Consideration of Management Measures for Pelagic Species Under the Island-based Fishery Management Plans

White Paper

April 2022

Table of Contents

List of Tables

List of Figures

1. Background

The Puerto Rico Fishery Management Plan (FMP), the St. Thomas and St. John FMP, and the St. Croix FMP were approved by the Secretary of Commerce in September 2020. Select pelagic species were included for management in federal waters under the FMPs (Table 1). Pelagic species were not managed under the U.S. Caribbean-wide FMPs, and thus are new to federal management. The island-based FMPs established annual catch limits (ACL), annual catch targets, and accountability measures for the pelagic stocks and stock complexes (Appendix A), but did not establish size limits or bag and trip limits for the stocks and stock complexes.

This paper provides information to assist the Caribbean Fishery Management Council (Caribbean Council) in establishing additional management measures for the pelagic species to control or reduce effort, if desired.

Table 1.1. Pelagic species managed under the island-based fishery management plans.

Puerto Rico FMP	St. Thomas/St. John FMP	St. Croix FMP
Tripletail (*Lobotes surinamensis*) Dolphin (*Coryphaena hippurus*) Pompano dolphin (*Coryphaena equiselis*) Little tunny (*Euthynnus alletteratus*) Blackfin tuna (*Thunnus atlanticus*) King mackerel (*Scomberomorus cavalla*) Cero mackerel (*Scomberomorus regalis*) Wahoo (*Acanthocybium solandri*) Great barracuda (*Sphyraena barracuda*)	Dolphin (*Coryphaena hippurus*) Wahoo (*Acanthocybium solandri*)	Dolphin (*Coryphaena hippurus*) Wahoo (*Acanthocybium solandri*)

1.1 Guidance from the Caribbean Council

At the December 2021 Caribbean Council meeting, pelagic species new to management were discussed by constituents and Council members.

The Puerto Rico District Advisory Panel (DAP) Chair presented a summary from the October 2021 DAP meeting discussing compatible state and federal regulations. The Puerto Rico DAP recommended that the Caribbean Council consider establishing size and bag limits for recreational fishing in federal waters similar to the regulations in place in Puerto Rico state waters (Table 1.2), but that the bag limits in federal waters for dolphin be set at fewer fish per day than allowed in state waters.

Table 1.2. Recreational size limits and bag limits for pelagic species in Puerto Rico state waters.

Regulation	Recreational Limit
Size limit	King mackerel - 20" fork length minimum Cero mackerel - 16" fork length minimum
Bag limit	Dolphin - 10 per fisher/day or 30 per vessel/day, whichever is less. Wahoo, King mackerel, Cero mackerel - 5 of each species per fisher/day or 10 animals vessel/day, whichever is less.

Source: Puerto Rico Fishing Regulations 2010 (#7949), Department of Natural and Environmental Resources

Following a presentation from the Beyond Our Shores Foundation Director on the Dolphinfish Research Program, Caribbean Council members discussed concerns about the potential overharvesting of juvenile dolphinfish in the region due to the continuous influx of *Sargassum*. The Chair of the St. Thomas and St. John DAP commented that the St. Thomas and St. John Fishery Advisory Committee (FAC), a U.S. Virgin Islands (USVI) territorial committee, previously recommended size and bag limits for dolphin and wahoo for recreational fishing regulations, which the FAC planned to propose for consideration from both state and federal managers. It was noted that the St. Croix FAC had similar discussions for dolphin and wahoo size limits. Currently, there are no commercial or recreational size limits, commercial trip limits, or recreational bag limits for pelagic species in USVI state or federal waters.

To begin addressing these issues, the Caribbean Council directed staff to develop a white paper for size limits for dolphin, wahoo, and mackerels[1] and recreational bag limits for dolphin and wahoo.

1.2 Description of the U.S. Caribbean Pelagic Fisheries

Pelagic and coastal pelagic species are targeted by commercial and recreational fishermen in both Puerto Rico and the USVI. The new island-based FMPs manage a select number of pelagic species.

Puerto Rico

In Puerto Rico, commercial fishermen primarily use hook-and-line gear, specifically handlines, to target coastal migratory species such as dolphin, wahoo, cero mackerel, and king mackerel (Agar and Shivlani 2016). About 59% of the fishermen using hook-and-line gear stated they primarily fish in Commonwealth waters (<9 nautical miles), 39% fish in both federal and Commonwealth waters, and <2% fish solely in federal waters (9-200 nautical miles) (Agar and Shivlani 2016). Between 1983 and 2002, pelagics (tuna, dorado, wahoo, marlin, sailfish and

[1] King and Cero mackerel are only managed in U.S. Caribbean federal waters under the Puerto Rico Fishery Management Plan.

swordfish) comprised approximately 7.6% of the total commercial landings (Salas et al. 2011). Of the pelagic species reported in the most recent Fisheries of the United States Report (NMFS 2021), dolphinfish accounted for 8% of the total landings for finfish species in Puerto Rico. In Puerto Rico, there are two-dolphinfish seasons: October through March for the northern stock and March to June for the southern stock (Rodríguez-Ferrer et al. 2006).

Currently, few data are available for recreational fishing activities in Puerto Rico. The National Marine Fisheries Service (NMFS) implemented its Marine Recreational Fisheries Sampling Survey Program in Puerto Rico in 2000, but the program was suspended in 2017 and has not resumed to date. During 2000-2017, the annual recreational landings estimated by the Marine Recreational Information Program for dolphin, wahoo, great barracuda and tripletail were greater than the commercial landings (Figure 1). For blackfin tuna, little tunny, king mackerel, and cero mackerel, recreational and commercial annual landings during the same period were closer in number (Figure 2).

