Dolphinfish Research Program™

Made possible by a grant from the Guy Harvey Ocean Foundation

January 2021

In early December we received a number of comments from anglers in San Juan, Puerto Rico, stating that the season was extremely slow to start off the north coast. Typically, dolphin abundance increases during October/November and by mid-December the season is in full swing. But, this was not the case this year. Fish just started to arrive toward the back half of December. This year there has been less sargassum reported along the north coast of PR, too, which could be related to the delay. In other news, the SAFMC public comment period for draft Amendment 10 ends on February 5th, 2021, and has led to dozens of comments from anglers throughout the region. The majority of comments to the safmc.net public comment board were from U.S. East Coast anglers but we took it a step further to request information from anglers throughout the broader Caribbean Sea. In particular, we requested their perception of dolphin stock status (i.e., health) off their coastline and we received some interesting insights. In this newsletter, we share our letter to the SAFMC which includes a figure created from anecdotal reports of stock status and health of dolphin throughout the region. The take-home message: the U.S. Amendment 10 process needs to be elevated to an international plan for the conservation and management of dolphin to improve stock status throughout the broader WCA.

Reported Tagging Progress from 12/19/2020-1/25/2021:

Robi Birriel (Nuri) 2 **Julien Brossel (Madetet) 1**

Year to 1/25/2021 for Reported Releases:
4 tagged & released for conservation and science
1 Recaptures to date in 2021 1 verified
0 PSAT movements
0 PSAT Deployments 0 Acoustic Tag

Reported Recaptures Since 12/19/2020

Captain Rick Schlee reported at *Thomas Flyer* tagged fish

Comment Now on Dolphin/Wahoo Fishery Management Plan!

In March 2016, the **South Atlantic Fishery Management Council** (**SAFMC**) initiated a process to consider changes to Amendment 10 of the U.S. Atlantic Coast Dolphin/Wahoo fishery management plan (FMP) in reaction to the commercial annual catch limit (ACL) being met and an ensuing harvest closure in 2015. Last April, the SAFMC's **Scientific and Statistical Committee** (**SSC**) recommended a new acceptable biological catch (ABC) level for dolphin and wahoo after incorporating recreational landings data from new methods, a revised U.S. commercial landings data stream, and data from the highest U.S. landings between 1994 and 2007. The **SAFMC's** goals are to incorporate the **SSC's** new catch level recommendations and to address management changes needed in the fishery based on public input in Amendment 10. After a scoping process that began in 2018, the **SAFMC** has arrived at preferred alternatives for changes to Amendment 10 and the Dolphin/Wahoo FMP. While the **SAFMC** introduces some key conservation measures to help alleviate the growing pressures on dolphin, within the draft amendment, there is no discussion of expanding size limits along the U.S. Atlantic coast to ensure more dolphinfish reach maximum reproductive output before being harvested or requiring the use of circle hooks while bailing for dolphin. Furthermore, there is no discussion of expanding conservation measures, including size, vessel, or bag limits, to the Gulf of Mexico, a location that feeds dolphin to the Florida Keys and U.S. Atlantic coast. NOW is the time to provide your comments to the **SAFMC**. Click here to read our letter to the **SAFMC,** which could not have been compiled without your participation in our tagging program since the onset of this study. We provide this letter to you for your reference to write your own letter or submit your own comments. Comments are due 2.5.2021. Voice your opinion now!

PUBLIC HEARINGS: DOLPHIN AND WAHOO MANAGEMENT MEASURES (AMENDMENT 10)

Webinar Registration:

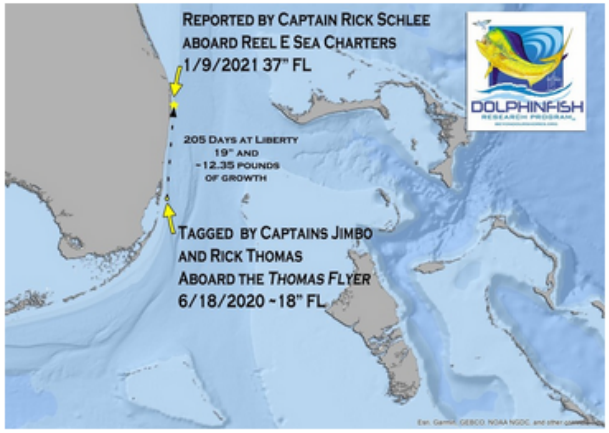
- Tues, January 26, 2021, 6 PM
- Wed January 27, 2021, 6 PM
- Thurs, January 28, 2021, 6 PM

New Dolphinfish Recapture

Dolphinfish Research Program Newsletter
January 2021

A special thanks goes out to ***Reel E Sea Charters*** (@reel_e_sea_charters (instagram)) and **Captain Rick Schlee** for reporting our first recovery of the year. **Captain Schlee** recovered this 37" cow while live baiting with his client (pictured above) off Lake Worth Inlet, Florida, on January 9th, 2021. This fish was tagged and released last summer by ***Thomas Flyer Fishing Charters*** (@thomasflyerfishing (instagram)). **Rick** and **Jimbo Thomas** estimated the fish was 18" fork-length when released. With a time at liberty of 205 days, this fish grew 19" or .09"/day and packed on approximately .96 ounces per day. Total weight gained was 12.35 pounds. At this growth rate, this particular

