

2022-2023 The Billfish Foundation
CONSERVATION RECORD



Photo courtesy of Charlie Shalley

BILLFISH.ORG



YETI®


COSTA®



GARMIN®


KING
Sailfish
RELEASE
MOUNTS

The Billfish Foundation

MISSION RUNDOWN

Through research, education, and advocacy, The Billfish Foundation works globally to advance the conservation of billfish to improve the health of the ocean's ecosystems and associated economies, while fighting for the rights of recreational anglers.



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SEIKO
SINCE 1881



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WELCOME MESSAGE

Encompassing two years' worth of data (2022-2023), we are excited to present the latest edition of The Billfish Foundation's Conservation Record. This publication stands as a testament to our commitment to the conservation of billfish species. Through a blend of science and communication, this comprehensive report transforms the billfish data you collect into an interesting and engaging read for all.

Unique to TBF, this publication creates a robust platform that supports our conservation efforts and offers the community a tangible representation of our annual findings. Our ultimate goal is to help bridge the gap between scientific research and policy while showcasing the immense benefits the sportfishing community brings to global billfish populations. We hope we have created an indispensable resource highlighting the growth we have experienced over the past two years.

We invite you to explore and enjoy this document that illustrates the beneficial uses of collected data and highlights new avenues for research and collaboration with fisheries institutions. As we advance our conservation initiatives, the opportunities for science-based endeavors continue to expand and benefit billfish populations worldwide.

Lastly, THANK YOU for supporting The Billfish Foundation's Tag and Release Program. Your commitment and support have been instrumental in making our program a success for decades.

Thank you and tight lines from all of us at TBF.



The Billfish Foundation's Tag & Release Program would not be possible without the dedicated support of our sponsors. We are exceptionally grateful to Costa, Yeti, King Sailfish Mounts, Garmin, Casa Vieja Lodge, Rock The Ocean, Boater's List, Seiko USA, and the International Game Fish Tournament Observers for their unwavering support. As always, we extend an additional thank you to all billfish anglers, captains, and mates who donate their time and resources to collect and report this data to us.





Photo courtesy of Marina Cap Cana



CONSERVATION MESSAGES FROM TAG & RELEASE SPONSORS

Since 1983, **COSTA** has developed meaningful partnerships with mission-aligned organizations like The Billfish Foundation. Protecting our waters and wild places is a core value of the Costa brand, and something we believe every angler has a responsibility to be a steward of as well. That is why Costa is proud to be a longtime supporter of TBF's traditional tagging research program, which has helped transform the billfish fishery from catch and kill, to catch, tag, and release. The science and data that TBF captures not only allows advocacy for responsible and effective management of billfish and their ecosystems, but also raises the awareness (and importance) of sportfishing to coastal communities we call home.



For decades, **SEIKO** has shown its dedication to marine conservation by supporting organizations like The Billfish Foundation (TBF). Seiko backs TBF's mission of billfish conservation, their tag and release program, and promoting communities that rely on healthy fisheries. Through initiatives such as the "Save the Ocean" project and the Prospex watch line, Seiko highlights its commitment to environmental stewardship and the protection of marine ecosystems.



YETI feels that the more time we spend outside, the more we understand our responsibility to protect the places we love. As climate change increases the intensity and frequency of natural disasters and weather events, YETI has committed more than ever to ensuring our communities have access to a healthy and thriving natural environment for generations to come.



GARMIN is proud to support The Billfish Foundation in its conservation and advocacy efforts for billfish around the globe. The work they do, along with the anglers and captains that voluntarily tag, release, and report their billfish catches, is invaluable and vital to helping us further understand and protect the billfish species. We fully support TBF in its mission to increase awareness of the importance of tag and release because the more we know, the better we can do to ensure these fish are around for generations to catch.



KING SAILFISH MOUNTS proudly supports The Billfish Foundation and its tag and release program. By tagging and releasing billfish, we're helping protect these majestic creatures and collecting valuable data that will aid in their conservation for generations to come. As a company specializing in creating stunning fish replicas, we are passionate about fishing and preserving our ocean's natural beauty. We stand behind TBF and its efforts to promote sustainable fishing practices. Together, we can make a real, science-based difference in the fight to preserve and conserve our ocean's precious resources for generations to come.



CASA VIEJA LODGE is not only a world-class fishing lodge, but also strongly believes in supporting fishing conservation and protecting our marine environment. As a plastic-free campus, Casa Vieja Lodge completely eliminated all single-use plastic at the lodge and on the fleet in 2018, and their support of data collection for billfish conservation illustrates their commitment and understanding to the importance of sustainable fishing efforts.



ROCK THE OCEAN (RTO) raises public awareness about the issues impacting the world's oceans. Through initiatives such as the Tortuga Music Festival, RTO is able to raise money to support scientific research, education, and ocean conservation. RTO also uniquely promotes TBF's efforts through its Conservation Village, a venue that allows TBF to discuss its Tag & Release Program and emphasize the importance of billfish and citizen science. Rock The Ocean proudly supports The Billfish Foundation's work to conserve and learn more about these fish and the communities dependent upon healthy fisheries.



The **INTERNATIONAL GAME FISH TOURNAMENT OBSERVERS (IGFTO)** is dedicated to observing today, so we can conserve tomorrow. As a charitable non-profit organization filled with passionate and experienced professionals, IGFTO's goals focus on proper tournament and fisheries management so we can continue to preserve and conserve our game fish worldwide. We support The Billfish Foundation's (TBF) efforts to safeguard billfish and lead the way in research and conservation.



With a passion for connecting water and boat enthusiasts, **BOATER'S LIST** has aimed to be a resource for anyone interested in enjoying our marine environment. Collaboration is the basis of their platform, and their efforts thus far have been tremendous in supporting proper fisheries management and billfish conservation. With the mindset of enhancing everyone's experience in and on the water, Boater's List strives to do it the right way.



INTERESTED IN BECOMING A SPONSOR?

CONTACT US: Tag@Billfish.org

PILLAR PROJECTS

TBF's three pillars (research, education, and advocacy) have allowed our staff and contributing members to become immersed in the global billfish community. Here's a breakdown of some of the conferences, events, tournaments, and research partners that have allowed us to support our community.

2022-2023 YEARS IN REVIEW

Costa Marlin Fly

In December 2022, TBF had the opportunity to be a part of a historical event. Through Costa Del Mar, a team of anglers, scientists, and conservation representatives was brought to Baja California Sur to satellite tag striped marlin for a trip to be called, the Marlin Fly Project. Costa's project was established as an opportunity to better understand global striped marlin fisheries, but the team took this process one step further by implementing a rarely used method for billfishing: fly fishing.

During this trip, there were a total of 15 striped marlin that were satellite tagged via fly rod, 7 of which were tagged with satellite tags donated by TBF. To date, this was the first recorded billfish satellite project completed solely on the fly. Led out of Magdalena Bay, Mexico, the research conducted on the Baja California striped marlin populations was not only groundbreaking, but it was a trip that would leave a lifelong impression on all who attended.

Findings from The Marlin Fly Project will help fill crucial data gaps on an understudied striped marlin population, which will be vital for the protection and management of this highly migratory species.

GCFI Conference

In November 2023, TBF had the chance to attend the Gulf and Caribbean Fisheries Institute's 76th Conference in Nassau, The Bahamas. The theme was "linking science and society towards a vision for sustainable fisheries" which encouraged discussions in bridging the gaps between social sciences, hard sciences, governance, and proper fisheries management. TBF's work was represented across three abstracts, all of which were selected for poster presentations. The titles and authors of the three posters are listed below.

1. Potential fisheries impacts of offshore wind farm development in the Gulf of Mexico following the Inflation Reduction Act -Adelaide Spain, Peter Chaibongsai, Thomas J. Morrell
2. Perceptions and Attitudes Toward Speed Restriction Zones for the Protection of Large Cetaceans - Racine Prinzo, Thomas J. Morrell, Peter Chaibongsai, Manoj Shivlani, Maria Cartolano
3. A collaborative research approach in support of conservation and sustainability of billfish - Jeremy Higgs, Peter Chaibongsai, Jim Franks, Ellen Peel

Dr. C. Phillip Goodyear

Goodyear et al 2023: HBF (Hooks Between Floats) is an Unreliable Index of Fishing Depth for US Longlines.

Statistical models often use the number of hook between floats (HBF) and not total hooks used for longline vessels as a predictor for estimating abundance trends in pelagic species based on Catch Per Unit Effort (CPUE) data. This convention stemmed from the belief that depths fished increased with HBF. However, an examination of hook-depth distributions from 1986-2015 for 128 longline configurations in the US showed significant variations. Gears with the same HBF had different time and mean depth fished, and annual variations were observed in depth configurations. Contrary to traditional belief, fishing depth decreased with HBF. Thus, using HBF as a surrogate for fishing depth should be approached with caution until confirmed by analysis.

HMS BFT Quota Increase

In March 2022, the National Marine Fisheries Service announced increases to all Fishing Categories following an increase in the total U.S. allocation agreed upon by an International Fishery Management Commission - ICCAT and Amendment 13. This was after TBF requested NMFS increase the allocation of Atlantic bluefin tuna to all segments within the Recreational Fishing Category.

The incidental catch for trophy Bluefin Tuna in the Gulf of Mexico went from 1.8 to 2.3 metric tons.

ICCAT Circle Hooks

Resulting from a years-long effort led by the United States, ICCAT adopted its first measure on gear and bait modifications in 2022 to mitigate the impacts of fishing interactions on sea turtles (Rec. 22-12). This measure, which went into effect in June 2023, finally requires science-based mitigation measures, such as the use of circle hooks by all ICCAT nations in shallow-set longline fisheries in the Atlantic Ocean that will reduce bycatch and increase post-release survival. While more work is still needed on the topic - including the size and definition of the circle hooks in question - this is still a huge step for the conservation of many species.

Tortuga Music Festival

In April of 2022 and 2023, TBF was lucky enough to be part of Rock the Ocean's Tortuga Music Festival. Rock the Ocean is a nonprofit organization dedicated to ocean conservation and Tortuga is the world's first major music festival heavily focused on conservation, with the goal of leaving the beach better than they found it. Over the last ten years, Tortuga Music Festival has hosted and donated to more than 100 nonprofit organizations in their Conservation Village, which aims to educate their fans on a number of topics and themes related to ocean conservation and sustainability.

TBF is proud to be a part of each Tortuga festival, dating back to their inaugural event in 2013, and could not be more appreciative of RTO for being a Tag & Release Program Sponsor of TBF.



Photo courtesy of Calvin Duplessis



Photo courtesy of Samuel Urbain

Events that GIVE BACK to TBF

Bay Point Billfish Open
Big Dog Tackle Swordfish Battle Tourn.
Billfish Pachanga
Cajun Canyons Billfish Classic
Emerald Coast Blue Marlin Classic
Fly Zone Fishing: Chub Cay Circuit
Kenny Vines Memorial Billfish Tournament*
Ladies Fish-Off
Mongo Offshore Tournament
Orange Beach Billfish Classic*
Pensacola International Billfish Tournament
Pirate's Cove Billfish Tournament
Sailfish Challenge
Sailfish Sweethearts
The Buccaneer Cup
The MidAtlantic*

Clubs that DONATE to TBF

Beach Haven Marlin & Tuna Club
Big Game Fishing Club France
Bluefin Academy
Cypress Cove Marina
Emerald Coast Big Game Fishing Club
Houston Big Game Fishing Club*
Marina Cap Cana
Marina Casa de Campo
Mobile Big Game Fishing Club
New Orleans Big Game Fishing Club
Orange Beach Sportfishing Club*
Pensacola Big Game Fishing Club*
Port Aransas Big Game Fishing Club
Puerto Rico Light Tackle Anglers Club
Sea Horse Anglers Club
Stuart Sailfish Club
West Palm Beach Fishing Club

*Asterisks denote clubs and events with significant contributions towards the mission of TBF, with Orange Beach Billfish Classic being the largest contributor to date.



LEARN MORE AT [BILLFISH.ORG/PARTNERS](https://billfish.org/partners)

TBF CIRCLE BACK

In addition to external affairs, TBF took strides to promote internal growth during 2022 and 2023.

Youth Publications

Did you know TBF has two youth magazines? These publications, *Spearfish* and *Sailfish*, each have two yearly editions, with *Spearfish* being geared toward middle school students and *Sailfish* being tailored for high school students.

At TBF, we believe the best way to instill proper billfish conservation ethics into our community is through education. Having education resources for younger generations allows youth anglers to begin fishing with conservation at the forefront of their minds. In addition to conservation, our youth publications teach young anglers about billfish and associated species, general ocean sciences, and marine conservation. *Sailfish Magazine* even offers its readers potential internship, career, and volunteer opportunities.

If you are interested in having TBF provide your school or camp with free copies of *Spearfish* and/or *Sailfish*, please contact us at education@billfish.org.

TBF Lifetime Achievement Awards

Each year, TBF presents Awards to members of our community who embody conservation, angling, scientific, and sportfishing values. There are three total awards: the Winthrop P. Rockefeller Lifetime Achievement Award, the John Rybovich Lifetime Achievement Award, and the Paxon "Packy" Offield Lifetime Science Achievement Award.



Raymond Douglas

In 2022, TBF honored two recipients with awards. The first, Charles Perry, received the John Rybovich Lifetime Achievement Award, and the second, Raymond Douglas, received the Winthrop P. Rockefeller Lifetime Achievement Award.

Charles Perry was awarded the John Rybovich Lifetime Achievement Award for his dedication to furthering billfish conservation through satellite tagging and his more than 60 years of sportfishing boat expertise. Not to mention his knack for catching world-record fish.

Raymond Douglas, founder of King Sailfish Mounts, was awarded the Winthrop P. Rockefeller Lifetime Achievement Award for revolutionizing the marine taxidermy industry. By allowing anglers to mount their trophy fish through measurements and photos, anglers were able to appreciate their incredible achievements while also releasing the fish to fight another day.



Charles Perry



Top photo, Guy Harvey. Above, Paul Spencer.

In 2023, there were two more Lifetime Achievement Award winners; Paul Spencer for the John Rybovich Lifetime Achievement Award and Guy Harvey for the Paxon “Packy” Offield Lifetime Science Achievement Award. Paul Spencer was awarded the John Rybovich Lifetime Achievement Award for his ethics of responsible fisheries management and billfish conservation through his yacht building with Spencer Yachts. Through his art and stewardship, Guy Harvey was awarded the Paxon “Packy” Offield Lifetime Science Achievement Award for furthering billfish science and creating a platform for education and awareness.

Steve C. Levi Memorial Trophy

Following the untimely and tragic passing of Steve C. Levi in early 2021, his gorgeous bronze marlin sculpture was donated to The Billfish Foundation by his daughters Kristen Dzwonkowski and Chelsea Scruggs. In honor of his legacy, TBF partnered with Gulf Coast Yacht Group to have the sculpture be used as a perpetual youth award. As a result, The Steve Levi Youth Conservation Award was created.

All who knew Steve understood he wanted to ensure the thrill of responsible sportfishing and marine conservation would be passed to the next generation. He did so by encouraging passionate adult anglers to share their love of billfishing with prospective youth anglers. To honor that, this award will be presented each year to the youth angler who shows a dedication to billfish conservation.

To officially kickstart the award, TBF selected Hadley Bonner, 13, as the first winner of the Steve Levi Youth Conservation Award. We at TBF commend her passion for sportfishing and billfish and could not be more excited for her! Congratulations, Hadley!

Grant Details and Workshops

As part of the National Fish and Wildlife Foundation’s (NFWF) Electronic Monitoring and Reporting Grant Program, Bluefin Data (BFD) and The Billfish Foundation (TBF) were selected as award recipients in 2022. Bluefin Data and their reporting platform VESL have offered a streamlined, electronic solution to data reporting for multiple fishing gear types while still offering anglers the opportunity to seamlessly report conservation data to organizations such as TBF.

This electronic reporting project will help to modernize the requirements of the HMS recreational, East Coast, and Gulf of Mexico reporting programs while expanding upon TBF tagging data collection. The results of this project will be a singular electronic form that satisfies the requirements of HMS and TBF, and expands the tagging program into a sector likely to have billfish interactions.

Updated Tag Cards

The TBF Tag Data Report cards have been a staple of TBF's Tagging Program since 1990. By collecting data associated with billfish species, location, and fish condition, in addition to profile information for captains, anglers, and mates, these cards have been pivotal for billfish conservation for more than three decades.

In 2022, TBF upgraded these cards to improve data quality and simplify the process for anglers to easily submit fisheries data. Numbers were added to each data field to help with the reporting process and essential data points were highlighted to emphasize their importance. A QR code was added to each card to create a direct path to our online database, and new data fields were added based on current research needs. While the baseline data for these cards has remained intact throughout the years, we at TBF are always open to improvements that will benefit our community. For any suggestions or feedback on the tag card or data reporting, please contact us at tag@billfish.org.

TBF Online Submission

TBF's online billfish database has gone through major updates since its introduction over a decade ago. Our goal here at TBF is to streamline the online reporting process as much as possible, allowing users to efficiently catch and report a billfish in the shortest amount of time. While self-reporting billfish data online is already the quickest and most reliable method of data reporting, we are continually looking to improve the process.

Beginning in May of 2022, we have implemented a number of new features that have upgraded the system as a whole. As of now, all users are easily able to see their unique fishing history on the upgraded home dashboard, along with their competition status throughout the year. We've improved usability, added video tutorials, FAQs, important links, and upgraded the map function to more easily record billfish catch locations. Plus, the updated Tagging Application allows users to upload their tag and release data immediately. This removes any import delays, furthering the speed at which data can be shared with our scientists, and allowing angler certificates to be sent out more quickly.

On the administrative side, we've made dramatic improvements to our database's backend, making it easier than ever to export data to be used in favor of our sportfishing community. We can filter searches by species, angler, ocean, year, location, and event, allowing TBF to contribute to more billfish research and participate in regulatory meetings and panels. As we move forward, we will continue to improve the process, always looking for methods to make the process as efficient as possible.



Photo courtesy of Clare Carter



The Billfish Foundation

TAG & RELEASE PROGRAM



OVERVIEW

Established in 1990, The Billfish Foundation's Tag & Release Program has generated the world's largest, privately-owned, open-sourced billfish database. This database remains the cornerstone of TBF's three pillars: research, education, and advocacy, and has now grown to boast more than 290,000 records of billfish interactions.

TBF receives thousands of tag, release, and recapture reports annually as a result of volunteer anglers, captains, and mates who support TBF's mission. If data acquisition was primarily left to research institutions and billfish scientists, not only would the data records be severely limited, but the general costs would be significantly higher. By relying on the sportfishing community and the concept of citizen science, TBF can obtain more data records, reach a far greater number of international locations, and help strengthen the connection between anglers and the sport they're passionate about.

As this data is open-sourced, it is available to the general public upon request. We encourage anyone interested in accessing our data to contact us at tag@billfish.org. The data gathered from billfish tagging and recaptured tags provides valuable scientific data to further understand growth rates, migratory patterns, habitat utilization, and post-release survival rates, all of which are invaluable for billfish conservation.

To get started, users can purchase billfish tags in bulk and at cost through our online shop. Once a tag is deployed, anglers can submit the data online, or manually input the data onto the cards and mail them to TBF.

Tag & Release Competition Details

TBF's Tag & Release Competition is held annually is held annually for TBF members beginning on November 1st, and ending on October 31st of the following year. TBF uses this competition to highlight the anglers, captains, and mates who embody the conservation ethic here at TBF, while practicing responsible billfishing and promoting the practice of proper data collection.

Each year, TBF hosts an awards ceremony to showcase the individuals who went above and beyond during the previous year's international competition. Awards are presented to those who tagged or released the most billfish of each species within each ocean category. We have additional trophies for youth and female anglers, as well as regional categories within South Florida, Hawaii, and the Gulf of Mexico.





MILESTONES

2022 and 2023 were filled with an abundance of milestones- first fish, tenth fish, and even 9,000th fish! We would like to take this opportunity to congratulate some members of our community who have achieved particularly large milestones.

GRAY INGRAM

9,000TH
FISH

CAPT. NEWT CAGLE

6,000TH
FISH

CAPT. JASON BRICE

6,000TH
FISH

CAMILA INGRAM

3,000TH
FISH

LAURA JESSEN

2,000TH
FISH

JILL YATES

1,000TH
FISH

CAPT. SEAN GALLAGHER

1,000TH
FISH

COLTON WYATT

75TH TAG
(YOUTH)

SAEED ALMAKTOUM

25TH TAG
(YOUTH)

CONNOR PORTER

10TH
RECAPTURE

BERNABE RUIZ

5TH
RECAPTURE

THOMAS ARMILLOTTO

5TH
RECAPTURE



Tagging Importance

The Billfish Foundation aims to support the best interests and desires of the recreational fishing community as well as the billfish themselves. Through the implementation of our international tag and release program, TBF believes anglers, researchers, and ocean enthusiasts can work together to promote healthier oceans and ecosystems.

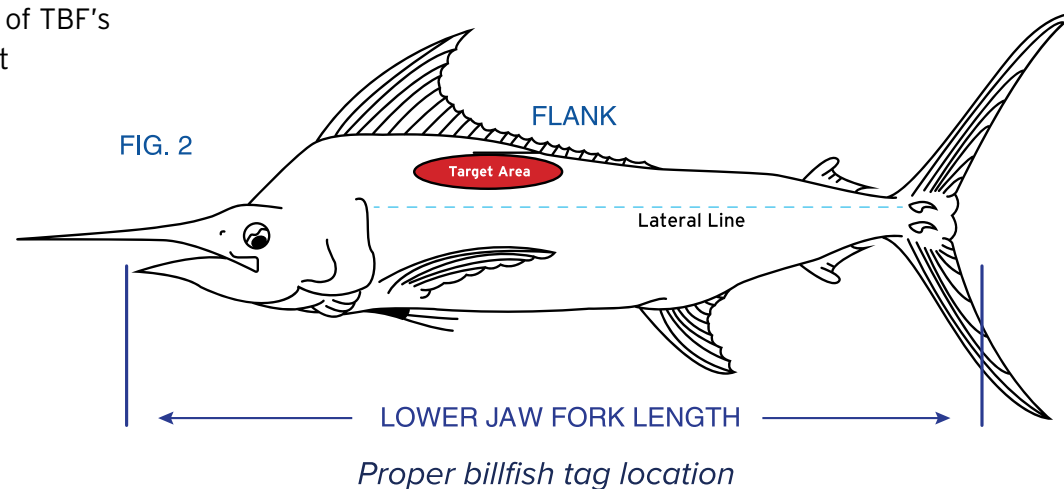
But what's so important about tag and release? Prior to TBF, a majority of caught billfish by recreational fishermen were landed and utilized as trophy fish, eventually reaching a tipping point of population degradation. By incorporating tag and release practices, not only can that fish continue to be showcased as a trophy (especially when incorporating sustainable mount companies such as King Sailfish Mounts), but they can also be utilized as a scientific tool.

