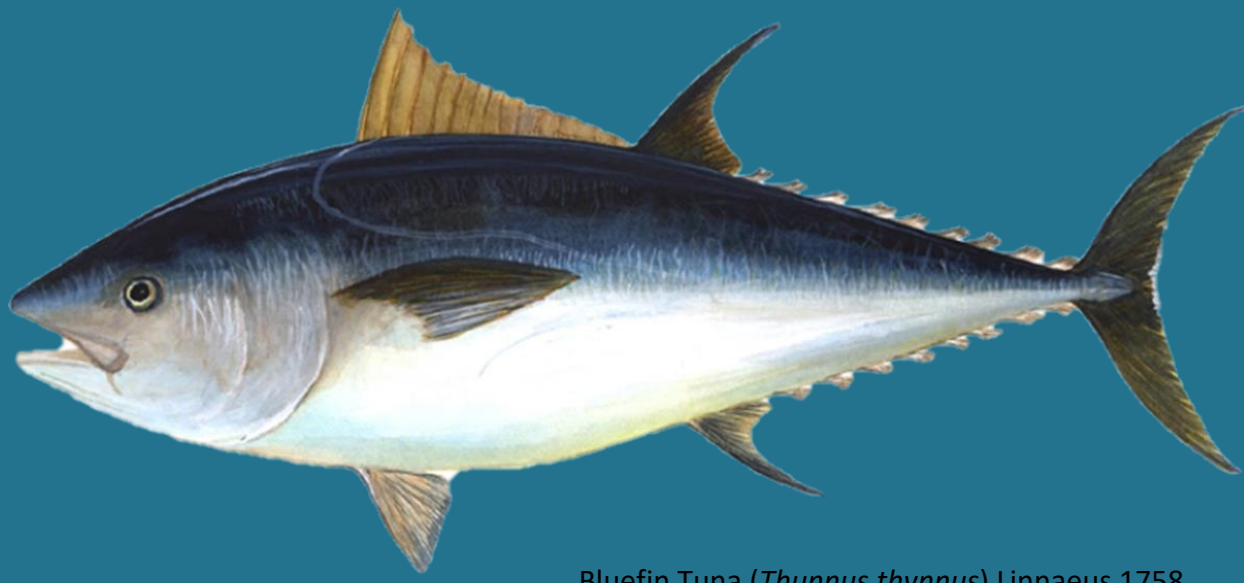
THE ATLANTIC-WIDE RESEARCH PROGRAMME FOR BLUEFIN TUNA (GBYP Phase 12)

Final report on tagging activities in the Celtic Seas Area 2022



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, 2022

In June 2022, the Marine Institute responded to a call for expressions of interest for tagging programme 2022 of the Atlantic Wide Research programme for bluefin Tuna (Phase 12) and were successful and received 5 satellite tags. An additional 13 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 2022.

Satellite tagging of Atlantic bluefin tuna was successfully carried out in Donegal Bay (North-West Ireland) on the 8th of August 2022 with all 5 individuals tagged and released with GBYP owned Wildlife Computers, pop-off satellite archival tags (PSAT) (Table 1) and numbered spaghetti tags. The Marine Institute tagged a further 13 Atlantic bluefin tuna in the period from 9th of August to 11th of October in Donegal Bay (N.W. Ireland) and Courtmacsherry Bay (S.W. Ireland) with Wildlife Computers PSATs. All 13 individuals were als0otagged with ICCAT issued spaghetti 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.

Presence of bluefin tuna of the coast of Ireland in 2021 was markedly reduced when compared to 2020. The Marine Institute carried out 15 full day tagging trips from the 31st of August to the 23rd of November 2021. All fourteen Marine Institute tags were deployed over 6 days, between the 31st of August and 8th of September. A further 8 days of tagging trips specifically for ICCAT GBYP PSATs were undertaken by the Marine Institute in October and November but no bluefin tuna were caught and the 9 GBYP tags were not deployed.

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).

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 5 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 2022.

In 2022, 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 2021, and the Radiance based on the South-West coast of Ireland a vessel licenced for bluefin tuna recreational angling and which had fished in 2020 and 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 form 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 2022 under MOU.