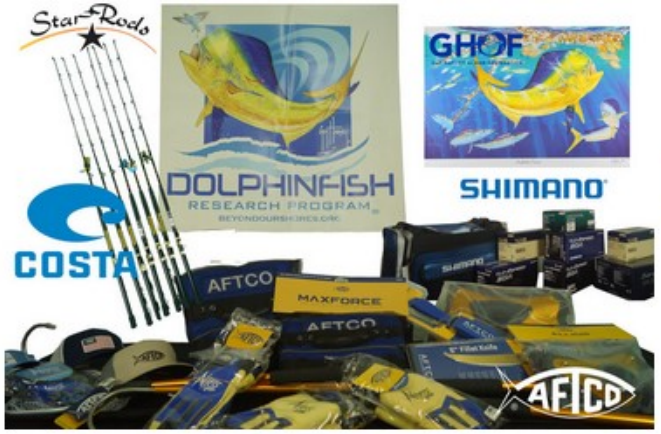
individual was packing on about a pound every 16 days! For Captain Schlee's report he will receive an AFTCO DRP performance fishing shirt, a 3-tag starter tagging kit, and Guy Harvey mini-print (image left). This marks the 718th recaptured logged for the DRP. Thanks to all individuals involved in this new recovery! Click here for more details.



New Tagging Awards Structure for 2021

Silver Sponsors

Bronze Sponsors



In January, we usually announce our year-end awards but due to the SAFMC public hearing this week, we postponed our annoucement until next month. In an effort to increase data collection on dolphinfish in 2021, we are excited to announce that each month this year we will be offering a monthly tagging award to the top tagging vessel that tags and releases the most amount of dolphin in that particular calendar month. We are also excited to announce that Costa has signed on as a 2021 award sponsor. In addition, our regional Mid-Atlantic Bight (MAB) awards program, which we started in 2020 to increase data collection in the MAB, will continue in 2021 thanks to support from AFTCO. Lastly, the first 20 recaptures of 2021 will receive a Guy Harvey mini-print! For more details click here.

Year-End Award Sponsors

New Blue AFTCO - DRP Performance Fishing Shirts!

Dolphinfish Research Program Newsletter
January 2021

Beyond Our Shores Foundation
Dolphinfish Research Program

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January 26, 2021

South Atlantic Fishery Management Council
4055 Faber Place Drive, Suite 201
North Charleston, SC, 29405

Dear Mr. John Carmichael and Council Members:

As the Director of the Beyond Our Shores Foundation, a 501(c)(3) formed to expand the Dolphinfish Research Program (DRP), an international angler-driven scientific capture-mark-recapture program for dolphinfish (*Coryphaena hippurus*), we would like to provide comments on this important draft amendment by first introducing policies that we support or suggest to be enacted to improve the proposed actions, then, second by addressing patterns and trends observed through our data collection. Using this approach, we hope you consider this constructive feedback meant to strengthen the amendment and overall dolphinfish conservation and management.

Expand 20" minimum size along U.S. East Coast

Anglers that have participated in the DRP are credited with successfully mapping out the migration of the species in the Western Central Atlantic Ocean (WCA) (Figure 1). With 717 conventional recoveries logged since 2002, we draw your attention to the extensive connectivity of this species between locations throughout the WCA, and when coupled with ocean circulation data (Figure 2), they show individual dolphinfish can reoccur in the same area semi-annually and annually. Of utmost importance for your consideration are examples of dolphinfish return migrants, which are fish tagged and released during summer along the U.S. East Coast between 18" and 21", or 2 to 3 whole weight pounds, and are recaptured along the same coast in a year subsequent to when tagged (Figure 3). These examples show individual fish grew between 10" to 33" while at liberty, which, when compared to average weight by length measurements for dolphinfish collected by the DRP, translates into fish more than tripling in weight for individuals at liberty for the shortest intervals or packing on up to 40 pounds for individuals at large for more than 300 days. These examples highlight the conservation benefit of releasing small fish within U.S. waters that can return within a year after considerable growth has occurred. While at liberty, these fish are able to reproduce at their maximum reproductive output for a greater amount of time, thus strengthening the spawning stock and annual recruitment. One key example I would like to share is that of a 20" dolphinfish tagged and released in June just south of the Outer Banks that was recaptured off Charleston, SC, 313 days later after growing 25" (see Figure 3 subpanel D). In order to reap the dividends from this species' early age of maturation (Perrichon et al. 2019), high reproductive capacity, fast

growth (Schwenke and Buckle 2007), and return migration tendency along the U.S. East Coast (Merten et al. 2014b; Merten et al. 2016), it is necessary at this time to include an action in this amendment to expand the current South Atlantic Bight 20" minimum size for waters from North Carolina to Maine. Please consider the addition of this action to Amendment 10 to give fish less than 20" the chance to advance reproductive capacity as well as return to the U.S. East Coast as larger return migrants.

Increase minimum size in Florida Atlantic Waters to 24"

With recreational effort on the rise in the United States, globally (Cooke and Cowx 2004), and specifically for dolphinfish since the 1990s (Freire et al. 2020), enhanced management measures are additionally needed among the jurisdictions and locations that land the most amount of fish. As is the case in the Florida Keys, south Florida, and off South Carolina, historically once regarded as prime dolphinfish fisheries, these locations are now perceived (Figure 4) as waters with decreasing abundance, changes in size frequency and timing, arrival, and duration present for migrating fish. Indeed, Florida constitutes the largest proportion of annual landings of dolphinfish within the WCA (Figure 5), and therefore any enhanced conservation measures implemented in these waters will have a larger overall impact to diminish local depletion and contribute to regional benefits of a stronger spawning stock. As a result, we advocate for an increase in minimum size within Florida's waters to 24", the length at which 100% of dolphinfish are at maximum sexual maturity and reproductive capacity (Oxenford 1999), to help initially maintain local abundance once fish do arrive, then overtime lead to an increase in local stock health due to the additive value of locally enhanced and regionally pervasive conservation measures.

