# 2019 Conservation Record

## The Billfish Foundation

The Billfish Foundation maintains the largest private tag and release database in the world, with over 260,000 records. In 2019 alone, over 11,000 new tag, release, and recapture records were added to this database, representing an enormous amount of data to help us learn more about billfish life history.



## Species In This Record

Black Marlin

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Yellowfin Tuna

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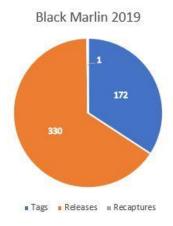


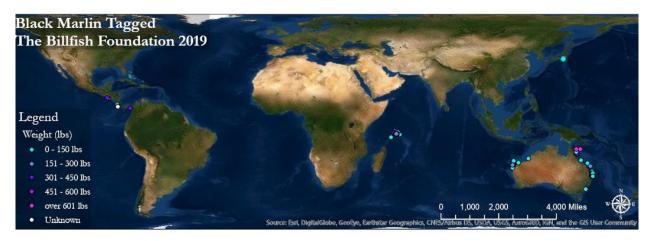
### **Black Marlin**

Of the over 11,000 new records in 2019, 502 were of black marlin, including one black marlin recapture. 66% of black marlin were released without tags, while 34% were tagged.

#### **Tags**

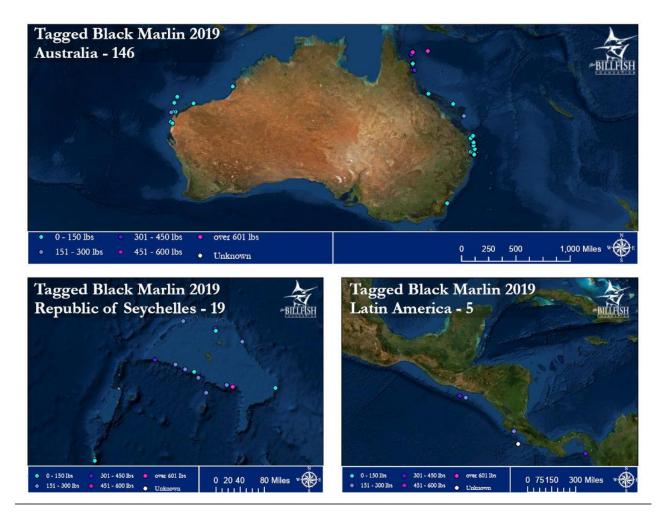
A total of 172 black marlin were tagged in 2019. 131 black marlin were tagged in the Pacific, 41 were tagged in the Indian, and none were tagged in the Atlantic, as they do not live there. The average estimated weight for tagged black marlin was 172.4lbs (78.2kg), though they ranged from 30lbs (13.6kg) to 900lbs (408kg).



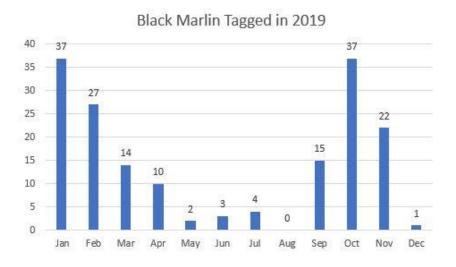




96 total anglers and 21 captains tagged black marlin in 2019. The majority of the tagging effort was shouldered by Captains Tim Richardson, Craig Denham, and Ross Newton out of Australia. In fact, the majority of black marlin, 146 total, were tagged near Australia. However, tags were also deployed in the Seychelles, El Salvador, Costa Rica, Mexico, Panama, and Japan. 19 black marlin were tagged in the Seychelles, and five were tagged in Latin America. The remaining two were tagged off of Japan and Mexico.



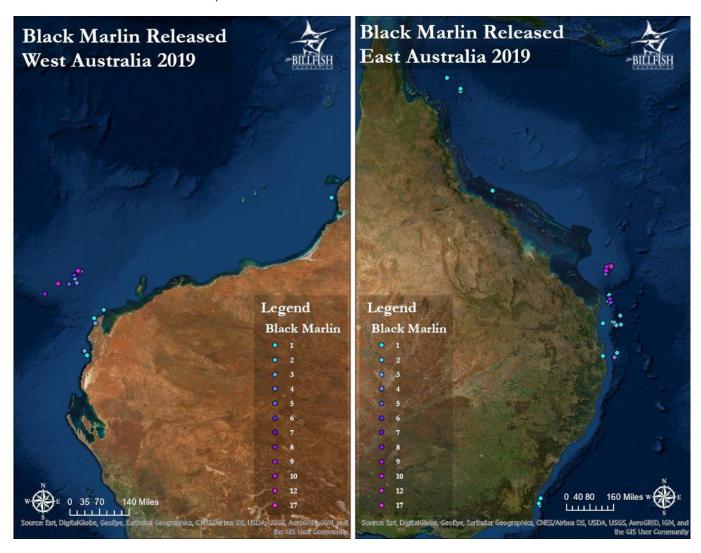
The majority of black marlin tagging effort occurred during during the Winter and Fall seasons. Peaks occurred in January and October, then trailed off. Almost no black marlin were tagged during the summer.



#### Releases

330 black marlin were released without tags in 2019, nearly double the number that were tagged. Of these, 139 were released in the Pacific Ocean and 191 were released in the Indian Ocean. 55 anglers and 19 captains released black marlin for TBF this year, the majority of which were released by Captains Eddy Lawler, Brett Alty, and Craig Denham.

The majority of black marlin were caught and released near Australia. In fact, 314 of the 330 black marlin were released offshore of Australia. Also, only in Australia were three or more black marlin released in one location in one day.

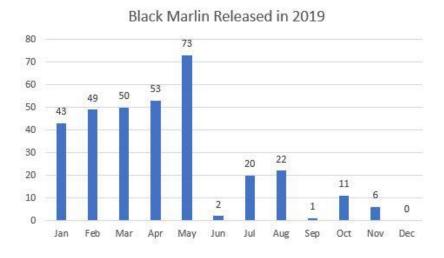


The remaining 16 black marlin releases occurred offshore of Central America and East Africa. More specifically, black marlin were released offshore of Costa Rica, Kenya, Panama, and the Seychelles.



