

DRAFT Coral Reef Ecosystem Restoration Working Group Recommendations for Sanctuary Advisory Council Consideration DRAFT

REGION	LOCATION	Habitat Type - Goals & Objectives	Habitat Description	Resources Present/Condition	Existing Access Restrictions	Working Group Comments / Site Selection Criteria	Site Information
Upper Keys	Turtle Reef, Pennekamp (East Ocean Reef)	Mid-Channel patch reef - State Waters	Aggregate Reef, Individual or Aggregated Patch Reef, Pavement, Seagrass, Unconsolidated Sediment	Acroporids: staghorn, elkhorn	<ul style="list-style-type: none"> FPS/John Pennekamp State Park Existing Management Area/Lobster Trapping Exclusion Zone No FKNMS Existing Management Area/SPA (FKNMS mooring buoys present) State Waters: 3 mooring buoys in Pennekamp, (5 installed/ maintained by FKNMS) 	<ul style="list-style-type: none"> East of Ocean Reef (circled, aka Turtle Rocks) Minimal use - low visitation Historic presence of Acroporids: staghorn, elkhorn FKNMS Vessel Grounding Restoration site: <i>Bad Boyz</i> FKNMS CREMP monitoring program thermograph station; existing long-term monitoring data available 	A mid-channel patch reef managed as part of the FPS John Pennekamp Coral Reef State Park. The site is a linear complex of aggregated coral patch reefs, located approx. 3.1 nm southeast of Ocean Reef Club within State waters. Accessible from Ocean Reef and Card Sound via Angelfish Creek, it is visited primarily by Ocean Reef residents and charter operators conducting baitfishing activity on the backreef. The proposed site partially overlaps the no lobstering zone, so consumptive activities are limited.
Upper Keys	Carysfort Reef - North	Reef Margin/Fore Reef	Spur and Groove, Aggregate Reef, Individual or Aggregated Patch Reef, Pavement, Seagrass, Unconsolidated Sediment	Acroporids present: staghorn, elkhorn; degraded Acroporids, recovering, recruitment - elkhorn	<ul style="list-style-type: none"> Existing Management Area: SPA is the largest (1.5 nm²) 	<ul style="list-style-type: none"> Minimal use - low visitation, hard to get to/remote Permitted/Coral Restoration Foundation - outplant sites Historic presence of Acroporids: elkhorn, staghorn; degraded but recruitment underway, recovering FKNMS Vessel Grounding Restoration sites; vessel grounding hot spot FKNMS CREMP, CDC monitoring program stations, thermograph station; existing long-term monitoring data available 	Carysfort/South Carysfort Reef is one of the best developed reef systems in the Keys and is the largest of all SPAs. It contains a spur and groove reef, including well-developed stands of elkhorn coral, patch reefs and rubble. Historic Carysfort Lighthouse nearby, the site is located 5.6 nm off Key Largo. Accessible from Ocean Reef and Card Sound via Angelfish Creek. Some diving and fishing occur in the area, but little conflict among users.
Upper Keys	Elbow Reef, North Elpis	Reef Margin/Fore Reef	Spur and Groove, Aggregate Reef, Pavement, Unconsolidated Sediment	Acroporids: staghorn, elkhorn; degraded, vessel grounding - restoration monitoring data available as of 2008; Acroporid research data available	<ul style="list-style-type: none"> Adjacent and outside Existing Management Area: SPA (0.3 nm²) 	<ul style="list-style-type: none"> Low use - Low visitation Permitted/Coral Restoration Foundation - outplant sites Close to existing nursery Historic presence of Acroporids: elkhorn, staghorn FKNMS Vessel Grounding Restoration site: <i>Elpis</i>, degraded Long-term restoration monitoring site, existing data available as of 2008 Known long-term research stations; Acroporid research data available 	A well-defined spur and groove reef with healthy deepwater corals. The SPA located 5.5 nm off Key Largo, and 5 nm east of Rattlesnake Key. The SPA includes reef crest, rubble horns and extends out to the 30' depth contour. Lobster, ballyhoo fishermen use the area, significant recreational fishing adjacent to, and seaward of the reef. Minimal conflict between users, because not heavily used. The proposed site encompasses the <i>Elpis</i> grounding restoration site.
Upper Keys	Key Largo Dry Rocks	Reef Margin/Fore Reef	Individual or Aggregated Patch Reef, Pavement, Seagrass, Unconsolidated Sediment		<ul style="list-style-type: none"> Existing Management Area: SPA is very small (0.05 nm²) 	<ul style="list-style-type: none"> High use - heavy visitation; rough weather - high windy day use Permitted/Coral Restoration Foundation - existing outplanting sites Historic presence of Acroporids: elkhorn, staghorn Anchoring issues need to be addressed, in seagrass area FKNMS Permitted Restoration site FKNMS Vessel Grounding sites; vessel grounding hot spot - degraded 	A small spur and groove fore reef with stands of elkhorn coral (historically), and home to the "Christ of the Deep" statue. The SPA is ringed with mooring buoys, and located approx. 4.6 nm east of El Radabob Key, off Key Largo, seaward of Higdons Reef/White Banks, extending to the 30-foot depth contour. The site has excellent accessibility from Key Largo's Port Largo, and Largo Sound via North and South Sound Creeks and hosts commercial diving, snorkeling and fishing activities.
