



**ICCAT
ATLANTIC-WIDE
RESEARCH
PROGRAMME FOR
BLUEFIN TUNA
(GBYP)**



**Co-funded by
the European Union**

The Atlantic-Wide Research Programme for Bluefin Tuna (GBYP)



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International data-driven solutions for the conservation of bluefin tuna

The **Atlantic-Wide Research Programme for Bluefin Tuna (GBYP)** was adopted by the International Commission for the Conservation of Atlantic Tunas (ICCAT) in 2008, following the Standing Committee on Research and Statistics (SCRS) Chair's recommendations on bluefin tuna research priorities. Launched in 2009, GBYP aims to improve scientific advice on bluefin tuna (BFT) stocks conservation and management.

The programme is implemented in annual phases. Key activities include data recovery and management, provision of fishery independent indices (aerial surveys), biological sampling and analyses, tagging studies and programme coordination. To manage the programme, a **Programme Coordination Team** and a **Steering Committee** were established.



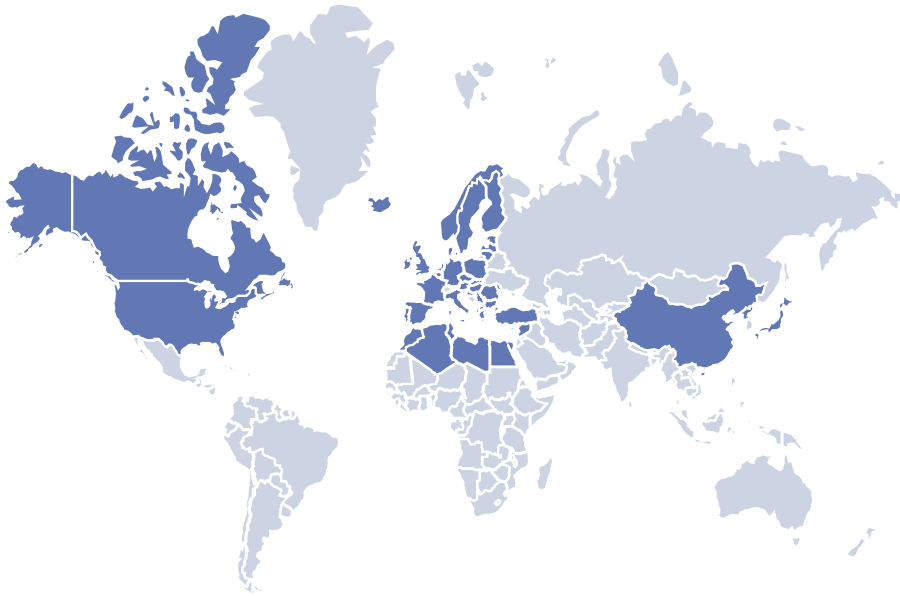
GBYP research and data for sustainable conservation and management of bluefin tuna

Safeguarding the future of this iconic species

The main objective of the GBYP is improvement of our knowledge of Atlantic bluefin tuna (*Thunnus thynnus*) stocks, aiming to support their long-term sustainability.

