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DATA REPORT
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Corals in the Mesophotic Zone (40–115 m) at the Barrier Reef Complex From San Andrés Island (Southwestern Caribbean)

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BACKGROUND

Shallow reefs in the SeaFlower Biosphere Reserve, even at the remotest bank atolls, are showing a steady decline in coral cover overall health condition during the last 20 years (Sánchez et al., 2019b). Mesophotic Coral Ecosystems (MCEs), located between 30 and >150 m of water depth, may act as a refuge of coral populations due to favorable conditions in this less altered environment (Bongaerts et al., 2010). Particularly, in our study area, San Andres Island, populations of corals reaching the lower (>60 m) mesophotic zone, 40–90 m, such as *Agaricia undata* exhibit genetic connectivity throughout its depth range (Gonzalez-Zapata et al., 2018a), supporting this zone as a major reef-building coral refuge. It has been suggested that depending on the type of endosymbiont, corals can acclimatize to deeper depths (Ziegler et al., 2015), which was in fact observed in the bacterial population from *A. undata* in San Andrés Island (Gonzalez-Zapata et al., 2018a). In addition, many species of fish, corals, and other invertebrates from shallow reefs are also found in mesophotic reefs and it is proposed that these populations could contribute to the recovery of affected populations in shallower areas following a disturbance (Kramer et al., 2019).

There are potential new species of corals and associated species, including common shallow-water fauna, in mesophotic reefs (Luck et al., 2013; Petrescu et al., 2014), which urges studies surveying coral diversity at these depths. However, these reefs have been rarely explored below 60 m in water depth. The dataset presented in this study, provide the first exploration of the mesophotic zone (40–120 m deep) in an oceanic barrier reef complex (SeaFlower Biosphere Reserve), San Andrés Island, Southwestern Caribbean. The dataset presented here includes the collection information, and community composition of corals *sensu lato* (stony corals, hydrocorals, black corals, and octocorals). The ultimate goal was to contribute to the understanding of sensible and vulnerable environments, in the SeaFlower Biosphere reserve, in which San Andrés Island is immersed.

DATA COLLECTION

We concentrated the study in the fore-reef slope of San Andrés Island barrier reef complex near the location called "Trampa de Tortugas" or "Trampa Tortuga," which offered a number of logistic advantages. The site bears a shelter to anchor the supporting boat despite its location on the

TABLE 1 | Specimens comprising the mesophotic coral dataset (Cnidaria: Anthozoa and Hydrozoa).

