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Table 1.5.1 Species Listed in the Gulf of Mexico Fishery Management Plans

Red Drum (1)		*Snowy grouper	<i>Epinephelus niveatus</i>
Red drum	<i>Sciaenops ocellatus</i>	**Nassau grouper	<i>Epinephelus striatus</i>
Reef Fish (43)		Marbled grouper	<i>Epinephelus inermis</i>
Balistidae—Triggerfishes (1)		Black grouper	<i>Mycteroperca bonaci</i>
Gray triggerfish	<i>Balistes capriscus</i>	Yellowmouth grouper	<i>Mycteroperca interstitialis</i>
Carangidae—Jacks (4)		Gag	<i>Mycteroperca microlepis</i>
Greater amberjack	<i>Seriola dumerili</i>	Scamp	<i>Mycteroperca phenax</i>
Lesser amberjack	<i>Seriola fasciata</i>	Yellowfin grouper	<i>Mycteroperca venenosa</i>
Almaco jack	<i>Seriola rivoliana</i>	Coastal Migratory Pelagic (3)	
Banded rudderfish	<i>Seriola zonata</i>	Species in the Management Unit	
Labridae—Wrasses (1)		King mackerel	<i>Scomberomorus cavalla</i>
Hogfish	<i>Lachnolaimus maximus</i>	Spanish mackerel	<i>Scomberomorus maculatus</i>
Lutjanidae—Snappers (14)		Cobia	<i>Rachycentron canadum</i>
Queen snapper	<i>Etelis oculatus</i>	Species in the Fishery, but not in the Management Unit	
Mutton snapper	<i>Lutjanus analis</i>	Cero	<i>Scomberomorus regalis</i>
Schoolmaster	<i>Lutjanus apodus</i>	Little tunny	<i>Euthynnus alleteratus</i>
Blackfin snapper	<i>Lutjanus buccanella</i>	Dolphin	<i>Coryphaena hippurus</i>
Red snapper	<i>Lutjanus campechanus</i>	Bluefish (GOM only)	<i>Pomatomus saltatrix</i>
Cubera snapper	<i>Lutjanus cyanopterus</i>	Shrimp (4)	
Gray (mangrove) snapper	<i>Lutjanus griseus</i>	Brown shrimp	<i>Penaeus aztecus</i>
Dog snapper	<i>Lutjanus jocu</i>	White shrimp	<i>Penaeus setiferus</i>
Mahogany snapper	<i>Lutjanus mahogoni</i>	Pink shrimp	<i>Penaeus duorarum</i>
Lane snapper	<i>Lutjanus synagris</i>	Royal red shrimp	<i>Pleoticus robustus</i>
Silk snapper	<i>Lutjanus vivanus</i>	Stone Crab (2)	
Yellowtail snapper	<i>Ocyurus chrysurus</i>	Species in the Management Unit	
Wenchman	<i>Pristipomoides aquilonaris</i>	Stone Crab	<i>Menippe mercenaria</i>
Vermilion snapper	<i>Rhomboplites aurorubens</i>	Stone Crab (Cedar Key N)	<i>Menippe adina</i>
Malacanthidae—Tilefishes (5)		Spiny Lobster (2)	
Goldface tilefish	<i>Caulolatilus chrysops</i>	Species in the Management Unit	
Blackline tilefish	<i>Caulolatilus cyanops</i>	Spiny lobster	<i>Panulirus argus</i>
Anchor tilefish	<i>Caulolatilus intermedius</i>	Slipper lobster	<i>Scyllarides nodife</i>
Blueline tilefish	<i>Caulolatilus microps</i>	Species in the fishery but not in the Management Unit	
(Golden) Tilefish	<i>Lopholatilus chamaeleonticeps</i>	Spotted Spiny lobster	<i>Panulirus guttatus</i>
Serranidae—Groupers (18)		Smooth Tail lobster	<i>Panulirus laeviscauda</i>
Dwarf sand perch	<i>Diplectrum bivittatum</i>	Spanish Slipper lobster	<i>Scyllarides aequinoctialis</i>
Sand perch	<i>Diplectrum formosum</i>		
Rock hind	<i>Epinephelus adscensionis</i>		
*Speckled hind	<i>Epinephelus drummondhayi</i>		
*Yellowedge grouper	<i>Epinephelus flavolimbatus</i>		
Red hind	<i>Epinephelus guttatus</i>		
**Goliath grouper	<i>Epinephelus itajara</i>		
Red grouper	<i>Epinephelus morio</i>		
*Misty grouper	<i>Epinephelus mystacinus</i>		
*Warsaw grouper	<i>Epinephelus nigritus</i>		
* deep-water groupers			
** protected groupers			
Note: scamp is a shallow-water grouper until the shallow-water grouper quota is filled, and is then considered a deep-water grouper			

Table 2.3.1 Possible actions for gear used or potentially used in fisheries managed by the Gulf of Mexico Fishery Management Council

otter trawl	frame trawl	longline	hook & line (bandit rig or rod & reel)	trap/pot	gill & trammel net	spear & power-heads	snare (for lobster)	chemicals	hand harvest
No restrictions	No restrictions	No restrictions	No restrictions	No restrictions	No restrictions	No restrictions	No restrictions	No restrictions	No restrictions
Limit effort (and fishing impacts) through mechanisms such as TACs, seasons, license limitations, or IFQs.	Limit effort (and fishing impacts) through mechanisms such as TACs, seasons, license limitations, or IFQs.	Limit effort (and fishing impacts) through mechanisms such as TACs, seasons, license limitations, or IFQs.	Limit effort (and fishing impacts) through mechanisms such as TACs, seasons, license limitations, or IFQs.	Limit effort (and fishing impacts) through mechanisms such as TACs, seasons, license limitations, or IFQs.	Limit effort (and fishing impacts) through mechanisms such as TACs, seasons, license limitations, or IFQs.	Limit effort (and fishing impacts) through mechanisms such as TACs, seasons, license limitations, or IFQs.	Limit effort (and fishing impacts) through mechanisms such as TACs, seasons, license limitations, or IFQs.	Limit effort (and fishing impacts) through mechanisms such as TACs, seasons, license limitations, or IFQs.	Limit effort (and fishing impacts) through mechanisms such as TACs, seasons, license limitations, or IFQs.
Require use of light weight nets and doors in regions with coral; hard bottom; and/or sand, mud, or low relief; Require use of smaller nets.	Require use of light weight nets and doors in regions with coral, hard bottom	Limit gear length to 300' or 500', limit numbers of gears and/or sets	Require use of circle hooks (recreational & commercial)	Require buoyancy on all traps/pots on coral, hard/live bottom or SAV habitat	Prohibit mechanical net haulers on coral habitat	Prohibit use of Scuba while spearfishing	Prohibit on coral, hard/live bottom habitat	Prohibit on coral, hard/live habitat	Prohibit on coral or hard bottom habitat
Require fishing with semi-pelagic nets in regions with coral; hard bottom; sponges; and/or sand, mud, or low relief	Require fishing with semi-pelagic nets		Limit number of lines per vessel (recreational & commercial)	Prohibit on coral, hard bottom or SAV habitat	Prohibit the gear on coral habitat	Prohibit, except for self-protection, on coral or hard bottom habitat	Prohibit in the Gulf EEZ	Prohibit in the Gulf EEZ	Prohibit in the Gulf EEZ
Prohibit in regions of coral; hard bottom; sponges; and/or sand, mud, or low relief	Prohibit in regions of coral	Prohibit on coral, or hard bottom	Require use of buoys on anchor lines so retrieval is straight up (commercial & recreational)	Prohibit in the Gulf EEZ	Prohibit in the Gulf EEZ	Prohibit, except for self-protection, in the Gulf EEZ			
Prohibit in the Gulf EEZ	Prohibit in the Gulf EEZ	Prohibit in the Gulf EEZ	Prohibit anchoring on coral and hard bottom habitat while fishing with vertical gear						
			Prohibit on coral, or hard bottom habitat						
			Prohibit in the Gulf EEZ						

Table 2.3.2 Possible actions for gear used in fisheries not managed by a Gulf of Mexico FMP

skimmer trawl	surface longline gear	oyster dredge	oyster rakes/ tongs	pattent tongs	cast net	dip net	slurp gun
No restrictions	No restrictions	No restrictions	No restrictions	No restrictions	No restrictions	No restrictions	No restrictions
Limit effort (and fishing impacts) through mechanisms such as TACs, seasons, and/or license limitations.	Limit effort (and fishing impacts) through mechanisms such as TACs, seasons, and/or license limitations.	Limit effort (and fishing impacts) through mechanisms such as TACs, seasons, and/or license limitations.	Limit effort (and fishing impacts) through mechanisms such as TACs, seasons, and/or license limitations.	Limit effort (and fishing impacts) through mechanisms such as TACs, seasons, and/or license limitations.	Limit effort (and fishing impacts) through mechanisms such as TACs, seasons, and/or license limitations.	Limit effort (and fishing impacts) through mechanisms such as TACs, seasons, and/or license limitations.	Limit effort (and fishing impacts) through mechanisms such as TACs, seasons, and/or license limitations.
Prohibit in the Gulf EEZ	Prohibit in the Gulf EEZ	Prohibit use on oyster reefs (excluding private leases)	Prohibit use on oyster reefs (excluding private leases)	Prohibit use on oyster reefs (excluding private leases)	Prohibit on coral habitat	Prohibit on coral habitat	Prohibit on coral gorgonian habitat

Table 2.4.1 Species for which EFH was defined in the 1998 Generic Amendment

FMP	Species considered	
	Common name	Latin name
Shrimp Fishery Of The Gulf Of Mexico	Brown shrimp White shrimp Pink shrimp Royal red shrimp	<i>Penaeus aztecus</i> <i>Penaeus setiferus</i> <i>Penaeus duorarum</i> <i>Pleoticus robustus</i>
Red Drum Fishery Of The Gulf Of Mexico	Red drum	<i>Scianops ocellatus</i>
Reef Fish Fishery Of The Gulf Of Mexico	Red grouper Gag grouper Scamp grouper Red snapper Gray snapper Yellowtail snapper Lane snapper Greater amberjack Lesser amberjack Tilefish Gray triggerfish	<i>Epinephelus morio</i> <i>Mycteroperca microlepis</i> <i>Mycteroperca phenax</i> <i>Lutjanus campechanus</i> <i>Lutjanus griseus</i> <i>Ocyurus chrysurus</i> <i>Lutjanus synagris</i> <i>Seriola dumerili</i> <i>Seriola fasciata</i> <i>Lopholatilus chamaeleontieps</i> <i>Balistes capriscus</i>
Stone Crab Fishery Of The Gulf Of Mexico	Stone crab	<i>Menippe mercenaria</i>
Coral And Coral Reef Fishery Of The Gulf Of Mexico	Coral and coral reefs	All corals
Spiny Lobster Fishery Of The Gulf Of Mexico And South Atlantic	Spiny lobster	<i>Panulirus argus</i>
Coastal Migratory Pelagic Resources Of The Gulf Of Mexico And South Atlantic	King mackerel Spanish mackerel Cobia Dolphin	<i>Scomberomorus cavalla</i> <i>Scomberomorus maculatus</i> <i>Rachycentron canadum</i> <i>Coryphaena hippurus</i>

Table 2.4.2. HAPC Alternative 3, Marine Managed Areas

Site ID links this table to mapped locations of the sites presented in Figures 2.3.14 (a-d) for the Western Gulf, denoted by ‘W’ and Figures 2.3.15 (a-e) for the Eastern Gulf, denoted by ‘E.’ Sites for which there were no data in the NOS database for Marine Managed Areas are listed at the bottom. Data for National Wildlife Refuges is currently being updated (J. Brownlee, personal communication).

Source: NOAA, National Ocean Service. Site maps are also available from www.mpa.gov.

Florida

Site ID	Site Name	Managing Agency	Site Purpose	Fishery Resources	Habitat Resources	Activities Not Allowed	Notes
E4	Desoto Canyon Closed Area	NOAA/NOAA Fisheries	MPA designed to reduce the number of undersized swordfish, billfish, and other species incidentally caught with pelagic longline gear.			No human activities are allowed from April 1 to August 31.	
E14	Florida Middle Ground Habitat Area of Particular Concern	NOAA/NOAA Fisheries	Protection of fragile coral resources	Ecologically important fish species	Hard bottoms	In one zone, no human activities are allowed.	
E6	Madison-Swanson Spawning Site	NOAA/NOAA Fisheries	Spawning aggregations of gag (<i>Mycteroperca microlepis</i>), as well as numerous other reef fish and coastal migratory pelagic species are protected from fishing activities. Deepwater habitat areas are also protected from fishery-related impacts.	Highly migratory fish species, commercially important finfisheries		No fishing allowed, except for Highly Migratory Species	
E3/W1	Reef Fish Stressed Area	NOAA/NOAA Fisheries	Rebuild declining reef fish stocks in an inshore stressed area.	Commercially important finfisheries, recreationally important finfisheries		No longline and buoy gear	

Table 2.4.2. HAPC Alternative 3, Marine Managed Areas, Continued

Site ID	Site Name	Managing Agency	Site Purpose	Fishery Resources	Habitat Resources	Activities Not Allowed	Notes
E15	Steamboat Lumps Spawning Site	NOAA/NOAA Fisheries	Spawning aggregations of gag (<i>Mycteroperca microlepis</i>), as well as numerous other reef fish and coastal migratory pelagic species are protected from fishing activities. Deepwater habitat areas are also protected from fishery-related impacts.	Ecologically important fish species, highly migratory fish species		No fishing allowed, except for Highly Migratory Species	
E25	Tortugas Shrimp Sanctuary	NOAA/NOAA Fisheries	Protect an area of abundance of small pink shrimp to trawling	Commercially important finfisheries			
	Florida Keys National Marine Sanctuary	NOAA/National Ocean Service	In general, all National Marine Sanctuaries are designated to provide comprehensive and coordinated conservation and management of these marine areas, and activities affecting them.	Commercially important finfisheries, ecologically important fish species, highly migratory fish species, important fish spawning areas, important shellfisheries, recreationally important finfisheries, recreationally important shellfisheries	Coral reefs, critical habitat, emergent wetlands, limestone cliff face, mangroves, mud flats, other living reefs, oyster reefs, sand bottom community, scrub-shrub/forested wetlands, seagrasses, spawning area, submerged aquatic vegetation	In certain zones, the following activities are not allowed: Anchoring, building/development (structure, docks), catch and release recreational fishing, commercial bottom trawling, commercial use of traps, consumptive recreational fishing, extractive research, speed boats, historic artifact removal/collection, internal combustion engines, large commercial vessels, military exercises/operations, non-extractive research, oil and gas exploration, other commercial fishing, other hunting, other mineral extraction, overflights, personal watercraft, salvage operations (non historic), seabed installation/surface layment, small commercial vessels, subsistence harvesting, waterfowl hunting.	One zone serves as important nesting site for sea birds.
E8	Apalachicola National Estuarine Research Reserve	FL Department of Environmental Protection	The mission of the National Estuarine Research Reserve Program is the establishment and management, through Federal-state cooperation, of a national system (National Estuarine Research Reserve System or System) of estuarine research reserves.				
E23	Rookery Bay National Estuarine Research Reserve	FL Department of Environmental Protection					

Table 2.4.2. HAPC Alternative 3, Marine Managed Areas, Continued

Alabama

Site ID	Site Name	Managing Agency	Site Purpose	Fishery Resources	Habitat Resources	Activities Not Allowed	Notes
E1	Weeks Bay National Estuarine Research Reserve	AL Department of Conservation and Natural Resources, Division of State Lands	The mission of the National Estuarine Research Reserve Program is the establishment and management, through Federal-state cooperation, of a national system (National Estuarine Research Reserve System or System) of estuarine research reserves.				

Mississippi

Site ID	Site Name	Managing Agency	Site Purpose	Fishery Resources	Habitat Resources	Activities Not Allowed	Notes
W21	Grand Bay National Estuarine Research Reserve	MS Department of Marine Resources	The mission of the National Estuarine Research Reserve Program is the establishment and management, through Federal-state cooperation, of a national system (National Estuarine Research Reserve System or System) of estuarine research reserves.				

Texas

Site ID	Site Name	Managing Agency	Site Purpose	Fishery Resources	Habitat Resources	Activities Not Allowed	Notes
W13	West and East Flower Garden Banks Habitat Area of Particular Concern	NOAA/NOAA Fisheries	Coral habitat protection from potential degradation resulting from fishery-related impacts.				
W14	Flower Garden Banks National Marine Sanctuary	NOAA/National Ocean Service	In general, all National Marine Sanctuaries are designated to provide comprehensive and coordinated conservation and management of these marine areas, and activities affecting them.	Commercially important finfisheries, ecologically important fish species, highly migratory fish species, important fish spawning areas, important shellfisheries, recreationally important shellfisheries	Coral reefs, other living reefs, sandy cliffs	In certain zones, the following activities are not allowed: catch and release recreational fishing, commercial bottom trawling, commercial use of traps, consumptive recreational fishing, extractive research, large commercial vessels, other commercial fishing, other hunting, subsistence harvesting, waterfowl hunting.	One zone provides nesting sites for shorebirds. Several large coral heads and formations are also located in the area and are popular dive sites.

Table 2.4.2. HAPC Alternative 3, Marine Managed Areas, Continued

Sites for which there were no data in the NOS database for Marine Managed Areas.

Site ID	State	Site Name	Managing Agency	
	FL	Dry Tortugas National Park	DOI/National Park Service	
		Everglades National Park	DOI/National Park Service	
E5/ W20		Gulf Islands National Seashore	DOI/National Park Service	
E11		Cedar Keys National Wildlife Refuge	DOI/USFWS	
E13		Chassahowitzka National Wildlife Refuge	DOI/USFWS	
E12		Crystal River National Wildlife Refuge	DOI/USFWS	
E17		Egmont Key National Wildlife Refuge	DOI/USFWS	
E19		Island Bay National Wildlife Refuge	DOI/USFWS	
E21		J.N. `Ding` Darling National Wildlife Refuge	DOI/USFWS	
E10		Lower Suwannee National Wildlife Refuge	DOI/USFWS	
E22		Matlacha Pass National Wildlife Refuge	DOI/USFWS	
E18		Passage Key National Wildlife Refuge	DOI/USFWS	
E20		Pine Island National Wildlife Refuge	DOI/USFWS	
E16		Pinellas National Wildlife Refuge	DOI/USFWS	
E9		St. Marks National Wildlife Refuge	DOI/USFWS	
E7		St. Vincent National Wildlife Refuge	DOI/USFWS	
E24		Ten Thousand Islands National Wildlife Refuge	DOI/USFWS	
E2		AL	Bon Secour National Wildlife Refuge	DOI/USFWS
W22		MS	Grand Bay National Wildlife Refuge	DOI/USFWS
W17		LA	Bayou Sauvage National Wildlife Refuge	DOI/USFWS
W16	Big Branch Marsh National Wildlife Refuge		DOI/USFWS	
W19	Breton National Wildlife Refuge		DOI/USFWS	
W18	Delta National Wildlife Refuge		DOI/USFWS	
W12	Sabine National Wildlife Refuge		DOI/USFWS	
W15	Shell Keys National Wildlife Refuge		DOI/USFWS	
W3	TX	Padre Island National Seashore	DOI/National Park Service	
W9		Anahuac National Wildlife Refuge	DOI/USFWS	
W4		Aransas National Wildlife Refuge	DOI/USFWS	
W5		Big Boggy National Wildlife Refuge	DOI/USFWS	
W7		Brazoria National Wildlife Refuge	DOI/USFWS	
W2		Laguna Atascosa National Wildlife Refuge	DOI/USFWS	
W10		McFaddin National Wildlife Refuge	DOI/USFWS	
W8		Moody National Wildlife Refuge	DOI/USFWS	
W6		San Bernard National Wildlife Refuge	DOI/USFWS	
W11	Texas Point National Wildlife Refuge	DOI/USFWS		

Table 3.2.1 Estuarine and nearshore habitat area (acres) by state

	Texas ¹	Louisiana ²	Mississippi ³	Alabama ⁴	Florida ⁵
Oyster Reef	8041	53865	4455	1472	74457
Salt Marsh	174960	292734	23814	10327	104166
Seagrass	91409	5657	140	12,300	890,000
Mangrove	1053				221986

¹ Oyster reef – Hal Osburn, Texas Parks and Wildlife, personal communication; salt marsh, mangrove – NOAA (1991); seagrass; Pulich (1998);

² Oyster reef - ; salt marsh – NOAA (1991); seagrass – Handley n.d.;

³ Oyster reef – Scott Gordon, Mississippi Department of Marine Resources, personal communication; salt marsh – NOAA (1991); seagrass – Handley n.d.

⁴ Oyster reef - ; salt marsh – NOAA (1991); seagrass – Stout et al. (1982)

⁵ Oyster reef - McNulty et al. 1972; seagrass, Duke and Kruczinsky (1992); salt marsh, mangrove NOAA (1991)

Table 3.2.2 Habitats utilized by life stages of Gulf of Mexico FMP species for EFH
Ecological functions: Red Drum FMP

Zone	Habitat Type	Eggs	Larvae	Post Larvae	Early Juveniles	Late Juveniles	Adults	Spawning Adults
Red drum (<i>Sciaenops ocellatus</i>)								
EST	SAV		Growth, Feeding	Growth, Feeding		Growth, Feeding	Feeding	Feeding
EST	Soft bottoms		Growth, Feeding	Growth, Feeding	Growth, Feeding		Feeding	Feeding
EST	Sand/ shell			Growth, Feeding			Feeding	Feeding
EST	Emergent marshes			Growth, Feeding	Growth, Feeding		Feeding	
NS	Pelagic	Growth					Feeding	
NS	Sand/ shell					Growth, Feeding	Feeding	Spawning
NS	Hardbottom					Growth, Feeding	Feeding	Spawning
OS	Sand/ shell						Feeding	
OS	Hardbottom						Feeding	
NOTES: Adults common offshore in 40-70 m of water. Early juvenile growth rates higher in backwater areas than in seagrass beds. Spawns in passes, inlets, and nearshore areas.								

Table 3.2.3 Summary of habitat utilization by life history stage for species in the Red Drum FMP

Scientific name	Eggs	Larvae	Postlarvae	Early Juveniles	Late juveniles	Adults	Spawning adults
<i>Sciaenops ocellatus</i>	Pelagic	SAV, Soft bottoms	Sand/ shell bottoms, SAV, Soft bottoms, Emergent marshes	Emergent marshes, SAV, Soft bottoms	Hard bottoms, Sand/ shell bottoms, SAV	Hard bottoms, Pelagic, Emergent marshes, Sand/ shell bottoms, SAV, Soft bottoms	Hard bottoms, Sand/ shell bottoms, SAV, Soft bottoms

Table 3.2.4 Red Drum species depth preferences by life stage from the habitat use database

Species	Life stage	Minimum depth (m)	Maximum Depth (m)	Comments
Red Drum	Eggs			
	Larvae			
	Postlarvae			
	Early Juveniles	0	3	
	Late Juveniles	0	5	
	Adult	1	70	
	Spawning Adults	40	70	

Table 3.2.5 Summary of occurrence by eco-region for life history stages for species in the Red Drum FMP

Common name	Eggs	Larvae	Post larvae	Early juveniles	Late juveniles	Adults	Spawning adults
Eco-region 1							
Red Drum	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Spawning Area
Eco-region 2							
Red Drum	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Spawning Area
Eco-region 3							
Red Drum	Common	Common	Common	Nursery Area	Nursery Area	Major Adult Area and Commercial Fishing Ground	Spawning Area
Eco-region 4							
Red Drum	Common	Common	Common	Nursery Area	Nursery Area	Major Adult Area and Commercial Fishing Ground	Spawning Area
Eco-region 5							
Red Drum	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Spawning Area

Table 3.2.6 Habitats utilized by life stages of Gulf of Mexico FMP species for EFH
Ecological functions: Reef Fish FMP

EST = Estuarine

NS = Nearshore

OS = Offshore

Growth = Growth to maturity

Zone	Habitat Type	Eggs	Larvae	Post Larvae	Early Juveniles	Late Juveniles	Adults	Spawning Adults
Gray Triggerfish (<i>Balistes capriscus</i>)								
NS	Reefs	Growth				Growth	Breeding, Feeding	Spawning, Feeding
NS	Drift algae		Growth	Growth	Growth, Feeding	Growth, Feeding		
NS	Mangroves				Growth	Growth		
NS	Sand/Shell						Feeding	Feeding
OS	Reefs	Growth					Breeding, Feeding	Spawning, Feeding
OS	Sand/Shell						Feeding	Feeding
NOTES: Females and/ or males guard nests in sand near reefs. Drift algae is primarily <i>Sargassum</i> .								
Greater Amberjack (<i>Seriola dumerili</i>)								
NS	Drift algae				Growth	Growth		
NS	Pelagic						Unknown	
NS	Reefs						Unknown	
OS	Drift algae				Growth	Growth		
OS	Pelagic	Growth	Growth	Growth			Unknown	Spawning
OS	Reefs						Feeding	
Lesser Amberjack (<i>Seriola fasciata</i>)								
OS	Drift algae				Growth	Growth		
OS	Hardbottom						Unknown	Spawning
NOTES: Drift algae is primarily <i>Sargassum</i> .								
Almaco Jack (<i>Seriola rivoliana</i>)								
NS	Drift algae				Growth	Growth		
OS	Drift algae				Growth	Growth		
OS	Pelagic	Growth					Unknown	Spawning
NOTES: Drift algae is primarily <i>Sargassum</i> . Northern Gulf of Mexico probably not an important spawning area.								
Banded Rudderfish (<i>Seriola zonata</i>)								
NS	Pelagic		Growth				Unknown	
OS	Pelagic							Spawning
OS	Drift algae				Growth	Growth		
NOTES: Drift algae includes <i>Sargassum</i> seaweed and <i>Physalia</i> jellyfish. Spawning in Eastern Gulf of Mexico, Yucatan Channel, and Florida Straits.								
Hogfish (<i>Lachnolaimus maximus</i>)								
EST	SAV				Growth, Feeding	Growth, Feeding		
EST	Hardbottom						Feeding	
NS	SAV				Growth, Feeding	Growth, Feeding		

Zone	Habitat Type	Eggs	Larvae	Post Larvae	Early Juveniles	Late Juveniles	Adults	Spawning Adults
NS	Reefs						Feeding	Spawning
NS	Hardbottom						Feeding	
NOTES: Hogfish observed spawning at sand/reef interface near insular shelf edge in Puerto Rico.								
Queen Snapper (<i>Etelis oculatus</i>)								
OS	Pelagic	Growth	Growth					
OS	Hardbottom						Feeding	
NOTES: Distributed in the southern portion of the Gulf of Mexico.								
Mutton Snapper (<i>Lutjanus analis</i>)								
EST	SAV				Growth, Feeding	Growth, Feeding	Feeding	
EST	Mangroves				Growth	Growth		
EST	Emergent marshes				Growth	Growth		
NS	Reefs	Growth	Growth	Growth	Growth, Feeding	Growth, Feeding	Feeding	
NS	SAV				Growth, Feeding	Growth, Feeding	Feeding	
NS	Mangroves				Growth	Growth		
NS	Shoals/Banks							Spawning
OS	Shelf edge/slope							Spawning
NOTES: Juveniles observed feeding on patch reefs located in seagrass beds. May spawn on shoals near reefs in Tortugas or at shelf edge in Bahamas.								
Schoolmaster (<i>Lutjanus apodus</i>)								
EST	SAV				Growth, Feeding	Growth, Feeding	Feeding	
EST	Mangroves				Growth, Feeding	Growth, Feeding		
EST	Emergent marshes					Growth, Feeding		
NS	Pelagic	Growth	Growth					
NS	SAV				Growth, Feeding	Growth, Feeding	Feeding	
NS	Mangroves				Growth, Feeding	Growth, Feeding		
NS	Reefs					Growth, Feeding	Feeding	
NS	Hardbottom					Growth, Feeding	Feeding	
OS	Pelagic	Growth	Growth					
OS	Reefs					Growth, Feeding	Feeding	Spawning
OS	Hardbottom					Growth, Feeding	Feeding	
NOTES: Adults found especially among Elkhorn Coral.								
Blackfin Snapper (<i>Lutjanus buccanella</i>)								
NS	Hardbottom				Growth	Growth		
OS	Pelagic	Growth						
OS	Hardbottom						Feeding	Spawning
OS	Shelf edge/slope						Feeding	Spawning
Red Snapper (<i>Lutjanus campechanus</i>)								