Expectations

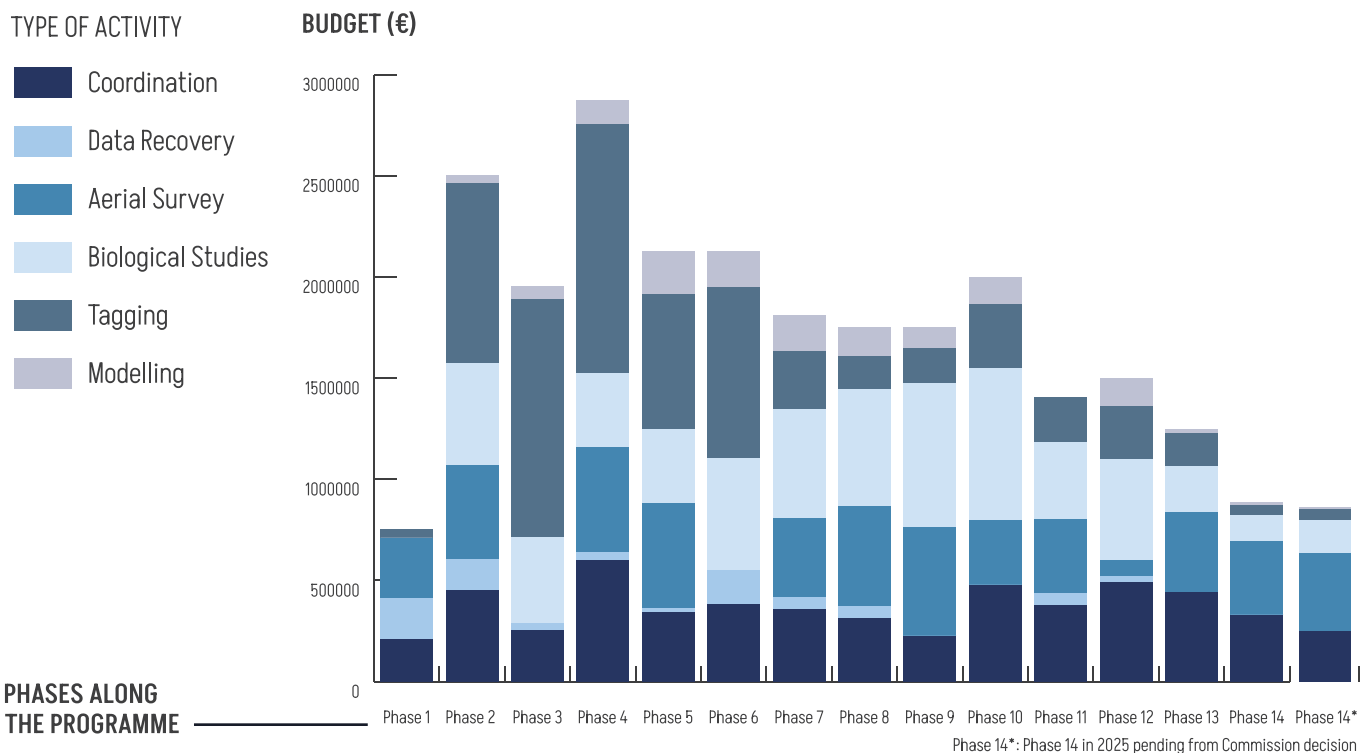
- 1 Enhancing scientific collaboration**
Strengthening partnerships between research teams from ICCAT Contracting Parties (CPCs), the fishing industry and international institutions to ensure the continuous exchange of knowledge and data to improve stock management.
- 2 Innovating research methods**
Adopting cutting-edge technologies and standardized methodologies, to improve estimates of population abundance and structure, gaining deeper insights into the complex biology and ecology of bluefin tuna.
- 3 Adapting to global challenges**
Addressing emerging challenges such as climate change impacts on marine ecosystems, changes in stock distribution, and the evolving needs of fisheries management through proactive and flexible research strategies.
- 4 Sustaining resources and data**
Ensuring the long-term sustainability of the scientific infrastructure created by the GBYP, such as data repositories and the tissue bank, to support ongoing and future research, aiming to provide scientific advice for management strategies.
- 5 Supporting policy and decision-making**
Continuing to assist the SCRS in providing the best scientific advice to ICCAT policymakers, aiming at ensuring that the bluefin tuna fisheries are managed sustainably for future generations.



18 ICCAT Contracting Parties and Cooperators collaborate to monitor, assess, and sustainably manage Atlantic bluefin tuna across the Atlantic Ocean and Mediterranean Sea.

The GBYP is funded by the European Union (80%) and by other CPCs, including Albania, Algeria, Canada, China (P.R.), Egypt, Iceland, Japan, Korea (Rep.), Libya, Morocco, Norway, Syria, Tunisia, Türkiye, United Kingdom, United States of America and Chinese Taipei, which provide donations according to national quotas, as well as voluntary contributions.

The evolution of the total budget during the Programme, by activity type, is as follows:



Governance structure

GBYP Coordination Team/Secretariat: the GBYP Coordination Team is now composed of the Programme Coordinator and a Database Specialist. This team carries out, with the support of all the departments of the ICCAT Secretariat and under the supervision of the ICCAT Assistant Executive Secretary, the day-to-day tasks related to the implementation of the project, as well the elaboration of regular project proposals and reports.

GBYP Steering Committee: the role of the GBYP Steering Committee is to guide and refine the Programme. It is regularly informed and consulted by the Coordinator on all relevant issues, including the Calls for Tenders to be issued. The Steering Committee meets no less than once a year, to assess the activities done, refine the Programme activities and propose its follow-up.



GBYP for society

The GBYP plays a critical role in ensuring the sustainability of bluefin tuna stocks, which are both economically and ecologically important, by contributing to:



Conservation of Marine Ecosystems

By protecting bluefin tuna populations the GBYP helps to maintain the health of marine ecosystems, since the species is an apex predator that plays a vital role in ocean biodiversity.

Support for Sustainable Fisheries

The GBYP's work directly informs the management of tuna fisheries, promoting practices that ensure long-term economic benefits for communities dependent on fishing.

Advance of the Global Scientific Knowledge

The Programme's findings contribute to the global understanding of the species migratory ecology and marine resources management, fostering international cooperation and innovation.

