Andrea Polanco Fernández

# Dynamics of the continental slope demersal fish community in the Colombian Caribbean –

## Deep-sea research in the Caribbean

# DYNAMICS OF THE CONTINENTAL SLOPE DEMERSAL FISH COMMUNITY IN THE COLOMBIAN CARIBBEAN

## Deep-sea research in the Caribbean

by

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A mi familia y al mar… mi vida!

To my family and to the sea….. my life!

Después de esto, jamás volveré a mirar el mar de la misma manera…

Ahora, como un pez en el agua… rodeado de inmensidad y libertad.

After this, I will never look again the sea in the same way

Now, as a fish in the sea… surounded of inmensity and freedom.

# TABLE OF CONTENTS

# TABLE OF FIGURES

# LIST OF TABLES

# LIST OF ANNEXES

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# ABSTRACT

Key words: Deep-sea fish, biodiversity, structural patterns, aggregations

Nowadays, the limited knowledge of marine biodiversity in the deep-sea faces increasing human exploration interest of this environment in the Colombian Caribbean (e.g. recent hydrocarbon exploration activities), wich makes it a national problem. This scenario requires a better understanding of the biodiversity, ecology, and biogeography of species that live in the territorial and adjacent waters of Colombia towards an adequate management of resources. The deep-sea demersal fish community is one of the main faunal groups that can be used to track aggregations of biodiversity in deep-sea ecosystems. The deep-sea waters of the Colombian Caribbean have been investigated by some foreign and national expeditions during the last five decades. Since then, the information obtained has been stored in a wide array of cruise reports and “gray” literature. With the main goal of identifying aggregations of biodiversity in terms of deep-sea fish species numbers and the physical and biological factors that may cause certain spatial distribution patterns. The current thesis summarizes the available information to produce a comprehensive inventory of demersal deep-sea fishes present in the Colombian Caribbean. Their structural patterns are analyzed in terms of composition and distribution through a multivariate regression tree (MRT) analysis to identify different environmental factors that may be influencing fish distributions. Hypotheses of correlation between the distributional patterns and the bathymetric (200 to 980 m), geographic (east-west), and topographic (bottom landscape) ranges are tested. A spatial analysis of the number of species per station under the light of the available environmental information and recent findings of deep-sea ecosystems in Colombia was made as well. As a result of this, 343 species of deep-sea demersal fishes included in 26 orders and 92 families are identified for the Colombian Caribbean. Six fish assemblages were found in the continental slope mainly characterized by depth and geographical location. Based on the outcomes of the spatial analyses, three areas of aggregations of

biodiversity of fish fauna were identified between 300 and 500 m depth in the Colombian Caribbean continental waters and one on insular waters. The continental offshore areas identified are located close to the sites where deep-sea reef ecosystems were reported before.The results support the idea of the Caribbean territorial waters of Colombia as an area with high values of deep-sea fish species compared to other regions in the western Atlantic coast. The structural data suggest a northeastern region that shows the highest concentration of species richness and abundances between the lower part of the upper slope and the upper part of the middle slope (275 – 602 m). Finally, the aggregations of fishes found add support to the previous stated evidence of the presence of deep-sea reefs ecosystems in the Colombian Caribbean located between the continental shelf break and the middle slope.

# RESUMEN

Palabras clave: Peces de profundidad, biodiversidad, patrones estructurales, agregaciones.

Actualmente, el limitado conocimiento de la biodiversidad marina en el mar profundo frente al aumento del interés humano por la exploración de estos ambientes en el Caribe colombiano (ej. recientes actividades de exploración de hidrocarburos) es un problema nacional. Este escenario, requiere una mayor comprensión de la biodiversidad, ecología y biogeografía de las especies que viven en las aguas territoriales y aguas adyacentes de Colombia hacia un adecuado manejo de los recursos. La comunidad de peces demersales de profundidad es uno de los principales grupos de fauna que pueden ser usados para rastrear las agregaciones de biodiversidad en los ecosistemas profundos. Las aguas profundas del Caribe colombiano han sido investigadas por algunas expediciones extranjeras y nacionales en las últimas cinco décadas. Desde entonces, la información obtenida ha sido almacenada de manera dispersa en informes de cruceros y literatura gris. Con el objetivo principal de encontrar agregaciones de biodiversidad en términos de número de especies de peces de profundidad e identificar los factores físicos y biológicos que pueden causar un determinado patrón de distribución espacial. Esta tesis presenta la información disponible para producir un inventario de los peces demersales de profundidad presentes en el Caribe colombiano. Analiza, los patrones estructurales de estos, en términos de composición y distribución, a través de un análisis de árbol de regresión multivariada para identificar entre los diferentes factores ambientales, cuál está influenciando la distribución de los peces. Probando hipótesis de correlación entre los patrones de distribución y los rangos batimétrico (200 to 980 m), geográfico (oriente-occidente) y topográfico (paisaje de fondo). Finalmente, provee un análisis espacial del número de especies por estación bajo la luz de la información ambiental disponible y los recientes hallazgos de evidencias de ecosistemas de profundidad en Colombia. Como resultado de esto, 343 especies de peces demersales de profundidad incluidas en 26 órdenes y 92 familias fueron identificadas para el Caribe colombiano. Seis ensamblajes de peces fueron hallados en el talud

continental principalmente caracterizados por profundidad y ubicación geográfica. Basado en los resultados del análisis espacial, tres áreas de agregación de biodiversidad de la ictiofauna fueron identificadas entre 300 y 500 m de profundidad en la parte continental del Caribe colombiano y una en aguas insulares. Las áreas de la parte continental están localizadas cercanas a sitios donde fueron registrados previamente ecosistemas de arrecifes de profundidad. Los resultados sustentan la idea de las aguas territoriales del Caribe colombiano como un área con altos valores de especies de peces de profundidad comparado con otras regiones de la costa Atlantica occidental. Los datos estructurales sugieren una región nororiental que presenta altas concentraciones de riqueza de especies y abundancias entre la parte baja del sector superior del talud y la parte superior de la parte media del talud (275 – 602 m). Finalmente, estas agregaciones de peces encontradas adicionan fundamento a la evidencia previamente establecida acerca de la presencia de ecosistemas de profundidad en el Caribe colombiano ubicados entre la zona de quiebre de la plataforma y la parte media del talud continental

# 1. RATIONALE

Knowledge on marine biodiversity in the deep ocean is limited or even non-existent for most marine territories. However, in the last several years, the deep sea has captured the attention of many people not only in terms of biodiversity and science, but also in terms of resources for various industrial sectors. Hydrocarbon industries, fisheries, mining, communications through undersea cabling, and pharmaceutical industries are some of the sectors looking into the potential of existing resources in the deep sea. This increasing interest demands a better understanding of the biodiversity, ecology, and biogeography of species that live in these deep territorial and adjacent waters of Colombia to facilitate an adequate management of resources. With the increasing anthropogenetic pressure on deep-sea ecosystems and the limited resources available to protect and conserve all biodiversity, decision makers have to establish priorities based on biological criteria as the areas with endemism, species richness, rarity and taxonomically unusual species. But those decisions have to be based on a precise knowledge and understanding of the structure (composition and distribution) of the fauna associated to those depths.

The deep-sea demersal fish community is one of the main groups of fauna that can be used to track aggregations of biodiversity (areas with high number of species) in deep-sea ecosystems. Demersal fish communities have been studied worldwide, giving their ecological and economical relevance. They are ecologically relevant as fundamental members of the ecosystem, supporting the trophic web, and economically as food resource for humans. Historically, the studies of Colombian fishes have been concentrated in coastal and shallow waters. Information of slope soft-bottom fish assemblages, where demersal fish are highly exploited as principal targets or by-catch components, is very scarce. Because of limited knowledge, the fish community as well as the complete deep-sea benthic fauna is exposed to significant threats due to poorly planned strategies and development, along with unregulated and unsustainable fishing practices. Therefore, the current study utilizes information on the composition and

distribution of the slope demersal fish assemblage and its relations to biotic and abiotic factors in order to identify aggregations of biodiversity. Moreover, this study intends to provide basic information that may contribute to sustainable decisions on biodiversity conservation strategies, highlighting the need of using comprehensive information of the different faunistic assemblages that is available nowadays.

