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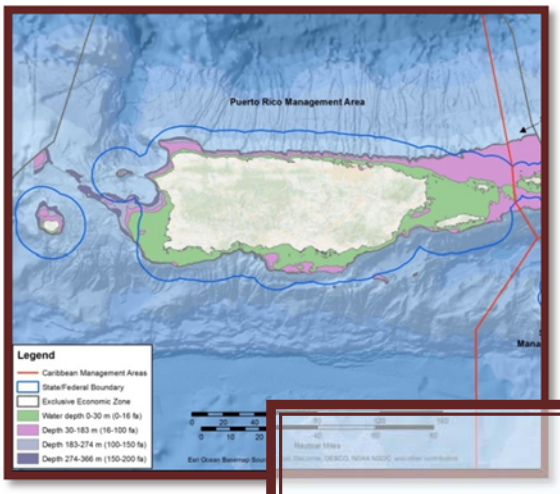

Draft Actions and Alternatives in the Draft Environmental Impact Statement (DEIS) for the Puerto Rico Fishery Management Plan

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Draft Actions and Alternatives in the DEIS for the Puerto Rico Fishery Management Plan

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Proposed Actions and Alternatives

1.1 Action 1: Determine Species to be Included for Management in the Puerto Rico Fishery Management Plan (FMP)

Alternative 1. No action. The Puerto Rico FMP is composed of all species within the fishery management units (FMUs) presently managed under the Spiny Lobster FMP, Reef Fish FMP, Queen Conch FMP, and the Corals and Reef Associated Plants and Invertebrates (Coral) FMP.

Alternative 2. For those species for which landings data are available, indicating the species is in the fishery, the Caribbean Fishery Management Council (Council) will follow a stepwise application of a set of criteria to determine if a species should be managed under the Puerto Rico FMP. The criteria under consideration include, in order:

Criterion A. Include for management those species that are presently classified as overfished in U.S. Caribbean federal waters based on NMFS determination, or for which historically identified harvest is now prohibited due to their ecological importance as habitat (e.g., corals presently included in the Corals and Reef Associated Plants and Invertebrates FMP) or habitat engineers (midnight, blue, rainbow parrotfish), or those species for which seasonal closures or size limits apply.

Table 1.1.1. Draft list of species proposed to be included in the Puerto Rico Fishery Management Plan based on **Alternative 2**, ***Criterion A***.

Family	Scientific Name	Common Name
Lutjanidae -- Snappers	*Apsilus dentatus*	Black snapper
	Lutjanus buccanella	Blackfin snapper
	Lutjanus vivanus	Silk snapper
	Rhomboplites aurorubens	Vermilion snapper
	Lutjanus synagris	Lane snapper
	Lutjanus analis	Mutton snapper
	Ocyurus chrysurus	Yellowtail snapper
Serranidae -- Groupers	*Epinephelus striatus*	Nassau Grouper
	Epinephelus itajara	Goliath grouper
	Epinephelus guttatus	Red hind
	Mycteroperca bonaci	Black grouper
	Epinephelus morio	Red grouper
	Mycteroperca tigris	Tiger grouper
	Mycteroperca venenosa	Yellowfin grouper
	Epinephelus flavolimbatus	Yellowedge grouper

Family	Scientific Name	Common Name
Scaridae -- Parrotfishes	*Scarus coeruleus*	Blue parrotfish
	Scarus coelestinus	Midnight parrotfish
	Scarus guacamaia	Rainbow parrotfish
Strombidae -- True conchs	*Lobatus gigas*	Queen conch
Palinuridae -- Spiny lobsters	*Panulirus argus*	Caribbean spiny lobster
All Coral Species (soft, hard, mesophotic, deep water)	*See Appendix A*	Corals

Criterion B. From the remaining species, exclude from federal management those species that have been determined to infrequently occur in federal waters based on expert analysis guided by available data.

Table 1.1.2. Draft list of species proposed to be excluded from the Puerto Rico Fishery Management Plan based on **Alternative 2, *Criterion B*.**

Family	Scientific Name	Common Name
Lutjanidae -- Snappers	*Lutjanus griseus*	Gray snapper
	Lutjanus mahogani	Mahogany snapper
Haemulidae -- Grunts	*Haemulon album*	Margate
	Haemulon aurolineatum	Tomtate
	Haemulon sciurus	Bluestriped grunt
	Haemulon flavolineatum	French grunt
	Anisotremus virginicus	Porkfish
Mullidae -- Goatfishes	*Pseudupeneus maculatus*	Spotted goatfish
	Mulloidichthys martinicus	Yellow goatfish
Sparidae -- Porgies	*Calamus bajonado*	Jolthead porgy
	Archosargus rhomboidalis	Sea bream
	Calamus penna	Sheepshead porgy
	Calamus pennatula	Pluma
Holocentridae -- Squirrelfishes	*Myripristis jacobus*	Blackbar soldierfish
	Priacanthus arenatus	Bigeye
	Holocentrus rufus	Longspine squirrelfish
	Holocentrus adscensionis	Squirrelfish
Malacanthidae -- Tilefishes	*Caulolatilus cyanops*	Blackline tilefish
	Malacanthus plumieri	Sand tilefish
Carangidae -- Jacks	*Caranx crysos*	Blue runner
	Caranx latus	Horse-eye jack
	Caranx lugubris	Black jack
	Seriola rivoliana	Almaco jack

Family	Scientific Name	Common Name
	Caranx ruber	Bar jack
	Seriola dumerili	Greater amberjack
	Caranx bartholomaei	Yellow jack
Scaridae -- Parrotfish	*Sparisoma rubripinne*	Redfin parrotfish
Balistidae -- Triggerfishes	*Xanthichthys rigens*	Sargassum triggerfish
Monocanthidae -- Filefishes	*Aluterus scriptus*	Scrawled filefish
	Cantherhines macrocerus	Whitespotted filefish
	Melichthys niger	Black durgon
Ostraciidae -- Boxfishes	*Lactophrys polygonia*	Honeycomb cowfish
	Lactophrys quadricornis	Scrawled cowfish
	Lactophrys trigonus	Trunkfish
	Lactophrys bicaudalis	Spotted trunkfish
	Lactophrys triqueter	Smooth trunkfish
Aquarium Trade Fish Species FMU in the Reef Fish FMP		
	Antennarius spp.	Frogfish
	Apogon maculatus	Flamefish
	Astrapogen stellatus	Conchfish
	Ophioblennius atlanticus	Redlip blenny
	Bothus lunatus	Peacock flounder
	Chaetodon aculeatus	Longsnout butterflyfish
	Chaetodon capistratus	Foureye butterflyfish
	Chaetodon ocellatus	Spotfin butterflyfish
	Chaetodon striatus	Banded butterflyfish
	Amblycirrhitus pinos	Redspotted hawkfish
	Dactylopterus volitans	Flying gurnard
	Chaetodipterus faber	Atlantic spadefish
	Gobiosoma oceanops	Neon goby
	Priolepis hipoliti	Rusty goby
	Gramma loreto	Royal gramma
	Clepticus parrae	Creole wrasse
	Halichoeres cyanocephalus	Yellowcheek wrasse
	Halichoeres garnoti	Yellowhead wrasse
	Halichoeres maculipinna	Clown wrasse
	Hemipteronotus novacula	Pearly razorfish
	Hemipteronotus splendens	Green razorfish
	Thalassoma bifasciatum	Bluehead wrasse
	Echidna catenata	Chain moray
	Gymnothorax funebris	Green moray