Traditional tagging can help TBF learn several things about billfish. For example, the deployment of tags can help researchers gain a better understanding of population assessments and/or if additional conservation measures are needed. Studying longer time frames of tagging activity allows researchers to pinpoint areas of significant drops or spikes in billfish tag and release occurrences, which can become areas of interest for global billfish scientists.

The best case scenario in terms of billfish tagging is referred to as a recapture. This occurs when a fish with a tag is caught again (or recaptured) and the anglers can report the catch data back to TBF. Information from a recaptured fish can help determine growth rates, distances traveled, and provide scientists with valuable data for future research endeavors.

Being able to recover recaptured tags is one of the most important aspects of TBF's tag and release system. To have insight into billfish migration trends without the need to deploy satellite tags is not only cost effective, but it also allows data to be collected from around the globe in a more accessible manner.

Regardless of the catch event (tag, release, or recapture), the most important aspect is submitting the data. Sometimes, billfish tags are deployed or recovered without relaying the information back to TBF. Referred to as "orphan tags," these leave a gap in a data collection record and prevents TBF from "closing the scientific loop" on a specific billfish. This negates the advantages of recapture data and emphasizes why tag reporting is so important.



If you ever have any questions or concerns on how to properly submit billfish data, please do not hesitate to contact TBF!

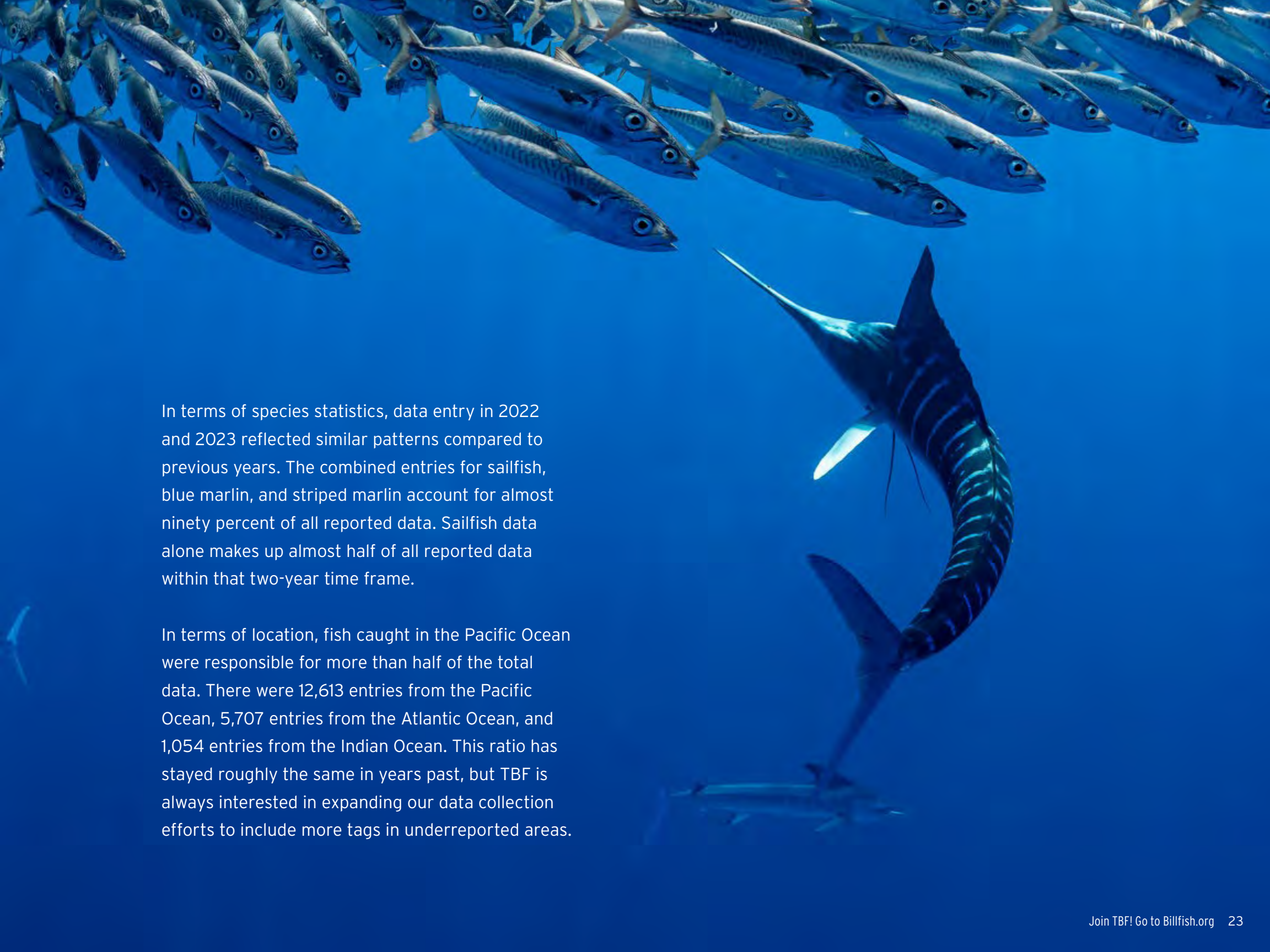


REPORTED SPECIES DATA

Species Overview/Years in Review

The 2022 and 2023 fishing seasons were nothing short of remarkable. Our volunteer anglers were responsible for adding 19,374 new records to our database. This was the result of 9,719 fish tagged and released, 9,492 additional fish released, and 163 recaptured tags. Over a two-year time period, that comes out to roughly 29 unique billfish events logged in our database each day. None of this would have been possible without our dedicated support system of volunteer anglers, captains, and mates.

Sometimes, TBF is asked if other pelagic species can be tagged. While the majority of our tag, release, and recapture records are associated with the seven species of billfish; black marlin, blue marlin, sailfish, spearfish, striped marlin, swordfish, and white marlin, there are additional records from bluefin and yellowfin tuna being submitted. Between 2022 and 2023, there were 224 tuna records entered into our database. Please note that while we appreciate the efforts to tag any pelagic species, TBF is only interested in billfish and tuna being tagged. Regardless of what species you are tagging, make sure you follow the proper tag, revival, and release procedures required to facilitate a low post-release mortality rate.



In terms of species statistics, data entry in 2022 and 2023 reflected similar patterns compared to previous years. The combined entries for sailfish, blue marlin, and striped marlin account for almost ninety percent of all reported data. Sailfish data alone makes up almost half of all reported data within that two-year time frame.

In terms of location, fish caught in the Pacific Ocean were responsible for more than half of the total data. There were 12,613 entries from the Pacific Ocean, 5,707 entries from the Atlantic Ocean, and 1,054 entries from the Indian Ocean. This ratio has stayed roughly the same in years past, but TBF is always interested in expanding our data collection efforts to include more tags in underreported areas.

BLACK MARLIN

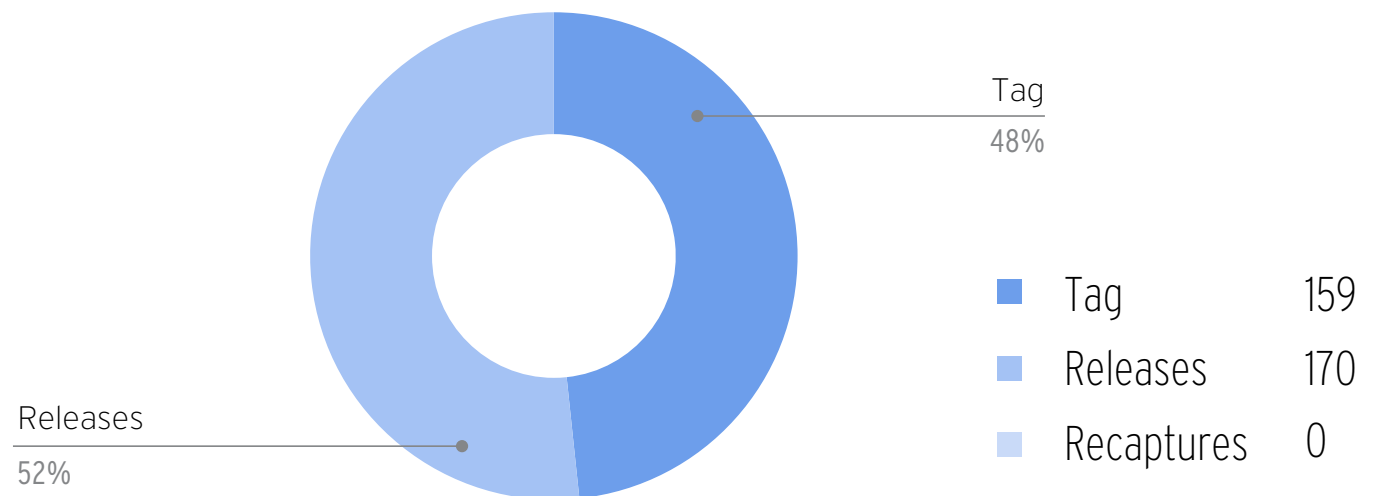
Istiompax Indica



Black Marlin // English // USA, Australia

Marlin Negro // Spanish // Mexico, Panama, Costa Rica

The black marlin is a species of billfish found in the Pacific and Indian Oceans. They are distinguishable from other billfish species by their rigid and broad pectoral fins, their small dorsal fins, and their deep blue (almost black) coloring. They are most similar in appearance to blue marlin yet are less frequently caught. Within the TBF database, black marlin records make up a very small proportion of tags, releases, and recaptures. In 2022 and 2023, there were only 329 black marlin records submitted to TBF.



When broken down, black marlin entries consisted of 159 tags and 170 releases, with zero recaptures. The majority of these black marlin encounters were concentrated in Australia, the Seychelles, and Kenya. As in years past, these locations seem to be reliable black marlin hot spots when they are not traveling. Interestingly enough, there were no black marlin tags or releases in Hawaii in this time period. We encourage all anglers in Hawaii to report black marlin records as they are extremely needed in our database!

With their large and muscular bodies, black marlin are capable of migrating thousands of miles per year. These fish prefer warm environments within equatorial and tropical waters. Although they are strong, they are not fast swimmers. Black marlin have allegedly been recorded swimming upwards of eighty miles per hour, yet this is extremely exaggerated. Their anatomical structure only permits them to hit top speeds of about 30 mph in bursts and a rapid cruising speed of about 20 mph.



Photo courtesy of Charlie Shalley



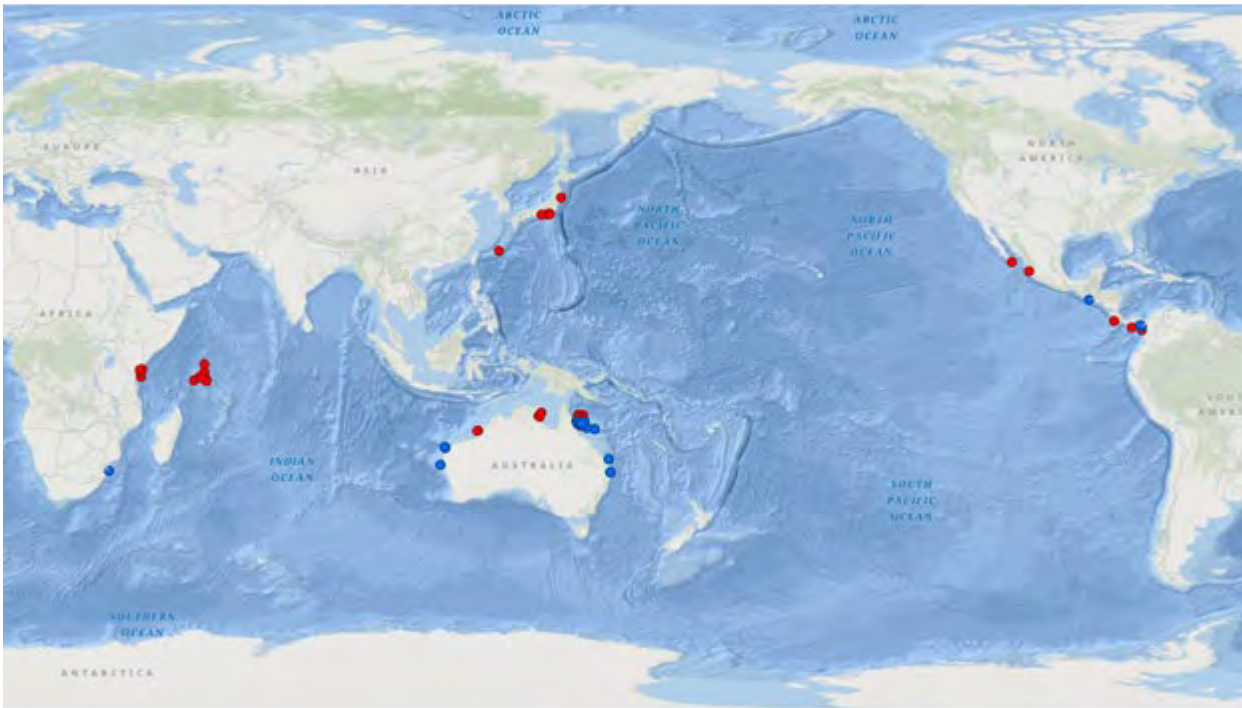
Courtesy of Didrik Stavervik

Black marlin are extremely persistent and will trail their prey for miles, waiting for the perfect opportunity to strike. This finicky behavior will sometimes have them trailing an angler's bait for long periods of time, even stalking bait for miles before showing true interest. If hooked up, these fish become extremely aggressive and will give an angler a true run for their money. Their fight is one of the most impressive of all billfish species.

Given all these factors, it is no surprise that black marlin records are so few and far between. There hasn't been a black marlin recapture recorded since 2020! With that being the case, TBF heavily encourages anglers and captains in the Pacific and Indian Oceans to report all black marlin tags and releases so more information can be gathered about this species.

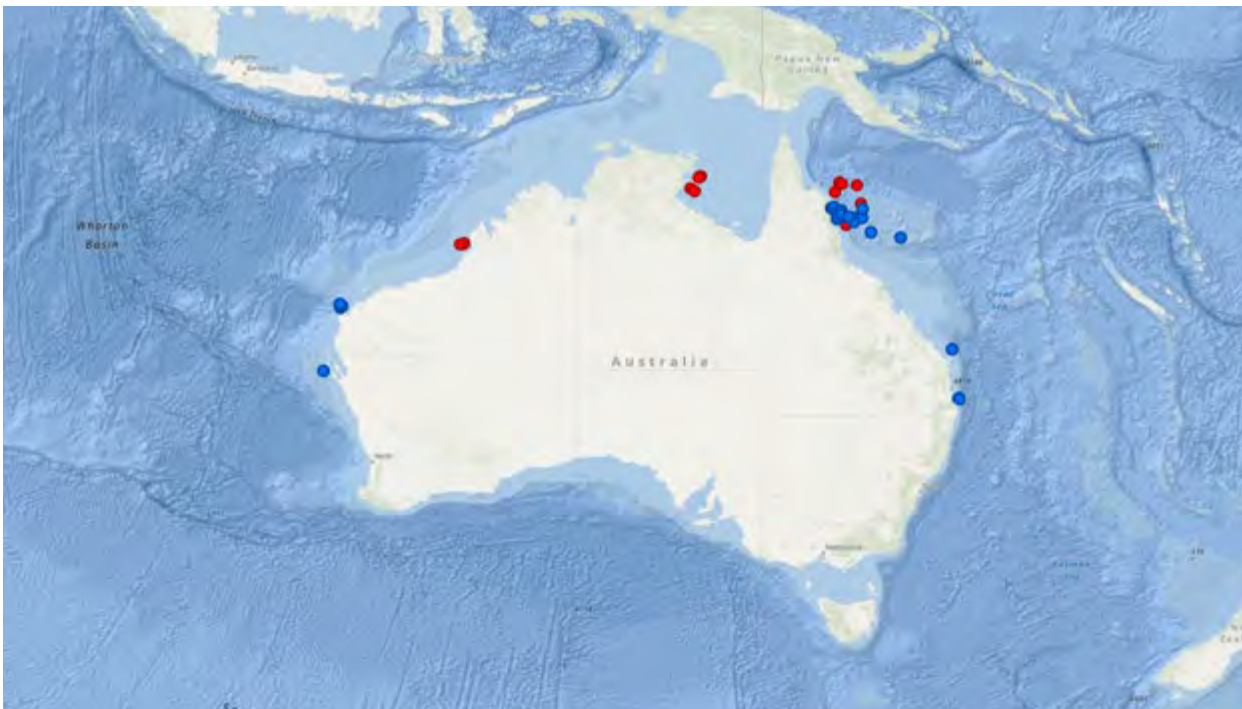
FUN FACTS ABOUT BLACK MARLINS

- » *Black marlin can reach a maximum size of 15 feet and 1,600 pounds. Females are much larger than males.*
- » *Their top speed is 30 mph.*
- » *Male black marlin have a lifespan of seven years, while females can live up to 13 years.*
- » *They are extremely migratory and are known to show aggressive tendencies.*



Overall Tag Distribution Map *Black Marlin*

Black marlin are only found in the Pacific and Indian Oceans and are an infrequently reported species. Tags are in red, releases are in blue.



Tag Hotspot Map *Black Marlin*

The majority of black marlin tags and releases are reported to us by captains and anglers in Northern Australia. Tags are in red, releases are in blue.

BLUE MARLIN

Makaira nigricans (Atlantic Blue Marlin)

Makaira mazara (Indo-Pacific Blue Marlin)



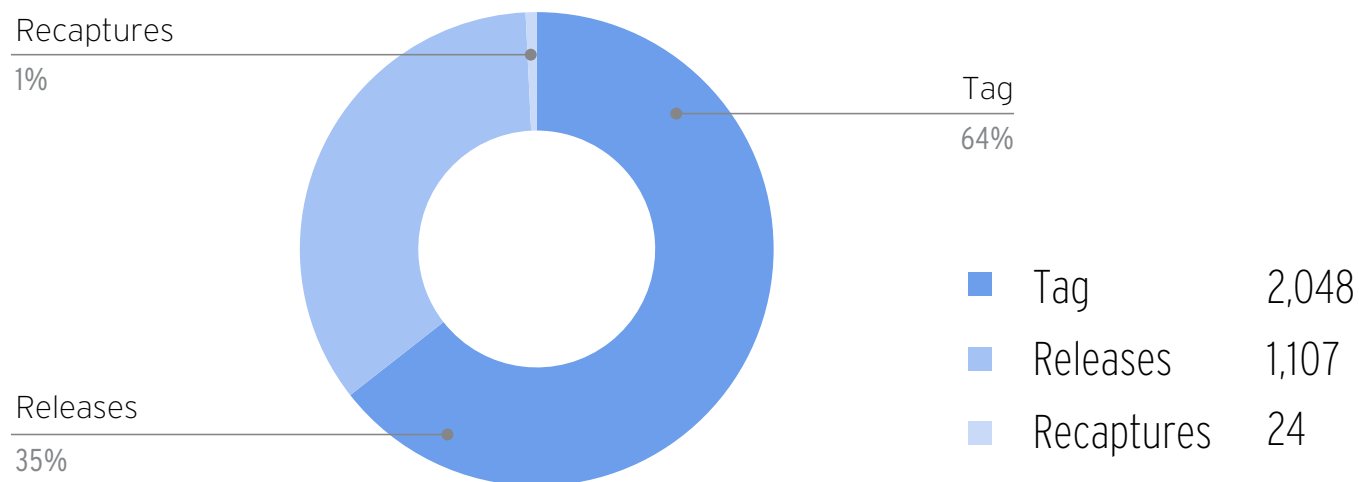
Blue Marlin // English // USA, Australia, USVI

Aguja Azul // Spanish // Dominican Republic, Mexico, Puerto Rico, Guatemala

Makaire Bleu // French // Cape Verde, France, Seychelles, Mauritius

Makajik // Japanese // Japan

The blue marlin is a species of billfish found in the tropical, subtropical, and temperate waters of every ocean. They are the largest species of billfish and are known for their substantial size and vibrant blue coloration. They are a highly sought after trophy fish with the data to prove it. In 2022 and 2023 there were 3,179 blue marlin tags, releases, and recaptures recorded. This makes up almost one-fifth of recorded species data in this time period.



As far as tags, releases, and recaptures, blue marlin records consisted of 2,048 tags, 1,107 releases, and 24 recaptures. Although blue marlin have a wide habitat range, there are favored spots where a majority of individuals will congregate. The majority of blue marlin were caught in the Gulf of Mexico and lower United States, Costa Rica, the Dominican Republic, and Hawaii. These regions have been blue marlin hotspots in the past, so these trends are on par with the expected species distribution.

Blue marlin have two subspecies, the Atlantic and Indo-Pacific blue marlin. These subspecies are isolated from one another but display very few genetic differences. Due to their habitat ranges in their respective oceans, these two subspecies are believed to rarely interact with each other. However, due to the lack of dissimilar genetic material, it is believed the subspecies could still reproduce if given the opportunity. This is thought to have happened in the few recorded instances of an Indo-Pacific blue marlin rounding the Cape of Good Hope and integrating with Atlantic blue marlin populations.¹

A lack of research on the genetic makeup of the two species lends itself to an open debate about the legitimacy of the development of two subspecies.



