghaus, R., & Cooke, S. J. (2009). Recreational fisheries: socioeconomic importance, conservation issues and management challenges. Recreational hunting, conservation and rural livelihoods: science and practice, 39-58.

Armstrong, M., Brown, A., Hargreaves, J., Hyder, K., Munday, M., Proctor, S., Roberts, A., Roche, N. and Williamson, K., 2013. Sea Angling 2012–a survey of recreational sea angling activity and economic value in England. Defra, London, UK. 16pp.

Best, E.A., Boles, H.D., 1956. An evaluation of creel census methods. Calif. fish Game 42, 109–115

Grilli, G., Curtis, J., Hynes, S., & O'Reilly, P. (2018). Sea bass angling in Ireland: A structural equation model of catch and effort. Ecological Economics, 149, 285-293.

Gundelund, C., Arlinghaus, R., Baktoft, H., Hyder, K., Venturelli, P., Skov, C., 2020. Insights into the users of a citizen science platform for collecting recreational fisheries data. Fisheries Research 229, 105597.

Hayne, D.., 1991. The access point creel survey: procedures and comparisons with the roving-clerk creel survey, in: D. Guthrie, J. M. Hoenig, M. Holliday, C. M. Jones, M. J. Mills, S. A. Moberly, K.H.P. and D.R.T. (Ed.), Creel and Angler Surveys in Fisheries Management.

Hynes, S., & Graeven, R. (2016). The value of recreational fishing in the Irish marine waters: a travel cost analysis using on-site count data models.

Fisher, M.R., 1997. Segmentation of the Angler Population by Catch Preference, Participation, and Experience: A Management-Oriented Application of Recreation Specialization. North Am. J. Fish. Manag. 17.

Grilli, G., Curtis, J., Hynes, S., & O'Reilly, P., 2019. Anglers' views on stock conservation: sea bass angling in Ireland. Marine Policy, 99, 34-41.

ICES. 2024. Workshop on Recreational Fisheries in Stock Assessments (WKRFSA).

ICES Scientific Reports. 6:26. 35 pp. https://doi.org/10.17895/ices.pub.25333498

ICES. (2023). Pollack (Pollachius pollachius) in subareas 6-7 (Celtic Seas and the English Channel). Report of the ICES Advisory Committee, pol.27.67.

Jones, C.M., Pollock, K.H., 2012. Recreational angler survey methods: estimation of effort, harvest, and released catch, in: Zale A V, Parrish D L, Dunlop E S (Eds.), Fisheries Techniques. American Fisheries Society, Bethesda, pp. 883–919.

Lennox, R.J., Sbragaglia, V., Vollset, K.W., Sortland, L.K., McClenachan, L., Jarić, I., Guckian, M.L., Ferter, K., Danylchuk, A.J., Cooke, S.J. and Arlinghaus, R., 2022. Digital fisheries data in the Internet age: Emerging tools for research and monitoring using online data in recreational fisheries. Fish and Fisheries, 23(4), pp.926-940.

Lewin, W.C., Weltersbach, M.S., Haase, K., Riepe, C., Skov, C., Gundelund, C. and Strehlow, H.V., 2021. Comparing on-site and off-site survey data to investigate survey biases in recreational fisheries data. ICES Journal of Marine Science, 78(7), pp.2528-2546.

Lockwood, R.N., 2000. Conducting Roving and Access Site Angler Surveys, in: Schneider, J.C. (Ed.), Manual of Fisheries Survey Methods II : With Periodic Updates. Michigan Department of Natural Resources.

Lombardo F, Gioacchini G, Pappalardo L, Baiata P,Candelma M, Pignalosa P, Carnevali, O. 2019. Determination of Length-weight equation applicable to Atlantic bluefin tuna (Thunnus thynnus) in the Mediterranean Sea. Collect. Vol. Sci. Pap. ICCAT, 75(6): 1392-1398

MacLeod K, Wögerbauer C, Maxwell H, Drumm A, O'Maoiléidigh N and Roche W (2024) Report on Ireland's Atlantic bluefin tuna catch, tag and release data collection programme 2023. Tuna CHART Programme Report.

Pollock, K.H., Hoenig John M., Jones, C.M., Robson, D.S., Greene, C.J., 1997. Catch Rate Estimation for Roving and Access Point Surveys. North Am. J. Fish. Manag. 17, 11–19. https://doi.org/10.1577/m04-148.1

Pollock, K.H., Watson, C.M., Brown, T.L., 1994. Angler surveys their application to fisheries, management, 1st ed. American Fisheries Society Special Publication, Bethesda.

