occur in the Puerto Rico EEZ would fall under this category (Table 2.2.5). These groups were added to the Puerto Rico FMP by Council motion at their 153<sup>rd</sup> regular meeting in August 2015, because as slow-moving benthic invertebrates, they are commercially exploited for consumption through export to Asian markets and are highly vulnerable to overharvest.

When applying the criteria included in **Preferred Alternative 2**, divergent perspectives arose both within the SSC and the Puerto Rico DAP and between these two entities. For example, the Puerto Rico DAP recommended that barracuda not be included for management because they are not commercially targeted due to their ciguatoxicity and are therefore not a key component of the commercial fishery. However, the SSC noted that barracuda occurs in the EEZ (not excluded under Criterion B) and opined that although they are not targeted or landed often nor are they biologically vulnerable, they are ecologically important as top-level predators. The Council considered both perspectives and chose to include the barracuda. Redfin parrotfish is another example where the DAP and SSC provided different recommendations to the Council. The Puerto Rico DAP recommended redfin parrotfish be included for management, but the SSC did not, noting that the redfin parrotfish stock rarely occurs in waters subject to federal management (i.e., those waters at least 9 nautical miles from shore, generally equivalent to those waters > 30 meters (m) depth). For this reason, the SSC recommended that redfin be excluded from management in the Puerto Rico FMP based on application of Criterion B. After considering this information, the Council chose to exclude the redfin parrotfish from the list of species to be included in the Puerto Rico FMP (Table 2.2.6).

In summary, **Preferred Alternative 2** would result in the following list of species to be included in the Puerto Rico FMP: queen conch, spiny lobster, all species of sea cucumbers, sea urchins, and coral occurring in Puerto Rico EEZ waters, and 63 species of finfish (Table 2.2.6).

**Table 2.2.6.** Species included in the Puerto Rico FMP based on Criteria A-E of Preferred Alternative 2. The Council proposed these species for management at their 153<sup>rd</sup> Regular Meeting (August 2015). Species marked with an asterisk would be new to federal management.