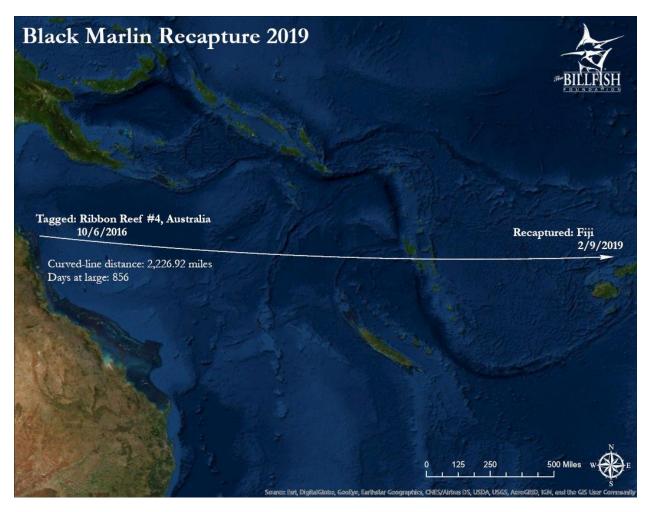


Similar to tags, black marlin catch and release rates took a steep decline during the summer months. However, unlike tagging, more black marlin were released without tags in the spring than any other season, with May containing the highest number of releases by 30 fish. Also opposite to tags, the fall and early winter showed low release rates, which picked up in January.



#### **Recaptures**

One black marlin was recaptured in 2019. This black marlin was originally tagged on October 6th, 2016 near Ribbon Reef #4 in Australia's Great Barrier Reef by Captain Craig Denham, first and second mates Tamara Thompson and Jimmy Gigger, and angler Paddy Gallagher aboard Hot Shot. The fish was at large for 856 days (roughly 2.3 years), before it was recaptured near Fiji on February 9th, 2019 by angler Isikelo Tavo aboard Solander X. In that time, the fish had traveled, at minimum, 2,226.92 miles (3,583.88 kilometers). This recapture was only TBF's 29th black marlin recapture since the inception of our program in 1990, meaning that the information that we gained from it was extraordinarily rare and valuable.

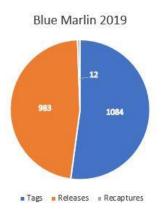


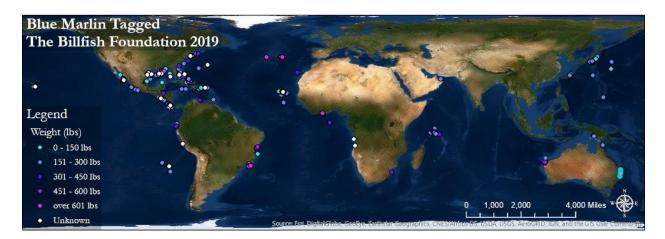
## **Blue Marlin**

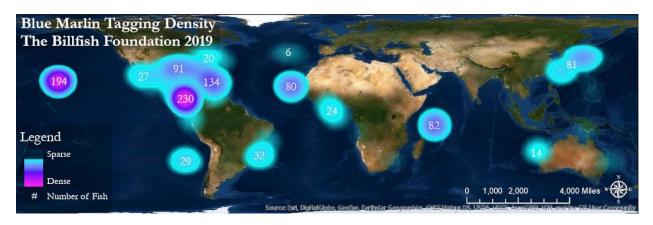
Of the over 11,000 new records in 2019, 2,079 were of blue marlin, including 12 blue marlin recaptures. 47.6% of blue marlin were released without tags, while 52.4% were tagged.

#### Tags:

1,084 blue marlin were tagged by TBF members in 2019. Of these, 405 were in the Atlantic, 580 in the Pacific, and 99 in the Indian Ocean. This effort was shouldered by an incredible 428 anglers and 187 captains. On average, tagged blue marlin were 226.1lbs (102.6kg).





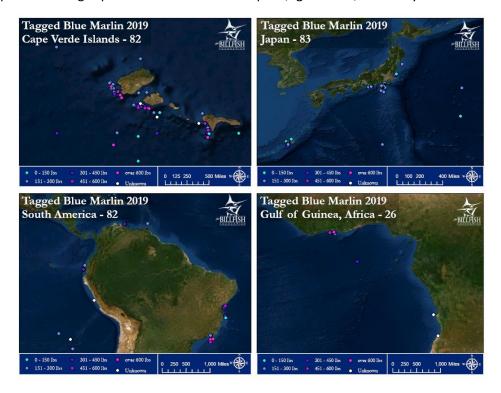


Blue marlin were tagged in an incredible 28 countries, including USA, Bahamas, Cote d'Ivoire, Guam, Seychelles, New Zealand, Australia, Azores, Mexico, Bermuda, Cape Verde, Dominican Republic, Costa Rica, El Salvador, Guatemala, Honduras, Japan, Curacao, Peru, Puerto Rico, Ecuador, Angola, Brazil, Jamaica, US Virgin Islands, Belize, Grenada, and South Africa.

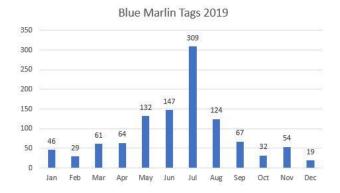
Roughly half of blue marlin tagged were in North American waters. This is thanks to anglers like Jill and Scott Yates, Jose Anton, and Gray Ingram and captains like Skip Smith, Mark Pagano, Ken Ross, and Chris Choy. Especially high tagging densities are seen off Hawaii, Louisiana, Costa Rica, and Guatemala.



Blue marlin tagging density was also high in Cape Verde, Japan, and Brazil. Anglers like Kumie Saegusa spearheaded the Japanese effort, and Batian Craig, Mike Mason, and Malan Horak dominated the Pacific. Top contributing captains included Stuart Simpson, Igor Assad, and Perry Rosalie.



Blue marlin tagging was very seasonal in 2019. Low in the winter months and peaking in the summer, there is a fairly even distribution from September to April.



#### **Releases:**

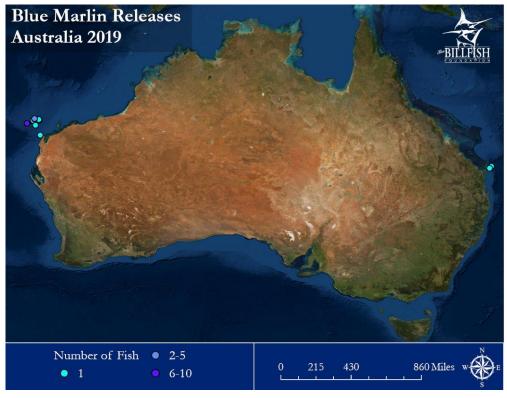
983 blue marlin were released by TBF members in 2019. Similarly distributed to tags, 456 were in the Atlantic, 473 in the Pacific, and 54 in the Indian Ocean. Far fewer people were involved in the release effort than the tagging effort, 198 anglers and 70 captains.

