

CUBA'S MESOPHOTIC CORAL REEFS

Fish Photo Identification Guide



ANDREW DAVID
DORKA COBIÁN ROJAS
FELICIA DRUMMOND
ALAIN GARCÍA RODRÍGUEZ



Edited by:
John K. Reed
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Credits:

Photo images: HBOI CIOERT

Images were taken with the UNCW-CIOERT Undersea Vehicle Program *Mohawk* ROV as digital still images or video screen grabs. Some species were photographed during shallow snorkel dives but were also observed at mesophotic depths during this expedition (13 taxa) or were reported in literature at depths >30 m (4 taxa).

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INTRODUCTION

Mesophotic coral reef ecosystems (MCEs) are light-dependent benthic communities that occur deeper than shallow reefs and typically range from depths of 30 m to the bottom of the photic zone, which may extend to >150 m in some regions. MCEs represent in part an extension of shallow-water coral reef ecosystems and support a diverse assemblages of habitat-building taxa, including corals, sponges and algae, and associated fish (Reed, González-Díaz, Busutil et al., 2018).

Many MCEs worldwide appear to be thriving compared to shallow reefs. The deep reef refugia hypothesis suggests that MCEs may be less impacted from natural and anthropogenic impacts than shallow coral reefs, and may be more stable and resilient than shallow reefs. MCEs may also act as refugia for shallow reef species through the export of fish and coral larvae. However, it is now apparent that MCEs are also vulnerable to disturbances from all facets of perturbations including climate change, bottom trawling, invasive species, and pollution.

Whereas considerable data have been reported regarding the distribution, ecology, and health of Cuba's shallow reefs, relatively little is known about the distribution, community

structure and health of Cuba's deep mesophotic reefs. Cuba's strong marine policies and legislation has already resulted in 105 MPAs, covering nearly 25% of its insular shelf, yet overfishing, poaching, pollution and global warming are threats to these vulnerable ecosystems, as reefs worldwide are threatened.

This photo album of selected fishes associated with Cuba's mesophotic reefs resulted from a recent joint Cuba-U.S. expedition that was conducted from May 14 to June 13, 2017 to map and document the extent and health of mesophotic coral ecosystems (MCEs) along the entire coastline of Cuba. Total ship transit around the island covered ~2,778 km (~1,500 nmi). Forty-three Remotely Operated Vehicle (ROV) dives at 36 stations confirmed the presence of MCEs habitat on all coasts of Cuba (Reed et al. 2018; Figure 1, Table 1).

ROV dives surveyed reefs from depths of 188 m to 18 m, covered 27 km, totaled 99 hours of bottom time, and resulted in 110 hours of high-definition video. A total of 21,146 digital still images documented habitat and species. The primary geomorphological features were the Deep Island Slope (125- >150 m), Deep Fore-Reef Escarpment (the 'Wall', 50-125 m), and Deep Fore-Reef Slope (30-50 m). Most vertical surfaces of the Wall were covered with dense sponges, algae, octocorals, and black corals. *Agaricia* was the most abundant scleractinian genus on the Wall at depths of 50-75 m, and was observed to 122 m.

A total of 178 fish species were identified from the ROV transects (Reed et al. 2018). Between 60 and 150 m, fish diversity and abundances were low at all sites, whereas from 30-60 m the diversity increased, as well as the frequency and abundance of fish species. The deep island slope zone (125-150 m) was dominated by Blackcap Basslet (*Gramma melacara*), Cave Basslet (*Liopropoma mowbrayi*),

Sunshinefish (*Chromis insolata*), Blackfin Snapper (*Lutjanus buccanella*), Longjaw Squirrelfish (*Neoniphon marianus*) and Longspine Squirrelfish (*Holocentrus rufus*). The walls (lower mesophotic reef zone, 50-120 m) and upper deep fore-reef (30-50 m) were inhabited by species common on Cuban shallow reefs, including numerous species from the families Acanthuridae, Balistidae, Carangidae, Chaetodontidae, Haemulidae, Holocentridae, Labridae, Lutjanidae, Pomacanthidae, Pomacentridae, and Serranidae. Groups of jack (*Caranx latus*, *C. ruber* and *C. lugubris*) were frequently observed. Ten species of grouper (Serranidae) were identified throughout the sampling area including Coney (*Cephalopholis fulva*), Graysby (*Cephalopholis cruentata*), Nassau Grouper (*Epinephelus striatus*) and Red Hind (*E. guttatus*). We observed Lionfish (*Pterois volitans/miles*) at most sites; the greatest depth was 188 m at Cabo Lucrecia (Site C-54B). The abundance of the invasive Lionfish was generally low, generally <10 observed during a four hour dive at most sites. An exception was at Cayo Coco (Site C-58) where they were relatively abundant with 53 counted on one dive.

It is important to note that the fish species included in this guide represent a subset of the 178 species documented on Cuba's mesophotic reefs during this expedition (Reed, González-Díaz, Busutil et al., 2018). Only species for which a clearly identifiable photograph was taken are included in this booklet. This guide contains images of 93 different taxa. A few species are represented by multiple images; these are species with ontogenetic color changes, multiple adult phenotypes, or behaviorally mediated color shifts (e.g., spawning coloration).

Figure 1. Map of Cuba showing ROV dive sites (red stars) on mesophotic reef sites (30-150 m depths) during the *F.G. Walton Smith* cruise, May 14 to June 12, 2017. Pink polygons- marine protected areas. (from REVISTA DE INVESTIGACIONES MARINAS Vol. 38(1):56-125).

