

# **Annex 1: Assessing the economic impact of CHART programme from angler expenditure in 2022**

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# Key Findings

- Anglers engaging in CHART were surveyed to assess the economic impact of the programme in 2022. 95 of the 1,755 anglers (~5%) that fished in CHART completed the survey, generating data for 69 out of the 622 trips (~11%) with paying anglers onboard.
- CHART anglers responding to the survey were between mostly 45-55 years old with high (>£50,000) household income with similar characteristics to those in the 2021 survey. Each angler spent an average of £1,039 to take part in each day of CHART fishing, with total spend of £3,253 per trip for all anglers on each boat. About 47% of this spend was for the vessel charter fee and around 91% of the spend took place within the South West of England.
- Raising to the total number of trips and calculating the flow through the UK economy showed that the direct impact of angling within CHART was £1.7 million, generating a total economic impact of £3.3 million, GVA of £915,000 and supporting 43 Full Time Equivalent jobs (FTE) with approximately 90% of this generated within the South West of England.
- The survey asked what anglers would do if CHART was not available. Based on the information provided, it was possible to determine that 20% of angler spend would occur anyway and 80% can be directly attributed to CHART. Hence, the spending of anglers taking part in CHART generated a direct impact of £1.3 million, total economic impact of £2.6 million, providing £733,000 of GVA and supporting approximately 34 FTEs.
- The economic impact was calculated to be 3.5 times higher in 2022 than in 2021, for which it was estimated that CHART generated a direct impact £343,000, and a total economic impact from CHART anglers was £742,000, providing £157,000 of GVA and supported approximately 9 FTEs.
- Increases in the economic impact from 2021 to 2022 is, among others, driven by a range of reasons including: larger overall CHART programme (increases in vessels, number of trips and number of anglers taking part); increases in charter fees; and increases in overall angler spending.
- Taking the results from 2021 and 2022 into account, results show a positive effect of the CHART programme for anglers involved in the CHART programme, as well as for the local and wider UK economy as a result of angler spending. However, further surveys are recommended for any future CHART or BFT angling programmes to ensure that robust estimates of economic impact can be generated.
- Estimates from the angler survey measure consumer surplus and assess the economic impact the anglers are having by visiting the area to spend time on a CHART day trip. In contrast, the skipper survey measures producer surplus and estimates the economic impact the skippers are having by investing to take part in the programme. As such, these estimates are not directly comparable and reflect different parts of the economic flow CHART generates and cannot be summed to generate a full economic picture for CHART without correcting for double counting.

# 1. Introduction

In recent years, the number of sightings of Atlantic Bluefin Tuna (BFT) in UK waters has been increasing. This has led to a growing interest in the species from the science community, the recreational fishing community, and the commercial fishing sector. It has been suggested by representatives from the recreational fishing sector that a Catch And Release Tagging programme (CHART) could contribute to international BFT research in addition to the potential social and economic benefits it would bring to coastal communities. The CHART programme conducted a pilot study for BFT from August to November 2021 across 15 vessels in the South West of England. This was continued into 2022 with 25 vessels from August to December.

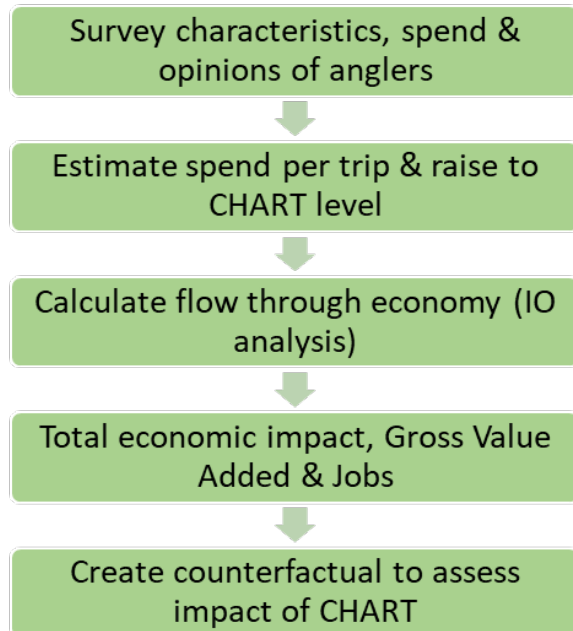
A survey was carried out with anglers engaging in CHART 2021 to assess the economic impact of the programme (Edwards et al., 2022). In the 2021 season, CHART anglers responding to the survey were mostly between 50-59 years old with high household income and had positive opinions about the programme. Each angler spent an average of £493 for one day of CHART fishing, with total spend of £1,311 per trip for all anglers on each boat. Raising to the total number of trips and calculating the flow through the UK economy showed that the direct impact of angling within CHART in 2021 was £410,000, generating a total economic impact of £889,000, Gross Value Added (GVA) of £189,000, and supporting 11 Full Time Equivalent jobs (FTE). Anglers were asked in the survey what they would do if CHART was not available. Based on their responses it was possible to determine that 17% of angler spend would occur anyway and 83% could be directly attributed to CHART. Hence, CHART in 2021 generated a direct impact of £343,000, total economic impact of £742,000, provided £157,000 of GVA, and supported approximately 9 FTEs (Edwards et al., 2022).

