National Bass Programme Update for Anglers

2018-2020 Data

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lascach Intíre Éireann Inland Fisheries Ireland

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Cover Photo by Shane Wickham (Angler)

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1 Introduction

European sea bass (*Dicentrarchus labrax*) (hereafter called bass) is a marine fish species, famed for its fighting ability and acclaimed by sea anglers. Bass can be found as far north as Norway and as far south as the North African coast. The Irish bass fish stock collapsed leading to a ban on inshore commercial fishing in 1990. With this ban, bass became Ireland's first marine species to be managed solely for angling. Inland Fisheries Ireland has responsibility for angling including sea angling and therefore bass.

Without commercial fishing data, bass stock status is assessed by combining a juvenile bass monitoring programme with citizen science data reported by bass anglers (survey monitoring to be reported separately). For this reason, the bass angling community plays a strong role in the stewardship of this species. This holistic angling-centric approach to bass monitoring enables Ireland to report on bass stock status. Continuous long-term monitoring by IFI, with substantial angler input, will be required for this angling-only species. Anglers interested in becoming involved in the programme should contact IFI at bass@fisheriesireland.ie

Presented below is an overview of angler-reported data on bass from 2018-2020.

2 Scale Sample Collection Programme

IFI's National Bass Programme received 1,304 bass scale samples from 47 bass anglers between 2018-2020. Samples were received from bass caught in ten different counties spanning from east to the west of the country. Anglers in Wexford, Kerry and Cork supplied 78% of the scales. Scales samples and the associated data provided on each scale envelope provide information on the size, age, spatial and temporal distribution of angler-caught bass.

County	Meath	Dub	Wick.	Wexford	Waterford	Cork	Kerry	Clare	Gal	Sligo	Total
2018			57	92	14	148	180	8			499
2019	3	1	26	141	71	73	99	15		3	429
2020	3		19	168	46	7	108	21	4		376
Total	6	1	102	401	131	228	387	44	4	3	1304

 Table 1 No. of scale samples envelopes supplied by anglers by county 2018-20

78% of were caught between the months of May and September, with 90% of all captured bass returned alive. The use of a lure/spinner continues to be the most popular method for catching bass (84% of all reported methods). The majority were sampled by shore anglers, only 5% of bass were caught from boats



Fig. 1 Bass angling methods used to catch bass 2018-2020

2.1 Size distribution of angler-caught bass

Between 2018-2020, angler-caught bass reported to IFI ranged in length from 13 to 85cm (Fig. 2). In 2018, anglers reported more bass in the 50-59cm and 60-69cm categories than the following two years. The highest number of bass between 40-49cm were reported in 2020 with no bass reported over 80cm and only 18% measured 50cm or more.



Fig. 2 Length frequency distribution of angler-supplied bass samples 2018-2020. Actual numbers of bass reported from each length category

2.2 Age profile of sampled bass

All scale samples were aged where possible by counting the age rings (annuli) on the supplied scales (e.g. Fig. 3). Bass tend to be found in nursery estuaries until four years of age. After this they mature and spawn in oceanic waters but they often return to the same estuary as adults as they display strong site fidelity.



Fig. 3 Image of Bass scale with growth rings (annuli) marked in red. This bass, caught in the Cromane Estuary, Co. Kerry in September 2020 was 59cm and 8 years old.

In the last three years, bass spawned in 2014 were the dominant year class (Fig. 4). In 2020 bass of the 2014 year-class measured between 38 and 53cm. This year class was widespread and dominated angler-catches as far north-east as Laytown, Co. Meath, and Strandhill, Co. Sligo in the west.





Further evidence of the strength of this year class is provided by juvenile bass surveys undertaken annually by IFI's Marine Sportsfish survey team. In 2014, bass fry were more widely distributed around the coast than in other years from the east to the southwest coasts (Fig. 5). As bass reach 4 years old, they are known to extend their range outside their nursery areas to coastal areas and become available to anglers. This 2014 year-class continues to dominate catches (Figs. 4 & 5) and has largely replaced the previously dominant year class of 2007. These results provide evidence of a small recovery in one cohort of the bass population.