# 2. INTRODUCTION

At the present time, ecosystems and fauna found in the sea below 200 m depth are still poorly known considering that this kind of environment represents 50% of the surface of earth (Tyler 2003). The concept of a poor, homogeneous, stable marine environment with vague boundaries and randomly dispersed individuals is changing in the light of recent studies (e.g., Tyler 2003). The deep-sea, herein considered as the region below 200 m, representing the transition from the continental shelves to the continental slope (Tyler 2003), is capturing the attention of many people not only in terms of biodiversity but also in terms of resources for various industrial sectors. Hydrocarbon industries, fisheries, mining, communications through undersea cabling, and pharmaceutical industries are some of the sectors looking into the potential of existing resources in the deep-sea (INVEMAR 2010). With the increasing anthropogenic pressure on deep-sea ecosystems and the limited resources available to conserve and explore all biodiversity, decision makers and researchers have to establish priorities for those areas ti be protected first based on biological criteria such as endemism, species richness, rarity and taxonomically unusual species (Myers et al. 2000). Basic understanding of the structure of associated fauna in terms of composition and distribution is required as foundation towards a proper management of resources. However, this knowledge of offshore benthic marine habitats and associations of animals in the deep ocean is limited or even non-existent for many marine territories.

This is particularly true for demersal fish communities, i.e., fishes that live and feed on or near the bottom. These communities have been studied worldwide due to their ecological relevance, being fundamental members of the ecosystem supporting the trophic web at different levels (Helfman 2009), with economical relevance as one of the main animal protein resource for humans in the world (Nelson 2006). Patterns of spatial and temporal variation on composition, abundance, and distribution of demersal fish assemblages of the continental shelf and slope have been described at several latitudes (e.g. Bianchi 1991, 1992a, 1992b; Koslow 1993; Fujita et al. 1995; Fariña et al. 1997; García et al. 1998; Moranta et al. 1998; Labrapoulou and

Papaconstantinou 2000; Magnusen 2002; Powell et al. 2003; D'Onghia et al. 2004). Life history strategies and adaptations, diversity, and distribution of benthic and benthopelagic fishes has been provided by some studies (e.g. Isaacs and Schwartzlose 1975; Haedrich and Rowe 1977; Gordon 1979; Hureau 1979; Haedrich et al. 1980; Merrett and Marshall 1981; Gordon and Duncan 1985; Haedrich and Merrett 1988; Hecker 1990; Gage and Tyler 1991; Merrett et al. 1991; Gordon and Bergstad 1992; Merrett and Haedrich 1997). Physical factors such as geomorphology and oceanographic parameters and biological factors for example resource availability, predator-prey relationships, and intraspecific and interspecific competition are known to affect vertical zonation (Koslow 1993; Powell et al. 2003, D' Onghia et al. 2004, Wei et al. 2010, 2012). Changes in species composition with depth on continental shelf and slope are well recognized (e.g. Haedrich et al. 1980; Carney et al. 1983; Abelló et al. 1988; Hecker, 1990; Cartes and Sardá 1993; Koslow 1993; Smale et al. 1993; Cartes et al. 1994; Gordon et al. 1995).

In the Western Atlantic, some studies of demersal fish assemblages have been conducted, such as that of Uyeno et al. (1983), off the coasts of Surinam and French Guayana, as well as by Valdez and Aguilera (1987) and Cervigón (1991, 1993, 1994 and 1996) in Venezuelan waters. In Colombia the studies of fishes are mainly concentrated in the continental shelf ecosystems. García et al. (1998), Manjarrés et al. (1998), Medina (2002), and Páramo et al. (2009) provided important studies on demersal fish assemblages in the Colombian Caribbean continental shelf that described basic patterns of distribution of fishes in waters above 200 m depth. The knowledge of the upper slope fauna and ecosystems of the Colombian Caribbean are scarce, reduced to some foreign oceanographic cruises reports. In 1998, the Institute of Marine and Coastal Research – INVEMAR - began exploring the continental shelf and upper slope with the Macrofauna I and II projects. Its main goal was to characterize the marine benthic biodiversity in Colombian territorial waters. Macrofauna I project focused on the upper slope. Fish material was identified by two biology students whose thesis were entitled "Ichthyofaunal associated to the upper continental slope between 200-500 m isobats, from Castilletes to Cartagena in the Colombian Caribbean" (Saavedra-Díaz 2000) and "Characterization of the demersal

ichthyofauna community of the southern Colombian Caribbean region (300 and 500 m) and some zoogeographics considerations" (Roa-Varón 2000). As a results of these campaigns, three new species of fishes were described for science (Mok et al. 2001; Saavedra-Díaz et al. 2003) and 57 new records generated: five for the Caribbean, eight for the southern Caribbean, and 44 for Colombia (Roa-Varón et al. 2003, 2007; Polanco et al. 2004; Saavedra-Díaz et al. 2004; Mejía-Ladino et al. 2007). Other results included collection-based taxonomic revisions of different groups of fishes (Saavedra-Díaz et al. 2000; Mejía et al. 2001; Polanco 2002, 2006; Garrido-Linares 2004; Mejía-Ladino 2007). The increasing interest for the exploration and potential exploitation of fossil hydrocarbon resources in Colombia prompted the Hydrocarbons National Agency (ANH) to support scientific projects (ANH I and II, for the Caribbean region) in the deep sea. Polanco et al. (2010) presented a preliminary list and description of Colombian Caribbean demersal fishes found between 20 and 800 m, summarizing most of the results of three of the projects mentioned above (Macrofauna I and II, and ANH I). Later, Páramo et al. (2012), as a product of a deep-sea fishery exploration study in the Colombian Caribbean, presented an analysis of the deep-sea fish assemblages across a depth range of 200-550 m.

In terms of the environment, the majority of the seafloor are sedimentary plains with relatively homogeneous features and similar oceanographic characteristics and biotas (Snelgrove et al 1997). Nevertheless, the deep-sea floor has some unique features such as seamounts, deep-sea trenches or submarine canyons among others, forming distinct ecosystems and causing a relative increase of biodiversity compared to surrounding bottom areas (Reyes et al. 2005). In Colombia, the findings of some specific fauna, such as habitat-forming corals and high values of associated biodiversity, were the first evidence for the presence of deep-sea reef ecosystems (Reyes et al. 2005; Santodomingo et al. 2007, 2013). Moreover, some evidence of others ecosystems, such as methane seeps with chemosynthetic communities have been found (Gracia et al. 2011).

So far a comprehensive analysis in terms of composition and distribution of slope benthic fish community, that is basic information needed that may support future research goals, management decisions or conservation strategies, is nonexistent in Colombia. The present study aims to assess the structure (composition and distribution) of the demersal fish communities along the Colombian Caribbean, in order to identify aggregations of biodiversity and its relation to the biotic (e.g. resource availability) and abiotic (e.g. geomorphology and oceanographic) factors that may cause this spatial distribution pattern.

# 3. OBJECTIVES AND HYPOTHESES

The general objective of this study is to identify aggregations of deep-sea demersal fish biodiversity in the Colombian Caribbean, information that may support future research goals and sustainable decisions on biodiversity conservation strategies. For achieving this, the following specific objectives are proposed:

I) To provide the first comprehensive assessment of Colombian Caribbean deep-sea demersal fish diversity below 200 m.

As stated for many regions in the world, patterns of spatial distribution of demersal fishes are affected by physical and biological factors. It is the intention of this study to test the following hypotheses associated to objectives II and III:

II) To describe the deep-sea demersal fish faunal structure patterns (composition and distribution).

$H_0$1 Fish demersal fauna variation is positively correlated with depth.

$H_0$2 Fish demersal fauna show a longitudinal spatial distribution pattern (east – west).

$H_0$3 Fish demersal fauna variation is correlated with the topography of the sea floor in the Colombian Caribbean.

III) To provide a spatial description of demersal fish biodiversity patterns within the Colombian Caribbean upper slope.

$H_0$4 Aggregations of demersal fish biodiversity can be found along the slope in the Colombian Caribbean caused by physical and/or biological factors.

# 4. STUDY AREA

Following the latest marine biogeographic classification system proposed by Spalding et al. (2007) into marine ecoregions (Marine Ecoregions of the World or MEOW), the Greater Caribbean is part of the Tropical Northwestern Atlantic Province, which comprises nine ecoregions: Western Caribbean, Southwestern Caribbean, Eastern Caribbean, Southern Caribbean, Greater Antilles, Bermuda, Bahamian, Southern Gulf of Mexico, and Floridian. The Colombian Caribbean is included in the Southwestern Caribbean ecoregion. But, as stated in Spalding et al. (2007), this classification has been heavily influenced by data from nearshore and intertidal biotas, and data from deeper waters typically had decreasing influence on boundary definitions. This statement will be tested by assessing the entire deep-sea fish fauna from the Caribbean region (Polanco and Acero in preparation).

