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The Billfish Foundation appreciates the opportunity to provide comments on Draft Amendment 15 to the Consolidated Highly Migratory Species (HMS) Fishery Management Plan, however what the National Marine Fisheries Service (NMFS) released in Amendment 15 is extremely disappointing for it grossly fails to meet the responsibility to inform the public. In fact, we view your failure **as arbitrary and capricious, an abuse of discretion**, for you are fully aware that the technical, complex, multi-faceted and lengthy (598 pages) Amendment, highlighting PRISM, was far beyond the comprehension of the public, even those who regularly participate in your processes, including those who have done so for decades. It is an insult. The inadequacy of the agency informing the public was clearly made in the September meeting of the HMS Species Advisory Committee when a Committee member, who has a PhD in fisheries, shared she cannot understand Amendment 15. She added **to understand the content of Amendment 15, one must have a PhD in modeling fish population dynamics, a highly specialized area of science**.

The lack of public participation in Amendment 15 meetings and relatively few comments received, compared to other recently proposed measures, directly reflects the lack of the public's understanding, not a lack of interests. Without the public's comprehension, including those deeply invested in the agency's HMS management history and processes, of the issued Amendment 15, one cannot determine whether the Amendment, specifically via PRISM, reflects sound options and sound decision making or just a new method selected from the influence of others. The failing to adequately inform the public and questions raised why PRISM was applied in this HMS Amendment, instead of traditional fishery evaluations, should halt any further action on Amendment 15.

A technical analysis of the PRISM computer model and its appropriateness for application in guiding management of highly migratory fish is essential. In

the Amendment text itself, it is noted that PRISM models, (predictive spatial model) are not usually applied in management of HMS. Yet it was done in Amendment 15 without any explanation.

The publication of the PRISM paper in *Marine Biology Journal* raises questions of a **conflict of interest**, it did not establish confidence in the application of PRISM in Amendment 15. The conflict of interest questions arose from the fact that one of the authors is listed on the Journal's website as an Associate Editor. He is also an agency employee, whose overwhelming number of publications indicate a strong interest in sharks, consistent with the agency's priority in Amendment 15 and with **9 out of the last 16 amendments to the HMS Plan.** Subsequent to the Journal publication, the PRISM paper was sent to NOAA's Office of Science & Technology, specifically to the Center for Independent Experts (CIE) for review, surely to give the appearance the PRISM paper did receive critical review. If such were the case, that might give the public, who could not understand the paper's content, a false sense of credibility and cause acceptance. But the agency gave the CIE reviewing experts (Gaertner, Howell, Sparholt) instructions not to focus on PRISM's methodology, but instead to focus on the communication and description of the spatial management alternatives, rendered that review shallow. Fortunately, at least one reviewer raised concerns and "strongly recommended" further concerns with PRIS's use in Amendment 15. The limited expert reviews insured a thorough review of PRISM methodology would not be reviewed. PRISM's methodology is the crux of the modifications, how they were generated. A genuine expert review of PRISM's methodology is still needed as is an evaluation of whether it is appropriate in guiding management to identify and select Closed Zone modifications for HMS

Some comments made in the **reports of CIE reviewing experts** that, even without understanding the technicalities of PRISM, still **raise serious concerns**, as follows.

"the model (PRISM) moves from interpolating between the data to ***extrapolating beyond the data****, with all the risks that this implies,"* "it is critical that a species-by-specie analysis be conducted alongside the main multispecies metrics of success for each proposed closure to check for potential poor performance for any given species of concern."
"a particular closure could do well overall across the range of bycatch species, while still performing poorly for one or more of those species,"] *"here is now a point that could be questioned by external scientists or*