As with tags, an enormous number of countries were involved in the releases of blue marlin, including the Bahamas, USA, Bermuda, Mexico, Dominican Republic, Cape Verde, Costa Rica, Australia, Japan, Curacao, Sao Tome and Principe, Portugal, Ecuador, Turks and Caicos, Seychelles, South Africa, US Virgin Islands, Kenya, Cote d'Ivoire, El Salvador, Guatemala, and Spain.

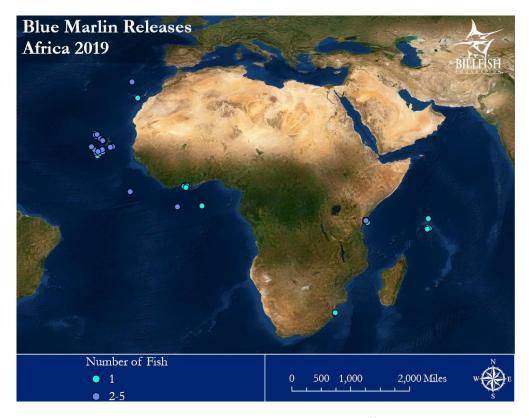
Once again, North America shouldered a substantial portion of the release effort. Hot spots included Baja Mexico, Louisiana, Hatteras, Costa Rica, Guatemala, and the Dominican Republic. This is thanks especially to anglers like Mike Brauser and Gray Ingram, and captains like Chris Sheeder.



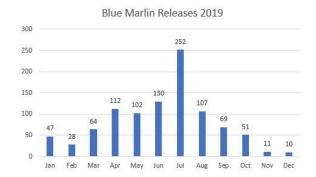
North America was not the only locality with high blue marlin releases. Captains like Zak Conde, Bertrand Bouchard, Calvin du Plessis, and Eddy Lawler represented Australia, Cape Verde, and parts of Africa exceptionally well.







As with tagging, there was a clear seasonality to blue marlin release effort. Peaking strongly in July, it tapered evenly down until December, then crawled back up from January to June.



#### **Recaptures:**

12 total blue marlin recaptures occurred in 2019, though only 9 had complete data for mapping. All nine recaptures occurred in the North American Atlantic with the exception of two near Hawaii.

Six of the nine map-able recaptures had times at large of three or less years. However, three stood out as longer running. A five-year recapture occurred between the Bahamas and Guadeloupe (French West Indes), a six-year occurred that was both caught and recaptured off the Dominican Republic, and, most interestingly, a ten-year recapture occurred just a few miles from the original tagging location in Bermuda.



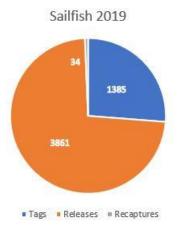
Though long recapture distances are fun to look at on a map, these short-distance recaptures tell a fascinating story regarding the reliable migratory patterns of these fish. In Bermuda, the fish was both tagged and recaptured in the summer. However, in the Dominican Republic, the fish was tagged and recaptured in spring and autumn, respectively. Sometimes, these recaptures give us more questions than answers, which is why we need more to unravel the local versus migratory nature of these fish.

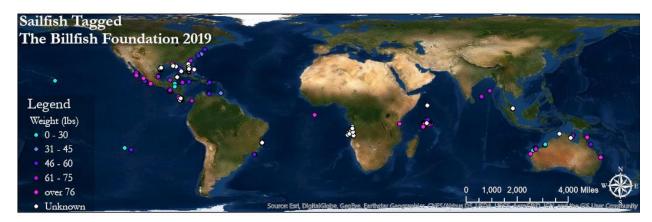
## Sailfish

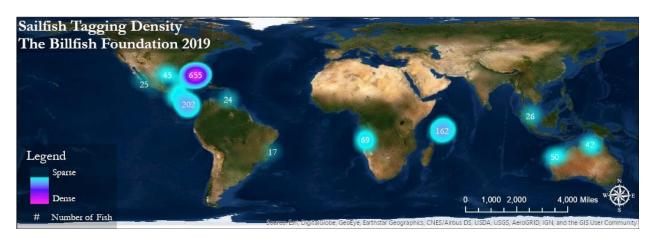
Of the over 11,000 new records in 2019, 5,280 were of sailfish, including an incredible 34 sailfish recaptures. 73.6% of sailfish were released without tags, while 26.4% were tagged.

#### Tags:

An incredible 1,385 sailfish were tagged for TBF in 2019. Of these, 865 were tagged in the Atlantic, 264 in the Indian, and 256 in the Pacific. 500 individual anglers with 126 captains tagged in 2019, representing 17 countries; the USA, Angola, Brazil, Honduras, Belize, The Bahamas, Seychelles, Mexico, Australia, Dominican Republic, Grenada, Guatemala, Malaysia, Costa Rica, Curacao, Panama, and Zanzibar! Sailfish were fairly small on average, 49.3lbs (22.4kg).

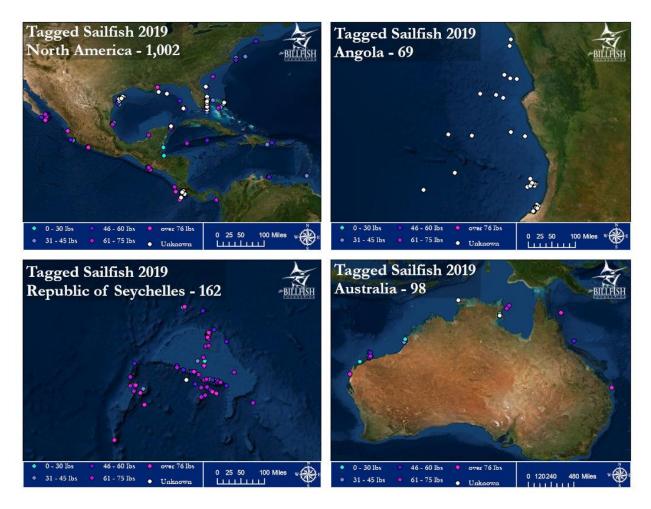




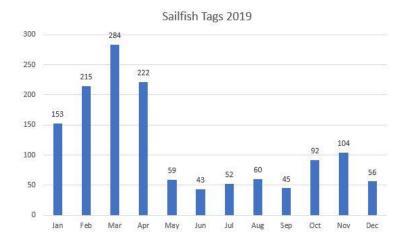


The largest concentration of sailfish tagging effort was North America, and the largest concentration in North America was in Florida, thanks to the efforts of anglers like Jill and Scott Yates with Captain Mark Pagano, as well as sailfish regulars like Captains Bouncer Smith and Nicholas Gonzalez. North American sailfish tagging was also dense in countries like Costa Rica, crediting a huge proportion of the catch to

Fish Tank team, Laura Jessen and Ben Horning. Sailfish tagging is also up in the Indian Ocean thanks to teams like Australian Kelly and Bomber Farrell, Perry Rosalie, and Seychelles-based Mike Mason.

