

Tuna CHART 2020 Report

Report on Ireland's Atlantic bluefin tuna catch, tag and release data collection programme 2020



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1. Introduction

In 2018, ICCAT permitted countries in the North-East Atlantic without a Bluefin quota to authorise a limited number of sport vessels to target bluefin tuna with the purpose of “tag and release” without the need to allocate a country-specific quota. Tuna CHART is Ireland’s conventional tagging programme designed to implement, co-ordinate and oversee “tag and release” of ABFT by authorised angling charter skippers.

Atlantic bluefin tuna (*Thunnus thynnus*), the largest tuna in the world, frequent Irish coastal waters to feed following annual spawning migrations in the Mediterranean and possibly even the Gulf of Mexico. The bluefin tuna is prized by sea anglers for its power and fighting ability and is a highly valuable commercial species.

The International Commission for the Conservation of Atlantic Tunas (ICCAT) is an inter-governmental fishery organization responsible for the conservation of tunas and tuna-like species in the Atlantic Ocean and its adjacent seas. ICCAT compiles fishery statistics from its members and from all entities fishing for these species in the Atlantic Ocean, coordinates research, including stock assessment, on behalf of its members, develops scientific-based management advice, provides a mechanism for Contracting Parties to agree on management measures, and produces relevant publications.

ICCAT manage Atlantic bluefin stocks under a two-stock hypothesis for management and assessment i.e.

- Eastern Atlantic Ocean and Mediterranean Sea stock, that spawns in the Mediterranean Sea
- Western Atlantic Ocean stock, that spawns in the Gulf of Mexico, with a boundary line dividing the stocks at 45 W longitude.

The Mediterranean and Eastern Atlantic bluefin tuna (considered a single stock) is a highly regulated species with annual catch limits set by the International Commission for the Conservation of Atlantic Tunas (ICCAT) based on scientific advice.

The EC became a Contracting Party to ICCAT (the International Commission for the Conservation of Atlantic Tunas) in 1997. EU TACs and quotas for Bluefin Tuna were set by Council for the first time at the December, 1997 meeting in order to implement ICCAT catch limits/TACs for these species. Ireland did not have a track record of targeting bluefin tuna and does not have a quota. Ireland has access to a by-catch “others” quota for member states without a quota share to cover by-catches of BFT in commercial fisheries subject to certain conditions. Ireland has no quota to cover recreational fishing for BFT and has had no such quota since 1997.

The ocean waters off south Donegal are currently regarded by the International Commission for the Conservation of Atlantic Tuna (ICCAT) as an important area for Atlantic bluefin tuna and indications are that significant numbers arrive in the area over the period August to November each year.

The Tuna CHART programme is a collaborative scientific programme between Inland Fisheries Ireland and the Marine Institute in partnership with the Sea Fisheries Protection Authority, the Department of Agriculture, Food and the Marine (DAFM) and the Department of Environment, Climate and Communications (DECC). Training of skippers in tagging procedures and reporting of the fish caught and fishing activities are requirements of the programme. Any mortalities must be reported to ICCAT.

The Tuna CHART programme commenced in 2019. This report presents a summary overview of the 2020 programme results.

2. Methods

2.1 Skipper authorisation

In 2020, following an application process, 22 experienced charter skippers were authorised under a DECC Section 14 authorisation to operate a catch, tag and release bluefin charter fishery. Anglers were permitted to participate in the fishery as paying customers onboard vessels of authorised skippers. Authorised skippers were based in ports along the Northwest, West and South coasts (Fig.1). A mandatory training course was developed by IFI and the Marine Institute in collaboration with DAFM, DECC and the SFPA. Due to Covid-19 governmental restrictions limiting congregations in one place, training of the authorised skippers took place online in May 2020 via video. Skippers were required to pass a short test on each module to pass the course. and a live interactive on-line session with contributions from all collaborative partners in the programme was held subsequently to answer any queries which individual skippers may have had. The training course encompassed an introduction to ICCAT and bluefin tagging research, bluefin welfare, required angling gear and best practice, bluefin handling and tagging techniques, legislation and data collection.

Section 14 authorisations were limited to the open season only (1st July - 12th November 2020). The Tuna CHART season was due to open on the 1st July 2020. Due to government Covid-19 travel restrictions, the season opening was postponed to 13th July 2020. Subsequently skippers in Donegal were restricted from bringing anglers on board from the 15th October. These restrictions were extended to all counties on the 21st October. Skippers were still permitted to catch, tag and release bluefin but without anglers on board.