Require Circle Hooks when Bailing Dolphinfish

In September 2017, a survey was initiated through the distribution of a DRP newsletter. A total of 468 anglers responded. The majority of respondents were recreational fishermen (69.7%; n=421), had been fishing more than 12 years (66.7%) and embarked on more than 21 fishing trips per year (73.6%). While fishing for dolphinfish, the majority of respondents (52.8%) indicated the use of circle hooks while trolling only sometimes, versus never (25.7%), always (14.5%), or only during sight-casting or live-baiting (7%). However, 91.4% of respondents indicated they would use circle hooks while fishing for dolphinfish if the DRP provided the tackle in tag kits. Only 8.6% indicated that they would not use this tackle even if they received it in free tag kits. Now is the time to require the use of circle hooks when vessels are engaged in bailing dolphinfish (casting to dolphinfish with live or cut bait from a drifting or slowly moving boat), to reduce discard mortality rates estimated between 15-40% (Rudershausen et al. 2019)

Approve Action 11 – Alternative 2 / Sub-Alternative 2a along entire U.S. East Coast

Survey data collected by our program indicate the perception of stock health varies by region in the WCA (Figure 4). Generally, anglers report a positive perception of the fishery when immediately adjacent to expansive areas of ocean with low directed effort toward dolphinfish fisheries; angler perceptions worsen as the number of jurisdictions with directed dolphinfish fisheries increase down current of major dolphinfish movement routes. Given the information presented above with regards to regional connectivity, circulation, and annual re-occurrence, it is of our view that the degree to which dolphinfish are seasonally depleted increases as

fish move toward the Loop Current from the Caribbean Sea or Gulf of Mexico, or into the Florida Straits via the Old Bahama Channel. Therefore, given that dolphinfish are linked in an annual cycle in the WCA, dolphinfish conservation and management measures should be established in areas of good or worsening stock perception (sources) in order to improve stock health in the locations with the worst perceptions (sinks). Therefore, we applaud the Council in including Action 11 in this amendment and support Alternative 2 and sub-alternative 2a. Please consider our arguments and enact this action for the entire U.S. East Coast. If sub-alternative 2a is implemented along the U.S. East Coast it would mirror the vessel and bag limit in the U.S. Caribbean Sea established by the Caribbean Fishery Management Council in 2010.

Approve Action 3 – Alternative 4 and Action 9 – Alternative 2 / Sub-Alternative 2a

Dolphinfish are subject to increasing commercial catches in the largest fisheries (e.g., Taiwan, Peru, Ecuador) (Kleisner 2008; Aires-da-Silva et al. 2016) and increasing demand in major seafood markets (e.g., China, United States, and European Union) (MSA 2016). Directed commercial landings are also significant, additionally supplemented by, indirect harvest in purse seine (Hall and Roman 2013) and longline fisheries (Lynch et al. 2018), but the total WCA commercial take remains unknown. For the latter, a decrease in relative abundance has been documented in U.S Atlantic pelagic longline fisheries (Lynch et al. 2018). However, a considerable amount of uncertainly exists regarding how many dolphinfish are indirectly caught in all Atlantic pelagic longline fisheries, which have risen tremendously over the past 30 years both inside and outside of national jurisdictions (Figure 6). Given this uncertainly, with regards to Action 3, we support Alternative 4, which will decrease the U.S. commercial allocation by 2%. We do not support the preferred alternative because we feel U.S. commercial fishermen can offer a premium product compared to those that are imported and therefore did not feel a reduction of 3% is necessary at this time. Furthermore, with relation to Action 9, we would only support the Preferred Alternative 2 and sub-alternative 2a of a 250 pound trip limit for vessels holding trap, pot, or buoy gear to harvest dolphinfish or wahoo by hook and line if their activities cease in the presence of recreational fishing vessels engaged in the same activity at the same place and time to avoid sector conflict and competition. Furthermore, the use of circle hooks should be required for these vessels when fishing for dolphinfish and wahoo next to pots. In the Mid-Atlantic Bight, our tagging data indicate dolphinfish tagged (n=422) next to pots are generally small fish (range: 12” to 36”; average and SD = 18.08 ± 6.97” fork-length).

Approve Action 1 - Alternative 4

In the data presented in the minutes, the average annual landings for dolphinfish from 1994-2003 were 22,112,604 lbs., while from 2004-2019 they were 15,972,423 lbs. This represents a drop of 28% on reported landings, a trend that is readily discernable in the graphs. We do not see any indication that this trend has been recognized and taken into consideration in formulating alternatives for establishing the ACL. Therefore, it is not clear whether the objective of Action 1 is to maintain landings at the more recent level, achieve a return to those seen in 1994-2003, or something else. Given the level of uncertainty with regards to both recreational and commercial landings, especially as it pertains to direct and indirect international commercial fisheries, we feel that a precautionary approach is warranted and therefore support Alternative 4 of Action 1 to establish the ACL at 90% of the updated ABC.

Expand FMP to include the Gulf of Mexico

The strongest management plan for dolphinfish in the region (i.e., South Atlantic Fishery Management Council Dolphin/Wahoo Management Plan) only applies to a small portion of the species distribution yet we routinely document broad connectivity and annual seasonal reoccurrence. Despite the pronounced variability in recreational dolphinfish landings data collected in the Gulf of Mexico (GOM) since 1995, average annual landings are higher than that of the New England, a region where discussions indicate Amendment 10 will apply. In addition, GOM anglers have favored inclusion within the FMP on the SAFMC amendment 10 comment board. Therefore, please include the Gulf of Mexico Fishery Management Council in discussions to expand this FMP to cover the GOM. Stronger management actions for dolphinfish in the GOM can improve dolphinfish stock status in the Lower and Upper Keys, a location with the worst stock perception in the entire region.