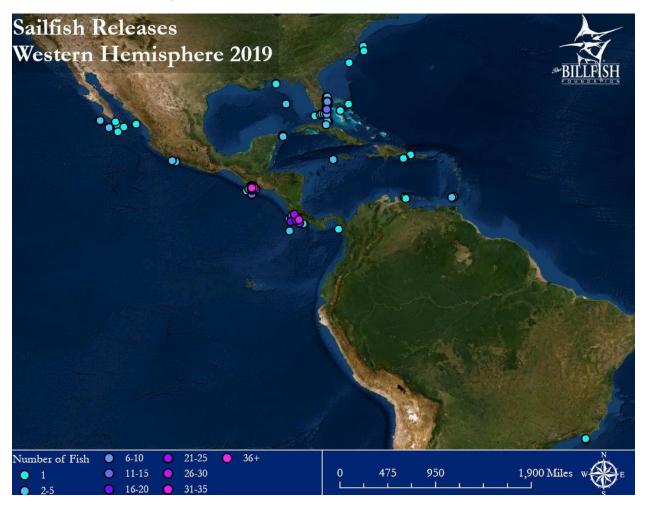


Unsurprisingly, sailfish tagging followed a very seasonal pattern. Very low in the summer months, tagging began increasing in the fall, taking a small dip in December, and then peaking in the spring. February, March, and April are peak months for sailfish tagging, which steeply drops off in May.

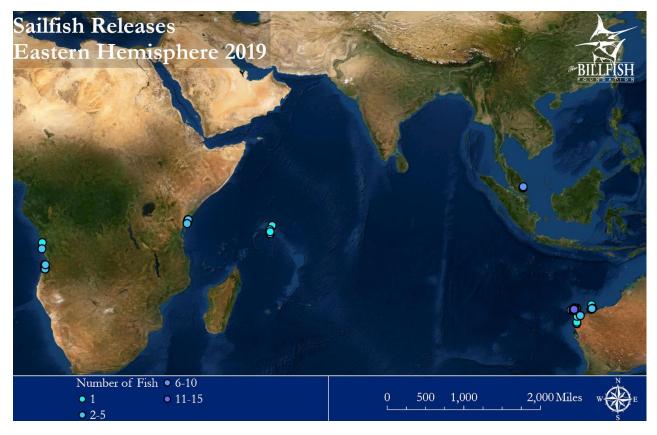


#### **Releases:**

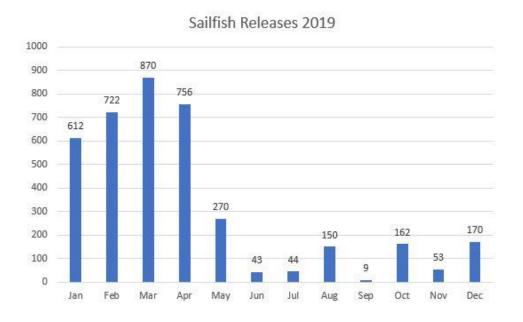
If 1,385 sailfish tags seemed like a lot, the 3,861 sailfish released by TBF members in 2019 is nothing short of exceptional. 668 of these fish were released in the Atlantic, 213 in the Indian, and the vast majority, 2,980, in the Pacific. Interestingly, far less anglers and captains, 236 and 65 respectively, were responsible for the whole of the release effort. Sailfish were released without tags in the USA, Mexico, Dominican Republic, Costa Rica, Australia, Grenada, Guatemala, Malaysia, Angola, Kenya, the Bahamas, Panama, Brazil, and the Seychelles.



The brunt of the Atlantic releases were accomplished by anglers Luke Lulfs, Jill Yates, and Jacob Lepera in Florida, along with Captains Dean Panos, Travis Ralph, and Mark Pagano. The Pacific effort was spearheaded by Captains Jason Brice and Chris Sheeder and anglers Gray and Camila Ingram. The Indian effort was led by Captains Eddy Lawler and Calvin du Plessis and anglers Rowan and Kerrie Smith.



Sailfish releases followed the same temporal pattern as tags. Release numbers rose in the early months of the year, peaking in March, before plummeting in the summer. Unlike tags, sailfish releases stayed consistently low for the remainder of the year.



#### **Recaptures:**

A total of 34 sailfish were recaptured in 2019 (please note only those reported by the beginning of 2019 are mapped below). The largest proportion of these, 18, were both tagged and recaptured in or near Floridian waters. These Florida-based recaptures spanned up to 4.5 years and as little as just one year. More importantly, though, is the clear migration patterns that can be seen when all of these are mapped together. Sailfish are hugging the coast and moving up and down South Florida, turning off and moving down into the Caribbean after the northern Keys. Having data that perfectly outlines this migratory relationship is vital in our efforts to prove the need for inter-Caribbean management of this species.



Sailfish were recaptured in more than just Florida. Shorter term recaptures were found in Malaysia and Costa Rica, which, despite being an ocean apart, both show the recaptured fish staying within the same waters for a month, an important piece of information in itself. Within a single area of Australia (thanks Bomber Farrell), five sailfish were recaptured in 2019, all of which had been tagged between September and November of 2018 or 2019. Looking at the months that these fish are tagged and recaptured help us paint a picture of where these fish are going. They are found in the Northeast Pacific and Northwest Atlantic in the early months of the year, and the South Pacific in the late months of the year. Because of your efforts, TBF is able to make finite provable assertions regarding where these fish go and when, vital information for their management and conservation.

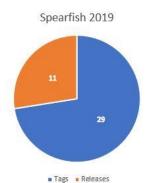






## **Spearfish**

Of the over 11,000 new records in 2019, less than 50 were of spearfish, and no spearfish were recaptured. Of these records, 72.5% of spearfish were tagged and 27.5% were released without tags. Of these 40 fish, four were Atlantic longbill spearfish, *Tetrapturus pfluegeri*, and 36 were Pacific shortbill spearfish, *Tetrapturus angustirostris*.

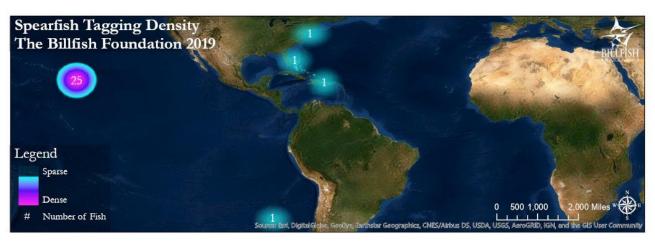


#### **Tags**

Of the 29 tagged fish, 25 of were tagged off of Hawaii and the other four were tagged near Chile, the Dominican Republic, and the

Bahamas. Three of these 29 fish were tagged in the Atlantic, 26 were tagged in the Pacific. The average weight of all spearfish was only 28.9lbs (13.1kg). A total of 18 anglers and eight captains contributed to spearfish tagging this year.