Ryan, D. Leonard, E. and Roche. W. (2023). Marine Recreational Fishing Catches in Ireland - 2022. Inland Fisheries Ireland, 3044 Lake Drive, Citywest Business Campus, Dublin 24.

Ryan, D. K., Leonard, E., Casserly, C. M. and Roche. W. (2022). Marine Recreational Angling Catches in Ireland. Pilot Study Report (2019-2021). Revised effort & catch estimates. Inland Fisheries Ireland, 3044 Lake Drive, Citywest Business Campus, Dublin 24.

Ryan, D., O'Reilly, P., Leonard, E. and Roche. W. (2021). Online Behaviour and Attitudes survey of Irish Sea Anglers. Inland Fisheries Ireland, 3044 Lake Drive, Citywest Business Campus, Dublin 24.

Turner, R. A., Addison, J., Arias, A., Bergseth, B. J., Marshall, N. A., Morrison, T. H., & Tobin, R. C. (2016). Trust, confidence, and equity affect the legitimacy of natural resource governance. Ecology and Society, 21(3).

Skov, C., Hyder, K., Gundelund, C., Ahvonen, A., Baudrier, J., Borch, T., deCarvalho, S., Erzini, K., Ferter, K., Grati, F., van derHammen, T., Hinriksson, J., Houtman, R., Kagervall, A., Kapiris, K., Karlsson, M., Lejk, A.M., Lyle, J.M., Martinez-Escauriaza, R., Moilanen, P., Mugerza, E., Olesen, H.J., Papadopoulos, A., Pita, P., Pontes, J., Radford, Z., Radtke, K., Rangel, M., Sagué, O., Sande, H.A., Strehlow, H. V, Tutiņš, R., Veiga, P., Verleye, T., Vølstad, J.H., Watson, J.W., Weltersbach, M.S., Ustups, D., Venturelli, P.A., 2021. Expert opinion on using angler Smartphone apps to inform marine fisheries management: status, prospects, and needs. ICES J. Mar. Sci. https://doi.org/10.1093/icesjms/fsaa243

Venturelli, P.A., Hyder, K., Skov, C., 2017. Angler apps as a source of recreational fisheries data: opportunities, challenges and proposed standards. Fish Fish. 18, 578–595. https://doi.org/10.1111/faf.12189

Vølstad, J. H., Pollock, K. H., & Richkus, W. A. (2006). Comparing and combining effort and catch estimates from aerial–access designs as applied to a large-scale angler survey in the delaware river. North American Journal of Fisheries Management, 26(3), 727-741.

Appendix

Pollack: Recreational Angling Status Overview 2024

Pollack (a member of the cod family *Gadidae*) is a species with an elongated body, typically reaching lengths over 60 cm and weights of up to 4 kg. The International Council for the Exploration of the Sea (ICES) divides pollack into three management units: the Bay of Biscay and Iberian waters (ICES subarea VIII and division IX.a), the Celtic Sea and English Channel (ICES subareas VI and VII), and the North Sea region (ICES subarea IV and division III.a) (Fig. 1). The Celtic Sea and English Channel stock, which includes Irish waters is currently data-limited due to uncertainties about stock identity and a lack of fishery-independent abundance data (ICES 2023).

In Ireland, commercial fishing for pollack is currently limited due to low stock levels. Although the International Council for the Exploration of the Sea (ICES) recommended a zero catch for pollack in the Celtic Sea and English Channel for 2024 and 2025, a restricted by-catch only Total Allowable Catch (TAC) was implemented to prevent disruption to other whitefish fisheries.

Pollack remains a popular species among recreational anglers, especially during summer and autumn. It is commonly caught from both the shore and during winter boat angling trips. However, declines in pollack catches have raised concerns, prompting increased focus on conservation and sustainable fishing practices. In April 2024, the specialised committee on fisheries (SCF), convened for the 1st EU-UK Expert Workshop on Pollack. It concluded that although current advice for pollack fishing in the Celtic Sea and English Channel is considered robust to a range of assumptions for recreation catches, the EU and UK acknowledged that recreational fishing likely makes up a significant proportion of total catches. As a result, both parties agreed to enhance understanding of recreational pollack fishing and its impact, with the goal of developing fair and effective measures to reduce fishing mortality. This includes conducting various surveys to address gaps in knowledge on pollack stock status, biology, and ecology.