This report follows on from previous work on estimating the social and economic impact of CHART generated directly by the anglers that took part in the programme in CHART 2022. This study identified the general profile of anglers, their opinions and personal benefits generated from the programme as well as the overall economic impact generated from the spend by anglers.

## 2. Methods

To evaluate the economic and social benefits of the CHART programme, a survey was designed using the platform Qualtrics (<https://www.qualtrics.com/uk/>; Appendix 1). This was based on the survey developed for 2021, but updated to remove sections that were no longer necessary and added questions where additional information needed for the analysis was identified. Anglers were asked to complete the survey at the end of the trip, and reminders were distributed to anglers by the skippers at the midpoint and end of the season. The survey asked anglers for their personal characteristics, motivations for angling, and expenses with regards to their CHART trip. Questions relating to the anglers fishing preferences were also added to provide information of anglers preferred methods of fishing. The responses of the anglers were analysed to estimate the overall economic impact and social benefits of CHART in 2022 (Figure 1).

As this study aimed to identify economic impact of anglers, responses were only kept if the angler indicated they were a paying customer on their trip, excluding 2 responses. Responses relating to the angler characteristics were assessed to identify the types of anglers taking part and the trip they took. The distance travelled by anglers for CHART was calculated as the direct line from the centroid of their home postcode to the port associated with the vessel. To ensure anonymity of anglers, only the first half of the postcode (outward postcode) was requested. The opinions of anglers about CHART programme were also collected.



**Figure 1: Conceptual framework of methodology for socio-economic effects of CHART 2021.**

A total of 95 anglers provided data on their spend across a range of categories per person for one day of their trip. Trip spending categories included: accommodation; charter fees; accessories; transport; flights; food (from restaurants, takeaways, and shops); fuel; parking; and other additional spending. Anglers were also asked to split this spending by location, spending on transport, accommodation and food were assumed to have taken place within the South West of England while for all other spending categories anglers were asked to identify how much was spent in the South West of England, in the entire UK as well as internationally. As approximately 90% of spending was within the South West of England, all spending was combined to give an overall picture of impact generated by CHART. This was used to calculate the spend per angler for one day of CHART fishing. Where a response was received from more than one angler on the same CHART trip, the mean of the spend was taken. Survey responses were matched with trip information from the skipper logbooks to identify trip details such as number of anglers aboard. Where trip information from a survey response did not match to a trip that took place, it was assumed to be an error in the recording of the date of the trip and the survey response was matched to the trip information of the vessel from nearest available date. This resulted in responses for 69 of the CHART trips that took place in 2022. As this survey was used to calculate the social and economic impact of the paying anglers that took part in the CHART programme, any trips with no anglers on board (n=9) were removed, leaving 622 trips in total for the CHART 2022 season with paying anglers on board. Spend was multiplied by the number of anglers aboard each trip to calculate total spending for each individual trip. From this, average spend for each individual spend category was calculated giving an estimate for the total expenditure for one day of CHART fishing.

While there were more responses from some vessels and no response from others, it was assumed that the 69 trips represented a representative sample of the whole population (622 trips). This was because it was not possible to account for all the differences between trips with the limited number of responses. Assuming a representative sample of trips, the spend per trip was raised to the total angler spend on CHART. For this step, the 'srvyr' package in R was used (Freedman Ellis & Schneider, 2021; R Core Team, 2021).

An Input-Output (IO) approach was used to derive the total economic impact, Full Time Equivalent employment (FTEs), and GVA from the total angler spend (see Hyder et al. (2020) for a detailed description of the approach). To do this, the raised angler spend on each of the different categories was partitioned into the relevant industrial sectors based on industry distribution tables used to assess the economic impact of recreational sea angling (e.g. Hyder et al. 2020). After the angler spends were assigned to their respective industrial sector, imports and taxes were removed to obtain a total expenditure estimate. This estimate created the baseline for assessing the economic impact. We generated Leontieff multipliers (type II) based on supply and use tables (SUT) for 2020, the latest published by the Office for National Statistics (ONS)<sup>1</sup>. The total economic impact, gross-

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<sup>1</sup><https://www.ons.gov.uk/economy/nationalaccounts/supplyandusetables/datasets/inputoutputsupplyandusetables>



value added, and employment effect were assessed by applying the Leontieff multipliers to the total expenditure estimates.

The total economic impact generated by anglers fishing within CHART is not the same as the total impact that CHART generated. This is because it does not account for what these anglers would do instead as it can be assumed that a proportion of the money spent on CHART by anglers would be spent anyway irrespective of the existence of the programme. For example, some of the anglers may still go fishing on a charter boat if CHART was not available to target other species or engage in non-angling activities. This is known as the counterfactual. To assess the counterfactual, anglers were asked what they would do if CHART was not available. According to the responses, 65% of anglers indicated they would not have come to the area if CHART were not available, with approximately one third of all anglers indicating they would still fish for tuna elsewhere. Anglers wanting to fish for tuna elsewhere would need to go abroad, as tuna fishing outside of the CHART programme is not legal in the UK, with only a small proportion of their spending contributing to the UK economy. Spend directly attributed to CHART was identified based on the activity anglers would do if CHART were unavailable using several assumptions (Table 1). Trip spend was partitioned into five groups using the proportion of anglers that would take part in each alternative activity (Table 1). Spend attributed directly to CHART was calculated based on the assumptions for each group (Table 1).