Most spearfish were tagged by angler Paul Dolinoy and his captain, Chris Choy, and mate, Li'i Purdy, as well as by captain Gene Vander Hoek and his mate Jack Leverone, who all together are responsible for the 25 Hawaiian spearfish tags.



The majority of spearfish were tagged in the summer months, from May to August. Of the 29 spearfish tagged, only three were tagged outside of these four months.

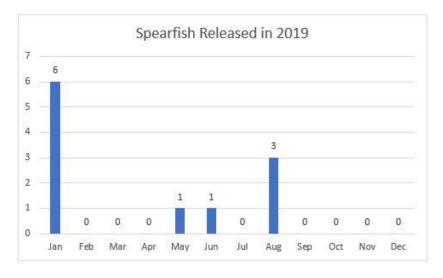


#### Releases

Only 11 spearfish were released in 2019. Of these 11, only one was in the Atlantic, and ten were in the Pacific. The only Atlantic spearfish was released in Greece, a location from which TBF hasn't had a spearfish release in over a decade. Only five anglers and three captains from Mexico, the USA (Hawaii), and Greece released spearfish in 2019.



Six of the 11 spearfish were released in January in Mexico. The remaining five were caught and released in May, June, and August, similar to the tagged spearfish.

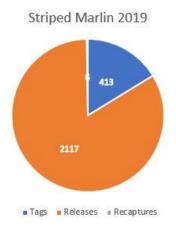


## **Striped Marlin**

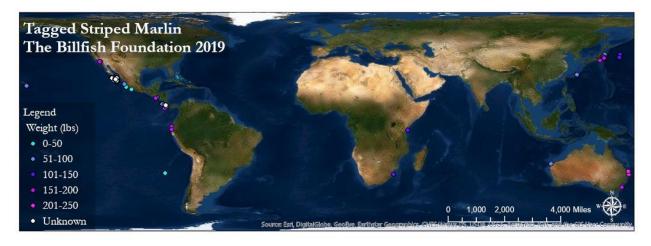
Of the over 11,000 new records in 2019, 2,536 were of striped marlin, including 6 striped marlin recaptures. 84% of striped marlin were released without tags, while 16% were tagged.

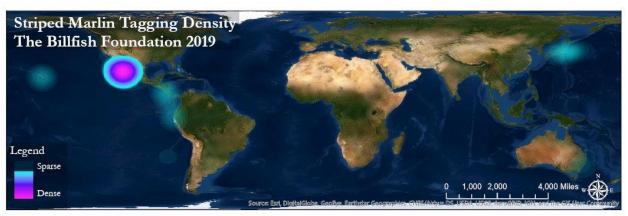
#### Tags:

413 striped marlin were tagged by 185 anglers and 42 captains in 2019. These fish were tagged in released from 11 countries, including Mexico, Australia, USA, El Salvador, Peru, Costa Rica, Japan, South Africa, Kenya, and Ecuador. Striped marlin are not found in the Atlantic Ocean. As such, 410 of tagged fish were in the Pacific Ocean, and only three

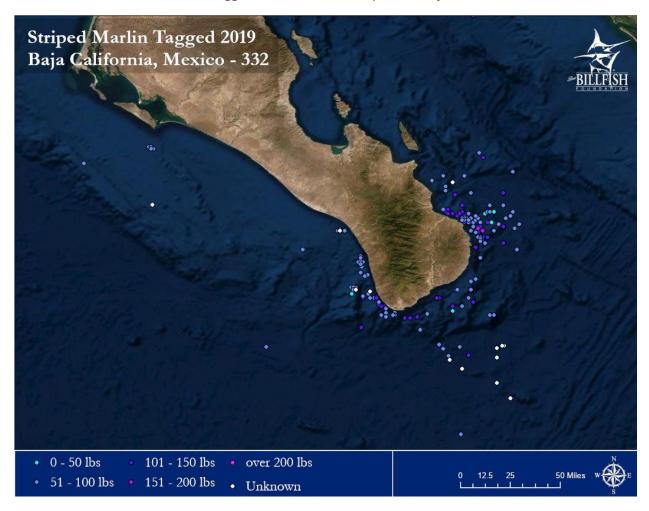


were in the Indian. On average, tagged striped marlin weighed approximately 92.9lbs (42.1kg). Laura Jessen and her Captain Ben Horning and team aboard the Fish Tank had the highest striped marlin tagging numbers of the year.

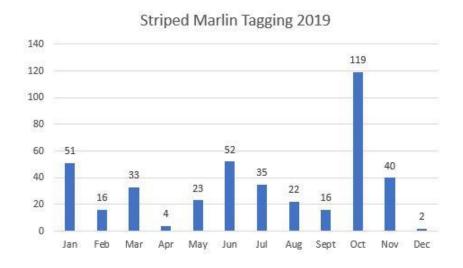




The vast majority of striped marlin, 357 Of the total 413, were tagged off the west coast of Central America. Of these 357, 332 were tagged off the southern point of Baja California in Mexico.

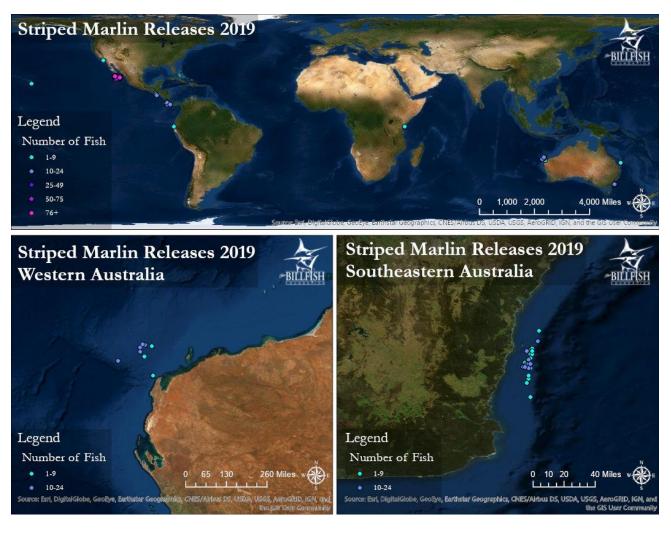


Striped marlin were tagged year round in 2019, though tagging peaked in October. The lowest tagging activity was seen in April and December.