*stakeholders: In which aspects the HMS spatial management plan is specific to high migratory species? i.e., how it would be different from a spatial management plan for less mobile species?" "**Community importance or unique characteristics, such as a species that may be highly sought after in the recreational fishery**." "there is a lot of information on the movement of the bycatch species of interest (and on target species) from past tagging studies, using conventional tags and electronic tags which could be helpful to assess the effectiveness of the closed areas," it continues… "**lack of sensitivity testing on the 25%/50% values"," lack of population modeling," "PRISM cannot be used alone in management, but must be incorporated into a wider risk assessment including population modeling," "it must be used as one part of an integrated management evaluation," "PRISM model results need to be used as part of a holistic evaluation (including population estimation) rather than as stand-alone results," "two simplifications which stand out as potentially problematic -"bycatch risk maps are simplified from the actual risks estimated with PRISM to a simple binary map with each grid cell assigned to either high or low risk ..and the second is that this is done based on the percentile of the distribution of bycatch risk, rather than the actual cumulative risk within the closed and open areas….both are questionable choices;" "no information included to show the researchers had conducted the necessary "sanity checks" to establish that the simplifications were behaving appropriately;" "strongly recommends that an evaluation be made of the appropriateness of using the binary high/low risk maps rather than the full heat maps coming from the PRISM model:" "the choice of metrics be re-evaluated," "If a decision is made to continue using the percentile distribution, then the choice of using exactly 25% and 50% to could be helpful to assess the effectiveness of the closed areas."** "As mentioned above, a significant fraction of the overall bycatch risk may occur in "low bycatch" areas. "The review recommends that the choice of metrics be re-evaluated in a future revision. It is normally not good modelling practice to take a standard model (here a GAM) and "throw in a lot of parameters" and afterwards sort out things with AIC and the like. Selecting parameters and model structure should rather be a very long and very careful work building on the science available and common sense."*

Amendment 15 Fails Atlantic Marlin.

The decision to combine all billfish into one group in Amendment 15, to increase "sample size," fails Atlantic marlin. Assessing the effectiveness of Closed Zones to reduce bycatch and bycatch mortality of Atlantic blue marlin, which was and remains overfished, cannot be achieved by combining all billfish. Atlantic blue marlin, white marlin, swordfish and sailfish exhibit very different **unique behaviors**, for instance blue marlin are not found just off the shoreline, where sailfish can often be found. Combining all billfish cheated blue marlin in the East Coast Closed Zone modifications, which are not extended eastward enough to reduce bycatch and bycatch mortality of the species. Atlantic blue marlin remain overfished and are important to the sportfishing community and should receive protections.

Even without an understanding of PRISM technicalities, our reading of Amendment 15 raised many questions about choices made, a few of those questions follow.

> PRISM projected a high billfish occurrence rate of 40% (no separate marlin projections) in Atlantic pelagic longline sets and in the Gulf of Mexico a rate of 44%, with shortfin mako sharks projected at 27% and evaluated sea turtles at 6% and 7%. The high billfish occurrence rates give the impression that reducing billfish longline bycatch would be a top priority, but that is not reflected in the Amendment anywhere.
>
> ***Why didn't the high billfish occurrence rates in pelagic longline gear warrant a higher priority for reducing billfish bycatch mortality?***
>
> PRISM also identifies "high-bycatch risk areas" within the Zones as those including the top 25% occurrence probabilities, thus 25% risk area value is assigned. Each species is assigned a value "based on the level of management importance," which sounds subjective. Protected species were assigned a 50% risk value and billfish 25% even though the projected billfish occurrence probabilities were the highest of all.
>
> High-bycatch-risk value, according to Amendment text… includes "species that may be in need of greater protection due to stock status [overfished], ESA status, or community importance [extremely high] would be given a greater high-bycatch risk area value than other species."

Atlantic marlin are overfished and are extremely important to the sportfishing community/industry, which would seem to justify a higher risk value than 25%

Once PRISM determined the high bycatch risk area values, it used that decision to calculate an occurrence probability [with pelagic longline gear] threshold for each high risk area evaluated. Billfish's thresholds (differs from above) within the high bycatch risk area was assigned 75% in the Atlantic Ocean and 73% in the Gulf of Mexico. Other threshold percentages assigned includes: Leatherback sea turtles - 2.4% in the Atlantic and 2.8% in the Gulf; Loggerhead sea turtles - 3.4% in Atlantic only; and shortfin mako sharks- 25% in Atlantic and 49% in the Gulf.

Again the high percentages for billfish raise the very important question why weren't billfish (marlin) given a high priority in reducing pelagic longline bycatch? Where would marlin separately have scored and how would proposed Closed Zone changes have reflected that higher priority need?

PRISM used four lengthy "metrics," on pages 2-14 through p 2-18 in Amendment 15, to formulate the development of options, in doing so two types of data over different time ranges were compared, one inside the Closed Zones (2017-2019), which the PRISM model identified as "predicted occurrences" (interaction probabilities) compared to actual observer data outside Closed Zones from a different time frame, **1997 - 2019**.

Comparing two types of data from two different time frames and from different locations usually raises questions of validity, as often heard … "don't compare apples and oranges."