Family	Scientific Name	Common Name
	Gymnothorax miliaris	Goldentail moray
	Ogcocepahalus spp.	Batfish
	Myrichthys ocellatus	Goldspotted eel
	Opistognathus aurifrons	Yellowhead jawfish
	Opistognathus whitehursti	Dusky jawfish
	Centropyge argi	Cherubfish
	Holacanthus tricolor	Rock beauty
	Abudefduf saxatilis	Sergeant major
	Chromis cyanea	Blue chromis
	Chromis insolata	Sunshinefish
	Microspathodon chrysurus	Yellowtail damselfish
	Pomacentrus fuscus	Dusky damselfish
	Pomacentrus leucostictus	Beaugregory
	Pomacentrus partitus	Bicolor damselfish
	Pomacentrus planifrons	Threespot damselfish
	Priacanthus cruentatus	Glasseye snapper
	Equetus acuminatus	High-hat
	Equetus lanceolatus	Jackknife-fish
	Equetus punctatus	Spotted drum
	Scorpaenidae	Scorpionfishes
	Hypoplectrus unicolor	Butter hamlet
	Liopropoma rubre	Swissguard basslet
	Rypticus saponaceus	Greater soapfish
	Serranus annularis	Orangeback bass
	Serranus baldwini	Lantern bass
	Serranus tabacarius	Tobaccofish
	Serranus tigrinus	Harlequin bass
	Serranus tortugarum	Chalk bass
	Symphurus arawak	Caribbean tonguefish
	Hippocampus spp.	Seahorses
	Syngnathus spp.	Pipefishes
	Synodus intermedius	Sand diver
	Canthigaster rostrata	Sharpnose puffer
	Diodon hystrix	Porcupinefish
Aquarium Trade Fish Species (FMU) in the Coral FMP		
	Aphimedon compressa	Erect rope sponge
	Chondrilla nucula	Chicken liver sponge
	Cynachirella alloclada	
	Geodia neptuni	Potato sponge

Family	Scientific Name	Common Name
	Haliclona spp.	Finger sponge
	Myriastra spp.	
	Niphates digitalis	Pink vase sponge
	N. erecta	Lavender rope sponge
	Spinosella policifera	
	S. vaginalis	
	Tethya crypta	
	Aiptasia tagetes	Pale anemone
	Bartholomea annulata	Corkscrew anemone
	Condylactis gigantea	Giant pink-tipped anemone
	Hereractis lucida	Knobby anemone
	Lebrunia spp.	Staghorn anemone
	Stichodactyla helianthus	Sun anemone
	Zoanthus spp.	Sea mat
	Discosoma spp. (formerly Rhodactis)	False coral
	Ricordia florida	Florida false coral
	Sabellastarte spp.	Tube worms
	S. magnifica	Magnificent duster
	Spirobranchus giganteus	Christmas tree worm
	Tridachia crispata	Lettuce sea slug
	Oliva reticularis	Netted olive
	Cyphoma gibbosum	Flamingo tongue
	Lima spp.	Fileclams
	L. scabra	Rough fileclam
	Spondylus americanus	Atlantic thorny oyster
	Octopus spp. (except the Common octopus, O.vulgaris)	
	Alpheaus armatus	Snapping shrimp
	Paguristes spp.	Hermit crabs
	P. cadenati	Red reef hermit
	Percnon gibbesi	Nimble spray crab
	Lysmata spp.	Peppermint shrimp
	Thor amboinensis	Anemone shrimp
	Mithrax spp.	Clinging crabs
	M. cinctimanus	Banded clinging
	M. sculptus	Green clinging
	Stenorhynchus seticornis	Yellowline arrow
	Periclimenes spp.	Cleaner shrimp

Family	Scientific Name	Common Name
	Gonodactylus spp.	
	Lysiosquilla spp.	
	Stenopus hispidus	Banded shrimp
	S. scutellatus	Golden shrimp
	Analcidometra armata	Swimming crinoid
	Davidaster spp.	Crinoids
	Nemaster spp.	Crinoids
	Astropecten spp.	Sand stars
	Linckia guildingii	Common comet star
	Ophidiaster guildingii	Comet star
	Oreaster reticulatus	Cushion sea star
	Astrophyton muricatum	Giant basket star
	Ophiocoma spp.	Brittlestars
	Ophioderma spp.	Brittlestars
	O. rubicundum	Ruby brittlestar

Criterion C. From the remaining species, <u>include</u> for management those species that are biologically vulnerable, constrained to a specific habitat that renders them particularly vulnerable, or have an essential ecological value, as determined by expert analysis.

Table 1.1.3. Draft list of species proposed to be included in the Puerto Rico Fishery Management Plan based on **Alternative 2, *Criterion C***.

Family	Scientific Name	Common Name
Lutjanidae -- Snappers	*Lutjanus jocu*	Dog snapper
	Lutjanus apodus	Schoolmaster
	Lutjanus cyanopterus	Cubera snapper
Serranidae -- Groupers	*Cephalopholis fulva*	Coney
	Cephalopholis cruentatus	Graysby
	Epinephelus adscensionis	Rock hind
	Epinephelus mystacinus	Misty grouper
	Mycteroperca interstitialis	Yellowmouth grouper
Scaridae -- Parrotfishes[1]	*Scarus vetula*	Queen parrotfish
	Scarus taeniopterus	Princess parrotfish
	Sparisoma chrysopterum	Redtail parrotfish
	Sparisoma viride	Stoplight parrotfish
	Sparisoma aurofrenatum	Redband parrotfish
	Scarus croicensis	Striped parrotfish

Family	Scientific Name	Common Name
Acanthuridae -- Surgeonfishes	*Acanthurus coeruleus*	Blue tang
	Acanthurus bahianus	Ocean surgeonfish
	Acanthurus chirurgus	Doctorfish
Balistidae -- Triggerfishes	*Canthidermis sufflamen*	Ocean triggerfish
	Balistes vetula	Queen triggerfish (Old Wife)
	Balistes capriscus	Gray triggerfish
Labridae -- Wrasses	*Lachnolaimus maximus*	Hogfish
	Halichoeres radiatus	Puddingwife
	Bodianus rufus	Spanish hogfish
Pomacanthidae -- Angelfishes	*Holacanthus ciliaris*	Queen angelfish
	Pomacanthus arcuatus	Gray angelfish
	Pomacanthus paru	French angelfish
Sphyraenidae -- Barracudas	~~*Sphyraena guachancho*~~	~~Guaguanche~~
	Sphyraena barracuda	Great barracuda
Lobotidae -- Tripletail	*Lobotes surinamensis*	Tripletail
Myliobatidae -- Eagle and Manta	*Manta birostris*	Manta
	Aetobatus narinari	Spotted eagle ray (chucho)
	Dasyatis americana	Sting ray

[1] The Council added the parrotfish species for all the islands by motion at the 153rd Council Meeting, which corresponds to this Criterion.

Criterion D. From the remaining species, <u>include</u> those species possessing economic importance to the nation or regional economy based on a threshold of landings or value separately determined for each of the recreational, commercial, and aquarium trade sectors as appropriate (e.g., top 90%) and those representing an important component of bycatch, as established by expert analysis.

Table 1.1.4. Draft list of species proposed to be included in the Puerto Rico Fishery Management Plan based on **Alternative 2, *Criterion D***.

Family	Scientific Name	Common Name
Lutjanidae - Snappers	*Pristipomoides aquilonaris*	Wenchman
	Pristipomoides macrophthalmus	Cardinal
	Etelis oculatus	Queen snapper
Haemulidae--Grunts	*Haemulon plumieri*	White grunt
Carangidae--Jacks	*Caranx hippos*	Crevalle jack
	Alectis ciliaris	African pompano
	Elagatis bipinnulata	Rainbow runner

Family	Scientific Name	Common Name
Coryphaenidae - Dolphin fish	*Coryphaena hippurus*	Dolphin
	Coryphaena equiselis	Pompano dolphin
Scombridae -- Mackerels and tunas	*Euthynnus alletteratus*	Little tunny
	Thunnus atlanticus	Blackfin tuna
	Scomberomorus cavalla	King mackerel
	Scomberomorus regalis	Cero
	Acanthocybium solandri	Wahoo

Table 1.1.5 below summarizes the resulting species from all criteria.

Table 1.1.5. Consolidated list of species under **Alternative 2** recommended for inclusion in the Puerto Rico Fishery Management Plan. The Caribbean Fishery Management Council proposed these species for management at their 153rd Regular Meeting, held in August 2015. The Puerto Rico FMP draft list of species includes queen conch (1 species), spiny lobster (1 species), sea cucumbers, sea urchins, all species of coral, and 63 species of finfish.