Number	PTT ID	PSAT Code	Tagging Date	Time (24 H)	Latitude	Longitude	SF Length (cm)	Owner
1	233943	21P1987	08/08/2022	10:30	54 37.33	8 49.01	240	ICCAT
2	233944	21P1989	08/08/2022	14:25	54 37.71	8 45.96	226	ICCAT
3	233945	21P1991	08/08/2022	12:35	54 37.57	8 47.47	230	ICCAT
4	233946	21P1993	08/08/2022	10:10	54 37.45	8 49.048	222	ICCAT
5	233967	21P2023	08/08/2022	11:22	54 37.70	8 48.38	216	ICCAT

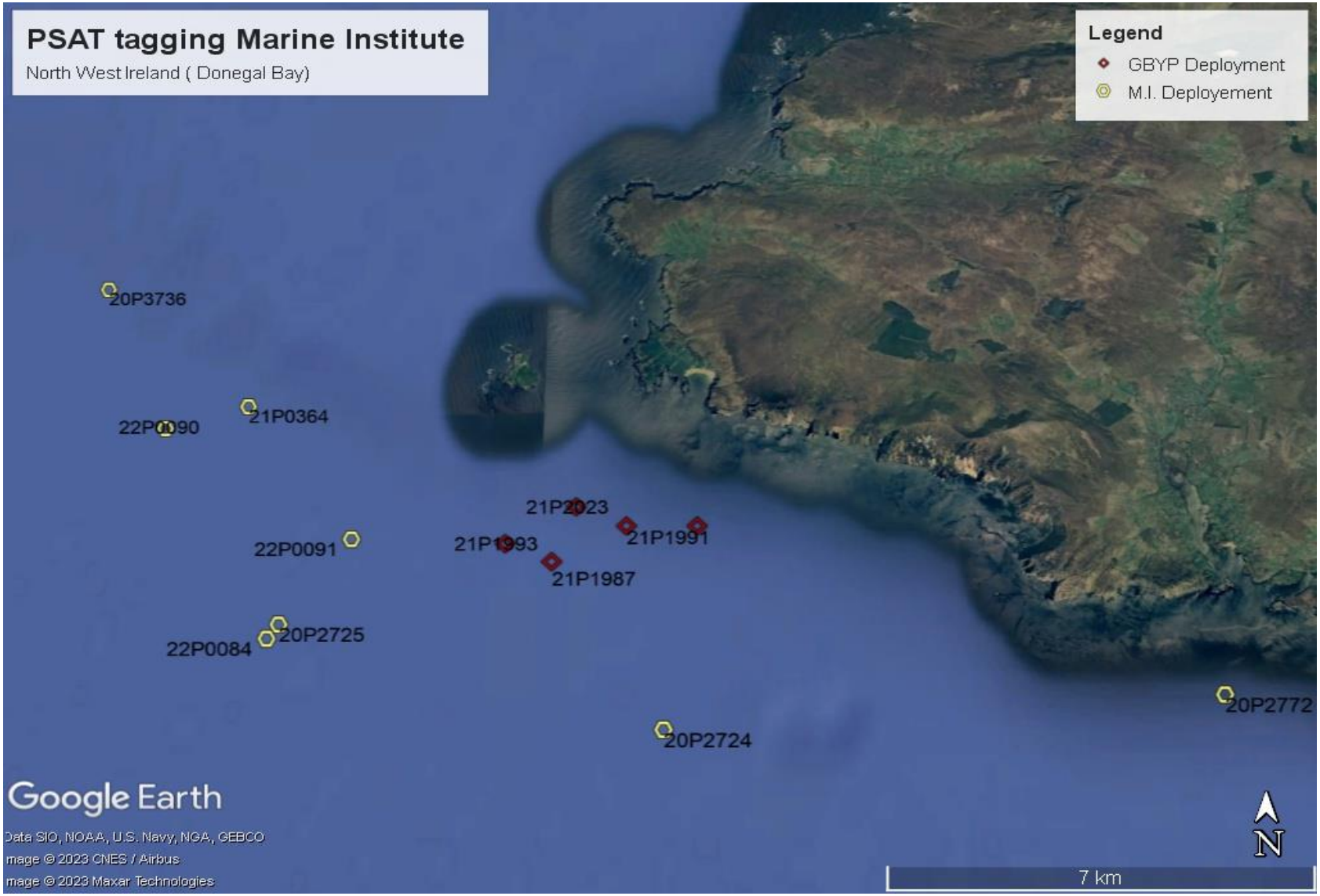

Figure 1. Marine Institute's PSAT tagging locations in Donegal Bay, North-West Ireland. Tagging took place form the 8th of August to the 2nd of September 2022. A total of 4 trips were undertaken with the Leah C fishing vessel out of Killybegs, Donegal to tag 13 individual Bluefin tuna. Five tuna were tagged with GBYP tags (red marker) and 8 with M.I. tags (yellow marker).

