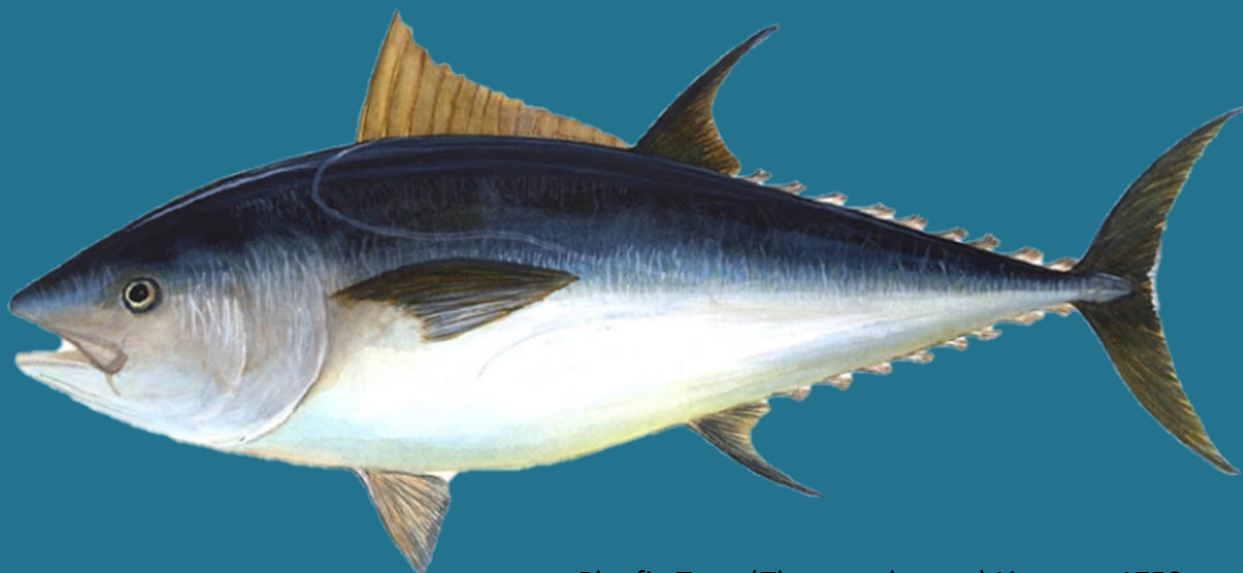


**THE ATLANTIC-WIDE RESEARCH PROGRAMME FOR
BLUEFIN TUNA (GBYP Phase 13)**

**Final report on tagging activities in the Celtic Seas Area
2023**



Bluefin Tuna (*Thunnus thynnus*) Linnaeus 1758

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Marine Institute
Foras na Mara



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1. Executive Summary of bluefin Tuna Satellite Tagging in Ireland, 2023

In June 2023, the Marine Institute responded to a call for expressions of interest for tagging programme 2023 of the Atlantic Wide Research programme for bluefin Tuna (Phase 13) and were successful, receiving 8 satellite tags. An additional 24 satellite tags were made available by the Marine Institute who also provided funding for deployment of all tags, vessel charter and production of the report.

All tagging was carried out under an approved project licence from the Irish Health Products Regulating Authority (HPRA) with licenced and trained personnel. The Irish Sea Fisheries Protection Agency (SFPA) were made aware of the programme and identities of the vessels, skippers and scientific personnel. The Marine Institute have been included by ICCAT in the International Research Mortality Allowance (RMA). ICCAT also supplied ICCAT coded floy tags for identification of fish if recaptured at a later stage. An invitation to supply quotes for the Supply of a Commercial/Recreational fishing vessel to tag bluefin tuna off the Coast of Ireland for the Marine Institute was issued in July 2023.