Upper Keys	French Reef	Reef Margin/Fore Reef	Spur and Groove, Aggregate Reef, Pavement, Reef Rubble, Seagrass, Unconsolidated Sediment	Acroporids present: staghorn, elkhorn; Acroporid research data available	<ul style="list-style-type: none"> Existing Management Area: SPA is small (0.1 nm²) Existing Management Area: NOAA NMFS Lobster Trapping Exclusion Zone (portion outside SPA) 	<ul style="list-style-type: none"> Heavy use area Permitted/Coral Restoration Foundation - existing outplanting sites Historic presence of Acroporids: elkhorn, staghorn FKNMS Permitted Restoration sites FKNMS Vessel Grounding Restoration site Known long-term research stations; Acroporid research data available 	The spur and groove reef includes rubble fields to the 60-foot depth contour, and contains many caves and arches. The SPA is located 6 nm off Key Largo. The site has excellent accessibility from Key Largo's Port Largo, and Largo Sound via North and South Sound Creeks and hosts commercial diving, snorkeling and fishing activities. Lobster fishermen use the surrounding areas.
Upper Keys	Molasses Reef	Reef Margin/Fore Reef	Spur and Groove, Aggregate Reef, Pavement, Reef Rubble, Seagrass, Unconsolidated Sediment	economic data available	<ul style="list-style-type: none"> Existing Management Area: SPA (0.3 nm²) 	<ul style="list-style-type: none"> Heavy use, highest visitation (next to Sand Key) Economic data available (51 K visitors/year) Area of concentrated charter dive operators' use Permitted/Coral Restoration Foundation - existing outplanting sites Closer proximity to existing coral nursery FKNMS CREMP, CDC monitoring program stations, thermograph stations; existing long-term monitoring data available (extensive) 	A spur and groove reef that includes a significant number of boulder corals and a deep wall. Located 6 nm off Key Largo, adjacent to the historic Molasses Reef Light and the south white shoal marker. The SPA is highly accessible from Key Largo's Port Largo, and Largo Sound via North and South Sound Creeks and the most heavily visited reef in the Upper Keys for diving. It serves to reduce diver and hook-and-line fishermen conflicts.
Upper Keys	Molasses Reef - North Wellwood Restoration	Reef Margin/Fore Reef	Spur and Groove, Aggregate Reef, Pavement, Unconsolidated Sediment	Acroporids present: staghorn, elkhorn; monitoring data available; degraded, vessel grounding	<ul style="list-style-type: none"> Existing Management Area: SPA (0.3 nm²) 	<ul style="list-style-type: none"> Low use, low visitation Permitted/Coral Restoration Foundation - existing outplanting sites Closer proximity to existing coral nursery Historic presence of Acroporids: elkhorn, staghorn FKNMS Vessel Grounding Restoration site: M/V <i>Wellwood</i>, degraded Long-term restoration monitoring site, existing data available FKNMS CREMP, CDC monitoring program stations, thermograph stations; existing long-term monitoring data available (extensive) 	A spur and groove reef that has been heavily degraded by a large ship grounding. Located 6 nm off Key Largo, adjacent to the historic Molasses Reef Light and the north white shoal marker. The SPA is highly accessible from Key Largo's Port Largo, and Largo Sound via North and South Sound Creeks. The north end is visited less frequently and has undergone several phases of structural and biological restoration since the grounding injury in 1984.

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REGION	LOCATION	Habitat Type - Goals & Objectives	Habitat Description	Resources Present/Condition	Existing Access Restrictions	Working Group Comments / Site Selection Criteria	Site Information
Upper Keys	Snapper Ledge	Reef Margin/Fore Reef	Spur and Groove, Aggregate Reef, Pavement, Unconsolidated Sediment	Acroporids present: staghorn, elkhorn; active restoration; good condition	<ul style="list-style-type: none"> No FKNMS Existing Management Area/SPA (2 mooring buoys present, installed/maintained by FKNMS) Existing Management Area: NOAA NMFS Lobster Trapping Exclusion Zone 	<ul style="list-style-type: none"> Heavy use - by divers, charter operators Permitted/Coral Restoration Foundation - Nursery and existing outplanting sites Historic presence of Acroporids: elkhorn, staghorn Source of parent colonies for nurseries FKNMS Permitted Restoration sites 	This patchy spur and groove reef is a popular site with the dive operators. Located 5.4 nm off Tavernier, just southwest of Pickles Reef. CRF began its Snapper Ledge elkhorn nursery in 2009, and has proven successful producing hundreds of elkhorn colonies a year. Known for its large population of Snapper often seen at the northwest tip of the patch. In addition to charter dive and fishing operators, the site is used by recreational divers and fishermen.