Zone	Habitat Type	Eggs	Larvae	Post Larvae	Early Juveniles	Late Juveniles	Adults	Spawning Adults
NS	Pelagic		Growth					
NS	Hardbottom				Growth, Feeding	Growth, Feeding		
NS	Sand/ shell				Growth, Feeding	Growth, Feeding		
NS	Soft bottoms				Growth, Feeding	Growth, Feeding		
OS	Pelagic	Growth	Growth					
OS	Hardbottom				Growth, Feeding	Growth, Feeding	Feeding	
OS	Sand/ shell				Growth, Feeding	Growth, Feeding		Spawning
OS	Soft bottoms				Growth, Feeding	Growth, Feeding		
OS	Reefs						Feeding	
Cubera Snapper (<i>Lutjanus cyanopterus</i>)								
EST	SAV				Growth	Growth		
EST	Mangroves				Growth	Growth	Feeding	
EST	Emergent marshes				Growth	Growth		
NS	SAV				Growth	Growth		
NS	Mangroves				Growth	Growth	Feeding	
NS	Reefs						Feeding	
OS	Pelagic	Growth						
OS	Reefs						Feeding	Spawning
NOTES: Some spawning aggregations known to form over wrecks.								
Gray Snapper (<i>Lutjanus griseus</i>)								
EST	SAV			Growth, Feeding	Growth, Feeding	Growth, Feeding		
EST	Emergent marshes				Growth	Growth, Feeding	Feeding	
EST	Mangroves				Growth, Feeding	Growth, Feeding		
EST	Sand/ shell						Feeding	
EST	Soft bottoms						Feeding	
NS	SAV			Growth, Feeding	Growth, Feeding	Growth, Feeding		
NS	Mangroves				Growth, Feeding	Growth, Feeding		
NS	Sand/ shell						Feeding	
NS	Soft bottoms						Feeding	
NS	Reefs	Growth	Growth				Feeding	Spawning
NS	Shoals/ banks							Spawning
NS	Hardbottom						Feeding	
OS	Pelagic	Growth	Growth					
OS	Sand/ shell						Feeding	
OS	Soft bottoms						Feeding	
OS	Reefs	Growth	Growth				Feeding	Spawning
OS	Hardbottom						Feeding	

Zone	Habitat Type	Eggs	Larvae	Post Larvae	Early Juveniles	Late Juveniles	Adults	Spawning Adults
NOTES: Most common in Florida. Postlarvae found especially over <i>Halodule</i> and <i>Syringodium</i> seagrasses, while juveniles may prefer <i>Thalassia</i> seagrass.								
Dog Snapper (<i>Lutjanus jocu</i>)								
EST	SAV				Growth	Growth	Feeding	
EST	Mangroves					Growth		
EST	Emergent marshes				Growth			
NS	Pelagic	Growth	Growth					
NS	SAV				Growth	Growth	Feeding	
NS	Mangroves					Growth		
NS	Reefs						Feeding	Spawning
OS	Reefs						Feeding	
NOTES: Adults may be territorial. Move inshore when they are ready to spawn. Form spawning aggregations.								
Mahogany Snapper (<i>Lutjanus mahogoni</i>)								
NS	Pelagic	Growth	Growth					
NS	Reefs				Growth	Growth	Feeding	
NS	Hardbottom						Feeding	
NS	Sand/ shell				Growth	Growth	Feeding	
NS	SAV						Feeding	
NOTES: Adults found especially around island and reef areas. Occur less frequently over sand and vegetated bottom, than over reef and hardbottom.								
Lane Snapper (<i>Lutjanus synagris</i>)								
EST	SAV			Growth	Growth, Feeding	Growth, Feeding		
EST	Mangroves				Growth, Feeding	Growth, Feeding		
EST	Sand/ shell				Growth, Feeding	Growth, Feeding		
EST	Soft bottom				Growth, Feeding	Growth, Feeding		
NS	SAV			Growth	Growth, Feeding	Growth, Feeding		
NS	Mangroves				Growth, Feeding	Growth, Feeding		
NS	Sand/ shell				Growth, Feeding	Growth, Feeding	Feeding	
NS	Soft bottom				Growth, Feeding	Growth, Feeding		
NS	Reefs			Growth	Growth, Feeding	Growth, Feeding	Feeding	
NS	Shoals/ banks						Feeding	
OS	Pelagic	Growth						
OS	Reefs						Feeding	
OS	Banks						Feeding	
OS	Sand/ shell						Feeding	
OS	Shelf edge/slope							Spawning
NOTES: Adults most common in coral reef areas and sand/shell bottoms. Juveniles are opportunistic with regard to habitat selection. Spawning detected on shelf waters in Cuba and on inner shelf off Campeche.								
Silk Snapper (<i>Lutjanus vivanus</i>)								
OS	Shelf						Feeding	

Zone	Habitat Type	Eggs	Larvae	Post Larvae	Early Juveniles	Late Juveniles	Adults	Spawning Adults
	edge/slope							
Yellowtail Snapper (<i>Ocyurus chrysurus</i>)								
EST	SAV				Growth, Feeding			
EST	Mangroves				Growth, Feeding			
EST	Soft bottoms				Growth, Feeding			
NS	SAV				Growth, Feeding			
NS	Mangroves				Growth, Feeding			
NS	Soft bottoms				Growth, Feeding			
NS	Reefs					Growth, Feeding	Feeding	
NS	Hardbottom						Feeding	
NS	Shoals/ banks						Feeding	
OS	Pelagic	Growth						
OS	Reefs						Feeding	
OS	Hardbottom						Feeding	
OS	Shoals/ banks						Feeding	
NOTES: In the Gulf of Mexico, the highest occurrence is in Central and South Florida in <50 m depth; very rare in western Gulf. Early juveniles prefer <i>Thalassia</i> seagrass and mangrove roots.								
Wenchman (<i>Pristipomoides aquilonaris</i>)								
OS	Pelagic	Growth	Growth					
OS	Hardbottom						Feeding	
OS	Shelf edge/slope						Feeding	Spawning
NOTES: Most abundant between 80-200 m depth.								
Vermilion Snapper (<i>Rhomboplites aurorubens</i>)								
NS	Reefs				Growth	Growth	Unknown	
NS	Hardbottom				Growth	Growth	Unknown	
OS	Reefs				Growth	Growth	Unknown	
OS	Hardbottom				Growth	Growth	Unknown	
Blueline Tilefish (<i>Caulolatilus microps</i>)								
OS	Pelagic	Growth	Growth					
OS	Hardbottom						Feeding	
OS	Shelf edge/slope						Feeding	
OS	Sand/ shell						Feeding	
OS	Soft bottoms						Feeding	
NOTES: Goldface tilefish (<i>C. chrysops</i>), Blackline tilefish (<i>C. cyanops</i>), and Anchor tilefish (<i>C. intermedius</i>) are inferred to have similar life history patterns to the Blueline tilefish (all from the same guild). Blueline Tilefish construct burrows in soft sediments or utilize existing holes, crevices, and ledges. May be found co-occurring with Snowy, Warsaw, and Yellowedge groupers, Silk and Vermilion snappers, and <i>Pagrus pagrus</i> .								
Golden Tilefish (<i>Lopholatilus chamaeleonticeps</i>)								
OS	Pelagic	Growth	Growth					
OS	Hardbottom				Growth	Growth	Feeding	

Zone	Habitat Type	Eggs	Larvae	Post Larvae	Early Juveniles	Late Juveniles	Adults	Spawning Adults
OS	Soft bottoms				Growth	Growth	Feeding	
OS	Shelf edge/slope	Growth			Growth	Growth	Feeding	
NOTES: Most common between 250-350 m depths. Late juveniles and adults construct and inhabit burrows.								
Dwarf Sand Perch (<i>Diplectrum bivittatum</i>)								
NS	Hardbottom					Unknown	Unknown	
OS	Soft bottoms						Unknown	
Sand Perch (<i>Diplectrum formosum</i>)								
NS	Soft bottoms						Feeding	
NS	SAV						Feeding	
NS	Shoals/ banks						Feeding	
NS	Reefs						Feeding	
NOTES: Mostly found in the Northern Gulf of Mexico particularly off the coast of Florida in <50 m depth;								
Rock Hind (<i>Epinephelus adscensionis</i>)								
NS	Reefs				Growth		Feeding	
NS	Hardbottom						Feeding	
OS	Pelagic	Growth	Growth					
OS	Reefs						Feeding	Spawning
OS	Hardbottom						Feeding	Spawning
NOTES: Some spawning known to occur on the Florida Middle Grounds. Do not usually feed at bottom in depths over 60 m.								
Speckled Hind (<i>Epinephelus drummondhayi</i>)								
OS	Pelagic	Growth	Growth					
OS	Reefs						Feeding	
OS	Hardbottom						Feeding	
OS	Shelf edge/slope							Spawning
NOTES: Adults most commonly found at depths of 60-120 m. Juveniles occur in shallower waters than adults. Spawning takes place in > 146 m depth.								
Yellowedge Grouper (<i>Epinephelus flavolimbatus</i>)								
OS	Pelagic	Growth	Growth					
OS	Hardbottom					Growth	Feeding	
NOTES: Adult abundance highest off of Texas and West Florida in > 180 m of water. Adults and juveniles known to inhabit burrows. Juveniles occur shallower than adults. Co-occurs with Snowy Grouper and Tilefish.								
Red Hind (<i>Epinephelus guttatus</i>)								
NS	Reefs				Growth	Growth	Feeding	
NS	Sand/ shell						Feeding	
OS	Pelagic	Growth	Growth					
OS	Reefs						Feeding	
OS	Sand/ shell						Feeding	
OS	Hardbottom						Feeding	Spawning
NOTES: In Gulf of Mexico abundance is highest in the southeastern reef areas. Spawning aggregations found on the Florida Middle Grounds and at edge of insular platform in Puerto Rico.								
Goliath Grouper (<i>Epinephelus itajara</i>)								
EST	SAV				Growth, Feeding	Growth, Feeding		
EST	Mangroves			Growth	Growth, Feeding	Growth, Feeding		
EST	Hardbottom					Growth, Feeding		

Zone	Habitat Type	Eggs	Larvae	Post Larvae	Early Juveniles	Late Juveniles	Adults	Spawning Adults
NS	SAV				Growth, Feeding	Growth, Feeding		
NS	Mangroves			Growth	Growth, Feeding	Growth, Feeding		
NS	Reefs				Growth, Feeding	Growth, Feeding	Feeding	
NS	Hardbottom					Growth, Feeding		
NS	Shoals/Banks						Feeding	
OS	Pelagic	Growth	Growth					
OS	Hardbottom						Feeding	Spawning
OS	Reefs							Spawning

NOTES: Highest abundances off Southwest Florida and the Campeche Banks in 2-55 m of water. Form spawning aggregations at depths around 36-46 m.

Red Grouper (*Epinephelus morio*)

EST	SAV				Growth, Feeding			
EST	Hardbottom				Growth, Feeding	Growth, Feeding		
NS	SAV				Growth, Feeding			
NS	Reefs				Growth, Feeding	Growth, Feeding	Feeding	
NS	Hardbottom				Growth, Feeding	Growth, Feeding	Feeding	
OS	Pelagic	Growth	Growth, Feeding					
OS	Reefs						Feeding	
OS	Hardbottom						Feeding	

NOTES: Highest abundances off of the Florida and Yucatan coasts in 30-120 m of water. Spawning occurs at depths of 20-100 m, but do not form spawning aggregations.

Misty Grouper (*Epinephelus mystacinus*)

OS	Pelagic	Growth	Growth					
OS	Hardbottom						Feeding	Spawning
OS	Shelf edge/s lope						Feeding	

NOTES: Found mostly between 100-400 m, with juveniles occurring shallower.

Warsaw Grouper (*Epinephelus nigritus*)

NS	Reefs					Growth		
OS	Pelagic	Growth	Growth					
OS	Hardbottom						Feeding	
OS	Shelf edge/slope						Feeding	

NOTES : Adults commonly found between 40-250 m.

Snowy Grouper (*Epinephelus niveatus*)

NS	Reefs				Growth, Feeding	Growth, Feeding		
OS	Pelagic	Growth	Growth					
OS	Reefs					Growth, Feeding	Feeding	
OS	Hardbottom						Feeding	
OS	Shelf						Feeding	

Zone	Habitat Type	Eggs	Larvae	Post Larvae	Early Juveniles	Late Juveniles	Adults	Spawning Adults
	edge/slope							
NOTES: Highest abundances seen off South Florida and the northwest coast of Cuba. Adults common on Oculina reefs. May co-occur with deepwater species such as Yellowedge Grouper and Tilefishes.								
Nassau Grouper (<i>Epinephelus striatus</i>)								
NS	Pelagic		Growth					
NS	SAV				Growth, Feeding			
NS	Reefs				Growth, Feeding		Feeding	
NS	Hardbottom						Feeding	
NS	Sand/ shell						Feeding	
OS	Reefs						Feeding	Spawning
OS	Hardbottom						Feeding	Spawning
OS	Sand/ shell						Feeding	Spawning
NOTES: Occurs down to 100 m. Juveniles are also associated with tilefish mounds and small coral clumps. Forms spawning aggregations.								
Marbled Grouper (<i>Epinephelus inermis</i>)								
NS	Reefs						Unknown	
OS	Reefs						Unknown	
Black Grouper (<i>Mycteroperca bonaci</i>)								
EST	SAV				Growth, Feeding			
EST	Mangroves						Feeding	
NS	SAV				Growth, Feeding			
NS	Mangroves						Feeding	
NS	Reefs					Growth, Feeding	Feeding	
NS	Hardbottom					Growth, Feeding	Feeding	
OS	Pelagic	Growth	Growth					
OS	Reefs						Feeding	
OS	Hardbottom						Feeding	
NOTES: Occurs down to 150 m., but rare in western Gulf of Mexico. Spawning aggregation seen in Florida Keys in 18-28 m depth, and ripe females found on Campeche Banks.								
Yellowmouth Grouper (<i>Mycteroperca interstitialis</i>)								
EST	Mangroves				Growth	Growth, Feeding		
NS	Mangroves				Growth	Growth, Feeding		
NS	Reefs						Feeding	
NS	Hardbottom						Feeding	
OS	Pelagic	Growth	Growth					
OS	Reefs					Unknown	Feeding	
OS	Hardbottom						Feeding	
NOTES: Occurs off west coast of Florida, Campeche banks, Texas Flower Gardens, and northwest coast of Cuba. Spawning occurs off west coast of Florida, probably at Florida Middle Grounds. In Gulf, adults common only at depths > 30 m.								
Gag Grouper (<i>Mycteroperca microlepis</i>)								
EST	SAV				Growth, Feeding	Growth, Feeding		
NS	SAV				Growth, Feeding	Growth, Feeding		
NS	Reefs						Feeding	

Zone	Habitat Type	Eggs	Larvae	Post Larvae	Early Juveniles	Late Juveniles	Adults	Spawning Adults
NS	Hardbottom					Growth, Feeding	Feeding	
OS	Pelagic	Growth	Growth					
OS	Reefs						Feeding	
OS	Hardbottom					Growth, Feeding	Feeding	
NOTES : Form spawning aggregations, with the West Florida Shelf as a major spawning area.								
Scamp (<i>Mycteroperca phenax</i>)								
NS	Reefs				Growth	Growth	Feeding	
NS	Hardbottom				Growth	Growth	Feeding	
NS	Mangroves				Growth	Growth		
OS	Pelagic	Growth	Growth					
OS	Reefs						Feeding	Spawning
OS	Hardbottom						Feeding	
OS	Shelf edge/slope							Spawning
NOTES: Found especially off Florida in 40-80 m of water. Show preference for Oculina reefs especially for spawning. May spawn at Florida Middle Grounds. Form spawning aggregations at shelf edge, which seem to overlap spawning sites used by Gag Grouper in some cases.								
Yellowfin Grouper (<i>Mycteroperca venenosa</i>)								
EST	SAV				Growth	Growth		
NS	SAV				Growth	Growth		
NS	Reefs						Feeding	
NS	Hardbottom					Growth	Feeding	
OS	Reefs						Feeding	
OS	Hardbottom						Feeding	
NOTES: Occurs in the southern Gulf of Mexico, and is rare in the rest of the Gulf.								

Table 3.2.7 Summary of habitat utilization by life history stage for species in the Reef Fish FMP

Scientific name	Eggs	Larvae	Post-larvae	Early Juveniles	Late juveniles	Adults	Spawning adults
<i>Balistes caprisicus</i>	Reefs	Drift algae	Drift algae	Drift algae, Mangroves	Drift algae, Mangroves, Reefs	Reefs, Sand/ shell bottoms	Reefs, Sand/ shell bottoms
<i>Caulolatilus microps</i>	Pelagic	Pelagic				Hard bottoms, Sand/ shell bottoms, Shelf edge/slope, Soft bottoms	
<i>Diplectrum bivittatum</i>					Hard bottoms	Hard bottoms, Soft bottoms	
<i>Diplectrum formosum</i>						Reefs, SAV, Shoals/ Banks, Soft bottoms	
<i>Epinephelus adscensionis</i>	Pelagic	Pelagic				Hard bottoms, Reefs	Hard bottoms, Reefs
<i>Epinephelus drummondhayi</i>	Pelagic	Pelagic				Hard bottoms, Reefs	Shelf edge/slope
<i>Epinephelus flavolimbatus</i>	Pelagic	Pelagic			Hard bottoms	Hard bottoms	
<i>Epinephelus guttatus</i>	Pelagic	Pelagic		Reefs	Reefs	Hard bottoms, Reefs, Sand/ shell bottoms	Hard bottoms
<i>Epinephelus inermis</i>						Reefs	
<i>Epinephelus itajara</i>	Pelagic	Pelagic	Man-groves	Mangroves, Reefs, SAV	Hard bottoms, Mangroves, Reefs, SAV	Hard bottoms, Shoals/ Banks, Reefs	Reefs, Hard bottoms
<i>Epinephelus morio</i>	Pelagic	Pelagic		Hard bottoms, Reefs, SAV	Hard bottoms, Reefs	Hard bottoms, Reefs	
<i>Epinephelus mystacinus</i>	Pelagic	Pelagic				Hard bottoms, Shelf edge/slope	Hard bottoms
<i>Epinephelus nigritus</i>	Pelagic	Pelagic			Reefs	Hard bottoms, Shelf edge/slope	
<i>Epinephelus niveatus</i>	Pelagic	Pelagic		Reefs	Reefs	Hard bottoms, Reefs, Shelf edge/slope	
<i>Epinephelus striatus</i>		Pelagic		Reefs, SAV		Hard bottoms, Reefs, Sand/ shell bottoms	Hard bottoms, Reefs, Sand/ shell bottoms
<i>Etelis oculatus</i>	Pelagic	Pelagic				Hard bottoms	

Scientific name	Eggs	Larvae	Post-larvae	Early Juveniles	Late juveniles	Adults	Spawning adults
<i>Lachnolaimus maximus</i>				SAV	SAV	Hard bottoms, Reefs	Reefs
<i>Lopholatilus chamaeleonticeps</i>	Pelagic, Shelf edge/slope	Pelagic		Hard bottoms, Shelf edge/slope, Soft bottoms	Hard bottoms, Shelf edge/slope, Soft bottoms	Hard bottoms, Shelf edge/slope, Soft bottoms	
<i>Lutjanus analis</i>	Reefs	Reefs	Reefs	Mangroves, Reefs, SAV, Emergent marshes	Mangroves, Reefs, SAV, Emergent marshes	Reefs, SAV	Shoals/ Banks, Shelf edge/slope
<i>Lutjanus apodus</i>	Pelagic	Pelagic		Mangroves, SAV	Hard bottoms, Mangroves, Reefs, SAV, Emergent marshes	Hard bottoms, Reefs, SAV	Reefs
<i>Lutjanus buccanella</i>	Pelagic			Hard bottoms	Hard bottoms	Hard bottoms, Shelf edge/slope	Hard bottoms, Shelf edge/slope
<i>Lutjanus campechanus</i>	Pelagic	Pelagic		Hard bottoms, Sand/ shell bottoms, Soft bottoms	Hard bottoms, Sand/ shell bottoms, Soft bottoms	Hard bottoms, Reefs	Sand/ shell bottoms
<i>Lutjanus cyanopterus</i>	Pelagic			Mangroves, Emergent marshes, SAV	Mangroves, Emergent marshes, SAV	Mangroves, Reefs	Reefs
<i>Lutjanus griseus</i>	Pelagic, Reefs	Pelagic, Reefs	SAV	Mangroves, Emergent marshes, Seagrasses	Mangroves, Emergent marshes, SAV	Emergent marshes, Hard bottoms, Reefs, Sand/ shell bottoms, Soft bottoms	
<i>Lutjanus jocu</i>	Pelagic	Pelagic		SAV	Mangroves, SAV	Reefs, SAV	Reefs
<i>Lutjanus mahogoni</i>	Pelagic	Pelagic		Reefs, Sand/ shell bottoms	Reefs, Sand/ shell bottoms	Hard bottoms, Reefs, Sand/ shell bottoms, SAV	

Scientific name	Eggs	Larvae	Post-larvae	Early Juveniles	Late juveniles	Adults	Spawning adults
<i>Lutjanus synagris</i>	Pelagic		Reefs, SAV	Mangroves, Reefs, Sand/shell bottoms, SAV, Soft bottoms	Mangroves, Reefs, Sand/shell bottoms, SAV, Soft bottoms	Reefs, Sand/ shell bottoms, Shoals/ Banks	Shelf edge/slope
<i>Lutjanus vivanus</i>						Shelf edge	
<i>Mycteroperca bonaci</i>	Pelagic	Pelagic		SAV	Hard bottoms, Reefs	Hard bottoms, Mangroves, Reefs	
<i>Mycteroperca interstitialis</i>	Pelagic	Pelagic		Mangroves	Mangroves, Reefs	Hard bottoms, Reefs	
<i>Mycteroperca microlepis</i>	Pelagic	Pelagic		SAV	Hard bottoms, Reefs, SAV	Hard bottoms, Reefs	
<i>Mycteroperca phenax</i>	Pelagic	Pelagic		Hard bottoms, Mangroves, Reefs	Hard bottoms, Mangroves, Reefs	Hard bottoms, Reefs	Reefs, Shelf edge/slope
<i>Mycteroperca venenosa</i>				SAV	Hard bottoms, SAV	Hard bottoms, Reefs	Hard bottoms
<i>Ocyurus chrysurus</i>	Pelagic			Mangroves, SAV, Soft bottoms	Reefs	Hard bottoms, Reefs, Shoals/ Banks	
<i>Pristipomoides aquilonaris</i>	Pelagic	Pelagic				Hard bottoms, Shelf edge/slope	Shelf edge/slope
<i>Rhomboplites aurorubens</i>	Pelagic			Hard bottoms, Reefs	Hard bottoms, Reefs	Hard bottoms, Reefs	
<i>Seriola dumerili</i>	Pelagic	Pelagic	Pelagic	Drift algae	Drift algae	Pelagic, Reefs	Pelagic
<i>Seriola fasciata</i>				Drift algae	Drift algae	Hard bottoms	Hard bottoms
<i>Seriola rivoliana</i>	Pelagic			Drift algae	Drift algae	Pelagic	Pelagic
<i>Seriola zonata</i>		Pelagic		Drift algae	Drift algae	Pelagic	Pelagic

Table 3.2.8 Reef Fish FMP species depth preferences by life stage from the habitat use database (*Italicized numbers indicate proxy information used*)

Common name	Eggs Min. Depth (m)	Eggs Max. Depth (m)	Larvae Min. Depth (m)	Larvae Max. Depth (m)	Post larvae Min. Depth (m)	Post larvae Max. Depth (m)	Early juveniles Min. Depth (m)	Early juveniles Max. Depth (m)	Late juveniles Min. Depth (m)	Late juveniles Max. Depth (m)	Adults Min. Depth (m)	Adults Max. Depth (m)	Spawning adults Min. Depth (m)	Spawning adults Max. Depth (m)
(Golden) Tilefish	<i>80</i>	<i>450</i>	<i>80</i>	<i>450</i>	<i>80</i>	<i>450</i>	<i>80</i>	<i>450</i>	<i>80</i>	<i>450</i>	80	450	80	450
Almaco jack	<i>15</i>	<i>160</i>	<i>15</i>	<i>160</i>	<i>15</i>	<i>160</i>	<i>15</i>	<i>160</i>	<i>15</i>	<i>160</i>	15	160	15	160
Anchor tilefish	<i>60</i>	<i>256</i>	<i>60</i>	<i>256</i>	<i>60</i>	<i>256</i>	<i>60</i>	<i>256</i>	<i>60</i>	<i>256</i>	60	256	60	256
Banded rudderfish	<i>10</i>	<i>130</i>			<i>10</i>	<i>130</i>	<i>10</i>	<i>130</i>	<i>10</i>	<i>130</i>	10	130	10	130
Black grouper	<i>18</i>	<i>28</i>	<i>10</i>	<i>150</i>	<i>10</i>	<i>150</i>					10	150	18	28
Blackfin snapper	<i>40</i>	<i>300</i>	<i>40</i>	<i>300</i>	<i>40</i>	<i>300</i>	12	40	12	40	40	300	40	300
Blackline tilefish	<i>60</i>	<i>256</i>	<i>60</i>	<i>256</i>	<i>60</i>	<i>256</i>	<i>60</i>	<i>256</i>	<i>60</i>	<i>256</i>	60	256	60	256
Blueline tilefish	<i>60</i>	<i>256</i>	<i>60</i>	<i>256</i>	<i>60</i>	<i>256</i>	<i>60</i>	<i>256</i>	<i>60</i>	<i>256</i>	60	256	60	256
Cubera snapper	<i>10</i>	<i>85</i>	<i>10</i>	<i>85</i>	<i>10</i>	<i>85</i>	<i>0</i>	<i>85</i>	<i>0</i>	<i>85</i>	0	85	10	85
Dog snapper											9	151	15	30
Dwarf sand perch											1	100	1	100
Gag	<i>50</i>	<i>120</i>	<i>50</i>	<i>120</i>	<i>50</i>	<i>120</i>	<i>0</i>	<i>12</i>	<i>1</i>	<i>50</i>	20	100	50	120
Goldface tilefish	<i>60</i>	<i>256</i>	<i>60</i>	<i>256</i>	<i>60</i>	<i>256</i>					60	256	60	256
Gray (mangrove) snapper	<i>0</i>	<i>180</i>	<i>0</i>	<i>180</i>							0	180	0	180
Gray triggerfish	<i>10</i>	<i>100</i>							<i>10</i>	<i>100</i>	10	100	10	100
Greater	<i>1</i>	<i>360</i>	<i>1</i>	<i>360</i>	<i>1</i>	<i>360</i>	<i>1</i>	<i>360</i>	<i>1</i>	<i>360</i>	1	360	1	360

Common name	Eggs Min. Depth (m)	Eggs Max. Depth (m)	Larvae Min. Depth (m)	Larvae Max. Depth (m)	Post larvae Min. Depth (m)	Post larvae Max. Depth (m)	Early juveniles Min. Depth (m)	Early juveniles Max. Depth (m)	Late juveniles Min. Depth (m)	Late juveniles Max. Depth (m)	Adults Min. Depth (m)	Adults Max. Depth (m)	Spawning adults Min. Depth (m)	Spawning adults Min. Depth (m)
amberjack														
Hogfish	3	30	3	30	3	30	3	30	3	30	3	30	3	30
Jewfish (Goliath)	36	46	36	46					2	3	0	95	36	46
Lane snapper	4	132	4	132			0	20	0	20	4	132	4	132
Lesser amberjack							55	130	55	130	55	130	55	130
Mahogany snapper											2	30	2	30
Marbled grouper	3	213	3	213	3	213	3	213	3	213	3	213	3	213
Misty grouper	150	300	150	300							150	300	150	300
Mutton snapper													25	95
Nassau grouper			2	50							1	100	18	50
Queen snapper	95	680	95	680	95	680	95	680	95	680	95	680	95	680
Red grouper	20	100	20	100			0	15	0	50	3	190	20	100
Red hind	18	110	18	110	18	110	2	10	18	110	18	110	18	27
Red snapper	18	37	18	37	18	37	17	183	20	46	7	146	18	37
Rock hind	2	100	2	100	2	100	2	100	2	100	2	100	2	100
Sand perch	1	80	1	80	1	80	1	80	1	80	1	80	1	80
Scamp	60	189	60	189	60	189	12	33	12	33	12	189	60	189
Schoolmaster	0	90	0	90	0	90			0	90	0	90	0	90
Silk snapper	90	200	90	200	90	200	30	40	30	40	90	200	90	200
Snowy grouper	30	525	30	525	30	525			17	60	30	525	30	525
Speckled hind	146	183	146	183	146	183	25	183	25	183	25	183	146	183