Family or Class	#	Species Name	Common Name	Criterion
Strombidae -- True conchs	1	*Lobatus (Strombus) gigas*	Queen conch	A
Palinuridae -- Spiny lobster	2	*Panulirus argus*	Caribbean spiny lobster	A
Lutjanidae -- Snappers	3	*Apsilus dentatus*	Black snapper	A
	4	*Lutjanus buccanella*	Blackfin snapper	A
	5	*Lutjanus vivanus*	Silk snapper	A
	6	*Rhomboplites aurorubens*	Vermilion snapper	A
	7	*Lutjanus synagris*	Lane snapper	A
	8	*Lutjanus analis*	Mutton snapper	A
	9	*Ocyurus chrysurus*	Yellowtail snapper	A
	10	*Pristipomoides aquilonaris*	Wenchman	D
	11	*Pristipomoides macrophthalmus*	Cardinal snapper	D
	12	*Etelis oculatus*	Queen snapper	D
	13	*Lutjanus jocu*	Dog snapper	C
	14	*Lutjanus apodus*	Schoolmaster	C
	15	*Lutjanus cyanopterus*	Cubera snapper	C
Serranidae -- Groupers	16	*Epinephelus striatus*	Nassau Grouper	A
	17	*Epinephelus itajara*	Goliath grouper	A
	18	*Epinephelus guttatus*	Red hind	A
	19	*Mycteroperca bonaci*	Black grouper	A
	20	*Epinephelus morio*	Red grouper	A

Family or Class	#	Species Name	Common Name	Criterion
	21	*Mycteroperca tigris*	Tiger grouper	A
	22	*Mycteroperca venenosa*	Yellowfin grouper	A
	23	*Epinephelus flavolimbatus*	Yellowedge grouper	A
	24	*Cephalopholis fulva*	Coney	C
	25	*Cephalopholis cruentatus*	Graysby	C
	26	*Epinephelus adscensionis*	Rock hind	C
	27	*Epinephelus mystacinus*	Misty grouper	C
	28	*Mycteroperca interstitialis*	Yellowmouth grouper	C
Scaridae -- Parrotfishes	29	*Scarus coeruleus*	Blue parrotfish	A
	30	*Scarus coelestinus*	Midnight parrotfish	A
	31	*Scarus guacamaia*	Rainbow parrotfish	A
	32	*Scarus vetula*	Queen parrotfish	C
	33	*Scarus taeniopterus*	Princess parrotfish	C
	34	*Sparisoma chrysopterum*	Redtail parrotfish	C
	35	*Sparisoma viride*	Stoplight parrotfish	C
	36	*Sparisoma aurofrenatum*	Redband parrotfish	C
	37	*Scarus croicensis*	Striped parrotfish	C
Acanthuridae -- Surgeonfishes	38	*Acanthurus coeruleus*	Blue tang	C
	39	*Acanthurus bahianus*	Ocean surgeonfish	C
	40	*Acanthurus chirurgus*	Doctorfish	C
Balistidae -- Triggerfishes	41	*Canthidermis sufflamen*	Ocean triggerfish	C
	42	*Balistes vetula*	Queen triggerfish	C
	43	*Balistes capriscus*	Gray triggerfish	C
Labridae -- Wrasses	44	*Lachnolaimus maximus*	Hogfish	C
	45	*Halichoeres radiatus*	Puddingwife	C
	46	*Bodianus rufus*	Spanish hogfish	C
Pomacanthidae -- Angelfishes	47	*Holacanthus ciliaris*	Queen angelfish	C
	48	*Pomacanthus arcuatus*	Gray angelfish	C
	49	*Pomacanthus paru*	French angelfish	C
Sphyraenidae -- Barracudas[1]	50	*Sphyraena barracuda*	Great barracuda	C
Lobotidae -- Tripletail	51	*Lobotes surinamensis*	Tripletail	C
Myliobatidae -- Eagle and Manta	52	*Manta birostris*	Manta	C
	53	*Aetobatus narinari*	Spotted eagle ray (chucho)	C
	54	*Dasyatis americana*	Sting ray	C
Haemulidae -- Grunts	55	*Haemulon plumieri*	White grunt	D

[1] The guachancho (*Sphyraena guachancho*) was eliminated from the list of species to be considered by Council motion at the 154th Regular Meeting in December 2015. The distribution of this species is more coastal, and it is not expected to be found in federal waters of Puerto Rico

Family or Class	#	Species Name	Common Name	Criterion
Carangidae -- Jacks	56	*Caranx hippos*	Crevalle jack	D
	57	*Alectis ciliaris*	African pompano	D
	58	*Elagatis bipinnulata*	Rainbow runner	D
Coryphaenidae -- Dolphin fish	59	*Coryphaena hippurus*	Dolphin	D
	60	*Coryphaena equiselis*	Pompano dolphin	D
Scombridae -- Mackerels and tunas	61	*Euthynnus alletteratus*	Little tunny	D
	62	*Thunnus atlanticus*	Blackfin tuna	D
	63	*Scomberomorus cavalla*	King mackerel	D
	64	*Scomberomorus regalis*	Cero	D
	65	*Acanthocybium solandri*	Wahoo	D
Classs Holothuroidea -- Sea Cucumbers	66	All (several families and species)	Sea cucumbers	Council Motion
Class Echinoidea -- Sea Urchins	67	All (several families and species)	Sea urchins	Council Motion
All Corals (soft, hard, mesophotic, deep-water)	68	Several families and species (*see Appendix A)*	Corals	A

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Alternative 3. Identify species to be managed by the Council in waters of the exclusive economic zone (EEZ) off Puerto Rico using all or some of the criteria listed below. For those species for which landings data are available, indicating the species is in the fishery, the Council will choose a set of criteria to determine if a species should be managed under the Puerto Rico FMP. The criteria under consideration include, (A) the status of the stock and/or if it currently has a harvest prohibition, size limit, or seasonal closure in federal waters, (B) the degree to which the species occurs in state rather than in federal waters and can therefore be affected by federal management, (C) the ecological importance of a species within the coral reef ecosystem, and (D) the extent of harvest relative to a pre-established threshold. The selected criteria will be applied, in no specific order, to identify the species to be managed.

Criterion A. Include for management those species that are presently classified as overfished in U.S. Caribbean waters based on National Marine Fisheries Service (NMFS) determination, or for which historically identified harvest is now prohibited due to their ecological importance as habitat (corals presently included in the Corals and Reef Associated Plants and Invertebrates FMP) or habitat engineers (midnight, blue, rainbow parrotfish), or those species for which seasonal closures or size limits apply.

Criterion B. Exclude from federal management those species that have been determined to infrequently occur in federal waters based on expert analysis guided by available data.

Criterion C. Include for management those species that are biologically vulnerable, constrained to a specific habitat that renders them particularly vulnerable, or have an essential ecological value, as determined by expert analysis.

Criterion D. Include those species possessing economic importance to the nation or regional economy based on a threshold of landings or value separately determined for each of the recreational, commercial, and aquarium trade sectors as appropriate (e.g., top 90%) and those representing an important component of bycatch, as established by expert analysis.

1.2 Action 2: Establish Stocks or Stock Complexes in the Puerto Rico Fishery Management Plan (FMP)

Alternative 1. No Action. In the Puerto Rico FMP, retain the stocks/stock complexes presently used for management in the Puerto Rico exclusive economic zone under the Reef Fish, Spiny Lobster, Queen Conch, and Corals and Reef Associated Plants and Invertebrates (Coral) FMPs (Table 1.2.1). For species that were not previously managed in federal waters, no stock/stock complexes are established (Table 1.2.2).

Table 1.2.1. Current stock/stock complexes under the Reef Fish, Spiny Lobster, Queen Conch, and Coral FMPs for species to be included for management under the Puerto Rico FMP as selected in Action 1, Alternative 2.