Photo courtesy of Clare Carter



Photo courtesy of Grander Marlin

Some consider blue marlin to be one species, with populations in all oceans. However, Atlantic blue marlin have much lower genetic diversity than their Indo-Pacific counterparts.² Genetic makeup has also proved that Pacific and Indian Ocean blue marlin populations are part of the same stock, with identical DNA material. Additionally, blue marlin from the Atlantic Ocean have different lateral lines than fish from the Indian and Pacific Oceans, indicating the two subspecies have enough of a genetic variance to display different features.³

Blue marlin are frequently caught by recreational anglers and are not particularly difficult to catch if you're in the right area. However, they will put up a massive fight when hooked up, making them a challenge many anglers want to conquer. With almost 70,000 blue marlin tags, releases, and recaptures in

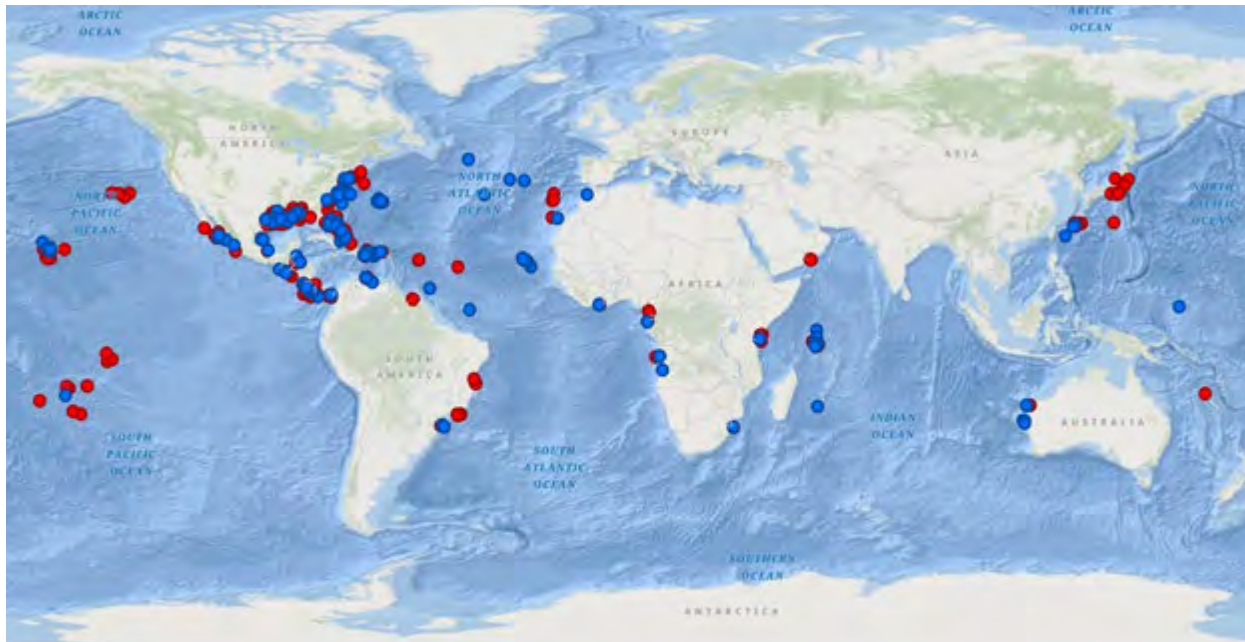
the TBF database, they are a species with no shortage of information, yet we still encourage anglers to submit as much blue marlin data as possible for regulatory measures and to fulfill research needs.

In 2022 and 2023, there were 24 blue marlin recaptures with seven of those being orphan tags, i.e. recaptures with no original tag reported.

1. Graves, J.E. Molecular insights into the population structures of cosmopolitan marine fishes. *Journal of Heredity*, Volume 89, Issue 5, September 1998.
2. Chen H, Chang CH, Sun CL, Shao KT, Yeh SZ, DiNardo G. Population Structure of Blue Marlin, *Makaira nigricans*, in the Pacific and Eastern Indian Oceans. *Zoological Studies*. August 2016.
3. Nakamura, I. FAO species catalogue. Vol1.5. 1985 Billfishes of the World. An annotated and illustrated catalogue of marlins, sailfishes, spearfishes and swordfishes known to date. FAO Fish.Synop. 1985.

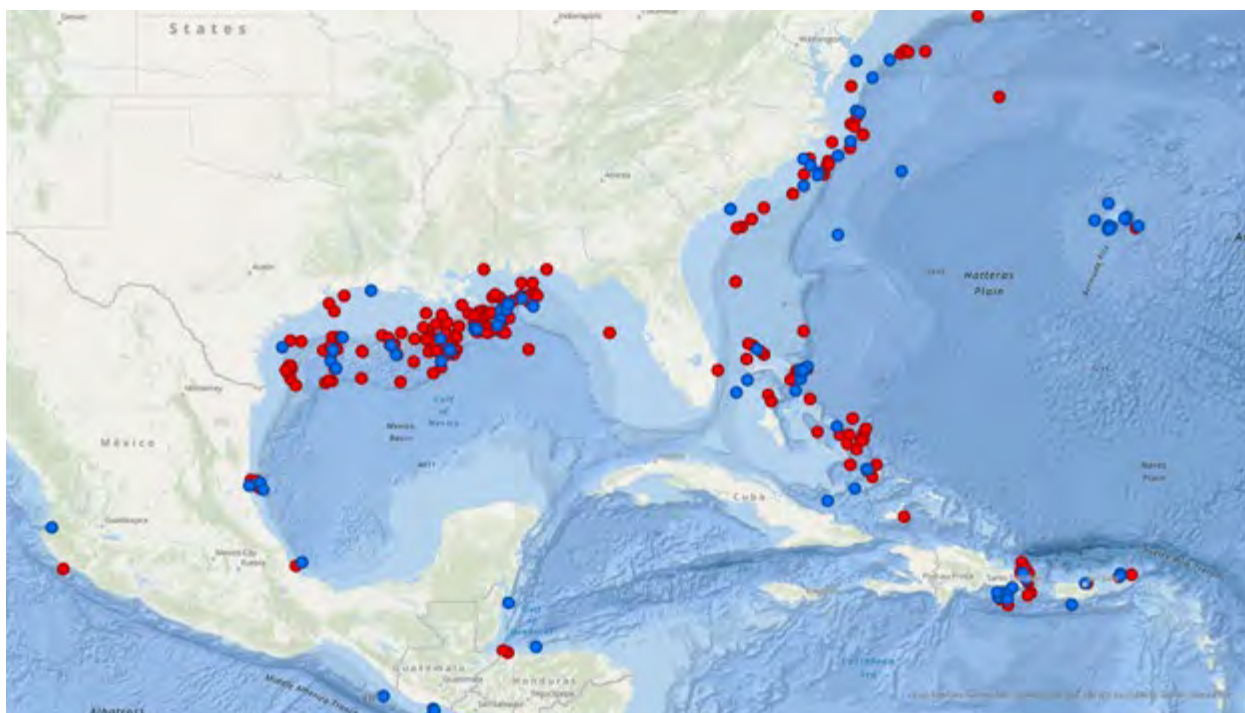
FUN FACTS ABOUT BLUE MARLINS

- » *Blue marlin can reach sizes of 16.5 feet and 1,800 pounds. Females are much larger than males.*
- » *Their top speed is 65 mph.*
- » *Male blue marlin have a lifespan of 18 years while females can live for 27 years.*
- » *Blue marlin are found in all oceans and they are solitary creatures.*



Overall Tag Distribution Map *Blue Marlin*

Blue marlin are found in every ocean. Tag and release reports most often come from the Gulf of Mexico, Central America, and Hawaii. Tags are in red, releases are in blue.



Tag Hotspot Map *Blue Marlin*

Tags and releases from North America and The Caribbean made up over one third of blue marlin reports in 2022 and 2023. Tags are in red, releases are in blue.

Recaptures *Blue Marlin*

BF496911

Tag Date & Location: 10/06/2012 in Desecho, Puerto Rico

Recapture Date & Location: 05/22/2023 in La Guaira, Venezuela

Days at Large: 3880

Est. Straight Line Distance: 446 nautical miles

Tag Boat: ISLAMAR

Recapture Boat: LIVE TO FISH

BF624343

Tag Date & Location: 12/15/2022 in the Dominican Republic

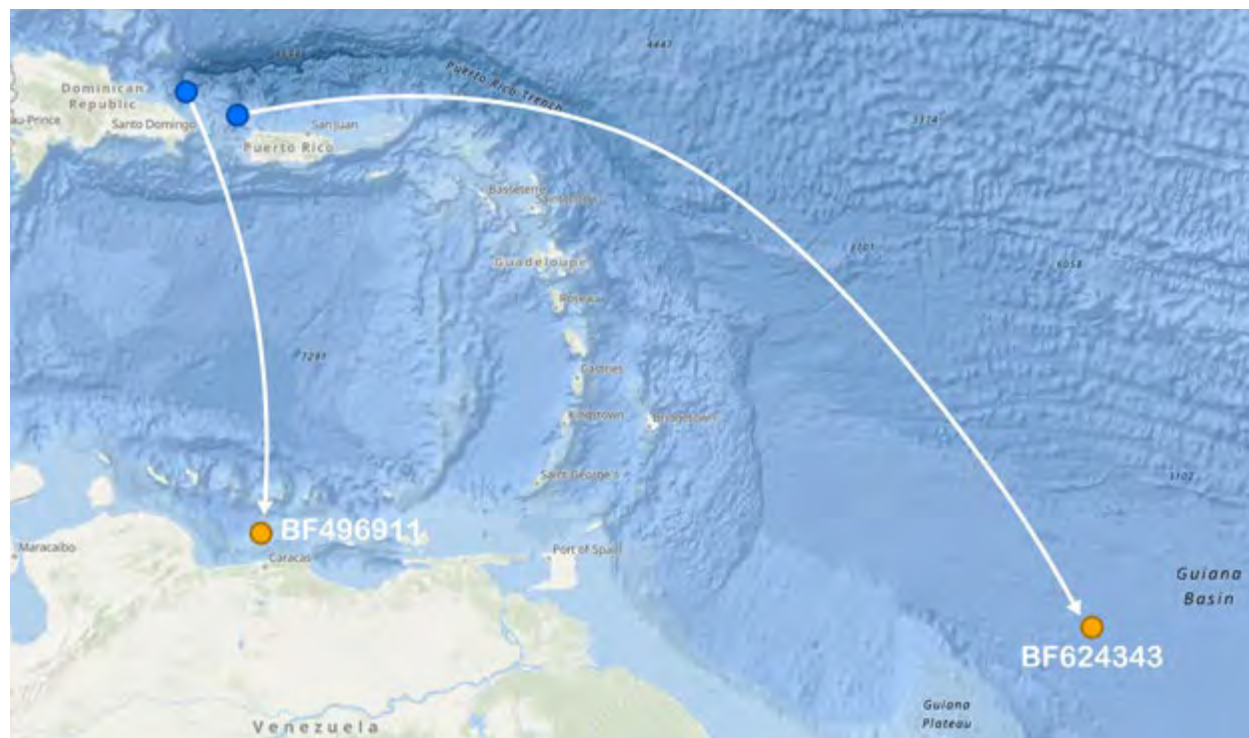
Recapture Date & Location: 11/10/2023 in the Atlantic Ocean

Days at Large: 330

Est. Straight Line Distance: 1203 nautical miles

Tag Boat: POLARIZER

Recapture Boat: BIG BEAR



BF636272

Tag Date & Location: 07/25/2021 in Macau, Dominican Republic

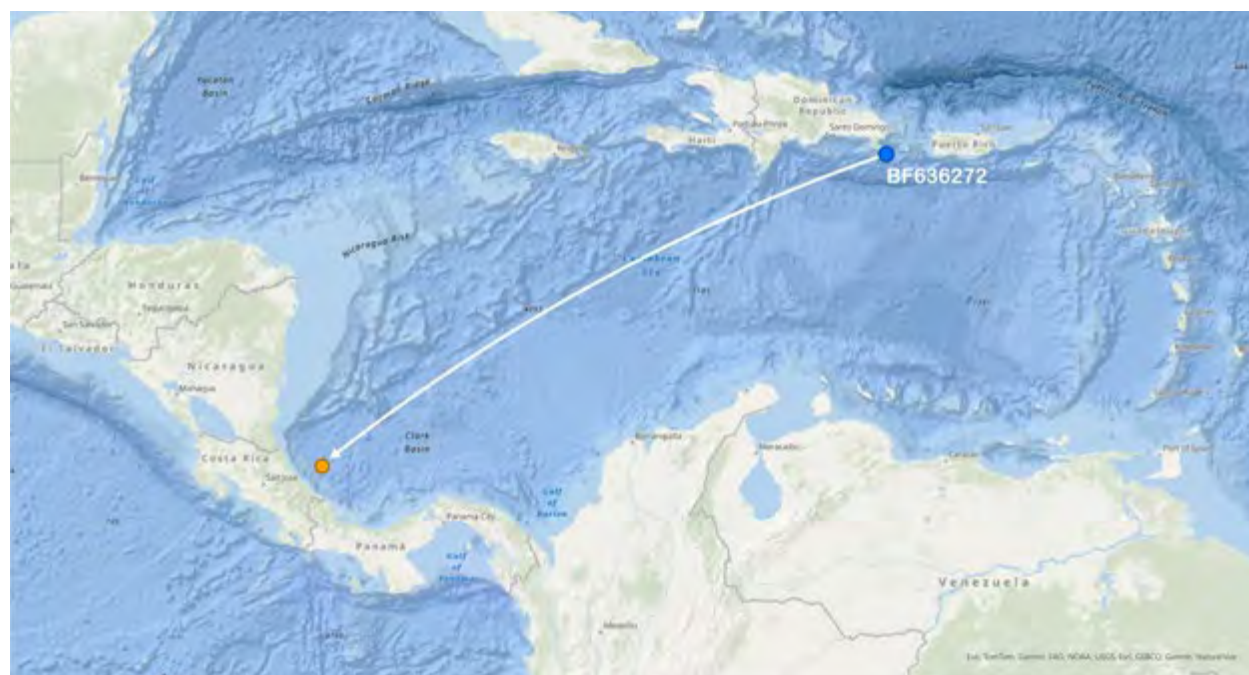
Recapture Date & Location: 03/12/2022 in Limon, Costa Rica

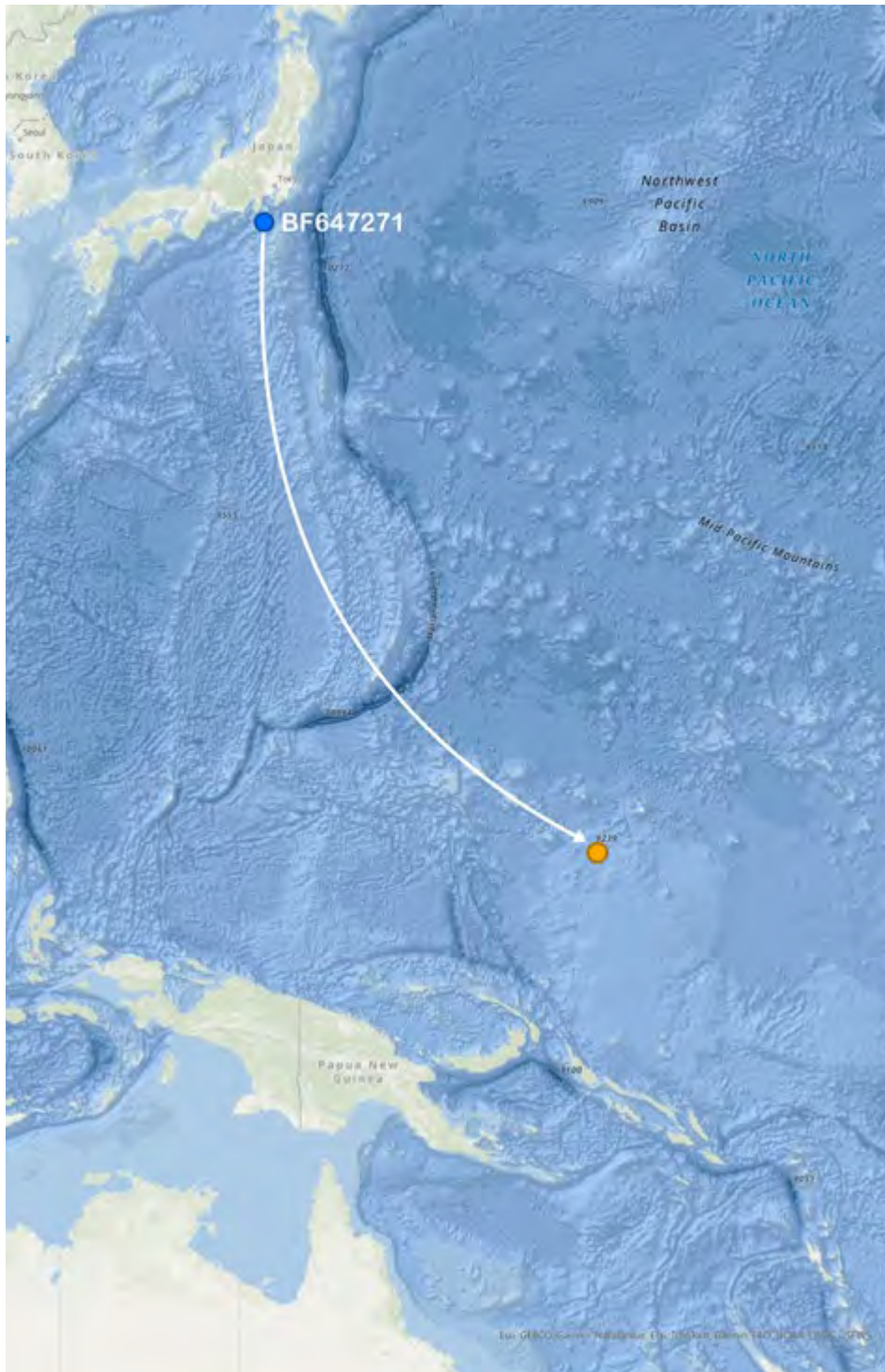
Days at Large: 230

Est. Straight Line Distance: 991 nautical miles

Tag Boat: SALTY FARE

Recapture Boat: NOT SPECIFIED





BF647271

Tag Date & Location: 08/07/2022 in Hyoutan, Japan

Recapture Date & Location: 08/19/2023 in Micronesia

Days at Large: 377

Est. Straight Line Distance: 2,032 nautical miles

Tag Boat: GOTCH

Recapture Boat: JAPANESE COMMERCIAL VESSEL



Photo courtesy of Antonio Amaral

SAILFISH

Istiophorus albicans (Atlantic Sailfish)

Istiophorus platypterus (Indo-Pacific Sailfish)



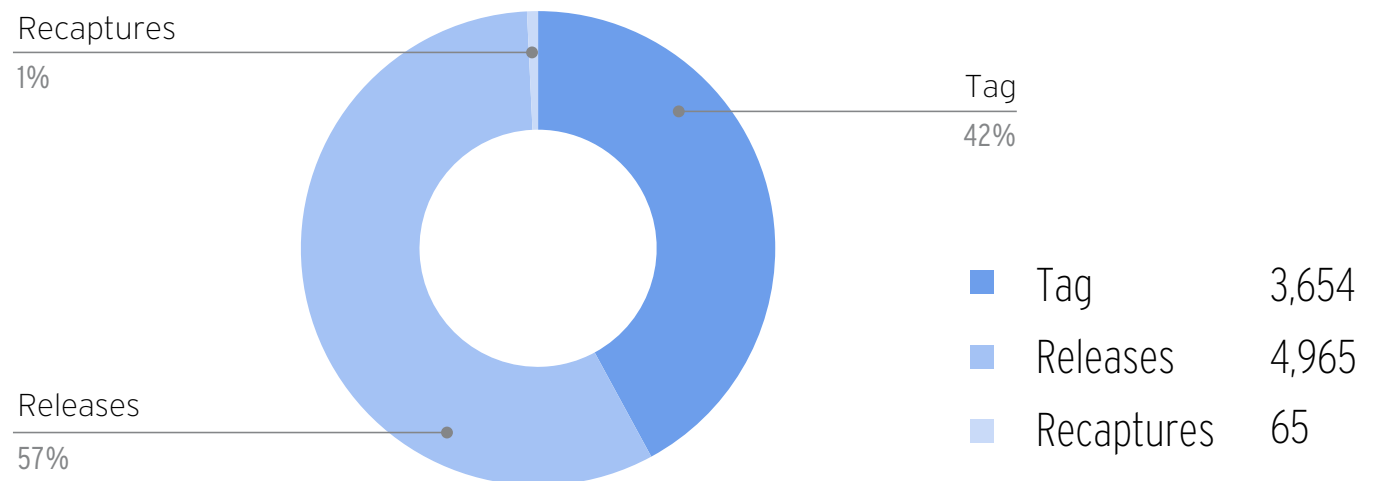
Sailfish // English // USA, Australia

Agulhão de Vela, Veleiro // Portuguese // Brazil, Portugal, Cape Verde, Angola

Aguja, Pez Vela // Spanish // Mexico, Dominican Republic, Costa Rica, Guatemala

Espadon // French // Morocco, Senegal

The sailfish is perhaps the most recognizable and iconic of all billfish. While other billfish have a pointed dorsal fin that hugs the spine, sailfish get their name from the characteristically large sail-like fin on their back. In addition, sailfish are the fastest fish in the world. Because of these characteristics, sailfish are one of the most targeted species of billfish. Between 2022 and 2023, there were 8,684 sailfish records added to the TBF database. That's almost half of all data entries in that timeframe.



Sailfish records in 2022 and 2023 consisted of 3,654 tags, 4,965 releases, and 65 recaptures. The majority of sailfish were caught in South Florida, Guatemala, and Costa Rica. This aligns with historical trends, highlighting consistency in sailfish hotspots.

There are two subspecies of sailfish, the Atlantic sailfish and Indo-Pacific sailfish. Similar to the differences between blue marlin subspecies, there is a debate between whether the subspecies breakdown of sailfish is legitimate. Although they vary slightly in appearance, there has been no differences found in genetic makeup or quantitative features. Some scientists recognize only a single species, while others believe the slight visual differences indicate genetic variations and prove two subspecies.¹

Atlantic sailfish have very specific migration patterns. In Eastern North America, Atlantic sailfish tend to live within the Gulf Stream. Their habitat range is dependent on water temperature movement. In the summers, sailfish will migrate north in the Gulf Stream and can be found far offshore in warmer waters. In the winter, Atlantic sailfish migrate south, preferring the mild winters of inshore tropical environments. That is why in Florida, there are specific months, typically October to April, that are known to be sailfish season.



Courtesy of Didrik Stavervik



Indo-Pacific sailfish are usually much darker toned than their Atlantic counterparts. Unsurprisingly, they have similar migration patterns to Atlantic sailfish, but without the Gulf Stream, Indo-Pacific sailfish are less reliant on temperature and current shifts to direct their movement. They are found in tropical and temperate environments, specifically in the waters of Central America. In Central America, these fish are most often caught during December to May. However, in countries like Guatemala and Costa Rica, anglers will likely catch sailfish year-round.