Common name	Eggs Min. Depth (m)	Eggs Max. Depth (m)	Larvae Min. Depth (m)	Larvae Max. Depth (m)	Post larvae Min. Depth (m)	Post larvae Max. Depth (m)	Early juveniles Min. Depth (m)	Early juveniles Max. Depth (m)	Late juveniles Min. Depth (m)	Late juveniles Max. Depth (m)	Adults Min. Depth (m)	Adults Max. Depth (m)	Spawning adults Min. Depth (m)	Spawning adults Min. Depth (m)
Vermilion snapper	180	300	180	300	180	300	1	25	1	25	180	300	180	300
Warsaw grouper	40	525	40	525	40	525	20	30	20	30	40	525	40	525
Wenchman	80	200	80	200	80	200	19	378	19	378	19	378	80	200
Yellowedge grouper	35	370	35	370	35	370	35	370	35	370	35	370	35	370
Yellowfin grouper	2	214	2	214	2	214			2	4	2	214	2	214
Yellowmouth grouper	20	189	20	189	20	189	18	24	18	24	20	189	20	189
Yellowtail	1	183	1	183	1	183					1	183	1	183

Proxy species

(Golden) Tilefish-Adult depths served as proxy data for eggs, larvae, postlarvae, early juveniles, and late juveniles

Almaco jack-Spawning adult depths served as proxy data for eggs, larvae, and postlarvae

Almaco jack-Adult depths served as proxy data for early juveniles and late juveniles

Banded rudderfish-Spawning adult depths served as proxy data for eggs, larvae, and postlarvae

Banded rudderfish-Adult depths served as proxy data for early juveniles and late juveniles

Black grouper-Spawning adult depths served as proxy data for eggs

Black grouper-Adult depths served as proxy data for larvae and postlarvae

Blackfin snapper-Spawning adult depths served as proxy data for eggs, larvae, and postlarvae

Blueline tilefish-Spawning adult depths served as proxy data for eggs, larvae, and postlarvae of Blueline, Anchor, Blackline, and Goldface tilefish

Blueline tilefish-Adult depths served as proxy data for early juveniles and late juveniles of Blueline, Anchor, and Blackline tilefish

Cubera snapper-Spawning adult depths served as proxy data for eggs, larvae, and postlarvae

Cubera snapper-Adult depths served as proxy data for early juveniles and late juveniles

Gag-Spawning adult depths served as proxy data for eggs, larvae, and postlarvae

Gray snapper-Spawning adult depths served as proxy data for eggs and larvae

Gray triggerfish-Spawning adult depths served as proxy data for eggs

Goliath grouper-Spawning adult depths served as proxy data for eggs and larvae

Lane snapper-Spawning adult depths served as proxy data for eggs and larvae

Lesser amberjack-Adult depths served as proxy data for early juveniles and late juveniles
Marbled grouper-Adult depths served as proxy data for eggs, larvae, and postlarvae, early juveniles, late juveniles, and spawning adults
Misty grouper-Spawning adult depths served as proxy data for eggs and larvae
Queen snapper-Spawning adult depths served as proxy data for eggs, larvae, and postlarvae
Queen snapper-Adult depths served as proxy data for early juveniles and late juveniles
Red hind-Spawning adult depths served as proxy data for eggs, larvae, and postlarvae
Red hind-Adult depths served as proxy data for late juveniles
Red snapper-Spawning adult depths served as proxy data for eggs, larvae, and postlarvae
Rock hind-Spawning adult depths served as proxy data for eggs, larvae, and postlarvae
Rock hind-Adult depths served as proxy data for early juveniles and late juveniles
Sand Perch-Spawning adult depths served as proxy data for eggs, larvae, and postlarvae
Sand Perch-Adult depths served as proxy data for early juveniles and late juveniles
Scamp-Spawning adult depths served as proxy data for eggs, larvae, and postlarvae
Schoolmaster-Spawning adult depths served as proxy data for eggs, larvae, and postlarvae
Schoolmaster-Adult depths served as proxy data for late juveniles
Silk snapper-Adult depths served as proxy data for eggs, larvae, postlarvae, and spawning adults
Snowy grouper-Spawning adult depths served as proxy data for eggs, larvae, and postlarvae
Speckled hind-Spawning adult depths served as proxy data for eggs, larvae, and postlarvae
Speckled hind-Adult depths served as proxy data for early juveniles and late juveniles
Vermilion snapper-Spawning adult depths served as proxy data for eggs, larvae, and postlarvae
Warsaw grouper-Spawning adult depths served as proxy data for eggs, larvae, and postlarvae
Warsaw grouper-Late juvenile depths served as proxy data for early juveniles
Wenchman-Spawning adult depths served as proxy data for eggs, larvae, and postlarvae
Wenchman-Adult depths served as proxy data for early juveniles and late juveniles
Yellowedge grouper-Spawning adult depths served as proxy data for eggs, larvae, and postlarvae
Yellowedge grouper-Adult depths served as proxy data for early juveniles and late juveniles
Yellowfin grouper-Spawning adult depths served as proxy data for eggs, larvae, and postlarvae
Yellowmouth grouper-Spawning adult depths served as proxy data for eggs, larvae, and postlarvae
Yellowtail snapper-Spawning adult depths served as proxy data for eggs, larvae, and postlarvae

Life stages in estuarine and nearshore habitats had their depth ranges inferred from the depth ranges of those aquatic zones

Table 3.2.9 Summary of occurrence by eco-region for life history stages for species in the Reef Fish FMP

Common Name	Eggs	Larvae	Postlarvae	Early juveniles	Late juveniles	Adults	Spawning adults
Eco-region 1							
(Golden) Tilefish	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Almaco jack	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Anchor tilefish	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Banded rudderfish	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Black grouper	Common	Common	Common	Nursery Area	Nursery Area	Major Adult Area and Commercial Fishing Ground	Major Adult Area and Commercial Fishing Ground
Blackfin snapper	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Blackline tilefish	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Blueline tilefish	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Cubera snapper	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Dog snapper	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Dwarf sand perch	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Gag	Common	Common	Common	Nursery Area	Nursery Area	Major Adult Area and Commercial Fishing Ground	Major Adult Area and Commercial Fishing Ground
Goldface tilefish	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area

Common Name	Eggs	Larvae	Postlarvae	Early juveniles	Late juveniles	Adults	Spawning adults
Gray (mangrove) snapper	Common	Common	Common	Nursery Area	Nursery Area	Major Adult Area and Commercial Fishing Ground	Major Adult Area and Commercial Fishing Ground
Gray triggerfish	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Greater amberjack	Common	Common	Common	Nursery Area	Nursery Area	Major Adult Area and Commercial Fishing Ground	Major Adult Area and Commercial Fishing Ground
Hogfish	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Jewfish (Goliath)	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Lane snapper	Common	Common	Common	Nursery Area	Nursery Area	Major Adult Area and Commercial Fishing Ground	Major Adult Area and Commercial Fishing Ground
Lesser amberjack	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Mahogany snapper	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Marbled grouper	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Misty grouper	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Mutton snapper	Common	Common	Common	Nursery Area	Nursery Area	Major Adult Area and Commercial Fishing Ground	Major Adult Area and Commercial Fishing Ground

Common Name	Eggs	Larvae	Postlarvae	Early juveniles	Late juveniles	Adults	Spawning adults
Nassau grouper	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Queen snapper	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Red grouper	Common	Common	Common	Nursery Area	Nursery Area	Major Adult Area and Commercial Fishing Ground	Major Adult Area and Commercial Fishing Ground
Red hind	Common	Common	Common	Nursery Area	Nursery Area	Major Adult Area and Commercial Fishing Ground	Major Adult Area and Commercial Fishing Ground
Red snapper	Common	Common	Common	Nursery Area	Nursery Area	Major Adult Area and Commercial Fishing Ground	Major Adult Area and Commercial Fishing Ground
Rock hind	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Sand perch	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Scamp	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Schoolmaster	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Silk snapper	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Snowy grouper	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Speckled hind	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Vermilion snapper	Common	Common	Common	Nursery Area	Nursery Area	Major Adult Area and Commercial Fishing Ground	Major Adult Area and Commercial Fishing Ground
Warsaw grouper	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area

Common Name	Eggs	Larvae	Postlarvae	Early juveniles	Late juveniles	Adults	Spawning adults
Wenchman	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Yellowedge grouper	Common	Common	Common	Nursery Area	Nursery Area	Major Adult Area and Commercial Fishing Ground	Major Adult Area and Commercial Fishing Ground
Yellowfin grouper	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Yellowmouth grouper	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Yellowtail	Common	Common	Common	Nursery Area	Nursery Area	Major Adult Area and Commercial Fishing Ground	Major Adult Area and Commercial Fishing Ground
Eco-region 2							
(Golden) Tilefish	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Almaco jack	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Anchor tilefish	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Banded rudderfish	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Black grouper	Common	Common	Common	Nursery Area	Nursery Area	Major Adult Area and Commercial Fishing Ground	Major Adult Area and Commercial Fishing Ground
Blackfin snapper	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Blackline tilefish	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence

Common Name	Eggs	Larvae	Postlarvae	Early juveniles	Late juveniles	Adults	Spawning adults
Blueline tilefish	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Cubera snapper	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Dog snapper	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Dwarf sand perch	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Gag	Common	Common	Common	Nursery Area	Nursery Area	Major Adult Area and Commercial Fishing Ground	Major Adult Area and Commercial Fishing Ground
Goldface tilefish	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Gray (mangrove) snapper	Common	Common	Common	Nursery Area	Nursery Area	Major Adult Area and Commercial Fishing Ground	Major Adult Area and Commercial Fishing Ground
Gray triggerfish	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Greater amberjack	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Hogfish	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Jewfish (Goliath)	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Lane snapper	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Lesser amberjack	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Mahogany snapper	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Marbled grouper	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence

Common Name	Eggs	Larvae	Postlarvae	Early juveniles	Late juveniles	Adults	Spawning adults
Misty grouper	No Occurrence	No Occurrence	No Occurrence	No Occurrence	No Occurrence	No Occurrence	No Occurrence
Mutton snapper	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Nassau grouper	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Queen snapper	No Occurrence	No Occurrence	No Occurrence	No Occurrence	No Occurrence	No Occurrence	No Occurrence
Red grouper	Common	Common	Common	Nursery Area	Nursery Area	Major Adult Area and Commercial Fishing Ground	Major Adult Area and Commercial Fishing Ground
Red hind	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Red snapper	Common	Common	Common	Nursery Area	Nursery Area	Major Adult Area and Commercial Fishing Ground	Major Adult Area and Commercial Fishing Ground
Rock hind	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Sand perch	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Scamp	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Schoolmaster	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Silk snapper	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Snowy grouper	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Speckled hind	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Vermilion snapper	Common	Common	Common	Nursery Area	Nursery Area	Major Adult Area and Commercial Fishing Ground	Major Adult Area and Commercial Fishing Ground
Warsaw grouper	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area

Common Name	Eggs	Larvae	Postlarvae	Early juveniles	Late juveniles	Adults	Spawning adults
Wenchman	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Yellowedge grouper	Common	Common	Common	Nursery Area	Nursery Area	Major Adult Area and Commercial Fishing Ground	Major Adult Area and Commercial Fishing Ground
Yellowfin grouper	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Yellowmouth grouper	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Yellowtail	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Eco-region 3							
(Golden) Tilefish	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Almaco jack	Occurrence	Occurrence	Occurrence	Nursery Area	Nursery Area	Adult Area	Occurrence
Anchor tilefish	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Banded rudderfish	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Black grouper	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Blackfin snapper	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Blackline tilefish	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Blueline tilefish	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Cubera snapper	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Dog snapper	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Dwarf sand perch	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Gag	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Adult Area	Adult Area
Goldface	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area

Common Name	Eggs	Larvae	Postlarvae	Early juveniles	Late juveniles	Adults	Spawning adults
tilefish							
Gray (mangrove) snapper	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Adult Area	Adult Area
Gray triggerfish	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Greater amberjack	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Hogfish	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Jewfish (Goliath)	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Lane snapper	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Lesser amberjack	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Mahogany snapper	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Marbled grouper	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Misty grouper	No Occurrence	No Occurrence	No Occurrence	No Occurrence	No Occurrence	No Occurrence	No Occurrence
Mutton snapper	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Nassau grouper	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Queen snapper	No Occurrence	No Occurrence	No Occurrence	No Occurrence	No Occurrence	No Occurrence	No Occurrence
Red grouper	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Red hind	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Red snapper	Common	Common	Common	Nursery Area	Nursery Area	Major Adult Area and Commercial Fishing Ground	Major Adult Area and Commercial Fishing Ground
Rock hind	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence

Common Name	Eggs	Larvae	Postlarvae	Early juveniles	Late juveniles	Adults	Spawning adults
Sand perch	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Scamp	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Schoolmaster	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Silk snapper	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Snowy grouper	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Speckled hind	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Vermilion snapper	Common	Common	Common	Nursery Area	Nursery Area	Major Adult Area and Commercial Fishing Ground	Major Adult Area and Commercial Fishing Ground
Warsaw grouper	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Wenchman	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Yellowedge grouper	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Yellowfin grouper	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Yellowmouth grouper	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Yellowtail	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Eco-region 4							
(Golden) Tilefish	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Almaco jack	Occurrence	Occurrence	Occurrence	Nursery Area	Nursery Area	Adult Area	Occurrence
Anchor tilefish	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Banded rudderfish	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Black grouper	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Blackfin	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence

Common Name	Eggs	Larvae	Postlarvae	Early juveniles	Late juveniles	Adults	Spawning adults
snapper							
Blackline tilefish	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Blueline tilefish	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Cubera snapper	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Dog snapper	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Dwarf sand perch	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Gag	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Adult Area	Adult Area
Goldface tilefish	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Gray (mangrove) snapper	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Adult Area	Adult Area
Gray triggerfish	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Greater amberjack	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Hogfish	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Jewfish (Goliath)	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Lane snapper	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Lesser amberjack	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Mahogany snapper	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Marbled grouper	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Misty grouper	No Occurrence	No Occurrence	No Occurrence	No Occurrence	No Occurrence	No Occurrence	No Occurrence
Mutton snapper	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Nassau grouper	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence

Common Name	Eggs	Larvae	Postlarvae	Early juveniles	Late juveniles	Adults	Spawning adults
Queen snapper	No Occurrence	No Occurrence	No Occurrence	No Occurrence	No Occurrence	No Occurrence	No Occurrence
Red grouper	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Red hind	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Red snapper	Common	Common	Common	Nursery Area	Nursery Area	Major Adult Area and Commercial Fishing Ground	Major Adult Area and Commercial Fishing Ground
Rock hind	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Sand perch	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Scamp	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Schoolmaster	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Silk snapper	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Snowy grouper	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Speckled hind	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Vermilion snapper	Common	Common	Common	Nursery Area	Nursery Area	Major Adult Area and Commercial Fishing Ground	Major Adult Area and Commercial Fishing Ground
Warsaw grouper	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Wenchman	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Yellowedge grouper	Common	Common	Common	Nursery Area	Nursery Area	Major Adult Area and Commercial Fishing Ground	Major Adult Area and Commercial Fishing Ground
Yellowfin grouper	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence

Common Name	Eggs	Larvae	Postlarvae	Early juveniles	Late juveniles	Adults	Spawning adults
Yellowmouth h grouper	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Yellowtail	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Eco-region 5							
(Golden) Tilefish	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Almaco jack	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Anchor tilefish	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Banded rudderfish	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Black grouper	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Blackfin snapper	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Blackline tilefish	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Blueline tilefish	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Cubera snapper	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Dog snapper	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Dwarf sand perch	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Gag	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Adult Area	Adult Area
Goldface tilefish	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Gray (mangrove) snapper	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Adult Area	Adult Area
Gray triggerfish	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Greater amberjack	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Hogfish	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence

Common Name	Eggs	Larvae	Postlarvae	Early juveniles	Late juveniles	Adults	Spawning adults
Jewfish (Goliath)	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Lane snapper	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Lesser amberjack	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Mahogany snapper	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Marbled grouper	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Misty grouper	No Occurrence	No Occurrence	No Occurrence	No Occurrence	No Occurrence	No Occurrence	No Occurrence
Mutton snapper	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Nassau grouper	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Queen snapper	No Occurrence	No Occurrence	No Occurrence	No Occurrence	No Occurrence	No Occurrence	No Occurrence
Red grouper	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Red hind	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Red snapper	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Rock hind	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Sand perch	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Scamp	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Schoolmaster	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Silk snapper	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Snowy grouper	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Speckled hind	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Vermilion snapper	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Warsaw grouper	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Wenchman	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area

Common Name	Eggs	Larvae	Postlarvae	Early juveniles	Late juveniles	Adults	Spawning adults
Yellowedge grouper	Common	Common	Common	Nursery Area	Nursery Area	Major Adult Area and Commercial Fishing Ground	Major Adult Area and Commercial Fishing Ground
Yellowfin grouper	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Yellowmouth grouper	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Yellowtail	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence

Table 3.2.10 Gulf group king mackerel management regulations and harvest levels. Pounds are in millions.

Fishing Year	ABC RANGE ¹² (lbs.)	TAC (lbs.)	Rec. Alloc./Quota ³ (lbs. / numbers)	Rec. Bag Limit ⁴	Commercial Allocation	East/West-EC/WC-North-South ^{5,6}	Annual Harvest Levels		
							Com	Rec	Total
1986/87	1.2-2.9	2.9	1.97	2/3 FL-TX	0.93 :	0.60/0.27 + PS=0.06	1.473	3.269	4.742
1987/88	0.6-2.7	2.2	1.50	2/3 FL-TX	0.70 :	0.48/0.22	0.868	2.145	3.013
1988/89	0.5-4.3	3.4	2.31	2/3 FL-TX	1.09 :	0.75/0.34	1.405	5.276	6.681
1989/90	2.7-5.8	4.25	2.89 / 298,000	2/3 FL-TX	1.36 :	0.94/0.42	1.954	3.360	5.314
1990/91	3.2-5.4	4.25	2.89 / 301,000	2/3 FL-TX	1.36 :	0.94/0.42	1.816	3.951	5.767
1991/92	4.0-7.0	5.75	3.91 / 574,000	2 FL; 2/3 AL-TX	1.84 :	1.27/0.57	2.117	4.773	6.890
1992/93	4.0-10.79	7.80	5.30 / 715,000 ⁸	2 FL-TX	2.50+0.259 :	1.73+0.259/0.77 ⁷	3.599	6.258	9.857
1993/94	1.9-8.1 ⁹	7.80	5.30 / 759,000	2 FL-TX	2.50 :	1.73/0.77	2.572	6.146	8.718
1994/95	1.9-8.1 ⁹	7.80	5.30 / 768,000	2 FL-TX	2.05+0.300 :	1.73+0.300/0.77 ¹⁰	2.901	7.948	10.849
1995/96	1.9-8.1 ⁹	7.80	5.30 / 629,000	2 FL-TX	2.50 :	1.73/0.77	2.645	6.265	8.910
1996/97	4.7-8.8	7.80	5.30 / 629,000	2 FL-TX	2.50 :	1.73/0.77	2.864	6.933	9.797
1997/98	6.0-13.7	10.6	7.21	2 FL-TX	3.39 :	2.34/1.05	3.445	6.634 ¹	10.08

Fishing Year	ABC RANGE ¹² (lbs.)	TAC (lbs.)	Rec. Alloc./Quota ³ (lbs. / numbers)	Rec. Bag Limit ⁴	Commercial Allocation	East/West-EC/WC-North-South ^{5,6}	Annual Harvest Levels		
							Com	Rec	Total
1998/99	7.1-10.8	10.6	7.21	2 FL-TX	3.39	2.34/1.05	3.895	5.235	9.130
1999/00	8.0-12.5	10.6	7.21	2 FL-TX	3.39	2.34/1.05	2.974	3.994	6.968
2000/01	5.5-8.8	10.2	6.94	2 FL-TX	3.26	3.25/1.01-1.04/1.21-0.169/1.04	3.077	4.951	8.028

¹ Fishing year 1979/80 begins on 1 July 1979 and ends on 30 June 1980.

² Sums within rows may not appear to equal the total value shown due to rounding of numbers before printing.

³ Recreational quota in numbers is the allocation divided by an estimate of annual average weight (not used prior to fishing year 1989).

⁴ Bag Limit "2/3" means 2 for private boats; for charterboats: 2 with, or 3 without, captain and crew.

⁵ E/W com. allocations apply to all legal gears except purse seine in fishing year 1986 and are divided at the FL/AL Border (only H&L and runaround gillnet beginning 1990/91).

⁶ East Zone allocations are divided into East Coast FL and West Coast FL, and West Coast FL is divided into North and South subzones.

⁷ 0.250 million pounds added to com. allocation for FL east only, opened 2/18/93 - 3/26/93.

⁸ Bag limit will not be reduced to zero when allocation reached, beginning in fishing year 1992/93.

⁹ Panel recommended ABC range changed from 16%-84% to 16% -50% and Gulf Council selected TAC accepting greater than 50% risk level.

¹⁰ 0.300 million pounds added to hook-and-line quota for Florida West Coast subzone.

¹¹ Recreational landings, in pounds were estimated by multiplying number of fish caught by 10.77 lbs/fish.

¹² The range has been defined in terms of acceptable risk of achieving the FMP's fishing mortality rate target; the Panel's best estimate of ABC has been intermediate to the end-points of this range.

¹³ Estimated catch equal to the recreational allocation of TAC.

Table 3.2.11 Gulf group Spanish mackerel management regulations. Pounds are in millions. Prior to fishing year 1990, management was based upon a July-June fishing year. The regulations shown for fishing year 1987 and later are relative to the July-June fishing year.

Fishing Year	ABC RANGE ¹ (lbs)	TAC (lbs)	Rec. Alloc./Quota ² (lbs / numbers)	Rec. Bag Limit	Com. Alloc. (lbs)	Annual Harvest Levels ³		
						Com	Rec	Total
1987/88	1.9 - 4.0	2.50	1.08	3	1.42	2.581	3.124	5.705
1988/89	1.9 - 7.1	5.00	2.15	4 FL, 10 AL-TX	2.85	3.902	2.177	6.079
1989/90	4.9 - 6.5	5.25		4 FL, 10 AL-TX	2.99	2.145	1.856	4.001
1990/91	3.9 - 7.4	5.25	2.26 / 1,569,000	3 TX, 4 FL ⁴ , 10 AL-LA	2.99	2.074	2.138	4.213
1991/92	7.1 - 12.2	8.60	3.70 / 2,721,000	3 TX, 5 FL, 10 AL-LA	4.90	4.163	2.889	7.053
1992/93	5.1 - 9.8	8.60	3.70 / 3,274,000 ⁵	7 TX, 10 FL-LA	4.90	3.113	3.130	6.243
1993/94	4.7 - 8.7	8.60	3.70 / 3,274,000	7 TX, 10 FL-LA	4.90	2.614	2.696	5.309
1994/95	4.4 - 8.7	8.60	3.70 / 2,202,000	7 TX, 10 FL-LA	4.90	2.544	1.556	4.100
1995/96	4.0 - 10.7	8.60	3.70 / 2,782,000	7 TX, 10 FL-LA	4.90	1.075	1.575	2.650
1996/97	1.6 - 9.5	7.00	3.01 /	7 TX, 10 FL-LA	3.99	0.617	2.042	2.659
1997/98	5.5 - 13.9	7.00	3.01 /	7 TX, 10 FL-LA	3.99	0.356	2.455	2.810
1998/99	7.3-14.1	7.00	3.01 /	7 TX, 10 FL-LA	3.99	1.074	2.080	3.154
1999/00	9.1 - 17.1	9.1	3.9 /	7 TX, 10 FL-LA	5.2	1.056	3.355	4.411
2000/01	9.1 - 17.1	9.1	3.9 /	15 TX - FL	5.2	1.036	2.964	3.999

¹ The range has been defined in terms of acceptable risk of achieving the FMP's fishing mortality rate target; the Panel's best estimate of ABC has been intermediate to the end-points.

² Recreational quota in numbers is the allocation divided by an estimate of annual average weight (not used prior to fishing year 1989).

³ Sums within rows may not appear to equal the total value shown due to rounding of numbers before printing.

⁴ Rec. bag limit in FL changed from 4 to 5 on 1/1/91, and changed from 5 to 10 on 1/1/93.

⁵ Bag limit will not be reduced to zero when allocation reached, beginning fishing year 1992

⁶ Estimated catch equal to the recreational allocation of TAC.

Table 3.2.12 Recreational, commercial, and total landings of cobia from the Gulf of Mexico, 1980-2000 in pounds.

Year	Commercial	Recreational	Total
1980	99,312		99,312
1981	118,090	899,959	1,018,049
1982	110,310	909,701	1,020,011
1983	132,416	920,677	1,053,093
1984	142,246	893,590	1,035,836
1985	136,229	533,500	669,729
1986	159,459	1,382,327	1,541,786
1987	174,491	875,561	1,050,052
1988	161,355	1,346,093	1,507,448
1989	211,121	858,678	1,069,799
1990	161,112	763,355	924,467
1991	176,849	1,201,246	1,378,095
1992	235,101	935,311	1,170,412
1993	261,108	1,132,349	1,393,457
1994	263,907	1,396,300	1,660,207
1995	240,699	1,002,820	1,243,519
1996	262,320	1,634,134	1,896,454
1997	210,592	2,234,459	2,445,051
1998	202,415	1,065,149	1,267,564
1999	165,256	1,087,983	1,253,239
2000	137,882	1,037,864	1,175,746

Source: Erik Williams, NMFS

Table 3.2.13 Habitats utilized by life stages of Gulf of Mexico FMP species for EFH
Ecological functions: Coastal Migratory Pelagics FMP.