Establish International Dolphinfish Working Group

Additional analyses on countries with directed commercial landings have revealed under- or mis-reporting trends. Data suggest that the largest single-landing sector in the WCA, the Florida recreational sector, may not hold that designation for much longer. Our research suggests that increasing commercial landings in some Caribbean nations over the past 5 years when combined with mis-reporting and under reporting due to current economic restraints (hyperinflation and fuel limitations in some nations) has forced some offshore fleets to land dolphinfish outside of their home country. Our tagging and genetic data have linked dolphinfish throughout this region with the U.S. East Coast, yet, with the exception of a recreational vessel and bag limit in Puerto Rico, there are no conservation or management measures for dolphinfish in these areas. Therefore, management is not considering the full impacts on the stock. Now is the time to work with international partners to strengthen data collection programs and improve management to ensure the future sustainability of the WCA dolphinfish stock.

Thank you for the opportunity to comment on this amendment.

Best Regards,

Wessley Merten, Ph.D.
Director
Beyond Our Shores Foundation
Dolphinfish Research Program

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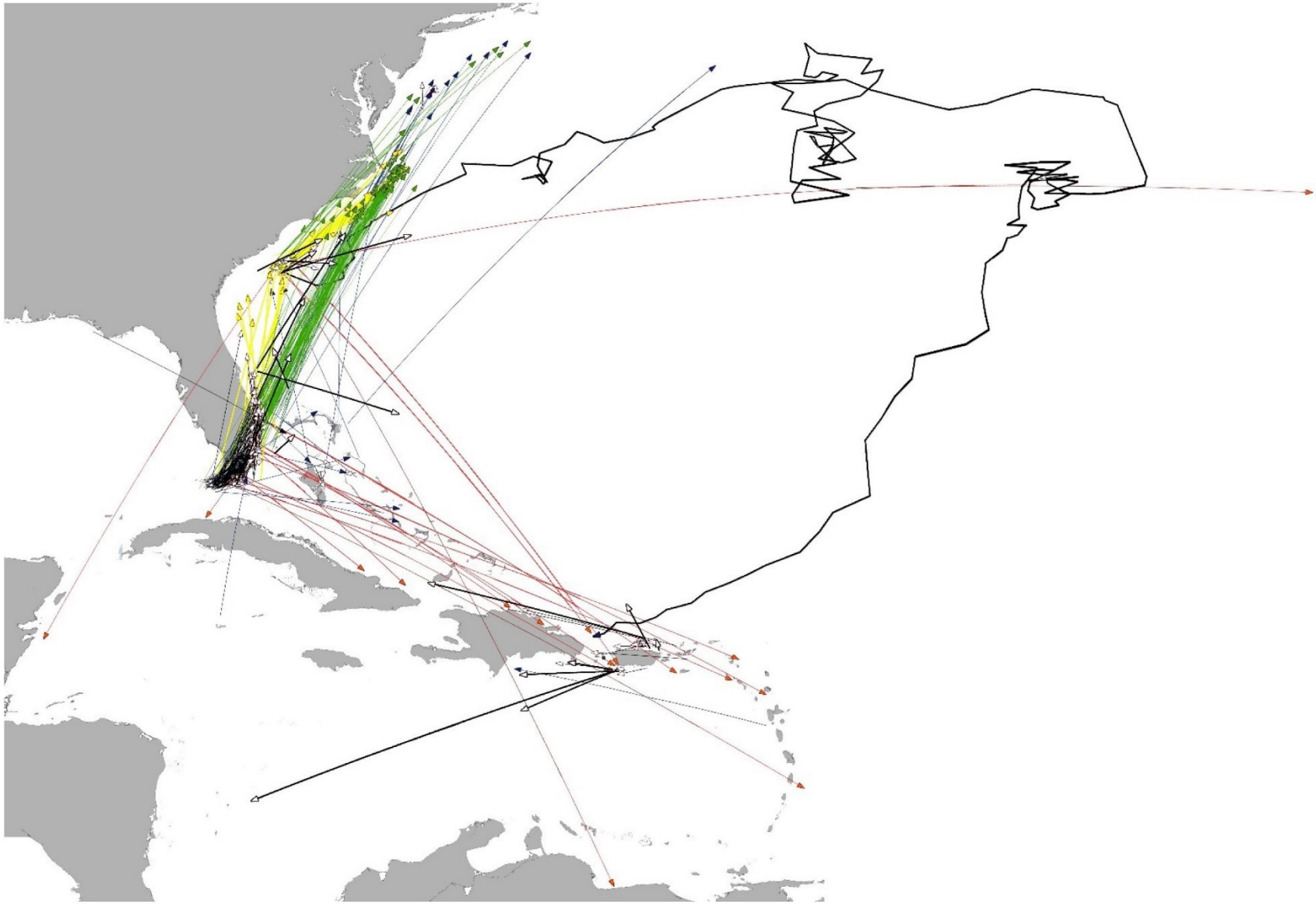

Figure 1 Straight-line horizontal movements of dolphinfish (*Coryphaena hippurus*) acquired from the majority of conventional (thin, colored, and black arrows) and satellite (thick, bold, and black arrows) tags in the Dolphinfish Research Program from 2002 to 2020 in the Western Central Atlantic Ocean, Caribbean Sea, and Gulf of Mexico. A 180-day geolocation track for a 43" bull is included as a thick black line. Movements (arrows) are estimates due to the broad scale of the map.