Satellite tagging of Atlantic bluefin tuna was successfully carried out in Donegal Bay (North-West Ireland) over two consecutive days, between the 30th of September and 1st of October 2023 with all 8 individuals tagged and released with GBYP owned Wildlife Computers, pop-off satellite archival tags (PSAT) (Table 1) and numbered floy tags. The Marine Institute tagged a further 9 Atlantic bluefin tuna in the period from 1st of October to 17th of October in Donegal Bay (N.W. Ireland) with Wildlife Computers PSATs. All 9 individuals were also tagged with ICCAT issued floy tags

2. Introduction

Electronic tagging using archival tags by Block et al. (2005) highlighted the potential importance of the coast of Ireland and the UK as migratory routes for Atlantic bluefin tuna. A 191 cm fish tagged in waters off North Carolina showed trans-Atlantic migrations to the Mediterranean Sea and multi-annual site fidelity to waters off Ireland and the UK. This single track suggested that after a juvenile foraging period in the west, Atlantic bluefin foraged in the waters of the east Atlantic off Ireland and then undertook migrations to the Balearics and other known Mediterranean spawning areas. Many other western released fish have moved into these waters (Block et al. 2005). The first dedicated electronic tagging activity off Ireland was conducted in 2003 and 2004 by a scientific team from Stanford University and An Bord Iascaigh Mhara - Irish Sea Fisheries Board (Cosgrave et al, 2008; Stokesbury et

al. 2007). Tagging of fish in Irish waters demonstrated that Atlantic bluefin released in Irish waters travel between European foraging grounds, known eastern breeding regions (Mediterranean Sea; Malta) and western Atlantic waters. These data also highlighted a tentative link between bluefin caught off Ireland and western management regions. In addition, recent electronic tagging of ABFT off Scotland has shown local movements of Atlantic bluefin tuna around Scottish waters (Neat et al. 2014), to the north of Ireland, and further south. Given these insights it is important that stock of origin, habitat utilisation and large-scale movement patterns of these Atlantic bluefin are characterised in more detail to ensure that the population models and concepts used in Atlantic bluefin tuna stock assessment and Management Strategy Evaluation (MSE) are parameterised as accurately as possible.

Investigation of the distribution and movements of Atlantic bluefin tuna in Irish waters is now a research priority for Ireland. 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 Department of Agriculture Food and the Marine (DAFM) requested that the Marine Institute carry out a bluefin tagging programme in autumn 2016 to support the International Commission for the Conservation of Atlantic Tuna (ICCAT) Atlantic-wide research programme for bluefin tuna (GBYP).

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. The Atlantic-wide research programme for bluefin tuna was officially adopted by the ICCAT Commission in 2008 with a key priority being to improve understanding of key biological and ecological processes through electronic tagging experiments to determine habitat and migration routes. GBYP was adopted as official acronym of the research, which was initiated at the end of March 2010.

ICCAT manages 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.

Results of Block et al. (2005) as well as tagging research by others including ICCAT and their collaborators indicates that movement across the currently assumed east-west boundary in the Atlantic, does occur. Scientists have used the spatial data to improve management models (Taylor et al. 2011, Kerr et al. 2016). ICCAT now recognises the need to develop quantitative knowledge of mixing rates and integrate this knowledge into the current assessments, as well as new models to improve the multiple stock evaluation processes.

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 MSs 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. This tagging programme has been developed to improve understanding of the stock and migratory patterns.

In 2016, the Marine Institute obtained expert guidance from Stanford University (USA) and University of Acadia (Nova Scotia, Canada) to successfully tag and release 16 Atlantic bluefin tuna off the coast of Donegal with satellite tags to identify spawning stocks and the level of mixing of stocks in Irish waters. Training in application of satellite tags to bluefin was provided to staff of the Marine Institute by these international tagging experts as direct experience in handling and tagging these extremely large fish is essential for future Irish tuna research work. A consortium continued to tag bluefin tuna off the Donegal coast over the period September to October 2017 and was expanded to include Queens University, Belfast, to investigate early behaviour and swim responses of bluefin tuna post capture and tagging. In total 9 fish were tagged with satellite tags and 3 fish tagged with accelerometer tags. The consortium works closely with ICCAT.