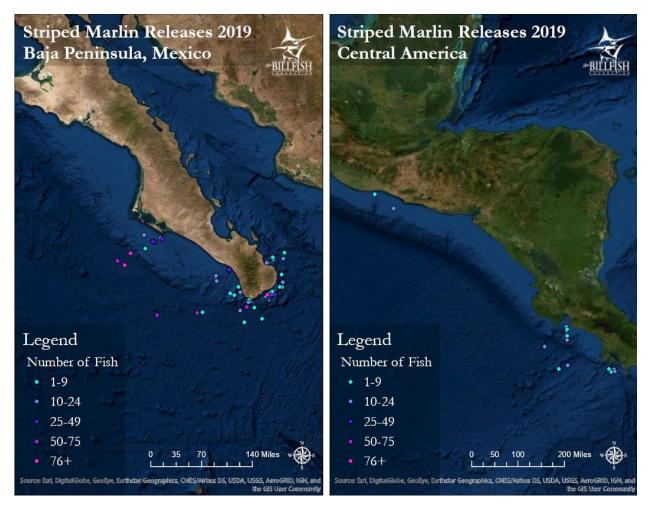


#### **Releases:**

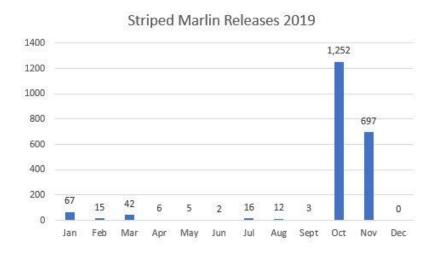
It was far more common for striped marlin to be released without tags than to be tagged in 2019. In fact, an enormous total of 2,117 striped marlin were released without tags in 2019. Of these, 2,092 were released in the Pacific Ocean, while 25 were released in the Indian Ocean. The majority of these fish were released off of Mexico, Guatemala, Costa Rica, and Australia, and a few were released off of Peru and Kenya. Far fewer anglers and captains were responsible for releasing fish in 2019, only 45 anglers and 22 captains for the entire 2,117 fish dataset. Major players in these releases were Gray Ingram, Camila Ingram, and Captain Scott Jones, who, in some cases, released multiple dozen per day.



As with tags, the majority of striped marlin releases were concentrated off the west coast of Central America, particularly Baja California.

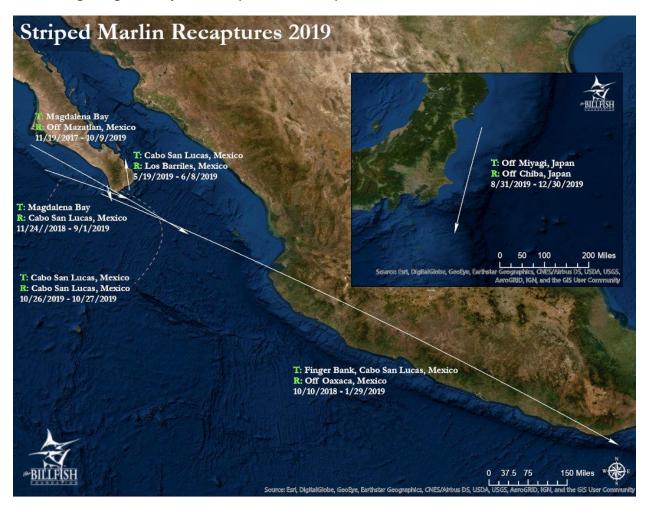


Striped marlin releases followed the same general temporal trend as tags. Lows occurred in late spring and early summer, while peak times were seen in the fall.



#### **Recaptures:**

Six striped marlin were recaptured in 2019. Five of these recaptures were in the peak area off eastern Central America and Baja. However, one fish was tagged and recaptured off of Japan. They traveled an average of 552 km/343 mi, though distances ranged from 36.1 km/22.4 mi to 2020.4 km/1255.4 mi. Time at large ranged from just one day to almost two years.

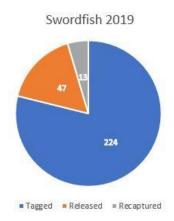


## Swordfish

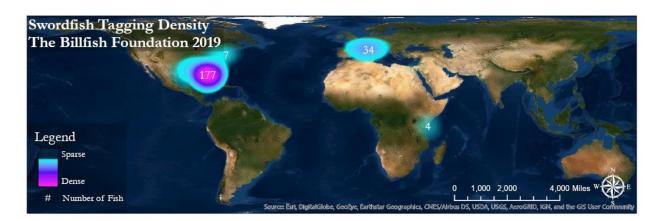
Of the over 11,000 new records in 2019, 304 were of swordfish, including 13 swordfish recaptures. 17.3% of swordfish were released without tags, while 82.7% were tagged.

#### Tags:

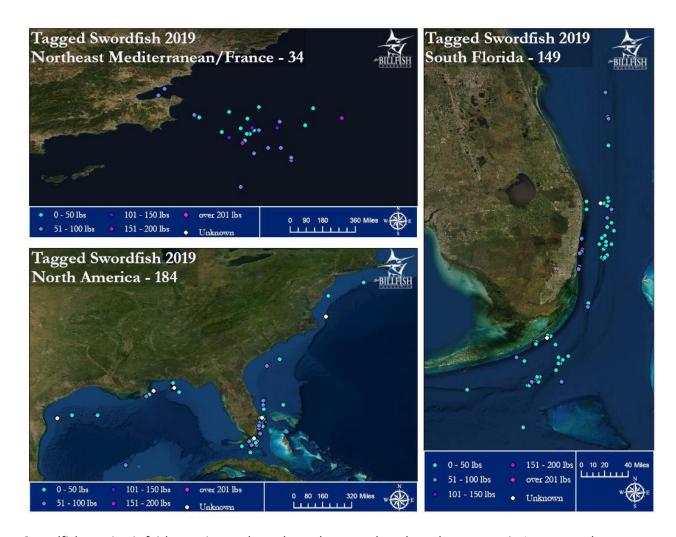
A total of 224 swordfish were tagged in 2019. The majority of these fish, 218, were tagged in the Atlantic Ocean, while only five were tagged in the Indian Ocean and one was tagged in the Pacific. 89 anglers and 27 captains tagged swords out of only five countries; USA, France, Japan, Kenya, and Saudi Arabia. On average, these fish were relatively small, 54.3 lbs (24.6kg).







Swordfish tagging is far higher in South Florida than anywhere else, thanks to SoFlo-based tagging captains like Nick Stanczyk, Henry Dombroski, and Travis Whitfield. Recently, however tagging effort has increased dramatically in the Mediterranean, thanks to the efforts of Samuel and Rudy Urbain. For 2020, TBF also expects a surge in tagging effort of the west coast of the US thanks in big part to the Offield center for billfish studies. These new locations are very exciting for swordfish research, as TBF is currently working hard to use this data to learn more about swordfish habitat utilization and migration in the regions.