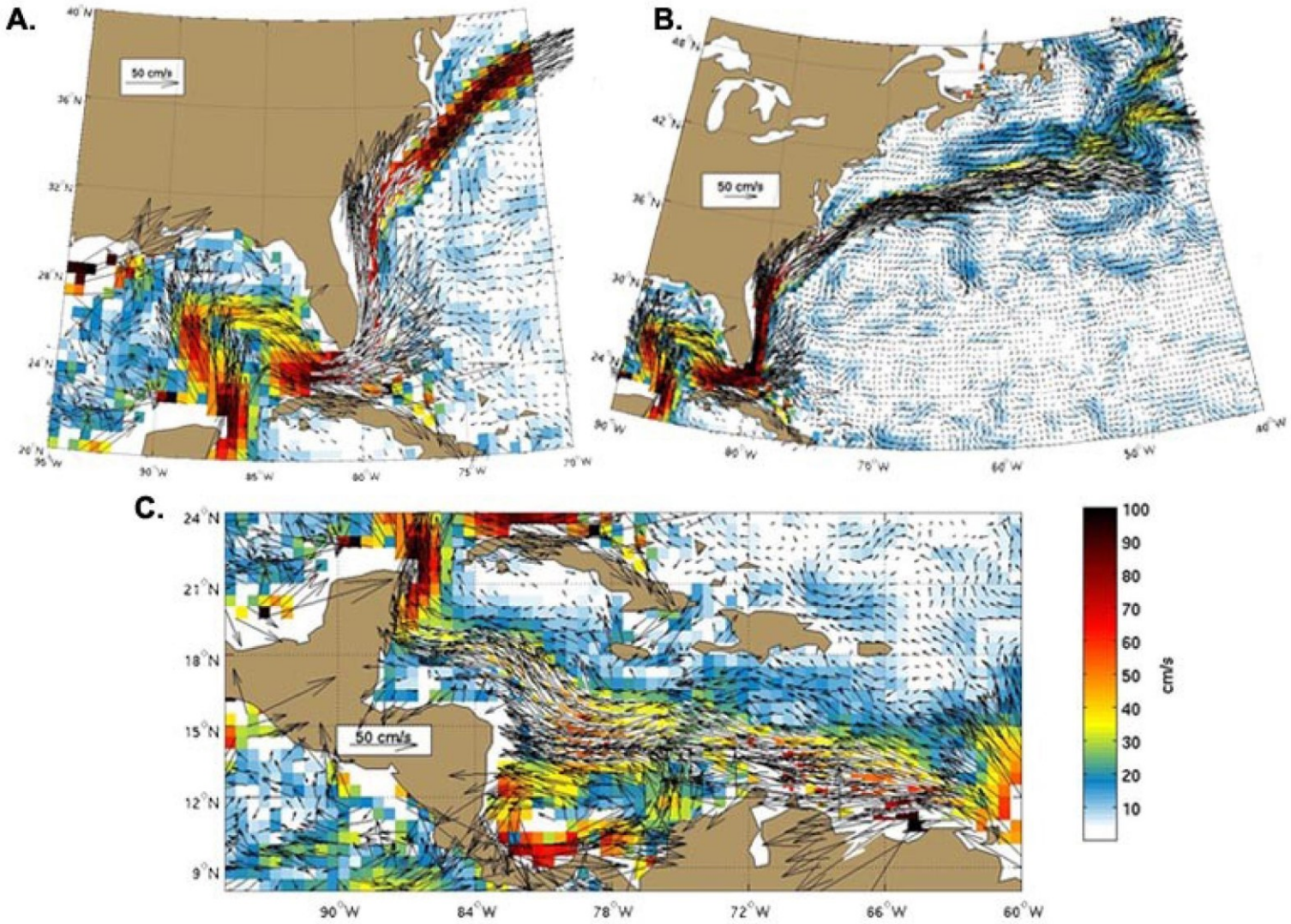

Figure 2 Annual means of surface circulation (cm/s) of the (A) Florida Current, (B) Gulf Stream, and (C) Caribbean Sea derived from analysis of surface drifters. This climatology was developed by Rick Lumpkin (NOAA/AOML) and Lucas Laurindo (Univ. Miami), in collaboration with Arthur Mariano (Univ. Miami), Mayra Pazos (NOAA/AOML), and Erik Valdes (CIMAS/AOML). Previous versions were developed with Gregory Johnson (NOAA/PMEL), Silvia Garzoli (NOAA/AOML), Jessica Redman (CIMAS), and Zulema Garraffo (Univ. Miami). Images taken from ftp://ftp.aoml.noaa.gov/phod/pub/lumpkin/drifter_climatology/figures/Atlantic/.