In 2018 and 2019 the Marine institute continued bluefin tuna tagging of the coast of Donegal over the period of August to November whilst continuing the partnership with Queens university Belfast as well as Trinity College Dublin to investigate post tagging behaviour of bluefin tuna. In total 24 tunas were tagged with PSATs and a further four with accelerometers in 2018 under ICCAT GBYP contract 07/2018-B, Phase 8. A further 12 tunas were tagged similarly with satellite tags in 2019 as part of ICCAT GBYP 16/2019-B, Phase 9. In 2020, a total of 17 LOTEK satellite tags were deployed by the Marine Institute on behalf of GBYP as part of Phase 10 GBYP programme while the Marine Institute provided 10 tags under the EU EMFF Sustainable Fisheries Programme. In total 27 tags were deployed in 2020. During the 2021 season, 14 Marine Institute PSATs, were deployed in Donegal Bay (North-West Ireland). Unfortunately owing to reduced presence of bluefin tuna of the coast of Ireland in the latter part of the 2021 season, none of the 9 GBYP tags were deployed despite an additional 8 days of tagging trips being undertaken specifically for the ICCAT GBYP (Phase 11) tags.

In 2022, the Marine institute undertook 7 full day tagging trips from the 08th of August to the 11th of October. Five GBYP PSAT tags were deployed on the 8th of August in Donegal Bay in the North-West of Ireland as part of Memorandum of Understanding with ICCAT GBYP. The Marine institute deployed a further thirteen tags between the 9th of August and the 11th of October in Donegal Bay in the North-West of Ireland (n=8) and Courtmacsherry bay in the South-west of Ireland (n= 5).

In 2023, all eight MoU tags for GBYP (Phase 13) were deployed in Donegal Bay (N-W of Ireland) over two consecutive days: 31st of September to the 1st of October 2023. The Marine institute deployed a further nine tags on the 1st and 17th of October in Donegal Bay in the North-West of Ireland.

2.1 Legislative/formal preparation:

Tagging was carried out under an Animal Welfare Licence (Project AE19121/P003 as required under Directive 2010/63 /EU and S.I. No. 543 of 2012).

ICCAT included the Marine Institute in the International Research Mortality Allocation (RMA) in 2018.

The Irish Sea Fisheries Protection Authority were notified of the tagging programme.

2.2 Financial preparation:

ICCAT provided 8 pop-off satellite archival tags under the MOU while funding for vessel time and Marine Institute support staff was provided for by the Marine Institute for deployment of the MOU tags. Marine institute satellite tags as well as vessel time and Marine Institute support staff were funded by the Marine Institute in 2023.

In 2023, four experienced skippers were tendered and the contract was awarded to skippers of the Leah C (Northwest Ireland), a vessel which had previously been used for tagging bluefin tuna from 2016 to 2022, and the Silver Dawn based on the South-West coast of Ireland a vessel licenced for bluefin tuna recreational angling, previously used for angling and tagging tuna in 2018 to 2021 (Appendix II).

3. Tagging Locations and Methods

Pop-up satellite transmitting tags are designed to track the large scale movements and behaviour of pelagic fish and other animals. Depth, temperature and light-level data are used to estimate location. At a user-specified date and time, a pin is corroded, releasing the tag to float to the surface and transmit summarised information via the ARGOS satellite network. Daily longitude of the migration track, is calculated onboard the tag using geo-location by light level techniques. Daily latitude can be calculated from transmitted light level curves using software provided by the tag manufacturer. The results provide the migration path and depth and temperature preferences of the study animal, as well as oceanographic data, in the form of depth-temperature profiles.

All fish were tagged off the coasts of Donegal (N.W. Ireland) and Cork (S.W. Ireland) within sight of shore (Figure 1 & Figure 2). Five PSAT tags were provided by ICCAT GBYP program (Table 1), whose codes and model are included in Table 1, while the Marine Institute provided thirteen more (Table 2). Two vessels were used during the tagging period, the Leah C in Donegal (N.W. Ireland) and the Radiance in Cork (South Ireland). These vessels are equipped with transom doors to bring fish on board with specialized gear, fighting chairs to land the fish.