This study comprises one local level to explore deeper the ichthyofauna of the Colombian Caribbean continental slope, set within a regional framework where we achieved a revision and confirmation of the identifications of more than 11000 lots of deep-sea fishes collected in the Caribbean Basin (area of coverage: 18° N, corresponding to the southern coast of Jamaica, La Hispaniola, Puerto Rico, and Saint Maarten, and 60° W, corresponding to the western coast of Martinique, St Lucia, eastern coast of Trinidad, and areas to the west and south, it is defined by the corresponding coastal line of Central and South America) below 200 m. The Colombian Caribbean information about the demersal ichthyofauna was extracted from the regional assessment.

The study area is located within 11°50' N – 71°18' W (Castilletes) to 08°42' N – 77°19' W (Cabo Tiburón) in the continental upper slope of Colombian Caribbean Sea (Figure *1*), known as Caribana upper slope (Tabares et al. 1996). Following the geomorphological and sedimentary description of the Colombian Caribbean region presented in Rangel and Idarraga (2010), the slope of the Colombian Caribbean can be

found between the 200 and 3500 m isobaths with an amplitude of 100 km, bordering a vast abyssal plain denominated the Colombian Basin. This abyssal zone ranges in depths between 3500 and 4000 m and limits to the east with the Beata Ridge, northwest with the Hess Scarp, westward with the Panamanian Arc, and south with the Colombian continental slope (Figure *1*). The complex bottom geomorphology divided the continental waters of the region in four different sections with particular characteristics (Rangel-Buitrago and Idarraga 2010). First, the Guajira region with a continental shelf variable in width (8 – 17 km) and a western part between the Mendihuaca river mouth until Mingueo with a narrower continental shelf associated to the Sierra Nevada de Santa Marta that rise eastward. This part exhibits different seabed features, such as submarine basins in the narrower part of the continental shelf with some reliefs and channels off Palomino and Mingueo. A transition central part in front of Riohacha with contrasting seabed features, such as the Rancheria river canyon and the Guajira Valley around 100 m deep; and finally a third part associated to a wide continental shelf. A Tayrona region, characterized by the absence of continental shelf and the presence of La Aguja canyon with thinner valleys positioned in different directions along its extention. Next is the Magdalena region, that consists in a section formed by the deltaic dynamism of the Magdalena river through time with a continental shelf aproximately 2 km wide and a variety of seabed forms, such as canyons, channels, levees, high structurals, mass deposits, and escarpment areas. Finally, the southwestern part of the Colombian Caribbean, the Sinú region, is also know as the Accretionary Sinú Prism (ASP). The features occurring within this area include drainage systems (broad channels and turbidity channels), anticlinal ridges with associated faults, seabed mounds, and mass-transport systems such as slumps and debris flows. The drainage systems include broad lower relief drainage channels occurring mostly in the southern and northern parts of the area and thin high relief turbidity channels that generally occur in the central part of the area. Small seabed mounds occur throughout the Sinú area. The mounds are probably buried mud diapirs, which are common in this Colombian offshore area (Rangel-Buitrago and Idarraga, 2010).

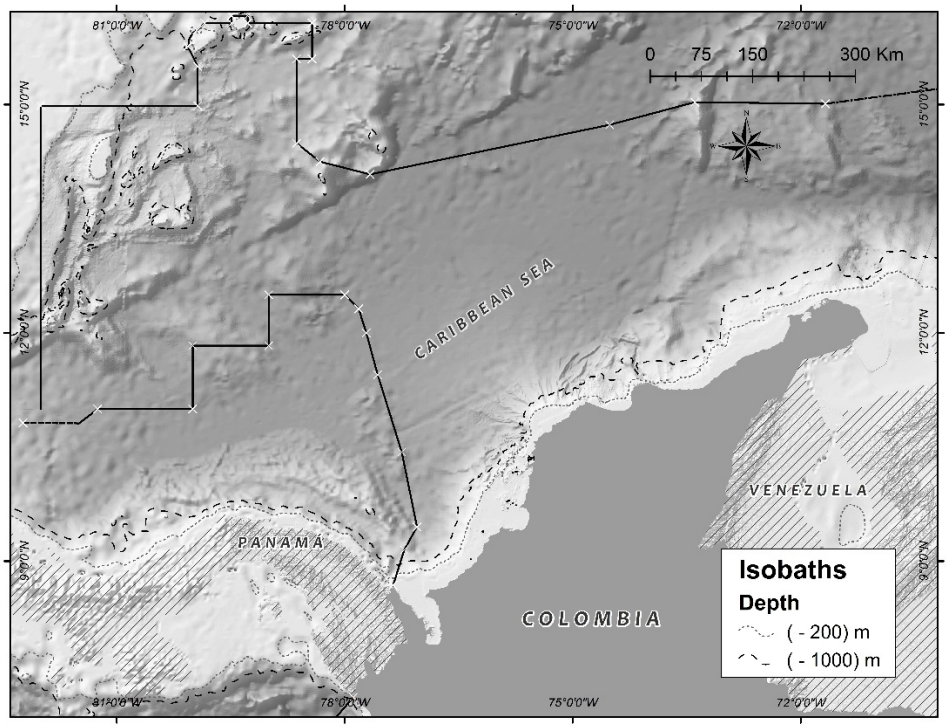


Figure 1. Area covered by this study. The dot lines and the black line indicate the bathymetric range in the continental upper slope of Colombian Caribbean sea (200-1000 m).

The Colombian Caribbean is affected by the three water masses that influence the deep-sea environment of the Caribbean region: the North Atlantic Deep Water, the Antarctic Intermediate Water, and Subtropical Underwater. The upper layers of the North Atlantic Deep Water enter to the Caribbean Basin through the Windward Passage (1540 m) and the Anegada and Jungfern Passages (1800 m) and mix with the Antarctic Intermediate Water that enters by several points with sill depths among 800 to 1400 m (Figure *2*). That forms a mixture that fills the lower reaches of the Caribbean Basin with uniform bottom water (Smith et al. 2002). About the displacement of water in the region, the Western Boundary current is the most remarkable feature. It flows through several passages in the Windward Islands to become the Caribbean Current, a warm and strong body of water that moves along the region to reach the Yucatan Chanel (Smith et al. 2002) with the

developing of numerous eddies, especially in the southwestern Caribbean and the Cayman Seas and between Jamaica and Cuba (Bullis and Struhsaker 1970).

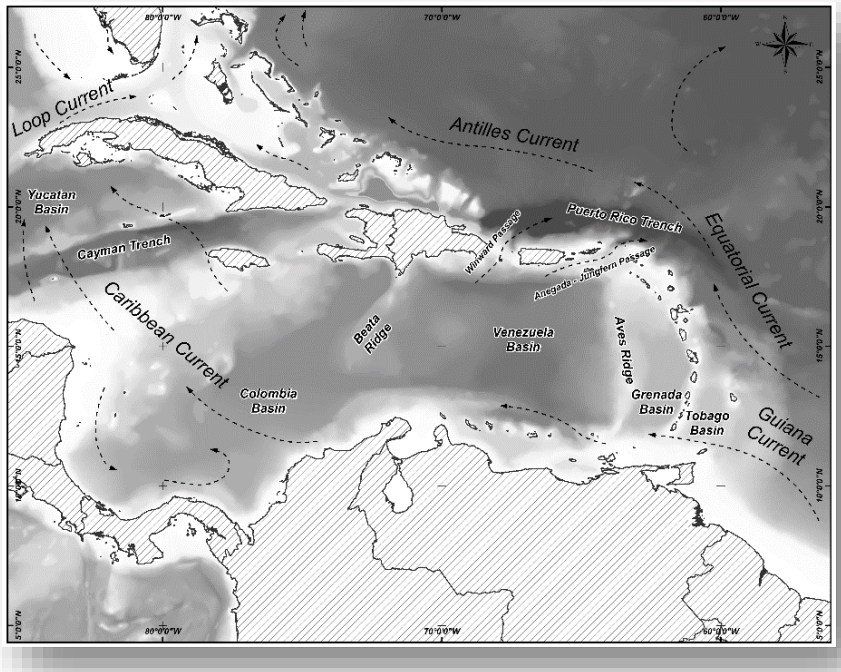


Figure 2. Major submarines basins, ridges and surface currents in the region.

# 5. CHAPTER I: Comprehensive assessment of Colombian Caribbean deep-sea demersal fish diversity below 200 m

## 5.1. INTRODUCTION

This assessment presents a list of the demersal deep-sea fishes found in the Colombian Caribbean region. Historically, the studies of fishes in the region have concentrated in coastal and shallow waters (Díaz and Acero 2003). But in the last few years the deep sea has captured the attention of many levels of society, not only in terms of biodiversity for science, but also in terms of productivity by different sectors. The absence of basic information to answer questions such as which species can be found in the area, has led me to develop an accurate inventory of the species that have been reported. Recent evidence of the presence of different types of deep-sea ecosystems (Reyes et al. 2005; Santodomingo et al. 2007; Gracia et al. 2012) increases the relevance of knowing the inventory of what species lives in our territorial waters.