Upper Keys	Hen and Chickens	Mid-Channel patch reef	Individual or Aggregated Patch Reef, Pavement, Seagrass	Mountain star, boulder corals; degraded - cold spells; Acroporids: Elkhorn	<ul style="list-style-type: none"> Existing Management Area: SPA is small (0.2 nm2) 	<ul style="list-style-type: none"> High use - heavy visitation Cold spell 2010 mortality - degraded (also 1970) Vulnerable to extreme temperatures Historic presence of Acroporids: elkhorn, staghorn Mountainous star, boulder corals present FKNMS monitoring program thermograph station; existing long-term monitoring data available 	A unique mid-channel patch reef complex with mounds of star corals showing signs of damage/decline. The SPA is 2 nm off Plantation Key, in the middle of Hawks Channel. It is easily accessible, with mooring buoys, and a high-use, low-conflict zone. Commercial and recreational snorkelers and divers are the primary users.
Upper Keys	Davis Reef	Reef Margin/Fore Reef (Transitional, low relief)	Aggregate Reef, Pavement, Reef Rubble, Seagrass, Unconsolidated Sediment		<ul style="list-style-type: none"> Existing Management Area: SPA is small (0.2 nm2) (Research Closure suggested) 	<ul style="list-style-type: none"> Heavy use area Permitted/FWRI Restoration - Nursery, existing outplanting sites and active research site Historic presence of Acroporids FKNMS Permitted Restoration sites 	Low-relief transitional reef with well-developed gorgonian coral. The SPA, located 4 nm off Plantation Key, helps to protect unique deepwater corals. It is easily accessible and heavily used. Used by Islamorada's divers, recreational fishermen, a few tropical fish collectors, and commercial fishermen offshore.
Middle Keys	Cheeca Rocks	Inshore Patch Reef	Aggregate Reef, Individual or Aggregated Patch Reef, Scattered Coral/Rock in Unconsolidated Sediment, Seagrass	degraded, vessel groundings	<ul style="list-style-type: none"> Existing Management Area: SPA is small (0.05 nm2) 	<ul style="list-style-type: none"> Permitted/Coral Restoration Foundation - outplant sites FKNMS Permitted Restoration sites FKNMS Vessel Grounding Restoration sites; vessel grounding hot spot - degraded 	The SPA is the only zone in the Middle Keys designated to protect inshore patch reefs. Located 0.5 nm off Upper Matecumbe Key (Islamorada). An easily accessible site, heavily used, especially by visitors to Cheeca Lodge. Primary uses include diving, snorkeling and education. No major consumptive users, a few tropical fish collectors displaced.
Middle Keys	South of Lower Matecumbe	Reef Margin/Fore Reef	Individual or Aggregated Patch Reef, Pavement, Seagrass, Unconsolidated Sediment	Acroporids: staghorn	<ul style="list-style-type: none"> No FKNMS Existing Management Area/SPA Existing Management Area: NOAA NMFS Lobster Trapping Exclusion Zone 	<ul style="list-style-type: none"> Permitted/Coral Restoration Foundation - existing outplanting sites Historic presence of Acroporids: staghorn FKNMS Permitted Restoration sites 	A linear reef margin complex located 4.4 nm south of Upper Matecumbe Key, 3.8 nm southeast of Lower Matecumbe and approx. 1.5 nm southwest of Alligator Reef Light. Habitat consists of aggregate patch reefs with transitional, intermediate reef characteristics of a very faint drowned spur and groove reef that tapers off to deep reef. This reef type is typical of the Middle Keys, marking the geological transition from the shallower reefs of the Upper Keys. Consumptive activities allowed, except within lobster trapping exclusion zones.
Middle Keys	Caloosa Rocks	Inshore Patch Reef	Individual or Aggregated Patch Reef, Pavement, Seagrass		<ul style="list-style-type: none"> No FKNMS Existing Management Area/SPA 	<ul style="list-style-type: none"> Mountainous star, boulder corals present 	An inshore patch reef consisting of a complex of large mounds of star coral. The site is located 0.7 nm southeast of the southern tip of Lower Matecumbe Key, along the inside edge of Hawks Channel and encompasses a portion of the seagrass community nearby. Consumptive activities are allowed, heavily used by recreational fishermen and charter fishing operators out of Islamorada.