All fish were captured using angling methods and squid spreader bar lure setups with up to 11 separate plastic squid lures per rig. Only the last in the train bears a hook. Once the lure is taken the fish are played to the boat as quickly as possible and landed through the transom door via a ramp using a lip hook technique developed by the Block lab (Block et al. 2001). On board, the team performed individual tasks e.g. placing of wet cloth over the eyes of the fish to keep the fish calm, constant irrigation of the gills with a hose pumping fresh saltwater, insertion of the PSAT into the dorsal musculature using a titanium tag dart with retention loop. Two other numbered marker tags (spaghetti tags) were also applied to aid in recovering information from tagged fish. Small samples of tissue were removed from the dorsal musculature and pectoral fin for genetic analyses. As rapidly as possible the fish were released back into the water. The on-board procedure takes approximately 2 to 4 minutes. Straight fork length and girth were recorded as well as comments on the fish appearance in general, the landing, tagging and release condition of the fish upon release. The GPS coordinates of hook-up as well as sea surface temperature and depth is noted and recorded. Details of tagging events are given in Table 2 with the ICCAT electronic tag report in Appendix II.

Table 1. Pop-off archival tags (PSAT) provided by GBYP (ICCAT) to the Irish Marine Institute for tagging in 2023 under MOU.

Number	PTT ID	PSAT Code	Tagging Date	Time (24 H)	Latitude	Longitude	SF Length (cm)	Owner
1	244362	23P0543	30/09/2023	09:45:00	54 32.71	8 33.80	178	GBYP
2	244346	23P0369	30/09/2023	11:10:00	54 32.88	8 37.16	205	GBYP
3	244351	23P0482	30/09/2023	11:10:00	54 32.88	8 37.16	216	GBYP
4	244347	23P0370	01/10/2023	10:25:00	54 33.096	8 38.33	172	GBYP
5	244325	22P1243	30/09/2023	12:00:00	54 32.88	8 38.58	185	GBYP
6	244322	22P0930	30/09/2023	15:00:00	54 32.34	8 37.68	211	GBYP
7	244324	22P1242	30/09/2023	13:05:00	54 32.07	8 39.80	156	GBYP
8	244349	23P0388	01/10/2023	09:10:00	54 33.26	8 34.41	163	GBYP