Oceanographic explorations that included deep-sea sampling in the Colombian Caribbean region began with one collection made in the Agassiz-Albatross expedition. The Albatross fish collection was described in Goode and Bean (1886) Oceanic Ichthyology: Deep-sea and Pelagic fishes of the World. More than half a century later, between 1956 and 1960, the US National Marine Fisheries Service made several cruises on board of the *R/V Oregon.* Results of the cruises 87, 92, 104, II-4 and II-22 were published by Bullis and Thompson (1965). Bullis and Struhshaker (1970) presented the main findings of deep-sea western Caribbean fishes from sampling stations near the Colombian islets of Quitasueño, Serranilla, and Roncador, and Old Providence (Providencia) and San Andrés islands (Oregon stations 46 and 78). At the same time (1966-1968), the University of Miami on board of the *R/V John Elliot Pillsbury* and *R/V Gillis* collected in the southern Caribbean region (Voss 1966; Voss et al. 1967; Bayer et al. 1970). Palacio (1974) published on the fishes collected above 200 m during this cruise, this being until now the most important and complete study of fishes in the

continental shelf of the Colombian Caribbean. Since then, a few, dispersed publications or gray literature contain contributions to the knowledge of the deep-sea fish fauna of the Colombian Caribbean (Bullis and Struhsaker 1970, Anderson et al. 1985, Saavedra et al. 2000, Saavedra-Díaz et al. 2003, Saavedra et al. 2004, Roa-Varón et al. 2003, Roa-Varón et al 2007, Polanco et al 2010, Paramo et al 2012). In 1998, the Institute of Marine and Coastal Research – INVEMAR began exploring the continental shelf and upper slope of Colombian waters with the Macrofauna I and II projects, having as main goal to characterize the marine benthic biodiversity in the territorial waters. The fishes sampled and identified during the Macrofauna I project were revised (Saavedra 2000, Roa-Varón 2000). During the Macrofauna II project, focused on the continental shelf, 15 stations in depths below 200 m were sampled. Since that time, the whole deep-sea fish material collected by INVEMAR, including the last mentioned phase of the Macrofauna project, excepting the order Lophiiformes (Mejía-Ladino 2007) and the genus *Neobythites* (Garrido Linares 2004), were identified by the author. Adding the international and national oceanographic explorations, a total of 283 deep-sea sampling stations have been explored in the Colombian Caribbean (Goode and Bean 1886; Bullis and Thompson 1965; Voss 1966; Voss et al. 1967; Bayer et al. 1970; Bullis and Struhhsaker 1970). This chapter provides a verifiable annotated list of species of demersal deep-sea fishes known from the Colombian Caribbean region on the basis of the confirmation of species collected on the above mentioned cruises, revision of the main museum collections that stored deep-sea samples from the area, identifications of recent records taken by the Colombian Marine and Coastal Research Institute (INVEMAR) in some oceanographic cruises along the Colombian coast, and revised information of species described from any locality inside the study area.

## 5.2. MATERIALS AND METHODS

Based on a reexamination of museum specimens and records from recent deepwater surveys a comprehensive assessment of the Colombian Caribbean deep-sea demersal fishes that live below 200 m depth is presented. The study material came primarily from the Agassiz-Albatross expedition, the National Marine Fisheries Service of United States cruises on board of the *R/V Oregon* and *R/V Oregon II*, the University of Miami cruises on board of the *R/V Gillis* and *R/V John Elliot Pillsbury* and the cruises of INVEMAR on board of the *B/I Ancón,* with a total of 283 stations sampled in depths between 200 m and 4197 m, with most of the stations located between 200 and 1000 m and some isolated deeper stations (Figure 3).

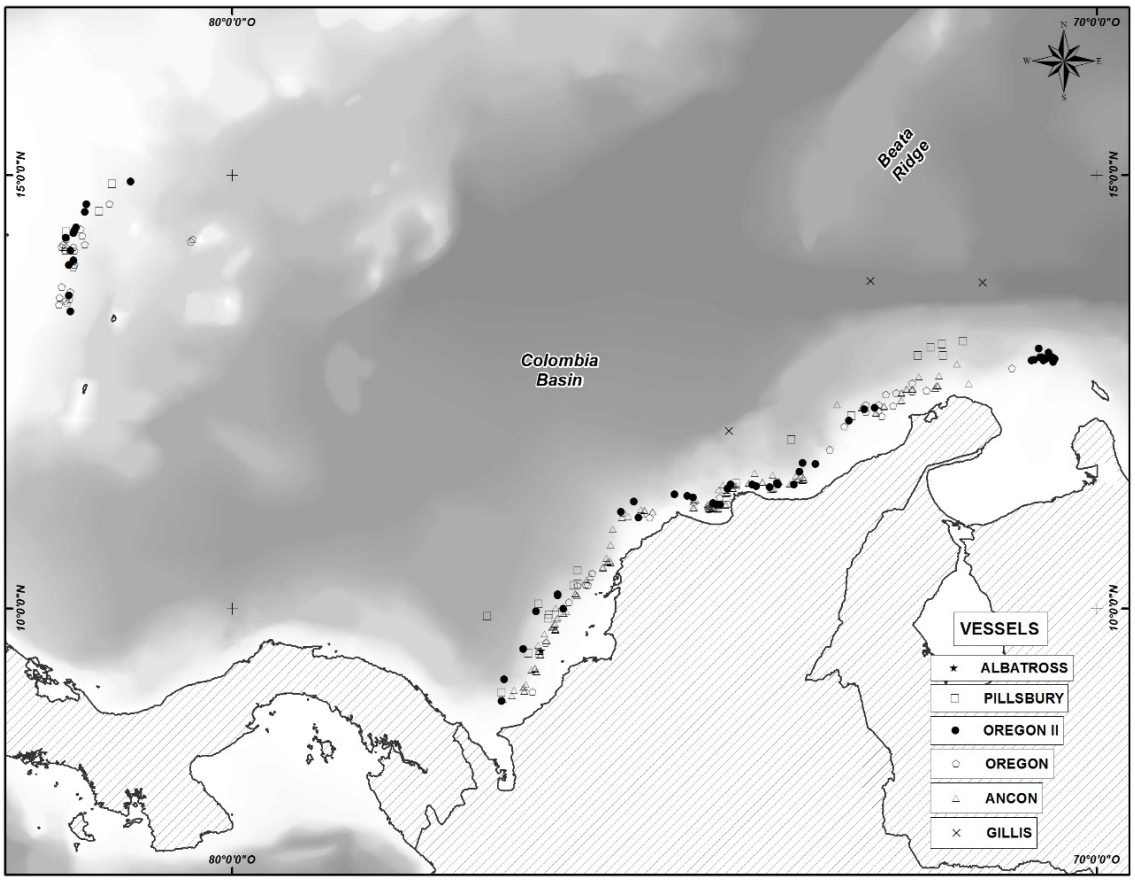


Figure 3. Deep bottoms trawls made by the different foreign and national cruises in the Colombian Caribbean Sea territorial waters.

In addition to vouchers (catalogued specimens reviewed to confirm identifications), unverified georeferenced records from the literature inside the study area were mentioned as text leading to the reference that contained this information. Unverified types that are included in a species description with additional examined material appear in italics. Unverified records do not mean unreliable records, just that their identification could not be confirmed in this study. The majority of the studied material is deposited in the National Museum of Natural History (USNM) - Smithsonian Institution, the Museum of Comparative Zoology (MCZ) – Harvard University, the Florida Museum of Natural History (UF) - University of Florida, and the Colombian Marine Museum of Natural History (INV PEC) - INVEMAR. A small number of samples were reviewed from the Academy of Natural Sciences of Philadelphia (ANSP) – Drexel University. Institutional abbreviations are as listed at http://www.asih.org/codons.pdf (Sabaj-Pérez 2013). The arrangement of orders and families follow Nelson (2006) and the spelling and citations of all scientific names follow Eschmeyer (2014). Common species names, when available, follow Carpenter (2002) (FAO), Page et al. (2013) (AFS), and Froese and Pauly (2014) (Fishbase). All lengths are given in millimeters after the number of specimens per lot, with the corresponding measurement abbreviation of total length (TL) or standard length (SL), unless indicated differently, such as HL (head length) or FL (fork length). Most lengths were taken from the original description, in the case of types, or from museum databases, or from the literature; in the latter case the original reference is quoted in the text. In this document the information of each species present in the Colombian Caribbean include all georeferenced stations where the species have been found in the complete Caribbean Basin.