During months when sailfish come inshore, they tend to hang out in loose schools of up to a few dozen, making it possible for anglers to

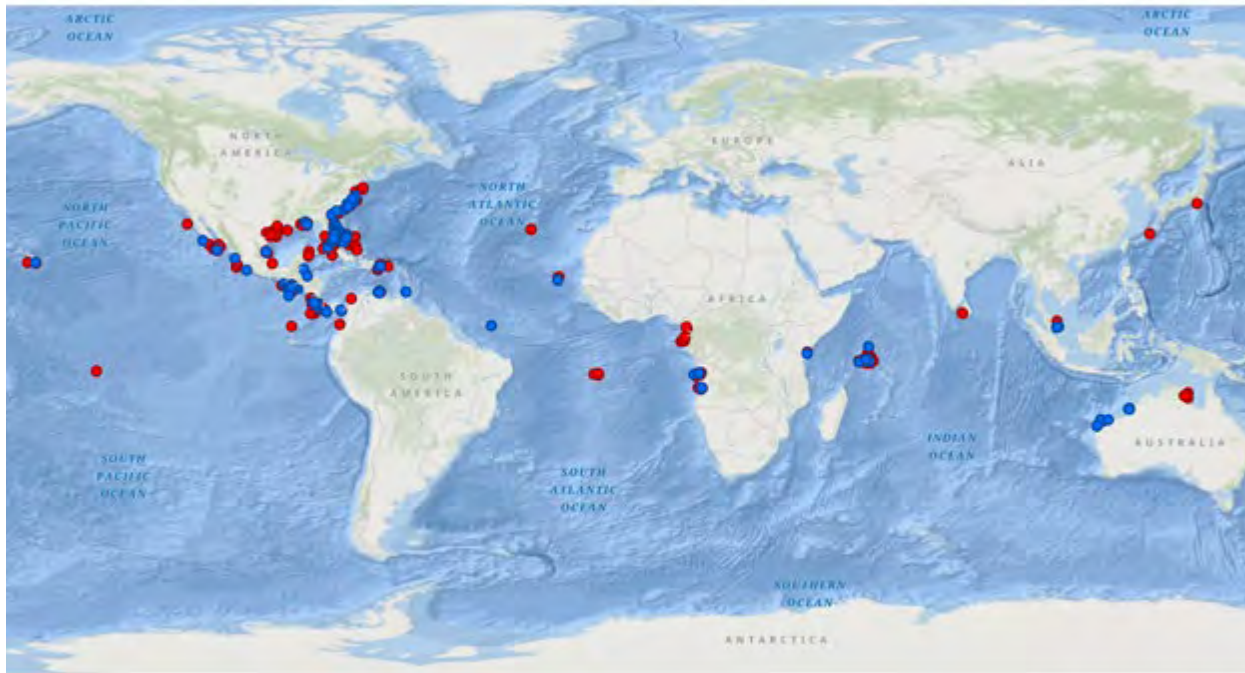
catch multiple sailfish in a few hours. They are a sought after fish and are loved for their unique appearance and acrobatic displays when hooked up. Sailfish are the most frequently tagged, released, and recaptured fish from TBF anglers. As a result, sailfish data far outweighs that of any other fish within the TBF database. Out of more than 290,000 billfish records in the system, sailfish records make up two-thirds of all data.

In 2022 and 2023, there were 65 sailfish recaptures with only five of those being orphan tags, i.e. recaptures with no original tag reported.

1. Nakamura, I. FAO species catalogue. Vol.1.5. 1985
Billfishes of the World. An annotated and illustrated catalogue of marlins, sailfishes, spearfishes and swordfishes known to date. FAO Fish.Synop. 1985.

FUN FACTS ABOUT SAILFISH

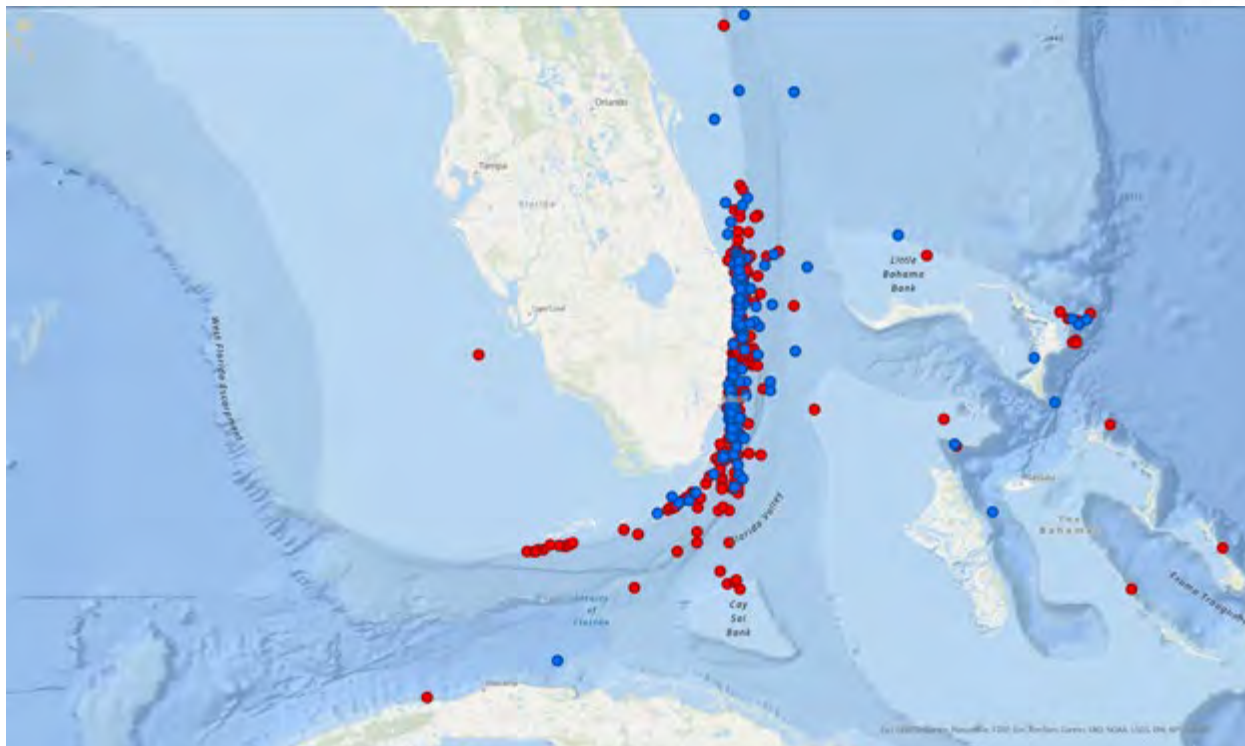
- » *Sailfish have a maximum size of 10 feet and 220 pounds.*
- » *Their top speed is 68 mph, making them the fastest species in the ocean.*
- » *Both males and females have a maximum lifespan of 15 years.*
- » *Sailfish hunt in packs, using their sails to corral schools of fish into tight balls, taking turns hunting.*



Bas: GIBCO, Garmin, Esri, TomTom, FAO, NOAA, USGS

Overall Tag Distribution Map *Sailfish*

Sailfish are found all over the world, yet tag and release reports tend to be concentrated within the United States and Central America. Additional hotspots include The Seychelles and Northern Australia. Tags are in red, releases are in blue.



Bas: GIBCO, Garmin, Esri, TomTom, FAO, NOAA, USGS

Tag Hotspot Map *Sailfish*

Tags are in red, releases are in blue. South Florida is a largely productive Atlantic sailfish fishery and the region of the world responsible for thousands of sailfish tags and releases. This corridor in 2022 and 2023 had almost two thousand combined tags and releases.

Recaptures *Sailfish*

BF614383

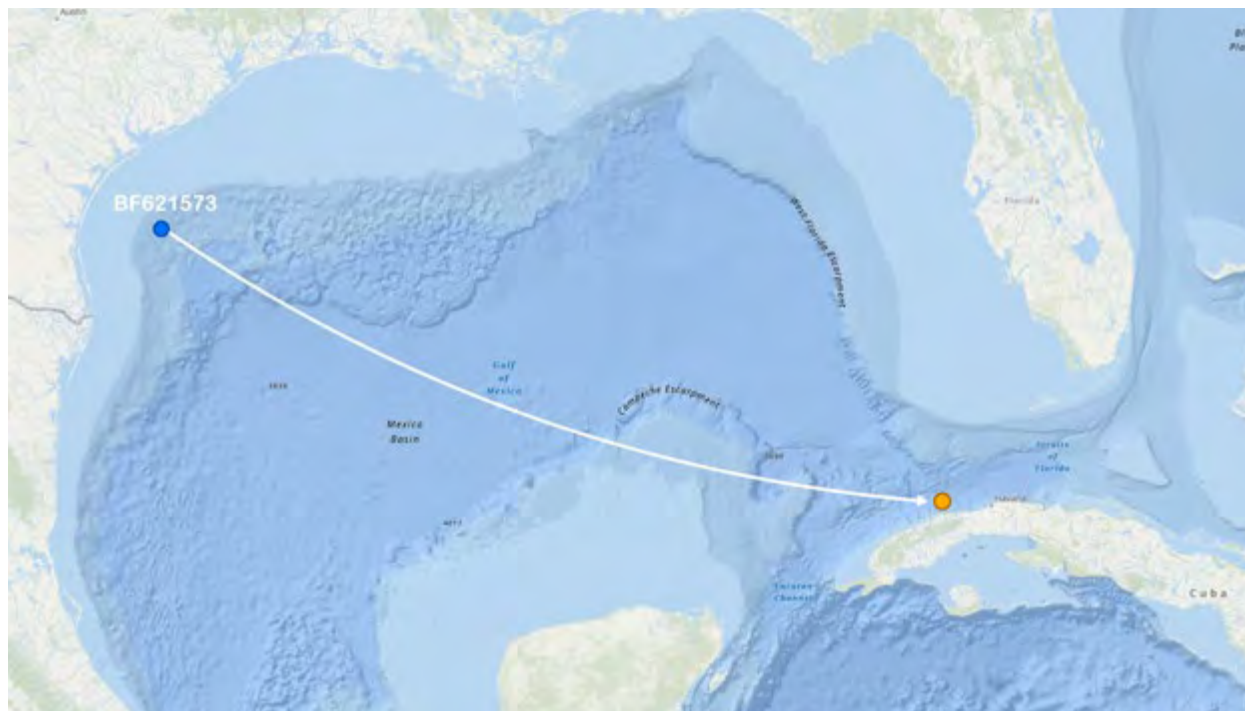
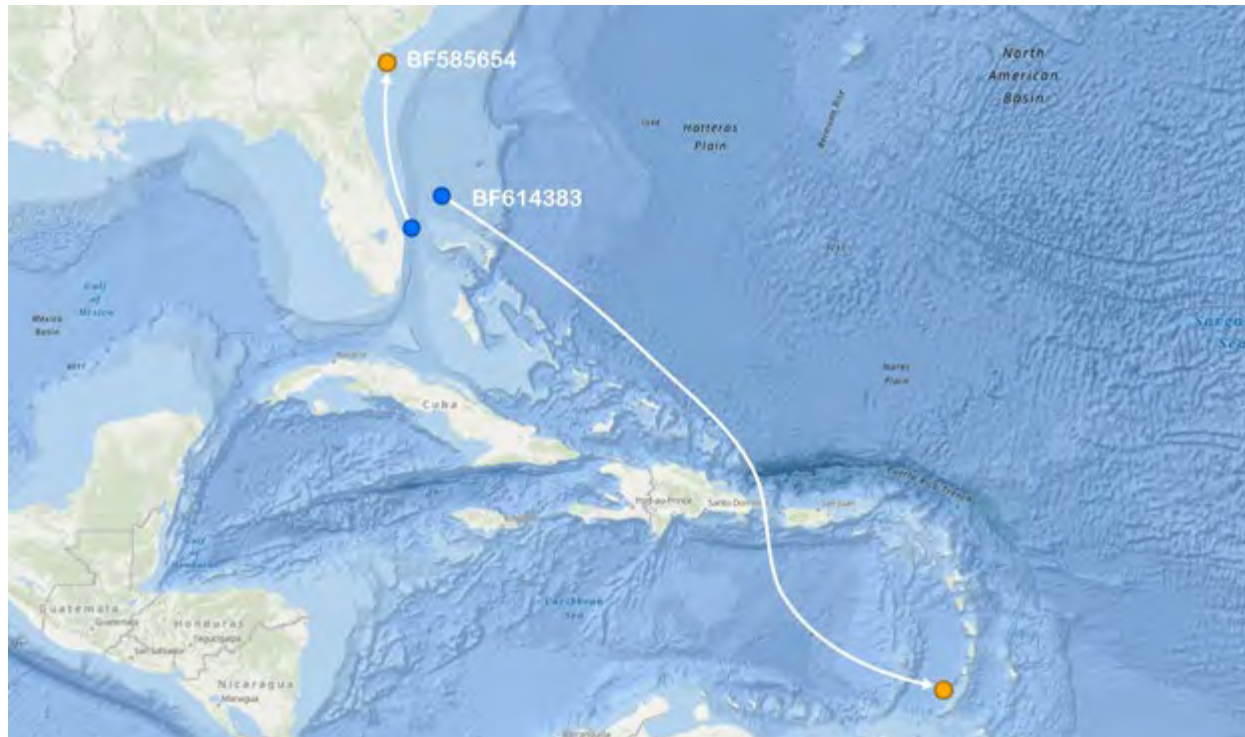
Tag Date & Location: 08/20/2021 in Fort Pierce, Florida
 Recapture Date & Location: 11/15/2022 in Grenada
 Days at Large: 452
 Est. Straight Line Distance: 1,444 nautical miles
 Tag Boat: SOUTHERN EAGLE
 Recapture Boat: HARMONY II

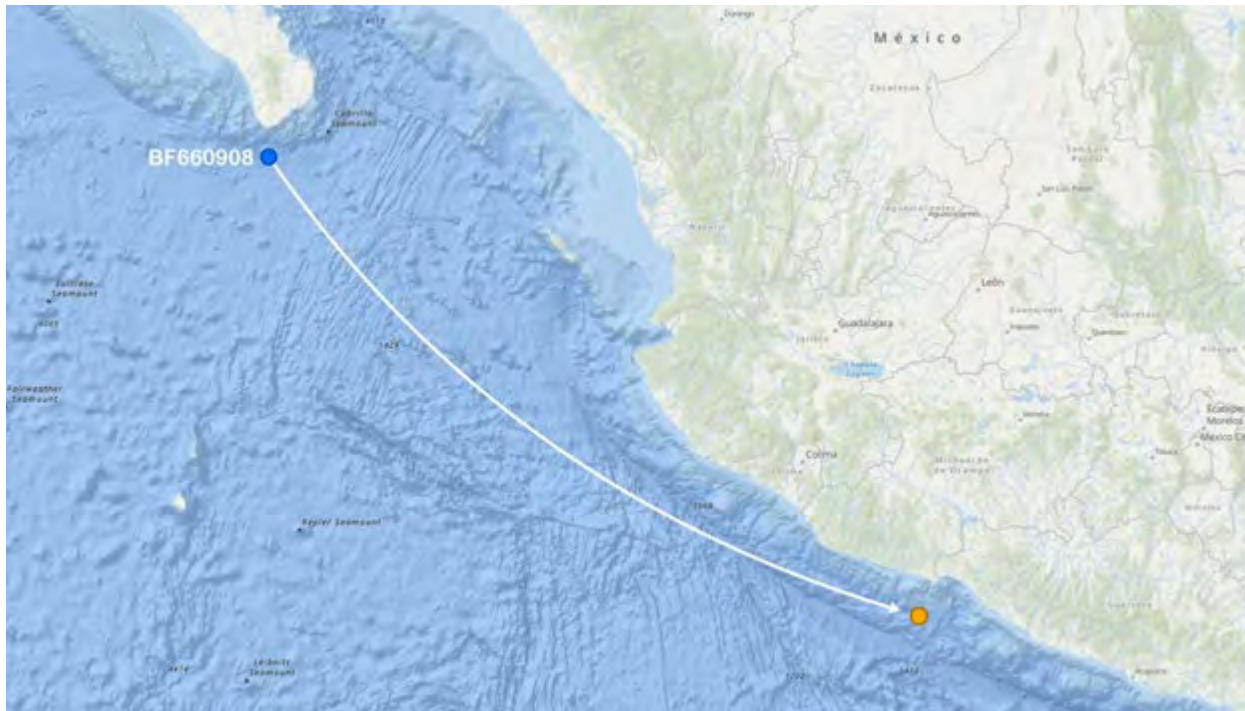
BF585654

Tag Date & Location: 03/30/2018 in Juno Beach, Florida
 Recapture Date & Location: 08/29/2022 in Savannah, Georgia
 Days at Large: 1613
 Est. Straight Line Distance: 322 nautical miles
 Tag Boat: POLARIZER
 Recapture Boat: TRASHMAN

BF621573

Tag Date & Location: 07/19/2021 in Port Aransas, Texas
 Recapture Date & Location: 02/07/2022 in Mariel, Cuba
 Days at Large: 203
 Est. Straight Line Distance: 812 nautical miles
 Tag Boat: MOJO
 Recapture Boat: NOT SPECIFIED





BF660908

Tag Date & Location: 08/14/2023 in Cabo San Lucas, Mexico

Recapture Date & Location: 11/13/2023 in
Lazaro Cardenas, Mexico

Days at Large: 91

Est. Straight Line Distance: 553 nautical miles

Tag Boat: BIG OH

Recapture Boat: MAHI MAHI



Courtesy of Didrik Stavervik

SPEARFISH

Tetrapturus pfluegeri (Longbill Spearfish)

Tetrapturus angustirostris (Shortbill Spearfish)

Tetrapturus georgii (Roundscale Spearfish)

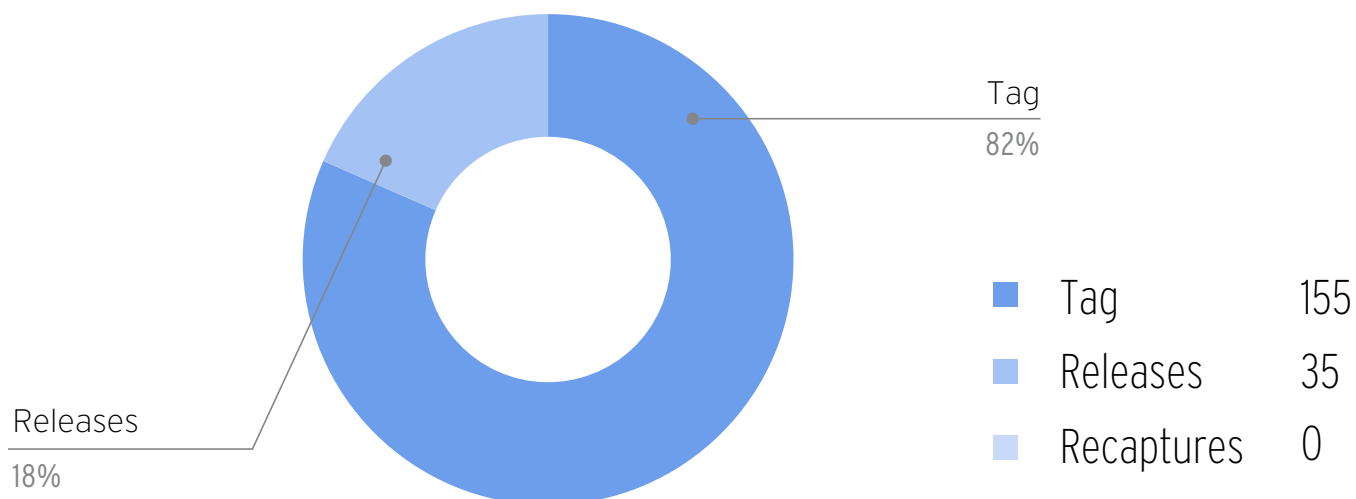
Tetrapturus belone (Mediterranean Spearfish)



Spearfish, Hatchet Marlin // English // USA, Australia

Aguja Picuda, Marlin Trompa Corta // Spanish // Spain, Mexico

The spearfish is the most uncommon of all billfish. With four distinct subspecies, all spearfish tend to be very slender with dorsal fins that span the length of their body. Although all types of spearfish have bills, only the longbill spearfish has a bill that extends noticeably past the lower jaw. Spearfish have bills that are far less prominent than other billfish species. Between the four subspecies, spearfish can be found in every ocean. However, they are extremely uncommon to catch and not often targeted, two aspects that are reflected in 2022 and 2023 catch data. Over the two-year span, only 190 spearfish records were added to the TBF database.



Spearfish records are few and far between. The 190 entries consist of 155 tags, 35 releases, and zero recaptures. Because there are four subspecies of spearfish, these tags and releases are distributed globally. But like in years past, there are population hotspots shown in Hawaii and Spain. Spearfish records make up the smallest percentage not only of 2022 and 2023 data, but of the TBF database as well.

Although spearfish records are rare, that does not mean spearfish are threatened by any means. Rather, they are just an elusive species! And while three of the spearfish subspecies have been globally known for centuries (shortbill, longbill, and Mediterranean spearfish), the roundscale spearfish was not classified as a species until 2006. Roundscale spearfish look virtually identical to white marlin. This misidentification of roundscale spearfish for white marlin has been taking place for centuries. Through a slight visible difference in scales, fins, and position of the anus, scientists were able to prove the roundscale spearfish was a unique species, but anglers often interchange these two species during data reporting.¹

It is difficult for anglers to tell the difference between a roundscale spearfish and a white marlin without the fish being removed from the water, which is heavily





discouraged. With this being the case, it is impossible to know how many white marlin tags in the TBF database are representative of roundscale spearfish.

Other species of spearfish are more easily identifiable. Unlike most billfish species, the spearfish is small and slender with a dorsal fin that is relatively consistent in height down the entire length of their spine. They have the smallest bill-to-body length ratio average of all billfish species. When combined, their range covers all oceans. These fish are rarely targeted exclusively, with only a few anglers and captains solely fishing for spearfish.