**Table 1: Assumptions made to calculate counterfactuals based on angler activity if CHART were not available.**

Activity if CHART were unavailable	% of Responses	Spending without CHART	Spending attributed to CHART	Assumptions
Go tuna fishing elsewhere	32.6%	Only accessories.	Everything apart from accessories.	Sea anglers would need to go abroad to fish for tuna elsewhere. Accessories would still be bought within the UK, but all other spending would go abroad.
Go angling elsewhere	28.8%	Angling spending.	Spending above average trip spend	Sea anglers would spend the average trip spend by sea anglers in 2021.
Do nothing or a different activity elsewhere	15.9%	No spending.	All spending.	All recorded spending was attributed to CHART as they would spend nothing otherwise.
Go angling in the South West	19.7%	Trip spend but with a cheaper charter tour.	Difference in charter fees and accessories.	Anglers would have the same trip spend with the exception of the higher cost of CHART charter fees (approximately £272 higher) and additional accessories.
Do something else in the South West	3%	Trip fee minus charter fee and accessories.	Charter fee and accessories.	Anglers would likely need to spend the same amount on their trip minus fees directly related to angling

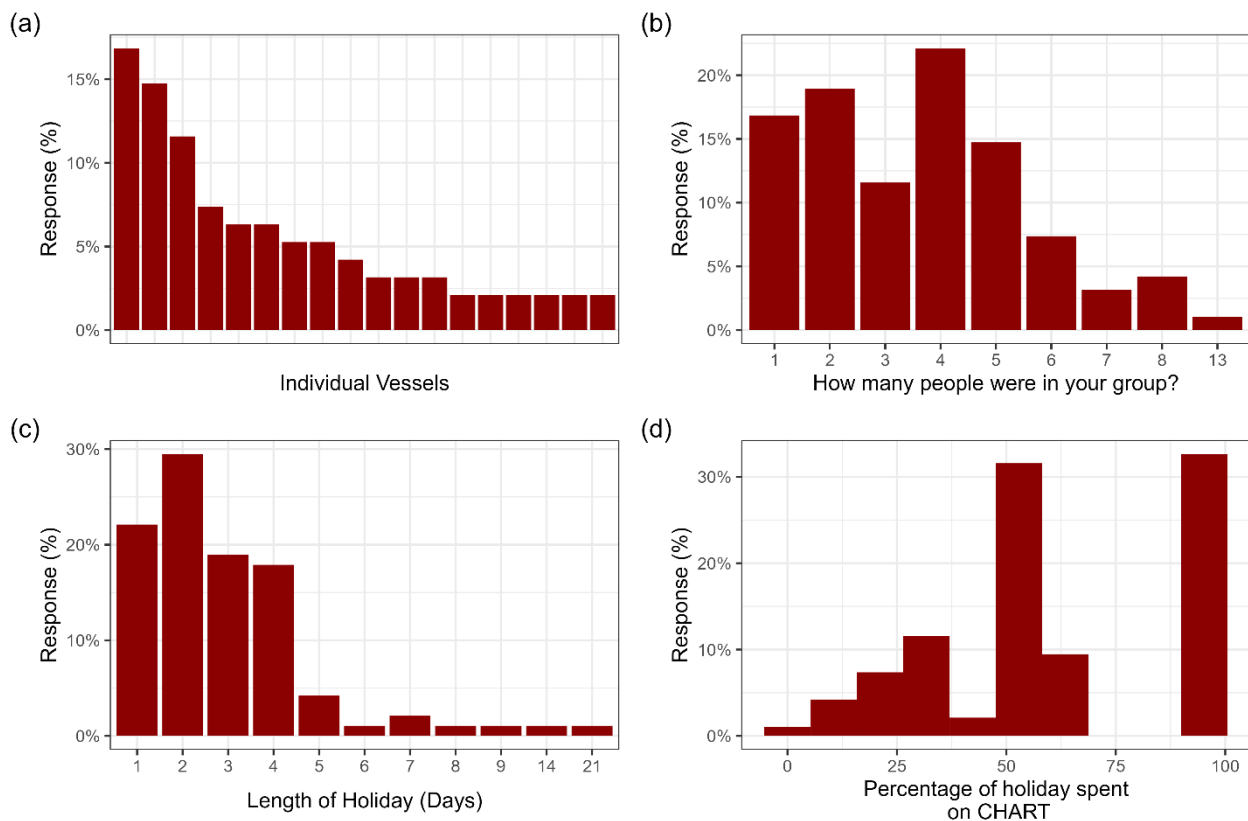
Spend per trip was adjusted to calculate the economic impact of CHART using the assumptions for each group of anglers (Table 1). These were combined to generate trip spending attributed to CHART, giving an estimate for the total expenditure. Trip spending was raised to the whole of CHART using the same method as before for the total economic impact of anglers fishing within CHART. Imports and taxes were removed from

the total spending before being scaled to the UK and applying the multiplier to assess the total economic impact, gross value added and employment effects solely generated by CHART.