A comparison of commercial and recreational fishing in Puerto Rico from 2000-2003, found that commercial fishermen landed more dolphin by weight, but smaller sized fish (414-1100 mm fork length) than both the recreational fishermen (700 - 1100 mm FL) and tournament fishermen (800 - 1149 mm FL) (Rodríguez-Ferrer et al. 2006).

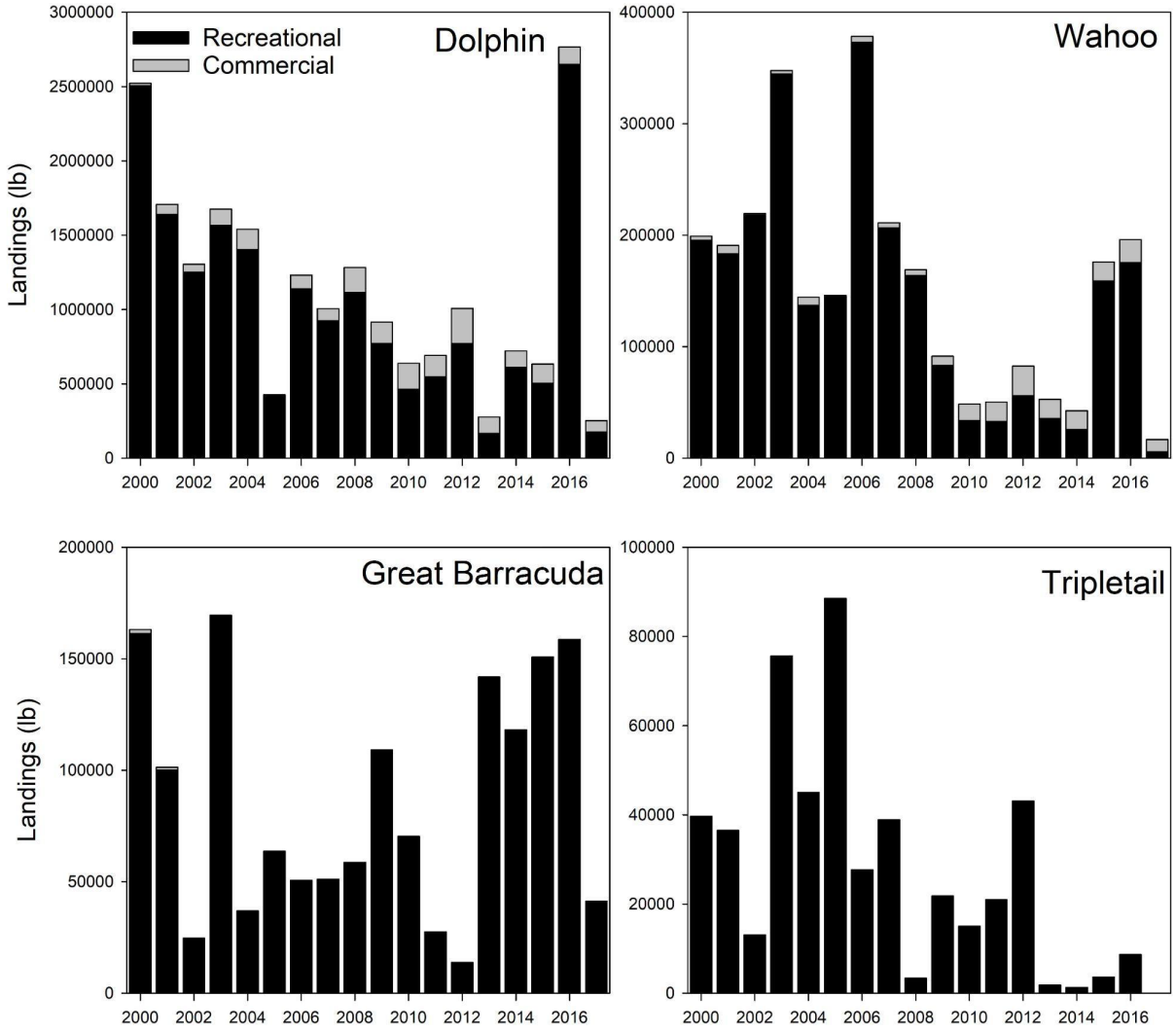

Figure 1.1. Annual recreational (black bars) and commercial (gray bars) landings for dolphin, wahoo, great barracuda, and tripletail in Puerto Rico from 2000-2017.