Fewer bass over 65cm were reported in 2020 than in 2018 or 2019, and this is unlikely to improve in 2021. However, bass 4 years and younger were also caught in substantial numbers in 2020 angler catches suggesting that recent year classes will fill the niche of the larger fish absent from the population.



Fig. 5 Bass fry (0-group) distribution and densities in 2014 juvenile bass surveys conducted by IFI. Bass spawned in 2014 were commonly encountered around the Irish coast as adults by anglers in 2020. Image is of bass fry encountered on the Lower Slaney waterbody, Co. Wexford in 2014.

3 Angling Effort Trends

One important source of data is angler catch. IFI developed bass angler logbooks (a voluntary angler diary) in 2013 and these are available free of charge from IFI to any interested angler <u>https://www.fisheriesireland.ie/what-we-do/research/national-bass-programme</u>. The logbooks provide information on angling days including blank days, bass catches and size of bass. They provide a useful source of angling effort and actual catches. These data can provide an indication of changes in the size of the bass population around the Irish coast.

Angling logbooks were submitted by a mixture of recreational sea anglers and expert bass anglers. IFI bass logbooks have been submitted by 25 different anglers since 2013. These logbooks provide information on catches and fishing effort and can advise on trends if sufficient returns are made. However, logbook reports dropped significantly in 2020, with just one angler logging angling effort, possibly because of limited movement patterns during the COVID-19 pandemic.



Fig. 6 National bass programme angling logbook

Although reporting rates fluctuate widely year-on-year, a higher proportion of larger bass (greater than 52cm (4lbs/ 1.8kgs) were reported in 2018 than in 2019 or 2020 (Fig. 7). This is in line with reports from the scale sampling programme that fewer large bass were encountered by anglers in the last 2 years.

Updated logbook data suggests that bass angling has remained relatively steady into 2019 at 0.57 bass per angler per hour and rose again in 2020 to 0.78, above the 8-year average of 0.52 bass per hour, or 1 bass every 115 minutes (Fig. 8). Continued reporting of angling effort by anglers will be required to compare catch rates year on year trends.



Fig. 7 Proportion of bass from each size category and b) the same data presented using total numbers of bass reported from each size category in logbook data.



Fig. 8 Bass catch per unit effort (no. bass per angler per hour). Logbooks were submitted by a combination of recreational anglers and expert anglers.

4 Bass Tagging and Recaptures

A citizen-science mark-recapture programme has been operating under IFI's National Bass Programme since 2013. Bass 20cm+ are tagged by bass anglers and IFI staff. Training is provided to all bass anglers to ensure good handling, a high standard of tagging and a swift return of the fish to the water. Bass are tagged with a simple T-bar tag, into the musculature below the second dorsal fin and between the bones to ensure long-term attachment. IFI bass tags are yellow and numbered sequentially from B-00001 onwards and labelled with IFI's website and phone number (Fig. 9).



Fig. 9 a) Newly tagged bass alongside tagging applicator and b) recaptured bass with IFI yellow T-bar tag and unique ID code.

1,185 bass have been tagged with numbered T-bar tags in the last three years by dedicated taggers on IFI's behalf. Wexford, Kerry and Waterford were the top three counties for bass tagging (Table 2, Fig. 10). Length, date and location information is collected for every tagged bass and where possible, scales are also taken.

Table 2 Number of bass tagged between 2018 and 2020 by anglers and IFI staff

Year	WX	KY	WD	С	WW	CE	G	L	Total
2018	195	120	23	85	34	4	0		461
2019	201	70	45	3	16		0	4	339
2020	137	95	87	27	17	18	4		385
Total	533	285	155	115	67	22	4	4	1185



Fig. 10 Bass Tagging locations by County 2018-2020



Fig. 11 73cm Bass tagged with B-03904 on the 4/9/2019 at Waterford on the Suir estuary.

Soft plastic lures were the most used method for catching bass to tag (Fig. 12). Bass were recaptured methods included lures, bait, tinsel feathers, fly, spinners, a research seine net, and a commercial gill net. Interestingly, of those recaptures where the methods were reported, 77% were recaptured using a different method to the angling method prior to initial tagging (Table 3).