Zone	Habitat Type	Eggs	Larvae	Post Larvae	Early Juveniles	Late Juveniles	Adults	Spawning Adults
King Mackerel (<i>Scomberomorus cavalla</i>)								
OS	Pelagic	Growth	Growth, Feeding		Growth, Feeding		Feeding	Spawning
NS	Pelagic				Growth, Feeding	Growth, Feeding	Feeding	
NOTES: Areas of abundance for larvae and juveniles in northcentral and northwestern Gulf linked to Mississippi River plume.								
Adult centers of abundance in waters of Florida and Mexico.								
Spawning over outer continental shelf, northwestern and northeastern Gulf considered important areas.								
Spanish Mackerel (<i>Scomberomorus maculatus</i>)								
EST	Pelagic				Growth, Feeding	Growth, Feeding	Growth, Feeding	
NS	Pelagic	Growth	Growth, Feeding		Growth, Feeding	Growth, Feeding	Growth, Feeding	Spawning
NOTES: Adult center of abundance is Florida.								
Cobia (<i>Rachycentron canadum</i>)								
NS	Pelagic	Growth		Growth	Growth	Growth, Feeding	Feeding	Spawning
OS	Pelagic		Growth	Growth	Growth	Growth, Feeding	Feeding	Spawning
Cero (<i>Scomberomorus regalis</i>)								
NS	Pelagic		Growth, Feeding					Spawning
NS	Reefs				Growth, Feeding	Growth, Feeding	Feeding	
OS	Pelagic	Growth						Spawning
Little Tunny (<i>Scomberomorus regalis</i>)								
NS	Pelagic	Growth	Growth	Growth	Growth	Growth	Feeding	Spawning
NS	Shoals/Banks						Feeding	
OS	Pelagic	Growth					Feeding	Spawning
OS	Shoals/Banks						Feeding	
Dolphin (<i>Coryphaena hippurus</i>)								
NS	Pelagic						Feeding	
NS	Drift algae						Feeding	
OS	Pelagic	Growth	Growth, Feeding				Feeding	Spawning
OS	Drift algae		Growth, Feeding		Growth, Feeding	Growth, Feeding	Feeding	
OS	Shelf edge/slope							Spawning
NOTES: Larvae abundant around Mississippi River Delta. Drift algae is <i>Sargassum</i> .								
Adults common at 40-200m.								
Bluefish (<i>Pomatomus saltatrix</i>)								

Zone	Habitat Type	Eggs	Larvae	Post Larvae	Early Juveniles	Late Juveniles	Adults	Spawning Adults
EST	Pelagic				Growth, Feeding	Growth, Feeding		
NS	Pelagic			Growth, Feeding	Growth, Feeding	Growth, Feeding	Growth, Feeding	
OS	Pelagic	Growth	Growth, Feeding	Growth, Feeding	Growth, Feeding	Growth, Feeding	Growth, Feeding	Spawning

Table 3.2.14 Summary of habitat utilization by life history stage for species in the Coastal Migratory Pelagics FMP

Scientific name	Eggs	Larvae	Post-larvae	Early Juveniles	Late juveniles	Adults	Spawning adults
<i>Coryphaena hippurus</i>	Pelagic	Drift algae, Pelagic		Drift algae	Drift algae	Drift algae, Pelagic	Pelagic, Shelf edge/slope
<i>Euthynnus alleteratus</i>	Pelagic	Pelagic	Pelagic	Pelagic	Pelagic	Pelagic, Shoals/Banks	Pelagic
<i>Pomatomus saltatrix</i>	Pelagic	Pelagic	Pelagic	Pelagic	Pelagic	Pelagic	Pelagic
<i>Rachycentron canadum</i>	Pelagic	Pelagic	Pelagic	Pelagic	Pelagic	Pelagic	Pelagic
<i>Scomberomorus cavalla</i>	Pelagic	Pelagic		Pelagic	Pelagic	Pelagic	Pelagic
<i>Scomberomorus maculatus</i>	Pelagic	Pelagic		Pelagic	Pelagic	Pelagic	Pelagic
<i>Scomberomorus regalis</i>	Pelagic	Pelagic		Reefs	Reefs	Reefs	Pelagic

Table 3.2.15 Coastal Pelagics species depth preferences by life stage from the habitat use database (Italicized numbers indicate proxy information used)

Species	Life stage	Minimum depth (m)	Maximum Depth (m)	Comments
Cobia	Eggs			Top meter of water column
	Larvae	<i>11</i>	<i>53</i>	And surface waters
	Postlarvae	11	53	
	Early Juveniles	5	300	In or near surface waters (S. Atl)
	Late Juveniles	6	9	
	Adult	1	70	
	Spawning Adults	<i>1</i>	<i>70</i>	Continental shelf-coastal waters
King mackerel	Eggs	35	180	
	Larvae	<i>35</i>	<i>180</i>	may descend to mid-depths during day
	Postlarvae			

Species	Life stage	Minimum depth (m)	Maximum Depth (m)	Comments
	Early Juveniles		9	Often taken by shrimp trawlers in < 9m.
	Late Juveniles			
	Adult	35	Shelf edge	most commonly found in < 80 m
	Spawning Adults	35	180	
Spanish mackerel	Eggs		50	
	Larvae	9	84	most occur at <50m
	Early Juveniles			
	Late Juveniles		50	
	Adult	3	75	
	Spawning Adults		50	

Table 3.2.16 Summary of occurrence by eco-region for life history stages for species in the Coastal Pelagics FMP

Common Name	Eggs	Larvae	Postlarvae	Early juveniles	Late juveniles	Adults	Spawning adults
Eco-region 1							
Cobia	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Major Adult Area and Commercial Fishing Ground	Occurrence
King mackerel	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Major Adult Area and Commercial Fishing Ground	Occurrence
Spanish mackerel	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Major Adult Area and Commercial Fishing Ground	Occurrence
Eco-region 2							
Cobia	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Adult Area	Occurrence
King mackerel	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Adult Area	Occurrence
Spanish mackerel	Common	Common	Common	Nursery Area	Nursery Area	Major Adult Area and Commercial Fishing Ground	Major Adult Area and Commercial Fishing Ground
Eco-region 3							
Cobia	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area

Common Name	Eggs	Larvae	Postlarvae	Early juveniles	Late juveniles	Adults	Spawning adults
King mackerel	Common	Common	Common	Nursery Area	Nursery Area	Major Adult Area and Commercial Fishing Ground	Adult Area
Spanish mackerel	Common	Common	Common	Nursery Area	Nursery Area	Major Adult Area and Commercial Fishing Ground	Major Adult Area and Commercial Fishing Ground
Eco-region 4							
Cobia	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
King mackerel	Common	Common	Common	Nursery Area	Nursery Area	Major Adult Area and Commercial Fishing Ground	Adult Area
Spanish mackerel	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Eco-region 5							
Cobia	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
King mackerel	Common	Common	Common	Nursery Area	Nursery Area	Adult Area	Adult Area
Spanish mackerel	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence

Table 3.2.17 Habitats utilized by life stages of Gulf of Mexico FMP species for EFH
Ecological functions: Shrimp FMP

Zone	Habitat Type	Eggs	Larvae	Post Larvae	Early Juveniles	Late Juveniles	Adults	Spawning Adults
Brown Shrimp (<i>Penaeus aztecus</i>)								
EST	Emergent marshes			Growth, Feeding	Growth, Feeding	Growth, Feeding		
EST	SAV			Growth, Feeding	Growth, Feeding	Growth, Feeding		
EST	Sand/ shell			Growth, Feeding	Growth, Feeding	Growth, Feeding		
EST	Soft bottoms			Growth, Feeding	Growth, Feeding	Growth, Feeding		
EST	Oyster reefs			Growth, Feeding	Growth, Feeding	Growth, Feeding		
NS	Sand/ shell						Feeding	
NS	Soft bottoms						Feeding	
OS	Sand/ shell	Growth					Feeding	Spawning
OS	Pelagic		Growth, Feeding					
OS	Soft bottoms	Growth					Feeding	Spawning
White Shrimp (<i>Penaeus setiferus</i>)								
EST	Emergent marshes			Growth, Feeding	Growth, Feeding	Growth, Feeding		
EST	Soft bottoms			Growth, Feeding	Growth, Feeding	Growth, Feeding		
NS	Sand/ shell	Growth						
NS	Soft bottoms	Growth					Feeding	Spawning
NS	Pelagic		Growth, Feeding					
Pink Shrimp (<i>Penaeus duorarum</i>)								
NS	Sand/ shell	Growth		Growth, Feeding	Growth, Feeding	Growth, Feeding	Feeding	Spawning
NS	SAV			Growth, Feeding	Growth, Feeding	Growth, Feeding		
NS	Pelagic		Growth, Feeding					
OS	Sand/ shell	Growth						
OS	Pelagic		Growth, Feeding					
Royal Red Shrimp (<i>Pleoticus robustus</i>)								
OS	Sand/ shell	Growth	Growth	Growth	Growth	Growth	Feeding	Spawning
OS	Soft bottoms	Growth	Growth	Growth	Growth	Growth	Feeding	Spawning

Table 3.2.18 Summary of habitat utilization by life history stage for species in the Shrimp FMP

Scientific name	Fertilized eggs	Larvae and pre-settlement post larvae	Late postlarvae and juveniles	Non-spawning adults	Spawning adults
<i>Penaeus aztecus</i>	Sand/ shell bottoms, Soft bottoms	Pelagic	Oyster reefs, Emergent marshes, Sand/ shell bottoms, SAV, Soft bottoms	Sand/ shell bottoms, Soft bottoms	Sand/ shell bottoms, Soft bottoms
<i>Penaeus duorarum</i>	Sand/ shell bottoms	Pelagic	Sand/ shell bottoms, SAV	Sand/ shell bottoms	Sand/ shell bottoms
<i>Penaeus setiferus</i>	Sand/ shell bottoms, Soft bottoms	Pelagic	Emergent marshes, Soft bottoms	Soft bottoms	Soft bottoms
<i>Pleoticus robustus</i>	Sand/ shell bottoms, Soft bottoms	Sand/ shell bottoms, Soft bottoms	Sand/ shell bottoms, Soft bottoms	Sand/ shell bottoms, Soft bottoms	Sand/ shell bottoms, Soft bottoms

Table 3.2.19 Shrimp FMP species depth preferences by life stage from the habitat use database (Italicized numbers indicate proxy information used)

Species	Life stage	Minimum depth (m)	Maximum Depth (m)	Comments
Brown Shrimp	Fertilized eggs	18	110	
	Larvae and pre-settlement post larvae	0	82	
	Late postlarvae and juveniles	0	18	
	Non-spawning adults	14	110	
	Spawning adults	18	110	
White Shrimp	Fertilized eggs	9	34	
	Larvae and pre-settlement post larvae	1	82	
	Late postlarvae and juveniles	1	30	
	Non-spawning adults	9	27	
	Spawning adults	9	34	
Pink Shrimp	Fertilized eggs	9	48	
	Larvae and pre-settlement post larvae	1	50	
	Late postlarvae and juveniles	1	65	
	Non-spawning adults	1	110	
	Spawning adults	9	48	
Royal Red	Fertilized eggs	250	550	

Species	Life stage	Minimum depth (m)	Maximum Depth (m)	Comments
Shrimp	Larvae and pre-settlement post larvae	250	550	
	Late postlarvae and juveniles	250	550	
	Non-spawning adults	140	730	
	Spawning adults	250	550	

Table 3.2.20 Summary of occurrence by eco-region for life history stages for species in the Shrimp FMP

Common name	Fertilized eggs	Larvae and pre-settlement post larvae	Late postlarvae and juveniles	Non-spawning adults	Spawning adults
Eco-region 1					
Brown shrimp	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Pink shrimp	Common	Common	Nursery Area	Major Adult Area and Commercial Fishing Ground	Major Adult Area and Commercial Fishing Ground
Royal red shrimp	Common	Common	Nursery Area	Major Adult Area and Commercial Fishing Ground	Major Adult Area and Commercial Fishing Ground
White shrimp	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Eco-region 2					
Brown shrimp	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Pink shrimp	Common	Common	Nursery Area	Major Adult Area and Commercial Fishing Ground	Major Adult Area and Commercial Fishing Ground
Royal red shrimp	Occurrence	Occurrence	Occurrence	Adult Area	Adult Area
White shrimp	Common	Common	Nursery Area	Adult Area	Adult Area
Eco-region 3					
Brown shrimp	Common	Common	Nursery Area	Major Adult Area and Commercial Fishing Ground	Major Adult Area and Commercial Fishing Ground
Pink shrimp	Common	Common	Nursery Area	Adult Area	Adult Area
Royal red shrimp	Common	Common	Nursery Area	Major Adult Area and Commercial Fishing Ground	Major Adult Area and Commercial Fishing Ground
White shrimp	Common	Common	Nursery Area	Adult Area	Adult Area
Eco-region 4					
Brown shrimp	Common	Common	Nursery Area	Major Adult Area and Commercial Fishing Ground	Major Adult Area and Commercial Fishing Ground
Pink shrimp	Occurrence	Occurrence	Occurrence	Occurrence	Occurrence
Royal red shrimp	Occurrence	Occurrence	Occurrence	Adult Area	Adult Area

Common name	Fertilized eggs	Larvae and pre-settlement post larvae	Late postlarvae and juveniles	Non-spawning adults	Spawning adults
White shrimp	Common	Common	Nursery Area	Major Adult Area and Commercial Fishing Ground	Major Adult Area and Commercial Fishing Ground
Eco-region 5					
Brown shrimp	Common	Common	Nursery Area	Major Adult Area and Commercial Fishing Ground	Major Adult Area and Commercial Fishing Ground
Pink shrimp	Common	Common	Nursery Area	Adult Area	Adult Area
Royal red shrimp	Occurrence	Occurrence	Occurrence	Adult Area	Adult Area
White shrimp	Common	Common	Nursery Area	Major Adult Area and Commercial Fishing Ground	Major Adult Area and Commercial Fishing Ground

Table 3.2.21 Habitats utilized by life stages of Gulf of Mexico FMP species for EFH
Ecological functions: Stone Crab FMP

Zone	Habitat Type	Eggs	Larvae	Post Larvae	Early Juveniles	Late Juveniles	Adults	Spawning Adults
Stone Crab (<i>Menippe mercenaria</i>)								
EST	SAV	Growth			Growth, Feeding	Feeding	Feeding	Spawning
EST	Hard bottoms	Growth			Growth, Feeding	Feeding	Feeding	Spawning
EST	Sand/ shell	Growth			Growth, Feeding	Growth, Feeding	Feeding	Spawning
EST	Oyster reefs	Growth						
EST	Pelagic		Growth	Growth				
NS	Reefs	Growth					Feeding	Spawning
NS	SAV	Growth			Growth, Feeding	Growth, Feeding	Feeding	Spawning
NS	Hard bottoms	Growth			Growth, Feeding	Growth, Feeding	Feeding	Spawning
NS	Sand/ shell	Growth			Growth, Feeding	Growth, Feeding	Feeding	Spawning
NS	Pelagic		Growth	Growth				
Highest abundance Naples to Key West, Florida. Range is northward to Homasassa, Florida.								
Gulf Stone Crab (<i>Menippe adina</i>)								
EST	Sand/ shell	Growth			Growth, Feeding	Growth, Feeding		Spawning , Feeding
EST	Soft bottoms	Growth		Growth	Growth, Feeding	Growth, Feeding	Feeding	Spawning , Feeding
EST	Oyster reefs			Growth	Growth, Feeding	Growth, Feeding	Feeding	
EST	Pelagic		Growth					
NS	Sand/ shell	Growth						
NS	Soft bottoms	Growth		Growth				
NS	Pelagic		Growth					
Most abundant in northern Gulf of Mexico.								

Table 3.2.22 Summary of habitat utilization by life history stage for species in the Stone Crab FMP

Scientific name	Eggs	Larvae	Postlarvae	Post settlement juveniles	Late juveniles	Adults
<i>Menippe adina</i>	Sand/ shell bottoms, Soft bottoms	Pelagic	Pelagic	Oyster reefs, Sand/ shell bottoms, Soft bottoms	Oyster reefs, Sand/ shell bottoms, Soft bottoms	Oyster reefs, Sand/ shell bottoms, Soft bottoms
<i>Menippe mercenaria</i> ,	Hard bottoms, Oyster reefs, Reefs, Sand/ shell bottoms, SAV	Pelagic	Pelagic	Hard bottoms, Sand/ shell bottoms, SAV	Hard bottoms, Sand/ shell bottoms, SAV	Hard bottoms, Reefs, Sand/ shell bottoms, SAV

Table 3.2.23 Stone Crab FMP species depth preferences by life stage from the habitat use database (*Italicized numbers indicate proxy information used*)

Species	Life stage	Minimum depth (m)	Maximum Depth (m)	Comments
Stone Crab	Eggs	0	62	
	Larvae	<i>0</i>	<i>62</i>	
	Postlarvae	<i>0</i>	<i>62</i>	
	Post-settlement Juveniles	<i>0</i>	<i>62</i>	
	Late Juveniles	<i>0</i>	<i>62</i>	
	Adult	0	62	
Gulf Stone Crab	Eggs	0	40	
	Larvae	<i>0</i>	<i>40</i>	
	Postlarvae	<i>0</i>	<i>40</i>	
	Post-settlement Juveniles	<i>0</i>	<i>40</i>	
	Late Juveniles	<i>0</i>	<i>40</i>	
	Adult	0	40	

Table 3.2.24 Summary of occurrence by eco-region for life history stages for species in the Stone Crab FMP

Common name	Eggs	Larvae	Postlarvae	Post settlement juveniles	Late juveniles	Adults
Eco-region 1						
Stone Crab	Common	Common	Common	Nursery Area	Nursery Area	Major Adult Area and Commercial Fishing Ground
Stone Crab (Cedar Key N)	No Occurrence	No Occurrence	No Occurrence	No Occurrence	No Occurrence	No Occurrence
Eco-region 2						
Stone Crab	Common	Common	Common	Nursery Area	Nursery Area	Adult Area
Stone Crab (Cedar Key N)	Common	Common	Common	Nursery Area	Nursery Area	Adult Area
Eco-region 3						
Stone Crab	No Occurrence	No Occurrence	No Occurrence	No Occurrence	No Occurrence	No Occurrence
Stone Crab (Cedar Key N)	Common	Common	Common	Nursery Area	Nursery Area	Adult Area
Eco-region 4						
Stone Crab	No Occurrence	No Occurrence	No Occurrence	No Occurrence	No Occurrence	No Occurrence
Stone Crab (Cedar Key N)	Common	Common	Common	Nursery Area	Nursery Area	Adult Area
Eco-region 5						

Common name	Eggs	Larvae	Postlarvae	Post settlement juveniles	Late juveniles	Adults
Stone Crab	No Occurrence	No Occurrence	No Occurrence	No Occurrence	No Occurrence	No Occurrence
Stone Crab (Cedar Key N)	Common	Common	Common	Nursery Area	Nursery Area	Adult Area

Table 3.2.25 Habitats utilized by life stages of Gulf of Mexico FMP species for EFH
Ecological functions: Spiny Lobster FMP

Zone	Habitat Type	Eggs	Larvae	Post Larvae	Early Juveniles	Late Juveniles	Adults	Spawning Adults
Spiny Lobster (<i>Panulirus argus</i>)								
EST	SAV			Growth			Growth, Feeding	
NS	SAV			Growth	Growth, Feeding		Growth, Feeding	
NS	Pelagic			Growth				
NS	Reefs				Growth, Feeding		Growth, Feeding	
NS	Hard bottoms				Growth, Feeding		Growth, Feeding	
OS	Reefs	Growth				Growth, Feeding	Growth, Feeding	Spawning
OS	Hard bottoms						Growth, Feeding	
OS	Pelagic		Growth, Feeding	Growth				
Adults common in 2-45 m depth.								
Young juveniles especially abundant in Laurencia algae.								
Slipper Lobster (<i>Scyllarides nodifer</i>)								
NS	Sand/ shell	Growth					Feeding	Spawning
NS	Soft bottoms	Growth					Feeding	Spawning
NS	Reefs	Growth					Feeding	Spawning
NS	Pelagic		Growth					
OS	Sand/ shell	Growth					Feeding	Spawning
OS	Soft bottoms	Growth					Feeding	Spawning
OS	Reefs	Growth					Feeding	Spawning
OS	Pelagic		Growth					
Spotted Spiny Lobster (<i>Panulirus guttatus</i>)								
NS	Reefs	Growth		Growth	Growth	Growth	Feeding	Spawning
NS	Pelagic		Growth					
OS	Reefs	Growth		Growth	Growth	Growth	Feeding	Spawning
OS	Pelagic		Growth					
Smooth Tail Lobster (<i>Panulirus laeviscauda</i>)								
Spanish Slipper Lobster (<i>Scyllarides aequinoctialis</i>)								

Table 3.2.26 Summary of habitat utilization by life history stage for species in the Spiny Lobster FMP

Scientific name	Phyllosome larvae	Puerulus postlarvae	Juveniles	Adults
<i>Panulirus argus</i>	Pelagic	Pelagic, SAV	SAV, Hard bottoms, Reefs	Hard bottoms, Reefs, SAV
<i>Panulirus guttatus</i>	Pelagic	Reefs	Reefs	Reefs
<i>Scyllarides nodife</i>	Pelagic			Reefs, Sand/ shell bottoms, Soft bottoms

Table 3.2.27 Spiny Lobster FMP species depth preferences by life stage from the habitat use database (Italicized numbers indicate proxy information used)

Species	Life stage	Minimum depth (m)	Maximum Depth (m)	Comments
Spiny Lobster	Phyllosome larvae	<i>1</i>	<i>100</i>	
	Puerulus postlarvae	<i>1</i>	<i>100</i>	
	Juveniles	<i>1</i>	<i>100</i>	
	Adults	1	100	
Slipper Lobster	Phyllosome larvae	0	75	
	Puerulus postlarvae			
	Juveniles	0	71	
	Adults	2	100	

Table 3.2.28 Summary of occurrence by eco-region for life history stages for species in the Spiny Lobster FMP

Common name	Phyllosome larvae	Puerulus postlarvae	Juveniles	Adults
Eco-region 1				
Slipper lobster	Occurrence	Occurrence	Occurrence	Occurrence
Spiny lobster	Common	Nursery Area	Nursery Area	Major Adult Area and Commercial Fishing Ground
Eco-region 2				
Slipper lobster	Occurrence	Occurrence	Occurrence	Occurrence
Spiny lobster	Common	Occurrence	Occurrence	Occurrence
Eco-region 3				
Slipper lobster	Occurrence	Occurrence	Occurrence	Occurrence
Spiny lobster	Common	Occurrence	Occurrence	Occurrence
Eco-region 4				
Slipper lobster	Occurrence	Occurrence	Occurrence	Occurrence
Spiny lobster	Common	Occurrence	Occurrence	Occurrence
Eco-region 5				
Slipper lobster	Occurrence	Occurrence	Occurrence	Occurrence
Spiny lobster	Common	Occurrence	Occurrence	Occurrence

Table 3.2.29 Ranks of habitat used by species in the Red Drum FMP by eco-region. Habitats are ranked according to their use for feeding, growth to maturity, and spawning.

Eco-Region	FMP	Habitat Zone	Habitat Type	Spawning Rank	Growth Rank	Feeding Rank	Mean Rank	Re-Rank	Reverse Rank	Normalized Score
1	Red drum	Nearshore	Hard bottoms	9	6	5	6.7	1	9	1.00
1	Red drum	Nearshore	Sand/ Shell bottoms	9	6	5	6.7	1	9	1.00
1	Red drum	Estuarine	Submerged Aquatic Veg	0	9	9	6.0	3	7	0.78
1	Red drum	Estuarine	Soft bottoms	0	8	8	5.3	4	6	0.67
1	Red drum	Estuarine	Emergent marshes	0	7	7	4.7	5	5	0.56
1	Red drum	Estuarine	Sand/ Shell bottoms	0	6	7	4.3	6	4	0.44
1	Red drum	Nearshore	Pelagic	0	6	3	3.0	7	3	0.33
1	Red drum	Offshore	Hard bottoms	0	0	3	1.0	8	2	0.22
1	Red drum	Offshore	Sand/ Shell bottoms	0	0	3	1.0	8	2	0.22
2	Red drum	Nearshore	Hard bottoms	9	6	5	6.7	1	9	1.00
2	Red drum	Nearshore	Sand/ Shell bottoms	9	6	5	6.7	1	9	1.00
2	Red drum	Estuarine	Submerged Aquatic Veg	0	9	9	6.0	3	7	0.78
2	Red drum	Estuarine	Soft bottoms	0	8	8	5.3	4	6	0.67
2	Red drum	Estuarine	Emergent marshes	0	7	7	4.7	5	5	0.56
2	Red drum	Estuarine	Sand/ Shell bottoms	0	6	7	4.3	6	4	0.44
2	Red drum	Nearshore	Pelagic	0	6	3	3.0	7	3	0.33
2	Red drum	Offshore	Hard bottoms	0	0	3	1.0	8	2	0.22
2	Red drum	Offshore	Sand/ Shell bottoms	0	0	3	1.0	8	2	0.22
3	Red drum	Nearshore	Hard bottoms	9	6	5	6.7	1	9	1.00
3	Red drum	Nearshore	Sand/ Shell bottoms	9	6	5	6.7	1	9	1.00
3	Red drum	Estuarine	Submerged Aquatic Veg	0	9	9	6.0	3	7	0.78
3	Red drum	Estuarine	Soft bottoms	0	8	8	5.3	4	6	0.67
3	Red drum	Estuarine	Emergent marshes	0	7	7	4.7	5	5	0.56
3	Red drum	Estuarine	Sand/ Shell bottoms	0	6	7	4.3	6	4	0.44
3	Red drum	Nearshore	Pelagic	0	6	3	3.0	7	3	0.33

Eco-Region	FMP	Habitat Zone	Habitat Type	Spawning Rank	Growth Rank	Feeding Rank	Mean Rank	Re-Rank	Reverse Rank	Normalized Score
3	Red drum	Offshore	Hard bottoms	0	0	3	1.0	8	2	0.22
3	Red drum	Offshore	Sand/ Shell bottoms	0	0	3	1.0	8	2	0.22
4	Red drum	Nearshore	Hard bottoms	9	6	5	6.7	1	9	1.00
4	Red drum	Nearshore	Sand/ Shell bottoms	9	6	5	6.7	1	9	1.00
4	Red drum	Estuarine	Submerged Aquatic Veg	0	9	9	6.0	3	7	0.78
4	Red drum	Estuarine	Soft bottoms	0	8	8	5.3	4	6	0.67
4	Red drum	Estuarine	Emergent marshes	0	7	7	4.7	5	5	0.56
4	Red drum	Estuarine	Sand/ Shell bottoms	0	6	7	4.3	6	4	0.44
4	Red drum	Nearshore	Pelagic	0	6	3	3.0	7	3	0.33
4	Red drum	Offshore	Hard bottoms	0	0	3	1.0	8	2	0.22
4	Red drum	Offshore	Sand/ Shell bottoms	0	0	3	1.0	8	2	0.22
5	Red drum	Nearshore	Hard bottoms	9	6	5	6.7	1	9	1.00
5	Red drum	Nearshore	Sand/ Shell bottoms	9	6	5	6.7	1	9	1.00
5	Red drum	Estuarine	Submerged Aquatic Veg	0	9	9	6.0	3	7	0.78
5	Red drum	Estuarine	Soft bottoms	0	8	8	5.3	4	6	0.67
5	Red drum	Estuarine	Emergent marshes	0	7	7	4.7	5	5	0.56
5	Red drum	Estuarine	Sand/ Shell bottoms	0	6	7	4.3	6	4	0.44
5	Red drum	Nearshore	Pelagic	0	6	3	3.0	7	3	0.33
5	Red drum	Offshore	Hard bottoms	0	0	3	1.0	8	2	0.22
5	Red drum	Offshore	Sand/ Shell bottoms	0	0	3	1.0	8	2	0.22

Table 3.2.30 Ranks of habitats used by species in the Reef Fish FMP by eco-region. Habitats are ranked according to their use for feeding, growth to maturity, and spawning.