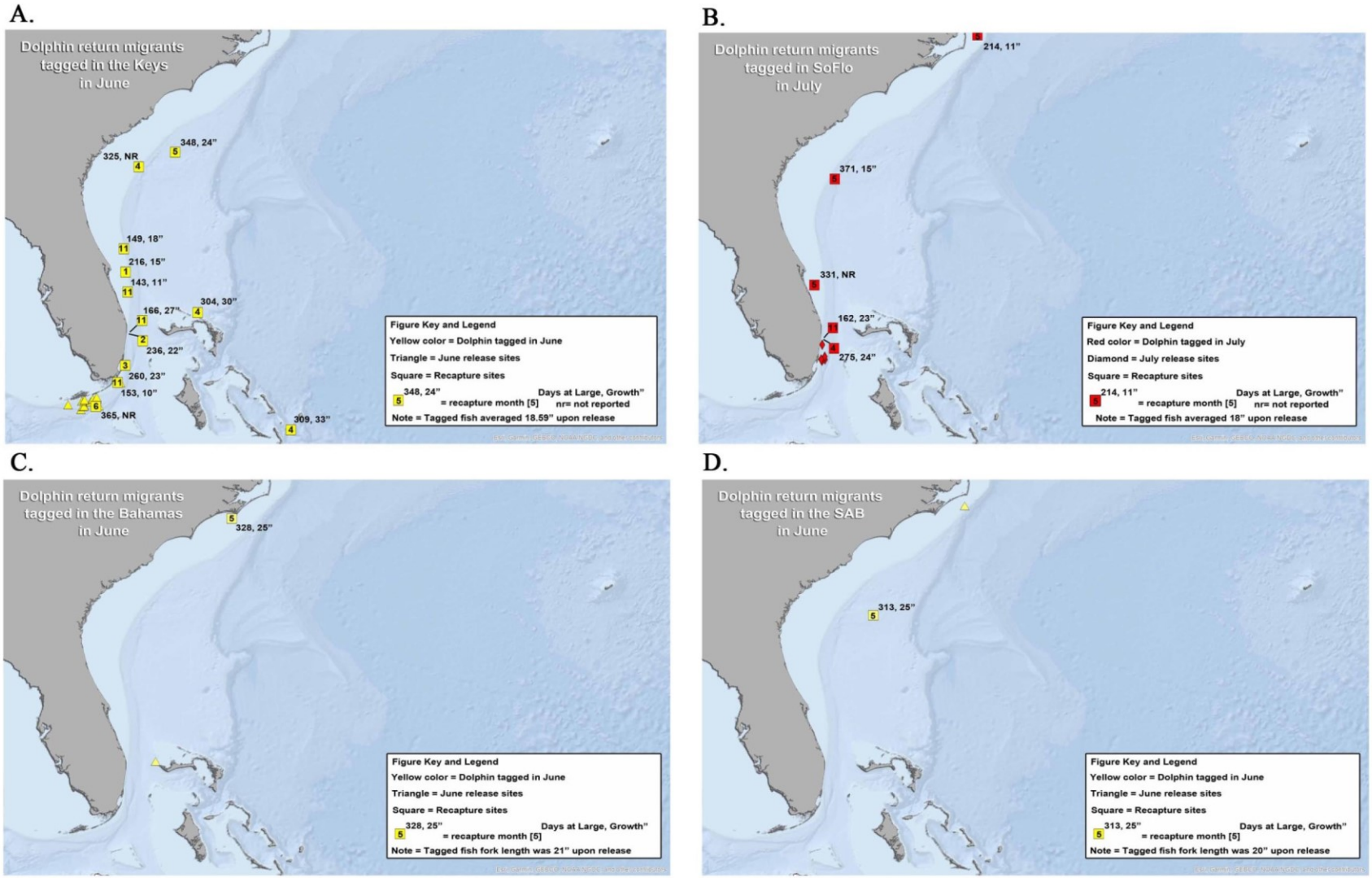

Figure 3 Tag and recapture details for fish that were recovered on the same coast where released in a year subsequent to when tagged. Examples are for dolphinfish tagged and released in the (A.) Florida Keys in June, (B.) South Florida in July, (C.) Bahamas in June, and (D.) South Atlantic Bight in June. See each sub-panel for additional tagging and recapture details.