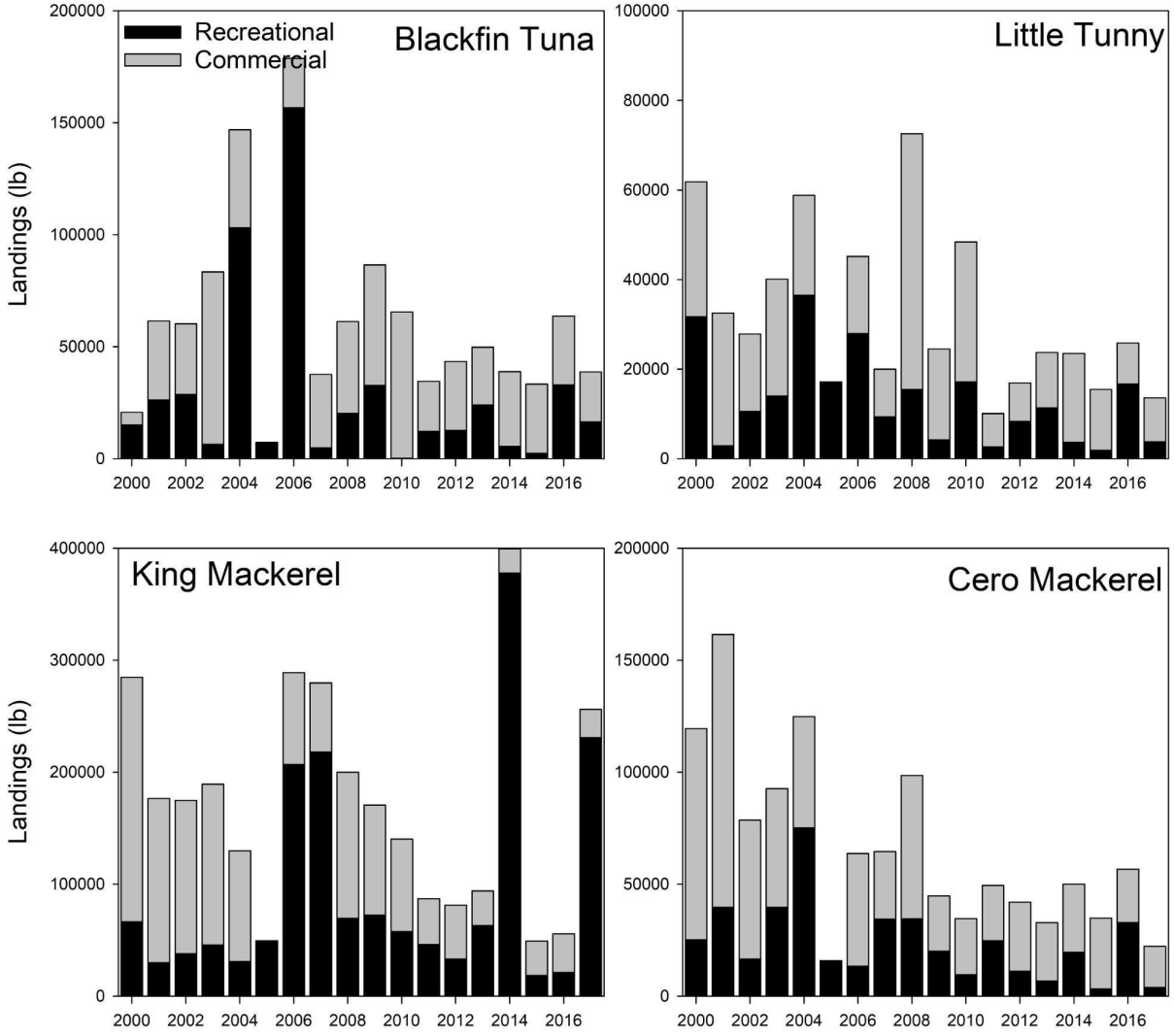

Figure 1.2. Annual recreational (black bars) and commercial (gray bars) landings for blackfin tuna, little tunny, king mackerel, and cero mackerel in Puerto Rico from 2000-2017.

In Puerto Rico, tournaments are an important part of the recreational fishing activities. Before regulations (i.e., bag limits) for dolphinfish were implemented by Puerto Rico in 2005, catches of 50 or more fish per boat per day were observed, with high numbers of immature fish and females landed. Following the 2005 bag limits regulations, the tournaments encouraged fishermen to land bigger fish, which reduced the tendency to land immature fish. Dolphinfish, great barracuda, wahoo, and tunas are the most often observed bycatch species during the tournaments. Rodríguez-Ferrer et al. (2007) evaluated data collected from fishing tournaments in Puerto Rico from 2000 to 2006, which included size information on landed dolphin (100-1525 mm), wahoo (570-1640 mm), mackerel (652-790 mm), and great barracuda (136-1420 mm).

U.S. Virgin Islands

The USVI commercial fisheries in St. Thomas and St. John and in St. Croix are small scale, artisanal fisheries that primarily catch benthic, coastal pelagic, and deep-water pelagic fish as well as spiny lobster and queen conch (Kojis et al. 2017). The fisheries are operated almost exclusively from small boats and the fishermen market the daily catch themselves. The shelf surrounding St. Croix is smaller than the shelf around St. Thomas and St. John, so deeper water is closer to shore and, therefore, pelagic fish are more accessible to the island's small boat fishery.

Dolphinfish and wahoo are harvested by about a quarter of fishermen on St. Thomas and St. John and more than half of the fishermen on St. Croix (Kojis et al. 2017). Most commercial fishermen fish year-round, but a few fish seasonally: October to November for dolphinfish, kingfish, tuna, wahoo in St. Thomas and St. John, and November to May for dolphinfish and other migratory pelagic fish in St. Croix (Kojis et al. 2017). In the USVI, dolphin landings have a primary peak in the spring and a secondary peak in the fall and wahoo landings have a single peak in fall/winter (Toller et al. 2005). In 2019, dolphinfish accounted for 6% of the total commercial landings in the USVI and wahoo for 3% (NMFS 2021). Annual commercial landings of dolphin and wahoo are generally greater in St. Croix than in St. Thomas and St. John (Figures 1.3 and 1.4).