Swordfish tagging is fairly consistent throughout the year, though peaks are seen in January and October. Tagging drops off in the late spring before picking back up for summer, as well as drops off in the early winter before picking back up in January.

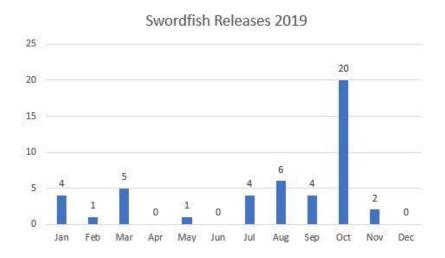


#### **Releases:**

Swordfish releases were quite low in 2019. Only 47 swords were releases by a total of 8 captains and 8 anglers. All of these fish were caught and released in the Atlantic, out of the USA and the Dominican Republic.



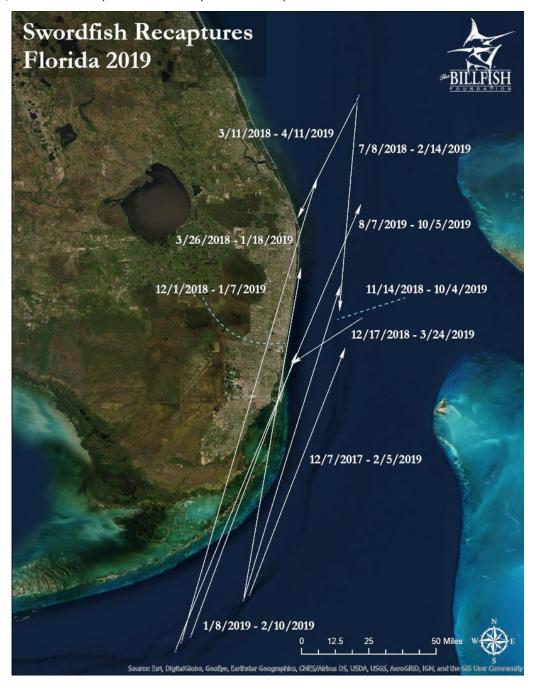
Swordfish releases were fairly consistent throughout the year, though, similar to swordfish tags, a large peak in effort occurred in October.



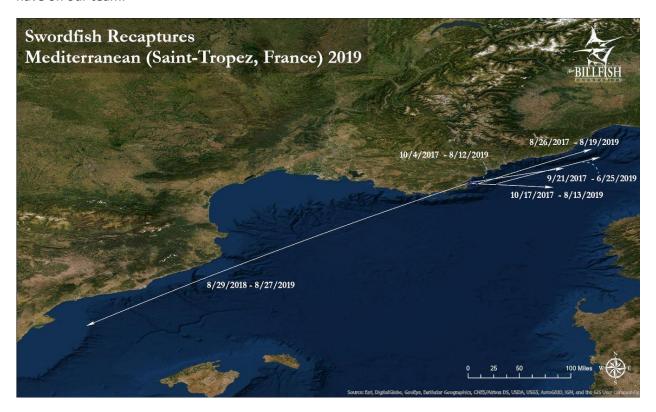
#### **Recaptures:**

Swordfish recaptures were plentiful this year, which is very exciting! 13 total recaptures were concentrated in South Florida and the Mediterranean, reflecting the location of the majority of tagging effort.

All nine South Florida recaptures occurred in the area between Vero Beach and the Keys. Time at large was fairly consistent. Seven of the nine recaptures occurred in less than a year of tagging, the other two occurring in 13 and 15 months. All swordfish were recaptured during the colder months, from October to April, with most recaptured in January and February.



The Mediterranean saw five swordfish recaptures in 2019, an incredible feat considering before 2019, no swordfish had ever been recaptured in the Mediterranean. Giving credit where it is due, every recapture in some way involved father-son duo Rudy and Samuel Urbain, a duo that TBF is thrilled to have on our team.



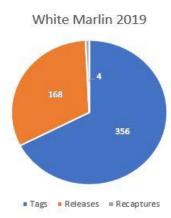
Swordfish in the Mediterranean spent a longer time at large before being recaptured as compared to South Florida. Four of five recaptures occurred 1.5 to 2 years after the original date of tagging. Only one recapture occurred almost exactly one year from date of tag. Also notable was the time of year. All fish were tagged between August and October, and all but one were recaptured in August (the fifth being recaptured in June).

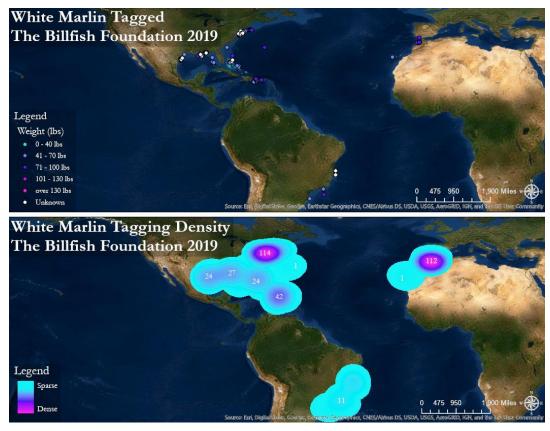
## **White Marlin**

Of the over 11,000 new records in 2019, 528 were of white marlin, including four white marlin recaptures. 32.1% of white marlin were released without tags, while 67.9% were tagged.

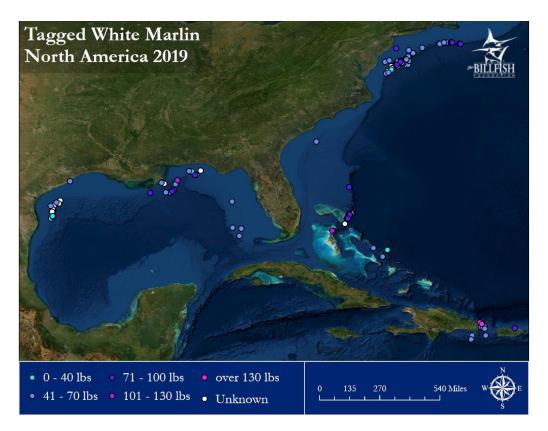
#### Tags:

356 white marlin were tagged with TBF tags in 2019. This enormous feat was achieved through the combined efforts of 117 anglers and 59 captains. White marlin are relatively small in comparison to other marlin species, and on average weighed 59.3lbs (26.9kg)/





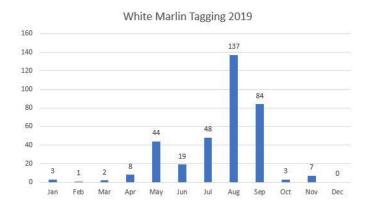
White marlin are endemic only to the Atlantic Ocean. As such, there were only eight countries from which white marlin were tagged; USA, Dominican Republic, Bahamas, Bermuda, Puerto Rico, Spain, Morocco, and Brazil. North America represents the largest effort, with 232 of the total 356 white marlin tagged there. Within Eastern North America, white marlin were tagged off of the Northeastern US, Gulf Coast (offshore of Texas, Louisiana, and Florida), and in/near the Bahamas and Dominican Republic. These locations were heavily tagged by anglers Jill and Scott Yates and Darren Helwig, as well as captains Mark Pagano and John Meade.