## 5.3. RESULTS

Six main expeditions collected samples in the Colombian Caribbean territorial waters until today. More than 1184 lots were collected and identified as a product of those expeditions and at least 2426 historical samples stored in foreign collections were confirmed and, in some cases, reidentified. The number of stations widely ranged among the different expeditions, from the Albatross, which included only one station in the area of interest, to the Ancón cruise with 84 stations (Table 1). Different type of gears were also used in a wide range of depths, with most of the samples collected between 200 and 1000 m and some deeper ones. The Gillis cruise comprised only two locations, but included the deeper reports of deep-sea fishes in the Colombian Caribbean (*Dolopichthys pullatus* – 4029 m and *Bathyonus laticeps* and *Bathytyphlops sewelli* – 4197 m). An increase of number of species reported could be observed along the historical and recent cruises made in the Colombian Caribbean region (Figure *4*).The Albatross and Gillis cruises exhibit values of low number of species due to the number of station sampled by each cruises in the study area (1 and 2 respectively). The middle part of the twentieth century presented a flourishing of deep-sea exploration in the region opening with the Oregon I expedition of 1957 to 1960 that reveal a considerable increase of number of species in the region that maintain a smoothly tendency of increase until the last expedition developed in the region by the Ancón in 2009.

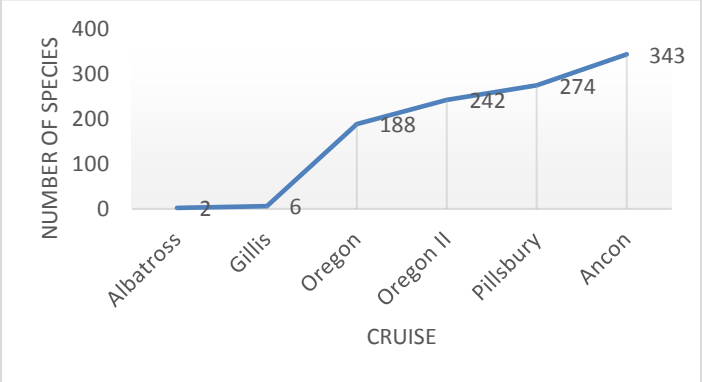


Figure 4. Cumulative number of deep demersal fish species found by the different cruises that collected samples in the Colombian Caribbean region until today.

Table 1. Different foreign and national cruises with collections in the Colombian Caribbean Sea territorial waters.

| Cruise | No. Stations | No. Species | Total individuals | Depth (m) | Type of gear |
|---|---|---|---|---|---|
| Albatross | 1 | 2 | 2 | 283 | Trawl - Small Beam |
| Gillis | 3 | 4 | 5 | 1554 - 4197 | 41' (12.5 m) otter trawl |
| Oregon I | 59 | 190 | 2130 | 200 -1006 | 40 -71' (12.1 – 21.6 m) shrimp trawl; 6 ft (1.83 m) Tumbler dredge |
| Oregon II | 56 | 158 | 821 | 201 - 1829 | 40 -130' (12.1 – 39.6 m) shrimp trawl; 8 ft (2.44 m) Tumbler dredge |
| Pillsbury | 18 | 137 | 1607 | 200 - 2983 | 10 - 41' (3.05 – 12.5 m) otter trawl |
| Ancón | 84 | 186 | 2396 | 200 - 980 | 29' (8.8 m) Semiballoon trawl |

A total of 343 species of deep-sea fishes are recorded from the Colombian Caribbean continental slope, collected below 200 m depth (Table 2) in 283 sampling stations. Those species are included in 26 orders and 92 families (Table 3). A verifiable annotated list is presented (Annex 1) on the basis of confirmations of deep-sea fishes collected on the above mentioned cruises, revision of the major museum collections that stored deep-sea samples from the area, and identifications of recent records taken by the Colombian Marine and Coastal Research Institute (INVEMAR) in some oceanographic cruises along the Colombian coast. A new recently described (Polanco and Fernholm 2014, see abstract below) species (Figure 5) was found in the collections made during the ANH II project. Each species includes catalog numbers and coordinates of the specimens that were verified in the different museums tracing distribution along the Caribbean Basin.

Table 2. Deep-sea fishes by numbers of families and species in the North Atlantic, New England, Gulf of Mexico, Caribbean region, and Colombian Caribbean slope. The number of deep-sea fish families and species include the mesopelagic fish fauna.

| Region | Species | Families |
|---|---|---|
| North Atlantic* | 505 | 72 |
| New England** | 630 | 135 |
| Gulf of Mexico*** | 691 | 138 |
| Caribbean region**** | 555 | 119 |
| Colombia Caribbean slope | 343 | 92 |

* Data from the North Atlantic from Merrett and Haedrich (1997).

** Data extracted from Moore et al.(2003), Hartel et al. (2008)

*** Data extracted from McEachran (2009).

**** Personal unpublished data

Table 3. Total number of species, genera and families of each order present below 200 m depth in the Colombian Caribbean, Caribbean Basin (Polanco and Acero in prep), and in the Gulf of Mexico. Gulf of Mexico data extracted from McEachran (2009).

| | Colombian Caribbean | | | Caribbean Basin | | | Gulf of Mexico* | | |
|---|---|---|---|---|---|---|---|---|---|
| ORDER | Total Spp | Genera | Families | Total Spp | Genera | Families | Total Spp | Genera | Families |
| **MYXINIFORMES** | 7 | 2 | 1 | 9 | 2 | 1 | 3 | 2 | 1 |
| **CHIMAERIFORMES** | 5 | 4 | 2 | 5 | 4 | 2 | 5 | 4 | 2 |
| **LAMNIFORMES** | / | / | / | / | / | / | 3 | 2 | 2 |
| **CARCHARHINIFORMES** | 8 | 4 | 1 | 14 | 5 | 2 | 12 | 7 | 4 |
| **HEXANCHIFORMES** | / | / | / | 2 | 2 | 1 | 3 | 2 | 1 |
| **SQUALIFORMES** | 10 | 3 | 3 | 16 | 7 | 6 | 24 | 12 | 7 |
| **SQUATINIFORMES** | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| **TORPEDINIFORMES** | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 |
| **RAJIFORMES** | 13 | 8 | 1 | 16 | 10 | 1 | 25 | 10 | 1 |
| **ALBULIFORMES** | 6 | 4 | 2 | 7 | 4 | 2 | 6 | 4 | 2 |
| **ANGUILLIFORMES** | 35 | 23 | 9 | 45 | 31 | 11 | 51 | 29 | 8 |
| **SACCOPHARYNGIFORMES** | / | / | / | 1 | 1 | 1 | 1 | 1 | 1 |
| **ARGENTINIFORMES** | 16 | 13 | 5 | 26 | 19 | 6 | 38 | 28 | 6 |
| **STOMIIFORMES** | 26 | 20 | 4 | 68 | 34 | 4 | 113 | 36 | 4 |
| **ATELEOPODIFORMES** | 1 | 1 | 1 | 2 | 2 | 1 | 2 | 1 | 1 |
| **AULOPIFORMES** | 16 | 9 | 6 | 30 | 20 | 8 | 44 | 25 | 10 |
| **MYCTOPHIFORMES** | 14 | 6 | 2 | 47 | 17 | 2 | 57 | 20 | 2 |
| **LAMPRIFORMES** | / | / | / | 1 | 1 | 1 | 5 | 5 | 4 |
| **POLYMIXIIFORMES** | 2 | 1 | 1 | 2 | 1 | 1 | 2 | 1 | 1 |
| **GADIFORMES** | 30 | 17 | 5 | 41 | 21 | 6 | 48 | 22 | 6 |
| **OPHIDIIFORMES** | 31 | 17 | 3 | 42 | 24 | 4 | 35 | 27 | 4 |
| **BATRACHOIDIFORMES** | 2 | 1 | 1 | 3 | 2 | 1 | 1 | 1 | 1 |
| **LOPHIIFORMES** | 16 | 11 | 6 | 28 | 17 | 10 | 22 | 17 | 11 |
| **STEPHANOBERYCIFORMES** | 2 | 2 | 2 | 10 | 7 | 4 | 20 | 12 | 7 |
| **BERYCIFORMES** | 6 | 6 | 5 | 8 | 8 | 4 | 11 | 15 | 5 |
| **ZEIFORMES** | 5 | 5 | 3 | 5 | 5 | 3 | 6 | 6 | 3 |
| **GASTEROSTEIFORMES** | / | / | / | / | / | / | 1 | 1 | 1 |
| **SCORPAENIFORMES** | 21 | 9 | 3 | 24 | 10 | 3 | 31 | 11 | 3 |
| **PERCIFORMES** | 53 | 35 | 19 | 75 | 53 | 27 | 94 | 61 | 32 |
| **PLEURONECTIFORMES** | 14 | 7 | 4 | 23 | 10 | 4 | 18 | 10 | 4 |
| **TETRAODONTIFORMES** | 2 | 2 | 1 | 3 | 3 | 1 | 5 | 4 | 1 |
| | 343 | 212 | 92 | 555 | 322 | 119 | 691 | 380 | 138 |

The Gulf of Mexico and the Caribbean Basin region data include the mesopelagic fauna. As this study is based in the demersal fauna all the stations in which a fishing gear different to a demersal trawl were used, were excluded. After that, trying to evaluate only the demersal fauna the families, genera, and species of the orders Stomiiformes and Myctophiformes, two of the main clades of mesopelagic fish fauna, were excluded from all the considered regions. Without those orders, a better approach to total figures for the demersal fauna are as described in Table 4.