Middle Keys	Tennessee Reef	Reef Margin/Fore Reef	Aggregate Reef, Pavement	Acroporids: staghorn	<ul style="list-style-type: none"> Existing Management Area: Research Only designated special-use zone (0.2 nm2) No mooring buoys present 	<ul style="list-style-type: none"> Historic presence of Acroporids: staghorn Deep Reef Spur and Groove FKNMS CREMP monitoring program stations, thermograph station; existing long-term monitoring data available 	A deep, drowned spur and groove reef, extending seaward to the 30-foot depth contour encompassing unique deepwater, slow-growth corals and sponges. A "Research Only" zone located 4 nm south of Long Key. A low-use, inaccessible site with no mooring buoys, not a prime dive spot. Located in the path of Florida Bay waters and also an area with good water quality. Fishing and lobster trapping inshore.
Middle Keys	South of Little Duck Key	Reef Margin/Fore Reef	Spur and Groove, Aggregate Reef, Pavement, Seagrass, Unconsolidated Sediment		<ul style="list-style-type: none"> No FKNMS Existing Management Area/SPA 	<ul style="list-style-type: none"> Large rectangle, multiple reefs FKNMS Maritime Heritage Program research & Shipwreck Trail site: <i>Adeline Baker</i> shipwreck; one spar buoy and a single mooring buoy present, installed/maintained by FKNMS 	A linear reef margin complex along the southwest end of the proposed zone that fringes an intermediate to deep, drowned spur and groove reef system exhibiting transitional reef features. Three additional reef margin features to the northeast along the reef tract are included, also exhibiting the same drowned spur and groove system. The site is located just seaward of the <i>Adeline Baker</i> shipwreck, and 4 nm south-southeast of Duck Key. Consumptive activities are allowed.

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Middle Keys	Coffins Patch	Offshore Patch Reef	Aggregate Reef, Individual or Aggregated Patch Reef, Reef Rubble, Seagrass, Unconsolidated Sediment	Pillar coral present	<ul style="list-style-type: none"> Existing Management Area: SPA (0.4 nm2) 	<ul style="list-style-type: none"> Permitted/TNC - FWRI Restoration Site - existing outplanting sites Pillar corals present here, significant population 	Characteristic of an offshore patch reef, the reef includes rare pillar coral, other unique corals and a rubble field on the back reef. The SPA is located 4 nm south of Grassy Key or southeast of Key Colony Beach. It's easily accessible, low-use and visited by divers, and formerly recreational fishermen, treasure hunters and tropical fish collectors.
Middle Keys	South of Key Colony Beach/Marker 48 Reef	Mid-Channel Patch Reef	Individual or Aggregated Patch Reef, Pavement, Seagrass, Unconsolidated Sediment		<ul style="list-style-type: none"> No FKNMS Existing Management Area/SPA (FKNMS mooring buoys present, 3 are installed/maintained by FKNMS) 	<ul style="list-style-type: none"> FKNMS Grounding Restoration Site: concrete debris removal Approx. 1 nm north of Permitted/TNC-FWRI Restoration/Nursery, outplant site; and Pillar coral restoration research site FKNMS CREMP monitoring program stations; existing long-term monitoring data available 	A mid-channel patch reef system of individual and clusters of aggregated coral heads with distinct halos surrounded by a dense seagrass community. The site is located approx. 1.4 nm south of the tip of Key Colony Beach and encompasses "Marker 48" along the edge of Hawks Channel. The reef is adjacent to red daymarker 48, and is easily accessible to residents of Key Colony beach, and Marathon via Vaca Cut. Consumptive activities are allowed.
Middle Keys	Delta Shoal	Reef Margin/Fore Reef	Spur and Groove, Aggregate Reef, Pavement, Reef Rubble, Seagrass, Unconsolidated Sediment		<ul style="list-style-type: none"> No FKNMS Existing Management Area/SPA No mooring buoys present 	<ul style="list-style-type: none"> Permitted/TNC - FWRI Restoration Site - existing outplanting sites FKNMS Permitted Restoration site: Diadema research, (FWC/FWRI) FKNMS Maritime Heritage Program & Shipwreck Trail site: <i>North American</i> shipwreck; one spar buoy and a single mooring buoy present, installed/maintained by FKNMS 	A spur and groove fore reef, with a prominent rubble berm, that drops off as an intermediate, drowned spur and groove reef to the 30-foot depth contour. The site is located approx. 3.3 nm south of Boot Key (Marathon), and 1 nm northeast of the historic Sombrero Lighthouse. Used heavily by recreational, charter and commercial fishermen and divers, consumptive activities are allowed.