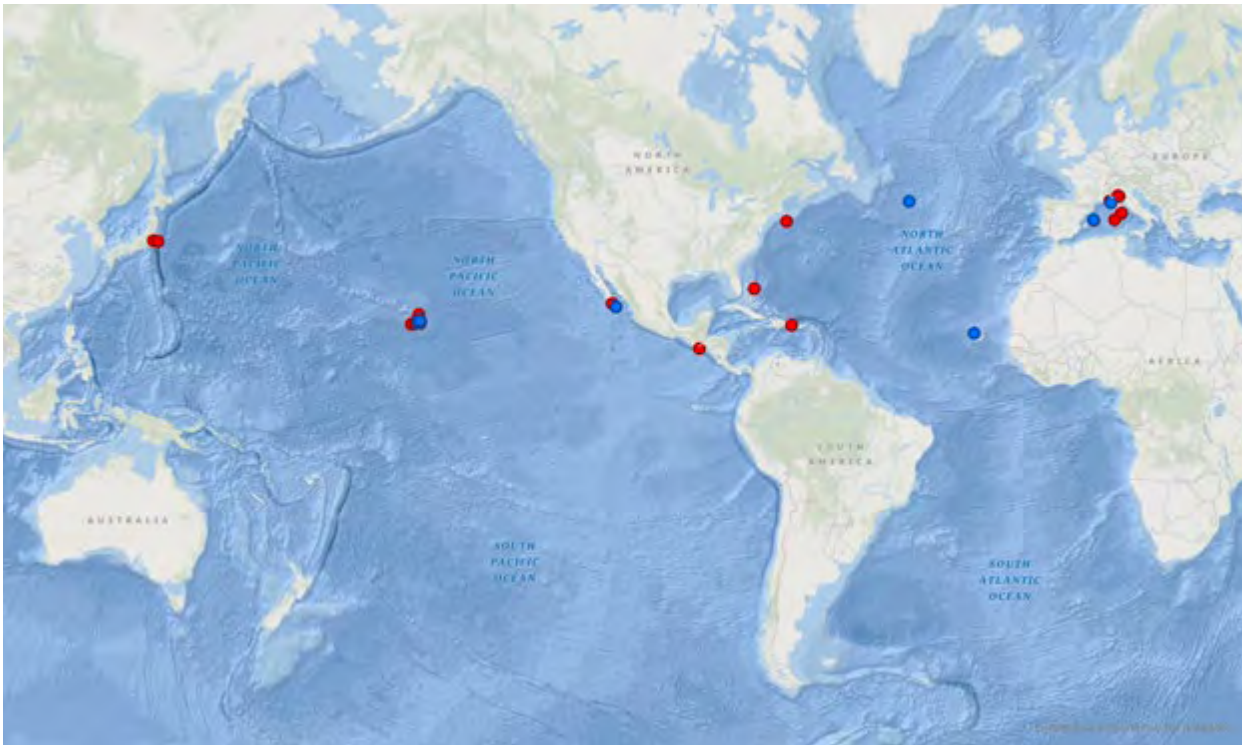
Mediterranean spearfish, like other spearfish species, are an elusive species targeted by only a handful

of captains. They spend their entire lives within the Mediterranean Sea and are most frequently caught as bycatch of yellowfin tuna. Shortbill spearfish are found in the Indian and Pacific Oceans and are immediately recognizable by a bill that extends only a few centimeters past their lower jaw. The longbill spearfish is found in the Atlantic Ocean and is the most easily identifiable of all spearfish species. They share traits with other spearfish species, namely their slim bodies and small size.

1. Shivji, Mahmood S. Validity, identification, and distribution of the roundscale spearfish, *Tetrapturus georgii* (Teleostei: Istiophoridae): morphological and molecular evidence. *Bulletin of Marine Science*. November 2006.

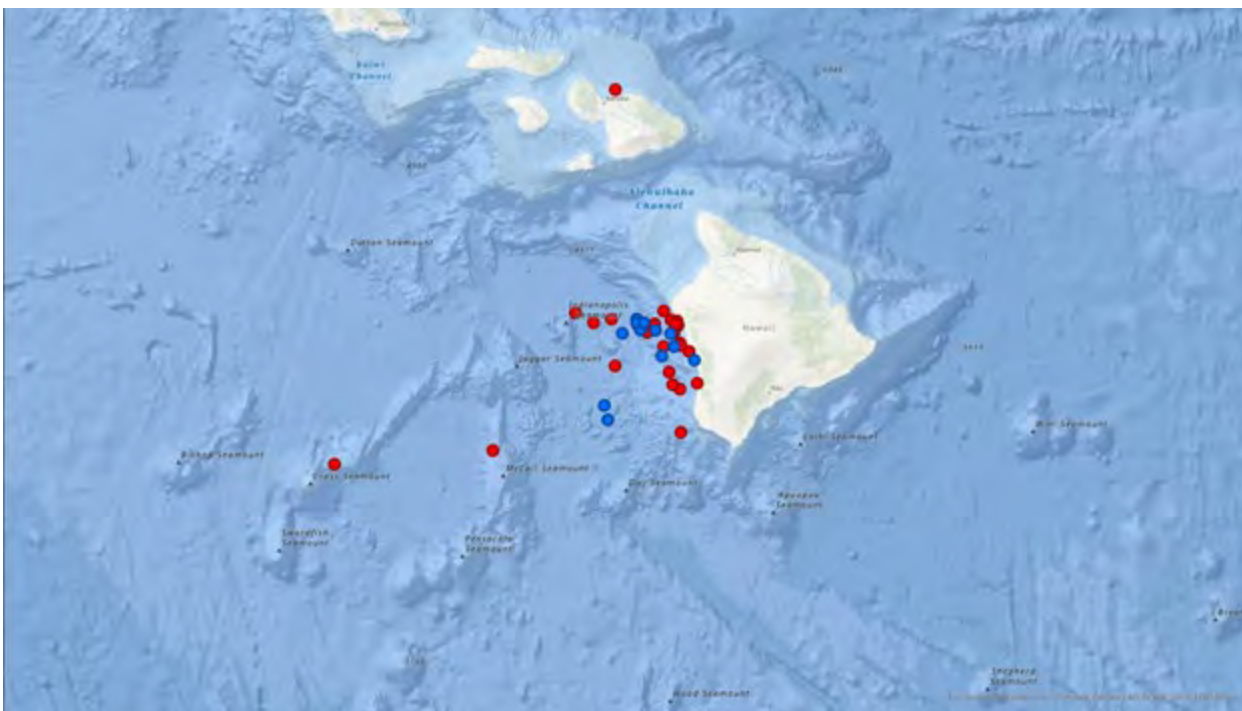
FUN FACTS ABOUT SPEARFISH

- » *Spearfish have a maximum size of eight feet and 150 pounds.*
- » *Their top speed is unknown.*
- » *They have an estimated lifespan of about five years.*
- » *All four subspecies of spearfish are highly elusive, they are the least reported of all billfish species.*



Overall Tag Distribution Map *Spearfish*

With four subspecies, spearfish can be found all over the world, yet they are the most elusive of all billfish species. Tags and releases of their Mediterranean and Hawaiian populations are the most frequently reported. Tags are in red, releases are in blue.



Tag Hotspot Map *Spearfish*

Almost every year, the highest concentrations of spearfish reports come from Hawaii's Kona coastline. Tags are in red, releases are in blue.

STRIPED MARLIN

Kajikia audax



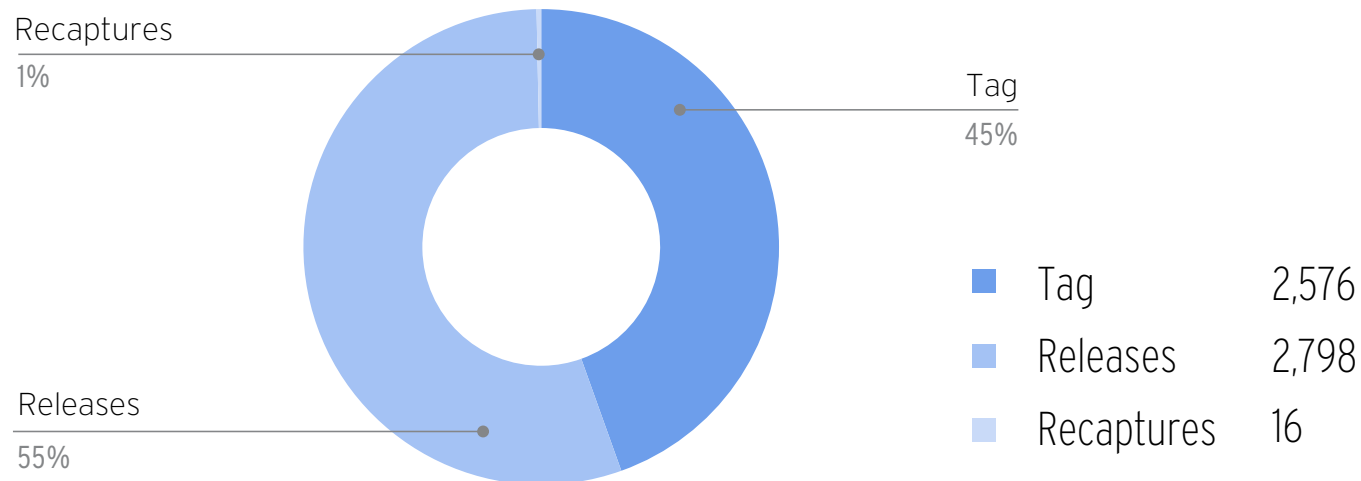
Striped Marlin // English // USA, Australia

Marlina Rayado // Spanish // Mexico

Nairagi // Hawaiian // Hawaii

Makijiki // Japanese // Japan

The striped marlin is a subspecies of billfish native to the Pacific and Indian Oceans. They are named for their 12-20 vertical stripes on the sides of their bodies. These stripes contain chromatophores, which are specialized pigmentation cells. When these cells expand and contract, they produce an array of colors, ranging anywhere from electric blue to a faded lavender. Striped marlin colors can reflect the emotional state of the fish; when a striped marlin's stripes are extremely vibrant, this can indicate the fish is excited, agitated, or on the hunt.



Striped marlin tend to swim and hunt in schools, making it easy to catch multiple in one day. With that being the case, in 2022 and 2023 there were 5,390 new striped marlin records added to the TBF database. That number is broken down between 2,576 tags, 2,798 releases, and 16 recaptures. Striped marlin hotspots were in Mexico and Japan. This is the same as in years past, indicating that habitat locations for striped marlin are staying the same.

This species tends to be on the smaller side of billfish species, with a maximum weight of about 450 pounds and 12 feet. They spend almost all of their time on the ocean's surface, hunting both during the day and at night. Even though they prefer the surface, striped marlin have been tracked performing extreme daily vertical migration patterns. They display unique diving behaviors, spending only a few minutes at depth per dive.



Courtesy of James Ferrara



Striped marlin are an interesting species because unlike most other billfish, they are frequently seen hunting in packs. A school of dozens of striped marlin will descend on a bait ball, taking turns attacking their prey. Using techniques similar to sailfish, striped marlin will work in pairs or small groups to corral their prey into a tight ball so other marlin can more easily hunt. They take turns with this process, perhaps even using their color changing capabilities as a form of communication while on the offense.^{1,2,3}

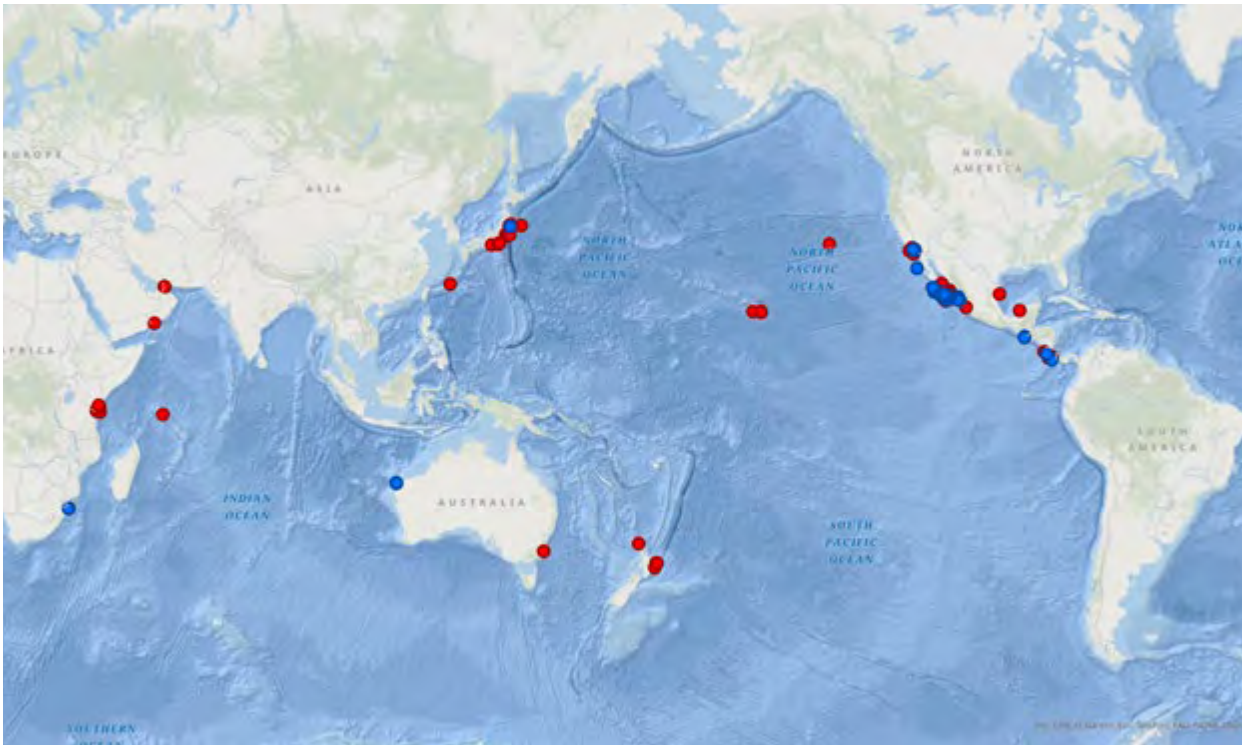
Striped marlin data makes up about one fourth of all of the data within the TBF database. Even so, we are always looking for new information on striped marlin, so we encourage anglers and

captains to continue reporting their data. In 2022 and 2023, there were 16 striped marlin recaptures with five of those being orphan tags, i.e. recaptures with no original tag reported. All recaptures took place in the water of Baja California Sur.

1. Alicia L. Burns, Max Licht, Robert J.P. Heathcote, Jens Krause, Matthew J. Hansen. Rapid color change in a group-hunting pelagic predator attacking schooling prey. *Current Biology*, Volume 34, Issue 4, 2024.
2. Hansen, M.J., Krause, S., Dhellemmes, F. et al. Mechanisms of prey division in striped marlin, a marine group hunting predator. *Commun Biol* 5, 1161. 2022.
3. M. J. Hansen et al. Linking hunting weaponry to attack strategies in sailfish and striped marlin. *The Royal Society B: Biological Sciences*. 2020.

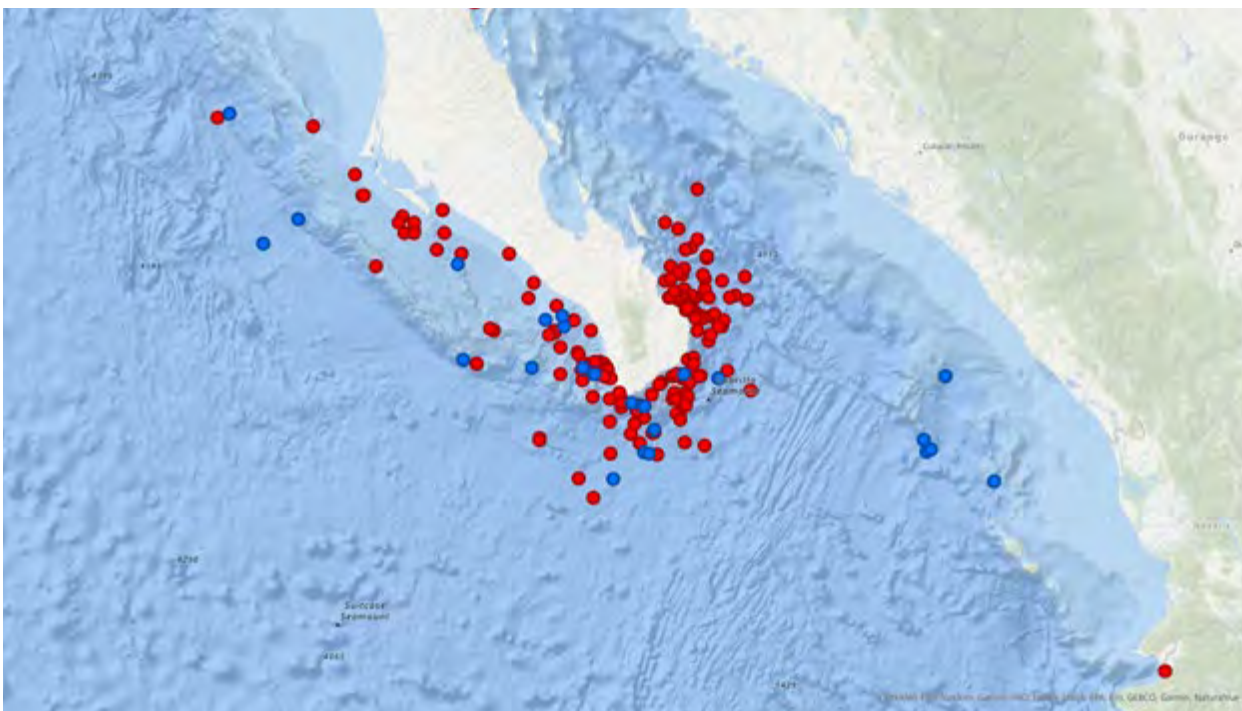
FUN FACTS ABOUT STRIPED MARLIN

- » *Striped marlin have a maximum size of 13 feet and 490 pounds.*
- » *Their top speed is 50 mph.*
- » *Both male and female striped marlin have a lifespan of about 20 years.*
- » *Striped marlin display extreme daily vertical migration patterns.*



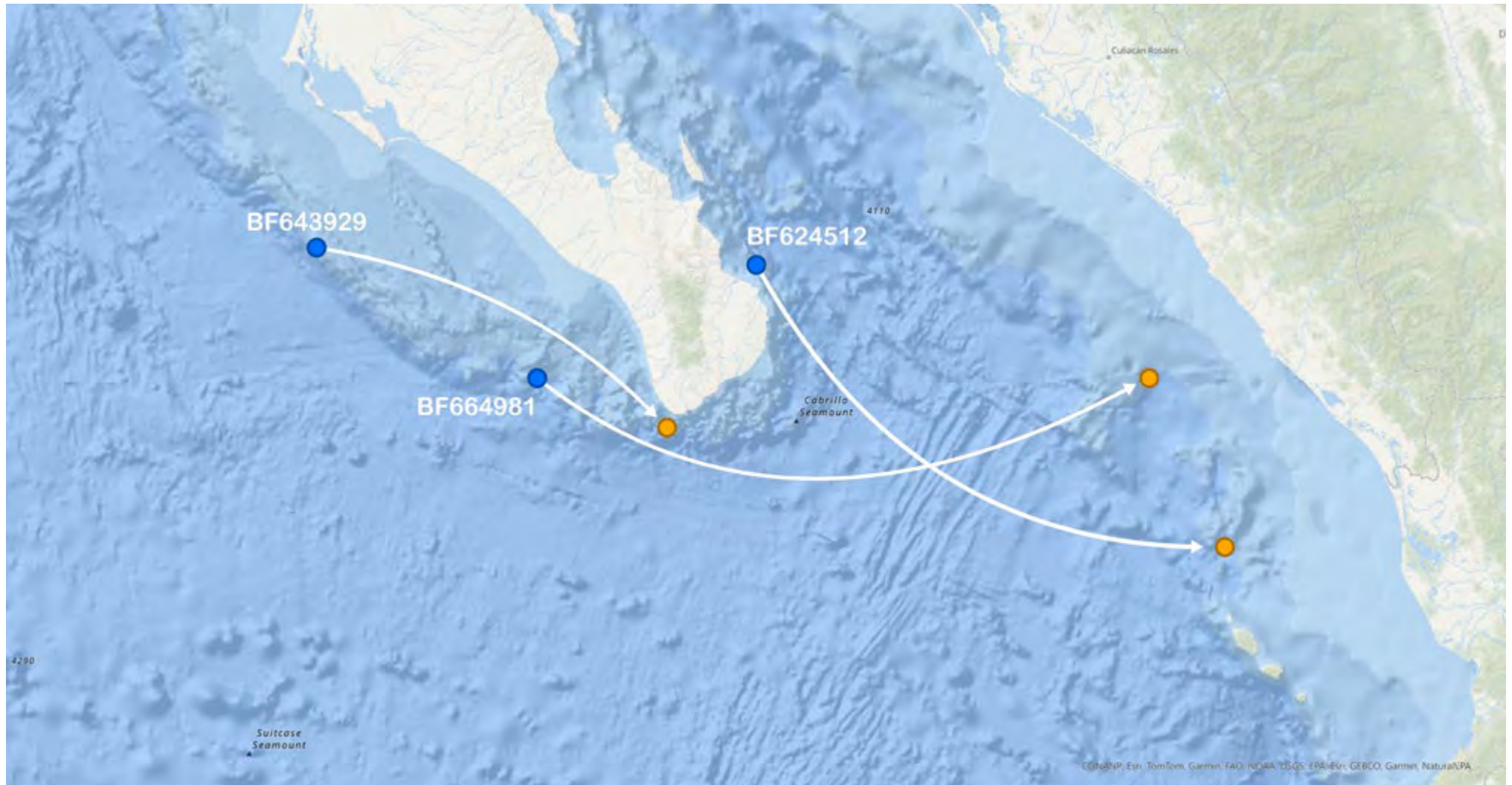
Overall Tag Distribution Map *Striped Marlin*

Striped Marlin are found in the Pacific and Indian Oceans, and tend to be reported most frequently from Mexico and Japan.



Tag Hotspot Map *Striped Marlin*

Baja California Sur is one of the most productive striped marlin fisheries in the world, as shown in this data. Releases are often reported in groups, so each release point is representative of a dozen releases. Tags are in red, releases are in blue.