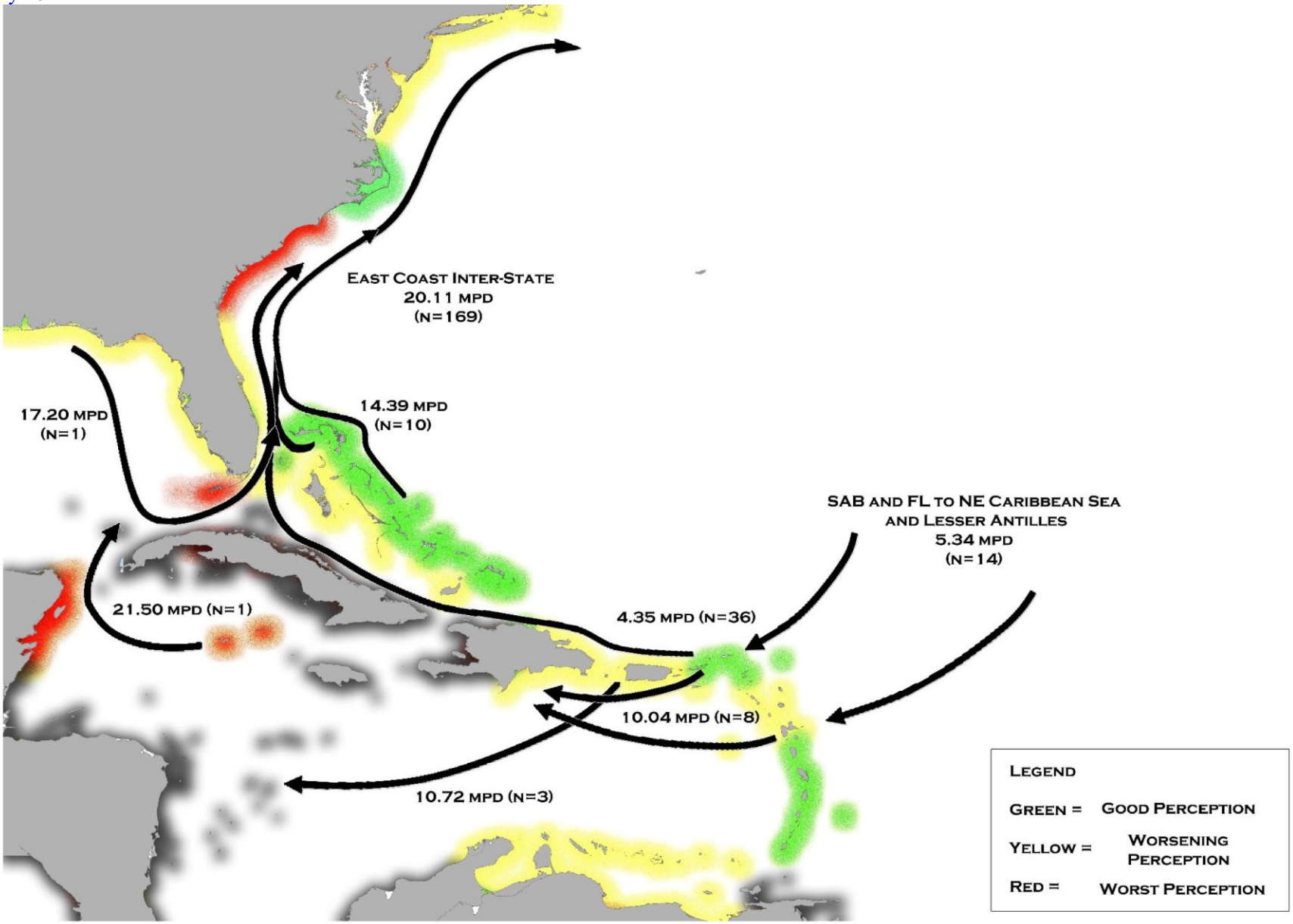

Figure 4 Dolphinfish stock status perception based on recorded public sentiment during South Atlantic Fishery Management Council (SAFMC) webinars, anecdotal survey responses (n=133) submitted on the SAFMC public comment board, and to the Dolphinfish Research Program (n=25). Theorized dolphinfish movement routes based on conventional and satellite tagging observations are included. Each theorized movement route is presented based on documented conventional and satellite tag movements. Coastlines with a black shading indicate unknown perception.

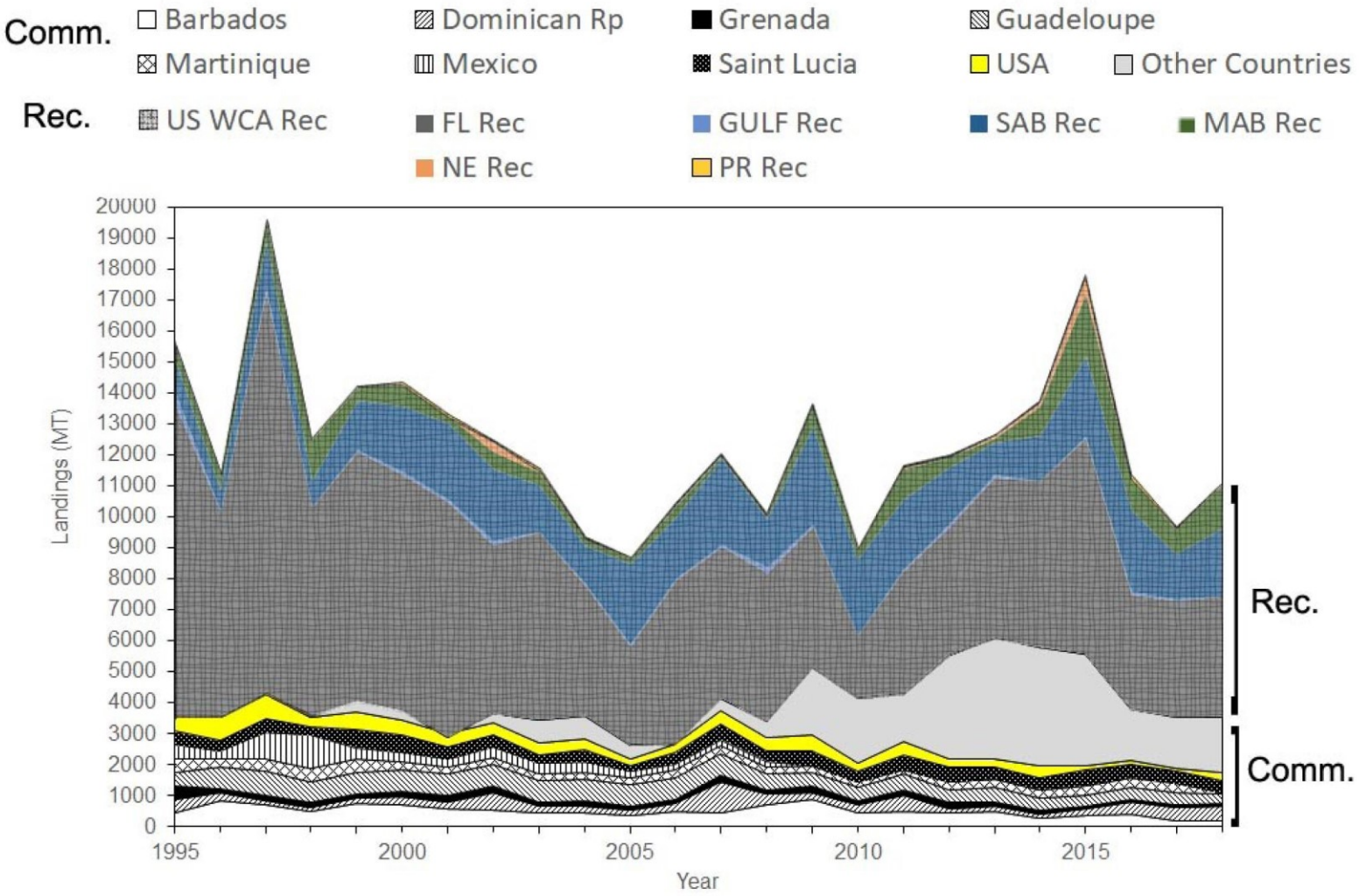

Figure 5 Western Central Atlantic Ocean commercial (comm.) and recreational (rec.) dolphinfish landings from 1995 until 2018 in metric tons from the Food and Agricultural Organization (FAO). Commercial landings are presented by country and aggregated by a group called "other countries" which consists of 15 nations that have sporadically reported dolphinfish landings from the beginning of the time period. The United States recreational sector (U.S. REC WCA) is presented as an aggregate (pattern) and broken down by each major Atlantic based recreational sector. FL Rec = Florida Recreational; Gulf Rec = Gulf of Mexico Recreational; SAB Rec = South Atlantic Bight Recreational; MAB Rec = Mid-Atlantic Bight Recreational; NE Rec = New England Recreational; PR Rec = Puerto Rico and United States Virgin Island Recreational.