Table 4. Total number of deep-sea demersal fish species, genera and families present below 200 m depth in the Colombian Caribbean, the Caribbean Basin, and the Gulf of Mexico excluding the orders Stomiiformes and Myctophiformes. The New England data are also presented, including the benthopelagic species living between 200 and 1000 m depth.

| Region | Species | Genera | Families |
|---|---|---|---|
| Gulf of Mexico* | 519 | 323 | 132 |
| New England** | 238 | | 76 |
| Caribbean Basin*** | 440 | 271 | 113 |
| Colombian Caribbean | 303 | 186 | 86 |

*Data extracted from McEachran (2009).

**Data extracted from Moore et al.(2003), Hartel et al. (2008).

**** Personal unpublished data

## NEW SPECIES DESCRIBED

As a product of the recent collections in the Colombian Caribbean slope a new species of myxinid was described and published during this study. The new species was named after Dr. Arturo Acero Pizarro, professor of the Universidad Nacional de Colombia Caribbean Campus, in recognition of his curiosity about, and important contributions to the study of Colombian marine fishes.

ABSTRACT

“A New Species of Hagfish (Myxinidae: *Eptatretus*) from the Colombian Caribbean

Andrea Polanco Fernández and Bo Fernholm

*Eptatretus aceroi*, new species, is described from one specimen captured on the upper continental slope in Colombian Caribbean waters at 705 m depth. The species can be distinguished from all congeners by having five gill apertures, 3/2 multicuspid teeth in the outer and inner tooth rows, respectively, an extremely slender body with the depth at the vertical through the pharyngocutaneus aperture 2.4% of the total length, and by having a total of 174 slime pores, the highest count in the genus. The species is compared with the other western Atlantic five-gilled species of *Eptatretus*…”


Figure 5. Holotype of *Eptatretus aceroi* Polanco F. and Fernholm from the Colombian Caribbean.

## 5.4. DISCUSSION

Taxonomic inventories and accurate knowledge of what, how much, and where in a specific region have been sampled are basic requirements to support an adequate first step towards an appropiate management and protection of biological resources in any environment. Miloslavich et al. (2010), discussing about marine biodiversity in the Caribbean, stated that coastal species richness tends to concentrate along the Antillean Arc (Cuba to the southernmost Antilles) and the northern coast of South America (Venezuela – Colombia), however no pattern could be observed in the deep-sea with the data available at that time. After this study, we have a first approach about the number of fish species found and reported in the deep-sea (below 200 m) of the Colombian Caribbean territorial waters. The number of deep-sea species listed represents an addition of approximated 25% to the total of 1336 shore fish species estimated by Miloslavich et al. (2010) for the Caribbean Basin. The number of deep demersal fish species tends to increase over time, according to the data obtained so far. Knowledge of the biology of offshore Caribbean countries is rather poor, with absence of biological investigations of the entire bathyal (depths of 200 to 2000 m) and one in the abyssal (2000 to 6845 m) region (Anderson et al. 1985). Some iniciatives have been conducted in the recent years (2013-2014), such as the Ocean Exploration Trust that includes in their projects the study of some geological hazards in the Caribbean Sea (http://www.oceanexplorationtrust.org/#!2014-expeditions/cpn8). That research is still in process of analysis.

The combined information from the Colombian Caribbean reveal a fauna dominated in number of species and families by the Perciformes (53 and 19 respectively) and Anguilliformes (35 and 9 respectively). In number of species these two orders are followed by the Ophidiiformes(31) and Gadiforms (30) in the Colombian Caribbean and in the Caribbean region in general (Polanco and Acero, *in prep*). The pattern in the Gulf of Mexico (McEachran 2009) which presents the higher number of species for the same two orders (Perciforms - 94 and Anguilliforms - 51) but followed by the Gadiformes (48) and Aulopiformes (44). In the New England

region four greatest orders have been identified to be dominant in number of species Perciformes (81), Lophiiformes (47), Gadiformes (46) and Aulopiformes (46) (Moore et al. 2003, Hartel et al. 2008, More et al. 2008). At the family level, the three considered regions (Colombian Caribbean, Caribbean Basin, and the Gulf of Mexico) appear closely aligned with Perciformes, Anguilliformes, Lophiiformes and Aulopiformes as the orders with the highest number of families respectively. The Anguilliformes are the only order that presents more number of families in the Caribbean Basin (11) and in the Colombian Caribbean (9) over the number found in the Gulf of Mexico (8). The species *Cynoponticus savanna*, a muraenesocid appears to be present in the Colombian Caribbean waters but absent in the Gulf of Mexico follow McEachran (2009). And the families Chlopsidae (*Kaupichthys* spp.) and Moringuidae *(Neoconger mucronatus*) present in the Caribbean region in depths below 200 m, are present in the Gulf of Mexico but have been registered in waters shallower than 200 m (see McEachran 2009).

The 343 species of demersal deep-sea fishes reported for the Colombian Caribbean represents 82.2% of the 417 demersal deep-sea species estimated for the whole Caribbean Basin (Polanco and Acero *in prep*) and 67.9% of the 505 species estimated by Merret and Haedrich (1997) for the North Atlantic (Table 2). Compared to the Gulf of Mexico (Table 2 and 3), the number of Colombian Caribbean species represents 49.6% of the total deep-sea species known from that area (691). It is a significantly high figure considering it comes from historical data of independent projects compared to the systematic sampling developed in the North Atlantic and the Gulf of Mexico. In terms of genera, the number present in the Colombian Caribbean represents 65.8% of those found in the Caribbean Basin, and 55.7% of those reported from the Gulf of Mexico. In terms of families, the figure present in the Colombian Caribbean represents 82.8% of the total number of families found in the Caribbean Basin and 66.6% of the Gulf of Mexico; on the other hand, the number of families reported for the North Atlantic (72) (Table 2) is clearly less than those known from Colombia.

After excluding the species of the orders Stomiiformes and Myctophiformes, that constitutes the larger portion of the mesopelagic species present in any region, the Colombian Caribbean comprises 76.9% of the families reported from the entire Caribbean Basin and 68.6% of its genera and species. Compared to the Gulf of Mexico, the Colombian Caribbean comprises 65.1% of the families, 83.9% of the genera and 58.9% of the species. The number of families, genera, and species reported for the Colombian Caribbean is always higher than 50% of those results from both, the Caribbean Basin and the Gulf of Mexico. The exclusion of those two orders (Stomiiformes and Myctophiformes), implies the omission of two of the three orders that together with the Perciformes contribute with the highest numbers of species to the fish lists of any of the regions. Without them, the high percentages for the Colombian Caribbean support the idea of an area with a very high biodiversity in terms of deep-sea demersal fishes.It is important to remember that older individuals of those orders will sometime be demersal and that taxa within those orders as the neoscopelids are basically benthopelagic species too. Moreover, It should be kept in mind that the bottom area truly sampled is basically reduced to the depth range between 200 and 1000 m at a southern marginal area and at a few northwestern points, leaving most of the large Colombian Basin mostly unsampled. Although this is a first step, the deepest waters of the Colombian Caribbean are still almost completely unstudied.

Two species (*Notacanthus chemnitzii*, *Dolopichthys pullatus*) are reported here for the first time from the Caribbean Basin based on Colombian samples. One hundred eleven of the 343 species reported from the region increased their bathymetric distribution ranges. Four new species (*Eptatretus aceroi*, *E. ancon*, *E. wayuu*, and *Symphurus hernandezi*) have been described in the last fifteen years (Mok et al. 2001; Saavedra-Díaz et al 2003; Polanco and Fernholm 2014). Even though the use of different types of deep-sea fishing gear along the cruises developed in the Colombian Caribbean help to obtain a representative sample of a variety of species, there is no doubt that with more detailed revisions of the taxonomy of some groups plus the projected increase of deep-water exploration below 1000 m, the total number of reported species and even the discovery of new species are likely to show considerable increases.