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

1 macrophthalmus	Family or Class	#	Species Name	Common Name	Criterion
The propose of the continues   The propose of the continues		11	Pristipomoides	Cardinal snapper	D
13   Lutjanus jocu   Dog snapper   C		11		Cardinar snapper	D
14   Lutjanus apodus   Schoolmaster   C     15   Lutjanus cyanopterus*   Cubera snapper*   C     16   Epinephelus striatus   Nassau Grouper   A     17   Epinephelus striatus   Red hind   A     18   Epinephelus guttatus   Red hind   A     19   Mycteroperca bonaci   Black grouper   A     20   Epinephelus morio   Red grouper   A     21   Mycteroperca tigris   Tiger grouper   A     22   Mycteroperca venenosa   Yellowfin grouper   A     23   Hyporthodus flavolimbatus   Yellowedge grouper   A     24   Cephalopholis fulva   Coney   C     25   Cephalopholis fulva   Coney   C     26   Epinephelus adscensionis   Rock hind   C     27   Hyporthodus mystacinus   Graysby   C     28   Mycteroperca interstitialis*   Yellowmouth     29   Scarus coeruleus   Blue parrottish   A     30   Scarus coelestinus   Midnight parrotfish   A     30   Scarus teulia   Queen parrotfish   C     31   Scarus guacamaia   Rainbow parrotfish   C     32   Scarus vetula   Queen parrotfish   C     33   Scarus teuliopterus   Princess parrotfish   C     34   Sparisoma aurofrenatum   Redband parrotfish   C     35   Sparisoma aurofrenatum   Redband parrotfish   C     36   Sparisoma aurofrenatum   Redband parrotfish   C     37   Scarus teeri   Striped parrotfish   C     38   Acanthurus bahianus   Ocean surgeonfish   C     39   Acanthurus bahianus   Ocean surgeonfish   C     40   Acanthurus bahianus   Ocean surgeonfish   C     41   Canthidermis sufflamen   Ocean triggerfish   C     42   Balistes vetula   Queen triggerfish   C     43   Balistes capriscus*   Gray angelfish   C     44   Lachnolaimus maximus   Hogfish   C     45   Pomacanthus arcuatus   Gray angelfish   C     46   Bodianus rufus   Spanish hogfish   C     47   Holacanthus ciliaris   Queen angelfish   C     48   Pomacanthus arcuatus   Gray angelfish   C     49   Pomacanthus arcuatus   Gray angelfish   C     40   Pomacanthus arcuatus   Gray angelfish   C     41   Cabotes surinamensis*   Tripetail*   C     42   Datria daractus   Tripetail*   C     43   Mytoteroperca tripertish   C     44   Datria		12	Etelis oculatus	Queen snapper	D
15   Lutjanus cyanopterus*   Cubera snapper*   C		13	Lutjanus jocu		C
16   Epinephelus striatus   Nassau Grouper   A   17   Epinephelus itajara   Goliath grouper   A   18   Epinephelus gutatus   Red hind   A   19   Mycteroperca bonaci   Black grouper   A   20   Epinephelus morio   Red grouper   A   21   Mycteroperca tigris   Tiger grouper   A   22   Mycteroperca venenosa   Yellowfin grouper   A   23   Hyporthodus flavolimbatus   Ycllowedge grouper   A   24   Cephalopholis fulva   Coney   C   Cephalopholis cruentatus   Graysby   C   Epinephelus adscensionis   Rock hind   C   Cephalopholis cruentatus   Graysby   C   Epinephelus adscensionis   Rock hind   C   Cephalopholis cruentatus   Graysby   C   Epinephelus adscensionis   Rock hind   C   Cephalopholis cruentatus   Yellowmouth   C   Tephalopholis cruentatus   Graysby   C   Epinephelus adscensionis   Rock hind   C   C   Epinephelus adscensionis   Rock hind   C   C   Epinephelus adscensionis   Rock hind   C   Epinephelus adscensionis   Epinephelus adscensionis   Rock hind   C   Epinephelus adscensionis   E		14	Lutjanus apodus	Schoolmaster	C
Serranidae Groupers   Finephelus itajara   Goliath grouper   A   Red hind   A   A   Mycteroperca bonaci   Black grouper   A   A   Mycteroperca bonaci   Black grouper   A   A   Mycteroperca tigris   Tiger grouper   A   A   Mycteroperca tigris   Tiger grouper   A   A   Mycteroperca tigris   Tiger grouper   A   A   A   Mycteroperca tigris   Tiger grouper   A   A   A   Mycteroperca tigris   Tiger grouper   A   A   A   A   A   A   A   A   A		15	Lutjanus cyanopterus*	Cubera snapper*	C
18		16		Nassau Grouper	A
Serranidae Groupers    Part			Epinephelus itajara		A
Serranidae Groupers    20   Epinephelus morio   Red grouper   A			Epinephelus guttatus		A
Serranidae Groupers    21		19	Mycteroperca bonaci	Black grouper	A
Serranidae Groupers   22   Mycteroperca venenosa   Yellowefin grouper   A		20	Epinephelus morio	Red grouper	A
Serranidae Groupers   23   Hyporthodus flavolimbatus   Yellowedge grouper   A		21	Mycteroperca tigris	Tiger grouper	A
24   Cephalopholis fulva   Coney   C	Samuanidaa Cuannaus	22	Mycteroperca venenosa	Yellowfin grouper	A
25   Cephalopholis cruentatus   Graysby   C	Serramuae Groupers	23	Hyporthodus flavolimbatus	Yellowedge grouper	A