## 3. Results

### 3.1. Anglers' Characteristics

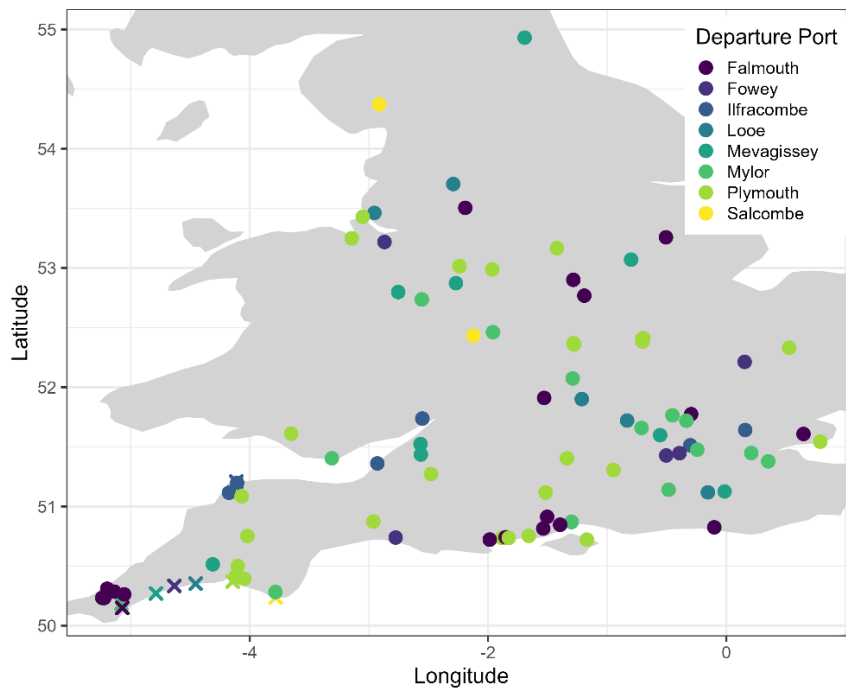
25 vessels took part in the CHART programme operating a total of 631 trips, 9 of which had no anglers onboard leaving 622 trips with paying anglers onboard. Approximately 95 (5%) of the 1,755 CHART anglers completed the survey who went on 69 different trips (~11%) across twelve vessels. The number of responses from each vessel was variable, with no responses from 7 vessels and three vessels accounting for more than one third of the responses (Figure 2a). This is likely due to the different amount of fishing effort per vessel.



**Figure 2: Trip characteristics of the anglers responding to the survey with the percentage of responses received from different vessels (a), number of anglers in each group (b), holiday lengths in days (c), and proportion of holiday spent on CHART (d).**

Most anglers (96%) had travelled to the area specifically to take part in CHART with nearly three quarters travelling in a group with an average of 3.7 people per group (Figure 2b). Anglers spent an average of 3.1 days in the area (Figure 2c), fishing for an average of 1.4 days, but did not spend all their trip fishing (Figure 2d). Anglers that responded to the

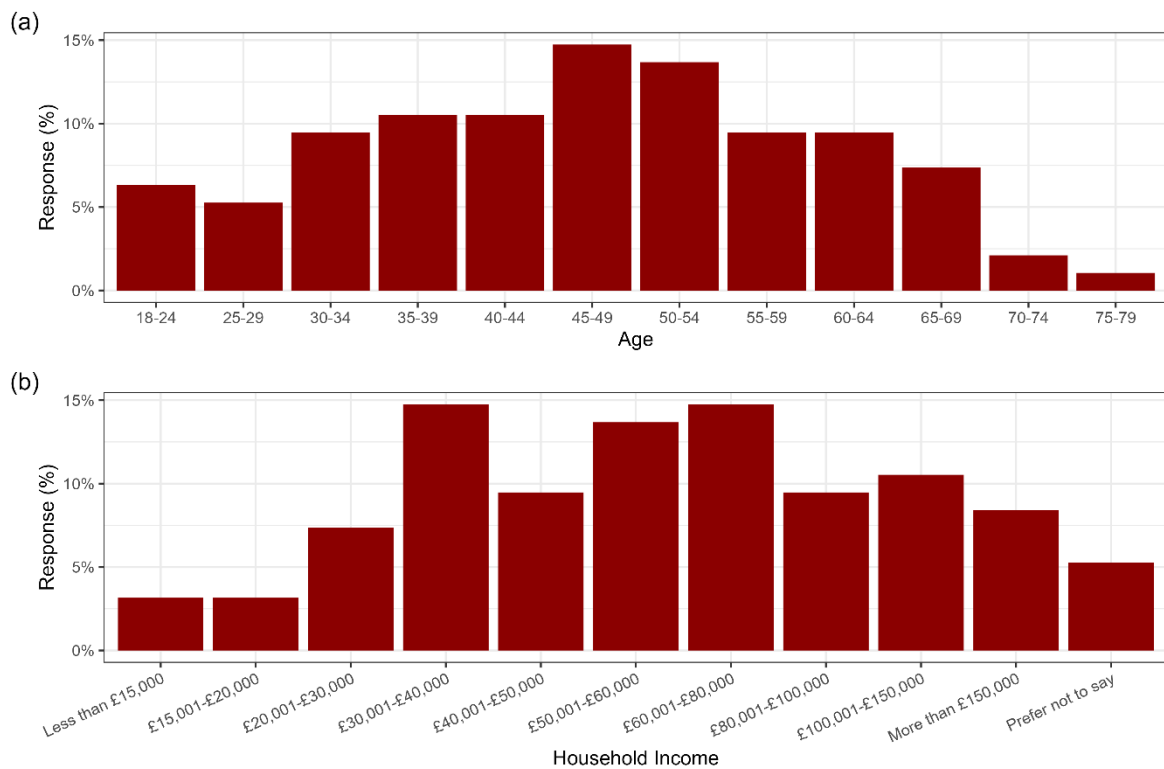
survey were from across England and Wales (Figure 3), and travelled an average of 256km each way, with the maximum distance travelled 559km each way.