Stocks/Stock complexes	Species included in the Reef Fish, Spiny Lobster, Queen Conch, and Coral FMPs
Snappers Snapper Unit 1	Black, blackfin, silk, vermillion, wenchman
Snapper Unit 2	Cardinal, queen
Snapper Unit 3[1]	Lane, mutton, dog, schoolmaster
Snapper Unit 4	Yellowtail
Groupers Grouper Unit 1	Nassau
Grouper Unit 2	Goliath
Grouper Unit 3	Red hind, coney, graysby, rock hind
Grouper Unit 4	Black, red, tiger, yellowfin
Grouper Unit 5	Misty, yellowedge
Acanthuridae – Surgeonfishes	Blue tang, Ocean surgeonfish, Doctorfish
Balistidae – Triggerfishes[2]	Ocean triggerfish Queen triggerfish
Haemulidae – Grunts[3]	White grunt
Labridae – Wrasses	Hogfish, Puddingwife, Spanish hogfish
Pomacanthidae - Angelfishes	Queen, gray, French
Scaridae – Parrotfishes[4]	Blue, Midnight, Rainbow, Queen Princess, Redtail, Stoplight, Redband, Striped
Class Holothuroidea - Sea Cucumbers[5]	All (several species)
Class Echinoidea - Sea Urchins[5]	All (several species)
Queen conch	Queen conch
Spiny lobster	Spiny lobster
Corals	Corals

[1]The SU3 currently also includes gray and mahogany snapper. These species were proposed to be removed from management in Action 1.

[2]Triggerfish currently also includes sargassum triggerfish and the black durgon. These species are proposed to be removed from management in Action 1.

[3]Grunts currently also include margate, tomtate, bluestriped, and the French porkfish. These species are proposed to be removed from management in Action 1.

[4]Parrotfish currently also include redfin parrotfish. This species is proposed to be removed from management in Action 1.

[5]Sea cucumbers and some sea urchins species are currently included in the Coral FMP as part of the aquarium trade FMU, which are proposed to be removed from management. Sea cucumbers and sea urchins are proposed to remain under management in the Puerto Rico FMP.

Table 1.2.2. New species proposed to be included for management under the Puerto Rico FMP based on Action 1, Alternative 2 that do not have an assigned stock/stock complex under Action 2, **Alternative 1**.

Family	**Species common name**
Snappers	Cubera snapper
Groupers	Yellowmouth
Triggerfishes	Gray triggerfish
Jacks	Crevalle jack, African pompano, Rainbow runner
Eagle and Manta	Manta, spotted eagle ray, sting ray
Mackerels and Tunas	Little tunny, Blackfin tuna, King mackerel, Cero, Wahoo, Tripletail
Barracudas	Great barracuda
Dolphin fishes	Dolphin, Pompano dolphin
Class Holothuroidea - Sea Cucumbers[1]	All (several species)
Class Echinoidea - Sea Urchins[1]	All (several species)

[1]Sea cucumbers and Sea urchins currently belong to the Coral Reef Resources FMU in the Coral FMP under the aquarium trade species. These groups will need to be assigned into a new stock/stock complexes.

Alternative 2. Do not organize the species in the Puerto Rico FMP in stock complexes. Species would be managed as individual stocks.

Alternative 3. Manage species in the Puerto Rico FMP as individual stocks or as stock complexes, based on scientific analysis, including one or more of the following: cluster analysis based on landings patterns; outcomes from the SEDAR Caribbean Data Evaluation Workshop (2009) (only for species previously managed that will remain in the FMP); biological/life history similarities and vulnerability (for all species); or, expert opinion from the scientific and fishing communities (for all species).

Alternative 4. Where there are stock complexes, select an indicator stock based on any of the following (*SSC input needed):*

Sub-Alternative 4a. TBD

Sub-Alternative 4b. TBD

Sub-Alternative 4c. TBD

1.3 Action 3: Management Reference Points for Stocks/Stock Complexes in the Puerto Rico Fishery Management Plan (FMP)

1.3.1. Action 3(a): Time Series

Select a time series of landings data to establish management reference points for a stock/stock complex, as applicable. Proposed time series are listed in Table 1.3.1 below. An individual alternative can be chosen for each stock/stock complex. (*Note: SSC input needed*).

Alternative 1. No Action. Use the time series of landings used in the 2010 Caribbean Annual Catch Limit (ACL) Amendment and the 2011 Caribbean ACL Amendment, as applicable, to set management reference points for a stock/stock complex in the Puerto Rico FMP. For species that were not previously managed in federal waters, there is no time series of landings to set management reference points.

Alternative 2. Use the longest year sequence of reliable[2] landings data available to set management reference points, as applicable, for a stock/stock complex in the Puerto Rico FMP.

Alternative 3. Use the most recent *X* years (e.g., four years: 2013-2016) of available landings data to set management reference points for a stock/stock complex in the Puerto Rico FMP. *(*Note: the years could be set as sub-alternatives. SSC will provide input)*

Alternative 4. Use the longest time series of pre-Caribbean Sustainable Fisheries Act (SFA) Amendment landings data that is considered to be consistently reliable[3] to set management reference points for a stock/stock complex in the Puerto Rico FMP (e.g., 1999-2005).

***Alternative 5**. Use *X* time series of available landings to set management reference points for a specific stocks/stock complex in the Puerto Rico FMP.

[2] Defined in both the 2010 and 2011 Caribbean ACL Amendments: more recent time-series landings data that are more reliable than baseline but that are affected by recent regulatory changes.
[3] Defined in both the 2010 and 2011 Caribbean ACL Amendments: reflects landings prior to implementation of the Caribbean SFA Amendment in 2006, thereby approximating sustainable yield.

Table 1.3.1. Time series of landings under **Alternatives 1-5** in Action 3(a) for the Puerto Rico FMP.

Puerto Rico			
Alternatives	**Description**	**Puerto Rico Commercial Sector**	**Puerto Rico Recreational Sector**
Alternative 1	Time series of landings used in the 2010 and 2011 Caribbean ACL Amendments (status quo)	1999-2005* for snapper, grouper, parrotfish, and queen conch (*longest time series of pre-Caribbean SFA Amendment landings data that is considered to be consistently reliable across all islands) 1988-2009* for grunts, jacks, triggerfish, wrasses, spiny lobster, sea cucumbers, and some sea urchin species[1] (*longest year sequence of reliable landings data available)	2000-2005* for snapper, grouper, parrotfish (*longest time series of pre-Caribbean SFA Amendment landings data that is considered to be consistently reliable across all islands) 2000-2009* for grunts, jacks, triggerfish, wrasses, angelfish, and surgeonfish (*longest year sequence of reliable landings data available)
Alternative 2	Longest year sequence of reliable data	To be determined (TBD)	TBD
Alternative 3	Most recent X years of available data	TBD	TBD
Alternative 4	Longest time series of pre-Caribbean SFA Amendment landings data	1999-2005	? - 2005
Alternative 5	Other	TBD	TBD

[1]Sea cucumbers and sea urchins have been managed as part of the Aquarium Trade FMU. Management reference points (and time series to derive those) apply to the Aquarium Trade FMU as a group.

1.3.2. Action 3(b): Maximum Sustainable Yield (MSY) Proxy for Stock/Stock Complexes in the Puerto Rico FMP.

Alternative 1. No Action. Establish the MSY proxy for stock/stock complexes by the methods used in the 2010 and 2011 Caribbean ACL Amendments, as applicable, based on the year sequence of landings data defined in Action 3(a). For species that were not previously managed in federal waters, no MSY proxy is established. Table 1.3.2 lists the methods used for previously managed stocks.

Table 1.3.2. Methods used in the 2010 and 2011 Caribbean ACL Amendments to establish the MSY proxies for stock/stock complexes managed under the Reef Fish, Spiny Lobster, and Coral FMPs.

Puerto Rico	
Stocks/Stock complexes	**Maximum Sustainable Yield proxy**
Snapper, grouper, parrotfish	*Commercial*: average (mean) annual commercial landings from year sequence in Action 3(a) *Recreational*: mean recreational catch from MRFSS during year sequence in Action 3(a)
Queen conch	*Commercial:* average annual commercial landings from year sequence in Action 3(a)
Grunts, jacks, triggerfish, wrasses, spiny lobster, sea cucumbers, and some sea urchin species	*Commercial and Recreational*: Median annual landings from year sequence in Action 3(a).
surgeonfish, angelfish	*Commercial and Recreational combined:* Maximum of a single year of recreational landings x 3.