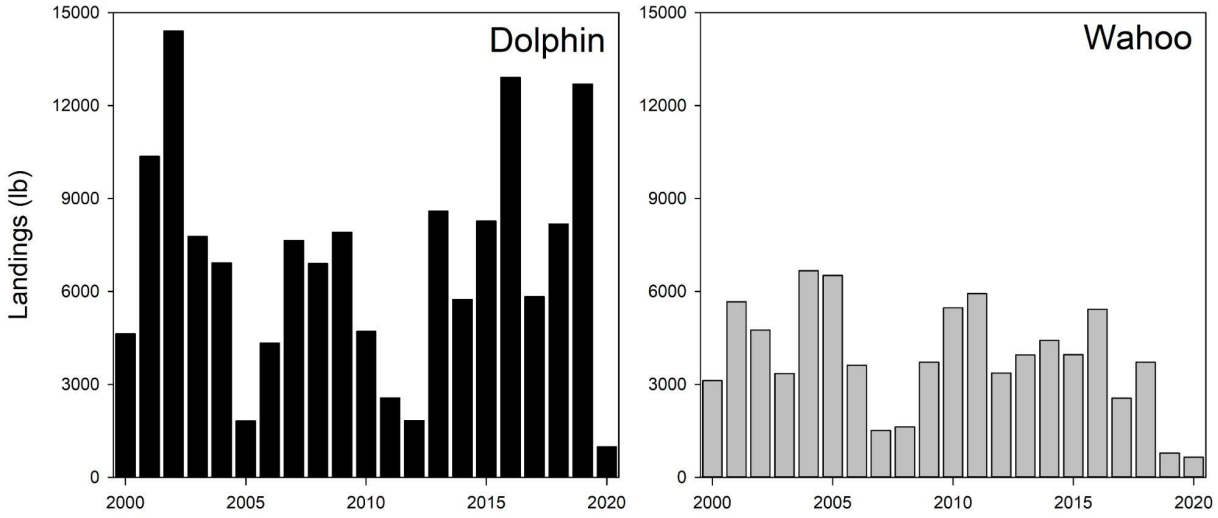

Figure 1.3. Annual dolphin (black bars) and wahoo (gray bars) commercial landings in St. Thomas and St. John from 2000-2020.

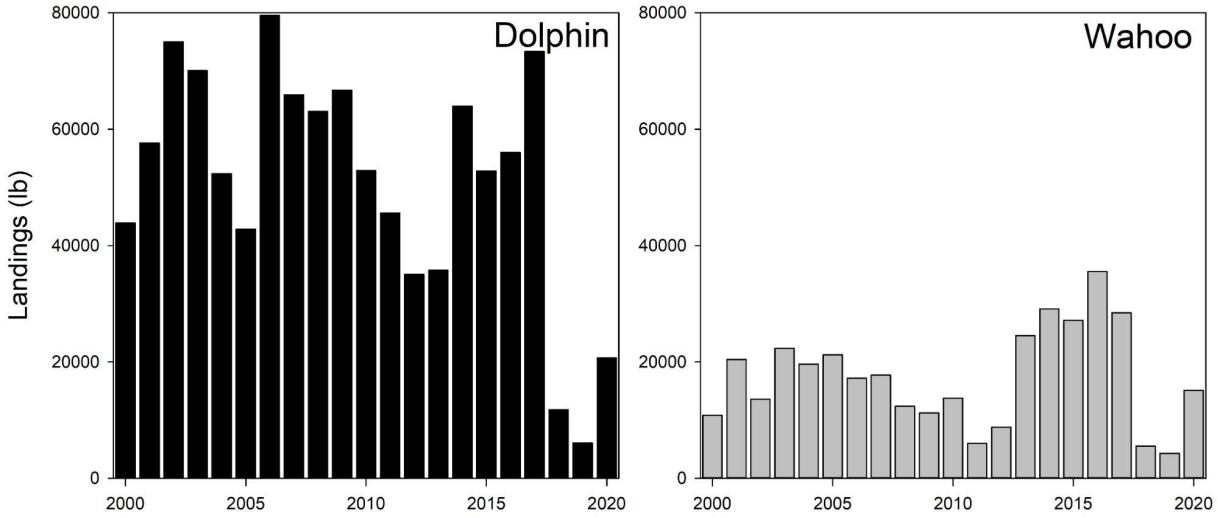

Figure 1.4. Annual dolphin (black bars) and wahoo (gray bars) commercial landings in St. Croix from 2000-2020.

As in Puerto Rico, information on recreational fishing in the USVI is very limited. Most data are collected from fishing tournaments or special projects (García-Moliner et al. 2002). A survey of recreational fishermen found that three broad types of fishing occur in the USVI: (1) big game fishing on large vessels (>9 meters) that primarily target billfish; (2) private boat fishing conducted on smaller boats that target reef fish and offshore pelagic fish; and (3) fishing from shore (e.g., beach, pier, dock), which primarily targets reef fish (Kojis and Tobias 2016). Most recreational fishing is done using hook-and-line fishing gear types such as plastic spool (Yo-Yo reel) or rod and reel. On St. Thomas and St. John, a higher number of fishermen participated in offshore and inshore trolling (65% and 61%, respectively) than on St. Croix (55% and 42%, respectively). These methods are primarily used to catch tuna, mackerel, dolphinfish and jacks.

Dolphin, wahoo, and billfish tournaments occur during the spring and summer migrations of pelagic species. Fourteen percent of the USVI recreational fishermen surveyed participated in fishing tournaments (22% from St. Thomas and St. John and 6% from St. Croix) (Kojis and Tobias 2016). Toller et al. (2005) identified five types of sportfishing tournaments in the USVI: shore-based handline, boat-based handline, offshore coastal pelagic, offshore pelagic, and marlin. Of those tournaments, landings from 2000 to 2005 on St. Thomas were dominated by dolphin, barracuda, and wahoo (Toller et al. 2005). On St. Croix, tournament landings during the same period were dominated by dolphin and wahoo. A greater number, weight and diversity of coastal pelagics were landed in St. Thomas tournaments than in St. Croix tournaments (Toller et al. 2005). An average of 12.9 boats that participated in offshore pelagic tournaments in St. Thomas (range 5 to 27) and 11.4 boats in St. Croix (range 7 to 20). Both fishing effort and catch rates were highly variable within and among years.