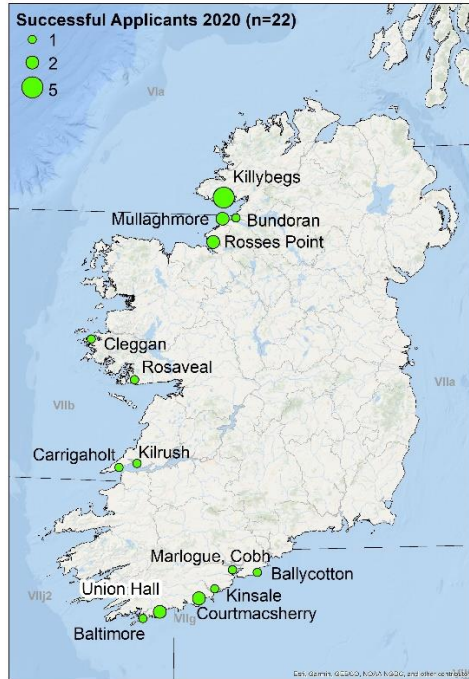


Fig. 1 Spatial Distribution of Authorised Skippers in 2020

All skippers/vessels were required to have suitably rated angling equipment, including 80-130lb class (or greater) bent butt rods and reels, and swivel rod holders. These provisions were required to minimise risk to tuna from lengthy playing bouts, and to allow for best management of fish welfare. Gear checks were undertaken by IFI staff in advance of the opening of the season and prior to authorisation.



Fig. 2 Measuring an Atlantic bluefin tuna in Donegal Bay

Skippers were provided with standardised equipment including measuring kits, lip hooks and double-barbed tags in 2020. These tags were considered to be a more robust tag compared to the spaghetti tags used in 2019. The double-barb tag was once again supplied by ICCAT (Fig. 3).



Fig. 3 Double barb ICCAT tag and metal applicator

2.2 Data

All skippers were required to permit onboard installation of a vessel monitoring system (VMS) for the duration of the open season. Vessel positions were monitored by the Sea Fisheries Protection Authority (SFPA).

Skippers submitted a digital report of their bluefin angling trips to IFI and Tuna CHART using the Tuna CHART form on Survey123, an ArcGIS application developed by IFI on ruggedised Samsung tablets (Fig. 4a). Skippers were obliged to submit their surveys digitally within 24 hours of their angling trip. An IFI ArcGIS Tuna CHART dashboard provided daily running summaries of spatial and temporal tagging activity.

Paper copies of the trip and fish information were also recorded by skippers and collected by MI at the end of the open season (Fig. 4b). Fields in the digital and paper forms were designed to correspond to fields in the ICCAT conventional tagging document (Fig. 5).

IFI Tuna CHART staff contacted all skippers weekly before, during and after the open season via phone and email to support data collection and general Tuna CHART queries. Digital and paper records were reviewed by IFI staff, and a summary of their own data was emailed back to each skipper for quality assurance throughout the season. Finally, an overview summary

table was sent to each skipper of their own data after the close of the season. This was for their review and to further ensure accuracy of the dataset.

MI conducted telephone calls with all authorised skippers for updates on three separate occasions: during the pilot programme (9th of September and 13th of October) and after the programme (14th of November 2020).

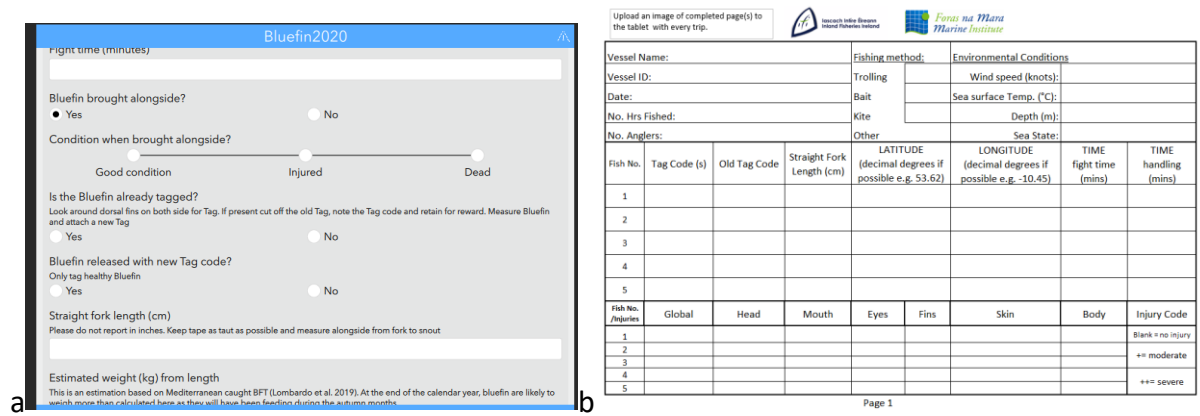


Fig. 4 a) Tuna CHART 2020 screenshot from the digital data collection form b) paper form