**Figure 3: General location of anglers that took part in CHART, coloured by the port they travelled to. Port locations are indicated by an x.**

Over half of anglers were above 45 years old, with the majority aged between 45 and 55 years (Figure 4a). Household income ranged from less than £15,000 to more than £150,000 each year with the majority in middle to upper-level incomes (>£30,000). Household income among anglers was generally high, with approximately 10% in each middle to upper-level income category and the majority of anglers stating a household income between £30,000 and £80,000 with over half above £50,000 (Figure 4b). CHART anglers had fished for 18 days in the past 12 months, which was high compared to the 7-11 days fished each year general population of sea anglers (Hyder et al., 2021).

When asked their top three reasons for taking part in CHART most anglers indicated their top two reasons were to catch tuna and gain a new experience. Anglers generally indicated a preference for one quality tuna (>300lb or 136kg) over a high quantity of tuna. The third reason was much more diverse with a mix between gaining “skills” and “experience” and environmental benefits such as “wildlife watching” and “socialisation”. When asked their preferences for fighting fish the majority indicated “stand up” to be preferred with their second and third choice an even mix between “fighting chair” and “rod holder” techniques. Anglers were also asked their preference for fishing techniques, within this the majority indicated a preference for towed surface lures (i.e. trolling-the method used in CHART 2021 and 2022), with surface “popping” (rod and line fishing with a lure) and bait fishing a second choice.



**Figure 4: Percentage of responses from anglers for each of the different categories relating to: (a) age; and (b) household income.**

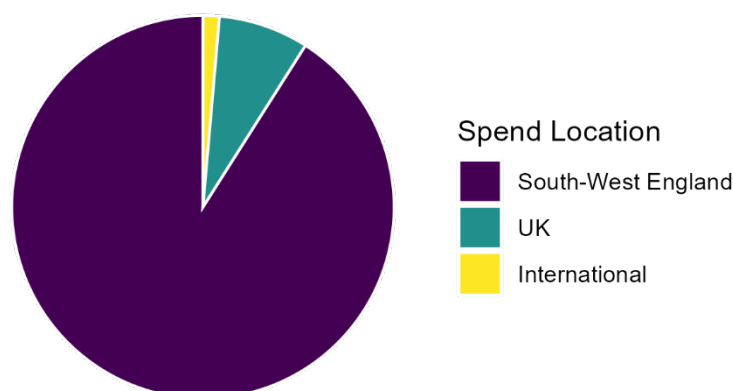
### 3.2. Spending

The average angler spend for one CHART day trip was £1039±65, more than double the total average spend in 2021 (£492) and approximately twelve-times greater than the average trip spend for all UK sea anglers in 2021 of £83 (Hyder et al., 2020). Charter fees to take part in CHART, at £489±33, accounted for the majority of the spend (47%) followed by accommodation at £145±17 (14%) (Table 2). Food was purchased mainly in restaurants, followed by shops. Spending on fuel was the next highest spend of anglers taking part in CHART with an average of £97±8 per person per day of their trip.

The majority (91%) of CHART angler expenditure took place within the South West of England (Figure 5). Angler spend within the UK (excluding the South West of England) accounted for only 8% of spending with the highest national spending being on fuel (£41±6). International spending accounted for only 1% of spending and was generally only for transport related spending with the highest amount on air fares (£7.2±5.6).

**Table 2: Average spend by category per angler for one CHART fishing day trip.**

Categories	Mean	Standard Error
Accessories	£42	£9
Accommodation	£145	£17
Charter Fees	£489	£33
Air fares	£17	£9
Food		
<i>Restaurants &amp; Takeaways</i>	£95	£10
<i>Shop</i>	£40	£5
Fuel	£97	£8
Other	£76	£18
Parking fees	£11	£2
Other transport cost	£25	£7
<b>Total</b>	<b>£1,039</b>	<b>£65</b>



**Figure 5 Proportion of anglers spending attributed to South West of England, the entire UK and internationally.**

### 3.3. Total Economic Impact of CHART

The average spend for each category calculated per trip for all anglers onboard gave an estimate for the total expenditure of £3,253 per trip. Spending distributions across the categories remained the same as spending by individual anglers. Charter fees accounted for 47% of this spend with an average £1,530 per trip, approximately £930 above average for other charter fees.