Adaptation to Environmental Changes

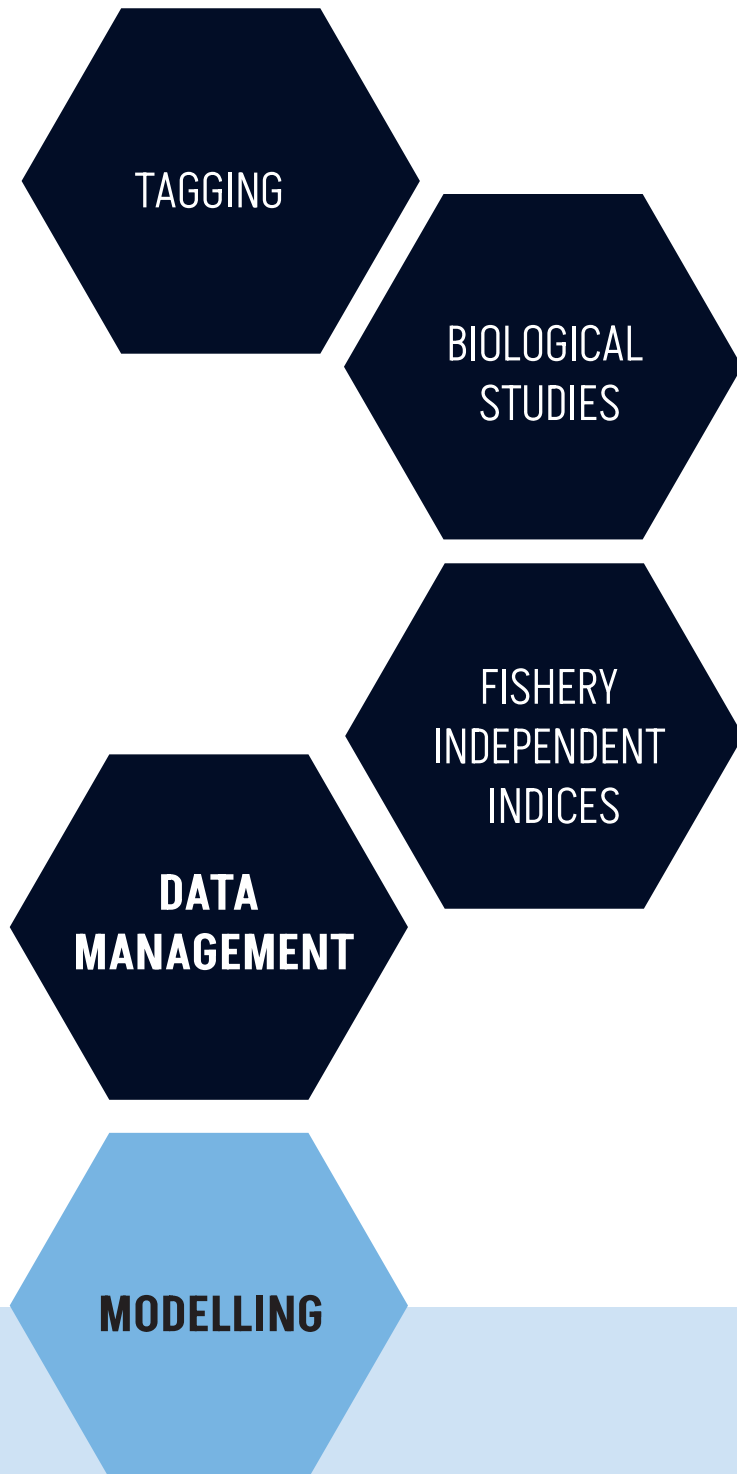
By addressing new challenges associated with climate change impacts on marine species, the GBYP helps society prepare for and mitigate future environmental changes affecting fisheries.