Alternative 2. Establish the MSY proxy as described by the sub-alternatives below. A different sub-alternative can be chosen for each stock/stock complex.

Sub-Alternative 2a. Median annual landings from year sequence in Action 3(a).

Sub-Alternative 2b. Mean annual landings for year sequence selected in Action 3(a).

Sub-Alternative 2c. Maximum of a single year of recreational landings x 3.

Sub-Alternative 2d. For the recreational sector: mean recreational catch (i.e., landings and bycatch) from MRFSS/MRIP during year sequence in Action 3(a).

Alternative 3. MSY = Long-term yield at maximum fishing mortality threshold (MFMT)(Assuming the spawner-recruit relationship is well estimated, otherwise undefined.) *(*Note, this MSY is from Tier 1 (Data Rich) of "Tiered" ABC Control Rule (ABC CR) (SSC input needed).*

1.3.3. Action 3(c): Overfishing Limit (OFL) for Stocks/Stocks Complexes in the Puerto Rico FMP.

Alternative 1. No Action**.** The OFL would be derived from the methods used in the 2010 and 2011 Caribbean ACL Amendments, as applicable for: parrotfish, grouper, queen conch, snapper, sea cucumbers, and some species of sea urchin, the OFL = MSY proxy. For grunts, jacks, triggerfish,wrasses, spiny lobster, surgeonfish, and angelfish, the OFL = MSY proxy adjusted using the ORCS scalar[4]. For species that were not previously managed in federal waters[5], no OFL is determined.

Alternative 2. For a stock/stock complex in the Puerto Rico FMP, establish the OFL= MSY proxy adjusted using the Only Reliable Catch Stocks (ORCS) scalar.

Alternative 3. For a stock/stock complex in the Puerto Rico FMP, the OFL = MSY proxy.

Alternative 4. OFL = scalar multiplied by 75th percentile of reference period landings, where the scalar = < 2 depending on perceived degree of exploitation, life history and ecological function. *(*Note, this is OFL from Tier 4a of "Tiered" ABC CR)*

Alternative 5. OFL = Scalar multiplied by the mean of recent landings (most recent three years of available landings), where the scalar <1 depending on perceived degree of exploitation, life history, and ecological function. *(*Note, this is OFL from Tier 4b of "Tiered" ABC CR)*

Alternative 6. OFL = yield at MFMT *(*Note, this OFL is from Tier 1 (Data Rich) of "Tiered" ABC CR)*Yield is model-based outcome, it is the projected yield

Alternative 7. OFL = catch at MFMT *(*Note, this OFL is from Tier 3 (Data Limited Quantitative Assessment) of "Tiered" ABC CR. It is also model based but it is the actual catch not a projection because this is data poor).*

[4] *From the 2011 Caribbean ACL Amendment:* for each of the FMUs analyzed using the ORCS approach, including both the commercial and recreational sectors, the outcome of the scalars analysis was a multiplier of 1.0. Using that 1.0 scalar, the OFL for each FMU (excluding angelfish and surgeonfish) for each sector was set as the median landings for the selected time period (1988-2009 for the commercial sector and 2000-2009 for the recreational sector). For angelfish and surgeonfish, the OFL for the commercial sector was set equivalent to the maximum recreational landings recorded during the appropriate time period times two.

[5] Species in the Puerto Rico FMP that were not previously managed in Puerto Rico federal waters: cubera snapper, yellowmouth grouper, gray triggerfish, crevalle jack, African pompano, rainbow runner, manta, spotted eagle ray, sting ray, little tunny, blackfin tuna, king mackerel, cero, wahoo, tripletail, great barracuda, dolphin, pompano dolphin.

1.3.4. Action 3(d): Acceptable Biological Catch (ABC) Control Rule for Stocks/Stocks Complexes in the Puerto Rico FMP.

Alternative 1. No action. Retain the specification of an ABC control rule by the methods used in the 2010 and 2011 Caribbean ACL Amendments, as applicable, where ABC=OFL for snapper, grouper, grunts, jacks, triggerfish,wrasses, spiny lobster, surgeonfish, angelfish, sea cucumbers, and some species of sea urchin, except for queen conch and parrotfish, for which the ABC would be specified by the SSC on an adhoc basis. For those species not previously managed in federal waters of Puerto Rico, no ABC control rule is established.

Alternative 2. Do not specify an ABC Control Rule. The ABC will be set by the Council's SSC on an ad hoc basis for each stock/stock complex.

Alternative 3. For a stock/stock complex in the Puerto Rico FMP, adopt an ABC Control Rule where the buffer (or no buffer) between the OFL and the ABC will be a fixed level consisting of:

Sub-Alternative 3a. ABC= OFL

Sub-Alternative 3b. ABC= OFL x 0.90

Sub-Alternative 3c. ABC= OFL x 0.85

Sub-Alternative 3d. ABC= OFL x 0.75

Alternative 4. For a stock/stock complex in the Puerto Rico FMP, adopt the ABC Control Rule described in Table 1.3.4 below.

Table 1.3.4. Acceptable Biological Catch Control Rule ("Tiered")*

Tier 1 ABC CR ("Data Rich")	
Condition for Use	Full stage-structured assessment where reliable time series on (1) catch, (2) stage composition and (3) index of abundance are available and the assessment provides estimates of MSST, MFMT, and PDF of OFL Minimum Stock Size Threshold (MSST) = 0.75*$SSB_{MSY\ (or\ proxy)}$ Maximum Fishing Mortality Threshold (MFMT) = $F_{MSY\ (or\ proxy)}$ MFMT = F_{MSY} MSY = Long-term Yield at MFMT(Assuming the spawner-recruit relationship is well estimated, otherwise undefined.)
OFL[1]	Yield at MFMT
ABC	ABC = x= OFL as reduced by scientific uncertainty† and risk of overfishing††. The reduction factor is applied to the PDF of OFL, where the PDF is determined from the assessment (where $\sigma > \sigma_{min}$ †††) ABC*= d(x) where $d = \begin{cases} \text{Scalar} & \text{if } B \geq Bmsy \\ \text{Scalar} * (B-B_{critical}) / (Bmsy- B_{critical}) & \text{if } B < B\ msy \end{cases}$ Where: Scalar is = 1 if risk of overfishing is specified (<0.5), <1 if not specified (=0.5) $B_{critical}$ is defined as the minimum level of depletion at which fishing would be allowed. †Scientific uncertainty would take into account, but not be limited to, the species life history and ecological function. ††Risk of overfishing determined by Council ††† σ_{min} could be equal to coefficient of variation; σ_{min} is in a log scale
Tier 2 ABC CR ("Data Moderate")	
Condition for Use	Data-moderate approaches where two of the three time series (catch, stage composition and index of abundance) are deemed informative by the assessment process, and the assessment can provide MSST, MFMT, and PDF of OFL
	Same as Tier 1, but variation of the PDF of OFL (σ) must be greater than 1.5 σ_{min} (in principle there should be more uncertainty with data-moderate approaches than data-rich approaches).
Tier 3 ABC CR ("Data Limited Quantitative Assessments")	
Conditions for Use	Relatively data-limited or out-of-date assessments
	MFMT = F_{MSY} (or proxy such as $F_{40\%}$) MSST = *unknown*
OFL	OFL = catch at MFMT
ABC	ABC determined from OFL as reduced by scientific uncertainty† and risk of overfishing†† a. Where the reduction factor is applied to the PDF of OFLwhen the PDF is determined from the assessment (with $s \geq 2s_{min}$) **OR** b. Where ABC = *reduction factor* * OFL, where *reduction factor* must be $\leq$ 0.9 †Scientific uncertainty would take into account, but not be limited to, the species life history and ecological function, the perceived level of depletion, and vulnerability of the stock to collapse. ††Risk of overfishing determined by Council
Tier 4 ABC CR (Landings and Ancillary Information (e.g., Productivity-Susceptibility Analyses, Expert opinion)	
4a	
Conditions for use	No accepted assessment, but stock unlikely to be subject to overfishing, and not likely to be overfished. If SSC consensus cannot be reached on the use of Tier 4a, Tier 4b should be used. MSST, MFMT, MSY = unknown OFL = Scalar * 75th percentile of reference period landings Scalar =< 2 depending on perceived degree of exploitation, life history and ecological function ABC = *buffer* * OFL, where *buffer* must be $\leq$ 0.9 (e.g., 0.9, 0.8, 0.75, 0.70…)
OFL	OFL = Scalar * 75th percentile of reference period landings Scalar =< 2 depending on perceived degree of exploitation, life history and ecological function
ABC	ABC = *buffer* * OFL, where *buffer* must be $\leq$ 0.9 (e.g., 0.9, 0.8, 0.75, 0.70…)
4B	

Conditions for use	No accepted assessment, but stock likely subject to overfishing and/or overfished or unclear. MSST, MFMT, MSY = undefined
OFL	OFL = Scalar * ***mean*** of recent landings (most recent three years of available landings) Scalar < 1 depending on perceived degree of exploitation, life history and ecological function
ABC	ABC = *buffer* * OFL, where *buffer* must be ≤ 0.9 (e.g., 0.9, 0.8, 0.75, 0.70…)

[1]Need SSC input about inclusion/exclusion of OFL in this ABC CR.