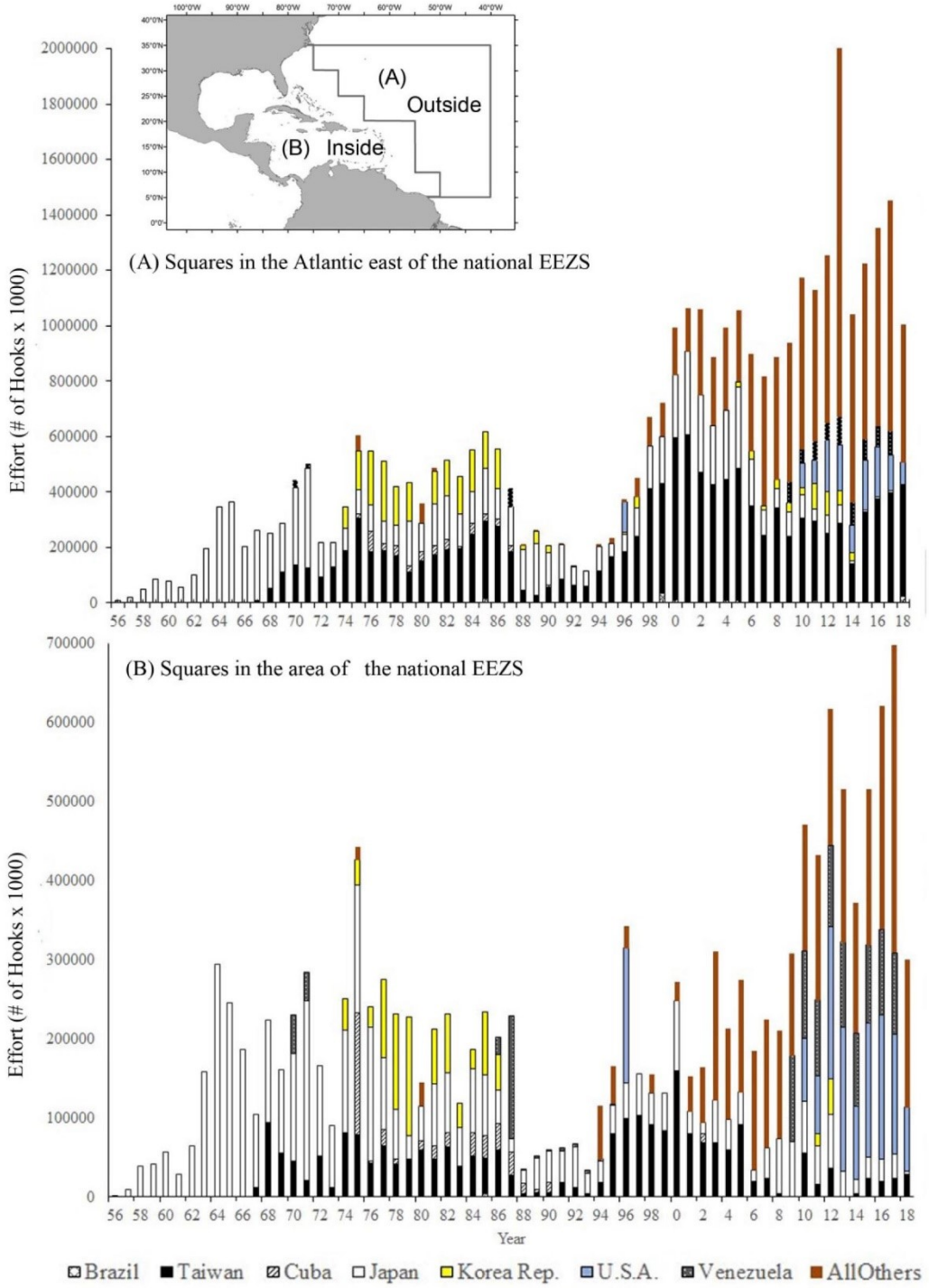

Figure 6 Atlantic pelagic longline effort (number of hooks x 1000) for the top 7 nations reporting effort to the International Commission for the Conservation of Atlantic Tunas (ICCAT) since 1956. A group called "all others" (red) includes nations that reported effort sporadically since the beginning of the time period. The methods used to develop this figure followed Mahon (1999) to illustrate the rise in effort (A) in the Atlantic Ocean east of national exclusive economic zones (EEZs) and (B.) within the area of the national EEZs.

Help Fund 2021's Tagging Effort

A special thanks to everyone who has contributed to our tagging program since the beginning of our 2020/2021 fundraising campaign. With your support, we were able to start 2021 strong and, to date, we have already shipped out 103 tagging kits. Our goal is to distribute 400 kits and 5,000 tags in 2021. While we have an operational budget to begin the year we still need support to help us fund our online tagging map (click here), acquire additional satellite tags to deploy on adult fish in 2021, as well as increase our tagging kit and education supplies to meet our growing demand for tagging kits. Our tagging program is at the forefront of educating anglers, advancing discussions and actions surrounding conservation of the species, and gathering additional data to help inform data-driven decision making at the state, federal, and international levels. Help the DRP expand in 2021. Click the icons below to shop or donate to support our program.

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