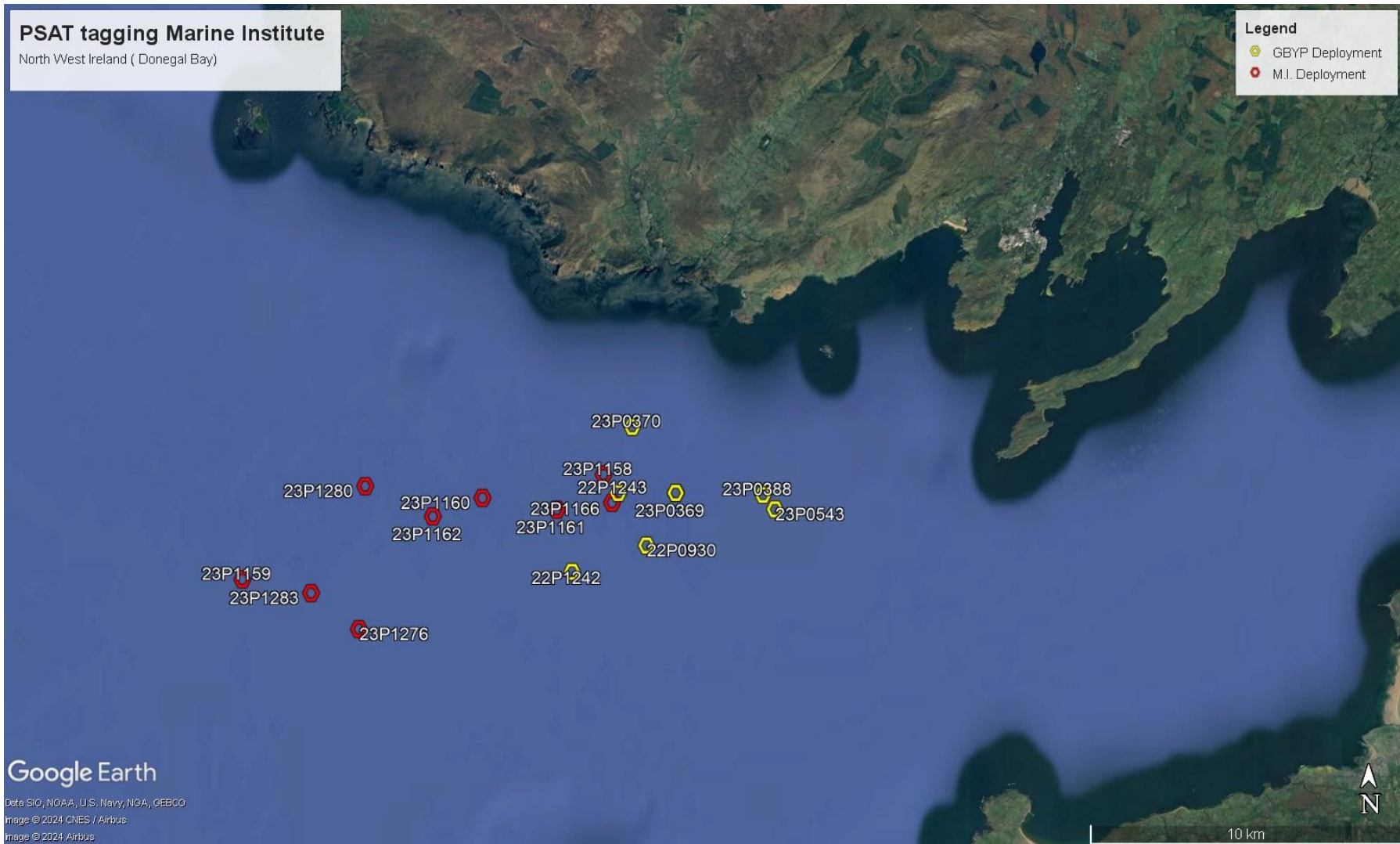


Figure 1. Marine Institute’s PSAT tagging locations in Donegal Bay, North-West Ireland. Tagging took place from the 30th of September to the 17th of October 2023. A total of 3 trips were undertaken with the Leah C fishing vessel out of Killybegs, Donegal to tag 17 individual Bluefin tuna. Eight tuna were tagged with GBYP tags (yellow marker) and nine with M.I. tags (red marker).

Table 2. Tagging details for all 17 bluefin tuna tagged in Ireland 2023 (M.I. and GBYP owned tags)