Notes: Changes in the trend of a stock's landings or a stock complex's landings in x (e.g., 3) consecutive years, shall trigger a re-evaluation of their ABC CR determination under Tiers

*Needs additional SSC input

1.3.5. Action 3(e): Optimum Yield (OY) and Annual Catch Limit (ACL) for Stocks/Stocks Complexes in the Puerto Rico FMP.

Alternative 1. The OY and the ACL would be derived by the methods used in the 2010 and 2011 Caribbean ACL Amendments, as applicable. These are listed in Table 1.3.5 below. For species not previously managed in federal waters, no OY or ACL is determined.

Table 1.3.5. Methods used in the 2010 and 2011 Caribbean ACL Amendments to establish the OY and ACL for stock/stock complexes managed under the Reef Fish, Spiny Lobster, and Coral FMPs.

Stock/Stock Complex	OY and ACL
Snapper and grouper	OY = ACL= OFL[1] x 0.85
Parrotfish	OY= ACL = ABC[2] x 0.85
Prohibited harvest sps.: Nassau, goliath, midnight, blue, rainbow parrotfish, corals	OY = ACL =0
Queen conch	OY = ACL = 0
Grunts, jacks, triggerfish,wrasses, spiny lobster	OY = ACL = ABC[3] x 0.90
Surgeonfish and angelfish	OY = ACL = ABC[3] x 0.75

[1]OFL =ABC
[2]ABC specified by the SSC.
[3]OFL =ABC

Alternative 2. For a stock/stock complex in the Puerto Rico FMP, determine the OY and the ACL based on the formula in one of the sub-alternatives below and the ABC established in **Action 3(d).**

Sub-Alternative 2a. OY = ACL = ABC

Sub-Alternative 2b. OY = ACL = ABC x 0.90

Sub-Alternative 2c. OY = ACL = ABC x 0.85

Sub-Alternative 2d. OY = ACL = ABC x 0.75

Sub-Alternative 2e. OY = ACL = 0

1.4 Action 4: Essential Fish Habitat (EFH) Description and Identification for Species Not Previously Managed in Federal Waters of Puerto Rico

Background

As identified in Action 1 (Alternative 2), the draft list of species to be managed under the Puerto Rico FMP includes queen conch (1 species), spiny lobster (1 species), 63 finfish, sea cucumbers, sea urchins, and all species of coral. From these, 18 species of finfish are new to federal management. The Magnuson-Stevens Fishery Conservation and Management Act (MSA) requires that each FMP describe and identify essential fish habitat for each fishery. Thus, this action would identify and describe EFH for the 18 finfish species new to federal management: cubera snapper, yellowmouth grouper, gray triggerfish, crevalle jack, African pompano, rainbow runner, manta, spotted eagle ray, sting ray, little tunny, blackfin tuna, king mackerel, cero, wahoo, tripletail, great barracuda, dolphin, and pompano dolphin. The remaining species identified for inclusion in the Puerto Rico FMP in Action 1 (Alternative 2) were previously managed under the Council FMPs and already have existing EFH designations. These existing designations will be evaluated during the ongoing EFH 5-year Review.[6]

Alternative 1. No action. Do not describe and identify EFH for species not previously managed in federal waters of Puerto Rico.

Alternative 2. Describe and identify EFH according to functional relationships between life history stages of federally-managed species and Puerto Rico marine and estuarine habitats.

Alternative 3. Use other method(s) to describe and identify EFH for species not previously managed in federal waters of Puerto Rico. The March 2004 Final Environmental Impact Statement for the Generic EFH Amendment explored a number of concepts that could be used depending on data availability. Some of these methods for describing EFH include:

1) Designating EFH based on distribution data (distribution of habitat types, fish species and fishing effort) (*Level 1 data – surveys of presence/absence; simple habitat/species associations.*

2) Designating EFH based on habitat-related densities of the species (EFH would be defined as the area where the density or relative abundance of a species life stage is above a threshold level) *(Level 2 – Survey/fishery related CPUE as proxy for density; or spatial modeling of probability of occurrence, or other forms of habitat suitability models).*

[6] Under the MSA, the FMP is required to both identify EFH and minimize to the extent practicable adverse effects on such habitat caused by fishing. The need to include an action to prevent, mitigate, or minimize adverse effects on EFH for species not previously managed in Puerto Rico federal waters will depend on the results of the analysis of the gears and techniques used to fish for those new species.

3) Using spatial data to designate EFH (*would use spatially explicit, qualitative or quantitative information that link fish distributions and habitat to describe and identify EFH). (Level 2)*

4) Habitat suitability models (uses habitat suitability modeling prepared by NOS to infer information about species distribution, and possibly relative density (i.e. assuming that habitats with a higher suitability support greater abundances of a species life stage).

5) Designating EFH based on data on growth, reproduction, or survival rates within habitats (obtained from tagging data (growth), fecundity data by area).

6) Designating EFH based on production rates by habitat.

1.5 Action 5: Framework Procedures for the Puerto Rico Fishery Management Plan

Alternative 1. No action. Retain the framework procedures presently included under the Reef Fish, Spiny Lobster, Queen Conch, and Corals and Reef Associated Plants and Invertebrates FMPs (Table 1.5.1).

Alternative 2. Adopt the base Framework Procedure listed in Table 1.5.2.

Alternative 3. Adopt the more broad Framework Procedure listed in Table 1.5.3.

Alternative 4. Adopt the more narrow Framework Procedure listed in Table Table 1.5.4.

Table 1.5.1. Alternative 1: Current framework measures in the Reef Fish, Spiny Lobster, Coral, and Queen Conch FMPs

Fr**amework Measures in Caribbean Council FMPs**
a) Quota Requirements
b) Seasonal Closures
c) Area Closures
d) Fishing Year
e) Trip/Bag Limit
f) Size Limits
g) Gear Restrictions or Prohibitions
h) Fishery Management Unit (FMU)
i) Total Allowable Catch (TAC)
j) Annual Catch Limits (ACLs)
k) Accountability Measures (AMs)
l) Annual Catch Targets (ACTs)
m) Maximum Sustainable Yield (MSY)
n) Optimum Yield (OY)
o) Minimum Stock Size Threshold (MSST)
p) Maximum Fishing Mortality Threshold (MFMT)
q) Overfishing Limit (OFL)
r) Acceptable Biological Catch (ABC) control rules
s) Actions to Minimize the Interaction of Fishing Gear with Endangered Species or Marine Mammals

Establish an assessment group and adjustments:
The following discussion outlines the procedure by which the Council may make management changes through regulatory amendment. As previously discussed, the purpose of frameworks and regulatory amendments is to provide the most responsive and efficient modifications to management measures. If an additional review process was included, there could be substantial delays, thus resulting in a longer lag time between identification of a problem and implementation of a response.

1. When the Council determines that management measures require modification, the Council will appoint an advisory panel (Group) that will assess the condition of species in the reef fish or queen conch management units (including periodic economic and sociological assessments as needed). The Group will present a report of its recommendations to the Council.