The direct impact of CHART, not accounting for the counterfactual, in 2022 was £1.7 million, generating a total economic impact of £3.3 million, GVA of £915,000 and supporting 43 FTEs (Table 3). This is considerably higher than the impact generated from the 2021 CHART pilot programme. The direct impact of CHART in 2021 was £410,000,

generating a total economic impact of £889,000, GVA of £189,000 and supporting 11 FTEs (Table 3). However, it should be considered that the sample size of anglers in the pilot study of this programme was substantially smaller. Thus, comparison between the years is limited and might be driven by different number of responses received.

**Table 3: Total Economic Impact of the CHART programme generated from Angler spending.** Spending is given as the mean with 95% confidence intervals in [].

Measure	2022		2021	
Responses				
<b>Angler</b>		95		111
<b>Trips</b>		69		80
<b>Total trips (with anglers)</b>		622		407
Spend per trip	£3,253	[£2,494, £4,012]	£1,311	[£1,125, £1,496]
Total expenditure (thousands)	£2,023	[£1,551, £2,495]	£534	[£458, £609]
Direct Impact				
<b>Expenditure ('000s)</b>	£1,663	[£1,289, £2,036]	£410	[£353, £467]
<b>Jobs</b>	30	[24-36]	7	[6-8]
<b>GVA (thousands)</b>	£915	[£720, £1,110]	£189	[£161, £215]
Total Economic Impact				
<b>Expenditure ('000s)</b>	£3,284	[£2,517, £4,051]	£889	[£765, £1,012]
<b>Jobs</b>	43	[34, 52]	11	[10, 13]

### 3.4. Impact Generated by CHART

The spending per trip was adjusted to calculate the economic impact of CHART using the counterfactuals assumptions (Table 1) for each group of anglers. These were combined to generate trip spending attributed to CHART, giving an estimate for the total expenditure of £2,567 for a single CHART Bluefin tuna trip.

Overall, 80% of the spending was found to be directly attributed to CHART, this has remained consistent with 2021 in which 83% was directly attributed to CHART. The total direct expenditure generated by CHART was estimated to be £1.3 million in 2022. This resulted in a total economic impact generated by CHART anglers of £2.6 million, providing £733,000 of GVA and supporting approximately 34 jobs (Table 4). This economic impact was generated across the second year of the programme from only 25 vessels with 622 trips (with paying anglers onboard) across a 5-month period. As with the expenditure, the economic impact was more than double the economic impact generated in 2021 by 15 vessels with 407 trips in a 4-month period (Table 4).

**Table 4: Economic Impact of spending directly attributed to CHART, given as the mean with 95% confidence intervals in [ ]**

Measure	2022		2021		Difference
Spend per trip	£2,567	[£1,985, £3,149]	£1,089	[£937, £1241]	2.36
<b>Total Expenditure ('000s)</b>	<b>£1,597</b>	<b>[£1,235, £1,959]</b>	<b>£443</b>	<b>[£381, £505]</b>	<b>3.60</b>
<b>Direct Impact</b>					
<b>Expenditure ('000s)</b>	£1,323	[£1,035, £1,611]	£343	[£295, £390]	3.86
<b>Jobs</b>	24	[19-29]	6	[5-7]	4
<b>GVA ('000s)</b>	£733	[£581, £884]	£157	[£135, £179]	4.67
<b>Total Economic Impact</b>					
<b>Expenditure ('000s)</b>	£2,603	[£2,013, £3,192]	£742	[£640, £845]	3.51
<b>Jobs</b>	34	[27, 41]	9	[8, 11]	7.11

## 4. Discussion

The effects of the CHART programme from anglers were positive, with considerable economic impact in particular within the South West of England. Anglers' comments indicated a positive experience within the CHART programme with lots of interest in the results of the tagging programme. Spending from anglers taking part in CHART 2022 generated a total economic impact of £2.6 million, providing £733,000 of GVA and supporting approximately 34 FTEs. This spend is considerably higher than would be generated without the CHART programme, as the counterfactual showed that 80% of spend was directly attributed to CHART. Based on anglers' responses approximately 90% of this impact was generated and remained within the South West of England, indicating the potential for this programme to benefit local communities. However, this assumed the 5.4% of anglers which responded to the programme were representative of those that took part throughout the full CHART 2022 programme.