GBYP Lines of activity

GBYP

Atlantic-Wide Research Programme for Bluefin Tuna



SCRS

Standing Committee of Research and Statistics

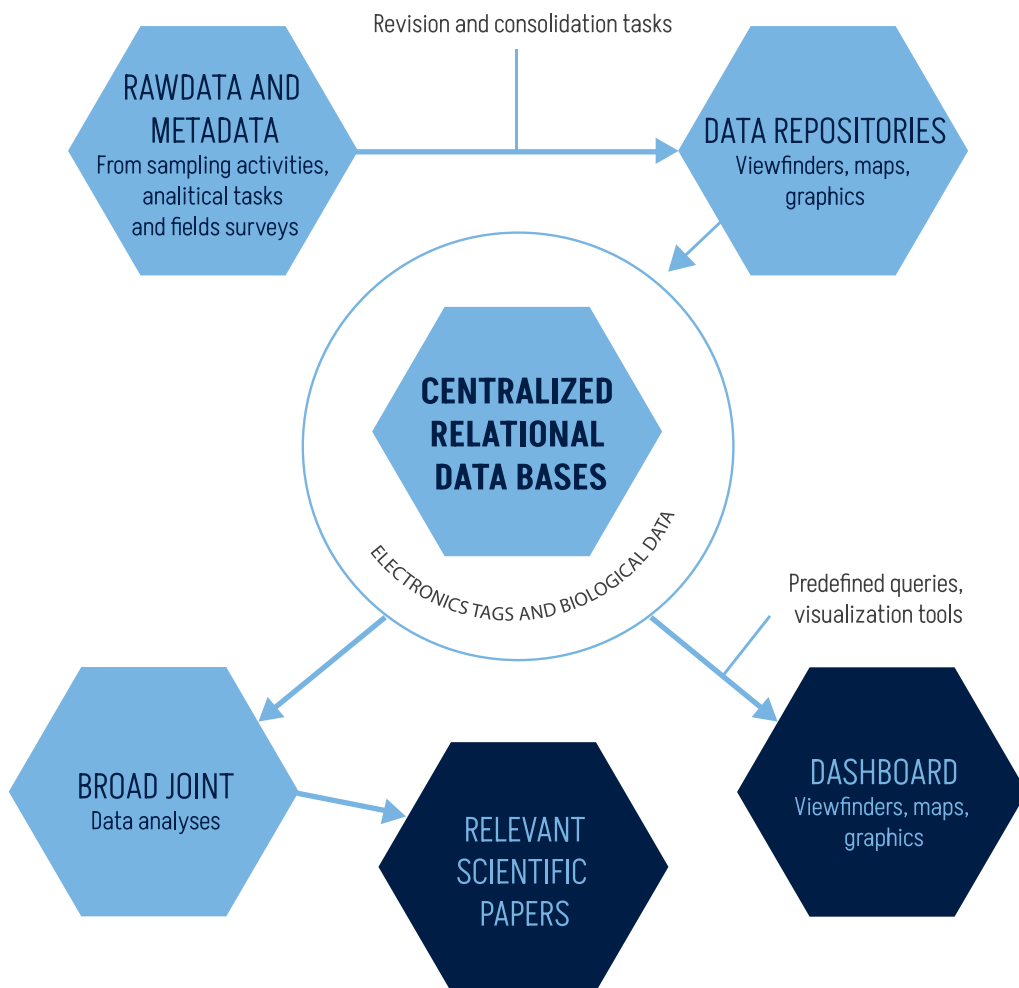
COMMISSION

FISHERIES MANAGEMENT



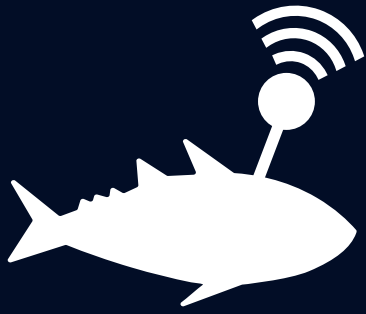
Data Recovery and Management

- Support for the creation of new ICCAT operational databases for broad data analysis (data from tagging and biological studies).
- Recovery of over **791 electronic tag datasets**.
- Significant contribution to enrichment of ICCAT fisheries related databases.



Historical catch and effort data recovered by the GBYP have significantly ameliorated the data set on which BFT stock assessments are based.

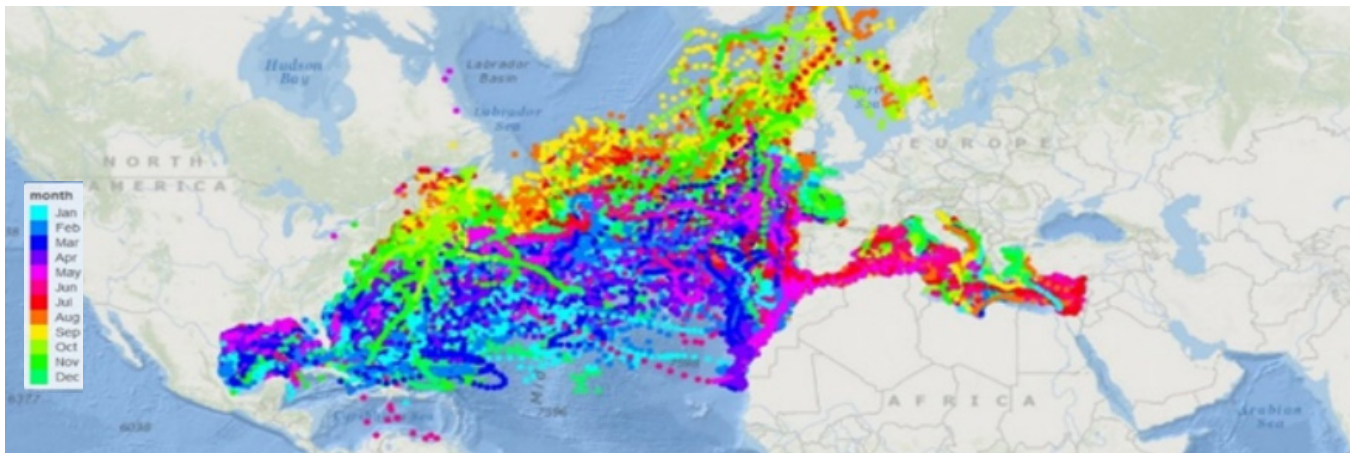
The new information systems developed at the ICCAT Secretariat with the support of the GBYP will allow broad analysis that will improve the accuracy of key parameters for stock assessment.