26   Epinephelus adscensionis   Rock hind   C   Pyporthodus mystacinus   Misty grouper   C   C   Myteroperca interstitialis*   Yellowmouth grouper*   C   C   Scarus coeruleus   Blue parrotfish   A   30   Scarus coelestinus   Midnight parrotfish   A   31   Scarus guacamaia   Rainbow parrotfish   A   32   Scarus vetula   Queen parrotfish   C   C   C   C   C   C   C   C   C		24	Cephalopholis fulva	Coney	С
26   Epinephelus adscensionis   Rock hind   C   C   Hyporthodus mystacinus   Misty grouper   C   C   Wylorthodus mystacinus   Yellowmouth   grouper*   C   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 vetula   Queen parrotfish   C   34   Sparisoma chrysopterum   Redtail parrotfish   C   35   Sparisoma viride   Stoplight parrotfish   C   36   Sparisoma aurofrenatum   Redband parrotfish   C   37   Scarus iseri   Striped parrotfish   C   C   Sparisoma verial   Stoplight parrotfish   C   Sparisoma verial   Stoplight parrotfish   C   C   Sparisoma verial   Stoplight parrotfish   C   C   Sparisoma verial   Stoplight parrotfish   C   Sparisoma verial   Stoplight parrotfish   C   Sphyraenidae   Sphyraenidae   Sphyraenidae   Sphyraenidae   Sparisoma verial   S		25			С
27   Hyporthodus mystacinus   Misty grouper   C		26			С
28   Mycteroperca interstitialis*   Yellowmouth grouper*   C		27	Hyporthodus mystacinus	Misty grouper	С
Scaridae Parrotfishes		28	·	Yellowmouth	С
Scaridae Parrotfishes   30   Scarus coelestinus   Midnight parrotfish   A   31   Scarus guacamaia   Rainbow parrotfish   A   32   Scarus vetula   Queen parrotfish   C   Gueen parrotfish   Gueen par		29	Scarus coeruleus	Blue parrotfish	A
Scaridae Parrotfishes    31   Scarus guacamaia   Rainbow parrotfish   C     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 iseri   Striped parrotfish   C     38   Acanthurus coeruleus   Blue tang   C     39   Acanthurus bahianus   Ocean surgeonfish   C     40   Acanthurus chirurgus   Doctorfish   C     41   Canthidermis sufflamen   Ocean triggerfish   C     42   Balistes vetula   Queen triggerfish   C     43   Balistes capriscus*   Gray triggerfish*   C     44   Lachnolaimus maximus   Hogfish   C     45   Halichoeres radiatus   Puddingwife   C     46   Bodianus rufus   Spanish hogfish   C     47   Holacanthus ciliaris   Queen angelfish   C     48   Pomacanthus arcuatus   Gray angelfish   C     49   Pomacanthus paru   French angelfish   C     Sphyraenidae   Barracudas   Great barracuda*   C     Lobotidae Tripletail   51   Lobotes surinamensis*   Tripletail*   C     Myliobatidae Eagle and   52   Manta birostris*   Giant manta ray*   C		30	Scarus coelestinus	•	A
Scaridae Parrotfishes   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 iseri   Striped parrotfish   C   38   Acanthurus coeruleus   Blue tang   C   39   Acanthurus bahianus   Ocean surgeonfish   C   40   Acanthurus chirurgus   Doctorfish   C   41   Canthidermis sufflamen   Ocean triggerfish   C   42   Balistes vetula   Queen triggerfish   C   43   Balistes capriscus*   Gray triggerfish*   C   44   Lachnolaimus maximus   Hogfish   C   C   45   Halichoeres radiatus   Puddingwife   C   C   46   Bodianus rufus   Spanish hogfish   C   C   48   Pomacanthus ciliaris   Queen angelfish   C   C   48   Pomacanthus arcuatus   Gray angelfish   C   C   Sphyraenidae   48   Pomacanthus arcuatus   Gray angelfish   C   C   Sphyraenidae   50   Sphyraena barracuda*   Great barracuda*   C   C   Myliobatidae Eagle and   52   Manta birostris*   Giant manta ray*   C		31	Scarus guacamaia		A
Scaridae Parrotfishes33Scarus taeniopterusPrincess parrotfishC34Sparisoma chrysopterumRedtail parrotfishC35Sparisoma virideStoplight parrotfishC36Sparisoma aurofrenatumRedband parrotfishC37Scarus iseriStriped parrotfishC38Acanthurus coeruleusBlue tangC39Acanthurus bahianusOcean surgeonfishC40Acanthurus chirurgusDoctorfishC41Canthidermis sufflamenOcean triggerfishC42Balistes vetulaQueen triggerfishC43Balistes capriscus*Gray triggerfish*C43Balistes capriscus*Gray triggerfishC44Lachnolaimus maximusHogfishC45Halichoeres radiatusPuddingwifeC46Bodianus rufusSpanish hogfishC47Holacanthus ciliarisQueen angelfishC48Pomacanthus arcuatusGray angelfishC49Pomacanthus paruFrench angelfishCSphyraenidae Barracudas50Sphyraena barracuda*Great barracuda*CLobotidae Tripletail51Lobotes surinamensis*Tripletail*CMyliobatidae Eagle and52Manta birostris*Giant manta ray*C					