ICCAT: INTERNATIONAL COMMISSION FOR THE CONSERVATION OF ATLANTIC TUNAS 2019a ENG

Tagging correspondent inc

Identification: Name [input], E-mail [input], Phone [input]
 Affiliation: Institution [input], Department [input], Address [input], Country [input]

Secretariat use only Filtering criteria

Date reported [input], Reference No [input], id [input], File name (proposed) [input]

Filter 1	Filter 2
a) 0	
b) 0	
c) 0	n/a
d) 0	

Data set characteristics inc

Reporting Flag [input], Sub-form / Description [input]
 TG02A Conventional tagging events (releases/recaptures)
 TG02B Vessels involved in tagging experiments
 TG02C Persons (taggers/recapturers) involved in tagging experiments

Version reported [input], Content (data) [input]

Release(R)/Recovery(C): Event identifier (unique) inc

Specimen identifier (unique)	Tagging operation (unique identifier)				RELEASE information													
	Tags used (full codes)				RC code	Time strata			Geographical strata			Fishing operation						
ID	Species cod.	Sex cod.	Tag1	Tag2	Tag3	Tag4	RCStage cod.	Date	Time (hh:mm)	Latitude	Longitude	Area description (optional)	Vessel ID	Gear cod.	School type	Survey acron	Bait cod.	Dept (m)
SpecimID	SpcCd	SexCd	Tag1Cd	Tag2Cd	Tag3Cd	Tag4Cd	RCStageCd	reDate	reTime	reLat	reLon	reArea	reVessID	reGearCd	reSchoolCd	reSurvAcro	reBaitCd	reDeptM

Figure 5. ICCAT conventional tagging report “TG02-CnvTReRc”.

Data collected from the programme was cross-checked by IFI and MI, using both the physical report and digital report once the programme has finished for the season. The quality assured data was then collated and submitted to ICCAT in the form of the conventional tagging report (TG02-CnvTReRc) (Fig. 5).

All the tagging data sent to ICCAT is processed regularly and included in the tagging database according to the relevant Species Group needs (in this case the ABFT) and is updated every

year. A summary of these data is then published and made available publicly at <https://www.iccat.int/en/accesingdb.html> under the “Tagging” toggle.

2.3 Observer programme

Eleven observer days took place during the 2020 ABFT CHART programme (Table 1) and these were focussed on skippers new to the programme.

Table 1. Observer days and fishery coverage.

	New 2020 skippers (n)	Observer days	BFT Tagged	Days fished	Coverag e
North-West (Donegal & Sligo)	3	6	15	15	40%
South (Cork)	4	5	81	60	8%
West (Galway & Clare)	2	0	0	9	0%
Total	9	11	96	84	13%

3. Results

3.1 Overview

A total of 302 bluefin fishing trips were undertaken and 685 Atlantic bluefin tuna were tagged during the open season. A further 76 tuna were hooked but not tagged, largely because they were lost before being brought alongside. On 12 occasions, tuna were brought alongside and measured but the fish could not be tagged for technical reasons.

Table 2. Bluefin tuna angling trips and tagged bluefin Tuna CHART 2020

Fishing Area	No. Skippers	No. Trips	No. Tuna Tagged
Donegal Bay	10	174	512
South Coast	8	110	170
West Coast	4	18	3
Tuna CHART 2020	22	302	685

3.2 Fishing Effort

Peak angling activity was recorded in September and October (Fig. 6). Covid restrictions from mid-October, in combination with Storm Aiden on the 30th October, contributed to a sharp reduction in fishing effort towards the end of the season. The season opened one month earlier than in 2019 and a small number of skippers undertook angling trips in this early period. Once bluefin were encountered in each region tuna angling activity increased generally.