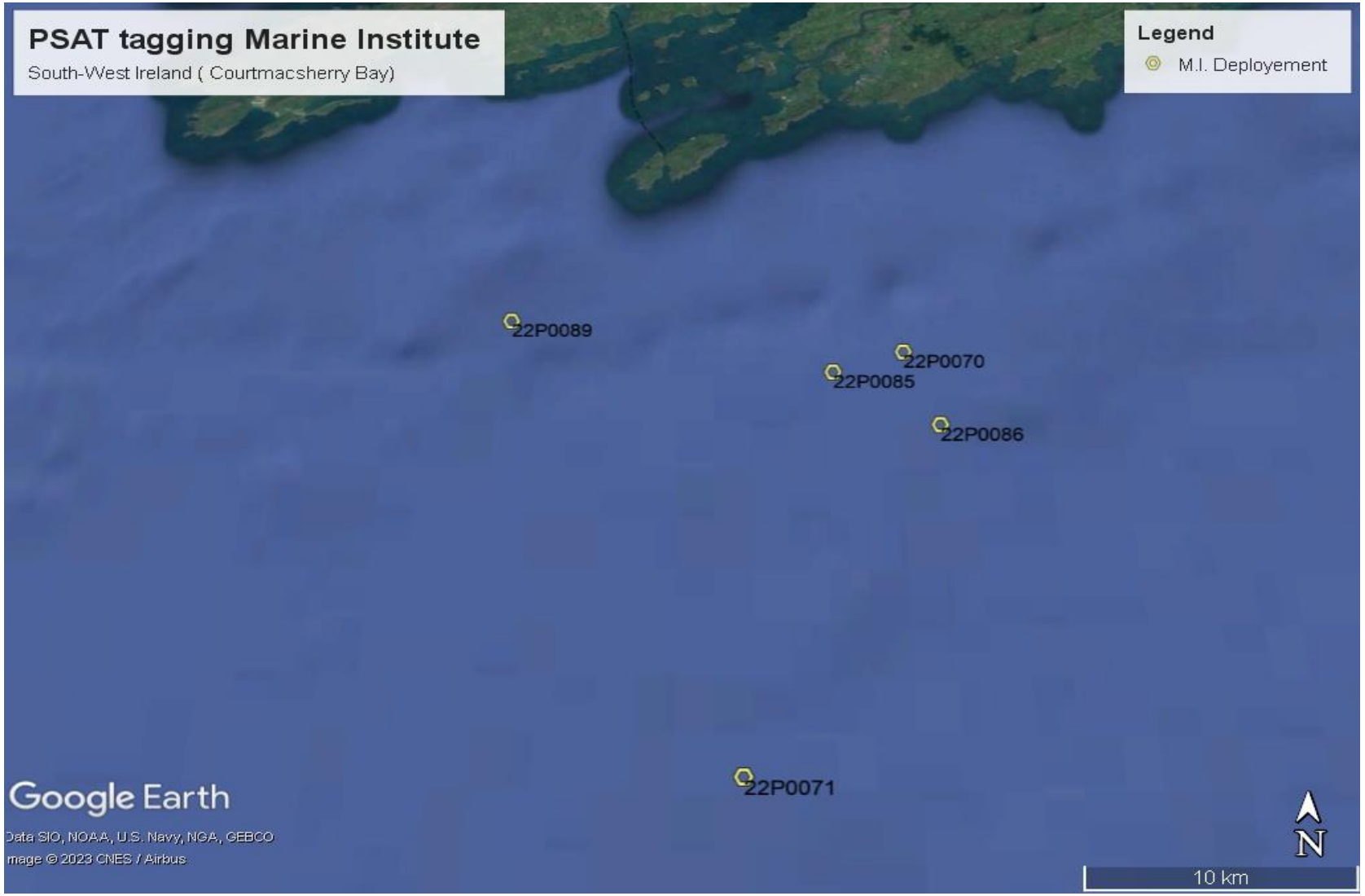

Figure 2. Marine Institute's PSAT tagging locations out of Courtmacsherry Bay, South-West Ireland. Tagging took place form the 28th of September to the 11th of November 2022. A total of 3 trips were undertaken with the Radiance fishing vessel out of Courtmacsherry, Cork to tag 5 individual Bluefin tuna with M.I. tags (yellow marker).