IN-ANDES	Code	Species	Depth (m)	Site	Sdate
		Black corals (Anthipatharia)			
4128	SAI206	*Antipathes atlantica* (Gray, 1857) (C)	40	Trampa deTortugas	11/04/15
4205	SAI128	*Antipathes furcata* (Gray, 1857) (A)	70	Trampa deTortugas	11/04/15
4466	SAI153	*Antipathes* sp. (Pallas, 1976) (C)	85	Trampa deTortugas	11/04/15
4467	SAI184	*Antipathes* sp. (Pallas, 1976)	40	Trampa deTortugas	11/04/15
4468	SAI185	*Antipathes* sp. (Pallas, 1976)	40	Trampa deTortugas	11/04/15
4469	SAI186	*Antipathes* sp. (Pallas, 1976)	40	Trampa deTortugas	11/04/15
4470	SAI187	*Antipathes* sp. (Pallas, 1976)	40	Trampa deTortugas	11/04/15
4164	SAI205	*Rhipidipathes colombiana* (Opresko and Sánchez, 1997) (R)	40	Trampa deTortugas	11/04/15
4324	SAI131	*Stichopathes lutkeni* (Brook, 1889) (A)	70	Trampa deTortugas	11/04/15
4325	SAI142	*Stichopathes lutkeni* (Brook, 1889)	85	Trampa deTortugas	11/04/15
4327	SAI150	*Stichopathes lutkeni* (Brook, 1889)	85	Trampa deTortugas	11/04/15
4328	SAI151	*Stichopathes lutkeni* (Brook, 1889)	85	Trampa deTortugas	11/04/15
4339	SAI171	*Stichopathes lutkeni* (Brook, 1889)	40	Trampa deTortugas	11/04/15
4340	SAI172	*Stichopathes lutkeni* (Brook, 1889)	40	Trampa deTortugas	11/04/15
4330	SAI174	*Stichopathes lutkeni* (Brook, 1889)	40	Trampa deTortugas	11/04/15
4341	SAI180	*Stichopathes lutkeni* (Brook, 1889)	40	Trampa deTortugas	11/04/15
4334	SAI190	*Stichopathes lutkeni* (Brook, 1889)	40	Trampa deTortugas	11/04/15
4335	SAI196	*Stichopathes lutkeni* (Brook, 1889)	40	Trampa deTortugas	11/04/15
4323	SAI104	*Stichopathes lutkeni* (Brook, 1889)	70	Trampa deTortugas	10/04/15
4394	SAI095	*Stichopathes occidentalis* (Gray, 1860) (A)	70	Trampa deTortugas	10/04/15
4395	SAI103	*Stichopathes occidentalis* (Gray, 1860)	70	Trampa deTortugas	10/04/15
4337	SAI120	*Stichopathes occidentalis* (Gray, 1860)	100	Trampa deTortugas	10/04/15
4396	SAI130	*Stichopathes occidentalis* (Gray, 1860)	70	Trampa deTortugas	11/04/15
4397	SAI132	*Stichopathes occidentalis* (Gray, 1860)	70	Trampa deTortugas	11/04/15
4374	SAI140	*Stichopathes occidentalis* (Gray, 1860)	85	Trampa deTortugas	11/04/15
4376	SAI144	*Stichopathes occidentalis* (Gray, 1860)	85	Trampa deTortugas	11/04/15
4379	SAI149	*Stichopathes occidentalis* (Gray, 1860)	85	Trampa deTortugas	11/04/15
4381	SAI156	*Stichopathes occidentalis* (Gray, 1860)	85	Trampa deTortugas	11/04/15
4382	SAI157	*Stichopathes occidentalis* (Gray, 1860)	85	Trampa deTortugas	11/04/15
4383	SAI168	*Stichopathes occidentalis* (Gray, 1860)	85	Trampa deTortugas	11/04/15
4385	SAI189	*Stichopathes occidentalis* (Gray, 1860)	40	Trampa deTortugas	11/04/15
4386	SAI191	*Stichopathes occidentalis* (Gray, 1860)	40	Trampa deTortugas	11/04/15
4388	SAI193	*Stichopathes occidentalis* (Gray, 1860)	40	Trampa deTortugas	11/04/15
4389	SAI194	*Stichopathes occidentalis* (Gray, 1860)	40	Trampa deTortugas	11/04/15
4391	SAI200	*Stichopathes occidentalis* (Gray, 1860)	40	Trampa deTortugas	11/04/15
4812	SAI081	*Stichophates* sp. (C)*	115	Trampa deTortugas	10/04/15
4579	SAI083	*Stichophates* sp.	115	Trampa deTortugas	10/04/15
4580	SAI094	*Stichophates* sp.	70	Trampa deTortugas	10/04/15
4581	SAI108	*Stichophates* sp.	90	Trampa deTortugas	10/04/15
4582	SAI111	*Stichophates* sp.	90	Trampa deTortugas	10/04/15
4585	SAI141	*Stichophates* sp.	85	Trampa deTortugas	11/04/15
4586	SAI148	*Stichophates* sp.	85	Trampa deTortugas	11/04/15
4587	SAI158	*Stichophates* sp.	85	Trampa deTortugas	11/04/15
4588	SAI166	*Stichophates* sp.	85	Trampa deTortugas	11/04/15
4589	SAI167	*Stichophates* sp.	85	Trampa deTortugas	11/04/15
4590	SAI195	*Stichophates* sp.	40	Trampa deTortugas	11/04/15
4592	SAI207	*Stichophates* sp.	40	Trampa deTortugas	11/04/15
4249	SAI010	*Tanacetipathes hirta* (Gray, 1857) (C)	67	Blue Wall	14/01/15

(Continued)