To compare, in 2021, spending attributed to CHART through the counterfactuals accounted for a similar percentage (83%) of the total spend. This resulted in a total direct expenditure in 2021 of approximately £343,000 directly from CHART with a total economic impact from CHART anglers of £742,000, providing £157,000 of GVA and supporting approximately 9 FTEs. As such, the economic impact was calculated to be 3.5 times higher in 2022 than in 2021 which might be driven by a range of reasons. Firstly, the programme was larger, increasing the number of vessels and trips (with paying anglers aboard) from 15 vessels and 407 trips to 25 vessels and 622 trips. This increased the number of anglers involved from 1070 to 1755. Secondly, charter fees, which accounted for the majority of the spend in both years, increased for the 2022 season as skippers were able to use the previous year to determine an appropriate cost for day trips, while accounting for the general increase in costs of fuel in 2022. Anglers spent on average per person 1.5 times more on charter fees in 2022 than in 2021.

Thirdly, angler expenditures increased considerably from 2021 to 2022. In particular, anglers' spend for accessories was 15 times higher in 2022 than 2021. High increases in spend were also found in fuel and food in shops, both of which were four times higher while food in restaurants was more than double. This could partially be caused by the increase in cost of living, but could also be driven by a shift of anglers attracted by CHART in 2022. With regards to the characteristics of anglers, in 2022 a slightly younger

population of angler took part in CHART which stated a similar avidity (i.e. in 2021 CHART angler stated to have been fishing 21 days in the previous 12 months, while in 2022 CHART anglers reported to have fished for 18 days in the past 12 months). The stated household income of CHART anglers remained similar over the years with approximately 20% of anglers' household incomes above £100,000. While it was estimated that anglers in general spent more on all categories in 2022, this was particularly evident for those on higher household incomes. In general, in 2022 anglers on higher household incomes (>£80,000; £1150±161 per day) spent more than double for one trip than those on lower incomes (<£30,000; £662±69). Anglers also stayed within the local areas for longer. The average trip length increased from 2.9 days to 3.1 days while the number of days fishing decreased from 1.5 to 1.3, indicating an increase in anglers coming to the area for more than just bluefin tuna fishing.

The economic impact of CHART was assessed in both 2021 and 2022 using two approaches one based on the spend of anglers and the second through understanding the income and expenditure of skippers (Defra, 2022; Muench et al., 2023). Estimates from the angler survey, assessed within this report, measures consumer surplus and assess the economic impact the anglers are having by visiting the area to spend time on a CHART day trip. In contrast, the skipper survey measures producer surplus and estimates the economic impact the skippers are having by investing to take part in the programme (Defra, 2022; Muench et al., 2023). As such, these estimates are not directly comparable and reflect different parts of the economic impact CHART generates (EFTEC, 2015), so cannot be summed to generate a full economic picture for CHART without correcting for double counting.

The scaling up of CHART from the first year to the second year and the resulting increases in the economic impact as well as the high proportion of the spending likely to stay within the local community indicates the positive effect increased availability of CHART is likely to have. While the study indicated positive effects of potential future CHART programmes, the economic impact calculated was generated only from a small population in the second year. As such this may not be directly representative of potential economic impacts of CHART in future years. The spending by anglers may change in future should more trips become available as more available trips may decrease the cost of charter fees, which as the major spend for anglers would considerably affect overall spending. Future years may generate a change in the angler profile with increased numbers of anglers from different areas, maybe even attract international visits, which may in turn impact spending generated by the programme. As such, caution should be taken when extrapolating results to the whole CHART programme, further socio-economic analysis of future CHART programmes will be needed to accurately assess the economic impact of this CHART programme.



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# Appendix 1. CHART Angler Questionnaire

## Informed Consent

The trip you have been on is part of the 2022 Catch And Release Tag (CHART) scientific data collection programme for Atlantic Bluefin Tuna.

Your feedback on the programme is vital to understand the benefits generated from sea angling for bluefin tuna and supports future development of bluefin tuna policy.

**We appreciate your help in completing this survey which will take 5-10 minutes.**

If you agree to complete this survey you will be asked about your angling trip, the amount you have spent on your visit, your angling experience, and personal information. The data collected will be compiled into a report used by officials and policymakers to inform future bluefin tuna policy.

Your responses will be **anonymised** before being made available to those making decisions about bluefin tuna. A summary and full report will be made available publicly, but no personal information which could be used to identify you will be published or shared. The more people willing to take part, the better the quality of the information produced.

You can withdraw from this study and have your data deleted at any time until 31st December 2022 by emailing [chart@cefas.co.uk](mailto:chart@cefas.co.uk) and stating the anonymous survey identification number you will enter on your survey form. You do not need to specify a reason for your withdrawal.

You can find out more about how we process your information in our Personal Information Charter here: <https://www.gov.uk/government/organisations/centre-for-environment-fisheries-and-aquaculture-science/about/personal-information-charter>

You can find out how we process your personal information within the privacy notice here: [CHART Angler Privacy Notice](#)

[CHART](#) ([www.cefas.co.uk/impact/programmes/chart](http://www.cefas.co.uk/impact/programmes/chart)) is run by Centre for Environment, Fisheries and Aquaculture Science ([www.cefas.co.uk](http://www.cefas.co.uk)) and funded by the Department for Environment, Food & Rural Affairs ([Defra](#)). For questions about this research, and your participation in it, please e-mail: [CHART@cefas.co.uk](mailto:CHART@cefas.co.uk)

## Informed consent

Please indicate whether you agree with the following:

- You have read and understood the information provided.
- You have been given the opportunity to ask questions regarding your participation in this study.
- You understand that your participation is voluntary and that you can withdraw from the study at any time, without giving a reason.
- You understand that taking part in the study involves completing a survey. You understand that information you provide will be used for research purposes including reports and scientific publications.