Table 2. Tagging details for all 18 bluefin tuna tagged in Ireland 2022 (M.I. and GBYP owned tags)

PSAT Tag Code	PTT ID	Owner	Tagging Duration	1st Floy	2nd Floy	Tagging Date	Tagging Time (24 H)	Latitude	Longitude	SF Length (cm)
21P0364	220981	M.I.	330 days	30811	79101	01/09/2022	17:42:00	54 38.82	8 53.83	225
20P3736	215331	M.I.	330 days	30814	79104	01/09/2022	16:20:00	54 40.51	8 57.12	193
20P2724	215329	M.I.	330 days	30812	79102	01/09/2022	11:35:00	54 35.48	8 46.70	194
20P2772	215338	M.I.	330 days	30821	79120	09/08/2022	16:00:00	54 36.09	8 37.74	226
20P2725	215330	M.I.	330 days	30813	79103	09/08/2022	09:55:00	54 36.53	8 52.85	202
21P1987	233943	GBYP	365 days	82962	30827	08/08/2022	10:30:00	54 37.33	8 49.01	240
21P1989	233944	GBYP	365 days	82964	30829	08/08/2022	14:25:00	54 37.71	8 45.96	226
21P1991	233945	GBYP	365 days	82965	30830	08/08/2022	12:35:00	54 37.57	8 47.47	230
21P1993	233946	GBYP	365 days	82961	30826	08/08/2022	10:10:00	54 37.45	8 49.048	222
21P2023	233967	GBYP	365 days	82963	30828	08/08/2022	11:22:00	54 37.70	8 48.38	216
22P0070	236575	M.I.	365 days	27588	82957	29/09/2022	12:15:00	51 19.72	9 20.78	222
22P0090	236581	M.I.	365 days	30854	82952	01/09/2022	14:30:00	54 39.06	8 55.46	186
22P0071	236576	M.I.	365 days	29398	82955	28/09/2022	12:45:00	51 8.78	9 27.15	244
22P0091	236582	M.I.	365 days	30831	82951	01/09/2022	18:15:00	54.97.49	8 51.82	214
22P0086	236579	M.I.	365 days	29377	82958	29/09/2022	16:50:00	51 18.8	9 20.8	236
22P0085	236578	M.I.	365 days	30881	82953	29/09/2022	14:10:00	51 18.96	9 23.54	234
22P0084	236577	M.I.	365 days	30857	77546	02/09/2022	15:25:00	54 36.44	8 52.95	197
22P0089	236580	M.I.	365 days	27576	82959	11/10/2022	15:45:00	51 21.00	9 20.943	222

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).

5. References

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6. Acknowledgements

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Appendix I Invitation to Tender for Tagging Vessel

In 2022, Quotes were sought from 5 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 2022

Sample quotation request No. 1 - Lot North West Coast

Dear,

The Marine Institute is continuing its bluefin Tuna tagging programme during the 2022 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 2021. 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 2021 – Lot 2 South Coast.

Dear,

The Marine Institute is continuing its bluefin Tuna tagging programme during the 2021 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 2021. 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_2022 ICCAT electronic tag report document for 2022 bluefin tuna tagging Ireland