2. The Council will consider the report and recommendations of the Group and hold public hearings at a time and place of the Council's choosing to discuss the Group's report. The Council may convene its Scientific and Statistical Committee to provide advice prior to taking final action. After receiving public input, the Council will make decisions on the need for change.

3. If changes to management regulations are needed, the Council will advise the Regional Administrator (RA) in writing of its recommendations accompanied by the Group's report (where appropriate), relevant background material, draft regulations, Regulatory Impact Review, and public comments.

4. The RA will review the Council's recommendations, supporting rationale, public comments, and other relevant information. If the RA concurs that the Council's recommendations are consistent with the goals and objectives of the fishery management plan, the national standards, and other applicable laws, the RA will recommend that the Secretary take appropriate regulatory action for the reef fish or queen conch fisheries on such date as may be agreed upon with the Council.

5. Should the RA reject the recommendations, the RA will provide written reasons to the Council for the rejection, and existing measures will remain in effect until the issue is resolved.

6. Appropriate adjustments that may be implemented by the Secretary include:

a. Specification of Maximum Sustainable Yield (MSY) or MSY proxy and subsequent adjustment where this information is available;

b. Specification of an Acceptable Biological Catch (ABC) control rule and subsequent adjustment where this information is available;

c. Specification of TAC and subsequent adjustment where this information is available;

d. Specification of Annual Catch Limits (ACLs) and Annual Catch Targets (ACTs), and subsequent adjustment;

e. Specification of AMs and subsequent adjustment;

f. Specification of Optimum Yield (OY) and subsequent adjustment where this information is available;

g. Specification of Minimum Stock Size Threshold (MSST) and subsequent adjustment;

h. Specification of Maximum Fishing Mortality Threshold (MFMT) or Overfishing Limit (OFL) and subsequent adjustment;

i. Specification (or modification) of quotas (including zero quotas), trip limits, bag limits (including zero bag limits), size limits, gear restrictions (ranging from modifying current regulations to a complete prohibition, including to respond to interactions with listed species), season/area closures (including spawning closures), and fishing year;

j. Initial specification and subsequent adjustment of biomass levels and age structured analyses;

k. Adjustments to the composition of Fishery Management Units (FMUs).

Authority is granted to the RA to close any fishery (i.e. revert any bag limit to zero and close any commercial fishery), once a quota has been established through the procedure described above, and such quota has been filled.

If NMFS decides not to publish the proposed rule of the recommended management measures, or to otherwise hold

the measures in abeyance, then the RA must notify the Council of its intended action and the reasons for NMFS' concern, along with suggested changes to the proposed management measures that would alleviate the concerns. Such notice shall specify: 1) The applicable law with which the amendment is inconsistent; 2) the nature of such inconsistencies; and 3) recommendations concerning the action that could be taken by the Council to conform the amendment to the requirements of applicable law.

Table 1.5.2. Alternative 2: Adopt the following framework procedure:

OPEN FRAMEWORK	
1. Situations under which it can be used: **A. A new stock assessment resulting in changes to: the overfishing limit, acceptable biological catch, or other associated management parameters.** The Council may, as part of a proposed framework action: - Propose an ACL or a series of ACLs - Propose corresponding adjustments to: MSY, OY, and related management parameters	
B. New information or circumstances - The Council will as part of a proposed framework action, identify the new information and provide rationale as to why this new information indicates that management measures should be changed.	
C. Changes are required to comply with applicable laws such as MSA, ESA, MMPA, or are required as a result of a court order. - In such instances, the RA will notify the Council in writing of the issue and that action is required. If there is a legal deadline for taking action, the deadline will be included in the notification.	
2. Types of Open Frameworks:	
Abbreviated Framework	**Standard Framework**
Can be used for routine or insignificant changes	Regulatory changes that do not qualify as routine or insignificant.
Request is made with letter or memo from the Council to the RA with supporting analyses (biological, social, economic). If RA concurs and approves action, it will be implemented through publication of FR Notice.	Requires a completed framework document with supporting analyses
Actions that can be taken under each Framework	
Abbreviated Framework	**Standard Framework**
i. Reporting and monitoring requirements ii. Permitting requirements iii. Gear marking requirements, iv. Vessel marking requirements v. Restrictions related to maintaining fish in a specific condition (whole condition, filleting, use as bait, etc.) vi. Bag and possession limit changes of not more than 1 fish vii. Size limit changes of not more than X% of the	i. Specification of ABC and ABC control rules ii. Rebuilding plans and revisions to approved rebuilding plans iii. Changes specified under Abbreviated Framework column (left) that exceed the established thresholds.

prior size limit viii. Vessel trip limit changes of not more than X% of the prior trip limit ix. Closed seasons of not more than X% of the overall open fishing season x. Species complex composition xi. Restricted areas (seasonal or year-round) affecting no more than a total of X square nautical miles xii. Re-specification of ACL or quotas that had been previously approved as part of a series of ACLs or quotas xiii. Specification of MSY, OY, and associated management parameters (such as overfished and overfishing definitions) where new values are calculated based on previously approved specifications xiv. Gear restrictions, except those that result in significant changes in the fishery, such as complete prohibitions on gear types xv. Quota changes of not more than X%, or retention of portion of an annual quota in anticipation of future regulatory changes during the same fishing year	
3. The Council will initiate the open framework process to inform the public of the issues and develop potential alternatives to address the issues. The framework process will include the development of documentation and public discussion during at least one council meeting.	
4. Prior to taking final action on the proposed framework action, the Council may convene its SSC, or AP, as appropriate, to provide recommendations on the proposed actions.	
5. For all framework actions, the Council will provide the letter, memo, or the completed framework document along with proposed regulations to the Regional Administrator in a timely manner following final action by the Council.	
6. For all framework action requests, the Regional Administrator will review the Council's recommendations and supporting information and notify the Council of the determinations, in accordance with the MSA and other applicable law.	
CLOSED FRAMEWORK	
Consistent with existing requirements in the FMP and implementing regulations, the RA is authorized to conduct the following framework actions through appropriate notification in the Federal Register: a. Close or adjust harvest of any sector of the fishery for a species, sub-species, or species group that has a quota or sub-quota at such time as projected to be necessary to prevent the sector from exceeding its sector-quota for the remainder of the fishing year or sub-quota season. b. Reopen any sector of the fishery that had been prematurely closed. c. Implement accountability measures, either in-season or post-season.	

Table 1.5.3. Alternative 3: Adopt the following framework procedure (Broad):

OPEN FRAMEWORK
1. The council may utilize this framework procedure to implement management changes in response to any additional information or changed circumstances. The Council will, as part of a proposed framework action, identify any new information and provide rationale as to why this new information requires that management measures be adjusted.
2. Open framework actions may be implemented at any time based on information supporting the need for adjustment of management measures or management parameters:
Actions that can be taken under Framework i. Reporting and monitoring requirements ii. Permitting requirements iii. Bag and Possession Limits iv. Size Limits v. Vessel Trip Limits vi. Closed Seasons vii. Species complex composition viii. Restricted areas (seasonal or year-round) ix. Re-specification of ACL, x. Specification of MSY, OY, and associated management parameters (such as overfished and overfishing definitions) where new values are calculated based on previously approved specifications xi. Gear restrictions, except those that result in significant changes in the fishery, such as complete prohibitions on gear types xii. Quota changes xiii. Specification of ABC and ABC control rules xiv. Rebuilding plans and revisions to approved rebuilding plans xv. Any other measures deemed appropriate by the Council
3. The Council will initiate the open framework process to inform the public of the issues and develop potential alternatives to address the issue. The framework process will include the development of documentation and public discussion during one council meeting.
4. For all framework actions, the Council will provide the letter, memo, or the completed framework document along with proposed regulations to the Regional Administrator in a timely manner following final action by the Council.
5. For all framework action requests, the Regional Administrator will review the Council's recommendations and supporting information and notify the Council of the determinations, in accordance with the MSA and other applicable law.