34   Sparisoma chrysopterum   Redtail parrotfish   C     35   Sparisoma viride   Stoplight parrotfish   C     36   Sparisoma aurofrenatum   Redband parrotfish   C     37   Scarus iseri   Striped parrotfish   C     38   Acanthurus coeruleus   Blue tang   C     39   Acanthurus bahianus   Ocean surgeonfish   C     40   Acanthurus chirurgus   Doctorfish   C     41   Canthidermis sufflamen   Ocean triggerfish   C     42   Balistes vetula   Queen triggerfish   C     43   Balistes capriscus*   Gray triggerfish   C     44   Lachnolaimus maximus   Hogfish   C     45   Halichoeres radiatus   Puddingwife   C     46   Bodianus rufus   Spanish hogfish   C     47   Holacanthus ciliaris   Queen angelfish   C     48   Pomacanthus arcuatus   Gray angelfish   C     49   Pomacanthus paru   French angelfish   C     Sphyraenidae   Barracudas   Sphyraena barracuda*   Great barracuda*   C     Myliobatidae Eagle and   52   Manta birostris*   Giant manta ray*   C	Scaridae Parrotfishes			•	С
Stoplight parrotfish   C   36   Sparisoma aurofrenatum   Redband parrotfish   C   37   Scarus iseri   Striped parrotfish   C   38   Acanthurus coeruleus   Blue tang   C   39   Acanthurus bahianus   Ocean surgeonfish   C   40   Acanthurus chirurgus   Doctorfish   C   C   41   Canthidermis sufflamen   Ocean triggerfish   C   42   Balistes vetula   Queen triggerfish   C   43   Balistes capriscus*   Gray triggerfish*   C   44   Lachnolaimus maximus   Hogfish   C   C   45   Halichoeres radiatus   Puddingwife   C   46   Bodianus rufus   Spanish hogfish   C   C   47   Holacanthus ciliaris   Queen angelfish   C   C   48   Pomacanthus arcuatus   Gray angelfish   C   C   Sphyraenidae   Angelfishes   49   Pomacanthus paru   French angelfish   C   C   Sphyraenidae   Sphyraenidae   Sphyraena barracuda*   Great barracuda*   C   Myliobatidae Eagle and   52   Manta birostris*   Giant manta ray*   C			•	•	С
36   Sparisoma aurofrenatum   Redband parrotfish   C   37   Scarus iseri   Striped parrotfish   C   C   Surgeonfishes   38   Acanthurus coeruleus   Blue tang   C   39   Acanthurus bahianus   Ocean surgeonfish   C   40   Acanthurus chirurgus   Doctorfish   C   C   41   Canthidermis sufflamen   Ocean triggerfish   C   42   Balistes vetula   Queen triggerfish   C   43   Balistes vetula   Queen triggerfish   C   C   44   Lachnolaimus maximus   Hogfish   C   C   45   Balistes capriscus*   Gray triggerfish*   C   C   46   Bodianus rufus   Puddingwife   C   C   46   Bodianus rufus   Spanish hogfish   C   C   47   Holacanthus ciliaris   Queen angelfish   C   C   48   Pomacanthus arcuatus   Gray angelfish   C   C   C   49   Pomacanthus paru   French angelfish   C   C   Sphyraenidae   Barracudas   Sphyraena barracuda*   Great barracuda*   C   C   Myliobatidae Eagle and   52   Manta birostris*   Giant manta ray*   C				•	С
Scarus iseri   Striped parrotfish   C			•		С
Acanthuridae Surgeonfishes  38			-	•	
Surgeonfishes   39   Acanthurus bahianus   Ocean surgeonfish   C				• •	
Surgeonfishes					
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Labridae Wrasses  44 Lachnolaimus maximus Hogfish C 45 Halichoeres radiatus Puddingwife C 46 Bodianus rufus Spanish hogfish C 47 Holacanthus ciliaris Queen angelfish C 48 Pomacanthus arcuatus Gray angelfish C 49 Pomacanthus paru French angelfish C Sphyraenidae Barracudas Sphyraena barracuda* Great barracuda* C Myliobatidae Eagle and S2 Manta birostris* Giant manta ray* C					
Labridae Wrasses45Halichoeres radiatusPuddingwifeC46Bodianus rufusSpanish hogfishCPomacanthidae Angelfishes47Holacanthus ciliarisQueen angelfishC48Pomacanthus arcuatusGray angelfishC49Pomacanthus paruFrench angelfishCSphyraenidae Barracudas50Sphyraena barracuda*Great barracuda*CLobotidae Tripletail51Lobotes surinamensis*Tripletail*CMyliobatidae Eagle and52Manta birostris*Giant manta ray*C					
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Angelfishes				· · · · · · · · · · · · · · · · · · ·	
Angellisnes  49 Pomacanthus paru French angelfish C  Sphyraenidae Barracudas  50 Sphyraena barracuda* Great barracuda* C  Lobotidae Tripletail  51 Lobotes surinamensis* Tripletail* C  Myliobatidae Eagle and  52 Manta birostris* Giant manta ray* C				`	
Sphyraenidae Barracudas50Sphyraena barracuda*Great barracuda*CLobotidae Tripletail51Lobotes surinamensis*Tripletail*CMyliobatidae Eagle and52Manta birostris*Giant manta ray*C	Angelfishes			·	
Lobotidae Tripletail51Lobotes surinamensis*Tripletail*CMyliobatidae Eagle and52Manta birostris*Giant manta ray*C			Î		
Myliobatidae Eagle and 52 Manta birostris* Giant manta ray* C		51	Lobotes surinamensis*	Tripletail*	С
	•				
Manta Rays 53 Aetobatus narinari* Spotted eagle ray* C	•	53	Aetobatus narinari*	Spotted eagle ray*	
Dasyatidae - Stingrays 54 Hypanus americanus* Southern stingray* C	•				
Haemulidae Grunts 55 Haemulon plumierii White grunt D			**	<u> </u>	