OTHER Possible Violations - NMFS Fishery Management Policies and Procedures

TBF also maintains that Amendment 15 violates numerous NMFS fishery Management Policies and Procedures (Policy 01-101-01, Procedure 01-101-08; 01-106). The NMFS Policy Directive System appears yet to specifically have included management of Atlantic highly migratory species, though by reference the policies and directives should apply.

PRISM does not use traditional vessel reported catch data or satellite tagging catch data, but instead uses environmental factors and observer data to make projections and, at times, extrapolate data to fill voids. Perhaps PRISM extrapolated and stretched data and missing data too far.

THE CURRENT CLOSED ZONES, IN PLACE FOR THE PAST 20 AND 21 YEARS, HAVE BEEN AND REMAIN SUCCESSFUL. Hook-up rates for anglers of not only billfish but many other species have increased during those years.

PRISM GENERATED CLOSED ZONE MODIFICATIONS CHARLESTON BUMP CLOSED ZONE

A. Sub-Alternative A2c Ranked #2 by PRISM – **NMFS Preferred Option - TBF sees this as a big negative for there is no protection for blue marlin & cannot support**

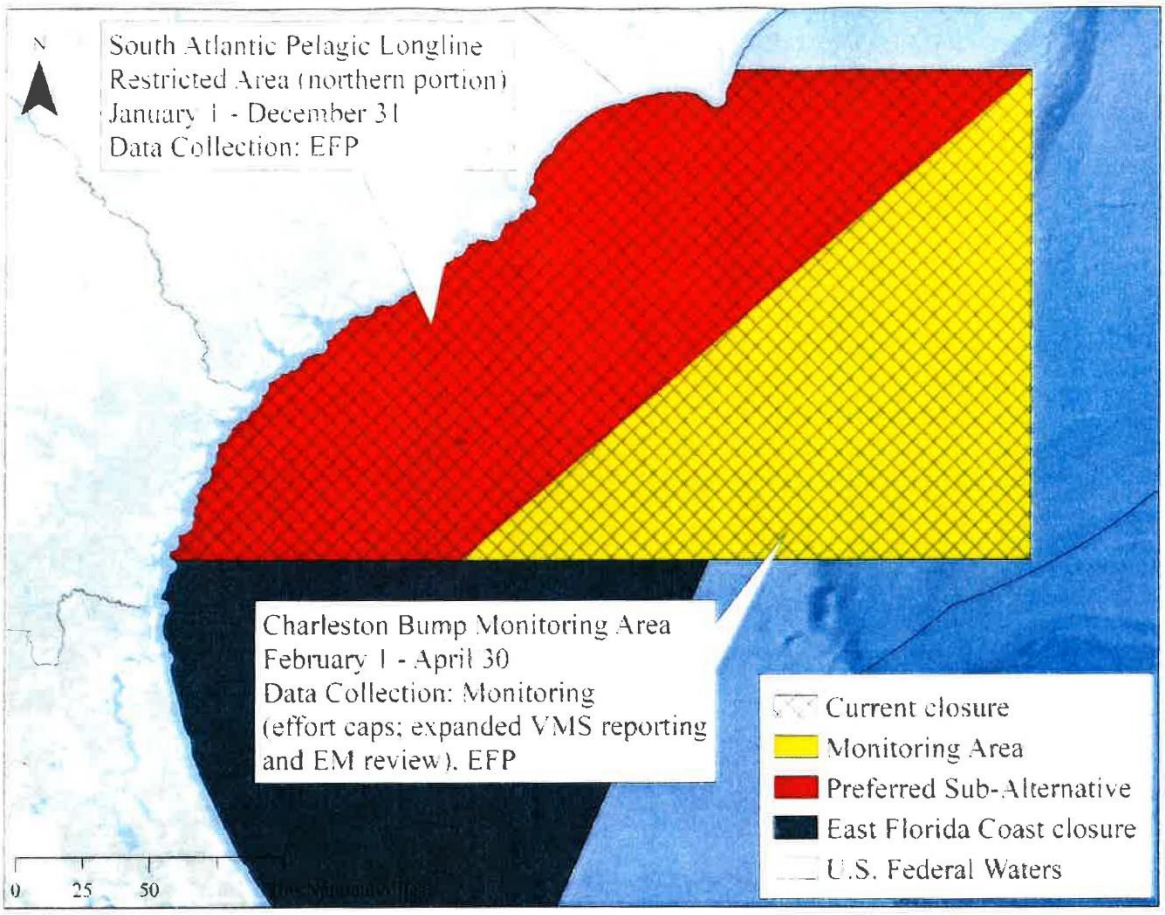

Figure 0.4 Preferred Charleston Bump Spatial Management Area Package

(1) **Closure,** the **red** above, will be **transitioned** from a **3-month closure** to a **12-month Closure**