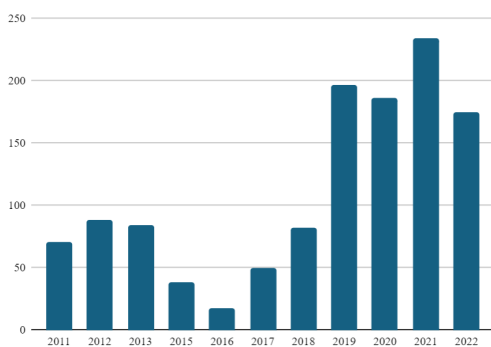
Tagging

- Deployment of over 30,000 conventional tags and 427 electronic tags.
- Improvements in electronic tags attachment methodologies, leading to increased retention time of electronic tags (over 200 days, compared to less than 50 days initially achieved).
- Improved tag recovery through awareness and reward programmes, including enhanced involvement of ICCAT Regional Observers Programme (ROP) in tag recovery activities.
- Support for tagging research teams (conventional and e-tags).
- Organization of 5 workshops.

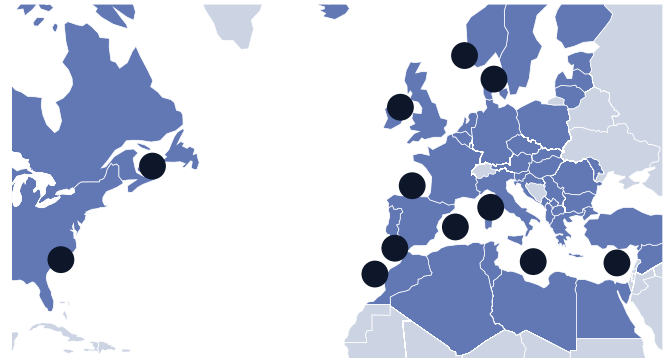
Species year-monthly distribution



Average days tag on fish



Deployment sites of GBYP e-tags



GBYP tagging program has provided crucial information on BFT spatial patterns, used directly to inform the BFT stock assessment carried out under the Management Strategies Evaluation (MSE) process

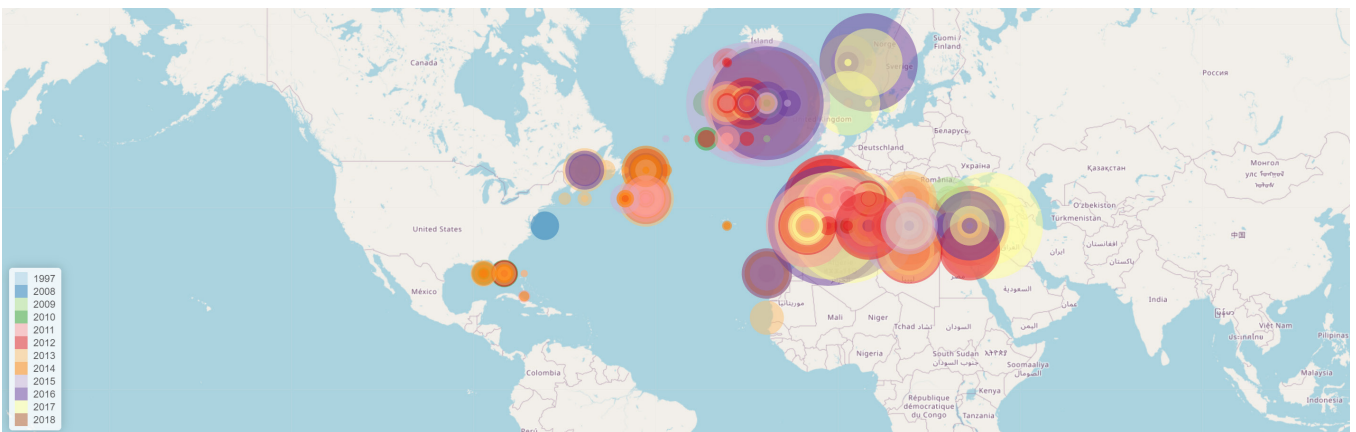


Biological Studies

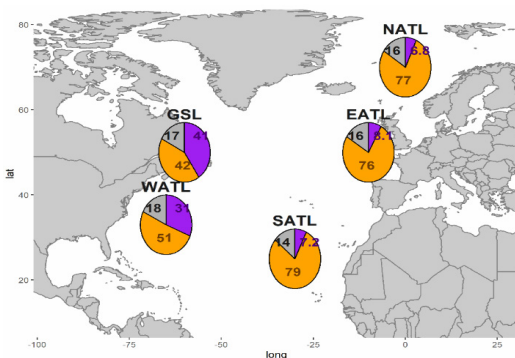
- Establishment of the GBYP Tissue Bank with almost **60,000 biological samples** (including otoliths, spines, gonads, and tissue for genetic studies).
- Genetic and microchemical analyses, which revealed a more complex population structure than previously thought, with important overlap between eastern and western stocks.
- 7 GBYP workshops on: biological sampling, growth, reproduction and Close-Kin Mark-Recapture (CKMR).