This revision suggests that not only the Colombian Caribbean could be a region of high concentration of fish biodiversity but also possibly can be acting as a center of endemicity. The comparison among regions made possible the identification of some fishes as the myxinids (hagfishes) and etmopterids (lantern sharks), with very high number of species. In those two cases not only there are more species present in the Colombian Caribbean than in the entire Gulf of Mexico, but there are also some species endemic to the Colombian Caribbean (*Eptatretus aceroi*, *E. ancon, E wayuu*, *Etmopterus carteri*, and *E. perryi*). As it was initially suggested by Acero (1985) in his evaluation of the distribution of some families of coral reef fishes, and by Díaz (1995), who compared the distribution of gasteropods along the continental shelf between Costa Rica and Guyana, and recently stated by Robertson and Cramer (2014), in their study to define and divide the Greater Caribbean based on the biogeography of shorefishes, the southern Caribbean is an area deserving special attention due to it characteristic fauna. The existence of a southern province in Northern South America with a species composition sufficiently distinct from the rest of the Greater Caribbean has already been proposed for shelf fishes (Robertson and Cramer, 2014). This may be supported by the deep-sea fish that also exhibits a differentiation in terms of composition in a relatively small sampled portion. Further studies have to be done to try to cover the whole or at least a number of representative locations of the Colombian Caribbean territorial waters below the kilometer depth (>1000 m), as well as other countries marine territorial waters inside the Caribbean Basin, in order to test this hypothesis.

# 6. CHAPTER II: Structure patterns of the deep-sea demersal fish fauna of the continental slope of the Colombian Caribbean

## 6.1. INTRODUCTION

Presently, economic development can be a major threat to the different deep-sea habitats and their associated fauna. Given the impossibility of conserving all the biodiversity, humanity has to establish priority areas. A basic understanding of the structure of associated fauna in terms of composition and distribution are required as a baseline towards a conscious and a proper management of resources. Patterns of spatial and temporal variation on composition, abundance, and distribution of the biodiversity of demersal fish assemblages of the continental shelf and slope have been described at several latitudes (e.g. Bianchi 1991, 1992a, 1992b; Koslow 1993; Fujita et al. 1995; Fariña et al. 1997a; García et al. 1998; Moranta et al. 1998; Labrapoulou and Papaconstantinou 2000; Magnusen 2002; Powell and Haedrich 2003; D'Onghia et al. 2004). Those patterns are well known to be caused by physical factors such as geomorphology and oceanographic parameters and biological factors for example resource availability, predator-prey relationships, and intraspecific and interspecific competition (Koslow 1993; Powell et al. 2003, D' Onghia et al. 2004).

Some studies of demersal fish assemblages have been conducted in the western Atlantic (Uyeno et al. 1983; Valdez and Aguilera 1987; Cervigón 1991, 1993, 1994 and 1996). In Colombia some studies (García et al. 1998; Manjarrés 1998; Medina 2002; Páramo et al. 2009) have explored community structural patterns, but are mainly concentrated in the continental shelf ecosystems, above 200 m depth. The knowledge about marine slope fauna and ecosystems of the Colombian Caribbean are reduced to some foreign oceanographic cruises reports. In 1998, the Institute of Marine and Coastal Research – INVEMAR began exploring the continental shelf and upper slope of Colombian waters with the Macrofauna I and II projects. Its main goal was to characterize the marine benthic biodiversity in territorial waters. Macrofauna I project focused on the

upper slope. The increasing interest for the exploration and potential exploitation of fossil hydrocarbon resources in Colombia prompted the Hydrocarbons National Agency (ANH) to support scientific projects (ANH I and II, for the Caribbean region) in the deep-sea. New species of fish were described for science as a product of those projects (Mok et al. 2001; Saavedra-Díaz et al. 2003, Polanco and Fernholm, 2014). On the other hand, Páramo et al. (2012) as a product of a deep-sea fishery exploration study in the Colombian Caribbean presented an analysis of the deep-sea fish assemblages across a depth range of 200-550 m.

The Colombian Caribbean is an area characterized by a wide bathymetric range in the deep-sea, with depths between 200 m (average where the continental break can be found) until around 3500 m (Rangel-Buitrago and Idarraga 2010). The complex bottom geomorphology divided the continental waters of the region in four different sections with particular characteristics (Rangel-Buitrago and Idarraga 2010). First, the Guajira region with a continental shelf variable in width (8 – 17 km) and a western part between the Mendihuaca River mouth until Mingueo with a narrower continental shelf associated to the Sierra Nevada de Santa Marta that rise eastward. This part exhibits different seabed features, such as submarine basins in the narrower part of the continental shelf with some reliefs and channels off Palomino and Mingueo. A transition central part in front of Riohacha with contrasting seabed features, such as the Rancheria River canyon and the Guajira Valley around 100 m deep; and finally a third part associated to a wide continental shelf. A Tayrona region, characterized by the absence of continental shelf and the presence of La Aguja Canyon with thinner valleys positioned in different directions along its extention. Next is the Magdalena region, that consists in a section formed by the deltaic dynamism of the Magdalena River through time with a continental shelf aproximately 2 km wide and a variety of seabed forms, such as canyons, channels, levees, high structurals, mass deposits, and escarpment areas. Finally, the southwestern part of the Colombian Caribbean, the Sinú region, is also know as the Accretionary Sinú Prism (ASP). The features occurring within this area include drainage systems (broad channels and turbidity channels), anticlinal ridges with associated faults, seabed mounds, and mass-transport systems such as slumps and debris flows. The drainage systems include broad lower relief drainage

channels occurring mostly in the southern and northern parts of the area and thin high relief turbidity channels that generally occur in the central part of the area. Small seabed mounds occur throughout the Sinú area. The mounds are probably buried mud diapirs, which are common in this Colombian offshore area (Rangel-Buitrago and Idarraga, 2010). This seabed geomorphological puzzle added to the particular hydrography of the region set a upper slope with a wide variety of environments that, due to their different conditions, may shelter different fish assemblages.

Knowledge of offshore benthic marine habitats and associations of animals in the deep ocean is limited and even non-existent for some regions in the world. In Colombia an accurate understanding of benthic slope fish communities' structure has not been available yet. It is the purpose of this study to present such a description for the Colombian Caribbean slope based on the deep-sea demersal fishes collected in 84 stations along the Colombian Caribbean. It presents an ecological analysis to give an approximation of the structure (composition and distribution) of the fish assemblages of the Colombian Caribbean in relation to the biological (i.e. resource availability), and physical (i.e. water depth, geomorphology, geographic location, and overlying water mass) processes that influence it. In this context the fish are used to:

i. Determine if there is a fish demersal fauna variation positively correlated with depth

ii. Identify if there is a horizontal spatial distribution (east – west) of the fish demersal fauna

iii. Determine if there is a fish demersal fauna variation positively correlated to the topography of the slope

## 6.2. MATERIALS AND METHODS

### 6.2.1. Sampling strategy

The data were obtained from bottom trawls catches, on board of the B/I Ancón , a 60 feet research vessel operated by INVEMAR (Figure 6).


Figure 6. INVEMAR's research vessel B/I Ancón

Four oceanographic expeditions were performed from November 1998 to June 2008 which included samples taken from 200 to 980 m depth (Macrofauna I, Macrofauna II stations below 200 m, ANH I, ANH II projects). A total of 84 stations were sampled using a semi-balloon trawl net with a mouth opening of 9 × 1 m, equipped with a protective bag of polyethylene with 10 mm stretched mesh-size at the cod-end, and operated at 5.5 km/h (three knots) in 20 minute hauls (*Annex 2*). Once on board the samples were washed with water in a 500 mm sieve (Figure 7). Each sample was separated and fixed in 10% formalin and then transported to

INVEMAR laboratories. Macrofauna I and II stations were sampled with two trawls of 10 minutes each. The data of those catches per station were summarized to standardize the four cruises to 20 min sampling. Haven as a result a general cualitative overview of the community structure without a strict qualitative data management, fact to be considered in the results. The catch from each station was sorted and identified to the lowest taxonomic level possible and then deposited in the fish collection of the Colombian Marine Natural History Museum (MHNMC) of INVEMAR, accession numbers can be found in the following address http://siam.invemar.org.co/siam/sibm/index.jsp (INVEMAR-SIBM 2014) through the projects named above.