TABLE 1 | Continued

IN-ANDES	Code	Species	Depth (m)	Site	Sdate
4253	SAI159	*Tanacetipathes hirta* (Gray, 1857)	85	Trampa deTortugas	11/04/15
		Reef building corals (Scleractinia)			
4302	SAI098	*Agaricia fragilis* (Dana, 1848) (C)	70	Trampa deTortugas	10/04/15
4303	SAI119	*Agaricia fragilis* (Dana, 1848)	80	Trampa deTortugas	10/04/15
4305	SAI188	*Agaricia fragilis* (Dana, 1848)	40	Trampa deTortugas	11/04/15
4741	SAI178	*Agaricia* sp. (R)	40	Trampa deTortugas	11/04/15
4739	SAI116	*Agaricia* sp.	80	Trampa deTortugas	10/04/15
4300	SAI033	*Agaricia undata* (Ellis and Solander, 1786) (A)	80	Trampa deTortugas	15/01/15
4738	SAI101	*Agaricia undata* (Ellis and Solander, 1786)	70	Trampa deTortugas	10/04/15
4199	SAI118	*Agaricia undata* (Ellis and Solander, 1786)	80	Trampa deTortugas	10/04/15
4740	SAI134	*Agaricia undata* (Ellis and Solander, 1786)	45	Trampa deTortugas	11/04/15
4301	SAI034	*Agaricia undata* (Ellis and Solander, 1786)	80	Trampa deTortugas	15/01/15
7244	SAI603	*Balanophyllia cyathoides* (Pourtalès, 1871) (A)	70	Trampa deTortugas	10/04/15
4479	SAI127	*Javania cailleti* (Duchassaing and Michelotti, 1864) (R)	110	Trampa deTortugas	10/04/15
4426	SAI117	*Mycetophyllia reesi* (Wells, 1973) (R)	80	Trampa deTortugas	10/04/15
4427	SAI121	*Mycetophyllia reesi* (Wells, 1973)	100	Trampa deTortugas	10/04/15
4428	SAI125	*Mycetophyllia reesi* (Wells, 1973)	110	Trampa deTortugas	10/04/15
4477	SAI071	*Phacelocyathus flos* (Pourtalès, 1878) (R)	70	Trampa deTortugas	16/01/15
4430	SAI096	*Thalamophyllia riisei* (Duchassaing and Michelotti, 1864) (A)	70	Trampa deTortugas	10/04/15
4431	SAI100	*Thalamophyllia riisei* (Duchassaing and Michelotti, 1864)	70	Trampa deTortugas	10/04/15
7242	SAI601	*Thalamophyllia riisei* (Duchassaing and Michelotti, 1864)	70	Trampa deTortugas	10/04/15
7243	SAI602	*Thalamophyllia riisei* (Duchassaing and Michelotti, 1864)	70	Trampa deTortugas	10/04/15
		Lace corals (Hydrozoa: Stylasteridae)			
4187	SAI064	*Stylaster duchassaingi* (Pourtalès, 1867) (C)	95	Trampa deTortugas	16/01/15
4188	SAI107	*Stylaster duchassaingi* (Pourtalès, 1867) (C)	90	Trampa deTortugas	10/04/15
		Gorgonian corals (Octocorallia)			
4262	SAI039	*Antillogorgia hystrix* (Bayer, 1961) (C)	60	Trampa deTortugas	15/01/15
4642	SAI032	*Caliacis nutans* (Duchassaing and Michelotti, 1864) (C)	80	Trampa deTortugas	15/01/15
4139	SAI105	*Ellisella barbadensis* (Duchassaing and Michelotti, 1864) (A)	90	Trampa deTortugas	10/04/15
4143	SAI162	*Ellisella barbadensis* (Duchassaing and Michelotti, 1864)	85	Trampa deTortugas	11/04/15
4137	SAI025	*Ellisella barbadensis* (Duchassaing and Michelotti, 1864)	80	Trampa deTortugas	15/01/15
4140	SAI106	*Ellisella barbadensis* (Duchassaing and Michelotti, 1864)	90	Trampa deTortugas	10/04/15
4141	SAI109	*Ellisella barbadensis* (Duchassaing and Michelotti, 1864)	90	Trampa deTortugas	10/04/15
4142	SAI160	*Ellisella barbadensis* (Duchassaing and Michelotti, 1864)	85	Trampa deTortugas	11/04/15
4190	SAI001	*Ellisella elongata* (Pallas, 1766) (R)	67	Blue Wall	14/01/15
4440	SAI110	*Ellisella schmitti* (Bayer, 1961) (A)	90	Trampa deTortugas	10/04/15
4498	SAI090	*Ellisella* sp. (R)*	115	Trampa deTortugas	10/04/15
4499	SAI092	*Ellisella* sp.	115	Trampa deTortugas	10/04/15
4409	SAI027	*Eunicea pinta* (Bayer and Deichmann, 1958) (C)	80	Trampa deTortugas	15/01/15
4410	SAI036	*Eunicea pinta* (Bayer and Deichmann, 1958)	60	Trampa deTortugas	15/01/15
4411	SAI176	*Eunicea* sp. (C)*	40	Trampa deTortugas	11/04/15
4412	SAI177	*Eunicea* sp.	40	Trampa deTortugas	11/04/15
4369	SAI022	*Hypnogorgia pendula* (Duchassaing and Michelotti, 1864) (C)	80	Trampa deTortugas	15/01/15
4639	SAI023	*Hypnogorgia pendula* (Duchassaing and Michelotti, 1864)	80	Trampa deTortugas	15/01/15
4640	SAI024	*Hypnogorgia pendula* (Duchassaing and Michelotti, 1864)	80	Trampa deTortugas	15/01/15
4641	SAI028	*Hypnogorgia pendula* (Duchassaing and Michelotti, 1864)	80	Trampa deTortugas	15/01/15
4646	SAI137	*Hypnogorgia* sp. (C)*	85	Trampa deTortugas	11/04/15
4208	SAI009	*Nicella goreaui* (Bayer, 1973) (C)	67	Blue Wall	14/01/15
4219	SAI087	*Nicella goreaui* (Bayer, 1973)	115	Trampa deTortugas	10/04/15
4220	SAI155	*Nicella goreaui* (Bayer, 1973)	85	Trampa deTortugas	11/04/15