The NMFS **Preferred Option significantly reduces the size** of the Closed Zones by moving the eastern boundary westward by diagonally bisecting the current closure, connecting the NE corner of the Zone (34 degrees 00' N. Lat,76 degree 00 W long) with a line that runs from **northeast** corner to a **southwest point** [**40 nm from shore**] near the Charleston Bump bathymetric feature on the southern boundary, including 400 meters of the shelf break.

The NMFS 'descriptions" used to describe this and other Preferred Options were poorly written. In this option, the new distance from shore was not specified, except in latitude and longitude readings, which are fine for boat

captains, but not for the public, including members of the public who have for decades and continue to participate in the HMS fishery management processes.

The waters within the Zone from shore out to 40 nm are proposed to be labeled a **High Bycatch Risk Area (HBRA)** in which research can be conducted on **longline vessels** so long as an Exempted Fishing Permit (EFP) is authorized. PRISM projects the presence of bycatch species near the shore, *within the 40 nm*, to include shortfin mako sharks and leatherback sea turtles, estimating an increase in protections by122%. **No mention of billfish**, **specifically not blue marlin**, which was one species for which Closed Zones were to protect from bycatch and bycatch mortality. Blue marlin were overfished when the Zones were created and remain overfished today, 2023.

The *PRISM* **modified Charleston Bump Closed** Zone clearly does not factor in protections for Atlantic blue marlin, thus the 122% increase in coverage/protections from becoming pelagic longline bycatch has to apply to sharks and sea turtles and maybe some other species, but not blue marlin, that species remain overfished and are extremely important to the sportfishing community, especially the anglers off South Carolina.

While not specifying where, the PRISM analysis provides that Atlantic billfish bycatch occurrence probability rate in **Atlantic pelagic longline gear was 40%.**

Waters east of what PRISM labels the **High Bycatch Risk Area,** the adjacent waters, in yellow, PRISM labels a **Monitoring Area between Feb 1 – April 30,** during which longline fishing will be allowed with effort caps, electronic monitoring (EM) and cooperative research via EFPs. **After April, the waters will be opened to pelagic longline fishing for swordfish.**

An explanation would be helpful to know upon what data PRISM calculated the changes in “coverage” of the Charleston Bump Closed Zones to increase by 122%, certainly not so for blue marlin.

Florida East Coast Closed Zone

A. Sub-Alternative A3d – NMFS Preferred Option - PRISM Ranked #3

Neither of the FL options offer much for blue marlin! Marlin do not hang out within 40 nm of the shore.

Your persistent focus on sailfish is misplaced. The agency cannot even provide the stock assessment status of sailfish, for the "so called" stock assessment worked on this year has never been released.

TBF does not endorse.

A year-round closure to pelagic longline fishing was generated by PRISM that requires the current eastern boundary to move west to 40 nm from shore and will be labeled a High Bycatch Risk Area, in which the waters shoreward are to receive more conservation protections for PRISM modeled species...leatherback sea turtle, shortfin mako sharks and billfish, but not mention of blue marlin, which was one species that was overfished when the Closed Zones were established 20 an 21 years ago and remain overfished.

Area east of High Bycatch Risk Area (yellow) will be a year-round Low Risk Monitoring Area in which pelagic longline fishing can take place to collect data with Electronic Monitoring, effort caps bycatch caps and EFP for research.