Eco-Region	FMP	Habitat Zone	Habitat Type	Spawning Rank	Growth Rank	Feeding Rank	Mean Rank	Re-Rank	Reverse Rank	Normalized Score
1	Reef fish	Nearshore	Reefs	21	23	24	22.7	1	24	1.00
1	Reef fish	Offshore	Hard bottoms	24	16	23	21.0	2	23	0.96
1	Reef fish	Offshore	Reefs	23	15	22	20.0	3	22	0.92

Eco-Region	FMP	Habitat Zone	Habitat Type	Spawning Rank	Growth Rank	Feeding Rank	Mean Rank	Re-Rank	Reverse Rank	Normalized Score
1	Reef fish	Offshore	Pelagic	21	24	3	16.0	4	21	0.88
1	Reef fish	Nearshore	Submerged Aquatic Veg	0	22	22	14.7	5	20	0.83
1	Reef fish	Offshore	Shelf edge/ Slope	22	7	13	14.0	6	19	0.79
1	Reef fish	Estuarine	Submerged Aquatic Veg	0	21	20	13.7	7	18	0.75
1	Reef fish	Nearshore	Hard bottoms	0	18	20	12.7	8	17	0.71
1	Reef fish	Nearshore	Mangroves	0	20	18	12.7	8	17	0.71
1	Reef fish	Offshore	Sand/ Shell bottoms	19	4	14	12.3	10	15	0.63
1	Reef fish	Estuarine	Mangroves	0	19	18	12.3	10	15	0.63
1	Reef fish	Estuarine	Reefs	0	17	16	11.0	12	13	0.54
1	Reef fish	Nearshore	Banks/ Shoals	18	0	10	9.3	13	12	0.50
1	Reef fish	Nearshore	Sand/ Shell bottoms	0	9	15	8.0	14	11	0.46
1	Reef fish	Estuarine	Emergent marshes	0	15	7	7.3	15	10	0.42
1	Reef fish	Nearshore	Soft bottoms	0	10	12	7.3	15	10	0.42
1	Reef fish	Nearshore	Drift algae	0	15	5	6.7	17	8	0.33
1	Reef fish	Offshore	Soft bottoms	0	9	11	6.7	17	8	0.33
1	Reef fish	Estuarine	Hard bottoms	0	7	10	5.7	19	6	0.25
1	Reef fish	Estuarine	Soft bottoms	0	7	10	5.7	19	6	0.25
1	Reef fish	Nearshore	Pelagic	0	15	0	5.0	21	4	0.17
1	Reef fish	Offshore	Drift algae	0	15	0	5.0	21	4	0.17
1	Reef fish	Estuarine	Sand/ Shell bottoms	0	4	7	3.7	23	2	0.08
1	Reef fish	Offshore	Banks/ Shoals	0	0	5	1.7	24	1	0.04
2	Reef fish	Nearshore	Reefs	22	23	24	23.0	1	24	1.00
2	Reef fish	Offshore	Hard bottoms	24	18	23	21.7	2	23	0.96
2	Reef fish	Offshore	Reefs	24	12	22	19.3	3	22	0.92
2	Reef fish	Offshore	Pelagic	22	24	3	16.3	4	21	0.88
2	Reef fish	Nearshore	Submerged Aquatic Veg	0	22	22	14.7	5	20	0.83

Eco-Region	FMP	Habitat Zone	Habitat Type	Spawning Rank	Growth Rank	Feeding Rank	Mean Rank	Re-Rank	Reverse Rank	Normalized Score
2	Reef fish	Nearshore	Hard bottoms	0	20	22	14.0	6	19	0.79
2	Reef fish	Offshore	Shelf edge/ Slope	22	7	12	13.7	7	18	0.75
2	Reef fish	Offshore	Sand/ Shell bottoms	19	5	17	13.7	7	18	0.75
2	Reef fish	Estuarine	Submerged Aquatic Veg	0	21	19	13.3	9	16	0.67
2	Reef fish	Nearshore	Mangroves	0	19	16	11.7	10	15	0.63
2	Reef fish	Estuarine	Mangroves	0	17	16	11.0	11	14	0.58
2	Reef fish	Estuarine	Reefs	0	17	13	10.0	12	13	0.54
2	Reef fish	Nearshore	Sand/ Shell bottoms	0	10	18	9.3	13	12	0.50
2	Reef fish	Nearshore	Soft bottoms	0	11	14	8.3	14	11	0.46
2	Reef fish	Nearshore	Drift algae	0	17	5	7.3	15	10	0.42
2	Reef fish	Offshore	Soft bottoms	0	10	12	7.3	15	10	0.42
2	Reef fish	Estuarine	Emergent marshes	0	10	9	6.3	17	8	0.33
2	Reef fish	Estuarine	Soft bottoms	0	7	10	5.7	18	7	0.29
2	Reef fish	Nearshore	Pelagic	0	17	0	5.7	18	7	0.29
2	Reef fish	Offshore	Drift algae	0	17	0	5.7	18	7	0.29
2	Reef fish	Estuarine	Hard bottoms	0	5	9	4.7	21	4	0.17
2	Reef fish	Estuarine	Sand/ Shell bottoms	0	5	9	4.7	21	4	0.17
2	Reef fish	Nearshore	Banks/ Shoals	0	0	9	3.0	23	2	0.08
2	Reef fish	Offshore	Banks/ Shoals	0	0	5	1.7	24	1	0.04
3	Reef fish	Nearshore	Reefs	23	22	23	22.7	1	23	1.00
3	Reef fish	Offshore	Hard bottoms	21	20	23	21.3	2	22	0.96
3	Reef fish	Offshore	Reefs	21	10	23	18.0	3	21	0.91
3	Reef fish	Offshore	Shelf edge/ Slope	23	10	15	16.0	4	20	0.87
3	Reef fish	Offshore	Sand/ Shell bottoms	21	6	19	15.3	5	19	0.83
3	Reef fish	Offshore	Pelagic	21	23	0	14.7	6	18	0.78
3	Reef fish	Nearshore	Sand/ Shell bottoms	0	14	23	12.3	7	17	0.74

Eco-Region	FMP	Habitat Zone	Habitat Type	Spawning Rank	Growth Rank	Feeding Rank	Mean Rank	Re-Rank	Reverse Rank	Normalized Score
3	Reef fish	Nearshore	Hard bottoms	0	18	17	11.7	8	16	0.70
3	Reef fish	Estuarine	Submerged Aquatic Veg	0	18	15	11.0	9	15	0.65
3	Reef fish	Nearshore	Submerged Aquatic Veg	0	18	15	11.0	9	15	0.65
3	Reef fish	Nearshore	Drift algae	0	22	10	10.7	11	13	0.57
3	Reef fish	Nearshore	Soft bottoms	0	14	18	10.7	11	13	0.57
3	Reef fish	Offshore	Soft bottoms	0	14	17	10.3	13	11	0.48
3	Reef fish	Nearshore	Mangroves	0	18	10	9.3	14	10	0.43
3	Reef fish	Estuarine	Reefs	0	14	10	8.0	15	9	0.39
3	Reef fish	Estuarine	Sand/ Shell bottoms	0	6	15	7.0	16	8	0.35
3	Reef fish	Estuarine	Soft bottoms	0	6	15	7.0	16	8	0.35
3	Reef fish	Estuarine	Mangroves	0	10	10	6.7	18	6	0.26
3	Reef fish	Offshore	Drift algae	0	20	0	6.7	18	6	0.26
3	Reef fish	Nearshore	Pelagic	0	10	0	3.3	20	4	0.17
3	Reef fish	Estuarine	Emergent marshes	0	3	6	3.0	21	3	0.13
3	Reef fish	Nearshore	Banks/ Shoals	0	0	6	2.0	22	2	0.09
3	Reef fish	Offshore	Banks/ Shoals	0	0	6	2.0	22	2	0.09
4	Reef fish	Nearshore	Reefs	23	22	22	22.3	1	23	1.00
4	Reef fish	Offshore	Hard bottoms	21	20	23	21.3	2	22	0.96
4	Reef fish	Offshore	Reefs	21	10	22	17.7	3	21	0.91
4	Reef fish	Offshore	Shelf edge/ Slope	23	10	15	16.0	4	20	0.87
4	Reef fish	Offshore	Sand/ Shell bottoms	21	6	19	15.3	5	19	0.83
4	Reef fish	Offshore	Pelagic	21	23	0	14.7	6	18	0.78
4	Reef fish	Nearshore	Sand/ Shell bottoms	0	14	22	12.0	7	17	0.74
4	Reef fish	Nearshore	Hard bottoms	0	18	17	11.7	8	16	0.70
4	Reef fish	Estuarine	Submerged Aquatic Veg	0	18	15	11.0	9	15	0.65
4	Reef fish	Nearshore	Submerged Aquatic Veg	0	18	15	11.0	9	15	0.65

Eco-Region	FMP	Habitat Zone	Habitat Type	Spawning Rank	Growth Rank	Feeding Rank	Mean Rank	Re-Rank	Reverse Rank	Normalized Score
4	Reef fish	Nearshore	Drift algae	0	22	10	10.7	11	13	0.57
4	Reef fish	Nearshore	Soft bottoms	0	14	18	10.7	11	13	0.57
4	Reef fish	Offshore	Soft bottoms	0	14	17	10.3	13	11	0.48
4	Reef fish	Nearshore	Mangroves	0	18	10	9.3	14	10	0.43
4	Reef fish	Estuarine	Reefs	0	14	10	8.0	15	9	0.39
4	Reef fish	Estuarine	Sand/ Shell bottoms	0	6	15	7.0	16	8	0.35
4	Reef fish	Estuarine	Soft bottoms	0	6	15	7.0	16	8	0.35
4	Reef fish	Estuarine	Mangroves	0	10	10	6.7	18	6	0.26
4	Reef fish	Offshore	Drift algae	0	19	0	6.3	19	5	0.22
4	Reef fish	Nearshore	Pelagic	0	10	0	3.3	20	4	0.17
4	Reef fish	Estuarine	Emergent marshes	0	3	6	3.0	21	3	0.13
4	Reef fish	Nearshore	Banks/ Shoals	0	0	6	2.0	22	2	0.09
4	Reef fish	Offshore	Banks/ Shoals	0	0	6	2.0	22	2	0.09
5	Reef fish	Nearshore	Reefs	24	23	24	23.7	1	24	1.00
5	Reef fish	Offshore	Hard bottoms	24	19	23	22.0	2	23	0.96
5	Reef fish	Offshore	Reefs	24	13	22	19.7	3	22	0.92
5	Reef fish	Offshore	Pelagic	24	24	0	16.0	4	21	0.88
5	Reef fish	Offshore	Sand/ Shell bottoms	19	7	20	15.3	5	20	0.83
5	Reef fish	Offshore	Shelf edge/ Slope	24	9	11	14.7	6	19	0.79
5	Reef fish	Nearshore	Mangroves	0	23	18	13.7	7	18	0.75
5	Reef fish	Estuarine	Mangroves	0	21	18	13.0	8	17	0.71
5	Reef fish	Estuarine	Submerged Aquatic Veg	0	19	18	12.3	9	16	0.67
5	Reef fish	Nearshore	Submerged Aquatic Veg	0	19	18	12.3	9	16	0.67
5	Reef fish	Nearshore	Hard bottoms	0	16	20	12.0	11	14	0.58
5	Reef fish	Estuarine	Reefs	0	16	18	11.3	12	13	0.54
5	Reef fish	Nearshore	Sand/ Shell bottoms	0	13	21	11.3	12	13	0.54

Eco-Region	FMP	Habitat Zone	Habitat Type	Spawning Rank	Growth Rank	Feeding Rank	Mean Rank	Re-Rank	Reverse Rank	Normalized Score
5	Reef fish	Nearshore	Soft bottoms	0	13	18	10.3	14	11	0.46
5	Reef fish	Nearshore	Drift algae	0	21	8	9.7	15	10	0.42
5	Reef fish	Offshore	Soft bottoms	0	13	12	8.3	16	9	0.38
5	Reef fish	Estuarine	Sand/ Shell bottoms	0	7	11	6.0	17	8	0.33
5	Reef fish	Estuarine	Soft bottoms	0	7	11	6.0	17	8	0.33
5	Reef fish	Offshore	Drift algae	0	16	0	5.3	19	6	0.25
5	Reef fish	Estuarine	Emergent marshes	0	4	6	3.3	20	5	0.21
5	Reef fish	Estuarine	Hard bottoms	0	4	6	3.3	21	4	0.17
5	Reef fish	Nearshore	Pelagic	0	9	0	3.0	22	3	0.13
5	Reef fish	Nearshore	Banks/ Shoals	0	0	8	2.7	23	2	0.08
5	Reef fish	Offshore	Banks/ Shoals	0	0	6	2.0	24	1	0.04

Table 3.2.31 Ranks of habitats used by species in the Pelagic Fish FMP by eco-region. Habitats are ranked according to their use for feeding, growth to maturity, and spawning.

Eco-Region	FMP	Habitat Zone	Habitat Type	Spawning Rank	Growth Rank	Feeding Rank	Mean Rank	Re-Rank	Reverse Rank	Normalized Score
1	Pelagics	Nearshore	Pelagic	8	9	9	8.7	1	9	1.00
1	Pelagics	Offshore	Pelagic	9	8	8	8.3	2	8	0.89
1	Pelagics	Offshore	Drift algae	0	7	7	4.7	3	7	0.78
1	Pelagics	Estuarine	Pelagic	0	6	6	4.0	4	6	0.67
1	Pelagics	Nearshore	Reefs	0	6	6	4.0	4	6	0.67
1	Pelagics	Offshore	Shelf edge/ Slope	7	0	0	2.3	6	4	0.44
1	Pelagics	Nearshore	Banks/ Shoals	0	0	4	1.3	7	3	0.33
1	Pelagics	Nearshore	Drift algae	0	0	4	1.3	7	3	0.33
1	Pelagics	Offshore	Banks/ Shoals	0	0	4	1.3	7	3	0.33
2	Pelagics	Nearshore	Pelagic	8	8	8	8.0	1	8	1.00
2	Pelagics	Offshore	Pelagic	8	7	7	7.3	2	7	0.88
2	Pelagics	Estuarine	Pelagic	0	6	6	4.0	3	6	0.75
2	Pelagics	Offshore	Drift algae	0	5	5	3.3	4	5	0.63
2	Pelagics	Offshore	Shelf edge/	6	0	0	2.0	5	4	0.50

Eco-Region	FMP	Habitat Zone	Habitat Type	Spawning Rank	Growth Rank	Feeding Rank	Mean Rank	Re-Rank	Reverse Rank	Normalized Score
			Slope							
2	Pelagics	Nearshore	Banks/Shoals	0	0	4	1.3	6	3	0.38
2	Pelagics	Nearshore	Drift algae	0	0	4	1.3	6	3	0.38
2	Pelagics	Offshore	Banks/Shoals	0	0	4	1.3	6	3	0.38
3	Pelagics	Offshore	Pelagic	8	8	7	7.7	1	8	1.00
3	Pelagics	Nearshore	Pelagic	7	7	8	7.3	2	7	0.88
3	Pelagics	Estuarine	Pelagic	0	6	6	4.0	3	6	0.75
3	Pelagics	Offshore	Drift algae	0	5	5	3.3	4	5	0.63
3	Pelagics	Offshore	Shelf edge/Slope	6	0	0	2.0	5	4	0.50
3	Pelagics	Nearshore	Banks/Shoals	0	0	4	1.3	6	3	0.38
3	Pelagics	Nearshore	Drift algae	0	0	4	1.3	6	3	0.38
3	Pelagics	Offshore	Banks/Shoals	0	0	4	1.3	6	3	0.38
4	Pelagics	Offshore	Pelagic	8	8	8	8.0	1	8	1.00
4	Pelagics	Nearshore	Pelagic	7	7	7	7.0	2	7	0.88
4	Pelagics	Offshore	Drift algae	0	6	6	4.0	3	6	0.75
4	Pelagics	Estuarine	Pelagic	0	5	5	3.3	4	5	0.63
4	Pelagics	Offshore	Shelf edge/Slope	6	0	0	2.0	5	4	0.50
4	Pelagics	Nearshore	Banks/Shoals	0	0	4	1.3	6	3	0.38
4	Pelagics	Nearshore	Drift algae	0	0	4	1.3	6	3	0.38
4	Pelagics	Offshore	Banks/Shoals	0	0	4	1.3	6	3	0.38
5	Pelagics	Offshore	Pelagic	8	8	8	8.0	1	8	1.00
5	Pelagics	Nearshore	Pelagic	7	7	7	7.0	2	7	0.88
5	Pelagics	Offshore	Drift algae	0	6	6	4.0	3	6	0.75
5	Pelagics	Estuarine	Pelagic	0	5	5	3.3	4	5	0.63
5	Pelagics	Offshore	Shelf edge/Slope	6	0	0	2.0	5	4	0.50
5	Pelagics	Nearshore	Banks/Shoals	0	0	4	1.3	6	3	0.38
5	Pelagics	Nearshore	Drift algae	0	0	4	1.3	6	3	0.38
5	Pelagics	Offshore	Banks/Shoals	0	0	4	1.3	6	3	0.38

Table 3.2.32 Ranks of habitats used by species in the Shrimp FMP by eco-region. Habitats are ranked according to their use for feeding, growth to maturity, and spawning

Eco-Region	FMP	Habitat Zone	Habitat Type	Spawning Rank	Growth Rank	Feeding Rank	Mean Rank	Re-Rank	Reverse Rank	Normalized Score
1	Shrimp	Offshore	Sand/ Shell bottoms	7	7	7	7.0	1	7	1.00
1	Shrimp	Offshore	Soft bottoms	7	6	7	6.7	2	6	0.86
1	Shrimp	Nearshore	Sand/ Shell bottoms	7	5	7	6.3	3	5	0.71
1	Shrimp	Estuarine	Sand/ Shell bottoms	0	5	7	4.0	4	4	0.57
1	Shrimp	Estuarine	Submerged Aquatic Veg	0	5	7	4.0	4	4	0.57
1	Shrimp	Nearshore	Pelagic	0	5	7	4.0	4	4	0.57
1	Shrimp	Offshore	Pelagic	0	5	7	4.0	4	4	0.57
2	Shrimp	Nearshore	Sand/ Shell bottoms	10	10	9	9.7	1	10	1.00
2	Shrimp	Nearshore	Soft bottoms	10	9	9	9.3	2	9	0.90
2	Shrimp	Offshore	Sand/ Shell bottoms	10	9	9	9.3	2	9	0.90
2	Shrimp	Nearshore	Pelagic	0	10	10	6.7	4	7	0.70
2	Shrimp	Offshore	Soft bottoms	10	0	9	6.3	5	6	0.60
2	Shrimp	Estuarine	Emergent marshes	0	9	9	6.0	6	5	0.50
2	Shrimp	Estuarine	Sand/ Shell bottoms	0	9	9	6.0	6	5	0.50
2	Shrimp	Estuarine	Soft bottoms	0	9	9	6.0	6	5	0.50
2	Shrimp	Estuarine	Submerged Aquatic Veg	0	9	9	6.0	6	5	0.50
2	Shrimp	Offshore	Pelagic	0	9	9	6.0	6	5	0.50
3	Shrimp	Offshore	Sand/ Shell bottoms	11	11	10	10.7	1	11	1.00
3	Shrimp	Nearshore	Sand/ Shell bottoms	10	9	10	9.7	2	10	0.91
3	Shrimp	Offshore	Soft bottoms	10	11	2	7.7	3	9	0.82
3	Shrimp	Nearshore	Soft bottoms	10	2	10	7.3	4	8	0.73
3	Shrimp	Estuarine	Soft bottoms	0	9	11	6.7	5	7	0.64
3	Shrimp	Estuarine	Emergent marshes	0	9	10	6.3	6	6	0.55
3	Shrimp	Estuarine	Sand/ Shell bottoms	0	9	10	6.3	6	6	0.55
3	Shrimp	Estuarine	Submerged Aquatic Veg	0	9	10	6.3	6	6	0.55
3	Shrimp	Nearshore	Pelagic	0	9	10	6.3	6	6	0.55

Eco-Region	FMP	Habitat Zone	Habitat Type	Spawning Rank	Growth Rank	Feeding Rank	Mean Rank	Re-Rank	Reverse Rank	Normalized Score
3	Shrimp	Offshore	Pelagic	0	9	10	6.3	6	6	0.55
3	Shrimp	Estuarine	Oyster reefs	0	2	2	1.3	11	1	0.09
4	Shrimp	Offshore	Soft bottoms	10	11	9	10.0	1	11	1.00
4	Shrimp	Offshore	Sand/ Shell bottoms	11	8	10	9.7	2	10	0.91
4	Shrimp	Nearshore	Soft bottoms	10	8	10	9.3	3	9	0.82
4	Shrimp	Estuarine	Soft bottoms	0	11	11	7.3	4	8	0.73
4	Shrimp	Estuarine	Emergent marshes	0	11	10	7.0	5	7	0.64
4	Shrimp	Estuarine	Oyster reefs	0	8	9	5.7	6	6	0.55
4	Shrimp	Estuarine	Sand/ Shell bottoms	0	8	9	5.7	6	6	0.55
4	Shrimp	Estuarine	Submerged Aquatic Veg	0	8	9	5.7	6	6	0.55
4	Shrimp	Nearshore	Pelagic	0	8	9	5.7	6	6	0.55
4	Shrimp	Nearshore	Sand/ Shell bottoms	0	8	9	5.7	6	6	0.55
4	Shrimp	Offshore	Pelagic	0	8	9	5.7	6	6	0.55
5	Shrimp	Offshore	Sand/ Shell bottoms	11	11	10	10.7	1	11	1.00
5	Shrimp	Nearshore	Sand/ Shell bottoms	10	11	10	10.3	2	10	0.91
5	Shrimp	Offshore	Soft bottoms	10	11	2	7.7	3	9	0.82
5	Shrimp	Nearshore	Soft bottoms	10	2	10	7.3	4	8	0.73
5	Shrimp	Estuarine	Soft bottoms	0	11	11	7.3	4	8	0.73
5	Shrimp	Estuarine	Emergent marshes	0	11	10	7.0	6	6	0.55
5	Shrimp	Estuarine	Sand/ Shell bottoms	0	11	10	7.0	6	6	0.55
5	Shrimp	Estuarine	Submerged Aquatic Veg	0	11	10	7.0	6	6	0.55
5	Shrimp	Nearshore	Pelagic	0	11	10	7.0	6	6	0.55
5	Shrimp	Offshore	Pelagic	0	11	10	7.0	6	6	0.55
5	Shrimp	Estuarine	Oyster reefs	0	2	2	1.3	11	1	0.09

Table 3.2.33 Ranks of habitats used by species in the Stone Crab FMP by eco-region. Habitats are ranked according to their use for feeding, growth to maturity, and spawning.

Eco-Region	FMP	Habitat Zone	Habitat Type	Spawning Rank	Growth Rank	Feeding Rank	Mean Rank	Re-Rank	Reverse Rank	Normalized Score
1	Stone crab	Estuarine	Hard bottoms	11	11	11	11.0	1	11	1.00
1	Stone crab	Estuarine	Sand/ Shell bottoms	11	11	11	11.0	1	11	1.00
1	Stone crab	Estuarine	Submerged Aquatic Veg	11	11	11	11.0	1	11	1.00
1	Stone crab	Nearshore	Hard bottoms	11	11	11	11.0	1	11	1.00
1	Stone crab	Nearshore	Sand/ Shell bottoms	11	11	11	11.0	1	11	1.00
1	Stone crab	Nearshore	Submerged Aquatic Veg	11	11	11	11.0	1	11	1.00
1	Stone crab	Estuarine	Reefs	11	3	5	6.3	7	5	0.45
1	Stone crab	Nearshore	Reefs	11	3	5	6.3	7	5	0.45
1	Stone crab	Estuarine	Pelagic	0	5	0	1.7	9	3	0.27
1	Stone crab	Nearshore	Pelagic	0	5	0	1.7	9	3	0.27
1	Stone crab	Estuarine	Oyster reefs	0	3	0	1.0	11	1	0.09
2	Stone crab	Estuarine	Sand/ Shell bottoms	13	13	13	13.0	1	13	1.00
2	Stone crab	Nearshore	Sand/ Shell bottoms	13	12	12	12.3	2	12	0.92
2	Stone crab	Estuarine	Hard bottoms	11	9	11	10.3	3	11	0.85
2	Stone crab	Estuarine	Soft bottoms	11	9	11	10.3	3	11	0.85
2	Stone crab	Estuarine	Submerged Aquatic Veg	11	9	11	10.3	3	11	0.85
2	Stone crab	Nearshore	Hard bottoms	11	9	11	10.3	3	11	0.85
2	Stone crab	Nearshore	Submerged Aquatic Veg	11	9	11	10.3	3	11	0.85
2	Stone crab	Estuarine	Oyster reefs	0	9	11	6.7	8	6	0.46
2	Stone crab	Estuarine	Reefs	11	3	5	6.3	9	5	0.38
2	Stone crab	Nearshore	Reefs	11	3	5	6.3	9	5	0.38
2	Stone crab	Nearshore	Soft bottoms	11	3	5	6.3	9	5	0.38
2	Stone crab	Estuarine	Pelagic	0	12	0	4.0	12	2	0.15
2	Stone crab	Nearshore	Pelagic	0	12	0	4.0	12	2	0.15
3	Stone crab	Estuarine	Soft bottoms	7	7	7	7.0	1	7	1.00

Eco-Region	FMP	Habitat Zone	Habitat Type	Spawning Rank	Growth Rank	Feeding Rank	Mean Rank	Re-Rank	Reverse Rank	Normalized Score
3	Stone crab	Estuarine	Sand/ Shell bottoms	7	7	5	6.3	2	6	0.86
3	Stone crab	Nearshore	Sand/ Shell bottoms	7	2	4	4.3	3	5	0.71
3	Stone crab	Nearshore	Soft bottoms	7	2	4	4.3	3	5	0.71
3	Stone crab	Estuarine	Oyster reefs	0	5	7	4.0	5	3	0.43
3	Stone crab	Estuarine	Pelagic	0	5	0	1.7	6	2	0.29
3	Stone crab	Nearshore	Pelagic	0	5	0	1.7	6	2	0.29
4	Stone crab	Estuarine	Soft bottoms	7	7	7	7.0	1	7	1.00
4	Stone crab	Estuarine	Sand/ Shell bottoms	7	7	5	6.3	2	6	0.86
4	Stone crab	Nearshore	Sand/ Shell bottoms	7	2	4	4.3	3	5	0.71
4	Stone crab	Nearshore	Soft bottoms	7	2	4	4.3	3	5	0.71
4	Stone crab	Estuarine	Oyster reefs	0	5	7	4.0	5	3	0.43
4	Stone crab	Estuarine	Pelagic	0	5	0	1.7	6	2	0.29
4	Stone crab	Nearshore	Pelagic	0	5	0	1.7	6	2	0.29
5	Stone crab	Estuarine	Soft bottoms	7	7	7	7.0	1	7	1.00
5	Stone crab	Estuarine	Sand/ Shell bottoms	7	7	5	6.3	2	6	0.86
5	Stone crab	Nearshore	Sand/ Shell bottoms	7	2	4	4.3	3	5	0.71
5	Stone crab	Nearshore	Soft bottoms	7	2	4	4.3	3	5	0.71
5	Stone crab	Estuarine	Oyster reefs	0	5	7	4.0	5	3	0.43
5	Stone crab	Estuarine	Pelagic	0	5	0	1.7	6	2	0.29
5	Stone crab	Nearshore	Pelagic	0	5	0	1.7	6	2	0.29

Table 3.2.34 Ranks of habitats used by species in the Lobster FMP by eco-region. Habitats are ranked according to their use for feeding, growth to maturity, and spawning.

Eco-Region	FMP	Habitat Zone	Habitat Type	Spawning Rank	Growth Rank	Feeding Rank	Mean Rank	Re-Rank	Reverse Rank	Normalized Score
1	Lobster	Offshore	Reefs	8	6	8	7.3	1	8	1.00
1	Lobster	Estuarine	Submerged Aquatic Veg	0	8	8	5.3	2	7	0.88
1	Lobster	Nearshore	Submerged Aquatic Veg	0	8	8	5.3	2	7	0.88
1	Lobster	Nearshore	Hard bottoms	0	6	8	4.7	4	5	0.63

Eco-Region	FMP	Habitat Zone	Habitat Type	Spawning Rank	Growth Rank	Feeding Rank	Mean Rank	Re-Rank	Reverse Rank	Normalized Score
1	Lobster	Nearshore	Reefs	0	6	8	4.7	4	5	0.63
1	Lobster	Offshore	Pelagic	0	6	3	3.0	6	3	0.38
1	Lobster	Offshore	Hard bottoms	0	2	3	1.7	7	2	0.25
1	Lobster	Nearshore	Pelagic	0	2	0	0.7	8	1	0.13
2	Lobster	Offshore	Pelagic	0	1	1	0.7	1	1	1.00
3	Lobster	Offshore	Pelagic	0	1	1	0.7	1	1	1.00
4	Lobster	Offshore	Pelagic	0	1	1	0.7	1	1	1.00
5	Lobster	Offshore	Pelagic	0	1	1	0.7	1	1	1.00

Table 3.2.35 Gulf of Mexico managed fishery species – missing habitat information by life history stage (missing data are highlighted dark gray)

COMMON NAME	SCIENTIFIC NAME	EGG	LARVAE	POST LARVAE	EARLY JUVENILE	LATE JUVENILE	ADULT	SPAWN ADULTS
For Reef Fish FMP								
Gray triggerfish	Balistes capriscus							
Greater amberjack	Seriola dumerili							
Lesser amberjack	Seriola fasciata							
Almaco jack	Seriola rivoliana							
Banded rudderfish	Seriola zonata							
Hogfish	Lachnolaimus maximus							
Queen snapper	Etelis oculatus							
Mutton snapper	Lutjanus analis							
Schoolmaster	Lutjanus apodus							
Blackfin snapper	Lutjanus buccanella							
Red snapper	Lutjanus campechanus							
Cubera snapper	Lutjanus cyanopterus							
Gray (mangrove) snapper	Lutjanus griseus							
Dog snapper	Lutjanus jocu							
Mahogany snapper	Lutjanus mahogoni							
Lane snapper	Lutjanus synagris							
Silk snapper	Lutjanus vivanus							
Yellowtail	Ocyurus chrysurus							
Wenchman	Pristipomoides aquilonaris							
Vermilion snapper	Rhomboplites aurorubens							
Goldface tilefish	Caulolatilus chrysops							
Blackline tilefish	Caulolatilus cyanops							
Anchor tilefish	Caulolatilus intermedius							
Blueline tilefish	Caulolatilus microps							
(Golden)	Lopholatilus							

BLUELINE IS SURROGATE FOR THESE TILEFISH SPP.