Fig 2: Distribution of pollack catch records collected through the IMREC onsite survey programmes. Larger circles denote more catches.

Pollack is a popular and commonly caught angling species around the Irish coast (**Fig. 2**). Three elements comprise most of the marine recreational fishing (MRF) activity in Ireland: shore angling, small boat angling and charter boat angling. Since there is currently no licensing system or mandatory reporting for marine recreational fishing (MRF) catches in Ireland, surveys are vital for estimating catch rates and angling effort. To address this need, the Irish Marine Recreational Angling Survey (IMREC) has developed and conducts a range of targeted surveys (**Table 1**). Current estimates suggest that over 2.5 million sea fishing trips are undertaken across all fishing platforms (**Table 2**).

Table 1: Surveys used in the IMREC programme to estimate catch rates and angling effort within the Irish marine recreational fishing sector.

Survey Type	Methodology	Target Group	Data Collected
Shore Angler Survey	Spatio-temporal sampling; random onsite interviews; follow-up interviews to complete trip data	Shore anglers	Multi species Catch per Unit Effort (CPUE) data
Small Boat Survey	Spatio-temporal sampling; random access-point interviews; follow-up interviews to complete trip data	Small boat anglers	Multi species Catch per Unit Effort (CPUE) data
Onboard Charter Catch Survey	Random sampling of charter trips	Charter boat anglers	Multi species Catch per Unit Effort (CPUE) data.
IPSOS-MRBI survey	random digit dialling telephone-omnibus approach	All angling platforms	Angling participation and effort
CSO survey	multiannual online general household survey	All angling platforms	Angling participation and effort

Table 2: Total annual sea angling trip estimates per annum for all angling types. IPSOS and CSO survey data combined (Ryan et al. 2021).

Angling Type	Total number of trips (000's) (RSE)
Shore Angling	1,637 (0.31)
Small Boat Angling	1,016 (0.43)
Charter Angling	43 (0.1)

Charter fleet catches

Over four years of onboard charter sampling, the catches of 679 charter anglers were recorded. Annual CPUE of released pollack ranged from 1.5(0.51RSE) in 2022 to 2.88 (0.35RSE) in 2024. Annual CPUE of retained pollack ranged from 1.9(0.27RSE) in 2023 to 3.13 (0.23) in 2024 (Fig.3). For all sampling years, retained pollack were on average longer (46.7cm) than released pollack (42.2cm) (Fig.4). Total annual catch of pollack was quite consistent over the sampling years, ranging from 239 tonnes in 2024 to 201 tonnes in 2022 (Table 3).

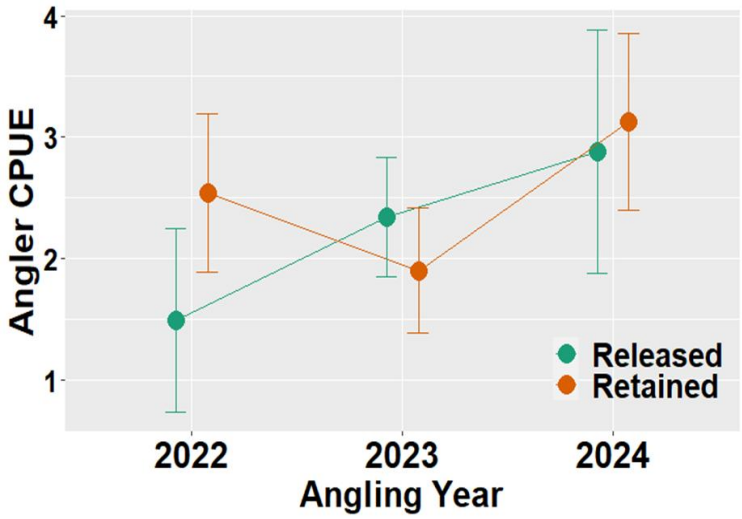

Fig 3: Catch per unit effort (CPUE) of pollack caught during the onboard survey of charter boat anglers.

Table 3: Total catch estimates of pollack in the Irish charter fleet.