(Continued)

TABLE 1 | Continued

IN-ANDES	Code	Species	Depth (m)	Site	Sdate
4221	SAI164	*Nicella goreaui* (Bayer, 1973)	85	Trampa deTortugas	11/04/15
4680	SAI112	*Nicella toeplitzae* (Viada and Cairns, 2007) (R)	80	Trampa deTortugas	10/04/15
4194	SAI089	*Swiftia exserta* (Ellis and Solander, 1786) (C)	115	Trampa deTortugas	10/04/15
4665	SAI050	*Thelogorgia studeri* (Bayer, 1991) (C)	95	Trampa deTortugas	16/01/15
4666	SAI052	*Thelogorgia studeri* (Bayer, 1991)	95	Trampa deTortugas	16/01/15
4667	SAI057	*Thelogorgia studeri* (Bayer, 1991)	95	Trampa deTortugas	16/01/15
4668	SAI058	*Thelogorgia studeri* (Bayer, 1991)	95	Trampa deTortugas	16/01/15
4669	SAI136	*Thelogorgia studeri* (Bayer, 1991)	85	Trampa deTortugas	11/04/15
4643	SAI056	*Thesea sp.* (Duchassaing and Michelotti, 1860) (C)	95	Trampa deTortugas	16/01/15
4647	SAI161	*Thesea* sp. (Duchassaing and Michelotti, 1860)	85	Trampa deTortugas	11/04/15
4648	SAI163	*Thesea* sp. (Duchassaing and Michelotti, 1860)	85	Trampa deTortugas	11/04/15
4349	SAI008	*Villogorgia nigrescens* (Duchassaing and Michelotti, 1860) (A)	67	Blue Wall	14/01/15
4350	SAI030	*Villogorgia nigrescens* (Duchassaing and Michelotti, 1860)	80	Trampa deTortugas	15/01/15
4351	SAI031	*Villogorgia nigrescens* (Duchassaing and Michelotti, 1860)	80	Trampa deTortugas	15/01/15
4352	SAI035	*Villogorgia nigrescens* (Duchassaing and Michelotti, 1860)	80	Trampa deTortugas	15/01/15
4353	SAI053	*Villogorgia nigrescens* (Duchassaing and Michelotti, 1860)	95	Trampa deTortugas	16/01/15
4660	SAI055	*Villogorgia nigrescens* (Duchassaing and Michelotti, 1860)	95	Trampa deTortugas	16/01/15
4354	SAI135	*Villogorgia nigrescens* (Duchassaing and Michelotti, 1860)	85	Trampa deTortugas	11/04/15