Specimen identifier (unique)			Tagging information												Time strata		Geographical strata			Fishing operation				
			RC	Electronic 1				Conventional 1			Conventional 2													
ID	Species code	Sex code	RCStage code	Tag Code	Tag type	Tag color	Manufacturer	Tag Code	Tag type	Tag color	Tag Code	Tag type	Tag color		Date	Time	Latitude	Longitude	Area Descrip	Vessel ID	Gear code	School type	Survey name (acronym)	Depth (m)
integer	T01	T02	T03		T21	T22	text	XX999999	T21	T22	XX999999	T21	T22		yyyy-mm-d	hh:mm	±dd.ddddd	ddd°mm'ss"[	text (100)	Vessels	T05	T06	text (15)	integer
1	BFT	M	RC1	06AF0001	POP-UP	grn		SS004051	STWT	grn	SS004051	STWT	grn		25/08/2007	08:45	15.12345	-17.01333	n/a	1	PS	FAD	CIV-ETRO	1000
1	BFT	U	R-1	21P0364	POP-ARC	oth1	Wildlife Computers	30811	ST-DART1	yel	79101	ST-DART2	yel		01/09/2022	17:42:00	54 38.82	8 53.83	Donegal Bay	1	TROL	FSC	IRELAND 2022	50
2	BFT	U	R-1	20P2736	POP-ARC	oth2	Wildlife Computers	30814	ST-DART1	yel	79104	ST-DART2	yel		01/09/2022	16:20:00	54 40.51	8 57.12	Donegal Bay	1	TROL	FSC	IRELAND 2022	50
3	BFT	U	R-1	20P2724	POP-ARC	oth3	Wildlife Computers	30812	ST-DART1	yel	79102	ST-DART2	yel		01/09/2022	11:35:00	54 35.48	8 46.70	Donegal Bay	1	TROL	FSC	IRELAND 2022	50
4	BFT	U	R-1	20P2772	POP-ARC	oth4	Wildlife Computers	30821	ST-DART1	yel	79120	ST-DART2	yel		09/08/2022	16:00:00	54 36.09	8 37.74	Donegal Bay	1	TROL	FSC	IRELAND 2022	50
5	BFT	U	R-1	20P2725	POP-ARC	oth5	Wildlife Computers	30813	ST-DART1	yel	79103	ST-DART2	yel		09/08/2022	09:55:00	54 36.53	8 52.85	Donegal Bay	1	TROL	FSC	IRELAND 2022	50
6	BFT	U	R-1	21P1987	POP-ARC	oth6	Wildlife Computers	82962	ST-DART1	yel	30827	ST-DART2	yel		08/08/2022	10:30:00	54 37.33	8 49.01	Donegal Bay	1	TROL	FSC	IRELAND 2022	50
7	BFT	U	R-1	21P1989	POP-ARC	oth7	Wildlife Computers	82964	ST-DART1	yel	30829	ST-DART2	yel		08/08/2022	14:25:00	54 37.71	8 45.96	Donegal Bay	1	TROL	FSC	IRELAND 2022	50
8	BFT	U	R-1	21P1991	POP-ARC	oth8	Wildlife Computers	82965	ST-DART1	yel	30830	ST-DART2	yel		08/08/2022	12:35:00	54 37.57	8 47.47	Donegal Bay	1	TROL	FSC	IRELAND 2022	50
9	BFT	U	R-1	21P1993	POP-ARC	oth9	Wildlife Computers	82961	ST-DART1	yel	30826	ST-DART2	yel		08/08/2022	10:10:00	54 37.45	8 49.048	Donegal Bay	1	TROL	FSC	IRELAND 2022	50
10	BFT	U	R-1	21P2023	POP-ARC	oth10	Wildlife Computers	82963	ST-DART1	yel	30828	ST-DART2	yel		08/08/2022	11:22:00	54 37.70	8 48.38	Donegal Bay	1	TROL	FSC	IRELAND 2022	50
11	BFT	U	R-1	22P0070	POP-ARC	oth11	Wildlife Computers	27588	ST-DART1	yel	82957	ST-DART2	yel		29/09/2022	12:15:00	51 19.72	9 20.78	Courtmacshe	2	TROL	FSC	IRELAND 2022	80
12	BFT	U	R-1	22P0090	POP-ARC	oth12	Wildlife Computers	30854	ST-DART1	yel	82952	ST-DART2	yel		01/09/2022	14:30:00	54 39.06	8 55.46	Donegal Bay	1	TROL	FSC	IRELAND 2022	50
13	BFT	U	R-1	22P0071	POP-ARC	oth13	Wildlife Computers	29398	ST-DART1	yel	82955	ST-DART2	yel		28/09/2022	12:45:00	51 18.78	9 27.15	Courtmacshe	2	TROL	FSC	IRELAND 2022	80
14	BFT	U	R-1	22P0091	POP-ARC	oth14	Wildlife Computers	30831	ST-DART1	yel	82951	ST-DART2	yel		01/09/2022	18:15:00	54 37.49	8 51.82	Donegal Bay	1	TROL	FSC	IRELAND 2022	50
15	BFT	U	R-1	22P0086	POP-ARC	oth15	Wildlife Computers	29377	ST-DART1	yel	82958	ST-DART2	yel		29/09/2022	16:50:00	51 18.8	9 20.8	Courtmacshe	2	TROL	FSC	IRELAND 2022	80
16	BFT	U	R-1	22P0085	POP-ARC	oth16	Wildlife Computers	30881	ST-DART1	yel	82953	ST-DART2	yel		29/09/2022	14:10:00	51 18.96	9 23.54	Courtmacshe	2	TROL	FSC	IRELAND 2022	80
17	BFT	U	R-1	22P0084	POP-ARC	oth17	Wildlife Computers	30857	ST-DART1	yel	77546	ST-DART2	yel		02/09/2022	15:25:00	54 36.44	8 52.91	Donegal Bay	1	TROL	FSC	IRELAND 2022	50
18	BFT	U	R-1	22P0089	POP-ARC	oth18	Wildlife Computers	27576	ST-DART1	yel	82959	ST-DART2	yel		11/10/2022	15:45:00	51 21.00	9 20.943	Courtmacshe	2	TROL	FSC	IRELAND 2022	100