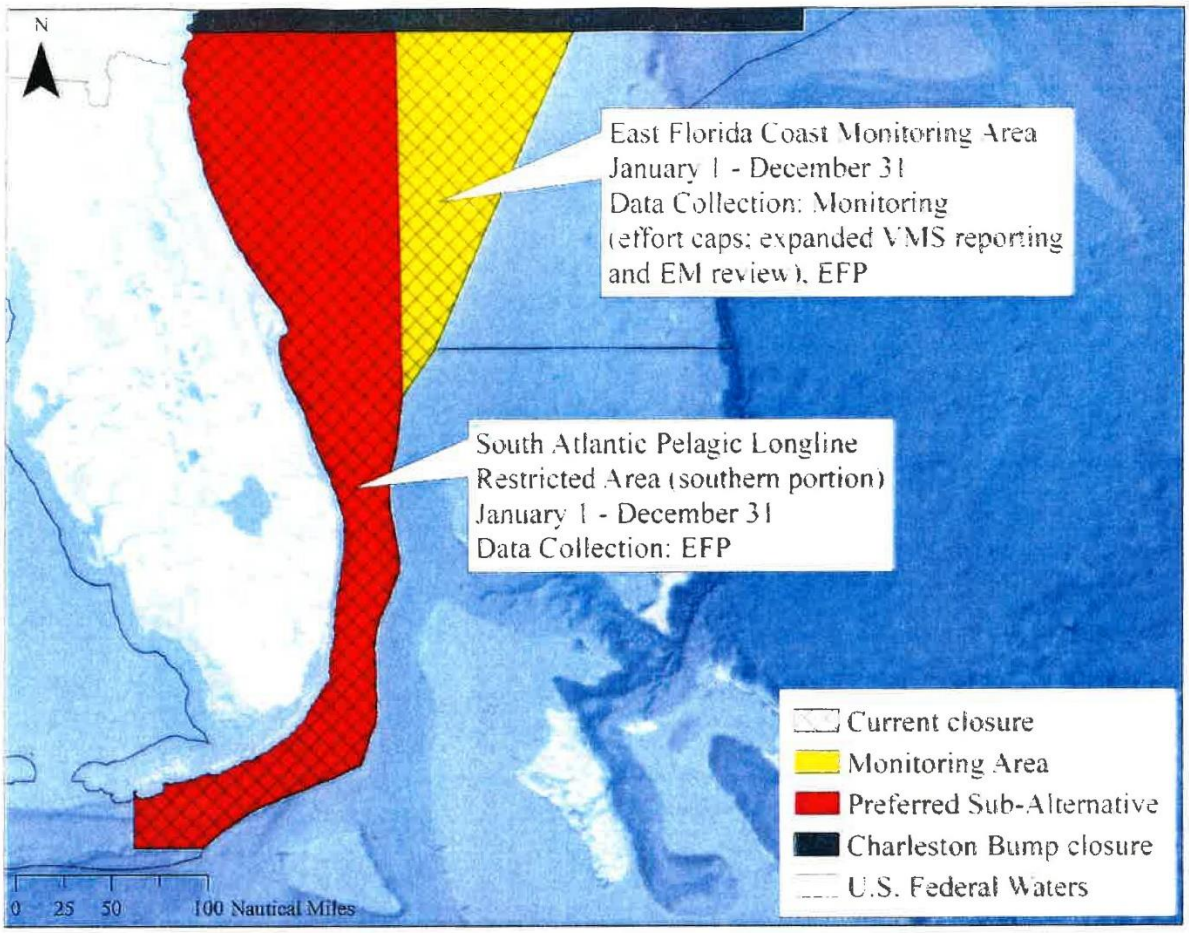

Figure 0.5 Preferred East Florida Coast Spatial Management Area Package

OR

This option offers a wee more for marlin, which is better than the Agency Preferred Option.

Sub-Alternative A3b – Second Option

Establishes 2 Areas with different dates to reduce conflict between fisheries (recreational and commercial)

(a) **May 1 - Nov 30** High Bycatch Area (Red) will remain closed to pelagic longline gear, **except for** research longline fishing with an Exempted Fishing Permit

(b) **<u>Dec 1 – April 30</u>** - **eastern boundary moves west to 40 nm** from shore, with the balance of current Closed Zone becoming open to pelagic longline fishing (cross hatched)

PRISM projects overall coverage to be <u>reduced by 21%. Not for blue marlin.</u>
PRISM highest metric score highest for billfish was between **May 1 – Nov. 30**

That high metric score, most likely reflects the high sailfish abundance. PRISM's metric explanations are extensive and highly technical, included on pages A-76 0 A-84 in Amendment 15. Without an explanation so that the public, including those who have participate in the highly migratory species management processes for decades, can understand, the pages <u>are not helpful.</u>