*IN-ANDES: museum catalog number. Code, collector number. Species, Depth (meter), Site at San Andrés Island (SeaFlower Biosphere Reserve) and Date collected (day/month/year). Information per species: (A) Abundant, (C) Common, and (R) rare. *Potentially new species.*

fore-reef terrace. In addition, this site provides the only accessible glimpse of the oldest slope of the barrier-reef complex of San Andrés (Geister, 1975; Díaz et al., 1995; Diaz et al., 1996). We explored the reef using Close-Circuit Rebreather (CCR) (Megalodon, Inner Space Systems) and hypoxic trimix techniques (e.g., 11% Oxygen and 60% Helium) with complete bail-out support for each diver. At the site, we installed a mooring block at 24 m as a gas station that had high oxygen bail-outs (O_2 96%) and from where we tied a 200 m long reel down to a depth of 114 m. The reel was used to safely explore down the site and to have an easy return to shallower waters. Seven dives were planned with a maximum of 20–30 min of bottom time and the longest dives spanned 133–328 min including decompression stops. The sampling included digital imagery (Nikon™ D7000, Nikkor micro 60 mm lens, Sea & Sea™ YS-D1 strobe, and Aquatica™ AD7000 housing) and 113 voucher specimens (dry and ethanol 96%), which were deposited at Museo de Historia ANDES (Bogotá, Colombia) (**Table 1**).

Coral Identifications

All specimens were examined under the optical and/or compound microscope for morphological identification and contrasted against species keys (if available) and/or taxonomic descriptions. For scleractinian corals we used Cairns, 2000; for Stylasteridae Cairns et al., 1986; for black corals Opresko and Sánchez, 2005; for octocorals Bayer, 1961; Bayer and Grasshoff, 1994, 1995; Sánchez and Wirshing, 2005; Sánchez, 2009. In addition, several species accounts for Colombia were also useful in species identification (Flórez et al., 2010; Chacón-Gómez et al., 2012; Santodomingo et al., 2013). When needed, Scanning Electron Microscopy (SEM) images were obtained at the microscopy laboratory in the Universidad de los Andes to increase the certainty of identifications.

DATASET OUTCOMES AND DISCUSSION

The dataset included 113 specimens from 33 species collected below 40 m (8 black corals, 1 lace coral, 8 scleractinian corals, and 16 gorgonian corals: **Table 1**). Exploring "Trampa de Tortugas," we noticed the disappearance of most reef-building corals and zooxanthellate octocorals at different depths. Some reef-building corals, notably *Mycethophyllia reesi*, *Agaricia undata, A. fragilis,* and *Madracis* sp., distributed well into the lower mesophotic zone (~90 m) and are characterized by an increase in the presence of the euendolithic algae *Ostreobium*, which is clearly observable at the colony surface (Gonzalez-Zapata et al., 2018b). These colonial corals are replaced below 80 m by azooxanthellate cup corals, including *Javania cailleti, Phacelocyathus flos, Balanophyllia cyathoides,* and *Thalamophyllia riisei* forma *solida* (**Figure 1**). A noteworthy observation was the presence of *Ostreobium* at the basal portion of *T. riisei* cup-corals.

The lower mesophotic reef is also the habitat of many unique black corals (e.g., *Rhipidipathes colombiana* and *Tanacetipathes hirta*) and hydrocorals (*Stylaster duchassaingi*) but the most abundant group are azoxanthellate octocorals mostly from the Plexauridae family (Sánchez, 2017; Sánchez et al., 2019a). The species replacement is enhanced by short terraces intertwined with abrupt steps at every 10 m starting at 60, 90, 100, and 115 m, at "Trampa Tortuga" reef in San Andrés Island. On the