In the USVI, declines in reef fish stocks prompted managers to encourage commercial fishermen to shift fishing effort towards seasonal stocks (i.e. dolphin, wahoo, and tuna) (Toller et al. 2005). If USVI reef fish stocks should continue to decline, it can be predicted that commercial effort will progressively shift towards pelagic resources. Therefore, managers must be aware of the potential for conflict between commercial and recreational fishermen over the shared resources.

1.3 Federal Management of Pelagic Species in the Southeast Region

In 1983, the Caribbean Council developed a Draft Fishery Management Plan for coastal migratory pelagic species (CCMP FMP) and an associated environmental impact statement (CFMC 1983). The species considered under the CCMP FMP included cero mackerel, king mackerel, great barracuda, dolphin, wahoo, almaco jack, bar jack, greater amberjack, horse-eye jack, yellow jack, blue runner, and rainbow runner. The Draft FMP was submitted in April 1983 at the 46th Caribbean Council meeting but was withdrawn in December 1983 (48th CFMC meeting). As such, the CCMP FMP was never formalized.

In February 2001, under the guidance of NMFS and NOAA General Counsel, the Caribbean Council, Gulf of Mexico Fishery Management Council (Gulf Council), and South Atlantic Fishery Management Council (South Atlantic Council) met in a joint session and approved a Dolphin Wahoo FMP for submission to the Secretary of Commerce for formal review. However, prior to submission and prompted by litigation, it was determined that the joint FMP did not meet mandates of the Sustainable Fisheries Act relative to Essential Fish Habitat. The Councils, NMFS and NOAA General Counsel worked to revise the FMP, but were advised by NOAA General Counsel that the litigation would require the Gulf and Caribbean Councils to incorporate bycatch measures in the FMP rather than deferring implementation through the proposed framework procedures. In July 2002, the South Atlantic Council requested the Secretary of Commerce approve their withdrawal from a joint Dolphin and Wahoo FMP with the Caribbean and Gulf Councils and approve the Dolphin and Wahoo FMP of the Atlantic (SAFMC 2003).

Of the pelagic species new to federal management in the U.S. Caribbean under the island-based FMPs (Table 1.1), dolphin, pompano dolphin, and wahoo are managed by the South Atlantic Council under the Dolphin and Wahoo FMP (SAFMC 2003), and king mackerel is managed jointly by the Gulf Council and South Atlantic Fishery Council under the FMP for the Coastal Migratory Pelagic of the Gulf of Mexico and Atlantic Region (GMFMC and SAFMC 1985). A summary of the rationale for certain management measures for these species, including size limits, recreational bag limits, and commercial trip limits, are described below and current regulations for the species are listed in Table 1.3.

> The **size limits** considered for **dolphin** were based on life history information coupled with size distribution of dolphinfish in both the commercial (by gear type) and

recreational (by fishing mode) landings data from the South Atlantic region (SAFMC 2003). A size limit was established in hopes of preventing the catch of smaller fish, discouraging waste by overharvest and discards, and imparting a conservation ethic to both sectors of the fishery. One complicating factor noted was the presence of pompano dolphin in the catch, which seldom grow larger than 16 inches.

A **recreational bag limit** for **dolphin** was established to reduce the practice of harvesting large quantities or entire schools of small, immature dolphin (SAFMC 2003). Unrestricted bag limits could result in localized depletion. The South Atlantic Council concluded that the recreational bag limit would cap dolphin harvest without excessively reducing the catch. The South Atlantic Council realized that some level of release mortality could occur, but thought that there would be a greater tendency to stop fishing when the bag limit is attained.

A **commercial trip limit** for **dolphin** of 4,000 pounds whole weight when 75% of the annual catch limit is met was established to regulate and cap commercial harvest of dolphin, insure highly efficient gear are not employed in the dolphin portion of the dolphin and wahoo fishery, and prevent a rapid increase in commercial landings, which could shift allocation from the recreational sector to the commercial sector (SAFMC 2016a). The South Atlantic Council felt that not implementing trip limits could result in additional effort and gear being introduced into the dolphin portion of the fishery, unrestrained commercial harvest, and the potential for overfishing.

A **size limit** was not established for **wahoo**, which would allow for harvest of fish prior to spawning. However, the majority of testimony at public hearings indicated there would be a problem with releasing wahoo safely and the associated hooking/gaffing mortality would likely outweigh the intended benefit.

A **commercial trip limit** for **wahoo** was established to cap harvest and prevent expansion (SAFMC 2003). It was noted by the South Atlantic Council that not establishing a commercial trip limit would leave harvest for wahoo unrestrained and a significant increase in harvest could occur if fishermen targeted wahoo with some type of highly efficient gear.

A **recreational bag limit** for **wahoo** was established to reduce the potential for excessive harvest and impart a conservation ethic to fishermen (SAFMC 2003). Public testimony and landings data suggested that catching more than two wahoo per recreational trip was uncommon. The South Atlantic Council felt that not establishing a bag limit could result in overfishing if there is no cap on total allowable catch and effort were to expand.

A **recreational bag limit** for **king mackerel** was established to limit future catch to a predefined level (GMFMC and SAFMC 1985).

A **size limit** for **king mackerel** was established to facilitate enforcement of the same size limit for Spanish mackerel (GMFMC and SAFMC 1990). It was noted that undersized Spanish mackerel are taken in a directed fishery and since the species may be confused for the other due to their similar appearance, having the same size limit for both species would benefit the Spanish mackerel stocks. It was also noted that release mortality for small fish of both species is believed to be low.

Table 1.3. Summary of management measures for pelagic species in federal waters managed by the South Atlantic (SA) and Gulf of Mexico (GoM) Fishery Management Councils.