- You understand that the research data may be accessed by those working at, or in collaboration with, the Centre for Environment Fisheries and Aquaculture, but that at all times your personal data will be handled in accordance with General Data Protection Regulation (GDPR).
- You are aged 18 years or older.

If you do not wish to participate in this research, please decline participation by selecting "disagree". By selecting "agree" you are consenting to your participation in the study.

### Trip Information

1. Vessel Name:
2. Date of most recent trip:
  - a. Day: \_\_\_\_\_
  - b. Month: \_\_\_\_\_
  - c. Year: \_\_\_\_\_
3. Please create your own ID number, e.g. using your parents initials and a memorable house or flat number (e.g.MAWA3).  
Surveys and data are anonymous, the survey ID you provide will allow you to identify your data if you want it withdrawn at a later date.

\_\_\_\_\_

### Your Visit

4. Do you live in the UK?  
If yes:
5. Please provide the first half of the postcode for your primary residence (e.g. SW1)  
If no:
6. Where is your primary place of residence?
  - a. Town/City
  - b. Country
  - c. State
7. Is this CHART bluefin tuna trip your primary reason for this travel?
8. Are you traveling on your own or in a group?  
If group:
9. How many people were in the group?
10. How many of these people went angling for tuna?
11. How many days is your whole visit/holiday?
12. How many CHART bluefin tuna fishing day trips will you go on during your visit/holiday?
13. What are your 3 main motivations for participating in the CHART bluefin tuna fishing trip? [Please rank your top 3 reasons]
  - a. Catching few large bluefin tuna (Over 300lbs/136kg)
  - b. Catching lots of small bluefin tuna (300lbs/136kg or Under)
  - c. Catching any bluefin tuna
  - d. New angling experience

- e. Wildlife watching
- f. Challenging myself
- g. Socialising
- h. Other, please specify: \_\_\_\_\_

14. If bluefin tuna angling was not available in CHART, would you? [Please select only ONE]

- a. Fish for bluefin tuna somewhere else
- b. Go angling somewhere else
- c. Go somewhere else for a different activity
- d. Go angling in this region
- e. Do something else in this region
- f. Do nothing

### Your Spending

15. How much did you spend for **one CHART day trip** on the following?

Please be reminded that your responses are **anonymous**.

If you didn't spend anything on a category, please put '0'.

For more information, click on the spending category.

16. Spending for this trip (£):

- a. Accommodation (only for the night before and/or the night after one CHART day trip)
- b. Charter fees
- c. Food in restaurants and takeaways
- d. Food from shops

17. Please split the following spending by geographical scale. If you didn't spend anything on a category, please put '0'.

	Spending per person		
	South West England	Rest of the UK	Outside of the UK
Transport or vehicle hire (£)			
Flights (£)			
Fuel (£)			
Parking (£)			
Accessories for this trip (£)			
Any other trip spend (£)			

### Your Angling Experience

18. How many times have you been sea angling in the past 12 months?

19. What fishing techniques would you prefer to use if all were offered in a future fishery? [Please rank by clicking and dragging into order of preference]

- a. Trolling
- b. Surface popping
- c. Jigging

- d. Bait fishing
  - e. Other, please specify: \_\_\_\_\_
20. How do you prefer to fight fish? [Please rank by clicking and dragging into order of preference]
- a. `Stand-Up`
  - b. From a rod holder
  - c. From a fighting char
  - d. Other, please specify: \_\_\_\_\_

## About you

Please be reminded that your responses are **anonymous** and will only be available to researchers with both scientific and ethical approvals.

*If there is any information you do not wish to provide, please select 'prefer not to say'.*

21. Age: \_\_\_\_\_

22. Gender: \_\_\_\_\_

23. Approximately what is your total household gross income (i.e. before income taxes) in the past 12 months? [If your income is not in GBP, please convert.]

24. Do you have a disability or long-term medical condition?

25. What is your ethnic group?

26. Would you like to be contacted about the results of this survey?

If yes,

27. Please provide your email address below. This information will be stored separately to ensure anonymity and will not be used for any other purposes.

28. Please let us know if you have any other comments about CHART.



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We are the government's marine and freshwater science experts. We help keep our seas, oceans and rivers healthy and productive and our seafood safe and sustainable by providing data and advice to the UK Government and our overseas partners. We are passionate about what we do because our work helps tackle the serious global problems of climate change, marine litter, over-fishing and pollution in support of the UK's commitments to a better future (for example the UN Sustainable Development Goals and Defra's 25 year Environment Plan).

We work in partnership with our colleagues in Defra and across UK government, and with international governments, business, maritime and fishing industry, non-governmental organisations, research institutes, universities, civil society and schools to collate and share knowledge. Together we can understand and value our seas to secure a sustainable blue future for us all, and help create a greater place for living.



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