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 Dolphinfish	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 mackerel*	D
	65	Acanthocybium solandri*	Wahoo*	D
Class Holothuroidea	66	All (See Appendix E) Sea cucumbers	Sea cucumbers	Е
Sea Cucumbers			Sea cacamoers	L
Class Echinoidea*	67	All (See Appendix E) Sea urchins	Е	
Sea Urchins			Dea archins	L
All Corals (soft, hard, mesophotic, deep-water)	68	All (See Appendix E)	Corals	A

<sup>\*</sup> Orders Arbacioida, Camarodonta, Cassiduloida, Cidaroida, Diadematoida, Echinolampadoida, Echinoneoida, Echinothurioida, Pedinoida, Salenioida, and Spatangoida.

## **Comparison of Action 2 Alternatives and Summary of Effects**

Alternative 1 would continue management of those stocks that are included under the existing U.S. Caribbean-wide FMPs, without alteration. When compared to the no action Alternative 1, Preferred Alternative 2 would identify species in need of conservation and management using an expert-based analysis of available data and information applied within an ordered set of evaluation criteria. The outcome of this ordered selection process would result in a change in the number of stocks subject to federal management in Puerto Rico EEZ waters relative to Alternative 1. Although 18 finfish stocks would be newly included in the federal management regime, 36 finfish stocks would be simultaneously removed from management, resulting in an overall decrease in the number and composition of managed fish (from 81 to 63). Both alternatives would continue to include spiny lobster and queen conch. Under Preferred Alternative 2, all species of corals, sea cucumbers, and sea urchins that occur in Puerto Rico EEZ waters would be added to the federal management regime (See Appendix E). In contrast, under Alternative 1, only the species or genera of corals, sea cucumbers, and sea urchins that were included in the Coral FMP would be managed in Puerto Rico EEZ waters.

Alternative 1 would not have direct physical, biological/ecological, socio-economic, or administrative effects relative to the present situation. Alternative 1 would be expected to have indirect biological/ecological and socio-economic effects because it would not extend management to other species in need of conservation and management based on the criteria established in the guidance on the Magnuson-Stevens Act. The Council would not set management reference points or other conservation measures for those species, or otherwise