Mgmt. Measure	Commercial	Recreational
Size limit	**Dolphin** - 20" minimum FL off FL, GA, and SC. No size restrictions in NC. **Wahoo** – none **King mackerel SA** – 24" FL **King mackerel GoM** – 24" FL	**Dolphin** - 20" minimum FL off the east coast of FL, GA, and SC; No size restrictions north of the SC/NC border through Maine. **Wahoo** – none **King mackerel SA** – 24" FL **King mackerel GoM** –24" FL
Trip limit (commercial) and Bag limit (recreational)	**Dolphin** - None if the vessel has a federal commercial permit for dolphin or wahoo. (*Once 75% of the Atlantic dolphin ACL is reached, the trip limit is 4,000 lb (1,814 kg), round weight*). For commercially permitted vessels fishing north of 39°N. that do not have a federal commercial vessel dolphin or wahoo permit, the trip limit is 200 lb combined. **Wahoo** - 500 lb (head and tail intact) (*If a notice is filed to close commercial harvest, then sale prohibited and bag limit [2] applies*) **King mackerel SA** – see 50 CFR 622.385(a)(1) for limits per zone **King mackerel GoM** – see 50 CFR 622.385(a)(2) for limits per zone	**Dolphin** - Bag limit of 10 dolphin and 2 wahoo per person/day, with a limit of 60 dolphin per boat/day (headboats are excluded from the boat limit)*. **Wahoo** - 2 per person/day **King mackerel SA** – 3 per person (GA:NY) and 2 per person (FL) **King mackerel GoM** – 3 per person

* The bag limit for dolphin was revised under Amendment 10 to the Fishery Management Plan for the Dolphin and Wahoo Fishery of the Atlantic (87 FR 19011; effective date May 2, 2022).

2. Discussion of Management Measures for Pelagic Stocks

The Caribbean Fishery Management Council (Caribbean Council) has expressed interest in setting size and bag limits for dolphin and wahoo in federal waters off Puerto Rico, St. Thomas and St, John, and St, Croix. At this time, the Caribbean Council could determine if they would want to establish size limits or quota limits (i.e., a trip limit for the commercial sector or a bag limit for the recreational sector) for additional pelagic species new to federal management under the island-based fishery management plans (FMP). Additionally, the Caribbean Council could revise the accountability measure (AM) provision for pelagic stocks and stock complexes to include size limits, bag limits, or trip limits as the responsive action that the Council and the National Marine Fisheries Service (NMFS) could take when the AM has been triggered (i.e., when landings exceed the annual catch target).

If requested by the Caribbean Council, staff could begin work on an Options Paper for the desired management options. Below are some examples of options that could be included in an Options paper for a future meeting.

2.1 Management Measure 1 - Size limits

Establishing size limits for the pelagic species new to management would allow the Caribbean Council to restrict the landing of fish below a certain size, reducing the amount of fish harvested before they have a chance to reproduce. If desired, size limit options could be recommended based on available life history information (e.g., size at first maturity) and landings and length data, where available.

Size limits could potentially increase stock biomass by preventing the harvest of fish below the optimum size identified for successful reproduction. This measure could be wasteful if undersized fish cannot be returned to the water alive. It also may be difficult for fishermen to redirect effort toward larger sized fish. Size limits may be undesirable if there is a higher incidence of ciguatera in larger sized fish or if there is a lack of commercial demand for larger individuals.

For this management measure, the Caribbean Council could consider:

- establishing a minimum size limit for pelagic species for the commercial sector.
- establishing a minimum size limit for pelagic species for the recreational sector.
- whether to specify the same recreational size limit set for state waters for king mackerel (20” fork length) or cero mackerel (16” fork length) in federal waters off Puerto Rico.

Table 2.1. Selection matrix for considering minimum size limits for pelagic species under each island-based FMP.

FMP	Species	Commercial size limit	Recreational size limit	Rationale
Puerto Rico FMP	Dolphin			
	Pompano dolphin			
	Wahoo			
	King mackerel*			
	Cero mackerel*			
	Little tunny			
	Blackfin tuna			
	Tripletail			
	Great barracuda			
St. Thomas and St. John FMP	Dolphin			
	Wahoo			
St. Croix FMP	Dolphin			
	Wahoo			

*Recreational size limit specified in state waters. See Table 1.2.

2.2 Management Measure 2 - Quota Limits

Establishing recreational bag or commercial trip limits for the pelagic species new to management would allow the Caribbean Council to limit the amount of fish removed from the fishery and reduce the harvest of smaller fish, especially for species that occur in large schools. Commercial trip limits could limit catch if highly efficient gear are employed in the fishery and both commercial trip limits and recreational bag limits could assist in preventing localized depletion.

For this management measure, the Caribbean Council could consider:

- establishing a trip limit for pelagic species for the commercial sector.
- establishing a bag limit for pelagic species for the recreational sector.
- whether to specify the same recreational bag limit set for state waters for dolphin (10 per person per day; 30 per vessel per day), and for wahoo, king mackerel, and cero mackerel (5 of each species per fisher per day; 10 animals per vessel per day) in federal waters off Puerto Rico.

Table 2.2. Selection matrix for considering quota limits for pelagic species under each island-based FMP.

FMP	Species	Commercial trip limit	Recreational bag limit	Rationale
Puerto Rico FMP	Dolphin			
	Pompano dolphin			
	Wahoo			
	King mackerel*			
	Cero mackerel*			
	Little tunny			
	Blackfin tuna			
	Tripletail			
	Great barracuda			
St. Thomas and St. John FMP	Dolphin			
	Wahoo			
St. Croix FMP	Dolphin			
	Wahoo			

*Recreational bag limit specified in state waters. See Table 2.