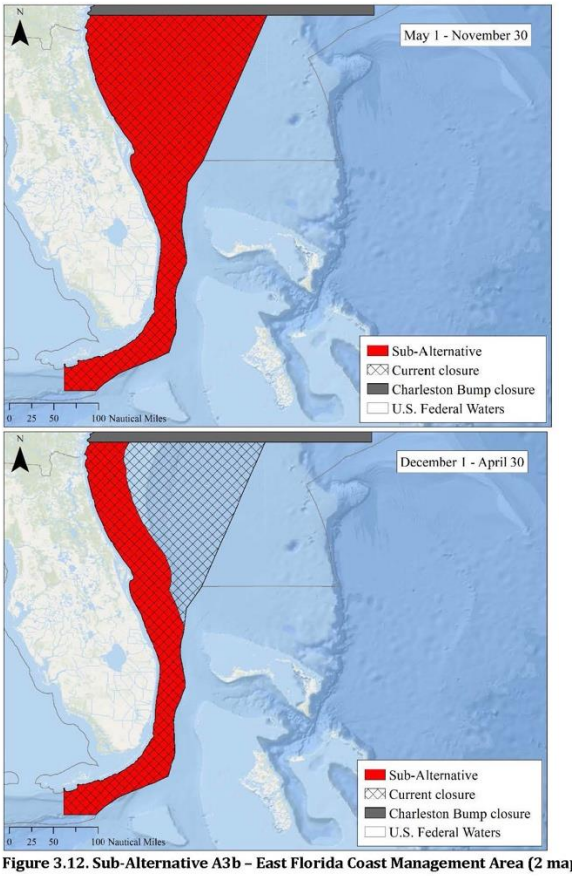

Figure 3.12. Sub-Alternative A3b – East Florida Coast Management Area (2 maps)

GULF of MEXICO – DE SOTO CANYON CLOSED ZONES – NMFS Preferred Option SUB-ALTERNATIVE 4d

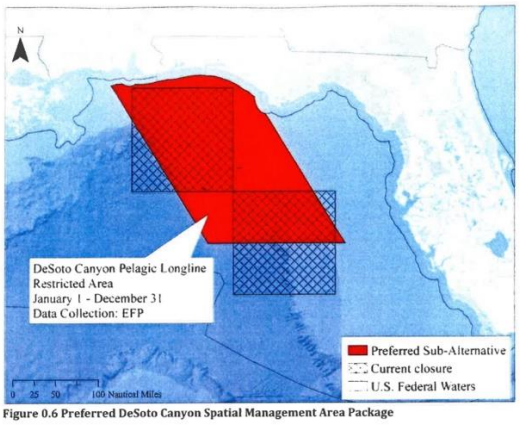

Figure 0.6 Preferred DeSoto Canyon Spatial Management Area Package

NOT PREFERRED BY TBF, should be embarrassing to agency.

(1) The High Bycatch Risk Areas (red), currently configured as 2 squares are closed year round, will become a parallelogram and will continue to be closed year round with exception for research with an EFP. PRISM projects the changes will **increase** coverage by 5%

(2) The new shape leaves some currently closed waters outside the parallelogram, crosshatched area, and opened to pelagic longline fishing. PRISM projects the new configuration will <u>protect areas of greater fishery interaction closer to the coast and along the shelf break.</u>

Not blue marlin. Obviously the agency's priority is focused, as is clear throughout all of Amendment 15, on sharks and leatherback sea turtles<u>, no priority for marlin.</u>

(3) High-bycatch-risk area for leatherback sea turtle and shortfin mako shark occurred along the northern areas of the Gulf of Mexico, but rarely occurred in the southeast box from November through March**. No mention of billfish or blue marlin bycatch in the region.**

PRISM projected billfish occurrences in Atlantic pelagic longline sets 40% and in the <u>Gulf of Mexico as 44%. S</u>hortfin mako sharks projected occurrences at 27% and sea turtles at 6 and 7%.

No mention of areas to provide protection for billfish or blue marlin from becoming longline bycatch.

(3) The bottom half (cross hatched) of the southern square in the current Closed Zone will open to pelagic longline fishing, as will the northeastern tip of that block and a quarter on the northwestern side.

(4) No Low Bycatch Area or Monitoring Area will be established.

In conclusion, all of us at TBF are greatly disappointed how the NMFS created Amendment 15 without comprehendible language. It is a failure. Amendment 15 should be scrapped and a new Closed Zone assessment begun using traditional fishery measures or leave the Closed Zones are they have been for the past 20 and 21 years.

Sincerely,

President