Fig. 12 Tagging and recapture angling methods

Tag ID	Capture Method	Recapture Method	Tagging Year	Recapture Year	Tagging Season	Recapture Season
B-02184	Lure	Lure	2017	2018	Summer	Summer
B-02192	Lure	Lure	2017	2018	Summer	Summer
B-05002	Lure	Lure	2020	2020	Summer	Summer
B-03272	Trawl	Lure	2018	2021	Autumn	Autumn
B-02236	Lure	Bait	2018	2018	Autumn	Autumn
B-03848	Lure	Bait	2017	2018	Autumn	Autumn
B-04014	Lure	Bait	2018	2020	Autumn	Summer
B-04173	Lure	Seine	2018	2019	Autumn	Spring
B-04195	Lure	Tinsel feathers	2019	2019	Winter	Spring
B-05160	Lure	Spinning Lure	2020	2020	Autumn	Autumn
B-03086	Fly	Lure	2018	2019	Spring	Winter
B-03767	Bait	Commercial net	2017	2018	Autumn	Spring
B-03823	Bait	Lure	2018	2018	Winter	Summer

Twenty-one tagged bass have been recaptured since 2018. Recently, a bass tagged in 2018 was recaptured in 2021, three years later, only 14km downstream (Fig. 13). The furthest distance travelled was by a bass which travelled from Wexford across the Celtic Sea to Swansea 130 days after tagging (Fig. 14). All remaining recaptures were within Irish waters. The majority, 62%, were recaptured at the same location, half of these were recaptured the following year, one was recaptured at the same location 2 years later (Table 4).

Table 4 Recapture summary information 2018-2020. Straight-line disp	lacement
between tagging and recapture location.	

Straight-line Displacement	Days at Liberty	No. Recaptures
0-1 km	14-705	13
2-10km	241-371	2
11-40km	157-1132	3
41-100km	31-154	2
207km	130	1
Total	-	21

In summary, the majority of bass recaptures (71%) were within 10km of their original capture location demonstrating the strong site-fidelity that adult bass exhibit, the localised nature of adult bass populations and their potential vulnerability to localised habitat degradation or localised pollution events.



Fig. 13 Bass tagged with tag B-03272 during an IFI bass trawling survey of the Munster Blackwater in 2018, recaptured just 14 km downstream at Youghal in 2021 by angler Warren Devlin.



Fig. 14 Bass recaptures 2018-2020 (n=21). Straight line distance lines between tagging events and recaptures. Where no line is visible, the recapture was within 10km of the tagging location.

5 Summary

Sampling by anglers (scale sampling and logbook reports) showed that larger bass are less frequently observed in recent years. This is consistent with Irish Specimen Fish Committee reports that show a steep decline in specimens (>10lbs/ 4.54kg/ 75cm) reported since 2010 (Fig. 15). Fewer bass over 65cm were reported in 2020 than in 2018 or 2019, and this is unlikely to improve in 2021. However, bass 4 years and younger were caught by anglers in substantial numbers in 2020 suggesting that recent year classes are likely to fill the niche of the larger fish absent from the population.



Fig. 15 Specimen bass reported to the Irish Specimen Fish Committee (>10lbs or >75cm)

From scale samples and surveys of juvenile bass it is evident that the 2014 yearclass continues to dominate catches (Fig. 5) and has largely replaced the previously dominant year class of 2007. These results provide evidence of a small recovery in one cohort of the bass population.

As demonstrated by the angler led IFI tagging programme bass return to their summer feeding grounds year on year and stay in the area for many months. Anglers participating in the programme reported releasing 90% of the bass they caught. Continued high levels of catch and release like this by all anglers will undoubtedly contribute to bass stock recovery while maintaining an active recreational fishery. The National Bass Programme recommends that bass anglers should continue to conserve the stock and return as many bass as possible. Continued long-term monitoring is required by IFI and the bass angling community to monitor the stock status of bass in Irish waters. Continued scale sample collection, and increased levels of bass angler voluntary logbook reporting are important to continue to understand the status of bass stocks in Irish waters. If you would like to participate in the National Bass Programme please send an email to the National Bass Programme at bass@fisheriesireland.ie

A sincere thank you to all bass anglers who contributed to the National Bass Programme which continues to contribute invaluable information to our understanding and monitoring of the bass population around the Irish coast. Your support with this programme is much appreciated.