3. References

Agar, J. and M. Shivlani. 2016. Socio-economic study of the hook and line fishery in the Commonwealth of Puerto Rico (2014). NOAA Technical Memorandum NMFS-SEFSC-700. 34 p. doi:10.7289/V5/TM-SEFSC-700

CFMC (Caribbean Fishery Management Council). 1983. Draft fishery management plan, draft environmental impact statement, and regulatory analysis for the coastal migratory pelagic resources. Caribbean Fishery Management Council, San Juan, Puerto Rico.

García-Moliner, G., I. Mateo, S. Maidment-Caseau, W.J. Tobías, and B. Kojis. 2002. Recreational Chartered Fishing Activity 307-317 in the US Caribbean. Available at: https://aquadocs.org/bitstream/handle/1834/29448/gcfi_53-28.pdf?sequence=1

Kojis B.L. and W.J. Tobias. 2016. Survey of boat-based recreational fishers in the US Virgin Islands. Proceedings of the 13th International Coral Reef Symposium, Honolulu: 170-183. Available at: http://coralreefs.org/wp-content/uploads/2019/01/Session-21-Kojis-Tobias.pdf

Kojis, B., N. Quinn, and J. Agar. 2017. Census of licensed fishers of the U.S. Virgin Islands (2016). NOAA Technical Memorandum NMFS-SEFSC-715, 160 p. doi:10.7289/V5/TM-SEFSC-715. Available at: https://repository.library.noaa.gov/view/noaa/16210.

National Marine Fisheries Service (2021) Fisheries of the United States, 2019. U.S. Department of Commerce, NOAA Current Fishery Statistics No. 2019 Available at: https://www.fisheries.noaa.gov/resource/document/fisheries-united-states-2019

Rodríguez-Ferrer, G., Y. Rodríguez-Ferrer, D. Matos-Caraballo, and C. Lilyestrom. 2006. Comparison of Dolphinfish (*Coryphaena hippurus*) Commercial and Recreational Fisheries in Puerto Rico during 2000-2003. 57th Gulf and Caribbean Fisheries Institute. Available at: https://aquadocs.org/bitstream/handle/1834/29780/gcfi_57-23.pdf?sequence=1&isAllowed=y

Rodríguez-Ferrer, G., Y. Rodríguez-Ferrer, and C. Lilyestrom. 2007. Evaluation of Statistical Data from Fishing Tournaments in Puerto Rico Collected from 2000 - 2006. Proceedings of the 60th Gulf and Caribbean Fisheries Institute. Punta Cana, Dominican Republic. Available at: https://nsgl.gso.uri.edu/flsgp/flsgpw07001/data/papers/058.pdf

Salas, S., R. Chuenpagdee, A. Charles, and J.C. Seijo. 2011. Coastal Fisheries of Latin America and the Caribbean. FAO Fisheries and Aquaculture Technical Paper. No. 544. 1-13, 285-315 pp. Available at: https://caribbeanfmc.com/pdfs/Coastal%20fisheries%20Latin%20America%20-%20Caribbean.pdf

Shivlani, M. and R. Koeneke. 2011. Spatial Characterization of Artisanal Fisheries in Puerto Rico: Geographic Information Systems (GIS) Approach for Assessing the Regional Effort and Landings. Proceedings of the 63rd Gulf and Caribbean Fisheries Institute November 1 -5, 2010 San Juan, Puerto Rico. Available at: https://core.ac.uk/reader/33719260

Toller, W., C. O'Sullivan, and R. Gomez. 2005. U.S. Virgin Islands Recreational Fishery Assessment Project: Survey of Fishing Tournaments in the U.S. Virgin Islands, October 1, 2000 to September 30, 2005. 54 pg.

Appendix A. Management Measures for Pelagic Stocks and Stock Complexes in the Island-based Fishery Management Plans (FMP)

A1. Puerto Rico Annual Catch Limits (ACL) for Pelagic Stocks and Stock Complexes

In the Puerto Rico management area, recreational and commercial landings data were used to establish separate ACLs for the pelagic stocks and stock complexes for the commercial and recreational fishing sectors (Table A1). For the pelagic stocks and stocks complexes, optimum yield equates to the total (recreational + commercial) ACL when data from both sectors are available. If landings for one sector are not available for comparison to the ACL, the ACL for the sector with available data would be the applicable ACL for the stock or stock complex.

Table A.1. Annual catch limits for the commercial sector, recreational sector, and combined total for the pelagic stocks and stock complexes managed under the Puerto Rico FMP. Values are in pounds (lb) whole weight. Indicator stocks are marked in bold text.

Pelagic Stock/Stock Complex	Commercial ACL (lb)	Recreational ACL (lb)	Total ACL (lb)
Great barracuda	495	167,693	168,188
Tripletail	270	39,005	39,275
Dolphinfish complex (**dolphin**, pompano dolphin)	232,173	1,513,873	1,746,046
Tuna complex (little tunny, blackfin tuna)	82,779	34,485	117,263
Mackerel complex (cero mackerel, king mackerel)	232,422	129,180	361,602
Wahoo	25,911	210,737	236,648

If there is a discrepancy between this document and the regulations in the U.S. Code of Federal Regulations (https://www.ecfr.gov/current/title-50/chapter-VI/part-622?toc=1), the regulations take precedence.

A2. Puerto Rico Accountability Measures (AM) for Pelagic Stocks and Stock Complexes

For the pelagic stocks and stock complexes managed under the Puerto Rico FMP, an AM-based season length reduction in the event of an ACL overage would not be applied. Instead, the Council would establish an annual catch target (ACT)[2] as a percentage of the ACL that would serve as the AM trigger.