Middle Keys	Sombrero Key	Reef Margin/Fore Reef	Spur and Groove, Pavement, Reef Rubble, Seagrass, Unconsolidated Sediment		<ul style="list-style-type: none"> Existing Management Area: SPA is small (0.2 nm2) 	<ul style="list-style-type: none"> FKNMS Vessel Grounding site: <i>Corinthia</i> FKNMS CREMP, CDC monitoring program stations, thermograph station; existing long-term monitoring data available 	A spur and groove reef with stands of elkhorn, reef crest and rubble field. The SPA is located 3.5 nm seaward of Boot Key (Marathon), and includes the historic Sombrero Lighthouse. Diving and snorkeling occurs in this high-use area. Catch-and-release trolling allowed, recreational fishing off the back and sides of the reef, commercial fishing seaward. The SPA serves to reduce diver and recreational fishing user conflicts.
Lower Keys	Newfound Harbor SPA S/V Bateau Duhe Voyager - Bela Zeky Restorations	Inshore Patch Reef	Individual or Aggregated Patch Reef, Pavement	boulder corals, Acroporids present: elkhorn; degraded - vessel groundings, cold spell	<ul style="list-style-type: none"> Existing Management Area: SPA is small (0.1 nm2), proposed sites are within, and outside 		This SPA is the only inshore patch reef complex protected in the Lower Keys, and contains a series of nearshore patch reefs located less than 0.5 nm from the entrance of Newfound Harbor. It is centered on two patch reefs along the shoreline of the western Newfound Harbor Keys, adjacent to flashing red channel marker 50, with the seaward extent along the 18-foot depth contour. Good accessibility, low user numbers, but a high-use area for environmental education, and formerly bait fishing, and spearfishing.
Lower Keys	Looe Key Reef SPA R/V Columbus Iselin Restoration	Reef Margin/Fore Reef	Spur and Groove, Aggregate Reef, Pavement, Reef Rubble, Unconsolidated Sediment	Acroporids present: staghorn, elkhorn; degraded - hurricanes, disease, vessel groundings	<ul style="list-style-type: none"> Existing Management Area: SPA (0.3 nm2) 	<ul style="list-style-type: none"> High use, heavy visitation, heavily utilized; 38 mooring buoys, 2-3 boats per buoy during periods of high use Historic presence of Acroporids: elkhorn, staghorn; degraded - hurricanes, diseases FKNMS Vessel Grounding Restoration site: R/V <i>Columbus Iselin</i>, mooring buoy #17 spur; long-term restoration monitoring site, existing data available FKNMS Vessel Grounding sites; vessel grounding hot spot - degraded FKNMS CREMP, CDC monitoring program and known long-term research stations, thermograph stations; ongoing research and existing long-term monitoring data available (extensive) 	A classic shallow spur and groove reef, the SPA expands protection to include transitional, intermediate reefs seaward to the 45- foot depth contour line, and a large seagrass community bordered by rubble fields and horns landward. It's located 5.5 nm south of Ramrod Key, 8.8 nm southwest of Bahia Honda Key, is easily accessible and well-marked by flashing red reef light/marker 24.
Lower Keys	American Shoal Reef	Reef Margin/Fore Reef		Acroporids present: staghorn	<ul style="list-style-type: none"> No FKNMS Existing Management Area/SPA No mooring buoys present Existing Management Area: NOAA NMFS Lobster Trapping Exclusion Zone, encompassed within proposed site 	<ul style="list-style-type: none"> Permitted/Mote Marine Lab Restoration Site - existing outplanting sites Historic presence of Acroporids: staghorn, <i>Acropora</i> rubble present 	A faint spur and groove reef, representing an extensive transitional, intermediate reef, including a large back reef rubble zone and large northwest rubble horn. Historic American Shoal Lighthouse nearby, the reef is located 5.5 nm south of Sugarloaf Keys, and 6.6 nm west of Looe Key. Consumptive activities other than lobster trapping (within zoned portion) are allowed.

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Lower Keys	Pelican Shoal	Reef Margin/Fore Reef	Spur and Groove, Aggregate Reef, Pavement, Reef Rubble, Land, Seagrass, Unconsolidated Sediment		<ul style="list-style-type: none"> ● FKNMS Wildlife Management Area, no FKNMS SPA present 	<ul style="list-style-type: none"> ● Historic presence of Acroporids: extensive, acres ● Potential upstream recruitment for the rest of the Middle, Upper Keys ● FKNMS Vessel Grounding sites present 	A faint, drowned spur and groove reef adjacent to the Wildlife Management Area, designated over the small rubble island important for nesting birds. Located 4.4 nm southeast of Boca Chica Key, 4.8 nm south of Saddlebunch Keys. No access restriction extends 50 meters offshore (April 1-August 31). Consumptive activities are allowed (observe no access rules).