PTT ID	PSAT Tag Code	Owner	Tagging Duration	1st Floy	2nd Floy	Tagging Date	Tagging Time (24 H)	Latitude	Longitude	SF Length (cm)
253167	23P1159	MI	330 days	29407	82971	17/10/2023	14:05:00	54 31.59	8 49.65	167
253166	23P1158	MI	330 days	29406	83970	01/10/2023	10:55:00	54 33.47	8 38.84	172
253170	23P1162	MI	330 days	29403	82967	01/10/2023	15:15:00	54 32.64	8 43.87	250
253169	23P1161	MI	330 days	29402	82966	01/10/2023	11:45:00	54 32.71	8 40.47	209
253168	23P1160	MI	330 days	29401	82956	01/10/2023	12:35:00	54 32.83	8 42.59	195
253172	23P1166	MI	330 days	29404	82968	01/10/2023	11:20:00	54 32.78	8 39.9	178
253178	23P1280	MI	330 days	29423	82987	17/10/2023	11:15:00	54 32.95	8 45.87	160
253175	23P1276	MI	330 days	29422	82986	17/10/2023	11:55:00	54 31.8	8 46.38	177
253181	23P1283	MI	330 days	29418	82982	17/10/2023	13:30:00	54 31.45	8 48.03	197
244362	23P0543	GBYP	365 days	29410	82974	30/09/2023	09:45:00	54 32.71	8 33.80	178
244346	23P0369	GBYP	365 days	29413	82977	30/09/2023	11:10:00	54 32.88	8 37.16	205
244351	23P0482	GBYP	365 days	29412	82976	30/09/2023	11:10:00	54 32.88	8 37.16	216
244347	23P0370	GBYP	365 days	29409	82973	01/10/2023	10:25:00	54 33.096	8 38.33	172
244325	22P1243	GBYP	365 days	29415	82979	30/09/2023	12:00:00	54 32.88	8 38.58	185
244322	22P0930	GBYP	365 days	29414	82978	30/09/2023	15:00:00	54 32.34	8 37.68	211
244324	22P1242	GBYP	365 days	209416	82980	30/09/2023	13:05:00	54 32.07	8 39.80	156
244349	23P0388	GBYP	365 days	29411	82975	01/10/2023	09:10:00	54 33.26	8 34.41	163

4. Results and possible recommendations for adjusting the tagging strategy in future Phases of ICCAT GBYP

Long term retention of satellite tags is essential to obtain the best value for money as well as the most complete information on the migration and behaviour of bluefin tuna. It is essential to have operators who have tagged bluefin tuna with satellite tags on board at all times. Training of new taggers operators should be under strict control and be supervised by experts with at least two years of tagging bluefin tuna experience. Only limited numbers of tags should be placed by newly trained taggers.

Fish for satellite tagging should be brought to the boat as quickly as possible to avoid exhausting the fish. Hand-lining or retrieving the fish with the rod in the rod holder can assist with bringing the fish in quickly (Figure 4). Tagging of the fish while still in the water alongside the boat would be advantageous in terms of eliminating much of the stress associated with tagging on board, provided the tag could be deployed quickly and easily. However, it is not possible to do this in all sea conditions and therefore, the presence of a transom door and ramp on the vessel is essential in order to avoid lifting the fish excessively onto the boat. Sufficient space is needed to be able to turn the fish and release it head first after tagging. Lip-hooking and bringing the fish on-board is also an operation which needs to be taught by experienced operators.

Types of anchor and tethering materials are crucial. Titanium anchors should not be too sharp to avoid them pulling out of the muscle too quickly. The use of a retention loop and a second anchor is highly recommended.



Figure 4. Bluefin tuna being played into the boat quickly using the rod rest to avoid stress; tagging procedure on board. Note constant irrigation of gills with fresh seawater during tagging and subsequent sampling of tissues for genetic stock identification. (Figure not to be reproduced without permission).

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6. Acknowledgements

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Appendix I Invitation to Tender for Tagging Vessel

In 2023, Quotes were sought from 4 skippers with previous experience in tagging bluefin tuna and which had confirmation of Public Liability Insurance, valid Safety Certificate for vessels; confirmation that the required Safety Equipment is on board; valid Tax Clearance Certificate and minimum Vessel Technical Specification, whereby vessels must:

- a. be at least 8 meters in length.
- b. have a range of at least 20 miles offshore
- c. have a stern door with removable slide or chute
- d. space for at least one experienced anglers
- e. space for up to 5-person scientific tagging team
- f. be experienced in offshore angling operations
- g. be able to stay at sea for at least 12 hours
- h. have previous experience with catching bluefin Tuna

Quotations were evaluated by scientific staff of the Marine Institute.