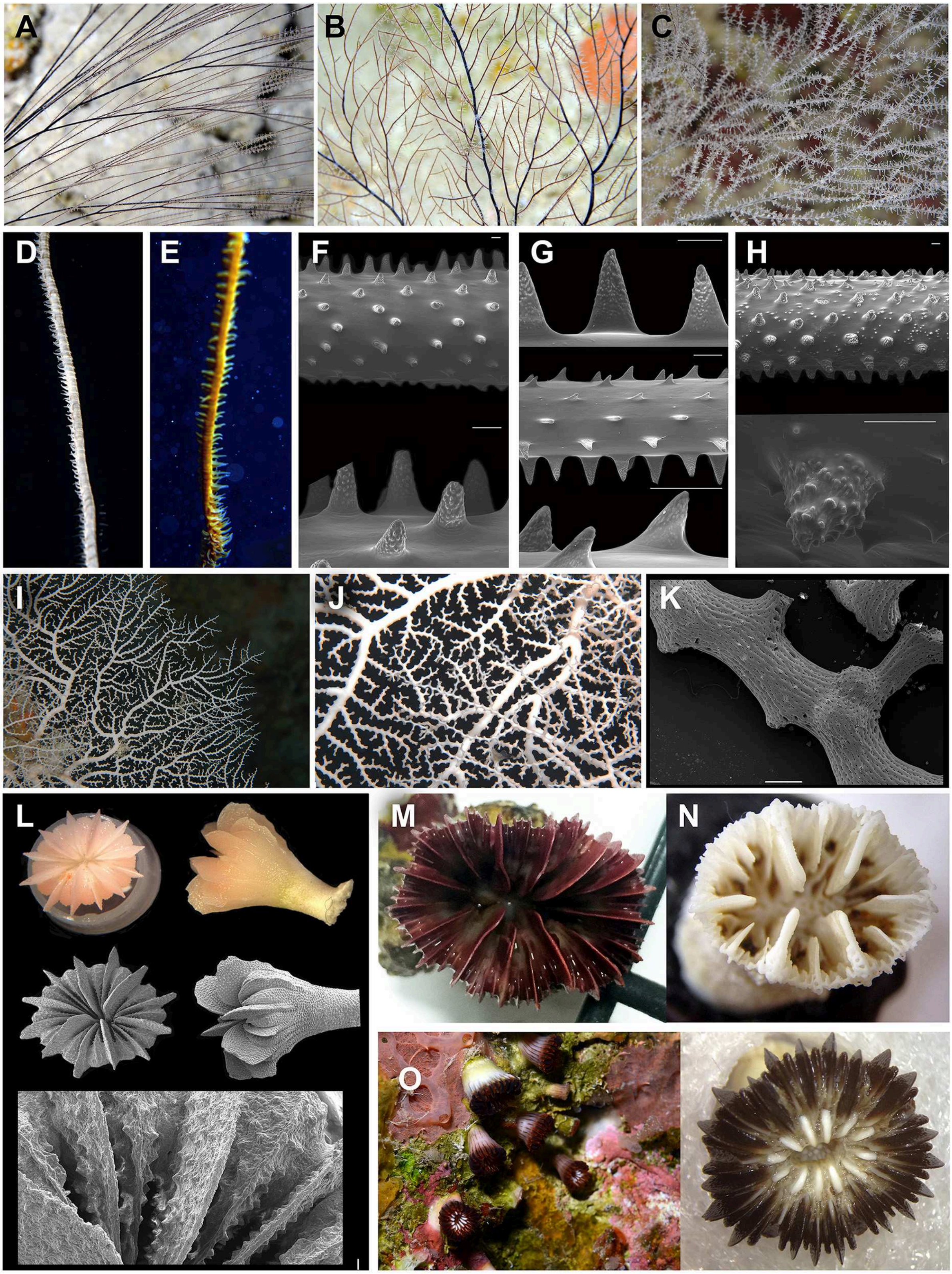

FIGURE 1 | Selected corals in the lower mesophotic zone (45–70 m) at San Andrés Island (SeaFlower Biosphere reserve). **(A–H)** Black corals. **(A)** *Antipathes furcata*, **(B,C)** *Antipathes atlantica*, **(D,E)** *Stichopathes* spp. **(F)** *Stichopathes lutkeni*; **(G)** *S. occidentalis*; **(H)** *Stichopathes* sp. (probably undescribed species or not reported *(Continued)*

FIGURE 1 | yet for the Caribbean) (scales **F–H** scale 200 and 50 μm for details). **(I–K)** *Stylaster duchassaingi* Pourtalès, 1867 **(I,J)**. Colonies at Trampa Tortuga, 90 m. **(K)** Scanning Electron Microscopy (SEM) images detail of terminal branches (scale 500 μm). **(L)** Cup coral *Thalamophyllia riisei* forma *solida,* voucher samples from Trampa Tortuga, San Andrés, optical, and SEM, including a costae detail. **(M)** Cup corals *Javania cailleti* (left) **(N)** *Balanophyllia cyathoides* (right), voucher specimen from Trampa Tortuga, San Andrés. **(O)** Cup coral *Phacelocyathus flos*, voucher from Trampa Tortuga, San Andrés. Corals at 55 m and voucher specimen.