GBYP bluefin tuna biological sample repository viewer

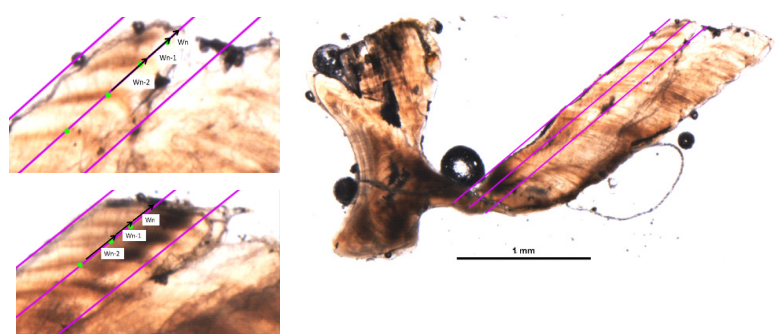
More than 60000 biological samples (gonads, otoliths, spines and muscle) stored in the GBYP Tissue Bank and available for ageing, genetic, microchemical and reproduction studies



Proportion of individuals from east and west stock in the different areas of the atlantic



Otolith section. Detail of rings marked for age counting



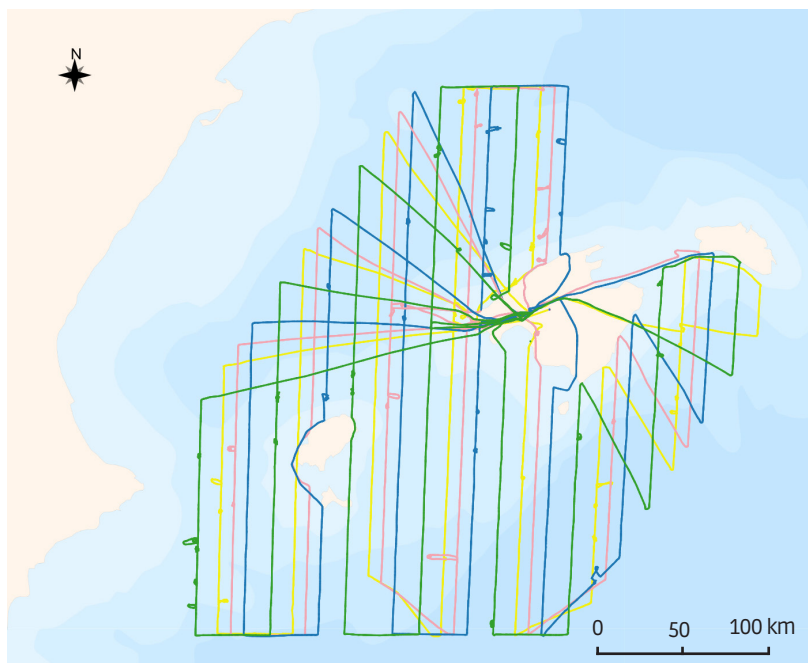
The GBYP funded biological studies, based on the GBYP tissue bank, are generating information on biological parameters and population structure, required for current BFT stocks assessment and for planning and implementing new methodologies to improve the species management (e.g. the Close-Kin Mark-Recapture approach).



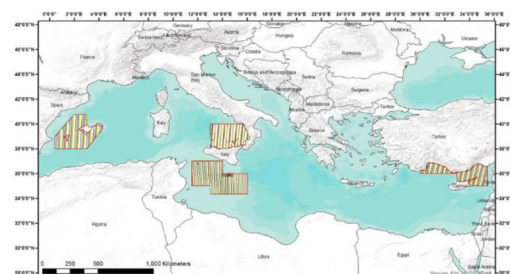
Fishery-Independent Indices

- Eleven annual standardized aerial survey campaigns over key spawning areas in the Mediterranean.
- Estimation of eastern Atlantic and Mediterranean bluefin tuna (BFT-E) spawning stock abundance and biomass indices.
- 3 workshops on fishery independent indices.