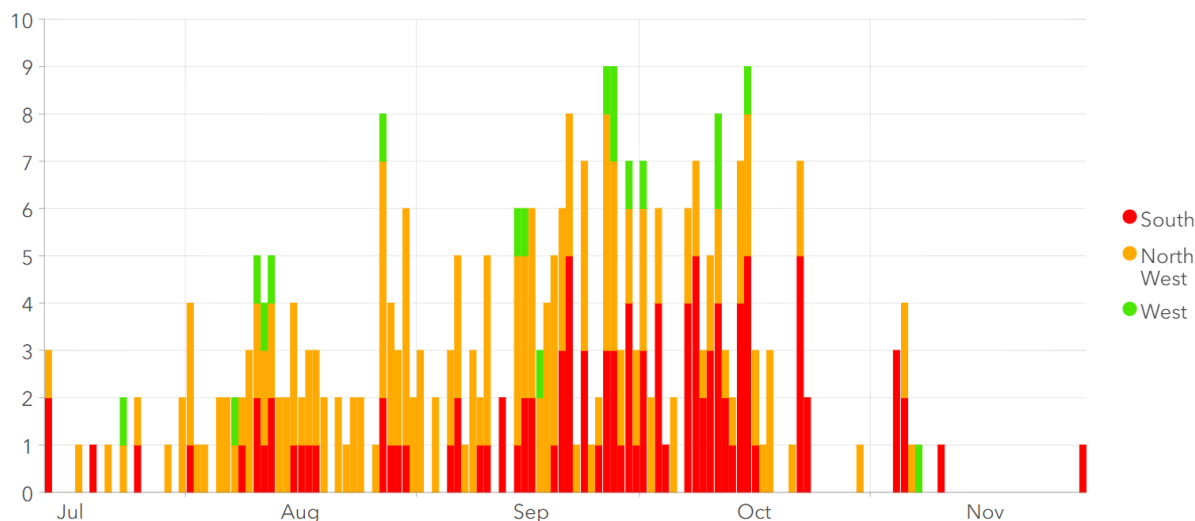


Fig. 6 Tuna CHART 2020 Fishing effort by day (Season 13th July-12th November).