Year	Total Annual catch (000's) (RSE)	Total Catch Biomass (t) (RSE)
Released		
2024	113 (0.35)	61 (0.33)
2023	108(0.21)	64(0.25)
2022	58(0.51)	41(0.34)
Retained		
2024	122 (0.23)	117 (0.23)
2023	88(0.27)	123(0.12)
2022	99(0.26)	102(0.2)

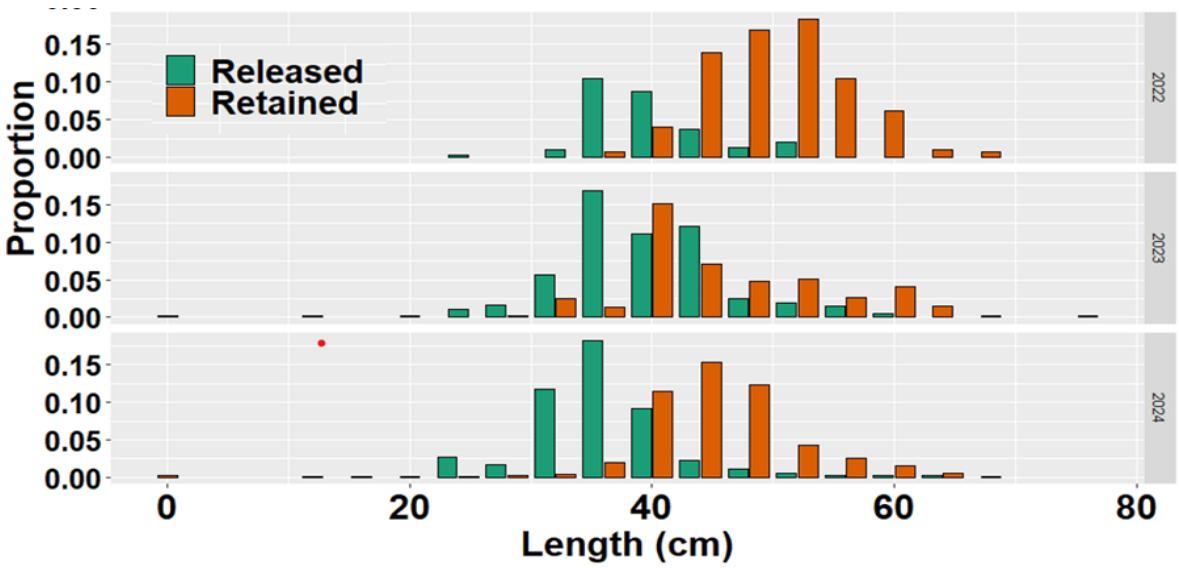

Fig 4: Length frequency distributions of pollack caught during the onboard survey of charter boat anglers.

Small Boat and Shore catches

Between 2022 and 2024, over 380 shore anglers and 72 small boat anglers were interviewed during their angling trips, to collect catch data. In 2024, CPUE was highest for small boat releases (1.49), while shore CPUE remained lower but showed an increase from 2022–23 (Table 4). Small boat catch data were limited due to sampling challenges, making estimates less precise. In 2024, shore-based surveys estimated a total released catch of 1.47 million fish,

Table 4. CPUE and Total catches pollack catches estimated from the shore and small boat survey onsite sampling programmes.

Year	Survey Type	CPUE (RSE)	Total Catch (000's) (RSE)	Biomass (t) (RSE)
Released				
2024	Small boat	1.49 (0)	1517 (0.44)	106 (0.44)
2022–23	Small boat	1.09 (0.01)	1103 (0.44)	2157 (0.44)
2024	Shore	0.90 (0.02)	1466 (0.33)	372 (0.31)
2022–23	Shore	0.08 (0.04)	135 (0.34)	15 (0.33)
Retained				
2024	Small boat	—	—	—
2022–23	Small boat	0.23 (0.02)	236 (0.45)	360 (0.44)
2024	Shore	0.19 (0.06)	311 (0.36)	107 (0.31)
2022–23	Shore	0.16 (0.04)	269 (0.35)	126 (0.33)

generating a biomass of 372 tonnes, while retained catches contributed 311,000 fish (107 t). Small boat surveys reported 1.52 million released Pollack (106 t), with no retained catch reported for the same period (Table 4).

IMREC has shown that pollack consistently make up a significant portion of marine recreational fishing (MRF) catches in Ireland. Given their substantial contribution to total pollack removals—alongside commercial catches—in the Celtic Sea and English Channel management unit, and ongoing concerns about stock sustainability, continued monitoring and further research into pollack stock structure are essential.