Real tracks of the plane over the Balearic sea during the 2022 GBYP aerial survey



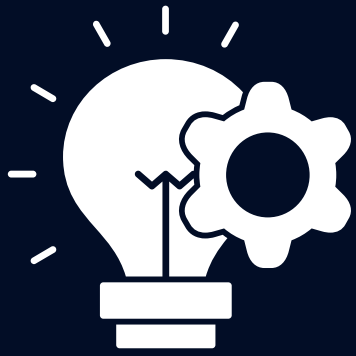
Areas surveyed within the GBYP aerial surveys



Aerial Team

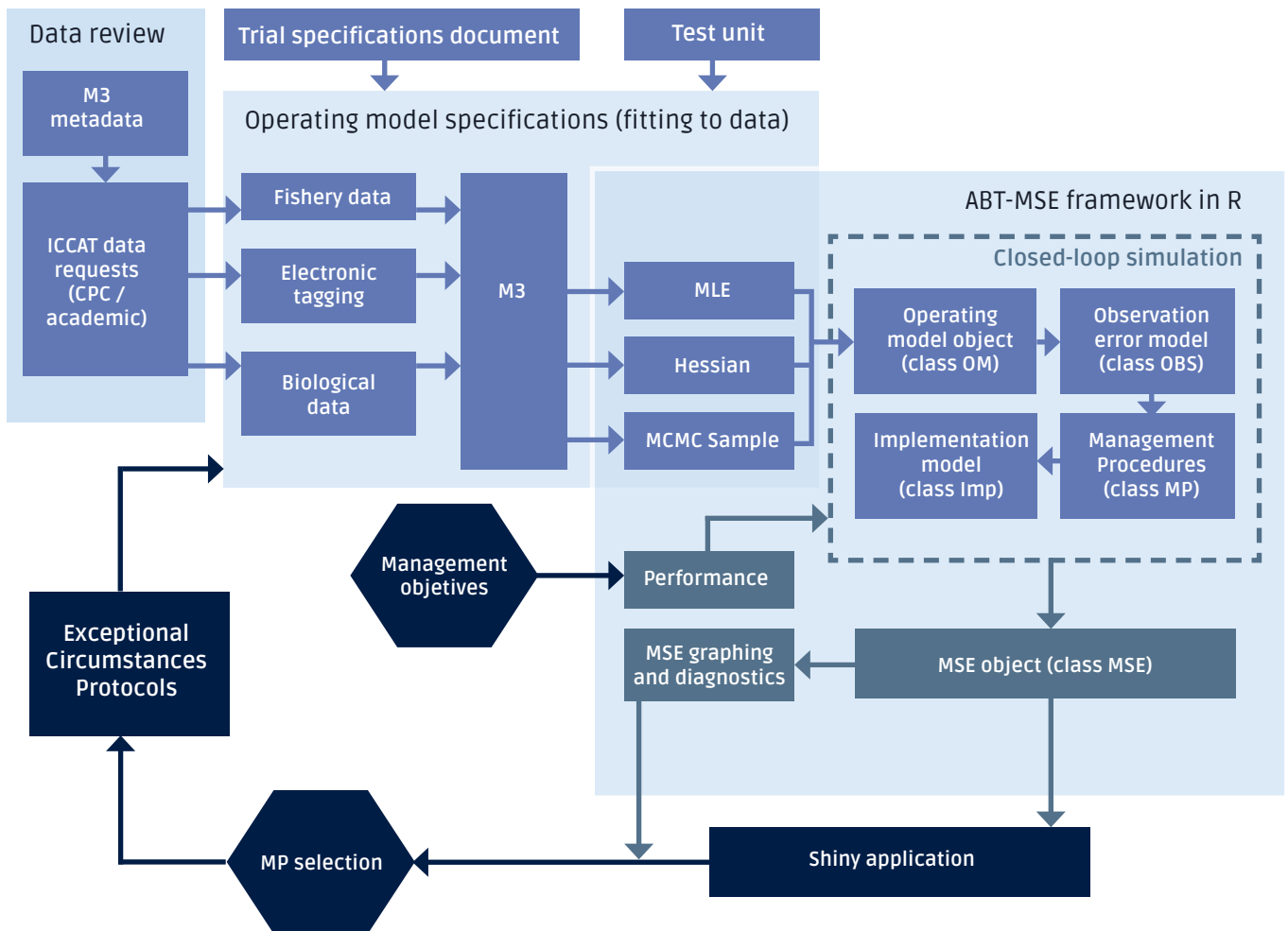


The GBYP aerial surveys spawning stock biomass index is one of the main fisheries independent indices currently in use for the BFT stock assessment under the current MSE based system.



Modeling Approaches

- Development of Management Strategy Evaluation (MSE) related modelling for robust BFT stock assessment and management.
- Provision of critical information for the better design and parameterization of stock assessment and management models.



Modelling activities have set the basis for implementation of the current BFT management system (MSE approach), and to develop a feasibility study based on genetic methodologies (CKMR) to improve BFT stock assessment. CKMR can provide absolute estimates of stock abundance, addressing the main uncertainty affecting the current stock assessment.