Lower Keys	Boca Chica Patch Reefs	Inshore Patch Reef	Aggregate Reef, Individual or Aggregated Patch Reef, Pavement, Seagrass, Unconsolidated Sediment	Acroporids present, but died 2010 - staghorn; degraded - cold spell, vessel groundings	<ul style="list-style-type: none"> ● No FKNMS Existing Management Area/SPA ● No mooring buoys present 	<ul style="list-style-type: none"> ● Low use ● Cold spell 2010 mortality - <i>Acropora cervicornis</i> ● Vulnerable to hot and cold weather ● Historic presence of Acroporids: staghorn, degraded ● Mountainous star, boulder corals present ● FKNMS Vessel Grounding Restoration site: <i>Lagniappe</i> ; vessel grounding hot spot - degraded; also the <i>Whiz</i> and an orphan grounding site 2012 ● FKNMS CREMP monitoring program stations nearby; existing long-term monitoring data available (Jaap Reef - GPS coordinates available) 	An extensive complex of inshore patch reefs that includes individual and large aggregated clusters of star and brain boulder corals. Located along the Boca Chica beach shoreline, the patch reefs are approx. 0.5 nm offshore, with the southwest end of the patch just northeast of flashing red channel marker 56 marking the edge of Hawks Channel. The site is utilized mostly by nearby residents of Boca Chica Key, Tamarac Park, and Geiger Key for snorkeling, kayaking, fishing and spearfishing. Consumptive activities are allowed.
Lower Keys	Hawk Channel Patch Reefs 1 East of W. Sambos ER	Mid-Channel Patch Reef	Aggregate Reef, Individual or Aggregated Patch Reef, Pavement, Seagrass, Unconsolidated Sediment	good condition	<ul style="list-style-type: none"> ● No FKNMS Existing Management Area/SPA ● No mooring buoys present 	<ul style="list-style-type: none"> ● Large polygon north of Middle Sambos, Eastern Sambos, and Pelican Shoal; also south of Boca Chica Patch Reefs ● Big coral heads in good condition ● FKNMS CREMP monitoring stations nearby; existing long-term monitoring data available (West Washerwoman Shoal, northeast - GPS coordinates available) 	A large area encompassing an extensive mid-channel patch reef system, consisting of individual and clusters of aggregated coral heads with distinct halos surrounded by dense seagrass communities and hardbottom areas. The site is located approx. 2 nm south of Boca Chica Key, and 2.3 nm south of Tamarac Park/Geiger Key and the southern tip of Saddlebunch Keys, and just west of West Washerwoman shoal, in the middle of Hawks Channel. The complex includes healthy boulder corals, rarely visited due to poor visibility. Commercial lobster fishermen use the area extensively. Consumptive activities are allowed.
Lower Keys	Western Sambo 1 (larger general EMA)	Reef Margin/Fore Reef	Spur and Groove, Aggregate Reef, Individual or Aggregated Patch Reef, Pavement, Reef Rubble, Seagrass, Unconsolidated Sediment	Acroporids present: Elkhorn, staghorn; degraded - vessel groundings	<ul style="list-style-type: none"> ● Existing Management Area: Ecological Reserve (9 nm2) 	<ul style="list-style-type: none"> ● Permitted/FKCC-Coral Restoration Foundation - existing outplanting sites ● Historic presence of Acroporids: elkhorn, staghorn - degraded ● FKNMS Permitted Restoration site: FL Aquarium and FKNMS - <i>Miss Beholden</i> vessel grounding; existing long-term monitoring data available ● FKNMS Vessel Grounding Restoration sites: <i>Jacqueline L, Connected</i> - degraded; monitoring data available as of 2009 ● FKNMS Vessel Grounding sites; vessel grounding hot spot - degraded ● FKNMS CREMP, CDC monitoring program stations, thermograph stations; existing long-term monitoring data available 	A well developed spur and groove reef, part of an FKNMS Ecological Reserve that includes the greatest habitat diversity in the Lower Keys. The fore reef proposed zone is located 4.3 nm south of Boca Chica Key at the southern tip of the ER, west of Eastern and Middle Sambos Reefs, in a region of the Keys that has (historically) some of the best water quality along the reef tract. Protection displaced lobster fishermen, commercial and recreational fishermen, tropical marine life collectors and spearfishing. Consumptive activities are allowed only in the portions of this proposed zone that lie outside, or south and west of the ER.
Lower Keys	Western Sambo 2 (West End) JACQUELINE L, CONNECTED Restorations	Reef Margin/Fore Reef	Spur and Groove, Aggregate Reef, Pavement, Reef Rubble, Seagrass	Acroporids present: Elkhorn, staghorn; existing data available - 2009	<ul style="list-style-type: none"> ● Existing Management Area: Ecological Reserve (9 nm2) 	<ul style="list-style-type: none"> ● Historic presence of Acroporids: elkhorn, staghorn - degraded ● FKNMS Vessel Grounding Restoration sites: <i>Jacqueline L, Connected</i> - degraded; monitoring data available as of 2009 ● FKNMS Vessel Grounding sites; vessel grounding hot spot - degraded ● FKNMS CREMP, CDC monitoring program stations, thermograph stations; existing long-term monitoring data available 	A well developed spur and groove reef, part of an FKNMS Ecological Reserve that includes the greatest habitat diversity in the Lower Keys. The fore reef proposed zone is located 4.3 nm south of Boca Chica Key at the southern tip of the ER, west of Eastern and Middle Sambos Reefs, in a region of the Keys that has (historically) some of the best water quality along the reef tract. This proposed zone is focused on the west end of the shallow fore reef and reef crest, degraded by vessel grounding injuries and heavily used by the charter diving and snorkeling operators.