COMMON NAME	SCIENTIFIC NAME	EGG	LARVAE	POST LARVAE	EARLY JUVENILE	LATE JUVENILE	ADULT	SPAWN ADULTS
Tilefish	chamaeleonticeps							
Dwarf sand perch	Diplectrum bivittatum							
Sand perch	Diplectrum formosum							
Rock hind	Epinephelus adscensionis							
Speckled hind	Epinephelus drummondhayi							
Yellowedge grouper	Epinephelus flavolimbatus							
Red hind	Epinephelus guttatus							
Jewfish (Goliath)	Epinephelus itajara							
Red grouper	Epinephelus morio							
Misty grouper	Epinephelus mystacinus							
Warsaw grouper	Epinephelus nigritus							
Snowy grouper	Epinephelus niveatus							
Nassau grouper	Epinephelus striatus							
Marbled grouper	Epinephelus inermis							
Black grouper	Mycteroperca bonaci							
Yellowmouth grouper	Mycteroperca interstitialis							
Gag	Mycteroperca microlepis							
Scamp	Mycteroperca phenax							
Yellowfin grouper	Mycteroperca venenosa							
For Shrimp FMP								
Brown shrimp	Penaeus aztecus							
White shrimp	Penaeus setiferus							
Pink shrimp	Penaeus duorarum							
Royal red shrimp	Pleoticus robustus							
For Red Drum FMP								
Red drum	Sciaenops ocellatus							
For Stone Crab FMP								

COMMON NAME	SCIENTIFIC NAME	EGG	LARVAE	POST LARVAE	EARLY JUVENILE	LATE JUVENILE	ADULT	SPAWN ADULTS
Stone Crab	Menippe mercenaria,							
Stone Crab (Cedar Key N)	Menippe adina							
For Spiny Lobster FMP								
Spiny lobster	Panulirus argus							
Slipper lobster	Scyllarides nodife							
For Pelagics FMP								
King mackerel	Scomberomorus cavalla							
Spanish mackerel	Scomberomorus maculatus							
Cobia	Rachycentron canadum							

NOTE: DARK GRAY AREAS INDICATE MISSING HABITAT USE INFORMATION FOR THAT SPECIES/LIFE STAGE

Table 3.2.36 Normalized Scores for habitat use by eco-region for all FMPs (except coral FMP)

Eco Region	Habitat Zone	Habitat Type	Reef Fish Mean Rank	Reef Fish Reverse Rank	Reef Fish Normalized Score	Pelagics Mean Rank	Pelagics Reverse Rank	Pelagics Normalized Score	Red Drum Mean Rank	Red Drum Reverse Rank	Red Drum Normalized Score	Shrimp Mean Rank	Shrimp Reverse Rank	Shrimp Normalized Score	Stone Crab Mean Rank	Stone Crab Reverse Rank	Stone Crab Normalized Score	Spiny Lobster Mean Rank	Spiny Lobster Reverse Rank	Spiny Lobster Normalized Score	Sum of Normalized EMP Scores	Habitat Ranks across EMPs
1	Estuarine	Submerged Aquatic Veg	7	18	0.75		0	0.00	3	7	0.78	4	4	0.57	1	11	1.00	2	7	0.88	3.98	1
1	Nearshore	Hard bottom	8	17	0.71		0	0.00	1	9	1.00		0	0.00	1	11	1.00	4	5	0.63	3.34	2
1	Nearshore	Sand/Shell bottom	14	11	0.46		0	0.00	1	9	1.00	3	5	0.71	1	11	1.00		0	0.00	3.17	3
1	Nearshore	Reefs	1	24	1.00	4	6	0.67		0	0.00		0	0.00	7	5	0.45	4	5	0.63	2.75	4
1	Offshore	Pelagic	4	21	0.88	2	8	0.89		0	0.00	4	4	0.57		0	0.00	6	3	0.38	2.72	5
1	Nearshore	Submerged Aquatic Veg	5	20	0.83		0	0.00		0	0.00		0	0.00	1	11	1.00	2	7	0.88	2.71	6
1	Nearshore	Pelagic	21	4	0.17	1	9	1.00	7	3	0.33	4	4	0.57	9	3	0.27	8	1	0.13	2.47	7
1	Estuarine	Sand/Shell bottom	23	2	0.08		0	0.00	6	4	0.44	4	4	0.57	1	11	1.00		0	0.00	2.09	8
1	Offshore	Reefs	3	22	0.92		0	0.00		0	0.00		0	0.00		0	0.00	1	8	1.00	1.92	9
1	Offshore	Sand/Shell bottoms	10	15	0.63		0	0.00	8	2	0.22	1	7	1.00		0	0.00		0	0.00	1.85	10
1	Offshore	Hard bottoms	2	23	0.96		0	0.00	8	2	0.22		0	0.00		0	0.00	7	2	0.25	1.43	11
1	Estuarine	Hard bottoms	19	6	0.25		0	0.00		0	0.00		0	0.00	1	11	1.00		0	0.00	1.25	12
1	Offshore	Shelf edge/Slope	6	19	0.79	6	4	0.44		0	0.00		0	0.00		0	0.00		0	0.00	1.23	13
1	Offshore	Soft bottoms	17	8	0.33		0	0.00		0	0.00	2	6	0.86		0	0.00		0	0.00	1.19	14
1	Estuarine	Reefs	12	13	0.54		0	0.00		0	0.00		0	0.00	7	5	0.45		0	0.00	0.99	15
1	Estuarine	Emergent marshes	15	10	0.42		0	0.00	5	5	0.56		0	0.00		0	0.00		0	0.00	0.98	16
1	Offshore	Drift algae	21	4	0.17	3	7	0.78		0	0.00		0	0.00		0	0.00		0	0.00	0.95	17

Eco Region	Habitat Zone	Habitat Type	Reef Fish Mean Rank	Reef Fish Reverse Rank	Reef Fish Normalized Score	Pelagics Mean Rank	Pelagics Reverse Rank	Pelagics Normalized Score	Red Drum Mean Rank	Red Drum Reverse Rank	Red Drum Normalized Score	Shrimp Mean Rank	Shrimp Reverse Rank	Shrimp Normalized Score	Stone Crab Mean Rank	Stone Crab Reverse Rank	Stone Crab Normalized Score	Spiny Lobster Mean Rank	Spiny Lobster Reverse Rank	Spiny Lobster Normalized Score	Sum of Normalized EMP Scores	Habitat Ranks across EMPs
1	Estuarine	Pelagic		0	0.00	4	6	0.67		0	0.00		0	0.00	9	3	0.27		0	0.00	0.94	18
1	Estuarine	Soft bottoms	19	6	0.25		0	0.00	4	6	0.67		0	0.00		0	0.00		0	0.00	0.92	19
1	Nearshore	Banks/Shoals	13	12	0.50	7	3	0.33		0	0.00		0	0.00		0	0.00		0	0.00	0.83	20
1	Nearshore	Mangroves	8	17	0.71		0	0.00		0	0.00		0	0.00		0	0.00		0	0.00	0.71	21
1	Nearshore	Drift algae	17	8	0.33	7	3	0.33		0	0.00		0	0.00		0	0.00		0	0.00	0.66	22
1	Estuarine	Mangroves	10	15	0.63		0	0.00		0	0.00		0	0.00		0	0.00		0	0.00	0.63	23
1	Nearshore	Soft bottoms	15	10	0.42		0	0.00		0	0.00		0	0.00		0	0.00		0	0.00	0.42	24
1	Offshore	Banks/Shoals	24	1	0.04	7	3	0.33		0	0.00		0	0.00		0	0.00		0	0.00	0.37	25
1	Estuarine	Oyster reefs		0	0.00		0	0.00		0	0.00		0	0.00	11	1	0.09		0	0.00	0.09	26
2	Nearshore	Sand/Shell bottoms	13	12	0.50		0	0.00	1	9	1.00	1	10	1.00	2	12	0.92		0	0.00	3.42	1
2	Offshore	Pelagic	4	21	0.88	2	7	0.88		0	0.00	6	5	0.50		0	0.00	1	1	1.00	3.26	2
2	Estuarine	Submerged Aquatic Veg	9	16	0.67		0	0.00	3	7	0.78	6	5	0.50	3	11	0.85		0	0.00	2.80	3
2	Nearshore	Hard bottoms	6	19	0.79		0	0.00	1	9	1.00		0	0.00	3	11	0.85		0	0.00	2.64	4
2	Nearshore	Pelagic	18	7	0.29	1	8	1.00	7	3	0.33	4	7	0.70	12	2	0.15		0	0.00	2.47	5
2	Estuarine	Soft bottoms	18	7	0.29		0	0.00	4	6	0.67	6	5	0.50	3	11	0.85		0	0.00	2.31	6
2	Estuarine	Sand/Shell bottoms	21	4	0.17		0	0.00	6	4	0.44	6	5	0.50	1	13	1.00		0	0.00	2.11	7
2	Offshore	Sand/Shell bottoms	7	18	0.75		0	0.00	8	2	0.22	2	9	0.90		0	0.00		0	0.00	1.87	8
2	Nearshore	Soft bottoms	14	11	0.46		0	0.00		0	0.00	2	9	0.90	9	5	0.38		0	0.00	1.74	9
2	Nearshore	Submer	5	20	0.83		0	0.00		0	0.00		0	0.00	3	11	0.85		0	0.00	1.68	10

Eco Region	Habitat Zone	Habitat Type	Reef Fish Mean Rank	Reef Fish Reverse Rank	Reef Fish Normalized Score	Pelagics Mean Rank	Pelagics Reverse Rank	Pelagics Normalized Score	Red Drum Mean Rank	Red Drum Reverse Rank	Red Drum Normalized Score	Shrimp Mean Rank	Shrimp Reverse Rank	Shrimp Normalized Score	Stone Crab Mean Rank	Stone Crab Reverse Rank	Stone Crab Normalized Score	Spiny Lobster Mean Rank	Spiny Lobster Reverse Rank	Spiny Lobster Normalized Score	Sum of Normalized EMP Scores	Habitat Ranks across EMPs
		ged Aquatic Veg																				
2	Estuarine	Emergent marshes	17	8	0.33		0	0.00	5	5	0.56	6	5	0.50		0	0.00		0	0.00	1.39	11
2	Nearshore	Reefs	1	24	1.00		0	0.00		0	0.00		0	0.00	9	5	0.38		0	0.00	1.38	12
2	Offshore	Shelf edge/Slope	7	18	0.75	5	4	0.50		0	0.00		0	0.00		0	0.00		0	0.00	1.25	13
2	Offshore	Hard bottoms	2	23	0.96		0	0.00	8	2	0.22		0	0.00		0	0.00		0	0.00	1.18	14
2	Offshore	Soft bottoms	15	10	0.42		0	0.00		0	0.00	5	6	0.60		0	0.00		0	0.00	1.02	15
2	Estuarine	Hard bottoms	21	4	0.17		0	0.00		0	0.00		0	0.00	3	11	0.85		0	0.00	1.02	15
2	Estuarine	Reefs	12	13	0.54		0	0.00		0	0.00		0	0.00	9	5	0.38		0	0.00	0.92	17
2	Offshore	Drift algae	18	7	0.29	4	5	0.63		0	0.00		0	0.00		0	0.00		0	0.00	0.92	17
2	Offshore	Reefs	3	22	0.92		0	0.00		0	0.00		0	0.00		0	0.00		0	0.00	0.92	17
2	Estuarine	Pelagic		0	0.00	3	6	0.75		0	0.00		0	0.00	12	2	0.15		0	0.00	0.90	20
2	Nearshore	Drift algae	15	10	0.42	6	3	0.38		0	0.00		0	0.00		0	0.00		0	0.00	0.80	21
2	Nearshore	Mangroves	10	15	0.63		0	0.00		0	0.00		0	0.00		0	0.00		0	0.00	0.63	22
2	Estuarine	Mangroves	11	14	0.58		0	0.00		0	0.00		0	0.00		0	0.00		0	0.00	0.58	23
2	Nearshore	Banks/Shoals	23	2	0.08	6	3	0.38		0	0.00		0	0.00		0	0.00		0	0.00	0.46	24
2	Estuarine	Oyster reefs		0	0.00		0	0.00		0	0.00		0	0.00	8	6	0.46		0	0.00	0.46	25
2	Offshore	Banks/Shoals	24	1	0.04	6	3	0.38		0	0.00		0	0.00		0	0.00		0	0.00	0.42	26
3	Nearshore	Sand/Shell bottoms	7	17	0.74		0	0.00	1	9	1.00	2	10	0.91	3	5	0.71		0	0.00	3.36	1
3	Offshore	Pelagic	6	18	0.78	1	8	1.00		0	0.00	6	6	0.55		0	0.00	1	1	1.00	3.33	2
3	Estuarine	Soft bottoms	16	8	0.35		0	0.00	4	6	0.67	5	7	0.64	1	7	1.00		0	0.00	2.66	3

Eco Region	Habitat Zone	Habitat Type	Reef Fish Mean Rank	Reef Fish Reverse Rank	Reef Fish Normalized Score	Pelagics Mean Rank	Pelagics Reverse Rank	Pelagics Normalized Score	Red Drum Mean Rank	Red Drum Reverse Rank	Red Drum Normalized Score	Shrimp Mean Rank	Shrimp Reverse Rank	Shrimp Normalized Score	Stone Crab Mean Rank	Stone Crab Reverse Rank	Stone Crab Normalized Score	Spiny Lobster Mean Rank	Spiny Lobster Reverse Rank	Spiny Lobster Normalized Score	Sum of Normalized EMP Scores	Habitat Ranks across EMPs
3	Nearshore	Pelagic	20	4	0.17	2	7	0.88	7	3	0.33	6	6	0.55	6	2	0.29		0	0.00	2.22	4
3	Estuarine	Sand/Shell bottoms	16	8	0.35		0	0.00	6	4	0.44	6	6	0.55	2	6	0.86		0	0.00	2.20	5
3	Offshore	Sand/Shell bottoms	5	19	0.83		0	0.00	8	2	0.22	1	11	1.00		0	0.00		0	0.00	2.05	6
3	Nearshore	Soft bottoms	11	13	0.57		0	0.00		0	0.00	4	8	0.73	3	5	0.71		0	0.00	2.01	7
3	Estuarine	Submerged Aquatic Veg	9	15	0.65		0	0.00	3	7	0.78	6	6	0.55		0	0.00		0	0.00	1.98	8
3	Nearshore	Hard bottoms	8	16	0.70		0	0.00	1	9	1.00					0	0.00		0	0.00	1.70	9
3	Offshore	Shelf edge/Slope	4	20	0.87	5	4	0.50		0	0.00					0	0.00		0	0.00	1.37	10
3	Offshore	Soft bottoms	13	11	0.48		0	0.00		0	0.00	3	9	0.82		0	0.00		0	0.00	1.30	11
3	Estuarine	Emergent marshes	21	3	0.13		0	0.00	5	5	0.56	6	6	0.55		0	0.00		0	0.00	1.24	12
3	Offshore	Hard bottoms	2	22	0.96		0	0.00	8	2	0.22					0	0.00		0	0.00	1.18	13
3	Estuarine	Pelagic		0	0.00	3	6	0.75		0	0.00				6	2	0.29		0	0.00	1.04	14
3	Nearshore	Reefs	1	23	1.00		0	0.00		0	0.00					0	0.00		0	0.00	1.00	15
3	Nearshore	Drift algae	11	13	0.57	6	3	0.38		0	0.00					0	0.00		0	0.00	0.95	16
3	Offshore	Reefs	3	21	0.91		0	0.00		0	0.00					0	0.00		0	0.00	0.91	17
3	Offshore	Drift algae	18	6	0.26	4	5	0.63		0	0.00					0	0.00		0	0.00	0.89	18
3	Nearshore	Submerged Aquatic Veg	9	15	0.65		0	0.00		0	0.00					0	0.00		0	0.00	0.65	19
3	Estuarine	Oyster reefs		0	0.00		0	0.00		0	0.00	11	1	0.09	5	3	0.43		0	0.00	0.52	20
3	Nearshore	Banks/	22	2	0.09	6	3	0.38		0	0.00					0	0.00		0	0.00	0.47	21

Eco Region	Habitat Zone	Habitat Type	Reef Fish Mean Rank	Reef Fish Reverse Rank	Reef Fish Normalized Score	Pelagics Mean Rank	Pelagics Reverse Rank	Pelagics Normalized Score	Red Drum Mean Rank	Red Drum Reverse Rank	Red Drum Normalized Score	Shrimp Mean Rank	Shrimp Reverse Rank	Shrimp Normalized Score	Stone Crab Mean Rank	Stone Crab Reverse Rank	Stone Crab Normalized Score	Spiny Lobster Mean Rank	Spiny Lobster Reverse Rank	Spiny Lobster Normalized Score	Sum of Normalized EMP Scores	Habitat Ranks across EMPs
		Shoals																				
3	Offshore	Banks/ Shoals	22	2	0.09	6	3	0.38		0	0.00					0	0.00		0	0.00	0.47	22
3	Nearshore	Mangro ves	14	10	0.43		0	0.00		0	0.00					0	0.00		0	0.00	0.43	23
3	Estuarine	Reefs	15	9	0.39		0	0.00		0	0.00					0	0.00		0	0.00	0.39	24
3	Estuarine	Mangro ves	18	6	0.26		0	0.00		0	0.00					0	0.00		0	0.00	0.26	25
4	Offshore	Pelagic	6	18	0.78	1	8	1.00		0	0.00	6	6	0.55		0	0.00	1	1	1.00	3.33	1
4	Nearshore	Sand/ Shell bottoms	7	17	0.74		0	0.00	1	9	1.00	6	6	0.55	3	5	0.71		0	0.00	3.00	2
4	Estuarine	Soft bottoms	16	8	0.35		0	0.00	4	6	0.67	4	8	0.73	1	7	1.00		0	0.00	2.75	3
4	Nearshore	Pelagic	20	4	0.17	2	7	0.88	7	3	0.33	6	6	0.55	6	2	0.29		0	0.00	2.22	4
4	Estuarine	Sand/ Shell bottoms	16	8	0.35		0	0.00	6	4	0.44	6	6	0.55	2	6	0.86		0	0.00	2.20	5
4	Nearshore	Soft bottoms	11	13	0.57		0	0.00		0	0.00	3	9	0.82	3	5	0.71		0	0.00	2.10	6
4	Estuarine	Submer ged Aquatic Veg	9	15	0.65		0	0.00	3	7	0.78	6	6	0.55		0	0.00		0	0.00	1.98	7
4	Offshore	Sand/ Shell bottoms	5	19	0.83		0	0.00	8	2	0.22	2	10	0.91		0	0.00		0	0.00	1.96	8
4	Nearshore	Hard bottoms	8	16	0.70		0	0.00	1	9	1.00		0	0.00		0	0.00		0	0.00	1.70	9
4	Offshore	Soft bottoms	13	11	0.48		0	0.00		0	0.00	1	11	1.00		0	0.00		0	0.00	1.48	10
4	Offshore	Shelf edge/ Slope	4	20	0.87	5	4	0.50		0	0.00		0	0.00		0	0.00		0	0.00	1.37	11
4	Estuarine	Emergent marshes	21	3	0.13		0	0.00	5	5	0.56	5	7	0.64		0	0.00		0	0.00	1.33	12
4	Offshore	Hard bottoms	2	22	0.96		0	0.00	8	2	0.22		0	0.00		0	0.00		0	0.00	1.18	13

Eco Region	Habitat Zone	Habitat Type	Reef Fish Mean Rank	Reef Fish Reverse Rank	Reef Fish Normalized Score	Pelagics Mean Rank	Pelagics Reverse Rank	Pelagics Normalized Score	Red Drum Mean Rank	Red Drum Reverse Rank	Red Drum Normalized Score	Shrimp Mean Rank	Shrimp Reverse Rank	Shrimp Normalized Score	Stone Crab Mean Rank	Stone Crab Reverse Rank	Stone Crab Normalized Score	Spiny Lobster Mean Rank	Spiny Lobster Reverse Rank	Spiny Lobster Normalized Score	Sum of Normalized EMP Scores	Habitat Ranks across EMPs
4	Nearshore	Reefs	1	23	1.00		0	0.00		0	0.00		0	0.00		0	0.00		0	0.00	1.00	14
4	Estuarine	Oyster reefs		0	0.00		0	0.00		0	0.00	6	6	0.55	5	3	0.43		0	0.00	0.98	15
4	Offshore	Drift algae	19	5	0.22	3	6	0.75		0	0.00		0	0.00		0	0.00		0	0.00	0.97	16
4	Nearshore	Drift algae	11	13	0.57	6	3	0.38		0	0.00		0	0.00		0	0.00		0	0.00	0.95	17
4	Estuarine	Pelagic		0	0.00	4	5	0.63		0	0.00		0	0.00	6	2	0.29		0	0.00	0.92	18
4	Offshore	Reefs	3	21	0.91		0	0.00		0	0.00		0	0.00		0	0.00		0	0.00	0.91	19
4	Nearshore	Submerged Aquatic Veg	9	15	0.65		0	0.00		0	0.00		0	0.00		0	0.00		0	0.00	0.65	20
4	Nearshore	Banks/Shoals	22	2	0.09	6	3	0.38		0	0.00		0	0.00		0	0.00		0	0.00	0.47	21
4	Offshore	Banks/Shoals	22	2	0.09	6	3	0.38		0	0.00		0	0.00		0	0.00		0	0.00	0.47	21
4	Nearshore	Mangroves	14	10	0.43		0	0.00		0	0.00		0	0.00		0	0.00		0	0.00	0.43	23
4	Estuarine	Reefs	15	9	0.39		0	0.00		0	0.00		0	0.00		0	0.00		0	0.00	0.39	24
4	Estuarine	Mangroves	18	6	0.26		0	0.00		0	0.00		0	0.00		0	0.00		0	0.00	0.26	25
5	Offshore	Pelagic	4	21	0.88	1	8	1.00		0	0.00	6	6	0.55		0	0.00	1	1	1.00	3.43	1
5	Nearshore	Sand/Shell bottoms	12	13	0.54		0	0.00	1	9	1.00	2	10	0.91	3	5	0.71		0	0.00	3.16	2
5	Estuarine	Soft bottoms	17	8	0.33		0	0.00	4	6	0.67	4	8	0.73	1	7	1.00		0	0.00	2.73	3
5	Estuarine	Sand/Shell bottoms	17	8	0.33		0	0.00	6	4	0.44	6	6	0.55	2	6	0.86		0	0.00	2.18	4
5	Nearshore	Pelagic	22	3	0.13	2	7	0.88	7	3	0.33	6	6	0.55	6	2	0.29		0	0.00	2.18	4
5	Offshore	Sand/Shell bottoms	5	20	0.83		0	0.00	8	2	0.22	1	11	1.00		0	0.00		0	0.00	2.05	6
5	Estuarine	Submerged Aquatic Veg	9	16	0.67		0	0.00	3	7	0.78	6	6	0.55		0	0.00		0	0.00	2.00	7

Eco Region	Habitat Zone	Habitat Type	Reef Fish Mean Rank	Reef Fish Reverse Rank	Reef Fish Normalized Score	Pelagics Mean Rank	Pelagics Reverse Rank	Pelagics Normalized Score	Red Drum Mean Rank	Red Drum Reverse Rank	Red Drum Normalized Score	Shrimp Mean Rank	Shrimp Reverse Rank	Shrimp Normalized Score	Stone Crab Mean Rank	Stone Crab Reverse Rank	Stone Crab Normalized Score	Spiny Lobster Mean Rank	Spiny Lobster Reverse Rank	Spiny Lobster Normalized Score	Sum of Normalized EMP Scores	Habitat Ranks across EMPs
5	Nearshore	Soft bottoms	14	11	0.46		0	0.00		0	0.00	4	8	0.73	3	5	0.71		0	0.00	1.90	8
5	Nearshore	Hard bottoms	11	14	0.58		0	0.00	1	9	1.00					0	0.00		0	0.00	1.58	9
5	Estuarine	Emergent marshes	20	5	0.21		0	0.00	5	5	0.56	6	6	0.55		0	0.00		0	0.00	1.32	10
5	Offshore	Shelf edge/Slope	6	19	0.79	5	4	0.50		0	0.00					0	0.00		0	0.00	1.29	11
5	Offshore	Soft bottoms	16	9	0.38		0	0.00		0	0.00	3	9	0.82		0	0.00		0	0.00	1.20	12
5	Offshore	Hard bottoms	2	23	0.96		0	0.00	8	2	0.22					0	0.00		0	0.00	1.18	13
5	Nearshore	Reefs	1	24	1.00		0	0.00		0	0.00					0	0.00		0	0.00	1.00	14
5	Offshore	Drift algae	19	6	0.25	3	6	0.75		0	0.00					0	0.00		0	0.00	1.00	14
5	Estuarine	Pelagic		0	0.00	4	5	0.63		0	0.00				6	2	0.29		0	0.00	0.92	16
5	Offshore	Reefs	3	22	0.92		0	0.00		0	0.00					0	0.00		0	0.00	0.92	16
5	Nearshore	Drift algae	15	10	0.42	6	3	0.38		0	0.00					0	0.00		0	0.00	0.80	18
5	Nearshore	Mangroves	7	18	0.75		0	0.00		0	0.00					0	0.00		0	0.00	0.75	19
5	Estuarine	Mangroves	8	17	0.71		0	0.00		0	0.00					0	0.00		0	0.00	0.71	20
5	Nearshore	Submerged Aquatic Veg	9	16	0.67		0	0.00		0	0.00					0	0.00		0	0.00	0.67	21
5	Estuarine	Reefs	12	13	0.54		0	0.00		0	0.00					0	0.00		0	0.00	0.54	22
5	Estuarine	Oyster reefs		0	0.00		0	0.00		0	0.00	11	1	0.09	5	3	0.43		0	0.00	0.52	23
5	Nearshore	Banks/Shoals	23	2	0.08	6	3	0.38		0	0.00					0	0.00		0	0.00	0.46	24
5	Offshore	Banks/Shoals	24	1	0.04	6	3	0.38		0	0.00					0	0.00		0	0.00	0.42	25
5	Estuarine	Hard bottoms	21	4	0.17		0	0.00		0	0.00					0	0.00		0	0.00	0.17	26

Table 3.2.37 Overall ranking of habitats use for species in the six FMPs of the Gulf Council (excludes coral) by eco-region.