Ruins of a factory for salted fish and garum (fish sauce) founded at End of the 2nd century BC in Tarifa, Spain.

The GBYP with and for

Senior and young researchers

Most of the studies supported by the GBYP have been carried out by recognized external experts in several fields, also involving young scientists. Moreover, novel methodologies have been developed and/or consolidated, and made available for future generations of researchers.

Local, national and international policy makers

Data and information produced by the GBYP have been used by the SCRS to provide scientific advice for the Commission. This information has also been used by local/regional/national/ authorities aiming the adoption of additional management measures.

Citizens and general public

Citizens have collaborated directly with the GBYP, mainly through the tag recovery programme. Moreover, sport fishermen also collaborate in tagging activities. Including citizens and key agents in GBYP actions is important to involve the general public in research and make them part of the scientific process.

Scientific and academic institutions

Many scientific and academic institutions have been engaged in GBYP activities across different research lines, including the GBYP electronic tagging programme.

Industries and socio-economic partners

The fishing and farming industries have collaborated directly with the GBYP, as members of consortia related to contracts, or by providing in-kind contributions (e.g. logistic support, facilitating sampling operations and tagging activities).

Take-home message

Impact

The GBYP has played a pivotal role in building a robust scientific basis for the sustainable conservation and management of Atlantic bluefin tuna stocks, with a particular focus on implementing the **Management Strategy Evaluation process**. This new approach, adopted by ICCAT in 2022, is a keystone in ICCAT fisheries management.



88 entities
28 countries
Research Institutes
Involved



257 contracts or MoU signed
Contracts and MoUs



283 reports and 183 scientific papers
Scientific Output



23 workshops and meetings of different scientific topics
Workshops Organized

Lessons learned

- **Budget:** Despite the progressive reduction in budget, as a result of the experience gained during the programme, it has been possible to maintain activity levels and even improve the quality of its outputs, through more efficient use of the available funds.
- **International coordination:** Collaboration between research teams and the fishing industry in the various CPCs, as well as closer coordination between the ICCAT Secretariat and the SCRS have been essential for the programme achievements and more efficient use of the financial resources.

Sustainability and Follow-up

- **Continued MSE development:** The GBYP will continue supporting the implementation and refinement of the MSE process to ensure sustainable bluefin tuna management.
- **Strengthening partnerships:** Enhanced coordination between the GBYP and national research programmes will optimize the use of financial resources, maintain the databases updated, and provide the best scientific advice on bluefin tuna ecology and stock dynamics.

Future steps

- **Advancing scientific knowledge:** The GBYP will work to deepen the understanding of population structure and spatial distribution patterns.
- **Fishery independent indices:** The GBYP will continue updating and improving the accuracy of fishery independent biomass and abundance indices, as required to implement the MSE.
- **Improving data systems and sampling:** Further development of ICCAT's information systems and optimized biological sampling schemes will ensure data quality and accessibility across programmes.

Become a part of the GBYP

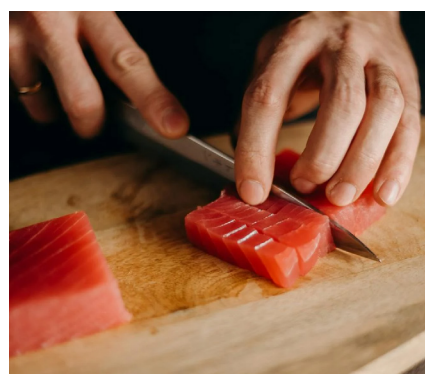
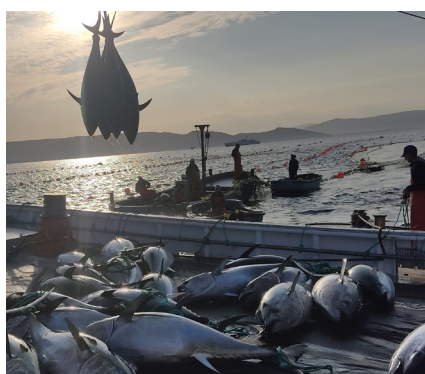
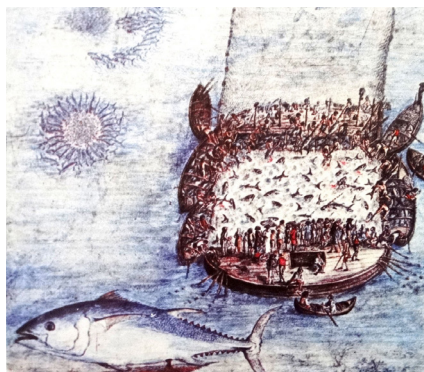
Web ICCAT <https://www.iccat.int/en/>

Web GBYP <https://www.iccat.int/gbyp/en/>

YouTube channel <https://www.youtube.com/@iccatgbyptagrecovery5454>

ICCAT tagging program <https://www.iccat.int/en/tag-program.html>

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