The Council set the ACTs for the pelagic stocks/stock complexes at 90% of the respective ACL (Table A2). An AM would be triggered if the sector landings, as available, exceed the sector ACT for that stock/stock complex. If landings for one sector are not available for comparison to the ACT, the ACT for the sector with available data would be the applicable ACT for the stock or stock complex.

Landings from the following years would be used to evaluate an exceedance of the ACT:

> A single year of applicable landings, using landings from 2018; then a single year of applicable landings, using landings from 2019; then a two-year average of applicable landings from 2019 and the subsequent year (2019-2020); then a three-year average of applicable landings from those two years and the subsequent year (2019-2021); and thereafter a progressive running three-year average (2020-2022, 2021-2023, etc.). The Regional Administrator in consultation with the Council may deviate from the specific time sequences based on data availability.[3]

If an AM is triggered, the Council in consultation with the SEFSC would assess whether corrective action is needed.

Table A.2. Annual catch targets for pelagic stocks/stock complexes in the Puerto Rico FMP by sector (commercial and recreational). Values are in pounds (lb) whole weight. Indicator stocks are marked in bold text. Where an indicator stock is used, the indicator information applies to the complex as a whole.

Pelagic Stock/Stock Complex	Commercial ACT (lb)	Recreational ACT (lb)
Great barracuda	445	150,924
Tripletail	243	35,105
Dolphinfish complex (**dolphin**, pompano dolphin)	208,956	1,362,486

[2] The ACT is a level of catch set to account for management uncertainty in controlling catch at or below the ACL.

[3] The RA may update the years specified for triggering an AM, beginning with landings from the most recent year available. If the island-based FMPs take effect in 2022, the most recent year of available landings likely would be 2020.

Pelagic Stock/Stock Complex	Commercial ACT (lb)	Recreational ACT (lb)
Tunas complex (little tunny, blackfin tuna)	74,501	31,037
Mackerel complex (cero mackerel, king mackerel)	209,180	116,262
Wahoo	23,320	189,663

If there is a discrepancy between this document and the regulations in the U.S. Code of Federal Regulations (https://www.ecfr.gov/current/title-50/chapter-VI/part-622?toc=1), the regulations take precedence.

A3. St. Thomas and St. John ACLs and AMs for Pelagic Stocks

In the St. Thomas and St. John management area, only commercial landings data are collected for Council-managed fish (reef fish and pelagics). However, the ACL and the AM (discussed below) governs all harvest, whether commercial or recreational. The ACL is based on available commercial landings information, whether reported as landed from federal or territorial waters.

For the pelagic stocks, an AM-based season length reduction in the event of an ACL overage would not be applied. Instead, the Council would establish an ACT as a percentage of the ACL that would serve as the AM trigger. The Council set the ACTs for the pelagic stocks at 90% of the respective ACL (Table A3). An AM would be triggered if the commercial landings exceed the ACT for the stock.

Landings from the following years would be used to evaluate an exceedance of the ACT:

> A single year of applicable landings, using landings from 2018; then a single year of applicable landings, using landings from 2019; then a two-year average of applicable landings from 2019 and the subsequent year (2019-2020); then a three-year average of applicable landings from those two years and the subsequent year (2019-2021); and thereafter a progressive running three-year average (2020-2022, 2021-2023, etc.). The Regional Administrator in consultation with the Council may deviate from the specific time sequences based on data availability.

If an AM is triggered, the Council in consultation with the SEFSC would assess whether corrective action is needed.

Table A.3. Annual catch limit and annual catch target for pelagic stocks managed under the St. Thomas and St. John FMP. Values are in pounds (lb) whole weight.

Pelagic Stock	Annual Catch Limit (lb)	Annual Catch Target (lb)
Dolphin	9,778	8,800
Wahoo	6,879	6,191

If there is a discrepancy between this document and the regulations in the U.S. Code of Federal Regulations (https://www.ecfr.gov/current/title-50/chapter-VI/part-622?toc=1), the regulations take precedence.

A4. St. Croix ACLs and AMs for Pelagic Stocks

In the St. Croix management area, only commercial landings data are collected for Council-managed fish (reef fish and pelagics). However, the ACL and the AM (discussed below) governs all harvest, whether commercial or recreational. The ACL is based on available commercial landings information, whether reported as landed from federal or territorial waters.

For the pelagic stocks, an AM-based season length reduction in the event of an ACL overage would not be applied. Instead, the Council would establish an ACT as a percentage of the ACL that would serve as the AM trigger. The Council set the ACTs for the pelagic stocks at 90% of the respective ACL (Table A4). An AM would be triggered if the commercial landings exceed the ACT for the stock.

Landings from the following years would be used to evaluate an exceedance of the ACT:

> A single year of applicable landings, using landings from 2018; then a single year of applicable landings, using landings from 2019; then a two-year average of applicable landings from 2019 and the subsequent year (2019-2020); then a three-year average of applicable landings from those two years and the subsequent year (2019-2021); and thereafter a progressive running three-year average (2020-2022, 2021-2023, etc.). The Regional Administrator in consultation with the Council may deviate from the specific time sequences based on data availability.

If an AM is triggered, the Council in consultation with the SEFSC would assess whether corrective action is needed.

Table A.4. Annual catch limit and annual catch target for pelagic stocks managed under the St. Croix FMP. Values are in pounds (lb) whole weight.

Pelagic Stock	Annual Catch Limit (lb)	Annual Catch Target (lb)
Dolphin	86,633	77,970
Wahoo	27,260	24,534

If there is a discrepancy between this document and the regulations in the U.S. Code of Federal Regulations (https://www.ecfr.gov/current/title-50/chapter-VI/part-622?toc=1), the regulations take precedence.