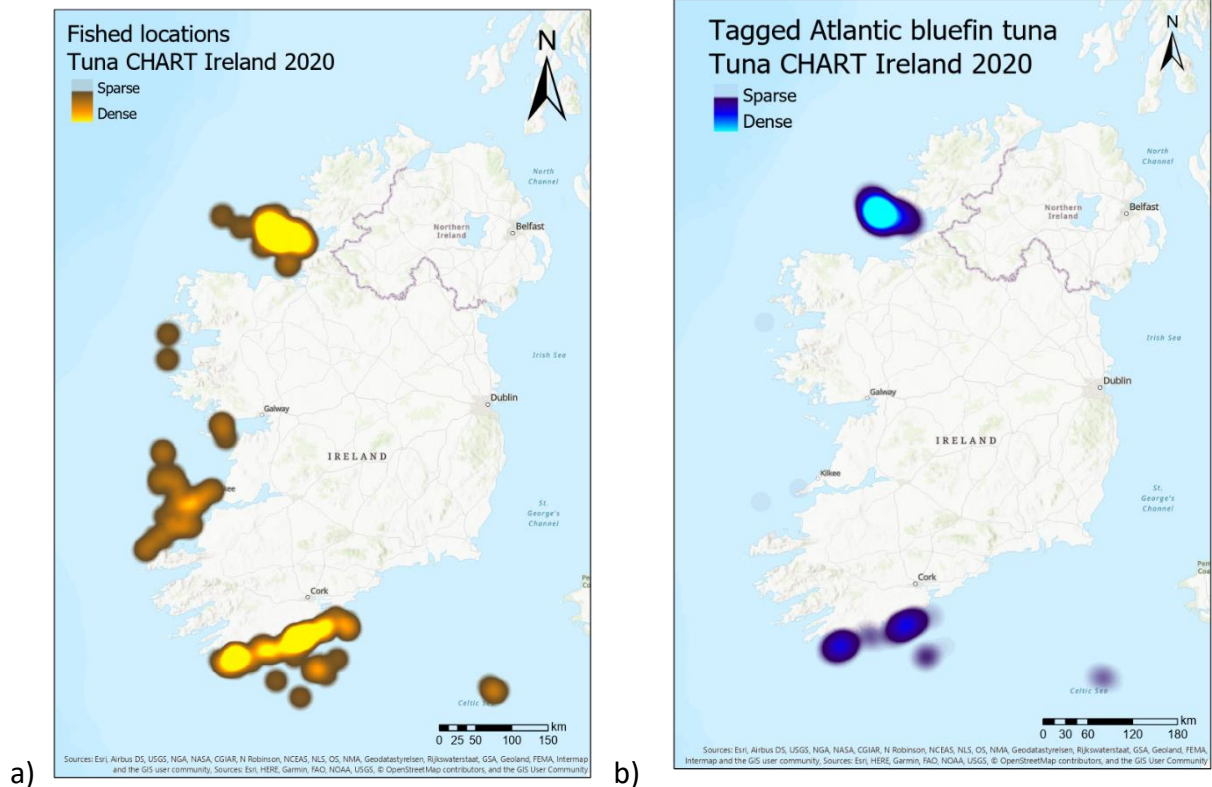


Fig 7 a) Fishing locations by authorised skippers and b) Bluefin tuna tagging heat map Tuna CHART 2020.

3.3 Tagging results

The first bluefin tagged was in Donegal Bay on the 31st July. The first bluefin tuna tagged off the south coast was on the 8th August. On the 11th August, the first bluefin was tagged off the West coast (Fig. 8).

Skippers based in ports in both Donegal and Sligo converged in Donegal Bay to target tuna in the same area. High numbers of bluefin were tagged in early August in the Northwest and then consistently from September until the end of October in both the Northwest and South.

Ten skippers fished in the Northwest. 546 bluefin were hooked up and 512 bluefin were tagged over the course of 174 trips in the Northwest during the open season. Seven out of ten skippers successfully tagged at least one bluefin. The number of bluefin tagged in Donegal Bay was 2.5 times that tagged in 2019.

Four skippers were based along the west coast where fishing effort was lowest. Few sightings of tuna were observed on the west coast. Three bluefin were hooked and all three were tagged, west of Co. Mayo and two off the coast of Co. Clare. In 2019 only one West coast bluefin was tagged, and this was more than 45km from shore. Two out of four skippers tagged at least one bluefin each.

Eight skippers were based along the south coast. 212 bluefin were hooked up. 42 were lost before being brought alongside. 170 bluefin were measured and tagged by seven different skippers. In 2019 just three bluefin were tagged off the south coast.

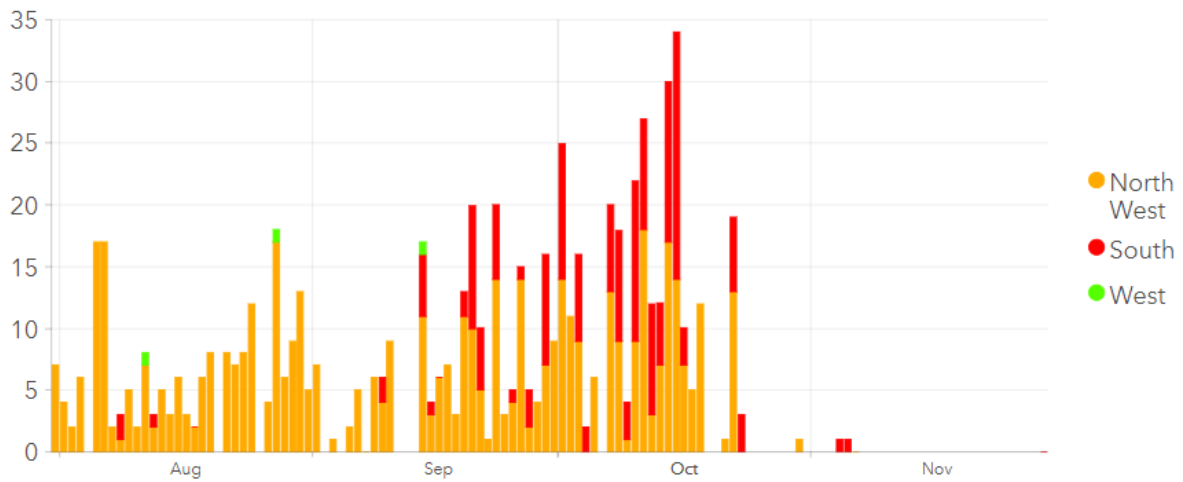


Fig. 8 Atlantic bluefin tuna daily tag numbers Tuna CHART 2020 (n=685).

3.4 Size distribution of Bluefin tuna

Bluefin ranged in length from 139cm to 275cm Straight Fork Length (SFL). The length data was normally distributed with a median length value of 208cm (Fig. 9). In 2019, the length frequency distribution was similar, with a median value of 205cm, though with two peaks, at 190cm and 220cm.