Recaptures *Striped Marlin*

BF624512

Tag Date & Location: 09/24/2021 in East Cape Baja Mexico

Recapture Date & Location: 12/31/2022 in Mazatlan, Mexico

Days at Large: 445

Est. Straight Line Distance: 190 nautical miles

Tag Boat: EL LOCO

Recapture Boat: DON CHON

BF664981

Tag Date & Location: 01/29/2023 in Finger Bank, Mexico

Recapture Date & Location: 11/21/2023 in Mazatlan, Mexico

Days at Large: 23

Est. Straight Line Distance: 220 nautical miles

Tag Boat: EIGHT EIGHTS

Recapture Boat: DON CHON

BF643929

Tag Date & Location: 12/02/2021 in Magdalena Bay, Mexico

Recapture Date & Location: 01/21/2021 in Cabo San Lucas, Mexico

Days at Large: 50

Est. Straight Line Distance: 160 nautical miles

Tag Boat: FISH TANK

Recapture Boat: NOT SPECIFIED



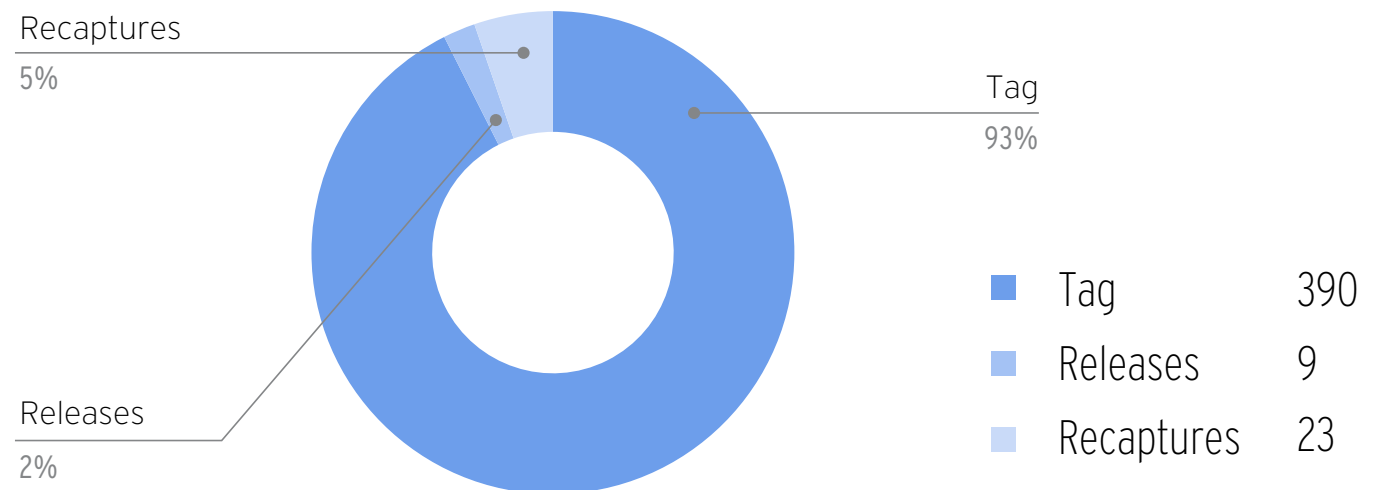
SWORDFISH

Xiphias gladius



Swordfish, Broadbill // English // USA, Australia
 Espada, Pez Espada // Spanish // Spain, Mexico
 Espadon // French // France, Cape Verde
 Pesce Spada // Italian // Italy

The swordfish is the most unique of all billfish subspecies. It shares the least amount of genetic material with the other six primary types of billfish. Swordfish are found globally and tend to live far down in the water column, often found several thousand feet below the surface. They are traditionally caught at nighttime when they come to the surface to feed. However, in the last few decades, daytime swordfishing has become popularized and anglers have started to target swordfish at greater depths. Daytime swordfishing hotspots include South Florida, where it was created, as well as the US East Coast, and the Gulf of Mexico.



Due to their unique depth preference, swordfish have different physiological features than other billfish species, a fact that lends them to not be considered a “true” billfish. Swordfish are born with scales and teeth, but as they get older, these features regress back into their bodies. So unlike other billfish, mature swordfish have no teeth or scales. Additionally, they have a specialized blood system that directs blood specifically to their eyes and brain. This allows them to conserve energy in colder temperatures by directing heat to only organs essential for deep diving. They are also quite large, with the capability to grow to an estimated maximum size of 1,200 pounds and 14 feet.

Swordfish are the species of billfish with the highest pressure from the commercial fishing industry. They are the most frequently eaten of all billfish, yet thankfully they continue to have stable population levels. With that being said, they are still an underrepresented species in the TBF database as many recreational anglers will harvest their swordfish catch. Between 2022 and 2023, there were





422 swordfish records added to the TBF database. This number is the sum of 390 tags, nine releases, and 23 recaptures.

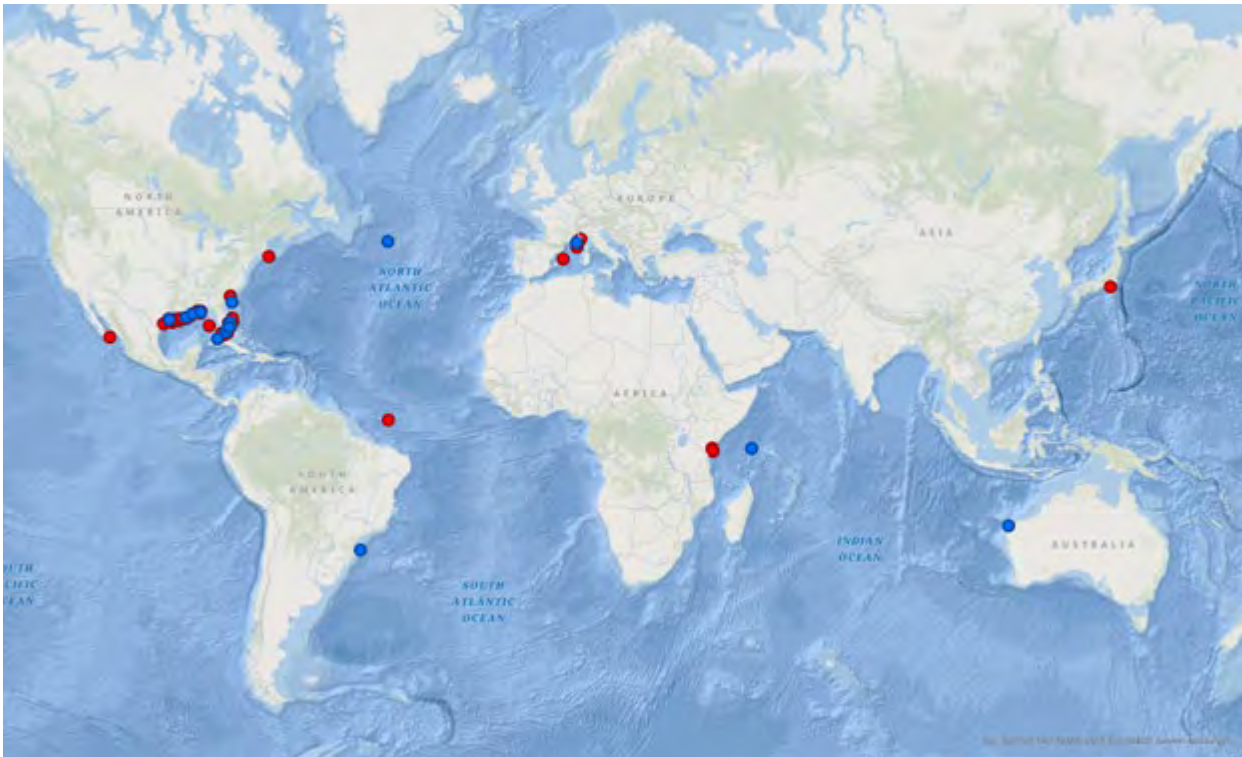
Not only can swordfish be found at a large range of depths, but they also have the most expansive habitat of all billfish. They can be found in every ocean, from areas in Canada to the bottom of South America and everywhere in between. Swordfish reporting hotspots in 2022 and 2023 were in South Florida, the Gulf of Mexico, and France. This has remained consistent throughout the last few years, indicating strong populations in these areas.

Due to the value of their meat, there are not a large number of anglers who tag and release swordfish. With that being the case, we encourage anglers to submit their swordfish release reports to TBF. Release information can be just as important as tagging.

In 2022 and 2023, there were 23 swordfish recaptures with four of those being orphan tags, i.e. recaptures with no original tag reported.

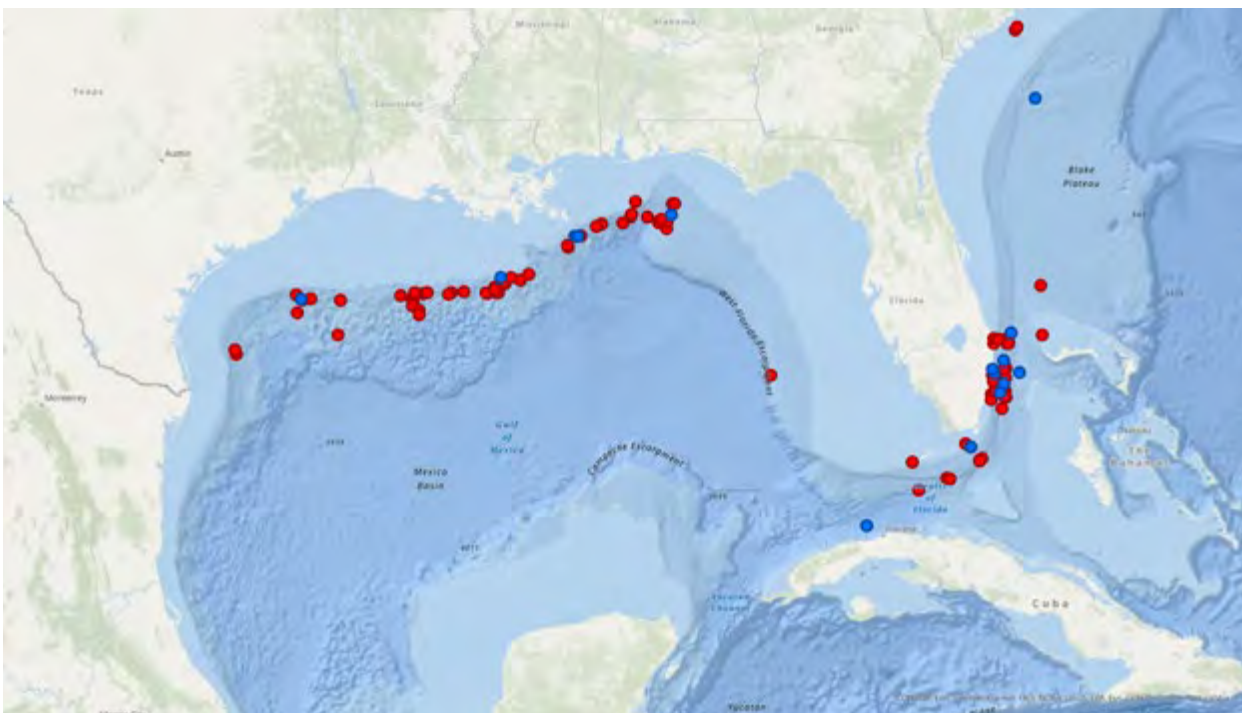
FUN FACTS ABOUT SWORDFISH

- » *Swordfish have a maximum size of 14 feet and 1,200 pounds.*
- » *Their top speed is 50 mph.*
- » *Female swordfish can live for 16 years, while the lifespan of males is about 12 years.*
- » *Swordfish typically live far below the surface of the ocean, unlike other billfish that utilize the top one hundred feet of the water column.*



Overall Tag Distribution Map *Swordfish*

Swordfish are found in every ocean and in a large range of environments and depths. The majority of reports received by TBF come from the Gulf of Mexico and South Florida.



Tag Hotspot Map *Swordfish*

The Gulf of Mexico and South Florida are two places where daytime swordfishing has become extremely popularized, allowing swordfish to be caught at any time. Tags are in red, releases are in blue.

Recaptures *Swordfish*

BF650198

Tag Date & Location: 10/03/2022 in Port Aransas, Texas

Recapture Date & Location: 06/09/2023 in Matagorda Island, Texas

Days at Large: 249

Est. Straight Line Distance: 524 nautical miles

Tag Boat: DIRTY MONEY

Recapture Boat: MISS RITA



BF626575

Tag Date & Location: 12/23/2021 in Islamorada, Florida

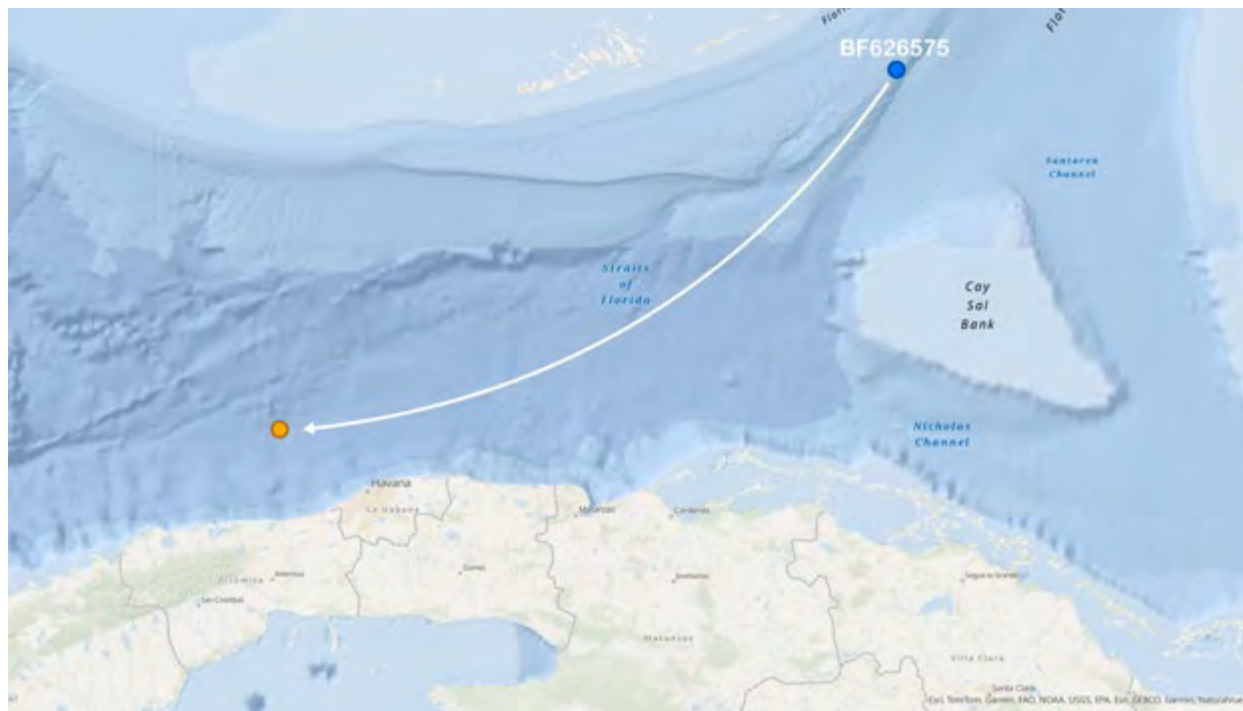
Recapture Date & Location: 02/17/2023 in Mariel, Cuba

Days at Large: 421

Est. Straight Line Distance: 167 nautical miles

Tag Boat: BROAD MINDED

Recapture Boat: EL DORADO





BF645878

Tag Date & Location: 10/16/2022 in Islamorada, Florida
 Recapture Date & Location: 05/16/2023 in Boynton Beach, Florida
 Days at Large: 212
 Est. Straight Line Distance: 130 nautical miles
 Tag Boat: BROAD MINDED
 Recapture Boat: NOT SPECIFIED

BF645872

Tag Date & Location: 09/04/2022 in Islamorada, Florida
 Recapture Date & Location: 12/02/2022 in Hillsboro Beach, Florida
 Days at Large: 89
 Est. Straight Line Distance: 122 nautical miles
 Tag Boat: BROAD MINDED
 Recapture Boat: NOT SPECIFIED

BF626576

Tag Date & Location: 12/31/2021 in Islamorada, Florida
 Recapture Date & Location: 09/07/2022 Boynton Beach, Florida
 Days at Large: 258
 Est. Straight Line Distance: 125 nautical miles
 Tag Boat: BROAD MINDED
 Recapture Boat: NOT SPECIFIED

WHITE MARLIN

Kajikia albida



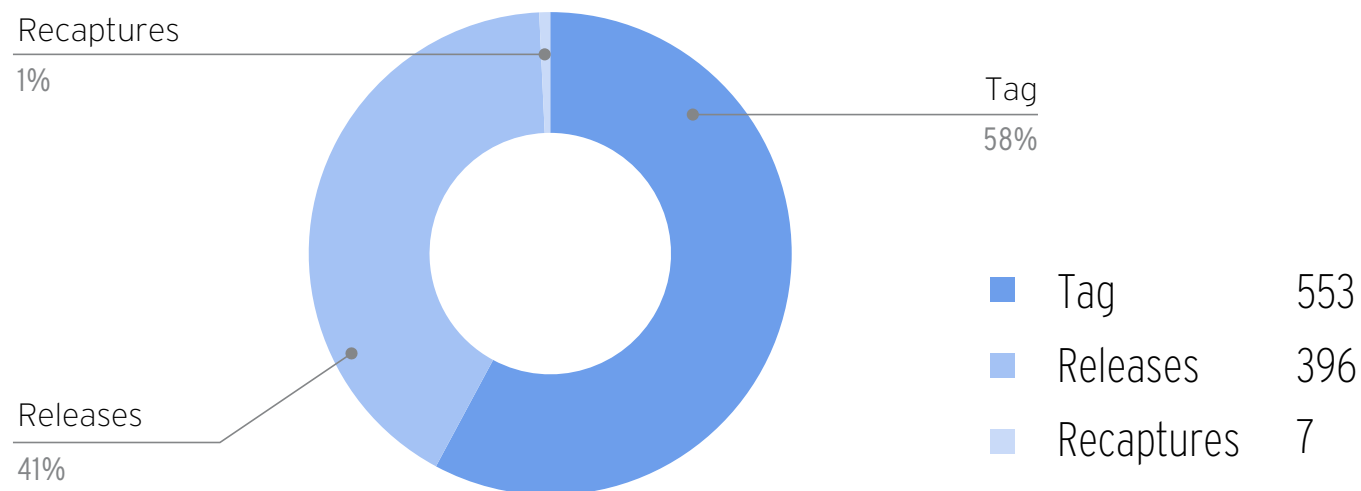
White Marlin // English // USA

Aguja Blanca // Spanish // Spain, Mexico, Puerto Rico

Espadon // French // Morocco, France

Agulhao Branco // Portuguese // Portugal, Brazil

Found only in the Atlantic Ocean, the white marlin is a small species of billfish known for their stark white bodies and hatchet-shaped dorsal fin. Often confused with roundscale spearfish, white marlin share many characteristics with the roundscale. White marlin have slender bodies, reaching maximum sizes of nine feet and 180 pounds. They are almost always found in the top of the water column, typically diving no deeper than 100 meters under the surface.



In the US East Coast, white marlin are often fished for as a tournament species. In 2022 and 2023, there were a total of 956 new white marlin records added to the TBF database. This number is the total of 553 tags, 396 releases, and seven recaptures. They are most often caught in the Mid-Atlantic region of the United States between the small window of June to September. Almost all white marlin reports in 2022 and 2023 came from Morocco, the Dominican Republic, the Gulf of Mexico, and the Mid-Atlantic, reflecting the same population hotspots as previous years.

White marlin are not schooling fish but are sometimes seen swimming in pairs. They are persistent hunters and will often attack bait multiple times before attempting to consume the fish. In addition, they display a unique technique called “tailing”, a tactic where they swim at the surface of the ocean with their dorsal fin out of the water. While this behavior can happen as a white marlin is hunting, they are known to tail while casually swimming as well. It is unknown why white marlin do this, as this is a technique most often seen in fish that live in extremely shallow waters, not in the open ocean.



Photo courtesy of Harry Hindmarsh



Because of their tendency as a tailing fish, white marlin are often seen by anglers way before they strike any bait. This makes them a fun species to fish for! White marlin are small and nimble, enabling them to perform extreme acrobatics while hooked.

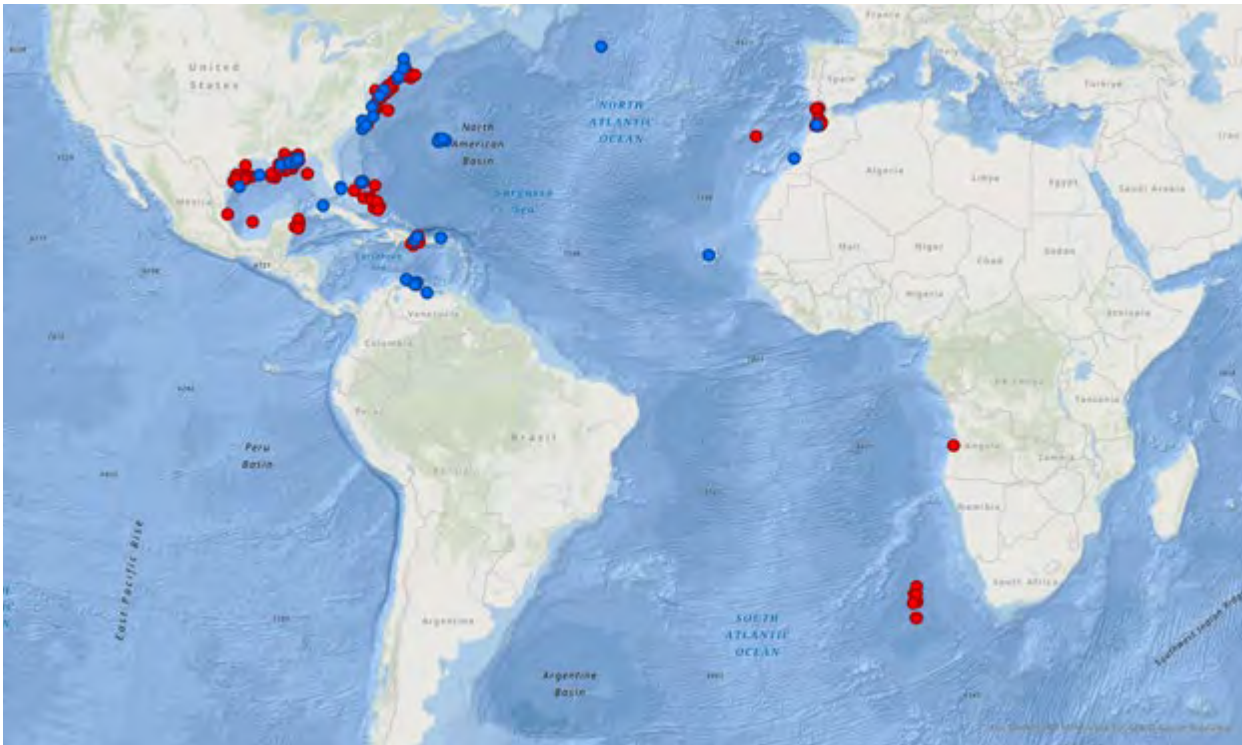
It is believed about one-fourth of all white marlin reportings are actually roundscale spearfish. Most anglers can only identify this species correctly by taking the fish out of the water, which we at TBF do not encourage. This can be extremely damaging to the fish and shorten their lifespan. With this being

the case, we are never sure exactly how many white marlin records we have in our database. However, we still encourage anglers and captains to report any tag and release data they have with this species, as this will help further understand this species and hopefully provide us with more information that can help differentiate the two species.