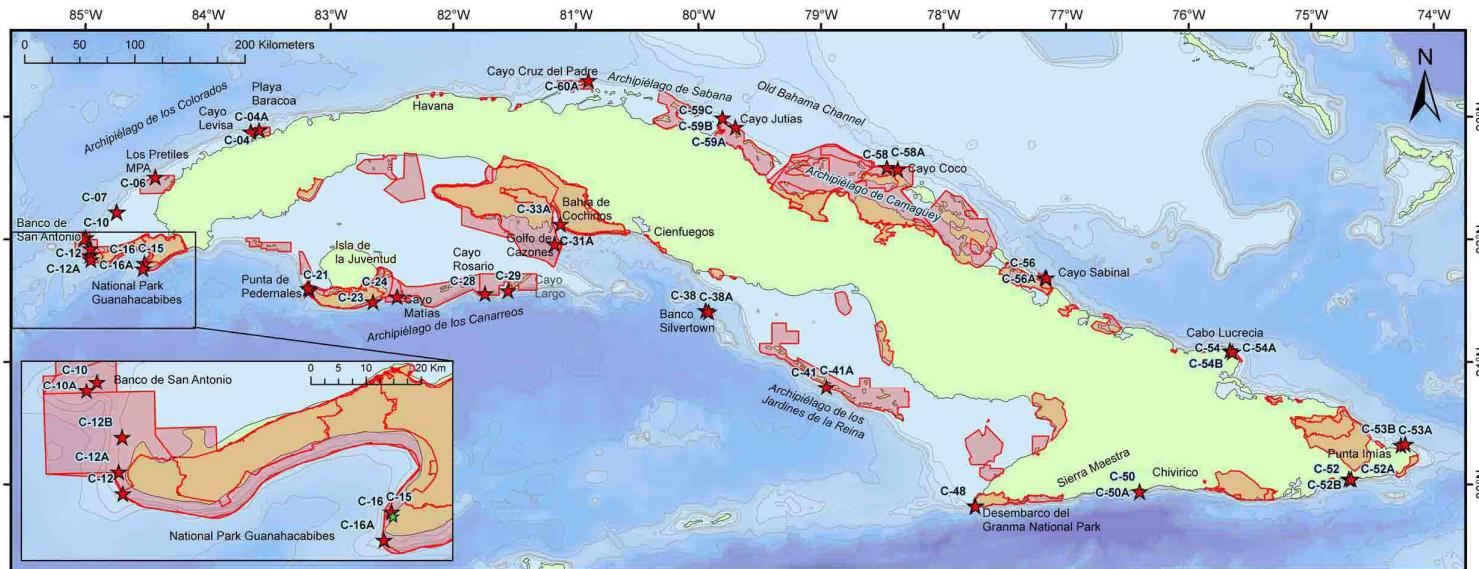


Table 1. ROV dive sites on Cuba's mesophotic reefs during the *F.G. Walton Smith* cruise, May 14 to June 12, 2017. (from REVISTA DE INVESTIGACIONES MARINAS Vol. 38(1):56-125).

Station	Dive No.	Location	Latitude	Longitude	Depth Range (m)
C-04	1	Cuba, NW coast, Cayo Levisa MPA	22°53.483'N	83°34.969'W	25-188
C-04A	2,3	Cuba, NW coast, 2 nmi north of Cayo Arenas, Cayo Levisa MPA	22°52.638'N	83°39.103'W	49-172
C-06	4,5	Cuba, NW coast, Norte de Los Pretiles MPA	22°30.487'N	84°25.907'W	43-170
C-07	6,7	Cuba, NW coast, Archipiélago de Los Colorados, No MPA	22°13.405'N	84°44.837'W	45-178
C-10	8	Cuba, W coast, Banco de San Antonio MPA, east wall	22°00.901'N	84°59.947'W	25-183
C-10A	9	Cuba, W coast, Banco de San Antonio MPA, south wall	22°00.017'N	85°00.977'W	30-150
C-12	10	Cuba, W coast, Los Cayuelos, Guanahacabibes National Park	21°50.005'N	84°57.426'W	149
C-12A	11	Cuba, W coast, Faro Roncali, off lighthouse, Guanahacabibes National Park	21°52.111'N	84°57.824'W	45-156
C-12B	12	Cuba, W coast, Las Tumbas, Guanahacabibes National Park	21°55.477'N	84°57.494'W	38-148
C-15	13	Cuba, W coast, El Almirante, Punto de Buceo, Cabo Corrientes, Guanahacabibes National Park	21°48.224'N	84°31.137'W	25-145
C-16A	14	Cuba, W coast, Cabo Corrientes, Guanahacabibes National Park	21°45.512'N	84°31.874'W	28-150
C-21	15	Cuba, S coast, SW tip of Isla de la Juventud, Punta de Pedernales MPA	21°35.263'N	83°10.325'W	25-158
C-21A	16	Cuba, S coast, SW Isla de la Juventud, bay on west side of point, Punta Francés MPA	21°36.010'N	83°10.943'W	28-150
C-23	17	Cuba, S coast, SE Isla de la Juventud, Punta Brava MPA	21°29.419'N	82°39.228'W	37-150
C-24	18	Cuba, S coast, E of Isla de la Juventud, Archipiélago de Los Canarreos, Cayo Matías MPA	21°31.924'N	82°27.480'W	40-150
C-28	19	Cuba, S coast, Archipiélago de Los Canarreos, Cayo Rosario MPA	21°33.469'N	81°44.401'W	29-150
C-29	20	Cuba, S coast, Archipiélago de Los Canarreos, Cayo Largo del Sur MPA	21°34.854'N	81°33.130'W	26-157

C-31A	21	Cuba, S coast, Golfo de Cazones, Punta Brava, Sur Ciénaga de Zapata, no MPA	21°57.650'N	81°10.355'W	18-150
C-33A	22	Cuba, S coast, Bahía de Cochinos, east wall, Zapata National Park	22°07.444'N	81°07.518'W	30-150
C-38	23,24	Cuba, S coast, south of Cienfuegos, Banco Silvertown, west wall, proposed MPA	21°25.180'N	79°56.377'W	24-150
C-38A	25	Cuba, S coast, south of Cienfuegos, Banco Silvertown, south wall, proposed MPA	21°24.470'N	79°54.942'W	40-153
C-41	26	Cuba, S coast, Cayo Caballones, south slope, Jardines de La Reina MPA	20°47.495'N	78°57.323'W	30-150
C-48	27,28	Cuba, S coast, Cabo Cruz, Desembarco del Granma National Park	19°49.600'N	77°44.551'W	40-154
C-50	29,30	Cuba, S coast, Sierra Maestra, Chivirico Proposed MPA	19°56.551'N	76°23.937'W	27-155
C-52	31	Cuba, S coast, Sierra Purial, Punta Imías, no MPA	20°02.601'N	74°41.498'W	60-161
C-52A	32	Cuba, S coast, Sierra Purial, east tip of Punta Imías, 1 nmi east of ROV 31, no MPA	20°02.513'N	74°40.345'W	43-156
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Green Moray / Morena Verde

Gymnothorax funebris

CLASS:

Actinopterygii

ORDER:

Anguilliformes

FAMILY:

Muraenidae

DEPTH:

-40 m



201706021_T-13-01-08_251_FIS.jpg

LOCATION: Cuba, S coast, Cabo Cruz, Desembarco del Gramma National Park, Station C-48

Sand Diver / Lagarto Manchado

Synodus intermedius

CLASS:

Actinopterygii

ORDER:

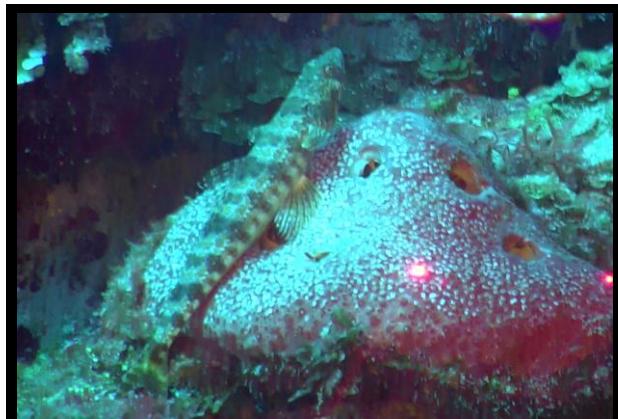
Aulopiformes

FAMILY:

Synodontidae

DEPTH:

-34 m



201705271_T-10-35-24_334_FIS.jpg

LOCATION: Cuba, S coast, Archipiélago de Los Canarreos, Cayo Rosario MPA, Station C-28

Snakefish / Lagarto

Trachinocephalus myops

CLASS:

Actinopterygii

ORDER:

Aulopiformes

FAMILY:

Synodontidae

DEPTH:

-44 m



201706094_T-17-39-56_227_FIS.jpg

LOCATION: Cuba, NE coast, Archipiélago Sabana-Camagüey,
Cayo Jutía, ¼ nmi N of snorkel Station, no MPA,C-
59C

Longspine Squirrelfish / Carajuelo Rufus

Holocentrus rufus

CLASS:

Actinopterygii

ORDER:

Beryciformes

FAMILY:

Holocentridae

DEPTH:

-62 m



201706043_T-14-10-22_167_FIS.jpg

LOCATION: Cuba, S coast, Sierra Purial, east tip of Punta
Imías, 1 nmi east of ROV 31, no MPA, Station C-
52A

Squirrelfish (gen.) /

Holocentrus sp.

CLASS:

Actinopterygii

ORDER:

Beryciformes

FAMILY:

Holocentridae



201705191_T-08-58-46_038_FIS.jpg

LOCATION: Cuba, NW coast, Los Pretiles MPA, Station C-06

Longjaw Squirrelfish / Carajuelo Mariano

Neoniphon marianus

CLASS:

Actinopterygii

ORDER:

Beryciformes

FAMILY:

Holocentridae



201705213_T-15-01-51_068_FIS.jpg

LOCATION: Cuba, W coast, Banco de San Antonio MPA, south wall, Station C-10A

Shortnose Batfish / Pez Diablo Ñato

Ogcocephalus nasutus

CLASS:

Actinopterygii

ORDER:

Lophiiformes

FAMILY:

Ogcocephalidae

DEPTH:

-121 m



201705201_T-09-19-36_283_FIS.jpg

LOCATION: Cuba, NW coast, Archipiélago de Los Colorados,
No MPA, Station C-07

Ocean Surgeon / Barbero

Acanthurus bahianus

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Acanthuridae

DEPTH:

-4 m



201706073_T-12-52-49_5033_FIS.jpg

LOCATION: Cuba, NE coast, Archipiélago Sabana-Camagüey,
Cayo Sabinal MPA, Station C-56A

Doctorfish / Barbero

Acanthurus chirurgus

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Acanthuridae



201706073_T-13-33-14_5092_FIS3.jpg

DEPTH:

-4 m

LOCATION: Cuba, NE coast, Archipiélago Sabana-Camagüey,
Cayo Sabinal MPA, Station C-56A

Blue Tang / Barbero Azul

Acanthurus coeruleus

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Acanthuridae

PHASE:

Adult Phase



201706044_T-15-22-43_4445_FIS.jpg

DEPTH:

-6 m

LOCATION: Cuba, S coast, Sierra Purial, east tip of Punta
Imías, no MPA, Station C-52B

Blue Tang / Barbero Azul

Acanthurus coeruleus

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Acanthuridae

PHASE:

Adult Phase

DEPTH:

-4 m



201706073_T-12-43-00_4982_FIS.jpg

LOCATION: Cuba, NE coast, Archipiélago Sabana-Camagüey,
Cayo Sabinal MPA, Station C-56A

Whitestar Cardinalfish / Cardenal Estrella

Blanca

Apogon lachneri

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Apogonidae



20170631_T-09-25-13_083_FIS.jpg

LOCATION: Cuba, S coast, Sierra Maestra, Chivirico Proposed
MPA, Station C-50

Yellow Jack / Cibí Amarillo

Carangoides bartholomaei

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Carangidae



201706073_T-12-53-40_5040_FIS.jpg

DEPTH:

-4 m

LOCATION: Cuba, NE coast, Archipiélago Sabana-Camagüey,
Cayo Sabinal MPA, Station C-56A

Horse-eye Jack / Gallego

Caranx latus

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Carangidae



201705263_T-16-37-29_212_FIS.jpg

DEPTH:

-44 m

LOCATION: Cuba, S coast, E of Isla de la Juventud,
Archipiélago de Los Canarreos, Cayo Matías
MPA, C-24

Black Jack / Tiñosa

Caranx lugubris

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Carangidae



201705203_T-16-29-46_199_FIS.jpg

LOCATION: Cuba, NW coast, Archipiélago de Los Colorados,
No MPA, Station C-07

Bar Jack / Cibí Carbonero

Caranx ruber

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Carangidae



201705203_T-14-23-16_015_FIS1.jpg

LOCATION: Cuba, NW coast, Archipiélago de Los Colorados,
No MPA, Station C-07

Foureye Butterflyfish / Parche Ocelado

Chaetodon capistratus

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Chaetodontidae

DEPTH:

-92 m



201705314_T-15-17-46_086_FIS.jpg

LOCATION: Cuba, S coast, south of Cienfuegos, Banco Silvertown, south wall, proposed MPA, Station C-38A

Spotfin Butterflyfish / Parche Ocelado Amarillo

Chaetodon ocellatus

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Chaetodontidae

DEPTH:

-36 m



201705211_T-11-02-39_221_FIS.jpg

LOCATION: Cuba, W coast, Banco de San Antonio MPA, east wall, Station C-10

Banded Butterflyfish / Parche Rayado

Chaetodon striatus

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Chaetodontidae



201706044_T-15-42-32_4509_FIS.jpg

DEPTH:

-6 m

LOCATION: Cuba, S coast, Sierra Purial, east tip of Punta Imías, no MPA, Station C-52B

Longsnout Butterflyfish / Parche Narizón

Prognathodes aculeatus

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Chaetodontidae



201706083_T-17-07-36_351_FIS.jpg

DEPTH:

-56 m

LOCATION: Cuba, NE coast, Archipiélago Sabana-Camagüey, Cayo Coco, proposed MPA, Station C-58A

Sharknose Goby / Gobio Hocicudo

Elacatinus evelynae

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Gobiidae

DEPTH:

-47 m



LOCATION: Cuba, NE coast, Cabo Lucrecia, no MPA, Station C-54

Goby / Gobio

Elacatinus sp.

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Gobiidae

E. xanthiprora or *E. randalli*

DEPTH:

-96 m



LOCATION: Cuba, S coast, Archipiélago de Los Canarreos, Cayo Rosario MPA, Station C-28

Royal Gramma / Loreto

Gramma loreto

CLASS:

Actinopterygii

ORDER:

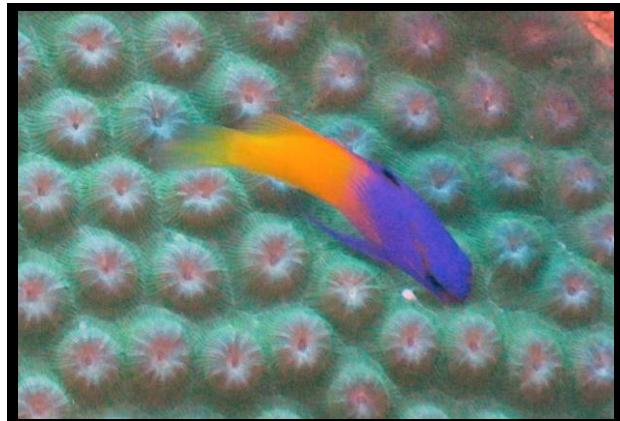
Perciformes

FAMILY:

Grammatidae

DEPTH:

-42 m



201705224_T-17-28-25_248_FIS.jpg

LOCATION: Cuba, W coast, Las Tumbas, Guanahacabibes National Park, Station C-12B

Blackcap Basslet / Gramma Violeta

Gramma melacara

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Grammatidae

DEPTH:

-32 m



201705251_T-11-26-01_190_FIS.jpg

LOCATION: Cuba, S coast, SW tip of Isla de la Juventud, Punta de Pedernales MPA, Station C-21

Black Margate / Pompón

Anisotremus surinamensis

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Haemulidae



201705251_T-11-30-04_204_FIS.jpg

LOCATION: Cuba, S coast, SW tip of Isla de la Juventud,
Punta de Pedernales MPA, Station C-21

Porkfish / Catalineta

Anisotremus virginicus

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Haemulidae



201706023_T-17-19-12_056_FIS.jpg

LOCATION: Cuba, S coast, Cabo Cruz, Desembarco del
Gramma National Park, Station C-48

French Grunt / Ronco Amarillo

Haemulon flavolineatum

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Haemulidae



201706073_T-13-37-38_5097_FIS.jpg

DEPTH:

-4 m

LOCATION: Cuba, NE coast, Archipiélago Sabana-Camagüey,
Cayo Sabinal MPA, Station C-56A

White Grunt / Ronco Arará

Haemulon plumieri

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Haemulidae



201705222_T-12-24-49_214_FIS.jpg

DEPTH:

-62 m

LOCATION: Cuba, W coast, Faro Roncali, off lighthouse,
Guanahacabibes National Park, Station C-12A

Bluestriped Grunt / Ronco Amarillo

Haemulon sciurus

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Haemulidae

DEPTH:

-49 m



201705233_T-16-41-45_163_FIS.jpg

LOCATION: Cuba, W coast, Cabo Corrientes,
Guanahacabibes National Park, Station C-16A

Striped Grunt / Jeníguano Rayado

Haemulon striatum

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Haemulidae

DEPTH:

-69 m



201706064_T-17-13-33_088_FIS.jpg

LOCATION: Cuba, NE coast, Cabo Lucrecia, proposed MPA,
Station C-54B

Chub / Chopa

Kyphosus sp.

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Kyphosidae

likely species K. vaigiensis

DEPTH:

-31 m



201705211_T-11-26-00_249_FIS.jpg

LOCATION: Cuba, W coast, Banco de San Antonio MPA, east wall, Station C-10

Spanish Hogfish / Pez Perro Español

Bodianus rufus

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Labridae

DEPTH:

-4 m



201706073_T-13-54-00_5120_FIS.jpg

LOCATION: Cuba, NE coast, Archipiélago Sabana-Camagüey, Cayo Sabinal MPA, Station C-56A

Creole Wrasse / Genícera

Clepticus parrae

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Labridae

PHASE:

Initial Phase

DEPTH:

-43 m



201706021_T-12-47-12_243_FIS.jpg

LOCATION: Cuba, S coast, Cabo Cruz, Desembarco del Gramma National Park, Station C-48

Creole Wrasse / Genícera

Clepticus parrae

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Labridae

PHASE:

Terminal phase

DEPTH:

-61 m



201706074_T-16-27-18_029_FIS.jpg

LOCATION: Cuba, NE coast, Archipiélago Sabana-Camagüey, Cayo Sabinal MPA, Station C-56

Slippery Dick / Doncella Rayada

Halichoeres bivittatus

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Labridae

PHASE:

Juvenile Phase

DEPTH:

-4 m



201706073008_1_FIS2.jpg

LOCATION: Cuba, NE coast, Archipiélago Sabana-Camagüey,
Cayo Sabinal MPA, Station C-56A

Yellowhead Wrasse / Doncella Cabeciamarilla

Halichoeres garnoti

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Labridae

PHASE:

Juvenile Phase

DEPTH:

-4 m



201706073008_1_FIS.jpg

LOCATION: Cuba, NE coast, Archipiélago Sabana-Camagüey,
Cayo Sabinal MPA, Station C-56A

Clown Wrasse / Doncella Payaso

Halichoeres maculipinna

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Labridae

DEPTH:

-4 m



201706073_T-12-34-31_4957_FIS.jpg

LOCATION: Cuba, NE coast, Archipiélago Sabana-Camagüey,
Cayo Sabinal MPA, Station C-56A

Puddingwife / Doncella Pudín

Halichoeres radiatus

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Labridae

PHASE:

Juvenile Phase

DEPTH:

-4 m



201706073_T-13-33-14_5092_FIS2.jpg

LOCATION: Cuba, NE coast, Archipiélago Sabana-Camagüey,
Cayo Sabinal MPA, Station C-56A

Hogfish / Pez Perro

Lachnolaimus maximus

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Labridae

PHASE:

Adult Phase

DEPTH:

-48 m



201705203_T-14-23-16_015_FIS.jpg

LOCATION: Cuba, NW coast, Archipiélago de Los Colorados,
No MPA, Station C-07

Hogfish / Pez Perro

Lachnolaimus maximus

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Labridae

PHASE:

Initial Phase

DEPTH:

-39 m



201705314_T-16-24-54_251_FIS.jpg

LOCATION: Cuba, S coast, south of Cienfuegos, Banco
Silvertown, south wall, proposed MPA, Station C-
38A

Bluehead / Cara De Cotorra

Thalassoma bifasciatum

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Labridae

PHASE:

Juvenile Phase

DEPTH:

-6 m



201706044_T-15-22-03_4442_FIS.jpg

LOCATION: Cuba, S coast, Sierra Purial, east tip of Punta Imías, no MPA, Station C-52B

Bluehead / Cara De Cotorra

Thalassoma bifasciatum

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Labridae

PHASE:

Terminal phase

DEPTH:

-6 m



201706044_T-15-36-32_4496_FIS.jpg

LOCATION: Cuba, S coast, Sierra Purial, east tip of Punta Imías, no MPA, Station C-52B

Quillfin Blenny / Sapito Filamentoso

Labrisomus filamentosus

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Labrisomidae

DEPTH:

-47 m



201706061_T-10-27-04_170_FIS.jpg

LOCATION: Cuba, NE coast, Cabo Lucrecia, no MPA, Station C-54

Black Snapper / Arnillo

Apsilus dentatus

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Lutjanidae

DEPTH:

-153 m



201705263_T-15-04-49_003_FIS.jpg

LOCATION: Cuba, S coast, E of Isla de la Juventud,
Archipiélago de Los Canarreos, Cayo Matías
MPA, C-24

Schoolmaster / Cají

Lutjanus apodus

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Lutjanidae

DEPTH:

-33 m



201705271_T-10-37-14_295_FIS.jpg

LOCATION: Cuba, S coast, Archipiélago de Los Canarreos,
Cayo Rosario MPA, Station C-28

Blackfin Snapper / Pargo Sesí

Lutjanus buccanella

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Lutjanidae

DEPTH:

-122 m



201705263_T-15-15-09_027_FIS.jpg

LOCATION: Cuba, S coast, E of Isla de la Juventud,
Archipiélago de Los Canarreos, Cayo Matías
MPA, C-24

Cubera Snapper / Cubera

Lutjanus cyanopterus

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Lutjanidae

Not Positive ID

DEPTH:

-70 m



201706081_T-11-45-22_186_FIS.jpg

LOCATION: Cuba, NE coast, Archipiélago Sabana-Camagüey, Cayo Coco, proposed MPA, Station C-58

Dog Snapper / Jocú

Lutjanus jocu

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Lutjanidae

DEPTH:

-30 m



201705211_T-11-26-36_252_FIS.jpg

LOCATION: Cuba, W coast, Banco de San Antonio MPA, east wall, Station C-10

Dog Snapper / Jocú

Lutjanus jocu

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Lutjanidae

Aggregation

DEPTH:

-68 m



201706083_T-17-28-55_173_FIS.jpg

LOCATION: Cuba, NE coast, Archipiélago Sabana-Camagüey,
Cayo Coco, proposed MPA, Station C-58A

Yellowtail Snapper / Rabirubia

Ocyurus chrysurus

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Lutjanidae

DEPTH:

-49 m



201705263_T-16-55-15_225_FIS.jpg

LOCATION: Cuba, S coast, E of Isla de la Juventud,
Archipiélago de Los Canarreos, Cayo Matías
MPA, C-24

Sand Tilefish / Matejuelo Blanco

Malacanthus plumieri

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Malacanthidae



201706053_T-15-57-21_171_FIS.jpg

DEPTH:

-52 m

LOCATION: Cuba, eastern tip of Cuba, NW Punta Maisí, Punta del Fraile, no MPA, Station C-53B

Yellow Goatfish / Salmonete Amarillo

Mulloidichthys martinicus

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Mullidae



201705203_T-14-54-30_030_FIS.jpg

DEPTH:

-47 m

LOCATION: Cuba, NW coast, Archipiélago de Los Colorados, No MPA, Station C-07

Spotted Goatfish / Salmonete Colorado

Pseudupeneus maculatus

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Mullidae

DEPTH:

-41 m



201706021_T-12-20-56_205_FIS.jpg

LOCATION: Cuba, S coast, Cabo Cruz, Desembarco del Gramma National Park, Station C-48

Glassy Sweeper / Pemferis Bandeado

Pempheris schomburgkii

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Pempheridae

DEPTH:

-4 m



201706073_T-13-40-50_5103_FIS.jpg

LOCATION: Cuba, NE coast, Archipiélago Sabana-Camagüey, Cayo Sabinal MPA, Station C-56A

Cherubfish / Angelote Pigmeo

Centropyge argi

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Pomacanthidae



201706053_T-16-26-14_232_FIS.jpg

DEPTH:

-54 m

LOCATION: Cuba, eastern tip of Cuba, NW Punta Maisí, Punta del Fraile, no MPA, Station C-53B

Queen Angelfish / Isabelita Reina

Holacanthus ciliaris

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Pomacanthidae



201705253_T-16-00-38_200_FIS.jpg

DEPTH:

-31 m

LOCATION: Cuba, S coast, SW Isla de la Juventud, bay on west side of point, Punta Francés MPA, Station C-21A

Rock Beauty / Vaqueta De Dos Colores

Holacanthus tricolor

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Pomacanthidae

DEPTH:

-72 m



201706041_T-10-31-28_109_FIS.jpg

LOCATION: Cuba, S coast, Sierra Purial, Punta Imías, no MPA,
Station C-52

Gray Angelfish / Angel

Pomacanthus arcuatus

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Pomacanthidae

DEPTH:

-35 m



201705271_T-10-33-06_284_FIS.jpg

LOCATION: Cuba, S coast, Archipiélago de Los Canarreos,
Cayo Rosario MPA, Station C-28

French Angelfish / Chivirica Francesa

Pomacanthus paru

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Pomacanthidae

DEPTH:

-50 m



201706053_T-16-16-30_211_FIS.jpg

LOCATION: Cuba, eastern tip of Cuba, NW Punta Maisí, Punta del Fraile, no MPA, Station C-53B

Sergeant Major / Pintano

Abudefduf saxatilis

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Pomacentridae

DEPTH:

-6 m



201706044_T-15-22-46_4446_FIS.jpg

LOCATION: Cuba, S coast, Sierra Purial, east tip of Punta Imías, no MPA, Station C-52B

Blue Chromis / Cromis Azul

Chromis cyanea

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Pomacentridae



201706073_T-12-33-57_4954_FIS1.jpg

DEPTH:

-4 m

LOCATION: Cuba, NE coast, Archipiélago Sabana-Camagüey,
Cayo Sabinal MPA, Station C-56A

Sunshinefish / Cromis Sol

Chromis insolata

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Pomacentridae

PHASE:

Adult Phase

DEPTH:

-45 m



201705213_T-15-25-55_113_FIS.jpg

LOCATION: Cuba, W coast, Banco de San Antonio MPA, south
wall, Station C-10A

Sunshinefish / Cromis Sol

Chromis insolata

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Pomacentridae

PHASE:

Juvenile Phase

DEPTH:

-80 m



201706031_T-10-04-41_148_FIS.jpg

LOCATION: Cuba, S coast, Sierra Maestra, Chivirico Proposed MPA, Station C-50

Brown Chromis / Cromis Prieto

Chromis multilineata

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Pomacentridae

DEPTH:

-38 m



201705314_T-16-26-44_258_FIS.jpg

LOCATION: Cuba, S coast, south of Cienfuegos, Banco Silvertown, south wall, proposed MPA, Station C-38A

Purple Reeffish / Cromis Púrpura

Chromis scotti

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Pomacentridae



201705271_T-09-29-22_123_FIS.jpg

LOCATION: Cuba, S coast, Archipiélago de Los Canarreos,
Cayo Rosario MPA, Station C-28

Yellowtail Damselfish / Chopita de cola Amarillo

Microspathodon chrysurus

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Pomacentridae

PHASE:

Juvenile Phase

DEPTH:

-6 m



201706044_T-15-20-31_4426_FIS.jpg

LOCATION: Cuba, S coast, Sierra Purial, east tip of Punta
Imías, no MPA, Station C-52B

Yellowtail Damselfish / Chopita de cola Amarillo

Microspathodon chrysurus

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Pomacentridae

PHASE:

Adult Phase

DEPTH:

-6 m



201706044_T-15-20-46_4430_FIS.jpg

LOCATION: Cuba, S coast, Sierra Purial, east tip of Punta Imías, no MPA, Station C-52B

Yellowtail Damselfish / Chopita de cola Amarillo

Microspathodon chrysurus

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Pomacentridae

PHASE:

Yellow Phase

DEPTH:

-4 m



201706073_T-12-40-27_4970_FIS.jpg

LOCATION: Cuba, NE coast, Archipiélago Sabana-Camagüey, Cayo Sabinal MPA, Station C-56A

Bicolor Damselfish / Chopita Bicolor

Stegastes partitus

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Pomacentridae

DEPTH:

-45 m



201706094_T-17-36-38_205_FIS.jpg

LOCATION: Cuba, NE coast, Archipiélago Sabana-Camagüey,
Cayo Jutía, ¼ nmi N of snorkel Station, no MPA,C-
59C

Threespot Damselfish / Chopita Amarilla

Stegastes planifrons

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Pomacentridae

DEPTH:

-30 m



20170611_T-10-12-19_176_FIS.jpg

LOCATION: Cuba, S coast, Cayo Caballones, south slope,
Jardines de La Reina MPA, Station C-41

Bigeye / Catalufa Toro

Priacanthus arenatus

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Priacanthidae

Positioned upside-down under ledge

DEPTH:

-38 m



201705213_T-15-36-11_142_FIS.jpg

LOCATION: Cuba, W coast, Banco de San Antonio MPA, south wall, Station C-10A

Short Bigeye / Catalufa De Lo Alto

Pristigenys alta

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Priacanthidae

DEPTH:

-146 m



201706021_T-10-20-53_017_FIS.jpg

LOCATION: Cuba, S coast, Cabo Cruz, Desembarco del Gramma National Park, Station C-48

Striped Parrotfish / Loro Listado

Scarus iseri

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Scaridae

PHASE:

Juvenile Phase

DEPTH:

-25 m



201705181_T-11-26-07_206_FIS.jpg

LOCATION: Cuba, NW coast, Cayo Levisa MPA, Station C-04

Princess Parrotfish / Loro Princesa

Scarus taeniopterus

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Scaridae

PHASE:

Juvenile Phase

DEPTH:

-25 m



201705181_T-11-26-07_206_FIS1.jpg

LOCATION: Cuba, NW coast, Cayo Levisa MPA, Station C-04

Princess Parrotfish / Loro Princesa

Scarus taeniopterus

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Scaridae

PHASE:

Initial Phase

DEPTH:

-50 m



201705201_T-11-44-40_262_FIS1.jpg

LOCATION: Cuba, NW coast, Archipiélago de Los Colorados,
No MPA, Station C-07

Princess Parrotfish / Loro Princesa

Scarus taeniopterus

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Scaridae

PHASE:

Adult Phase

DEPTH:

-40 m



201706021_T-12-26-02_222_FIS1.jpg

LOCATION: Cuba, S coast, Cabo Cruz, Desembarco del
Gramma National Park, Station C-48

Redband Parrotfish / Loro

Sparisoma aurofrenatum

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Scaridae

PHASE:

Juvenile Phase

DEPTH:

-38 m



201705314_T-16-26-09_255_FIS2.jpg

LOCATION: Cuba, S coast, south of Cienfuegos, Banco Silvertown, south wall, proposed MPA, Station C-38A

Yellowtail Parrotfish / Loro Aletirojo

Sparisoma rubripinne

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Scaridae

DEPTH:

-2 m



201706093_T-14-48-34_21-34_919_Stag_FIS.jpg

LOCATION: Cuba, NE coast, Archipiélago Sabana-Camagüey, Cayo Jutía, no MPA, Station C-59B

Stoplight Parrotfish / Loro

Sparisoma viride

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Scaridae

PHASE:

Terminal Phase

DEPTH:

-40 m



201706021_T-12-26-02_222_FIS.jpg

LOCATION: Cuba, S coast, Cabo Cruz, Desembarco del Gramma National Park, Station C-48

Graysby / Enjambre

Cephalopholis cruentata

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Serranidae

DEPTH:

-88 m



201706061_T-09-28-22_070_FIS.jpg

LOCATION: Cuba, NE coast, Cabo Lucrecia, no MPA, Station C-54

Coney / Guatívere

Cephalopholis fulva

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Serranidae

PHASE:

Bicolor Phase

DEPTH:

-58 m



201706053_T-16-43-15_250_FIS.jpg

LOCATION: Cuba, eastern tip of Cuba, NW Punta Maisí, Punta del Fraile, no MPA, Station C-53B

Coney / Guatívere

Cephalopholis fulva

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Serranidae

PHASE:

Dark Phase

DEPTH:

-3 m



201706063_T-12-42-37_4558_FIS.jpg

LOCATION: Cuba, NE coast, Cabo Lucrecia, no MPA, Station C-54A

Cephalopholis fulva

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Serranidae

PHASE:

Red Phase

DEPTH:

-82 m



201706081_T-11-37-02_141_FIS.jpg

LOCATION: Cuba, NE coast, Archipiélago Sabana-Camagüey,
Cayo Coco, proposed MPA, Station C-58

Red Hind / Cabrilla

Epinephelus guttatus

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Serranidae

DEPTH:

-47 m



201705233_T-16-17-30_111_FIS.jpg

LOCATION: Cuba, W coast, Cabo Corrientes,
Guanahacabibes National Park, Station C-16A

Red Grouper / Cherna Americana

Epinephelus morio

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Serranidae

DEPTH:

-47 m



201705203_T-15-41-52_070_FIS.jpg

LOCATION: Cuba, NW coast, Archipiélago de Los Colorados,
No MPA, Station C-07

Nassau Grouper / Cherna Criolla

Epinephelus striatus

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Serranidae

DEPTH:

-47 m



201705233_T-16-35-55_151_FIS.jpg

LOCATION: Cuba, W coast, Cabo Corrientes,
Guanahacabibes National Park, Station C-16A

Shy Hamlet / Vaca Bicolor

Hypoplectrus guttavarius

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Serranidae



201705213_T-15-48-27_165_FIS.jpg

DEPTH:

-32 m

LOCATION: Cuba, W coast, Banco de San Antonio MPA, south wall, Station C-10A

Butter Hamlet / Vaca Blanca

Hypoplectrus unicolor

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Serranidae



201705251_T-11-14-51_166_FIS.jpg

DEPTH:

-31 m

LOCATION: Cuba, S coast, SW tip of Isla de la Juventud, Punta de Pedernales MPA, Station C-21

Cave Basslet / Guardia Suizo

Liopropoma mowbrayi

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Serranidae

DEPTH:

-58 m



201706034_T-16-47-36_067_FIS.jpg

LOCATION: Cuba, S coast, Sierra Maestra, Chivirico Proposed MPA, Station C-50

Black Grouper / Aguají

Mycteroperca bonaci

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Serranidae

DEPTH:

-66 m



201706083_T-17-38-54_584_FIS.jpg

LOCATION: Cuba, NE coast, Archipiélago Sabana-Camagüey, Cayo Coco, proposed MPA, Station C-58A

Yellowmouth Grouper / Abadejo

Mycteroperca interstitialis

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Serranidae

DEPTH:

-27 m



201705211_T-11-36-40_269_FIS.jpg

LOCATION: Cuba, W coast, Banco de San Antonio MPA, east wall, Station C-10

Tiger Grouper / Bonací Gato

Mycteroperca tigris

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Serranidae

DEPTH:

-66 m



201705263_T-15-38-54_099_FIS.jpg

LOCATION: Cuba, S coast, E of Isla de la Juventud, Archipiélago de Los Canarreos, Cayo Matías MPA, C-24

Yellowfin Grouper / Arigua

Mycteroperca venenosa

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Serranidae



201706021_T-12-39-27_239_FIS.jpg

DEPTH:

-42 m

LOCATION: Cuba, S coast, Cabo Cruz, Desembarco del Gramma National Park, Station C-48

Greater Soapfish / Jaboncillo

Rypticus saponaceus

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Serranidae



201706094_T-16-26-15_045_FIS.jpg

DEPTH:

-108 m

LOCATION: Cuba, NE coast, Archipiélago Sabana-Camagüey, Cayo Jutía, 1/4 nmi N of snorkel Station, no MPA, C-59C

Harlequin Bass / Serrano Tigre

Serranus tigrinus

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Serranidae

DEPTH:

-38 m



201705314_T-16-37-43_277_FIS1.jpg

LOCATION: Cuba, S coast, south of Cienfuegos, Banco Silvertown, south wall, proposed MPA, Station C-38A

Great Barracuda / Picúa

Sphyraena barracuda

CLASS:

Actinopterygii

ORDER:

Perciformes

FAMILY:

Sphyraenidae

DEPTH:

-45 m



201705263_T-16-16-49_180_FIS.jpg

LOCATION: Cuba, S coast, E of Isla de la Juventud, Archipiélago de Los Canarreos, Cayo Matías MPA, C-24

Red Lionfish / Pez León

Pterois volitans

CLASS:

Actinopterygii

ORDER:

Scorpaeniformes

FAMILY:

Scorpaenidae

DEPTH:

-95 m



LOCATION: Cuba, NW coast, Los Pretiles MPA, Station C-06

Red Lionfish / Pez León

Pterois volitans

CLASS:

Actinopterygii

ORDER:

Scorpaeniformes

FAMILY:

Scorpaenidae

Aggregation

DEPTH:

-70 m



LOCATION: Cuba, NE coast, Archipiélago Sabana-Camagüey, Cayo Coco, proposed MPA, Station C-58

Atlantic Trumpetfish / Trompetero

Aulostomus maculatus

CLASS:

Actinopterygii

ORDER:

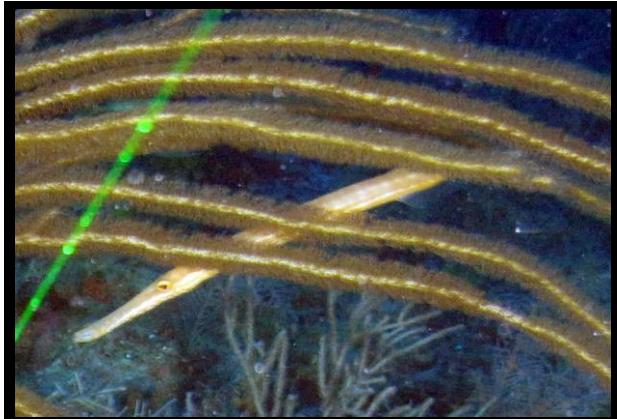
Syngnathiformes

FAMILY:

Aulostomidae

DEPTH:

-34 m



201706094_T-17-12-02_183_FIS.jpg

LOCATION: Cuba, NE coast, Archipiélago Sabana-Camagüey,
Cayo Jutía, ¼ nmi N of snorkel Station, no MPA,C-
59C

Queen Triggerfish / Cochino

Balistes vetula

CLASS:

Actinopterygii

ORDER:

Tetraodontiformes

FAMILY:

Balistidae

DEPTH:

-49 m



201705224_T-17-53-02_268_FIS.jpg

LOCATION: Cuba, W coast, Las Tumbas, Guanahacabibes
National Park, Station C-12B

Ocean Triggerfish / Lija

Canthidermis sufflamen

CLASS:

Actinopterygii

ORDER:

Tetraodontiformes

FAMILY:

Balistidae

DEPTH:

-39 m



201705213_T-16-36-50_204_FIS.jpg

LOCATION: Cuba, W coast, Banco de San Antonio MPA, south wall, Station C-10A

Ocean Triggerfish / Lija

Canthidermis sufflamen

CLASS:

Actinopterygii

ORDER:

Tetraodontiformes

FAMILY:

Balistidae

PHASE:

Breeding Phase

DEPTH:

-35 m



201705213_T-16-01-50_199_FIS.jpg

LOCATION: Cuba, W coast, Banco de San Antonio MPA, south wall, Station C-10A

Ocean Triggerfish / Lija

Canthidermis sufflamen

CLASS:

Actinopterygii

ORDER:

Tetraodontiformes

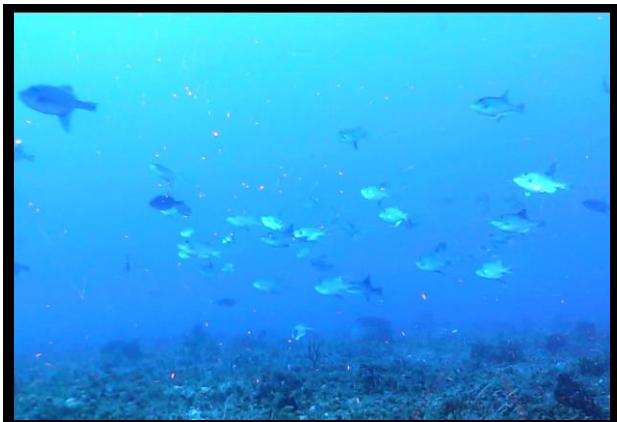
FAMILY:

Balistidae

Spawning
aggregation

DEPTH:

-40 m



201705213_T-16-59-26_271_FIS.jpg

LOCATION: Cuba, W coast, Banco de San Antonio MPA, south wall, Station C-10A

Black Durgon / Negrito

Melichthys niger

CLASS:

Actinopterygii

ORDER:

Tetraodontiformes

FAMILY:

Balistidae

DEPTH:

-4 m



201706073_T-12-43-32_4987_FIS.jpg

LOCATION: Cuba, NE coast, Archipiélago Sabana-Camagüey, Cayo Sabinal MPA, Station C-56A

Sargassum Triggerfish / Cocuyo

Xanthichthys ringens

CLASS:

Actinopterygii

ORDER:

Tetraodontiformes

FAMILY:

Balistidae

DEPTH:

-55 m



201705191_T-10-13-58_189_FIS1.jpg

LOCATION: Cuba, NW coast, Los Pretiles MPA, Station C-06

Orangespotted Filefish / Lija Colorada

Cantherhines pullus

CLASS:

Actinopterygii

ORDER:

Tetraodontiformes

FAMILY:

Monacanthidae

DEPTH:

-4 m



201706073_T-12-46-47_5003_FIS.jpg

LOCATION: Cuba, NE coast, Archipiélago Sabana-Camagüey, Cayo Sabinal MPA, Station C-56A

Honeycomb Cowfish / Torito Hexagonal

Acanthostracion polygonius

CLASS:

Actinopterygii

ORDER:

Tetraodontiformes

FAMILY:

Ostraciidae

DEPTH:

-146 m



201705183_T-15-36-23_030_FIS.jpg

LOCATION: Cuba, NW coast, 2 nmi north of Cayo Arenas,
Cayo Levisa MPA, Station C-04A

Sharpnose Puffer / Tamboril Narizón

Canthigaster rostrata

CLASS:

Actinopterygii

ORDER:

Tetraodontiformes

FAMILY:

Tetraodontidae

DEPTH:

-48 m

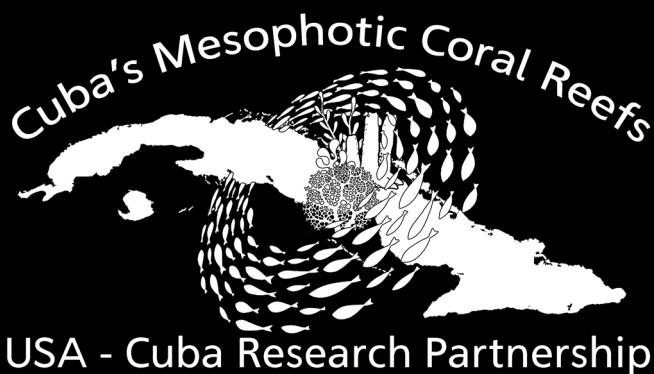


201706031_T-10-45-33_217_FIS.jpg

LOCATION: Cuba, S coast, Sierra Maestra, Chivirico Proposed
MPA, Station C-50

CUBA'S MESOPHOTIC CORAL REEFS

Fish Photo Identification Guide



USA - Cuba Research Partnership



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