Lower Keys	Key West Patch Reefs	Inshore Patch Reef	Artificial, Aggregate Reef, Pavement, Land, Seagrass, Unconsolidated Sediment		<ul style="list-style-type: none"> ● No FKNMS Existing Management Area/SPA 	<ul style="list-style-type: none"> ● Mountainous star, boulder corals present ● Inshore Patch Reef - selection criteria consideration ● Large polygon south of Trumbo Point NAS, Casa Marina, the Key West Int'l Airport and Stock Island, extending to Boca Chica Channel ● FKNMS Vessel Grounding sites present 	A large complex of inshore patch reefs, encompassing an extensive area along the shoreline of Key West extending from Boca Chica Channel to the Trumbo Point Navy Base seaward to the edge of Hawks Channel. Patch reefs are located from 0.3 to 0.7 nm offshore. Consumptive activities are allowed.

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Lower Keys	Eastern Dry Rocks 1 (general SPA area)	Reef Margin/Fore Reef	Spur and Groove, Aggregate Reef, Reef Rubble, Seagrass, Unconsolidated Sediment	Acroporids present: Elkhorn, Staghorn; active natural recruitment	● Existing Management Area: SPA is small (0.1 nm2)	<ul style="list-style-type: none"> ● Permitted/FKCC-Coral Restoration Foundation - existing outplanting sites ● Coral Nursery needed nearby ● Historic presence of Acroporids: elkhorn, staghorn; extensive, acres - degraded; active natural recruitment, especially backreef area ● FKNMS Vessel Grounding sites present 	A spur and groove bank reef, the SPA is located between the 4-foot-deep reef flat area and 30-foot depth contour, 5.2 nm southwest of Key West. The reef is easily accessible from Key West, and of high economic value to the charter fishing, sportfishing, diving and lobster fishing communities. High user conflicts are reduced by SPA designation.
Lower Keys	Rock Key 1 (general SPA area)	Reef Margin/Fore Reef	Spur and Groove, Aggregate Reef, Pavement, Reef Rubble, Seagrass, Unconsolidated Sediment	Acroporids present: Elkhorn, Staghorn	● Existing Management Area: SPA is small (0.1 nm2)	<ul style="list-style-type: none"> ● Permitted/FKCC-Coral Restoration Foundation - existing outplanting sites ● Coral Nursery needed nearby ● Historic presence of Acroporids: elkhorn, staghorn; extensive, acres - degraded ● FKNMS Vessel Grounding sites present: <i>Island Diver</i>; vessel grounding hot spot - degraded ● FKNMS Vessel Grounding & Restoration sites: <i>Italian Stallion, Paradiso</i> restoration site; existing restoration monitoring data available ● FKNMS CREMP, CDC monitoring program stations; existing long-term monitoring data available 	A spur and groove bank reef, the SPA is located between the reef crest and 30-foot depth contour, 5.8 nm southwest of Key West. The reef is easily accessible from Key West, and of high economic value to the charter fishing, sportfishing, diving and lobster fishing communities. High user conflicts are reduced by SPA designation.
Lower Keys	Sand Key 1 (general SPA area)	Reef Margin/Fore Reef	Spur and Groove, Aggregate Reef, Individual or Aggregated Patch Reef, Pavement, Reef Rubble, Seagrass, Unconsolidated Sediment	Acroporids present: Elkhorn, Staghorn	● Existing Management Area: SPA (0.5 nm2)	<ul style="list-style-type: none"> ● Permitted/FKCC-Coral Restoration Foundation - existing outplanting sites ● Coral Nursery needed nearby ● Historic presence of Acroporids: elkhorn, staghorn; extensive, acres - degraded ● FKNMS Vessel Grounding sites present ● FKNMS vessel grounding hot spot - degraded ● FKNMS CREMP, CDC monitoring program stations, thermograph station; existing long-term monitoring data available 	A spur and groove bank reef, the largest of the three Key West SPAs, sits adjacent to the historic Sand Key Lighthouse. It is located 6.5 nm southwest of Key West and extends from the reef flat to between the 30- and 60-foot depth contours. The reef is easily accessible from Key West, and of high economic value to the users. Catch and release trolling is allowed in the SPA and portions of the rubble ridges remain open to consumptive activities.