leeward side of the Island, there is parallel slope sand corridor (mostly from *Halimeda copiosa* flocks) following the reef slope, which end at about 60–80, where the reef growth continues. The deepest zooxanthellate gorgonian coral was *Antillogorgia hystrix* (65 m), followed by *Eunicea pinta* (55 m). Occasionally, *Muricea laxa*, *A. bipinnata,* and *A. americana* were seen at depths of about 40 m. These zooxanthellate octocorals share habitat with some azooxanthellate octocorals such as *Iciligorgia schrammi* and diverse ellisellids (Sánchez et al., 2019a).

Black corals (Antipatharia) are also common from 30 m down to the lower mesophotic area (Bo et al., 2019). The most abundant black corals are *Antipathes furcata* (**Figure 1A**), *A. caribbeana, A. atlantica* (**Figure 1B**), *Plumapathes pennacea, Stichopathes lutkeni,* and *S. occidentalis*. Wire corals, *Stichopathes* spp., with colonies reaching more than 2 m long were seen in high densities of to have more than 10 colonies per square meter (**Figures 1C,D**). Below 70 m, the aforementioned black corals are less seen and other species emerge such as *Rhipidipathes colombiana*, first seen off the Colombian coast (Opresko and Sánchez, 2005), and *Tanacetipathes hirta*. There is also a great amount of wire corals from species we could not identify and probably comprise new undescribed species. Despite the clear characters of *S. lutkeni* and *S. occidentalis* under the electron microscope, there were specimens, *Stichopathes* sp., with conspicuously smaller spines not found in any other species described for this region (**Figure 1H**).

The most unexpected finding comprised a number of new records for several deep-sea corals, which have been usually found on deeper waters. *Stylaster duchassaingi* Pourtalès, 1867, a hydrocoral (Stylasteridae) was observed from 80 to 115 m forming seafan colonies up to 40 cm in height (**Figures 1I–K**). This is the southernmost record of the species and one of the shallower observations in its range. *Stylaster roseus* is commonly observed in the same reef but above 40 m (JAS, personal observation). San Andrés Island is the only coral reef complex so far in the Caribbean with two documented species of *Stylaster*.

As expected, the exploration of the lower mesophotic zone uncovered a great amount of new species records and potential discoveries (e.g., *Stichopathes* sp.). In addition, this is the first time that many of the species have been ever seen and photographed in their natural environment (Sánchez et al., 2019a). Continuing research in this environment will enrich the ecology, systematics, and conservation of understudied corals such as cup corals. For instance, the *Thallamophyllia riisei* cup coral found in San Andrés is extremely different to the reported *T. riisei* from the Colombian coast (Flórez et al., 2010), which is colonial with great differences in morphological traits. It is worth mention that this is the product of only seven dives (and <140 min of total bottom time) for San Andres Island.

REUSE POTENTIAL

The specimens collected and properly curated (deposited and IN-ANDES in Bogota, Colombia) comprise a valuable resource for further systematic studies in several groups of corals, which could comprise new species. In addition, it is important to mention that the specimens in this data report have not been monitored in the past, giving the logistic constraints of deep-sea diving. As the interest in MCEs increases biodiversity data becomes crucial for comparisons.

DATA AVAILABILITY

The datasets for this study can be found at https://ipt.biodiversidad.co/cr-sib/resource.do?r=0359_mesofoticos_20190729, titled "Biodiversidad y Conectividad de los arrecifes mesofóticos (30–120 m) de la costa Caribe colombiana". The data presented here corresponds to coral specimens (Cnidaria: Anthozoa andHydrozoa) collected between 40 and 115 m in the mesophotic corals ecosystems from San Andrés Island (SeaFlower Biosphere Reserve).

AUTHOR CONTRIBUTIONS

JS, LD, JA, and NB conceived the study. JS, JA, and NB collected the data. FG-Z, AS, DV, AP-V, and JS identified and processed the material. JS wrote the report with the help of LD, FG-Z, and NB. All authors read and accepted the manuscript.

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