CLOSED FRAMEWORK
Consistent with existing requirements in the FMP and implementing regulations, the RA is authorized to conduct the following framework actions through appropriate notification in the Federal Register: a. Close or adjust harvest any sector of the fishery for a species, sub-species, or species group that has a quota or sub-quota at such time as projected to be necessary to prevent the sector from exceeding its sector-quota for the remainder of the fishing year or sub-quota season b. Reopen any sector of the fishery that had been prematurely closed c. Implement accountability measures, either in-season or post-season. d. Take any other immediate action specified in the regulations.

Table 1.5.4. Alternative 4: Adopt the following framework procedure (Narrow):

OPEN FRAMEWORK (ONLY THE FOLLOWING:)
A. A new stock assessment resulting in changes to: the overfishing limit, acceptable biological catch, or other associated management parameters. The Council may, as part of a proposed framework action: - Propose an ACL or series of ACLs - Propose corresponding adjustments to: MSY, OY, and related management parameters
Actions that can be implemented under the above conditions only
i. Reporting and monitoring requirements ii. Bag and Possession Limits iii. Size Limits iv. Closed Seasons v. Restricted areas (seasonal or year-round) vi. Quotas
The Council will initiate the open framework process to inform the public of the issues and develop potential alternatives to address the issue. The framework process will include the development of documentation and public discussion during at least three council meetings, and shall be discussed at separate public hearings within the areas most affected by the proposed measures.
Prior to taking final action on the proposed framework action, the Council shall convene its SSC and AP to provide recommendations on the proposed actions.
For all framework actions, the Council will provide the letter, memo, or the completed framework document and all supporting analyses, along with proposed regulations to the Regional Administrator in a timely manner following final action by the Council.
For all framework action requests, the Regional Administrator will review the Council's recommendations and supporting information and notify the Council of the determinations, in accordance with the MSA and other applicable law. The RA will provide the Council weekly updates on the status of the proposed measures.

CLOSED FRAMEWORK
Consistent with existing requirements in the FMP and implementing regulations, the RA is authorized to conduct the following framework actions through appropriate notification in the Federal Register: a. Close or adjust harvest any sector of the fishery for a species, sub-species, or species group that has a quota or sub-quota at such time as projected to be necessary to prevent the sector from exceeding its sector-quota for the remainder of the fishing year or sub-quota season b. Reopen any sector of the fishery that had been prematurely closed c. Implement accountability measures, either in-season or post-season.

Appendix A. List of Coral Species

Table A. List of species of corals currently included in the Corals and Reef Associated Plants and Invertebrates Fishery Management Plan (FMP). The proposed list of corals for the Puerto Rico FMP would include all corals – soft, hard, mesophotic, and deep-water corals.[7]

I. Coelenterates--Phylum Coelenterata		Family	Scientific Name	Common Name
A. Hydrocorals -- Class Hydrozoa				
Hydroids -- Order Athecatae	1	Milleporidae	*Millepora* spp.	Fire corals
	2	Stylasteridae	*Stylaster roseus*	Rose lace corals
B. Anthozoans -- Class Anthozoa				
Soft corals -- Order Alcyonacea	3	Anthothelidae	*Erythropodium caribaeorum*	Encrusting gorgonian
	4		*Iciligorgia schrammi*	Deep-water sea fan
	5	Briaridae	*Briareum asbestinum*	Corky sea finger
	6	Clavulariidae	*Carijoa riisei*	
	7		*Telesto* spp.	
Gorgonian corals -- Order Gorgonacea	8	Ellisellidae	*Ellisella* spp.	Sea whips
	9	Gorgoniidae	*Gorgonia flabellum*	Venus sea fan
	10		*G. mariae*	Venus sea fan
	11		*G. ventalina*	Common sea fan
	12		*Pseudopterogorgia acerosa*	Venus sea fan
	13		*P. albatrossae*	
	14		*P. americana*	Slimy sea plume
	15		*P. bipinnata*	Bipinnate plume
	16		*P. rigida*	
	17		*Pterogorgia anceps*	Angular sea whip
	18		*P. citrina*	Yellow sea whip
	19	Plexauridae	*Eunicea calyculata*	Warty sea rod
	20		*E. clavigera*	
	21		*E. fusca*	Doughnut sea rod
	22		*E. knighti*	
	23		*E. laciniata*	
	24		*E. laxispica*	
	25		*E. mammosa*	Swollen-knob
	26		*E. succinea*	Shelf-knob sea rod
	27		*E. touneforti*	

[7] This list needs to be updated with input from the SSC.

I. Coelenterates--Phylum Coelenterata		Family	Scientific Name	Common Name
	28		*Muricea atlantica*	
	29		*M. elongata*	Orange spiny rod
	30		*M. laxa*	Delicate spiny rod
	31		*M. muricata*	Spiny sea fan
	32		*M. pinnata*	Long spine sea fan
	33		*Muriceopsis* spp.	
	34		*M. flavida*	Rough sea plume
	35		*M. sulphurea*	
	36		*Plexaura flexuosa*	Bent sea rod
	37		*P. homomalla*	Black sea rod
	38		*Plexaurella dichotoma*	Slit-pore sea rod
	39		*P. fusifera*	
	40		*P. grandiflora*	
	41		*P. grisea*	
	42		*P. nutans*	Giant slit-pore
	43		*Pseudoplexaura crucis*	
	44		*P. flagellosa*	
	45		*P. porosa*	Porous sea rod
	46		*P. wagenaari*	
Hard Corals--Order Scleractinia	47	Acroporidae	*Acropora cervicornis*	Staghorn coral
	48		*A. palmata*	Elkhorn coral
	49		*A. prolifera*	Fused staghorn
	50		*Agaricia agaricities*	Lettuce leaf coral
	51		*A. fragilis*	Fragile saucer
	52		*A. lamarcki*	Lamarck's sheet
	53		*A. tenuifolia*	Thin leaf lettuce
	54		*Leptoseris cucullata*	Sunray lettuce
	55	Astrocoeniidae	*Stephanocoenia michelinii*	Blushing star
	56	Caryophyllidae	*Eusmilia fastigiata*	Flower coral
	57		*Tubastrea aurea*	Cup coral
	58	Faviidae	*Cladocora arbuscula*	Tube coral
	59		*Colpophyllia natans*	Boulder coral
	60		*Diploria clivosa*	Knobby brain coral
	61		*D. labyrinthiformis*	Grooved brain
	62		*D. strigosa*	Symmetrical brain

I. Coelenterates--Phylum Coelenterata		Family	Scientific Name	Common Name
	63		*Favia fragum*	Golfball coral
	64		*Manicina areolata*	Rose coral
	65		*M. mayori*	Tortugas rose coral
	66		*Montastrea annularis*	Boulder star coral
	67		*M. cavernosa*	Great star coral
	68		*Solenastrea bournoni*	Smooth star coral
	69	Meandrinidae	*Dendrogyra cylindrus*	Pillar coral
	70		*Dichocoenia stellaris*	Pancake star
	71		*D. stokesi*	Elliptical star
	72		*Meandrina meandrites*	Maze coral
	73	Mussidae	*Isophyllastrea rigida*	Rough star coral
	74		*Isophyllia sinuosa*	Sinuous cactus
	75		*Mussa angulosa*	Large flower coral
	76		*Mycetophyllia aliciae*	Thin fungus coral
	77		*M. danae*	Fat fungus coral
	78		*M. ferox*	Grooved fungus
	79		*M. lamarckiana*	Fungus coral
	80		*Scolymia cubensis*	Artichoke coral
	81		*S. lacera*	Solitary disk
	82	Oculinidae	*Oculina diffusa*	Ivory bush coral
	83	Pocilloporidae	*Madracis decactis*	Ten-ray star coral
	84		*M. mirabilis*	Yellow pencil
	85	Poritidae	*Porites astreoides*	Mustard hill coral
	86		*P. branneri*	Blue crust coral
	87		*P. divaricata*	Small finger coral
	88		*P. porites*	Finger coral
	89	Rhizangiidae	*Astrangia solitaria*	Dwarf cup coral
	90		*Phyllangia americana*	Hidden cup coral
	91	Siderastreidae	*Siderastrea radians*	Lesser starlet
	92		*S. siderea*	Massive starlet
Black Corals -- Order Antipatharia	93		*Antipathes* spp.	Bushy black coral
	94		*Stichopathes* spp.	Wire coral