Marquesas	Cottrell Key	Backcountry, Hardbottom	Aggregate Reef, Pavement, Mangrove, Seagrass, Unconsolidated Sediment	Boulder/brain corals, Acroporids present: staghorn; carpet anemones; all degraded - Blackwater	● FKNMS Wildlife Management Area nearby, no FKNMS SPA present ● FKNMS mooring buoys present, installed/maintained by FKNMS	<ul style="list-style-type: none"> ● Blackwater event mortality - degraded ● Historic presence of Acroporids: staghorn; significant amounts ● Boulder, brain corals present; carpet anemones ● FKNMS Vessel Grounding site: <i>Lady Ann</i> 2011 ● A long way from any proposed nurseries 	A hardbottom area consisting of aggregate coral reef, ledges, pavement, mangroves, and seagrass communities. Located 7.2 nm northwest of Key West, 0.3 nm northwest of Cottrell Key, which is a Wildlife Management Area with a 300-foot no motor zone. The site is used primarily by charter dive operators on bad weather days.
Marquesas	Western Dry Rocks	Reef Margin/Fore Reef	Spur and Groove, Aggregate Reef, Individual or Aggregated Patch Reef, Pavement, Reef Rubble, Seagrass, Unconsolidated Sediment	Acroporid: Elkhorn, Staghorn; degraded	<ul style="list-style-type: none"> ● No Existing Management Areas present/SPA ● FKNMS mooring buoys present, installed/maintained by FKNMS 	<ul style="list-style-type: none"> ● Least visited of all outside reefs (in the Key West Area) ● Historic presence of Acroporids: formerly huge elkhorn stands, staghorn stands - degraded ● Logistically very challenging site to work 	A classic spur and groove reef that is relatively small, with a well-developed rubble horn and several mooring buoys. West of Sand Key (2.6 nm), it is located 4.8 nm south of Man Key and 8.6 nm southwest of Key West. The reef is accessible from Key West, but is visited by charter operators when visibility is better than nearby reefs. Consumptive activities are allowed.
Marquesas	Man Key Patch Reefs	Inshore Patch Reefs	Individual or Aggregated Patch Reef		● No FKNMS Existing Management Area/SPA	<ul style="list-style-type: none"> ● Mountainous star, boulder coral heads present ● Inshore Patch Reef - selection criteria consideration ● A long way from any proposed nurseries 	An aggregate of inshore patch reefs, located nearshore approximately 0.3 nm seaward of Man Key, and 6 nm west of Key West. Consumptive activities are allowed.
Marquesas	Boca Grande Patch Reef	Inshore Patch Reefs	Individual or Aggregated Patch Reef		● No FKNMS Existing Management Area/SPA	<ul style="list-style-type: none"> ● Nice coral heads ● Inshore Patch Reef - selection criteria consideration ● A long way from any proposed nurseries ● FKNMS monitoring program thermograph station: nearby; existing long-term monitoring data available (Boca Grande Channel) 	An aggregate of inshore patch reefs, located nearshore approximately 0.4 nm seaward of Boca Grande Key, and roughly 10.5 nm west of Key West. Traditionally used by spearfishermen and snorkelers. Consumptive activities are allowed.
Dry Tortugas	East of DTNP Pulaski Shoals	Coral Reef slope, hardbottom	Aggregate Reef, Unconsolidated Sediment	Acroporid: staghorn; existing data available	● No Existing FKNMS Management Areas/SPA	<ul style="list-style-type: none"> ● Low use, low visitation ● Good control site ● Historic presence of Acroporids: staghorn ● Tortugas Gyre - importance for coral reefs to the east, northeast (Marquesas, Lower, Upper, Middle Keys) ● Logistically very challenging site to work ● FKNMS monitoring program stations: Pulaski Shoals - CREMP, CDC; long-term monitoring data available 	Placeholder for work outside Dry Tortugas NP, (no reef specified). Pulaski shoal is an intermediate to deep reef slope located off the northwest corner of DTNP. It is listed due to existing data available from FKNMS monitoring programs, it being the site of the <i>C/S Mavro Vetrican</i> large vessel grounding November 1989 and known historic presence of Acroporids. Consumptive activities are allowed.

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Dry Tortugas	Dry Tortugas National Park		Individual or Aggregated Patch Reef	Acroporid: staghorn; existing data available, photo-documentation	<ul style="list-style-type: none"> • NPS Existing Management Area: presently doing restoration 	<ul style="list-style-type: none"> • Historic presence of Acroporids: staghorn; anywhere less than 60 feet used to be entirely staghorn, photo-documentation available • Logistically very challenging site to work • FKNMS Monitoring program stations: multiple CREMP, CDC stations within the park; long-term monitoring data available 	(no site specified)