In 2022 and 2023, there were seven white marlin recaptures with five of those being orphan tags, i.e. recaptures with no original tag reported.

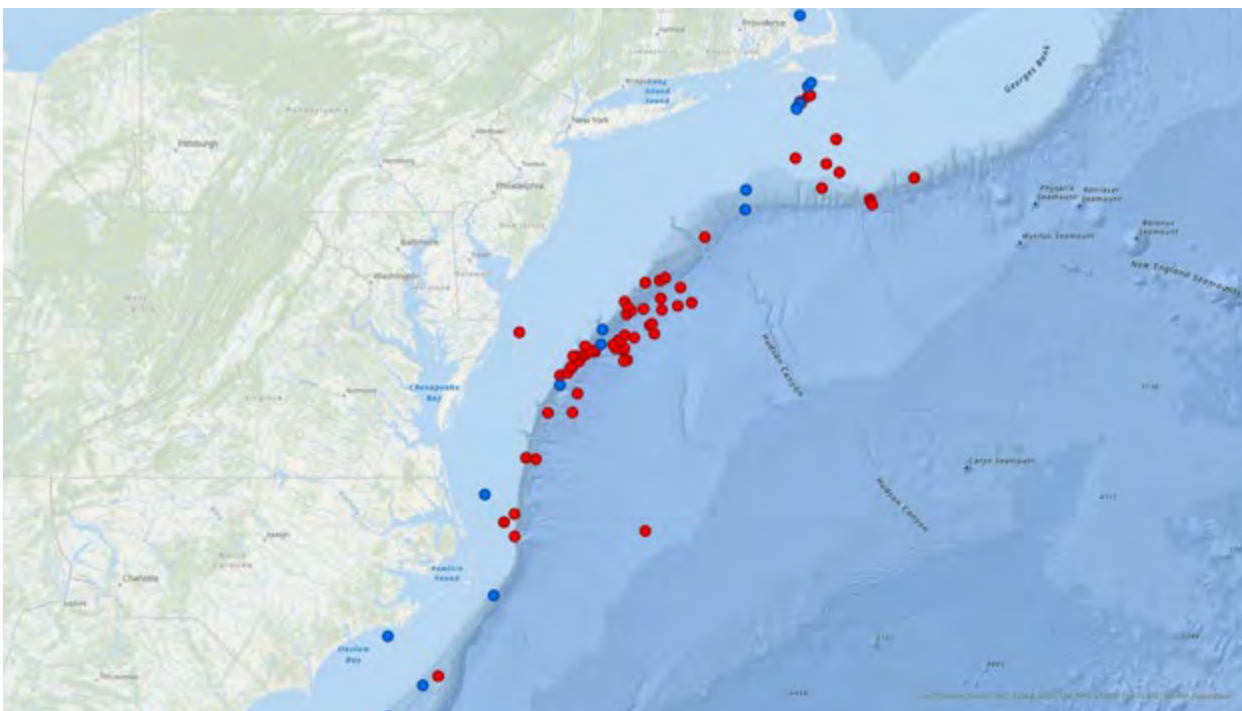
FUN FACTS ABOUT WHITE MARLIN

- » *White marlin have a maximum size of nine feet and 180 pounds.*
- » *Their top speed is 50 mph.*
- » *White marlin have been recorded living up to 15 years but it is believed their maximum lifespan is 30 years.*
- » *White marlin often display a behavior called “tailing,” where they swim at the surface with their fins above the water.*



Overall Tag Distribution Map *White Marlin*

White marlin are only found in the Atlantic Ocean. Hotspots for these fish include the Gulf of Mexico, the Mid-Atlantic, Morocco, and the Dominican Republic.



Tag Hotspot Map *White Marlin*

Like many pelagic species, white marlin thrive in areas with notable seafloor topography. The continental shelf dropoff in the Mid-Atlantic region of the United States serves as a productive fishery for white marlin. Tags are in red, releases are in blue.



Photo courtesy of Stuart Simpson



Photo courtesy of Stuart Simpson



Photo courtesy of Stuart Simpson



Photo courtesy of Stuart Simpson

BLUEFIN TUNA

Thunnus thynnus (Atlantic Bluefin Tuna)

Thunnus orientalis (Pacific Bluefin Tuna)

Thunnus maccoyii (Southern Bluefin Tuna)



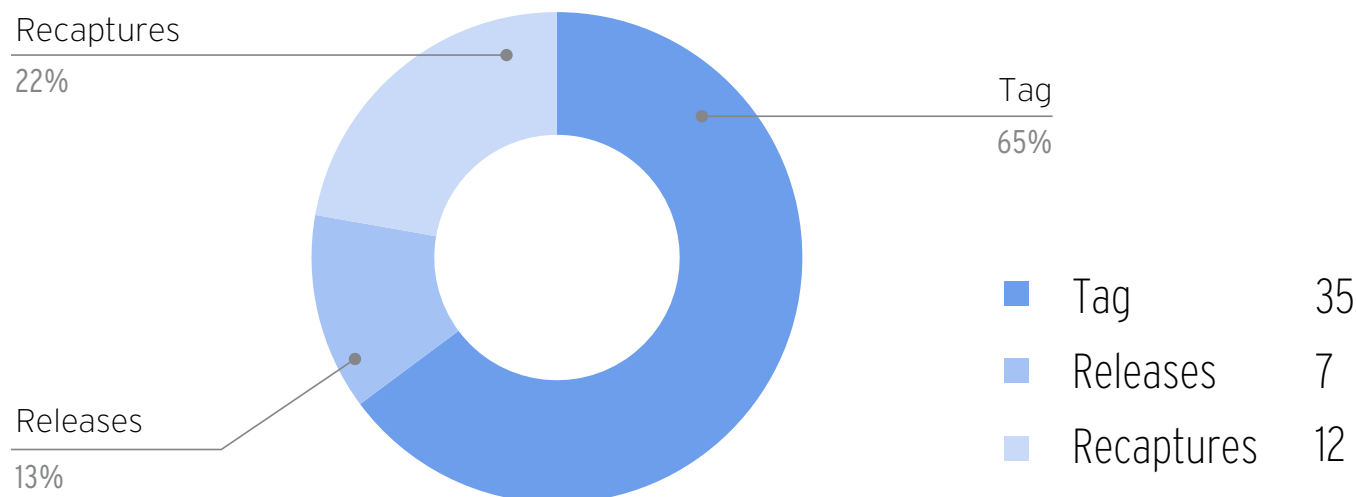
Bluefin Tuna, Bluefin // English // USA, Canada

Aleta Azul, Atun // Spanish // Spain, Mexico

Thone // French // France

Kuromaguro // Japanese // Japan

Although the bluefin tuna is not a billfish, there are still some anglers and captains in our volunteer community who tag and release these fish. With that being said, there were 54 records of bluefin tuna added to the TBF database between 2022 and 2023. That number is broken down between 35 tags, seven releases, and 12 recaptures. A majority of our bluefin tuna reports in our database primarily come from the Northeastern United States and Nova Scotia, thanks to the Large Pelagic Research Center and Dr. Lutcavage.



Like billfish, bluefin tunas are pelagic species. Their global populations often share habitats with various billfish species, and it is not uncommon for anglers to catch a billfish and a tuna on the same day. The majority of bluefin tuna records in the TBF database are on Atlantic bluefin tuna, specifically on the Eastern North America coastline.

Bluefin tuna are a highly migratory species of pelagic fish found globally. They are characterized by their torpedo-esque body shape, small yellow finlets, crescent shaped tail, and short pectoral fins. They are countershaded with deep blue coloring and gold highlights. Their blood vessels run through their muscles, causing bluefin tunas to have dark red meat.

There are three subspecies of bluefin tunas; the Atlantic bluefin, the Pacific bluefin, and the southern bluefin. There are three global



Photo courtesy of @Seataceans

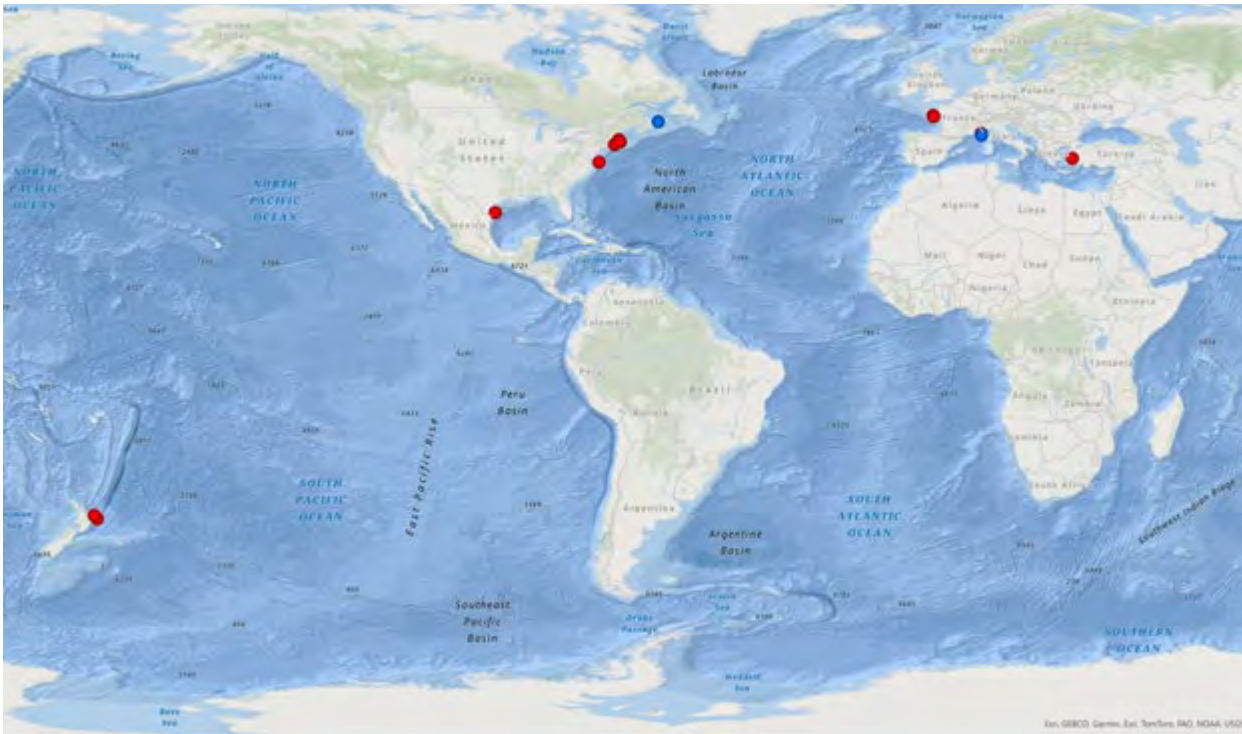


stocks of bluefin tuna; western Atlantic, eastern Atlantic, and Pacific. Bluefin tuna can reach sizes up to 2,000 pounds and 14 feet.

In 2022 and 2023, there were 12 bluefin tuna recaptures with nine of those being orphan tags, i.e. recaptures with no original tag reported.

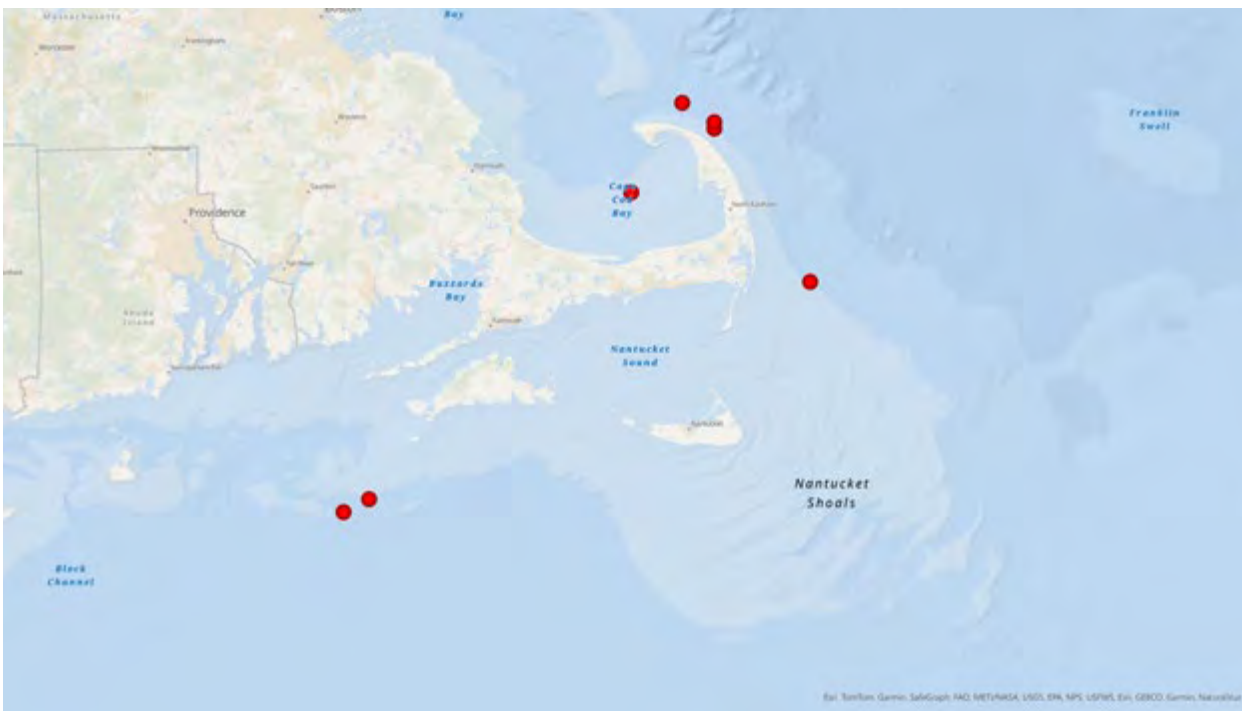
FUN FACTS ABOUT BLUEFIN TUNA

- » *Bluefin tuna are the largest species of tuna, with the largest fish reaching a maximum size of 13 feet and 2,000 pounds.*
- » *Atlantic bluefin tuna are the fastest subspecies of tuna, reaching speeds of 44 mph.*
- » *Bluefin tuna can live for 20 years, but they are the slowest developing species, not reaching adulthood until they are eight years old.*
- » *Bluefin tuna are warm blooded, having a similar blood vessel structure to mammals.*



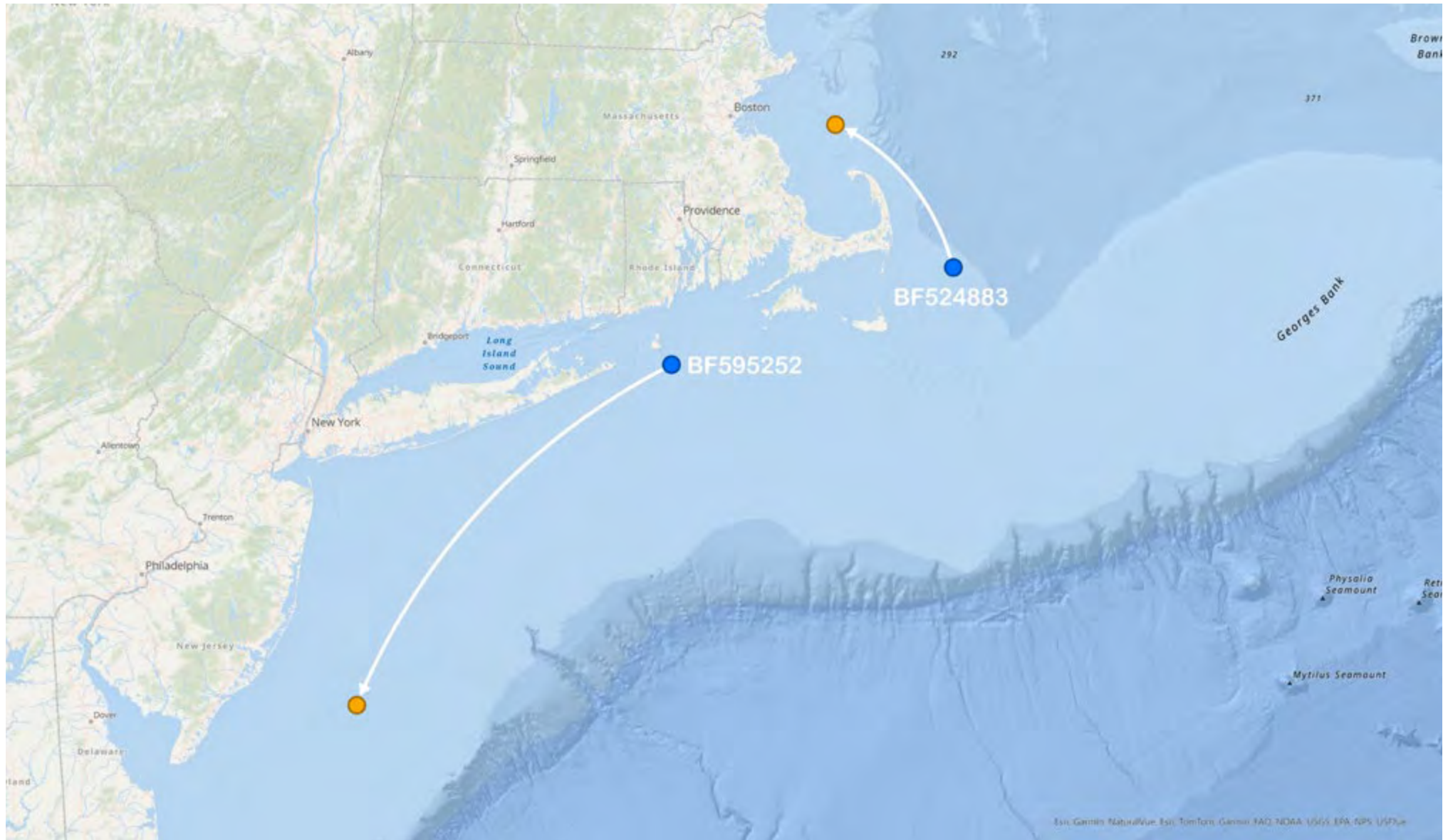
Overall Tag Distribution Map *Bluefin Tuna*

Bluefin tuna are found across the world. The majority of our tags come from the Northern Atlantic ocean. Tags are in red, releases are in blue.



Tag Hotspot Map *Bluefin Tuna*

The east coast of North America is one of the best spots to catch bluefin tuna. A handful of bluefins have been tagged in this area, shown in red.



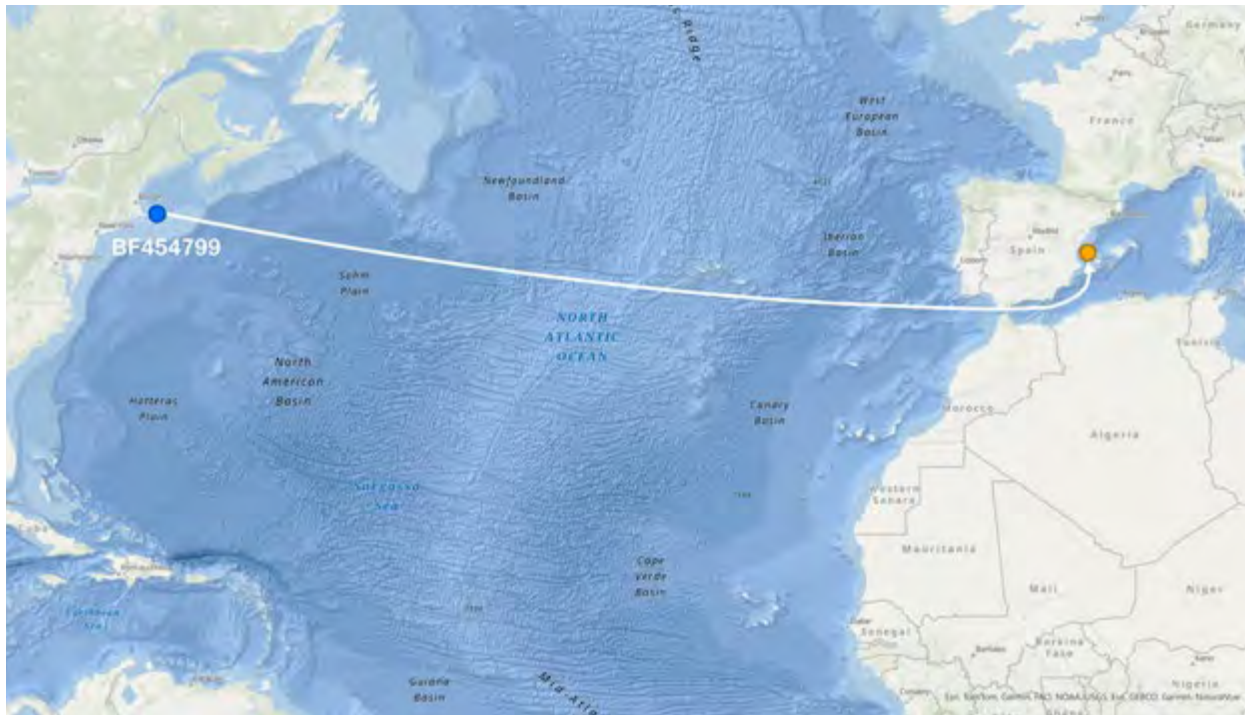
Recaptures *Bluefin Tuna*

BF595252

Tag Date & Location: 07/05/2021 in Block Island, Rhode Island
 Recapture Date & Location: 08/17/2023 in Cape May, New Jersey
 Days at Large: 773
 Est. Straight Line Distance: 200 nautical miles
 Tag Boat: BILDA
 Recapture Boat: MISS TESS

BF524883

Tag Date & Location: 09/26/2012 at Regal Sword Wreck, Massachusetts
 Recapture Date & Location: 07/26/2023 in Stellwagen Bank, Massachusetts
 Days at Large: 3955
 Est. Straight Line Distance: 76 nautical miles
 Tag Boat: TAMMY ROSE
 Recapture Boat: FOUR C'S



BF454799

Tag Date & Location: 07/28/2012 in Chatham, Massachusetts

Recapture Date & Location: 05/31/2022 in Menorca, Spain

Days at Large: 3594

Est. Straight Line Distance: 4,268 nautical miles

Tag Boat: BEARBOAT

Recapture Boat: NOT SPECIFIED



YELLOWFIN TUNA

Thunnus albacares



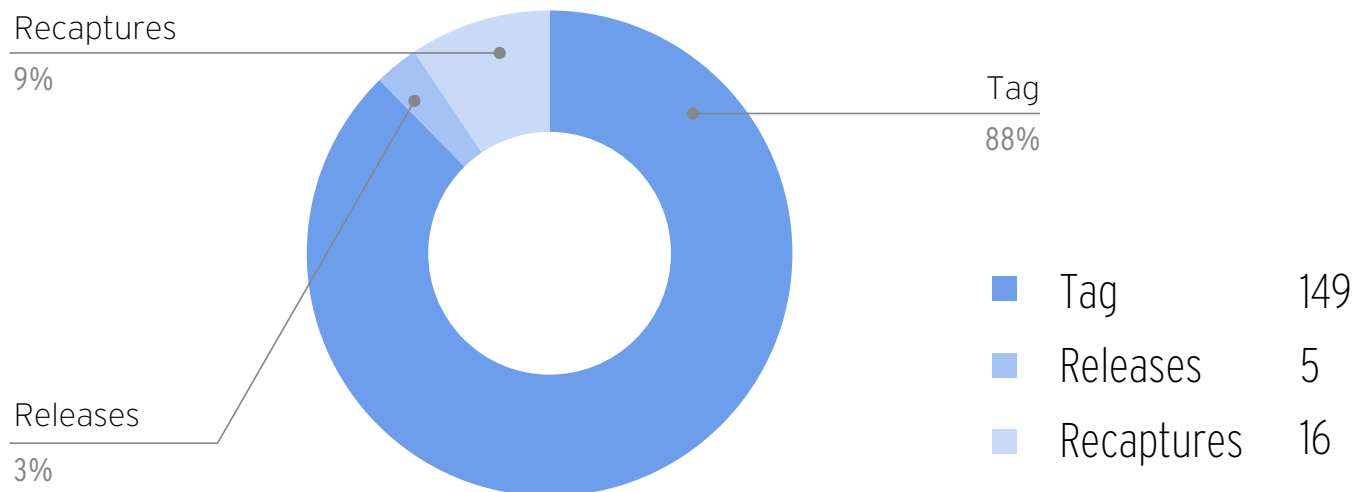
Yellowfin Tuna, Yellowfin // English // USA

Aleta Aleta Amarilla, Rabil // Spanish // Spain, Mexico, Panama

Ahi // Hawaiian // Hawaii

Kinhada // Japanese // Japan

The yellowfin tuna is a highly migratory species of pelagic fish found worldwide. Like bluefin tuna, there are some members of the TBF community who target yellowfins, despite the fact they are not a billfish species. In 2022 and 2023, there were 170 new yellowfin records added to the database. This number is the sum of 149 tags, five releases, and 16 recaptures.