Eco-Region	Habitat Zone	Habitat Type	Sum of Normalized FMP Scores	Habitat Ranks across FMPs
1	Estuarine	Submerged Aquatic Veg	3.98	1
1	Nearshore	Hard bottoms	3.34	2
1	Nearshore	Sand/ Shell bottoms	3.17	3
1	Nearshore	Reefs	2.75	4
1	Offshore	Pelagic	2.72	5
1	Nearshore	Submerged Aquatic Veg	2.71	6
1	Nearshore	Pelagic	2.47	7
1	Estuarine	Sand/ Shell bottoms	2.09	8
1	Offshore	Reefs	1.92	9
1	Offshore	Sand/ Shell bottoms	1.85	10
1	Offshore	Hard bottoms	1.43	11
1	Estuarine	Hard bottoms	1.25	12
1	Offshore	Shelf edge/ Slope	1.23	13
1	Offshore	Soft bottoms	1.19	14
1	Estuarine	Reefs	0.99	15
1	Estuarine	Emergent marshes	0.98	16
1	Offshore	Drift algae	0.95	17
1	Estuarine	Pelagic	0.94	18
1	Estuarine	Soft bottoms	0.92	19
1	Nearshore	Banks/ Shoals	0.83	20
1	Nearshore	Mangroves	0.71	21
1	Nearshore	Drift algae	0.66	22
1	Estuarine	Mangroves	0.63	23
1	Nearshore	Soft bottoms	0.42	24
1	Offshore	Banks/ Shoals	0.37	25
1	Estuarine	Oyster reefs	0.09	26
2	Nearshore	Sand/ Shell bottoms	3.42	1
2	Offshore	Pelagic	3.26	2
2	Estuarine	Submerged Aquatic Veg	2.80	3
2	Nearshore	Hard bottoms	2.64	4
2	Nearshore	Pelagic	2.47	5
2	Estuarine	Soft bottoms	2.31	6
2	Estuarine	Sand/ Shell bottoms	2.11	7
2	Offshore	Sand/ Shell bottoms	1.87	8
2	Nearshore	Soft bottoms	1.74	9
2	Nearshore	Submerged Aquatic Veg	1.68	10
2	Estuarine	Emergent marshes	1.39	11
2	Nearshore	Reefs	1.38	12
2	Offshore	Shelf edge/ Slope	1.25	13
2	Offshore	Hard bottoms	1.18	14
2	Offshore	Soft bottoms	1.02	15
2	Estuarine	Hard bottoms	1.02	15
2	Estuarine	Reefs	0.92	17

Eco-Region	Habitat Zone	Habitat Type	Sum of Normalized FMP Scores	Habitat Ranks across FMPs
2	Offshore	Drift algae	0.92	17
2	Offshore	Reefs	0.92	17
2	Estuarine	Pelagic	0.90	20
2	Nearshore	Drift algae	0.80	21
2	Nearshore	Mangroves	0.63	22
2	Estuarine	Mangroves	0.58	23
2	Nearshore	Banks/ Shoals	0.46	24
2	Estuarine	Oyster reefs	0.46	25
2	Offshore	Banks/ Shoals	0.42	26
3	Nearshore	Sand/ Shell bottoms	3.36	1
3	Offshore	Pelagic	3.33	2
3	Estuarine	Soft bottoms	2.66	3
3	Nearshore	Pelagic	2.22	4
3	Estuarine	Sand/ Shell bottoms	2.20	5
3	Offshore	Sand/ Shell bottoms	2.05	6
3	Nearshore	Soft bottoms	2.01	7
3	Estuarine	Submerged Aquatic Veg	1.98	8
3	Nearshore	Hard bottoms	1.70	9
3	Offshore	Shelf edge/ Slope	1.37	10
3	Offshore	Soft bottoms	1.30	11
3	Estuarine	Emergent marshes	1.24	12
3	Offshore	Hard bottoms	1.18	13
3	Estuarine	Pelagic	1.04	14
3	Nearshore	Reefs	1.00	15
3	Nearshore	Drift algae	0.95	16
3	Offshore	Reefs	0.91	17
3	Offshore	Drift algae	0.89	18
3	Nearshore	Submerged Aquatic Veg	0.65	19
3	Estuarine	Oyster reefs	0.52	20
3	Nearshore	Banks/ Shoals	0.47	21
3	Offshore	Banks/ Shoals	0.47	22
3	Nearshore	Mangroves	0.43	23
3	Estuarine	Reefs	0.39	24
3	Estuarine	Mangroves	0.26	25
4	Offshore	Pelagic	3.33	1
4	Nearshore	Sand/ Shell bottoms	3.00	2
4	Estuarine	Soft bottoms	2.75	3
4	Nearshore	Pelagic	2.22	4
4	Estuarine	Sand/ Shell bottoms	2.20	5
4	Nearshore	Soft bottoms	2.10	6
4	Estuarine	Submerged Aquatic Veg	1.98	7
4	Offshore	Sand/ Shell bottoms	1.96	8
4	Nearshore	Hard bottoms	1.70	9
4	Offshore	Soft bottoms	1.48	10

Eco-Region	Habitat Zone	Habitat Type	Sum of Normalized FMP Scores	Habitat Ranks across FMPs
4	Offshore	Shelf edge/ Slope	1.37	11
4	Estuarine	Emergent marshes	1.33	12
4	Offshore	Hard bottoms	1.18	13
4	Nearshore	Reefs	1.00	14
4	Estuarine	Oyster reefs	0.98	15
4	Offshore	Drift algae	0.97	16
4	Nearshore	Drift algae	0.95	17
4	Estuarine	Pelagic	0.92	18
4	Offshore	Reefs	0.91	19
4	Nearshore	Submerged Aquatic Veg	0.65	20
4	Nearshore	Banks/ Shoals	0.47	21
4	Offshore	Banks/ Shoals	0.47	21
4	Nearshore	Mangroves	0.43	23
4	Estuarine	Reefs	0.39	24
4	Estuarine	Mangroves	0.26	25
5	Offshore	Pelagic	3.43	1
5	Nearshore	Sand/ Shell bottoms	3.16	2
5	Estuarine	Soft bottoms	2.73	3
5	Estuarine	Sand/ Shell bottoms	2.18	4
5	Nearshore	Pelagic	2.18	4
5	Offshore	Sand/ Shell bottoms	2.05	6
5	Estuarine	Submerged Aquatic Veg	2.00	7
5	Nearshore	Soft bottoms	1.90	8
5	Nearshore	Hard bottoms	1.58	9
5	Estuarine	Emergent marshes	1.32	10
5	Offshore	Shelf edge/ Slope	1.29	11
5	Offshore	Soft bottoms	1.20	12
5	Offshore	Hard bottoms	1.18	13
5	Nearshore	Reefs	1.00	14
5	Offshore	Drift algae	1.00	14
5	Estuarine	Pelagic	0.92	16
5	Offshore	Reefs	0.92	16
5	Nearshore	Drift algae	0.80	18
5	Nearshore	Mangroves	0.75	19
5	Estuarine	Mangroves	0.71	20
5	Nearshore	Submerged Aquatic Veg	0.67	21
5	Estuarine	Reefs	0.54	22
5	Estuarine	Oyster reefs	0.52	23
5	Nearshore	Banks/ Shoals	0.46	24
5	Offshore	Banks/ Shoals	0.42	25
5	Estuarine	Hard bottoms	0.17	26

Table 3.3.1 Gulf of Mexico Commercial Spiny Lobster Landings (x 1,000) and Value (x 1,000), 1985-2001.

	lbs	Value		\$/lb	
		Current	Deflated ^a	Current	Deflated
1985	5,516	13,323	12,382	2.42	2.24
1986	4,433	11,622	10,595	2.62	2.39
1987	5,541	19,973	17,580	3.60	3.17
1988	5,834	15,862	13,411	2.72	2.30
1989	7,201	20,354	16,422	2.83	2.28
1990	5,440	18,332	14,031	3.37	2.58
1991	6,090	24,314	17,856	3.99	2.93
1992	4,057	15,299	10,904	3.77	2.69
1993	4,543	14,943	10,343	3.29	2.28
1994	6,358	27,017	18,227	4.25	2.87
1995	6,353	28,317	18,583	4.46	2.93
1996	7,226	27,357	17,441	3.79	2.41
1997	6,514	26,757	16,668	4.11	2.56
1998	5,311	19,941	12,233	3.75	2.30
1999	6,836	29,540	17,732	4.32	2.59
2000	5,167	25,277	14,680	4.89	2.84
2001	2,934	14,689	8,296	5.01	2.83

^a The deflated values and prices were derived using the Consumer Price Index with 1982-84 representing the base period.

Table 3.3.2 Gulf of Mexico Commercial Spiny Lobster Landings (x 1,000) by Gear, 1985-2001.^a

	Total lbs	Traps		Diving		Shrimp Trawl	
		Lbs	%	lbs	%	lbs	%
1985	5,516	5,199	93.6	92	1.7	119	2.1
1986	4,433	4,332	97.7	30	0.7	61	1.4
1987	5,541	5,398	97.4	82	1.5	59	1.1
1988	5,834	5,601	96.0	109	1.7	66	1.1
1989	7,201	6,962	96.7	71	1.0	57	0.8
1990	5,440	5,277	97.0	95	1.7	21	0.4
1991	6,090	5,811	95.4	119	1.9	31	0.5
1992	4,057	3,841	94.7	88	2.2	52	1.3
1993	4,543	4,322	95.4	100	2.2	46	1.1
1994	6,358	6,075	95.5	145	2.3	61	1.0
1995	6,353	6,107	96.1	200	3.2	22	0.3
1996	7,226	7,023	97.2	176	2.4	23	0.3
1997	6,514	6,150	94.0	302	4.6	52	0.8
1998	5,311	4,884	92.0	216	4.1	84	1.6
1999	6,836	6,346	92.8	438	6.4	20	0.3
2000	5,167	4,335	83.9	377	7.3	37	0.7
2001	2,934	2,550	86.9	244	8.3	23	0.8

^a Summation of poundage figures by gear type will not equal total poundage because landings by "other" gear category are not included in table.

Table 3.3.3 Gulf of Mexico Commercial Stone Crab Landings (x 1,000) and Value (x 1,000), 1985-2001.

	lbs	Value		\$/lb	
		Current	Deflated ^a	Current	Deflated
1985	4,072	8,068	7,499	1.98	1.84
1986	4,046	7,267	6,625	1.80	1.64
1987	4,768	11,160	9,823	2.34	2.06
1988	5,220	12,498	10,567	2.39	2.02
1989	5,166	12,638	10,197	2.45	1.97
1990	6,296	16,056	12,289	2.55	1.95
1991	6,270	12,532	9,203	2.00	1.47
1992	6,642	19,710	14,047	2.97	2.11
1993	6,494	11,659	8,070	1.80	1.24
1994	6,575	12,300	8,298	1.87	1.26
1995	6,032	18,860	12,377	3.13	2.05
1996	6,567	25,545	16,286	3.89	2.48
1997	6,419	-- ^b	--	--	--
1998	6,964	22,920	14,061	3.29	2.02
1999	5,446	23,144	13,893	4.25	2.55
2000	6,776	28,367	16,474	4.19	2.43
2001	6,507	19,930	11,256	3.06	1.73

^a The deflated values and prices were derived using the Consumer Price Index with 1982-84 representing the base period.

^b There appears to be an error in the 1997 dockside value estimate and, hence, it is not included in this table.

Table 3.3.4 Gulf of Mexico Shrimp Landings (in million pounds, heads-off), by Inshore and Offshore Waters, 1985-2001.^a

	Total		Inshore		Offshore	
	lbs	% trawl	lbs	% trawl	lbs	% trawl
1985	162.1	98	52.3	96	109.7	99
1986	181.2	97	62.5	92	118.6	99
1987	156.0	95	54.6	89	101.4	98
1988	135.7	95	53.1	88	82.6	99
1989	140.0	97	41.5	92	98.5	99
1990	156.3	96	51.9	91	104.4	98
1991	141.0	96	37.5	87	103.4	99
1992	123.7	91	44.5	77	79.2	99
1993	116.7	91	42.1	77	74.6	99
1994	123.3	91	41.0	77	82.2	98
1995	135.4	92	50.6	80	84.9	99
1996	129.5	91	38.4	79	91.1	96
1997	118.2	90	44.1	77	74.1	97
1998	151.3	89	51.6	74	99.7	97
1999	144.4	86	50.4	67	94.1	97
2000	174.4	80	66.3	52	108.1	97
2001	151.3	80	62.0	54	89.3	98

^a Includes only the Penaeid shrimp species. The three species of penaeid shrimp comprise more than 99% of the shrimp landings in the Gulf of Mexico.

Table 3.3.5 Gulf of Mexico Brown and White Shrimp Landings (million pounds, heads-off), by Inshore and Offshore Waters, 1985-2001.

	Brown Shrimp						White Shrimp					
	Total		Inshore		Offshore		Total		Inshore		Offshore	
	lbs	% trawl	lbs	% trawl	lbs	% trawl	lbs	% trawl	lbs	% trawl	lbs	% trawl
1985	87.2	99	31.2	97	56.0	100	58.9	98	20.3	94	38.7	100
1986	98.7	97	34.6	92	64.1	99	70.7	96	27.5	91	43.3	99
1987	92.2	95	31.5	88	60.6	98	53.5	95	22.4	89	31.0	99
1988	81.4	94	31.9	86	49.5	100	45.2	96	20.3	92	24.9	100
1989	94.8	97	28.1	94	66.7	99	36.6	96	12.8	90	23.7	99
1990	104.5	96	34.4	91	70.2	99	44.2	96	16.9	89	27.3	99
1991	88.4	97	22.1	90	66.2	99	45.8	94	14.9	83	30.9	100
1992	69.3	91	24.7	78	44.6	99	48.0	89	19.5	75	28.5	99
1993	68.2	91	25.3	78	42.9	99	39.1	89	16.5	76	22.5	99
1994	67.3	93	21.2	82	46.1	98	46.0	87	19.4	70	26.6	99
1995	76.3	93	29.0	84	47.3	98	46.9	88	21.3	74	25.6	99
1996	74.5	90	26.1	78	48.4	97	35.9	92	12.1	80	23.8	98
1997	66.5	90	26.7	78	39.8	99	39.1	88	16.8	74	22.3	99
1998	79.5	90	28.8	78	50.7	97	54.8	86	22.4	67	32.4	99
1999	81.5	86	28.2	68	53.3	96	55.0	85	21.8	64	33.2	99
2000	96.9	83	34.6	57	62.2	98	70.2	73	30.9	44	39.3	96
2001	88.6	79	38.6	53	50.0	98	53.2	80	22.7	54	30.5	99

Table 3.3.6 Gulf of Mexico Shrimp Catch by Statistical Grid, 1985-2001 avg.

	Inshore	Offshore	Total
1	---	353,841	353,841
2	---	5,240,428	5,240,428
3	---	1,366,930	1,366,930
4	15,265	598,945	614,210
5	30,526	460,812	491,338
6	8,660	1,134,656	1,143,316
7	420,112	1,237,357	1,657,469
8	153,266	531,801	685,067
9	56,559	69,386	125,945
10	1,752,414	331,495	2,083,909
11	303,311	5,035,870	5,339,181
12	7,584,175	1,091,632	8,675,807
13	12,178,882	11,060,330	23,239,212
14	10,105,471	8,517,202	18,623,173
15	638,175	7,891,131	8,529,306
16	1,381,829	9,094,675	10,476,504
17	940,824	9,211,493	10,152,317
18	3,816,144	6,777,034	10,593,178
19	6,331,546	11,951,399	18,282,945
20	1,227,050	6,209,564	7,436,614
21	1,968	5,744,009	5,747,945

Table 3.3.7 Deflated Value (in millions of dollars) and Dockside Price (headless weight) of Gulf of Mexico Shrimp Landings, by Inshore and Offshore Waters, 1985-2001.

	Total		Inshore		Offshore	
	value	\$/lb	value	\$/lb	value	\$/lb
1985	374.1	2.38	75.4	1.35	298.7	2.95
1986	507.9	3.24	113.0	2.03	394.8	3.90
1987	413.4	2.63	110.3	1.98	303.1	2.99
1988	340.8	2.17	90.9	1.63	250.0	2.47
1989	307.0	1.96	59.2	1.06	247.9	2.45
1990	312.5	1.99	74.4	1.34	238.1	2.35
1991	308.2	1.96	55.4	1.00	252.9	2.50
1992	263.2	1.68	68.4	1.23	194.7	1.92
1993	227.6	1.45	53.7	0.97	173.9	1.72
1994	303.8	1.94	70.4	1.27	233.4	2.30
1995	288.0	1.84	72.8	1.31	215.2	2.12
1996	253.0	1.61	47.9	0.86	205.1	2.03
1997	272.7	1.74	67.4	1.21	205.4	2.03
1998	282.7	1.80	58.8	1.06	223.9	2.21
1999	278.5	1.77	57.5	1.03	221.0	2.18
2000	371.9	2.37	93.7	1.68	278.2	2.75
2001	269.9	1.72	74.9	1.35	195.0	1.93

Table 3.3.8 Gulf of Mexico Commercial Reef Fish Landings^a (x 1,000) and Value (x 1,000), 1985-2001. All weights refer to gutted weights, unless otherwise specified.

	lbs	Value		\$/lb	
		Current	Deflated	Current	Deflated
1985	20,435	31,649	29,413	1.54	1.44
1986	22,944	36,422	33,232	1.59	1.45
1987	23,899	37,736	33,219	1.57	1.39
1988	23,144	37,850	31,995	1.63	1.38
1989	24,645	40,545	32,697	1.64	1.33
1990	20,656	36,608	28,009	1.77	1.36
1991	19,991	34,484	25,319	1.72	1.27
1992	20,791	36,363	25,912	1.75	1.25
1993	24,868	40,139	27,778	1.61	1.12
1994	21,824	37,715	25,449	1.73	1.17
1995	19,775	34,260	22,480	1.73	1.14
1996	19,299	35,103	22,373	1.82	1.16
1997	21,163	37,821	23,565	1.79	1.11
1998	19,568	38,022	23,326	1.94	1.19
1999	22,669	43,283	25,980	1.91	1.15
2000	22,120	44,278	25,713	2.00	1.16
2001	22,730	46,014	25,982	2.02	1.14

^a Includes both RFFMP and non-RFFMP reef fish species.

Table 3.3.9 Gulf of Mexico Commercial Reef Fish Landings (x 1,000) by State, 1985-2001. All weights refer to gutted weights, unless otherwise specified.

Year	Total	Florida	Alabama	Mississippi	Louisiana	Texas
1985	20,435	15,553	486	1,017	2,024	1,355
1986	22,944	16,968	468	897	3,207	1,404
1987	23,899	18,080	298	844	3,280-	1,308
1988	23,144	15,778	218	617	4,388	2,019
1989	24,645	19,143	147	400	3,408	1,351
1990	20,656	16,087	129	408	3,028	871
1991	19,991	16,293	118	306	2,668	363
1992	20,791	15,430	162	351	3,454	1,391
1993	24,868	18,705	137	324	3,797	1,903
1994	21,824	16,241	120	321	3,659	1,478
1995	19,775	14,862	60	298	2,966	1,776
1996	19,299	13,232	59	391	3,656	1,954
1997	21,163	14,360	79	432	4,073	2,218
1998	19,568	13,205	73	396	3,966	1,928
1999	22,669	15,793	111	174	4,544	2,047
2000	22,120	15,728	181	203	4,076	1,932
2001	22,730	16,999	262	166	3,629	1,974

Table 3.3.10 Gulf of Mexico Commercial Reef Fish Landings^a (x 1,000) by Primary Families/Species, 1985-2001. All weights refer to gutted weights, unless otherwise specified.

Year	Reef Fish	Grouper		Snapper		Tilefish		Triggerfish		Jack	
	lbs	lbs	%	lbs	%	lbs	%	lbs	%	lbs	%
1985	20,435	11,336	55.3	7,471	36.5	358	1.7	93	0.5	--	--
1986	22,944	12,459	54.3	8,015	34.9	432	1.9	96	0.4	--	--
1987	23,899	12,509	52.3	7,960	33.3	668	2.8	125	0.5	--	--
1988	23,144	10,141	43.8	8,241	35.6	1,077	4.7	196	0.8	--	--
1989	24,645	12,915	52.4	7,844	31.8	543	2.2	320	1.3	--	--
1990	20,656	9,793	47.4	7,580	36.7	470	2.3	469	2.3	<1	NE ^b
1991	19,991	9,767	48.9	7,097	35.5	390	2.0	445	2.2	50	0.3
1992	20,791	8,965	43.1	8,198	39.4	409	2.0	450	2.2	58	0.3
1993	24,868	11,502	46.2	9,702	39.0	456	1.8	563	2.3	1,306	5.3
1994	21,824	9,669	44.3	9,037	41.4	576	2.6	406	1.9	1,121	5.1
1995	19,775	9,143	46.2	7,821	39.5	570	2.9	338	1.7	990	5.0
1996	19,299	8,364	43.3	8,428	43.8	293	1.5	271	1.4	1,050	5.4
1997	21,163	9,264	43.8	9,414	44.5	558	2.6	186	0.9	1,030	4.9
1998	19,568	9,057	46.3	8,636	44.1	432	2.2	178	0.9	874	4.5
1999	22,669	11,261	49.7	9,267	40.9	491	2.2	224	1.0	1,003	4.4
2000	22,120	11,449	51.8	8,529	38.6	604	2.7	158	0.7	972	4.4
2001	22,730	12,199	53.7	8,362	36.8	641	2.8	174	0.8	950	4.2

^a Includes both federally and non-federally managed reef fish species.

Table 3.3.11 Value and Price of Gulf of Mexico Commercial Reef Fish Landingsa (x 1,000) by Primary Families/Species, 1985-2001. All weights refer to gutted weights, unless otherwise specified.

	Grouper			Snapper			Tilefish			Triggerfish			Jack		
	Value		De-flated Price	Value		De-flated Price	Value		De-flated Price	Value		De-flated Price	Value		De-flated Price
	Cur-rent	De-flated ^b		Cur-rent	De-flated		Cur-rent	De-flated		Cur-rent	De-flated		Cur-rent	De-flated	
1985	17,209	15,994	1.41	13,414	12,467	1.67	313	291	0.81	46	43	0.46	--	--	--
1986	20,639	18,831	1.51	14,228	12,982	1.62	420	383	0.89	52	47	0.49	--	--	--
1987	20,644	18,172	1.45	14,679	12,921	1.62	656	578	0.86	73	64	0.51	--	--	--
1988	17,873	15,108	1.49	16,230	13,719	1.66	1,182	999	0.93	144	122	0.62	--	--	--
1989	21,484	17,326	1.34	15,563	12,551	1.60	701	565	1.04	234	189	0.59	--	--	--
1990	18,338	14,031	1.44	15,487	11,850	1.56	601	460	0.98	361	276	0.59	<1	<1	0.54
1991	17,749	13,032	1.33	14,114	10,362	1.46	441	324	0.83	370	271	0.61	28	20	0.41
1992	17,964	12,804	1.43	15,484	11,037	1.35	449	320	0.78	393	280	0.62	39	28	0.48
1993	19,671	13,613	1.18	17,113	11,843	1.22	470	326	0.71	543	376	0.67	1,127	780	0.60
1994	18,147	12,245	1.27	16,485	11,123	1.23	696	470	0.82	357	241	0.59	1,046	706	0.63
1995	16,480	10,814	1.18	14,570	9,560	1.22	710	466	0.82	332	218	0.64	994	652	0.66
1996	16,919	10,783	1.29	15,482	9,868	1.17	388	248	0.85	285	182	0.67	1,084	691	0.66
1997	18,316	11,412	1.23	16,847	10,497	1.12	573	357	0.64	184	115	0.62	1,077	671	0.65
1998	18,695	11,470	1.27	17,246	10,580	1.22	476	292	0.68	175	107	0.60	907	557	0.64
1999	22,969	13,787	1.22	17,778	10,671	1.15	611	367	0.75	237	143	0.64	1,055	633	0.63
2000	24,230	14,071	1.23	17,405	10,107	1.19	833	484	0.80	182	105	0.67	1,024	595	0.61
2001	26,214	14,802	1.21	17,201	9,712	1.16	925	522	0.81	193	109	0.63	920	519	0.55

^a Includes both federally and non-federally managed reef fish species.

^b The deflated values and prices were derived using the Consumer Price Index with 1982-84 representing the base period.

Table 3.3.12 Gulf of Mexico Grouper Landings (x 1,000) by Primary Species, 1986-2001a. All weights refer to gutted weights, unless otherwise specified.

	Total	Red Grouper		Black Grouper		Gag Grouper		Yellowedge Grouper		Scamp		Snowy Grouper	
		lbs	%	lbs	%	lbs	%	lbs	%	lbs	%	lbs	%
1986	12,459	7,466	59.9	1,309	10.5	874	7.0	1,116	9.0	384	3.1	152	1.2
1987	12,509	7,934	63.4	1,318	10.5	781	6.2	1,092	8.7	363	2.9	163	1.3
1988	10,141	5,541	54.6	941	9.3	651	6.4	1,583	15.6	277	2.7	240	2.4
1989	12,915	8,875	68.7	1,373	10.6	859	6.7	580	4.5	305	2.4	134	1.0
1990	9,793	5,682	58.0	1,368	14.0	997	10.2	915	9.3	291	3.0	172	1.8
1991	9,767	6,031	61.7	885	9.1	1,119	11.5	839	8.6	359	3.7	181	1.9
1992	8,965	4,994	55.7	658	7.3	1,418	15.8	999	11.1	328	3.7	202	2.3
1993	11,502	7,520	65.4	1,889	16.4	1,753	15.2	814	7.1	367	3.2	167	1.5
1994	9,669	5,810	60.0	508	5.3	1,520	15.7	1,254	13.0	252	2.6	142	1.5
1995	9,143	5,622	61.9	467	5.1	1,580	17.2	906	9.9	274	3.0	143	1.6
1996	8,364	5,278	63.1	448	5.4	1,508	18.0	603	7.2	275	3.3	119	1.4
1997	9,264	5,765	62.2	286	3.1	1,692	18.3	819	8.8	346	3.7	193	2.1
1998	9,057	4,685	51.7	296	3.3	2,778	30.7	713	7.9	261	2.9	137	1.5
1999	11,261	7,018	62.3	298	2.6	2,213	19.7	1,076	9.6	306	2.7	183	1.6
2000	11,449	6,854	59.9	560	4.9	2,185	19.1	1,233	10.8	231	2.0	236	2.1
2001	12,199	6,866	56.3	586	4.8	3,154	25.9	863	7.1	315	2.6	249	2.0

^a Identification of grouper, by individual species, was not initiated until 1986. In addition, there was a relatively large "unclassified" category, particularly in the earlier years of analysis. Hence, landings and percentages in the earlier years will tend to be minimum estimates.

Table 3.3.13 Gulf of Mexico Snapper Landings (x 1,000) by Primary Species, 1985-2001. All weights refer to gutted weights, unless otherwise specified.

		Red Snapper		Vermilion Snapper		Yellowtail Snapper		Mutton Snapper		Lane Snapper		Silk Snapper	
		lbs	%	Lbs	%	lbs	%	lbs	%	lbs	%	lbs	%
1985	7,471	4,257	57.0	1,521	20.4	785	10.5	204	2.7	65	0.9	2	NE
1986	8,015	3,965	49.5	1,813	22.6	1,026	12.8	242	3.0	72	0.9	28	0.3
1987	7,960	3,357	42.2	1,665	20.9	1,275	16.0	363	4.6	78	1.0	39	0.5
1988	8,241	4,060	49.3	1,565	19.0	3,851		275	3.3	84	1.0	100	1.2
1989	7,844	3,100	39.5	1,662	21.2	1,715	21.9	349	4.4	112	1.4	49	0.6
1990	7,580	2,662	35.1	2,168	28.6	1,627	21.5	303	4.0	90	1.2	67	0.9
1991	7,097	2,241	31.6	1,795	25.3	1,713	24.1	340	4.8	147	2.1	191	0.3
1992	8,198	3,043	37.1	2,284	27.9	1,603	19.6	307	3.7	117	1.4	321	3.9
1993	9,702	3,405	35.1	2,725	28.1	2,193	22.6	323	3.3	126	1.3	158	1.6
1994	9,037	3,252	36.0	2,645	29.3	2,037	22.5	273	3.0	114	1.3	55	0.6
1995	7,821	2,951	37.8	2,171	27.8	1,729	22.1	204	2.6	88	1.1	114	1.5
1996	8,428	4,348	51.6	1,859	22.1	1,350	16.0	219	2.6	78	0.9	72	0.9
1997	9,414	4,786	50.8	2,091	22.2	1,529	16.2	222	2.4	95	1.0	135	1.4
1998	8,636	4,661	54.0	1,736	20.1	1,397	16.2	274	3.2	47	0.5	111	1.3
1999	9,267	4,877	52.7	1,993	21.5	1,718	18.5	182	2.0	63	0.7	94	1.0
2000	8,529	4,835	56.7	1,449	17.0	1,445	16.9	162	1.9	58	0.7	204	2.4
2001	8,362	4,556	54.5	1,716	20.5	1,297	15.5	181	2.2	88	1.1	128	1.5

Table 3.3.14 Gulf of Mexico Trips Reporting Catch of Snapper or Grouper, 1993-2001, avg.^a

Area	All Gears			Handlines		Longlines		Traps	
	Trips	lbs	lbs/Trip	Trips	%	Trips	%	Trips	%
1	1,882	377,275	200	1,687	90	18	1	17	1
2	804	875,560	1,089	603	75	93	12	83	10
3	509	1,088,781	2,139	199	39	165	33	145	29
4	881	1,249,792	1,418	574	65	285	32	14	2
5	1,444	2,667,734	1,847	838	58	546	38	15	1
6	1,836	2,089,019	1,138	1,421	77	181	10	190	10
7	1,587	1,155,661	728	1,221	77	60	4	293	18
8	689	633,702	920	596	86	80	12	5	1
9	558	425,478	763	475	85	72	13	NE	NE
10	640	723,905	1,131	604	94	33	5	NE	NE
11	413	442,988	1,073	396	96	12	3	NE	NE
12	81	89,411	1,104	77	96	4	5	0	0
13	572	434,314	759	549	96	20	4	NE	NE
14	282	417,495	1,480	249	88	29	10	NE	NE
15	259	457,595	1,767	237	92	19	7	0	0
16	436	911,009	2,089	409	94	20	5	NE	NE
17	664	1,289,238	1,942	637	96	19	3	NE	NE
18	389	810,882	2,084	366	94	20	5	NE	NE
19	271	426,705	1,575	261	96	10	4	0	0
20	126	203,710	1,617	87	70	35	28	0	0
21	188	220,472	1,173	170	90	19	10	0	0
≥22	22	30,451	1,384						

^a Compiled from logbook data.