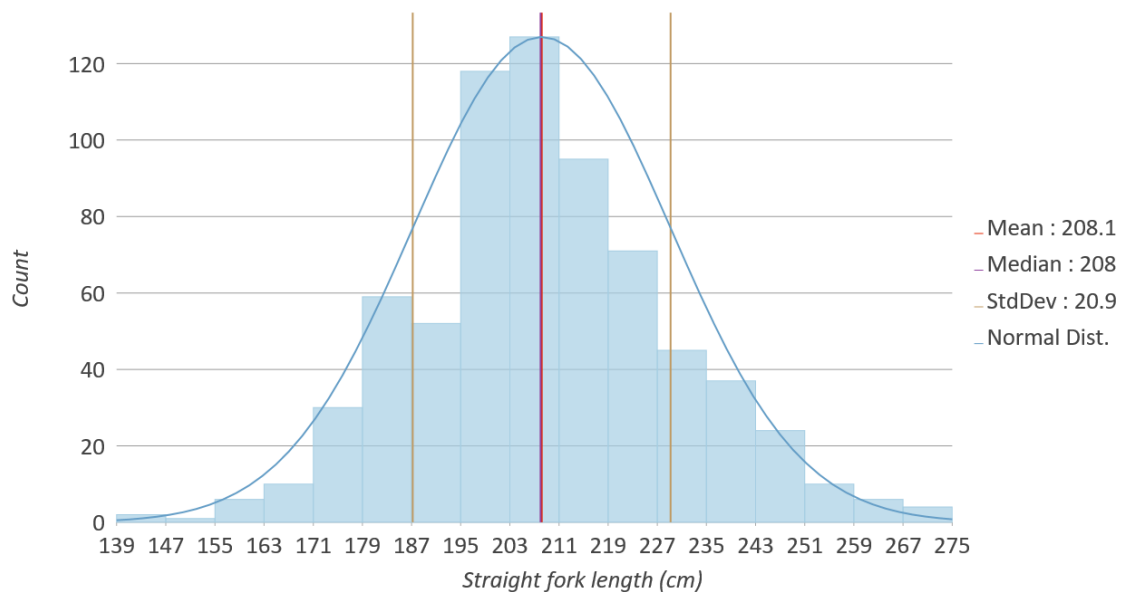


Fig. 9 Histogram of measured Atlantic bluefin tuna length distribution (cm) (Straight fork length) 2020 (n= 697)

3.5 Observer reports

Three minor issues were observed, falling into the following two categories: digital data collection using the tablet and fish handling.

Few issues reported with regard to the data collection and these many related to lack of signal strength at sea which delayed report logging. The tagging operation was carried out with very high compliance with requirements and only one incidence of a hook being unavoidably left in a fish. Over time this wire hook will disintegrate due to oxidation.

A single report of a skipper having to be prompted to take over for an angler once the 30-minute fight time was exceeded. Fight times longer than 30 minutes were recorded; however these were with skippers or crew bringing in the fish. Following a review in 2021 the Technical Group of the inter-departmental Tuna Chart group recognised that 30 min represents a short period and have recommended allowing for longer fights, at the skipper's professional discretion, when large fish are hooked.

4. Summary

High levels of catches were recorded in 2020 compared to 2019. Fishing effort increased by 50% despite the lack of international tourism while the number of bluefin tagged increased by 228%. The Northwest continued to dominate catches with the highest number of fish tagged during the season. The south coast reported the highest rate of change in numbers tagged, from 3 in 2019 to 170 in 2020. Notably, bluefin were found within close proximity of the coast, as has been recorded consistently in Donegal Bay since the programme started. Along the west coast few sightings were reported and in combination with low fishing effort, only three bluefin were tagged in 2020. Reports from skippers at that time suggest that bluefin were transient in the area in 2020, with few observations of large schools remaining in one location for extended periods of time.

In 2020, as in 2019, a storm in October impacted on fishing effort and also on the number of bluefin tagged at that time.

The observer reports detail that there is a high level of compliance by authorised skippers with the Bluefin tuna regulations, the Section 14 authorisation and the guidelines for angling, handling and measuring the bluefin. Reports from observers regarding fishing times have been incorporated into the training course and the digital data collection training course has been updated. Further, additional support with the use of the tablet will be provided in 2020 in advance of the start of the season.