Bluefin Tuna Vessel Charter 2023

Sample quotation request No. 1 - Lot North West Coast

Dear,

The Marine Institute is continuing its bluefin Tuna tagging programme during the 2023 season. The Institute is seeking quotations for the supply of a suitable vessel on the **North West Coast of Ireland** for **10 days** from the beginning of July until mid-November 2023. The vessel will be required to have a stern door with removable slide or chute, have space for up to 5-person scientific tagging team and have a range of at least 20 miles offshore.

The Institute will also require the vessel owner to have Public Liability insurance of not less than €2.6 million and Employers Liability of €13 million, a Valid **Safety Certificate** for vessels and the skipper has a current Atlantic bluefin Tuna Angling Authorisation.

If you are interested your quotation should be forwarded to me by return email. Please include VAT if you charge it.

Regards,

Sample quotation request No. 2 for bluefin Vessel Charter 2023 – Lot 2 South Coast.

Dear,

The Marine Institute is continuing its bluefin Tuna tagging programme during the 2023 season. The Institute is seeking quotations for the supply of a suitable vessel on the **South Coast of Ireland** for **10 days** from the beginning of July until mid-November 2023. The vessel will be required to have a stern door with removable slide or chute, have space for up to 5 person scientific tagging team and have a range of at least 20 miles offshore.

The Institute will also require the vessel owner to have Public Liability insurance of not less than €2.6 million and Employers Liability of €13 million, a Valid **Safety Certificate** for vessels and the skipper has a current Atlantic bluefin Tuna Angling Authorisation.

If you are interested your quotation should be forwarded to me by return email. Please include VAT if you charge it.

Regards.

Appendix II. TG03-EleTReRc_Ireland_BFT_2023 ICCAT electronic tag report document for 2023 bluefin tuna tagging Ireland