Table 3.3.15 Gulf of Mexico Trips Reporting Catch of Grouper, 1993-2001, avg.^a

Area	All Gears			Handlines		Longlines		Traps	
	Trips	lbs	lbs/Trip	Trips	%	Trips	%	Trips	%
1	703	61,979	88	558	79	14	2	12	2
2	526	388,830	739	329	63	90	17	76	14
3	489	997,797	2,040	180	37	161	33	143	29
4	850	1,205,383	1,418	546	64	282	33	13	2
5	1,413	2,613,027	1,849	804	57	543	38	15	1
6	1,820	1,995,475	1,096	1,396	77	180	10	187	10
7	1,552	1,057,868	682	1,194	77	60	4	274	18
8	613	500,301	816	522	85	79	13	5	1
9	419	177,260	423	341	81	71	17	NE	NE
10	420	108,088	257	385	92	33	8	NE	NE
11	229	55,729	169	214	94	11	5	NE	NE
12	32	10,270	320	29	92	2	8	0	0
13	197	46,170	234	178	90	18	9	NE	NE
14	164	74,516	454	138	84	25	15	NE	NE
15	153	69,248	453	135	88	17	11	0	0
16	221	89,353	404	199	90	17	8	NE	NE
17	292	96,418	455	272	93	18	6	NE	NE
18	166	80,988	487	147	89	18	11	0	0
19	93	19,439	209	84	90	9	9	0	0
20	57	47,997	842	22	39	33	59	0	0
21	80	55,679	696	63	79	17	21	0	0
22	12	10,042	837	6	53	5	38	NE	NE

^a Compiled from logbook data.

Table 3.3.16 Gulf of Mexico Trips Reporting Catch of Snapper, 1993-2001, avg.^a

Area	All Gears			Handlines		Longlines		Traps	
	Trips	lbs	lbs/Trip	Trips	%	Trips	%	Trips	%
1	1,800	315,296	175	1,627	90	14	1	15	1
2	744	486,729	654	573	77	69	9	79	11
3	393	90,984	232	151	38	108	28	133	34
4	596	44,409	75	433	73	145	24	9	2
5	842	54,706	65	501	59	287	34	7	1
6	978	93,544	96	715	73	94	10	107	11
7	640	97,793	153	461	72	27	4	145	23
8	507	133,401	263	480	95	18	4	3	1
9	432	248,217	575	414	96	10	2	NE	NE
10	598	615,816	1,030	588	98	7	1	NE	NE
11	391	387,268	990	383	98	3	1	NE	NE
12	78	79,140	1,015	76	98	2	2	0	0
13	548	388,144	708	536	98	9	2	NE	NE
14	259	342,978	1,324	240	93	15	6	NE	NE
15	242	388,347	1,605	229	95	10	4	0	0
16	421	821,656	1,952	385	96	10	2	0	0
17	651	1,192,820	1,832	632	97	10	2	0	0
18	379	729,883	1,926	364	96	11	3	0	0
19	266	407,266	1,531	259	97	5	2	0	0
20	108	155,713	1,442	86	80	19	17	0	0
21	175	164,793	942	167	95	8	5	0	0
22	17	20,409	1,200	15	86	1	7	1	7

^a Compiled from logbook data.

Table 3.3.17 Gulf of Mexico Commercial Grouper Catch (x 1,000) by Gear, 1993-2001.

	Handlines			Longlines			Traps		
	Trips	Catch	Catch/Trip	Trips	Catch	Catch/Trip	Trips	Catch	Catch/Trip
1993	6,077	2,471	406	1,303	4,848	3,721	1,103	720	653
1994	7,082	2,701	381	1,616	4,482	2,773	967	1,060	1,096
1995	7,147	2,914	408	1,717	4,440	2,586	927	1,277	1,378
1996	6,963	2,600	373	1,741	4,870	2,797	818	709	867
1997	7,360	2,821	383	1,812	5,627	3,105	733	924	1,261
1998	8,521	3,601	423	1,636	5,470	3,343	456	450	987
1999	9,125	3,579	392	1,714	6,839	3,990	528	987	1,869
2000	8,860	4,414	498	1,799	6,163	3,426	552	1,359	2,463
2001	7,746	4,501	581	1,616	6,207	3,841	446	957	2,145

^a Compiled from logbook data.

Table 3.3.18 Gulf of Mexico Commercial Snapper Catch (x 1,000) by Gear, 1993-2001.

	Handlines			Longlines			Traps		
	Trips	Catch	Catch/Trip	Trips	Catch	Catch/Trip	Trips	Catch	Catch/Trip
1993	9,382	5,534	590	879	124	140	821	370	450
1994	9,689	6,107	630	895	128	143	632	191	302
1995	9,509	5,909	621	843	148	175	571	196	343
1996	9,207	6,926	752	912	161	177	503	174	347
1997	9,072	7,702	849	892	190	214	497	130	262
1998	8,713	7,521	863	825	208	252	309	116	374
1999	9,534	7,838	822	956	248	260	413	102	246
2000	8,397	7,075	753	860	310	360	425	73	171
2001	8,973	6,797	757	798	292	366	335	36	107

^a Compiled from logbook data.

Table 3.3.19 Gulf of Mexico Coastal Pelagics Landings (x 1,000) and Value (x 1,000), 1985-2001.

Year	lbs	Value		\$/lb	
		Current	Deflated ^a	Current	Current Deflated
1985	4,899	2,573	2,391	0.52	0.49
1986	4,942	2,766	2,254	0.56	0.51
1987	4,108	2,254	1,984	0.55	0.48
1988	3,518	2,148	1,816	0.61	0.52
1989	4,274	2,480	2,000	0.58	0.47
1990	4,393	2,982	2,282	0.68	0.52
1991	4,615	2,513	1,845	0.54	0.40
1992	6,261	3,727	2,657	0.60	0.43
1993	5,875	3,958	2,739	0.67	0.47
1994	4,840	3,581	2,416	0.74	0.50
1995	3,730	2,934	1,925	0.79	0.52
1996	3,347	3,215	2,049	0.96	0.61
1997	2,770	2,786	1,736	1.01	0.63
1998	3,197	3,163	1,940	0.98	0.61
1999	4,011	3,545	2,128	0.88	0.53
2000	3,293	3,003	1,744	0.91	0.53
2001	3,691	3,293	1,860	0.89	0.50

^a Deflated value and price based on 1982-84 (=100) Consumer Price Index.

Table 3.3.20 Gulf of Mexico Commercial Coastal Pelagic Landings (x 1,000) by State, 1985-2001.

Year	Total	Florida	Alabama	Mississippi	Louisiana	Texas
1985	4,899	3,788	61	25	1,014	10
1986	4,942	4,377	109	53	390	13
1987	4,108	3,318	81	69	629	12
1988	3,518	2,820	129	46	509	13
1989	4,274	3,405	71	57	726	15
1990	4,393	3,506	152	38	684	13
1991	4,615	3,805	138	9	653	9
1992	6,261	4,832	158	7	1,215	49
1993	5,875	4,735	124	10	905	102
1994	4,840	3,479	251	38	933	139
1995	3,730	2,491	372	8	681	177
1996	3,347	2,273	242	8	665	159
1997	2,770	1,551	352	7	588	273
1998	3,197	1,737	220	3	898	339
1999	4,011	2,606	247	3	892	262
2000	3,293	1,804	388	4	1,003	93
2001	3,691	2,339	526	3	774	50

Table 3.3.21 Gulf of Mexico Commercial Landings of Coastal Pelagics, by Species, 1985-2001.

Year	Coastal Pelagics	King Mackerel		Spanish Mackerel		Cobia	
	lbs.	Lbs	%	lbs	%	lbs	%
1985	4,899	1,744	35.6	3,023	61.7	136	2.8
1986	4,942	2,044	41.4	2,738	55.4	160	3.2
1987	4,108	1,078	26.2	2,855	69.5	175	4.3
1988	3,518	1,040	29.6	2,316	65.8	162	4.6
1989	4,274	944	22.1	3,119	73.0	212	5.0
1990	4,393	1,651	37.6	2,579	58.7	163	3.7
1991	4,615	996	21.6	3,442	74.6	177	3.8
1992	6,261	2,252	36.0	3,773	60.3	235	3.8
1993	5,875	2,991	50.9	2,623	44.6	261	4.4
1994	4,840	1,796	37.1	2,779	57.4	264	5.5
1995	3,730	1,934	51.8	1,560	41.8	241	6.5
1996	3,347	2,421	72.3	663	19.8	262	7.8
1997	2,770	1,986	71.7	574	20.7	211	7.6
1998	3,197	2,522	78.9	470	14.7	205	6.4
1999	4,011	2,606	65.0	963	24.0	191	4.8
2000	3,293	1,962	59.6	1,098	33.3	150	4.6
2001	3,691	2,145	58.1	1,392	37.7	111	3.0

Table 3.3.22 Gulf of Mexico Coastal Pelagic Landings (x 1,000) and Value (x 1,000), by Species, 1985-2001.

	King Mackerel			Spanish Mackerel			Cobia		
	Value		Deflated Price	Value		Deflated Price	Value		Deflated Price
	Current	Deflated ^a		Current	Deflated		Current	Deflated	
1985	1,456	1,353	0.78	1,007	936	0.31	110	102	0.75
1986	1,743	1,590	0.78	893	815	0.30	129	118	0.74
1987	1,030	906	0.84	1,062	935	0.33	162	143	0.82
1988	1,052	889	0.86	924	781	0.34	172	145	0.89
1989	998	805	0.85	1,248	1,007	0.32	233	188	0.89
1990	1,661	1,271	0.77	1,116	854	0.33	206	157	0.96
1991	890	653	0.66	1,402	1,030	0.30	221	162	0.92
1992	2,108	1,502	0.67	1,288	918	0.24	331	236	1.00
1993	2,593	1,794	0.60	989	684	0.26	377	261	1.00
1994	1,972	1,330	0.74	1,198	808	0.29	412	278	1.05
1995	1,931	1,267	0.66	604	396	0.25	399	262	1.09
1996	2,431	1,549	0.64	324	206	0.31	460	293	1.12
1997	2,112	1,316	0.66	303	189	0.33	370	231	1.10
1998	2,507	1,538	0.61	284	174	0.37	372	228	1.12
1999	2,485	1,492	0.57	487	292	0.30	359	216	1.13
2000	2,092	1,215	0.62	538	312	0.28	280	163	1.09
2001	2,326	1,313	0.61	705	398	0.29	220	124	1.11

^a The deflated values and prices were derived using the Consumer Price Index with 1982-84 representing the base period.

Table 3.3.23 Gulf of Mexico Commercial Trips Reporting Catch of Coastal Pelagics, 1993-2001, avg.^a

Area	All Gears			Handlines		Trolling Lines		Longline		Gill Nets	
	Trips	lbs	lbs/Trip	Trips	%	Trips	%	Trips	%	Trips	%
1	463	221,091	478	344	74	77	17	4	1	10	2
2	296	314,578	1,063	178	60	75	25	20	7	15	5
3	134	169,669	1,266	30	23	48	35	36	27	15	11
4	126	33,071	262	26	21	37	30	59	47	4	3
5	223	25,908	116	83	37	14	6	116	52	6	3
6	201	44,265	220	134	67	3	1	38	19	14	7
7	164	32,361	197	117	71	18	11	12	8	6	4
8	315	107,772	342	157	50	143	45	12	4	NE	NE
9	283	44,697	158	164	58	115	41	4	1	0	0
10	119	13,547	114	107	90	7	6	2	2	0	0
11	72	16,175	225	51	71	16	23	2	3	NE	NE
12	31	41,957	1,353	25	82	3	10	2	7	NE	NE
13	172	141,130	821	123	71	39	22	9	5	NE	NE
14	139	169,874	1,222	78	56	50	36	9	6	NE	NE
15	104	89,786	863	82	80	15	15	4	4	0	0
16	121	112,649	931	90	74	25	20	4	3	0	0
17	168	180,462	1,075	119	71	45	27	3	2	NE	NE
18	70	42,200	603	61	87	6	8	3	4	0	0
19	43	21,870	508	38	88	6	14	2	6	0	0
20	19	13,447	708	13	67	NE	NE	5	26	0	0
21	16	2,890	181	9	58	NE	NE	7	41	0	0
22	2	3,606	1,802	1	50	NE	NE	NE	NE	0	0

^a Compiled from logbook data. These numbers will not add to published landing statistics due to the fact that mandatory logbook reporting requirements for king mackerel and Spanish mackerel were not implemented until 1998, and there are no mandatory reporting requirements for cobia.

Table 3.4.1 Number of proposed development actions reviewed annually by the NMFS Southeast Region, 1982-2001.

<u>CALENDAR YEAR</u>	<u>TEXAS</u>	<u>LOUISIANA</u>	<u>MISSISSIPPI</u>	<u>ALABAMA</u>	<u>FLORIDA GULF¹</u>	<u>TOTAL</u>
1982	1047	1724	75	271	428	3545
1983	781	1326	112	244	407	2870
1984	881	1164	78	150	386	2659
1985	729	1104	93	184	429	2539
1986	654	931	92	116	376	2169
1987	667	896	90	98	434	2185
1988	525	674	79	134	414	1826
1989	457	725	92	127	385	1786
1990	448	801	148	179	443	2019
1991	434	626	133	169	325	1687
1992	432	595	140	160	356	1683
1993	412	752	124	110	350	1748
1994	433	751	109	126	403	1822
1995	472	817	96	147	382	1914
1996	570	908	128	146	369	2121
1997	559	2127	171	173	482	3512
1998	697	1590	189	169	502	3147
1999	597	1176	205	217	435	2630
2000	578	1345	136	202	515	2776
2001	542	1239	154	347	512	2794

¹Numbers for Florida are an estimated subset of actions statewide

Table 3.5.1 Ranks of habitat sensitivity to specific gear types. Table is based on those found in Barnette (2001) and Hamilton (2000), with additions and modifications. Shaded areas indicate moderate and high impacts.

- **High** (3 or +++): Capable of severe damage to a wide swath of habitat during a single encounter. Seriously impairs the function (for fish) of the impacted habitat.
- **Moderate** (2 or ++): Capable of severe damage to habitat in a “footprint” of the gear during a single encounter; or capable of moderate damage to habitat over a swath. Impairs the function (for fish) of the habitat.
- **Minor** (1 or +): Capable of moderate damage to habitat in a limited area during a single encounter. May impair the function (for fish) of the habitat.
- **Negligible** (0): Does not typically cause damage. No perceptible impairment to the function (for fish) of the habitat.
- **N/A** = Not applicable or not possible.

	Fish Otter Trawl	Shrimp Otter trawl	Roller frame trawl	Skimmer trawl	Pair trawl	Bottom longline & Buoy	Fish trap	Blue crab trap	Lobster trap	Stone crab trap	Vertical gear	Spear & Power-head	Slurp gun	Crab scrape	Oyster dredge	Rake	Tong	Patent tong
Estuarine																		
SAV	++	++	+	+	+	+	++	+	+	+	+	0	0	+	+++	++	+	+++
Mangroves	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Drifting algae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	N/A
Emergent marshes	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	N/A	N/A	0	N/A	0	N/A	N/A	N/A	N/A	N/A
Sand/shell bottoms	++	+	+	+	+	+	0	0	0	0	0	0	0	+	++	++	0	++
Soft bottoms	++	++	++	+	++	+	0	0	0	0	0	0	0	++	++	++	+	++
Hard bottoms	++	++	++	++	++	+	++	+	++	+	+	+	0	++	++	++	+	++
Oyster reefs	++	++	++	++	++	0	0	0	0	0	+	+	0	++	+++	++	+	+++
Pelagic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	N/A
Nearshore																		
SAV	++	++	+	+	+	+	++	+	+	+	+	0	0	+	+++	++	+	+++
Mangroves	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Drifting algae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sand/shell bottoms	++	+	+	+	+	+	0	0	0	0	0	0	0	+	++	++	0	++
Soft bottoms	++	++	++	+	++	+	0	0	0	0	0	0	0	++	++	++	+	++
Hard bottoms	++	++	++	++	++	+	++	+	++	+	+	+	0	++	++	++	+	++

	Fish Otter Trawl	Shrimp Otter trawl	Roller frame trawl	Skimmer trawl	Pair trawl	Bottom longline & Buoy	Fish trap	Blue crab trap	Lobster trap	Stone crab trap	Vertical gear	Spear & Power-head	Slurp gun	Crab scrape	Oyster dredge	Rake	Tong	Patent tong
Coral Reefs	+++	+++	+++	++	+++	++	++	++	++	++	+	+	+	+++	+++	+++	+	+++
Pelagic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Offshore																		
SAV	++	++	+	N/A	+	+	++	N/A	+	+	+	0	0	N/A	N/A	N/A	N/A	N/A
Drifting algae	0	0	0	N/A	0	0	0	N/A	0	0	0	0	0	N/A	N/A	N/A	N/A	N/A
Sand/shell bottoms	++	+	+	N/A	+	+	0	N/A	0	0	0	0	0	N/A	N/A	N/A	N/A	N/A
Soft bottoms	++	++	++	N/A	++	+	0	N/A	0	0	0	0	0	N/A	N/A	N/A	N/A	N/A
Hard bottoms	++	++	++	N/A	++	+	++	N/A	+	+	+	+	0	N/A	N/A	N/A	N/A	N/A
Coral Reefs	+++	+++	+++	N/A	+++	++	++	N/A	++	++	+	+	+	N/A	N/A	N/A	N/A	N/A
Shelf edge/slope	++	++	++	N/A	+	+	+	N/A	+	+	+	0	0	N/A	N/A	N/A	N/A	N/A
Pelagic	0	0	0	N/A	0	0	0	N/A	0	0	0	0	0	N/A	N/A	N/A	N/A	N/A

	Hand harvest	Dip net	Bully net	Snare	Seine	Purse Seine	Drop net	Push net	Pound net	Channel net	Trammel net	Benthic gill net	Barrier net	Cast net	Butter-fly Net	Hoop Net	Harpoon	Allowable Chemical
Estuarine																		
SAV	0	0	0	0	+	+	0	+	0	0	+	+	0	+	0	+	0	0
Mangroves	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Drifting algae	0	0	0	0	+	+	0	+	0	+	0	0	0	0	0	0	0	0
Emergent marshes	0	0	0	0	N/A	N/A	0	N/A	N/A	N/A	N/A	N/A	N/A	+	N/A	N/A	N/A	N/A
Sand/shell bottoms	0	0	0	0	+	+	0	0	0	0	+	+	0	0	0	+	0	0
Soft bottoms	0	0	0	0	+	+	0	0	0	0	+	+	0	+	0	+	0	0
Hard bottoms	+	+	+	+	+	+	0	0	N/A	0	+	+	+	+	N/A	+	0	+
Oyster reefs	0	0	0	0	+	+	0	0	N/A	0	+	+	+	+	N/A	+	0	0
Pelagic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nearshore																		
SAV	0	0	0	0	+	+	0	+	0	0	+	+	0	0	0	+	0	0
Mangroves	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Drifting algae	0	0	0	0	+	+	0	+	0	+	0	0	0	0	0	0	0	0
Sand/shell bottoms	0	0	0	0	+	+	0	0	0	0	+	+	0	0	0	+	0	0

Soft bottoms	0	0	0	0	+	+	0	0	0	0	+	+	0	+	0	+	0	0
Hard bottoms	+	+	+	+	+	+	0	+	N/A	0	+	+	+	+	0	+	0	+
Coral Reefs	+	+	+	+	++	++	+	++	N/A	0	+	+	+	++	0	+	+	+
Pelagic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Offshore																		
SAV	0	0	0	0	N/A	+	N/A	N/A	N/A	N/A	+	+	N/A	N/A	N/A	N/A	0	0
Drifting algae	0	0	0	0	N/A	+	N/A	N/A	N/A	N/A	0	0	N/A	N/A	N/A	N/A	0	0
Sand/shell bottoms	0	0	0	0	N/A	+	N/A	N/A	N/A	N/A	+	+	N/A	N/A	N/A	N/A	0	0
Soft bottoms	0	0	0	0	N/A	+	N/A	N/A	N/A	N/A	+	+	N/A	N/A	N/A	N/A	0	0
Hard bottoms	+	+	+	+	N/A	+	N/A	N/A	N/A	N/A	+	+	N/A	N/A	N/A	N/A	0	+
Coral Reefs	+	+	+	+	N/A	++	N/A	N/A	N/A	N/A	+	+	N/A	N/A	N/A	N/A	0	+
Shelf edge/slope	0	0	0	0	N/A	0	N/A	N/A	N/A	N/A	0	0	N/A	N/A	N/A	N/A	0	0
Pelagic	0	0	0	0	N/A	0	N/A	N/A	N/A	N/A	0	0	N/A	N/A	N/A	N/A	0	0
NOTE: The approximate boundary between nearshore and offshore is the 60 foot (i.e. 18 meter) depth line.																		

Table 3.5.2 Number of nonindigenous aquatic microbes occurring (or having occurred at least once) in the five Gulf States

State	Shrimp Viruses	Bacteria	Protozoa	Fungi	TOTAL
AL	*	1	2	*	3
FL	1	2	7	*	10
LA	4	*	2	*	6
MS	*	*	2	*	2
TX	3	1	1	«	5

• = None.

Table 3.5.3 Number of nonindigenous aquatic invertebrates (non-insect) occurring in the five Gulf States

State	Tunicates	Bryozoans	Sponges	Coelenterates	Flat-worms	Round-worms	Seg. Worms	Mollusks	Crustaceans	TOTAL
AL	*	*	*	1	*	*	*	3	3	7
FL	3	6	*	2	7	2	2	19	23	64
LA	*	*	*	*	*	*	*	3	5	8
MS	*	*	*	1	*	*	*	2	2	5
TX	1	*	*	*	*	1	*	9	5	16

• = None.

Table 3.5.4 Number of nonindigenous aquatic vertebrates occurring in the five Gulf States

State	Fishes	Amphibians	Reptiles	Mammals	TOTAL
AL	51	*	1	1	53
FL	117	13	18	1	149
LA	27	2	*	1	30
MS	22	*	i*	1	23
TX	98	4	3	1	106

• = None.

Table 3.5.5 Number of nonindigenous aquatic plants occurring in the five Gulf States

State	Algae	Aquatic Vascular Plants	Semi-Aq. Vascular Plants	TOTAL
AL	1	25	6	32
FL	2	45	23	70
LA	1	34	10	45
MS	1	25	7	33
TX	2	30	12	41

Table 3.5.6 Non-Fishing Effects "Sensitivity" Indices for Essential Fish Habitat Types in the Gulf of Mexico.

Non-Fishing Impact Matrix													
	Physical					Water Quality					Biological		
	Dredge and Fill	Shoreline Hardening	Impingement/Entrainment/Thermal	Structural Shading	Boating Impacts	Altered Freshwater	Point Source Pollution	Non-Point Source	Oil/Gas Operations	Industrial Spills	Toxic Chemical Releases	Hypoxia	Harmful Algal Blooms
Estuarine													
Seagrasses	3	1	1	3	3	2	3	3	3	3	2	1	0
Mangroves	3	3	1	3	2	2	1	1	2	2	2	0	0
Benthic Algae	3	1	1	3	2	3	2	2	2	2	3	3	1
Drifting Algae	3	1	1	0	2	2	1	1	3	2	3	0	0
Emergent Marshes	3	3	1	3	3	3	2	1	2	2	2	0	0
Sand/Shell Bottom	3	1	0	1	2	1	2	2	3	1	0	0	0
Soft Bottom	3	1	0	1	2	1	2	2	3	1	0	0	0
Hardbottom	3	1	1	2	2	2	2	2	3	1	2	1	1
Oyster Bars	3	2	3	2	2	3	2	2	3	2	3	0	1
Pelagic	2	1	3	0	1	2	2	2	3	3	3	3	3
Nearshore													
Seagrasses	3	2	1	3	3	2	3	3	3	3	2	1	0
Mangroves	3	3	1	3	2	3	1	1	2	2	3	0	0
Benthic Algae	3	1	1	3	2	3	2	2	2	2	3	3	1
Drifting Algae	3	1	1	0	2	2	1	1	3	2	3	0	0
Sand/Shell Bottom	3	3	1	1	1	2	0	2	0	3	1	1	0
Soft Bottom	3	3	1	1	1	2	0	2	0	3	1	2	0
Hardbottom	3	3	1	2	2	2	0	2	2	3	1	1	1
Banks/Shoals	3	1	0	0	2	0	1	1	1	0	0	1	0
Reefs	3	3	1	2	3	3	1	2	3	3	3	3	1
Pelagic	3	3	1	3	0	1	0	2	3	3	3	2	3
Total (effect by impact):	59	38	21	36	39	41	28	36	46	43	40	22	12

- 3 - large effect
- 2 - moderate effect
- 1 - some effect
- 0 - not applicable or no effect

Table 3.5.7a. Normalized measured non-fishing effects for the Gulf of Mexico study area. (Estuarine)

ESTUARINE														
Zone	Dredge and Fill	Shoreline Hardening	Impingement/Entrainment/Thermal	Structural Shading	Boating Impacts (propeller scarring, turbidity, groundings)	Altered Freshwater Inflow	Point Source Pollution	Non-Point Source Pollution	Oil Spills	Industrial Spills	Toxic Chemical Releases (wood preservatives)	Oil/Gas Operations	Hypoxia	Harmful Algal Blooms
1	1	1	0	1	0	0	1	0	0	0	0	0	0	1
2	1	0	0	0	0	0	0	0	0	0	0	0	0	1
3	1	1	0	1	0	1	0	1	0	0	0	0	0	1
4	1	4	1	2	1	1	1	1	0	1	0	0	0	3
5	1	3	2	3	1	4	1	2	0	1	1	0	0	4
6	1	1	2	1	0	1	1	2	0	1	1	1	0	1
7	1	1	1	1	0	1	1	1	0	1	1	0	0	1
8	1	1	1	1	1	1	1	1	0	1	1	0	0	1
9	1	1	0	1	0	1	1	1	0	1	0	0	0	1
10	1	1	1	1	2	1	1	1	1	1	1	1	0	1
11	2	1	1	1	2	1	1	1	1	1	1	1	0	0
12	1	1	1	1	1	1	1	1	1	1	1	1	0	0
13	1	1	0	2	1	0	1	1	2	1	1	3	1	0
14	1	1	1	4	1	1	2	2	4	2	2	3	3	0
15	1	1	1	4	1	1	1	1	4	1	2	3	3	0
16	1	1	1	3	1	1	1	1	3	1	1	2	3	0
17	3	1	0	3	4	1	1	1	3	1	2	2	4	0
18	4	2	1	1	4	1	4	4	1	4	4	1	1	0
19	1	1	1	1	1	1	1	1	1	1	1	1	0	0
20	1	1	1	0	1	1	1	1	0	1	1	1	0	0
21	1	1	0	0	1	1	1	1	0	1	0	0	0	0

Table 3.5.7b. Normalized measured non-fishing effects for the Gulf of Mexico study area. (Nearshore)

NEARSHORE														
Zone	Dredge and Fill	Shoreline Hardening	Impingement/Entrainment/Thermal	Structural Shading	Boating Impacts (propeller scarring, turbidity, groundings)	Altered Freshwater Inflow	Point Source Pollution	Non-Point Source Pollution	Oil Spills	Industrial Spills	Toxic Chemical Releases (wood preservatives)	Oil/Gas Operations	Hypoxia	Harmful Algal Blooms
1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
2	0	0	0	0	0	0	0	0	0	0	0	0	0	1
3	1	0	0	0	1	0	0	0	0	0	0	0	0	1
4	1	0	0	0	2	0	0	0	0	0	0	0	0	1
5	2	0	0	0	2	0	0	0	0	0	0	1	0	1
6	1	0	0	0	0	0	0	0	0	0	0	1	0	1
7	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8	2	0	0	0	2	0	0	0	0	0	0	1	0	1
9	1	0	0	0	2	0	0	0	0	0	0	1	0	1
10	2	0	0	1	3	0	0	0	1	0	0	1	0	1
11	2	0	0	2	4	0	0	0	2	0	0	3	0	0
12	1	0	0	0	1	0	0	0	0	0	0	1	0	0
13	2	0	0	2	3	0	0	0	2	0	0	3	2	0
14	1	0	0	2	1	0	0	0	2	0	0	4	3	0
15	0	0	0	4	0	0	0	0	3	0	0	4	3	0
16	1	0	0	3	1	0	0	0	3	0	0	3	3	0
17	3	0	0	2	4	0	0	0	2	0	0	3	1	0
18	3	0	0	1	4	0	0	0	1	0	0	1	0	0
19	3	0	0	1	4	0	0	0	1	0	0	1	0	0
20	4	0	0	1	4	0	0	0	1	0	0	1	0	0
21	2	0	0	1	2	0	0	0	1	0	0	1	0	0