A large majority of our yellowfin tuna tags are reported by the Yellowfin Tuna Tagging Conservation Association (YTTCA). Each year they host a tournament in Venice, Louisiana, where they promote responsible harvest and educate participants on proper tagging practices. Over eleven years, they have submitted several hundred yellowfin tuna tags that have been a significant contribution to yellowfin tuna research. The yellowfin tuna tagged in this tournament have a very high recapture rate at about ten percent. This demonstrates that when a fish is properly tagged and released, low mortality rates are not unusual.

Hotspots for TBF's reported yellowfin tuna include the Gulf of Mexico and Panama. These fish like to hang around seafloor structures, making the oil and gas fields in the Gulf of Mexico prime fishing spots. Recreational fishing for yellowfin tuna in the Gulf of Mexico has created a thriving tourism industry and continues to boost local economies. In addition, there were five yellowfins released in Japan.

Like other tuna, yellowfin tuna are rhomboid fish with blue and white bodies, gold highlights,



Photo courtesy of Charlie Shalley

Photo courtesy of Carol Lynne



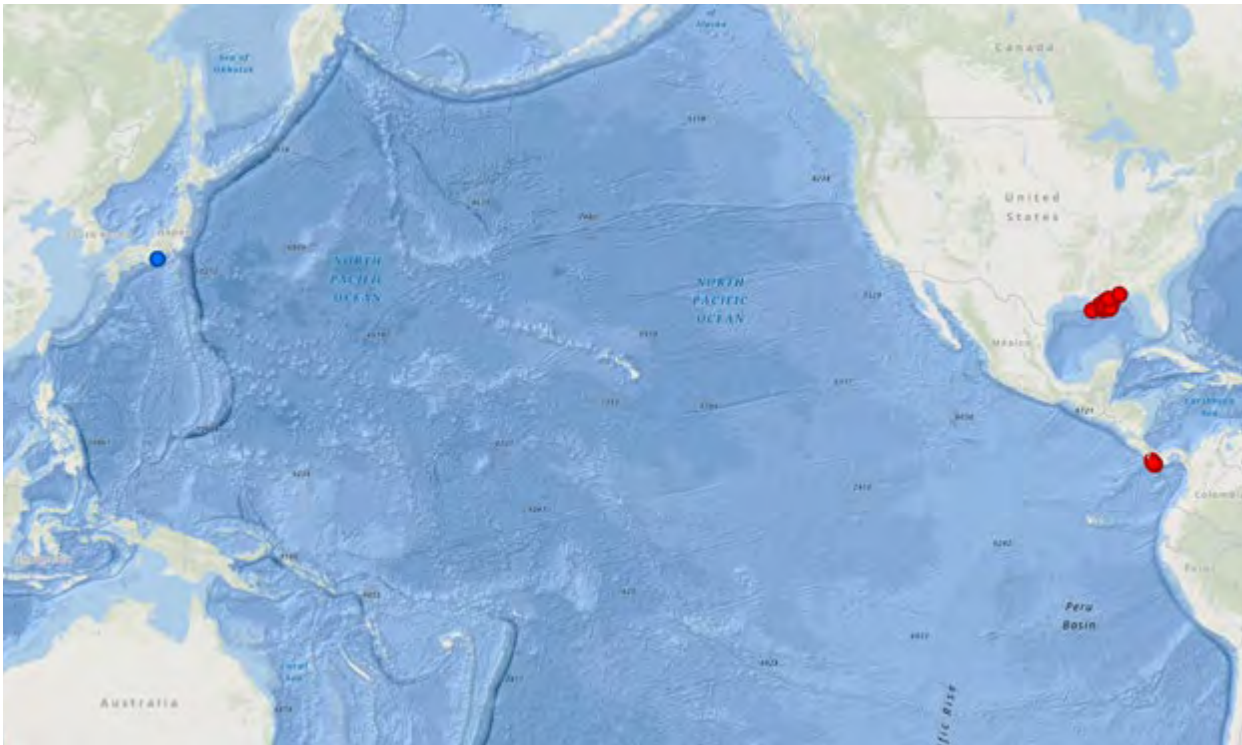
and yellow finlets. Additionally, their dorsal and anal fins as adults are extremely pronounced, reaching almost to their tails. The fins are a vibrant shade of yellow, which is the feature that gives this fish its name. As with other tuna species, yellowfin tuna have blood vessels that are dispersed throughout their muscles, rather than running alongside them, which gives their flesh a dark red color.

Unlike bluefin tuna, there are no subspecies of yellowfin tuna. There is only one global population that experiences no genetic variation between oceans. Yellowfin tuna are about the same size as southern bluefin tuna, being able to reach a maximum size of about 400 pounds and seven feet.

In 2022 and 2023, there were 16 yellowfin tuna recaptures with only three of those being orphan tags, i.e. recaptures with no original tag reported.

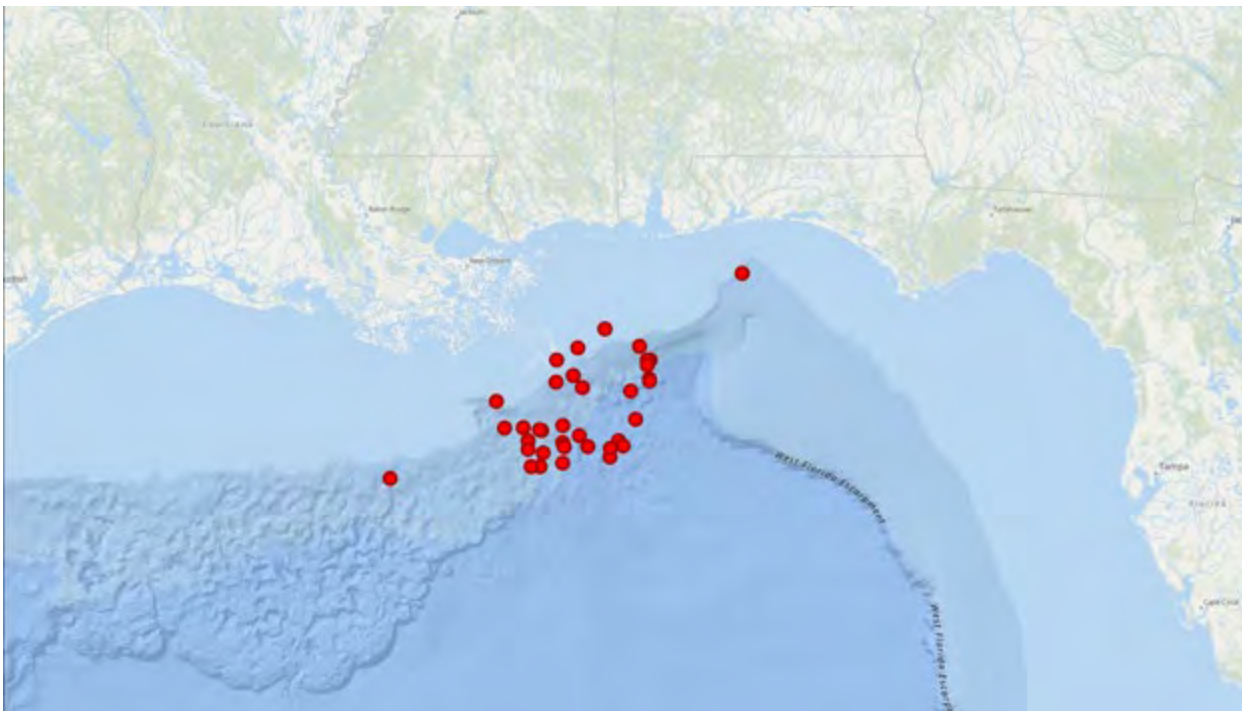
FUN FACTS ABOUT YELLOWFIN TUNA

- » *Yellowfin tuna can reach a maximum size of 440 pounds and seven feet*
- » *They can reach an estimated top speed of 46 mph.*
- » *Yellowfin tuna have a short lifespan of only seven years.*
- » *Juvenile yellowfin tuna often travel in schools with skipjack and juvenile bigeye tuna.*



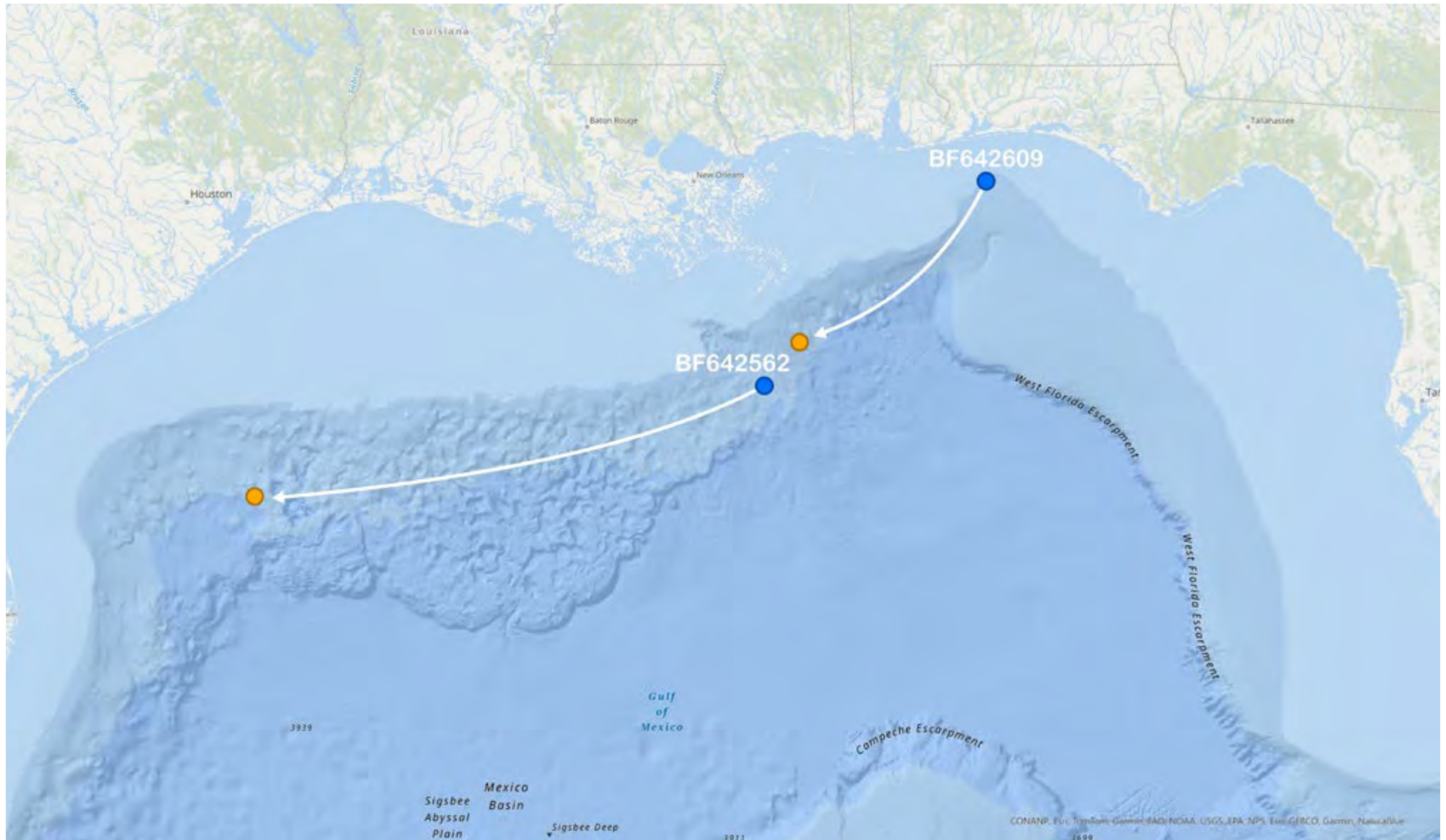
Overall Tag Distribution Map *Yellowfin Tuna*

Yellowfin tuna tags came from the Pacific coast of Panama and the Gulf of Mexico. In addition, five yellowfin tuna releases were reported from Japan. Tags are in red, releases are in blue.



Tag Hotspot Map *Yellowfin Tuna*

Thanks to YTTCA, dozens of tags have been deployed in the Gulf of Mexico on yellowfin tuna over the last decade. This fishery is especially important for juvenile yellowfin tuna. Tags are in red.



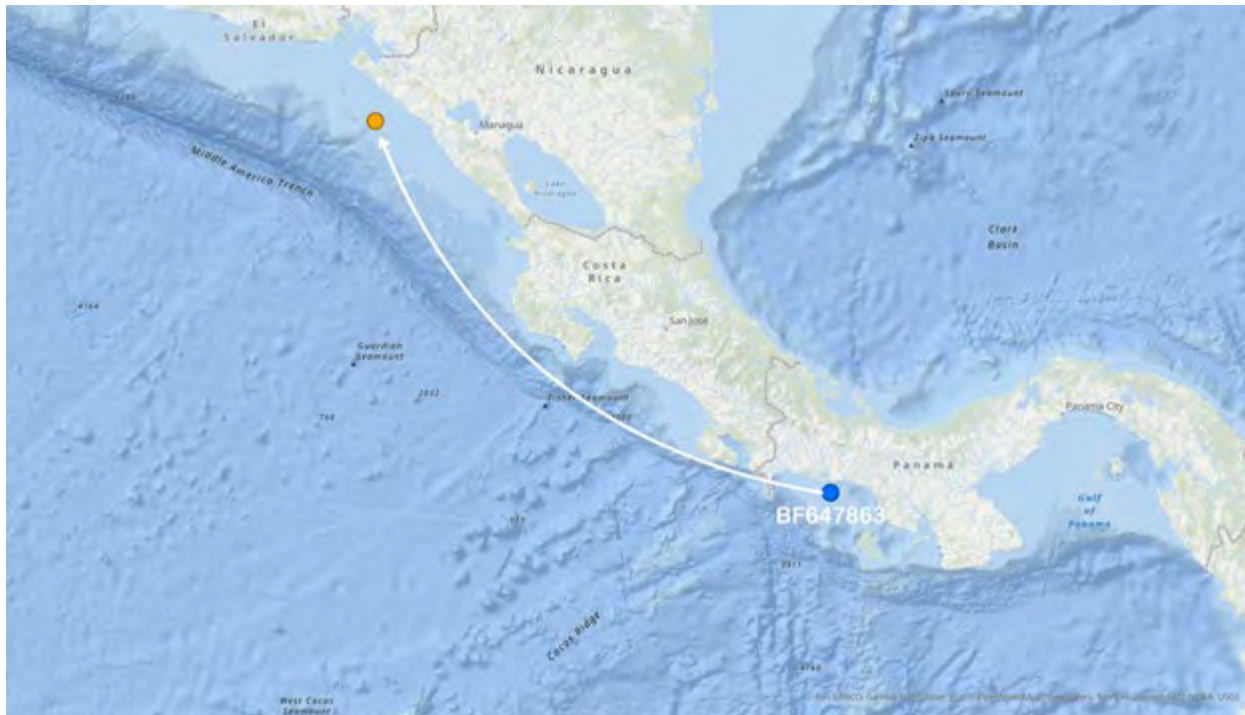
Recaptures *Yellowfin Tuna*

BF642562:

Tag Date & Location: 06/26/2023 in Venice, Louisiana
 Recapture Date & Location: 12/05/2023 at the Hoover Diana Platform, Texas
 Days at Large: 162
 Est. Straight Line Distance: 330 nautical miles
 Tag Boat: VOODOO SPORTFISHING
 Recapture Boat: NOT SPECIFIED

BF642609:

Tag Date & Location: 05/15/2022 in Pensacola, Florida
 Recapture Date & Location: 04/17/2023 in Venice, Louisiana
 Days at Large: 337
 Est. Straight Line Distance: 155 nautical miles
 Tag Boat: JOURNEY SOUTH OUTFITTERS
 Recapture Boat: NEGOTIATOR



BF647863

Tag Date & Location: 05/08/2023 in
Isla Montuosa, Panama

Recapture Date & Location: 08/09/2023 in
Nicaragua

Days at Large: 93

Est. Straight Line Distance: 395 nautical miles

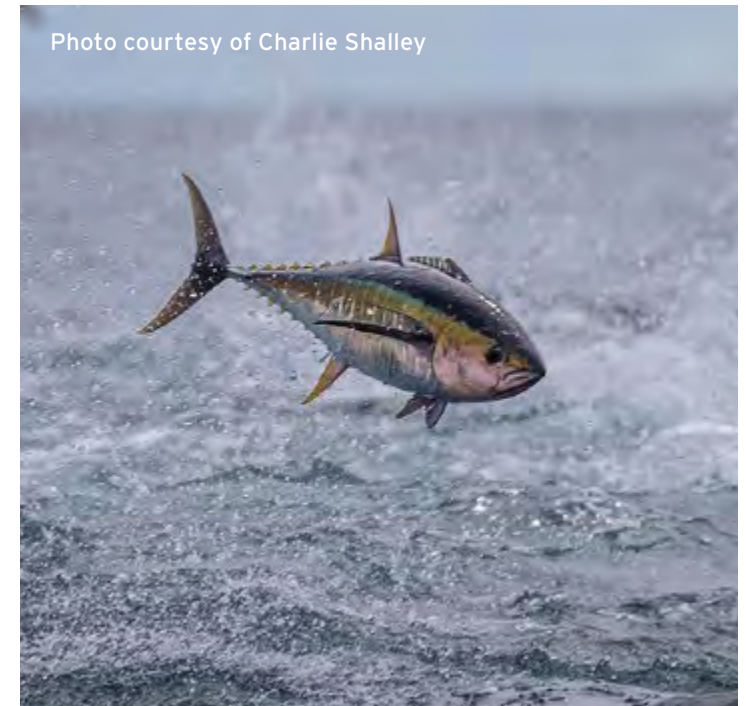
Tag Boat: NOT SPECIFIED

Recapture Boat: NOT SPECIFIED

Photo courtesy of Carol Lynne



Photo courtesy of Charlie Shalley







IN CONCLUSION

We hope you enjoyed looking through this year's TBF's Conservation Record, a publication highlighting the efforts of our constituents' in the sportfishing community. By gathering more data each year, TBF can utilize it in scientific and socio-economic research to show the importance of healthy billfish stocks and the impacts on recreational fishing. The Billfish Foundation works domestically and internationally with fisheries management organizations and government agencies to increase conservation measures that benefit both the fish and the local communities dependent upon billfish survival. With each new year of data, TBF's staff, scientists, and fisheries experts can interpret and convert this data into tangible conservation tactics.

FUTURE WORK

If you'd like to become involved in The Billfish Foundation's mission, there will be ample opportunities. Be sure to contact us on how you can be involved. For more information on upcoming events, check out our website, find us on social media, or sign up for our newsletter through www.billfish.org.



**To become a TBF Tagging Partner
or for more information email Tag@Billfish.org**

Photo courtesy of Marina Cap Cana

Conservation Record 2022-2023 Data Analysis & Report completed in 2024 by The Billfish Foundation
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Editors: Peter Chaibongsai & TJ Morrell | Writer: Adelaide Spain | Graphic Design: Jackie Marsolais, Savvy Graphics

All 2022-2023 data included compiled by Adelaide Spain using The Billfish Foundation's Tag & Release Database Maps
Created by Adelaide Spain using Esri Arcgis Pro