Specimen identifier (unique)			Tagging information											Time strata		Geographical strata			Fishing operation					
ID	Species code	Sex code	RC	Electronic 1				Conventional 1			Conventional 2			Date	Time	Latitude	Longitude	Area Descr	Vessel ID	Gear code	School type	Survey name (acronym)	Depth (m)	
				RCStage code	Tag Code	Tag type	Tag color	Manufacturer	Tag Code	Tag type	Tag color	Tag Code	Tag type											Tag color
integer	T01	T02	T03		T21	T22		XX999999	T21	T22		XX999999	T21	T22	yyyy-mm-d	hh:mm	=dd.ddd	ddd°mm'ss'	text (100)	Vessels	T05	T06	text (15)	integer
1	BFT	M	RC1	06AF0001	POP-UP	gm		SS004051	STWT	gm		SS004051	STWT	gm	25/08/2007	08:45	15.12345	-17.01333	n/a	1	PS	FAD	CIV-ETROO	1000
1	BFT	U	R-1	23P1159	POP-ARC	oth1	Wildlife Computers	29407	ST-DART1	yel		82971	ST-DART2	yel	17/10/2023	14:05:00	54 31.59	8 49.65	Donegal Bay	1	TROL	FSC	IRELAND 2023	50
2	BFT	U	R-1	23P1158	POP-ARC	oth1	Wildlife Computers	29406	ST-DART1	yel		83970	ST-DART2	yel	01/10/2023	10:55:00	54 33.47	8 38.84	Donegal Bay	1	TROL	FSC	IRELAND 2023	50
3	BFT	U	R-1	23P1162	POP-ARC	oth1	Wildlife Computers	29403	ST-DART1	yel		82967	ST-DART2	yel	01/10/2023	15:15:00	54 32.64	8 43.87	Donegal Bay	1	TROL	FSC	IRELAND 2023	50
4	BFT	U	R-1	23P1161	POP-ARC	oth1	Wildlife Computers	29402	ST-DART1	yel		82966	ST-DART2	yel	01/10/2023	11:45:00	54 32.71	8 40.47	Donegal Bay	1	TROL	FSC	IRELAND 2023	50
5	BFT	U	R-1	23P1160	POP-ARC	oth1	Wildlife Computers	29401	ST-DART1	yel		82956	ST-DART2	yel	01/10/2023	12:35:00	54 32.83	8 42.59	Donegal Bay	1	TROL	FSC	IRELAND 2023	50
6	BFT	U	R-1	23P1166	POP-ARC	oth1	Wildlife Computers	29404	ST-DART1	yel		82968	ST-DART2	yel	01/10/2023	11:20:00	54 32.78	8 39.9	Donegal Bay	1	TROL	FSC	IRELAND 2023	50
7	BFT	U	R-1	23P1280	POP-ARC	oth1	Wildlife Computers	29423	ST-DART1	yel		82987	ST-DART2	yel	17/10/2023	11:15:00	54 32.95	8 45.87	Donegal Bay	1	TROL	FSC	IRELAND 2023	50
8	BFT	U	R-1	23P1276	POP-ARC	oth1	Wildlife Computers	29422	ST-DART1	yel		82986	ST-DART2	yel	17/10/2023	11:55:00	54 31.8	8 46.38	Donegal Bay	1	TROL	FSC	IRELAND 2023	50
9	BFT	U	R-1	23P1283	POP-ARC	oth1	Wildlife Computers	29418	ST-DART1	yel		82982	ST-DART2	yel	17/10/2023	13:30:00	54 31.45	8 48.03	Donegal Bay	1	TROL	FSC	IRELAND 2023	50
10	BFT	U	R-1	23P0543	POP-ARC	oth1	Wildlife Computers	29410	ST-DART1	yel		82974	ST-DART2	yel	30/09/2023	09:45:00	54 32.71	8 33.80	Donegal Bay	1	TROL	FSC	IRELAND 2023	50
11	BFT	U	R-1	23P0369	POP-ARC	oth1	Wildlife Computers	29413	ST-DART1	yel		82977	ST-DART2	yel	30/09/2023	11:10:00	54 32.88	8 37.16	Donegal Bay	1	TROL	FSC	IRELAND 2023	50
12	BFT	U	R-1	23P0482	POP-ARC	oth1	Wildlife Computers	29412	ST-DART1	yel		82976	ST-DART2	yel	30/09/2023	11:10:00	54 32.88	8 37.16	Donegal Bay	1	TROL	FSC	IRELAND 2023	50
13	BFT	U	R-1	23P0370	POP-ARC	oth1	Wildlife Computers	29409	ST-DART1	yel		82973	ST-DART2	yel	01/10/2023	10:25:00	54 33.096	8 38.33	Donegal Bay	1	TROL	FSC	IRELAND 2023	50
14	BFT	U	R-1	22P1243	POP-ARC	oth1	Wildlife Computers	29415	ST-DART1	yel		82979	ST-DART2	yel	30/09/2023	12:00:00	54 32.88	8 38.58	Donegal Bay	1	TROL	FSC	IRELAND 2023	50
15	BFT	U	R-1	22P0930	POP-ARC	oth1	Wildlife Computers	29414	ST-DART1	yel		82978	ST-DART2	yel	30/09/2023	15:00:00	54 32.34	8 37.68	Donegal Bay	1	TROL	FSC	IRELAND 2023	50
16	BFT	U	R-1	22P1242	POP-ARC	oth1	Wildlife Computers	209416	ST-DART1	yel		82980	ST-DART2	yel	30/09/2023	13:05:00	54 32.07	8 39.80	Donegal Bay	1	TROL	FSC	IRELAND 2023	50
17	BFT	U	R-1	23P0388	POP-ARC	oth1	Wildlife Computers	29411	ST-DART1	yel		82975	ST-DART2	yel	01/10/2023	09:10:00	54 33.26	8 34.41	Donegal Bay	1	TROL	FSC	IRELAND 2023	50
18	BFT	U	R-1	1575406	OTHR	gra	InnovaSea	29419	ST-DART1	yel		82983	ST-DART2	yel	17/10/2023	09:40:00	54 33.98	8 42.8	Donegal Bay	1	TROL	FSC	IRELAND 2023	50