White marlin were also tagged in Morocco and off South America. Captain Christian Benazeth and angler Laurent Sahyoun are responsible primarily for these tags, as can be evidenced by the many years of sweeping the white marlin tagging division of the TBF Awards.



White marlin had the most clear tagging seasonality of all reported billfish species. Tagging was limited to any significant degree to between the months of May and September, with the largest tagging density occurring in August.

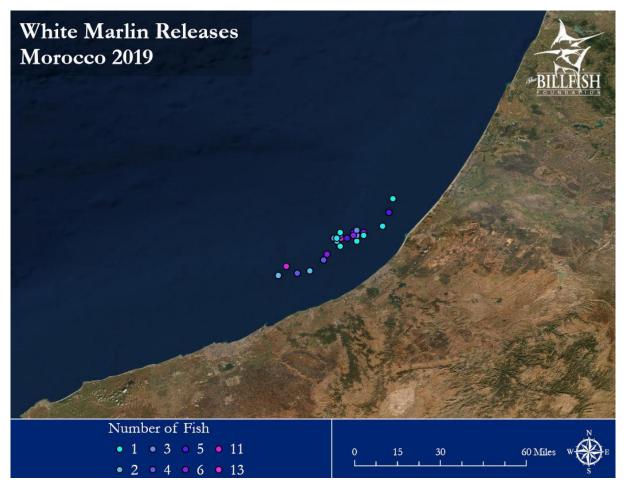


#### **Releases:**

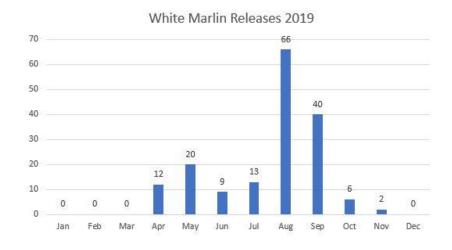
168 white marlin were released without tags in 2019. Similar to tagging, these fish were released off of the USA, Bermuda, Bahamas, USVI, El Salvador, Dominican Republic, Mexico, Angola, and, of course, Morocco. In sharp contrast to tagging, however, only 34 anglers and 26 captains contributed to white marlin releases in 2019. Once again, the primary shoulderers of this effort were Morocco-based angler Laurent Sahyoun and Captain Christian Benazeth.



Once again, Morocco represented itself as a hot spot for white marlin activity. Besides the one release in Angola, it is the only country from which white marlin were released without tags on the East side of the Atlantic.



White marlin releases mirrored the same distribution pattern as tags. White marlin were not released at all during the winter months, then release levels went up slightly in the late spring and early summer before peaking in late summer and early fall.



#### **Recaptures:**

Four white marlin recaptures occurred in 2019. Most excitingly, these four recaptures were in three different locations, exemplifying white marlin's cosmopolitan nature. The time at large varied immensely for these recaptures, with the Moroccan recapture occurring after only one month while one tagged off of Maryland was recaptured an incredible FIVE years later! Also worth noting is the date of these recaptures. Northeastern US saw all tags and recaptures occurring in August and September, as did Morocco, while Puerto Rico's recapture had both interactions in April and May. Information like this is extremely important, as it allows TBF and our partner researchers to piece together migration patterns of white marlin to better understand where they are at different times of the year.







## **Bluefin Tuna**

No tags or releases were reported for bluefin tuna in 2019. However, three recaptures were reported. One was both tagged and recaptured in Nova Scotian waters almost exactly two years apart, October 2017 and October 2019. One was both tagged and recaptured off of the Northeast United States, roughly 2.5 years apart, January 2017 to October 2019. However, one was quite impressive. A yellowfin tuna tagged in July of 2012 near Long Beach, New Jersey was recaptured almost seven years later off of Sardinia, Italy. Estimated 39 inches at tagging, it was 89.2 inches at recapture, growing over 3.5 feet in those nearly seven years. Documentation of this fantastic migration bolsters our understanding of the cosmopolitan nature of bluefin tuna and exemplifies the need for international regulatory groups like ICCAT.



## **Yellowfin Tuna**

Of the over 11,000 new records in 2019, 104 were of yellowfin tuna, including 1 recapture. 99% of yellowfin tuna were tagged and only 1% was released without a tag in 2019.

#### **Tags**

Of the 97 tagged yellowfin tuna, 93 were tagged in the Pacific off of Panama and only four were tagged in the Atlantic, specifically in the northern Gulf of Mexico. Only 12 anglers and three captains from two boats, Juanita Fish and Panama Sportfishing Lodge, were involved in yellowfin tagging in 2019. On average, tagged yellowfin were 39.6in (100.6cm) long. All 93 Pacific yellowfin were tagged in May, while one Atlantic was tagged in July and three were tagged in September.

#### Releases

Only one yellowfin tuna was released without a tag in 2019. It was released by Captain Eddy Lawler in the Indian Ocean off of Western Australia in January.

#### **Recaptures**

One yellowfin tuna was recaptured in 2019 in August near Costa Rica. It had originally been tagged in May of that year in Panama. In that time, it had travelled North over 200 miles.



## <u>Acknowledgements</u>

Established in 1990, The Billfish Foundation's Tag and Release Program is the largest private billfish tagging database in the world and the cornerstone of TBF's conservation and advocacy efforts. With more than 220,000 tag and release reports, TBF receives over 15,000 tag and release records annually from across the globe and provides vital information for billfish conservation.

The Billfish Foundation's Tag and Release Program would not be possible without the dedicated support of our sponsors. We are exceptionally grateful to King Sailfish Mounts, Casa Vieja Lodge, Yeti Coolers, Garmin, Costa Sunglasses, and the International Game Fish Tournament Observers for the unwavering support throughout the years. Thank you also to Carey Chen, who provided illustrations for the species represented in this record.













All data included was compiled by Faith Benner using The Billfish Foundation's Tag & Release Database. All maps were created by Faith Benner using ESRI ArcGIS Pro.