Figure 7. Sampling method: sieving process (>500 mm).

The seabed features used in this study follow the bathymetric interpretation made by Navas et al. (2010) with the Benthic Terrain Modeler (Wright et al. 2005) from the ArcGIS software (ESRI 2004). The nomenclature of those features follows the Intergovernmental Oceanographic Commission standardization of undersea feature names (IHO-IOC 2001). It must be considered that the bathymetric estimation of the undersea features may have a completely different scale of the sampled stations causing an uncertainty. The stations may be included on the mentioned feature or slightly adjacent because of this difference in scales. Temperature, salinity, and oxygen data of the bottom (using an average of the last ten meters) of the two last expeditions were available to use as physical factors different to the bottom topography. Those data were used and extrapolated to the nearest station of the Macrofauna projects. The use of different scales of work and the extrapolation of environmental data increase the uncertainty of the results but those assumptions are used in absence of better options.

### 6.2.2. Multivariate statistical analyses

The multispecies data set was summarized in an species abundance matrix for each sampled site of the Colombian Caribbean slope including bathymetry, georeferenced position (latitudinal and longitudinal values), landscape, water mass, temperature, salinity, and oxygen values. Prior to multivariate analyses, a Hellinger transformation was applied to the data set, computing the square root of each species abundance divided by the sum of the species present at the site. Then, to produce a model of distribution patterns of fishes for the Colombian Caribbean continental slope based on species-environment data, a Multivariate Regression Tree (MRT) was performed. The MRT (De'ath 2002) is a clustering method which operates on explanatory variables that act as constraints on the formation of the groups. The tree structure was generated by partitioning the whole dataset into mutually exclusive groups using the ‘mvpart’ library (De'ath 2002). It is run by successive binary splits of the data, each split involving a breakpoint in the environmental variable. Each split is chosen to minimize the total multivariate sum of squares within the two groups formed. This statistic

maximized at each division step is the $R^2$. The tree with the lowest cross-validation error (CV) was chosen as the best predictive tree. At the end of the procedure, each leaf of the tree is characterized by a number of sites, the multivariate mean of the sites, and the explanatory variable values that define it. A maximum of 1000 random starts in search of the stable solution were performed. All calculations were done through R package mvpart 1.6–0 (Therneau et al. 2012). Aditionally, to analyze the possible relationship between environmental factors and the distribution pattern of the slope fish assemblages, non-metric multidimensional scaling (NMDS) analyses were performed. NMDS was implemented using default options and Bray-Curtis dissimilarity, instead of the Euclidean distance for ordination, due to the interest in the compositional dissimilarity between sites rather than in raw differences on abundance of one species or another. One thousand random starts were used to search for a stable solution. To explore the relationships between the distributional patterns and the environmental variables, relevant variables were overlaid on the ordination using the ordisurf function that fits smooth surfaces using generalized additive models with thin plate splines (Wood 2000). An Indicator Species Analysis (INDVAL) was performed to find indicator species characterizing the obtained groups (Dufrene and Legendre 1997). This method combines information on species mean abundance and their ocurrence frequency. In this case, with data clustering on group sites on the basis of independent data such as environmental variables, the indicator species can be considered related to the ecological conditions of their group (Borcard et al. 2011). The INDVAL method was performed using the labdsv library under R package MVPARTwrap 0.1–9.2 (Ouellette and Legendre 2013). The significance was established using a minimum association value of 0.5.

## 6.3. RESULTS

### 6.3.1. Distribution patterns

A total of 186 species were listed, in 75 families and 25 orders, based on 7520 individuals sampled in 84 trawl stations along the Colombian Caribbean coast (*Annex 3*). A MRT analysis was used to analyze the multispecies data, a method of constrained clustering that determines groups that are similar in a chosen measure of species dissimilarity. The tree suggests that the fishes on the continental slope are separated into six discrete assemblages associated to bathymetric and geographic distributions (Figure 8). That model explained 33.8% among-field variation and a predictive accuracy with a cross validate error of 0.777. Two main groups are present: (Upper slope - US), a fish assemblage occurring from 200 to 380 m depth conformed by 33 stations, and (Middle slope - MS), a fish assemblage extending from 380 to 1000 m depth conformed by 51 stations (Figure 9A). Inside the upper slope fish fauna cluster (US) a first division of sites is driven by geographic distribution, (USa) a group conformed by nine stations located southwestern of the meridian 75.66°W and two other groups located northeastern of that point. The last ones exhibit a division based on bathymetry, (USb) comprising a group of 17 sites located at depths above 272 m (200 to 271.9 m), and (USc) a group of seven sites located in depths below or equal to 272 m (272 to 380 m). Inside the middle slope fish fauna group (MS) a first division of sites is driven by bathymetric distribution, (MSa) a group of 20 sites located at 602 m depth or below (602 to 1000 m). Additionally, two other groups are formed in depths above 602 m that exhibit a division based on the geographic distribution of the sites: (MSb) a group conformed by 20 stations located northeastern to the meridian 75.77 °W and (MSc) a group of 11 sites located southwestern to the last mentioned meridian. The NMDS ordination (stress=0.16) (concur with the MRT as the groups appear in specific areas of the scatter diagram (Figure 9B). With the ordisurf function the sites were fit into smooth surfaces indicating the depth where the sites are located. At this point, related to the first and second hypothesis testing a positive correlation between the fish fauna and the bathimetric distribution (i – $H_0$1); and

a longitudinal distribution (ii - $H_0 2$), the data support the influence of those variables as important factors on the fish assemblages present in the continental slope.

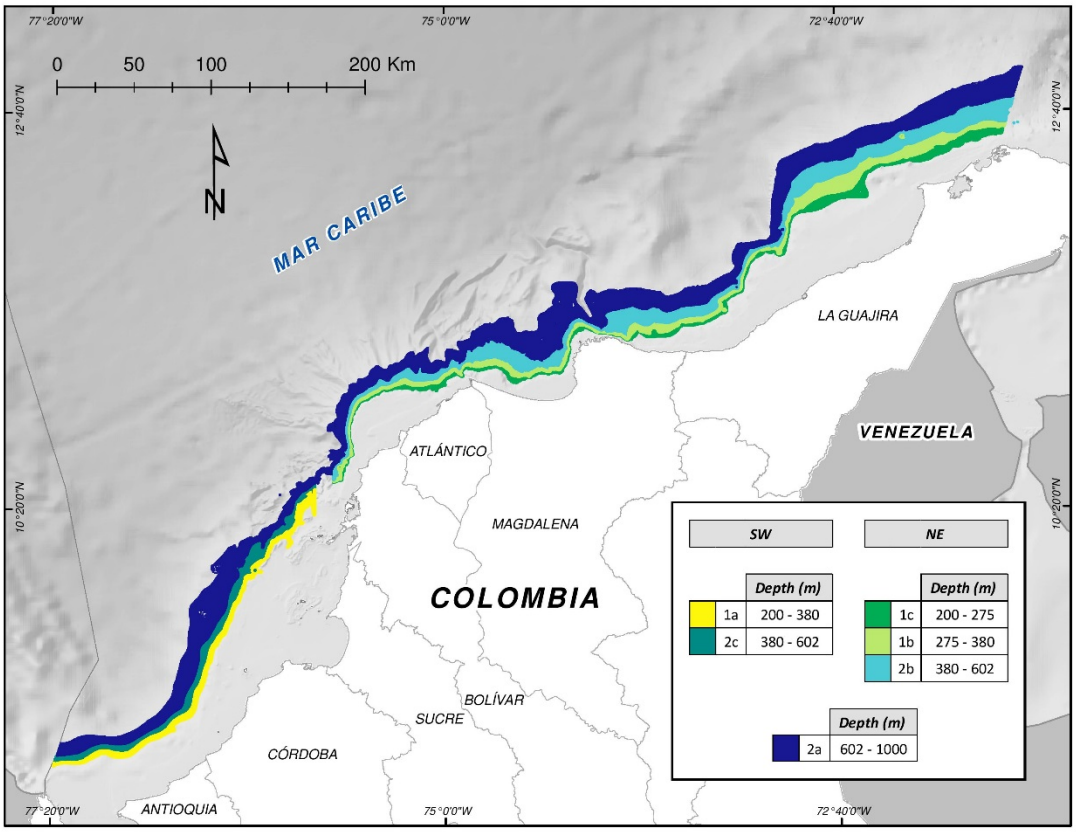


Figure 8. Six discrete assemblages associated to the bathymetric and geographic distributions: 1) USa yellow; USb green; USc dark green; 2) MSa dark blue; MSb cyan; MSc dark cyan.

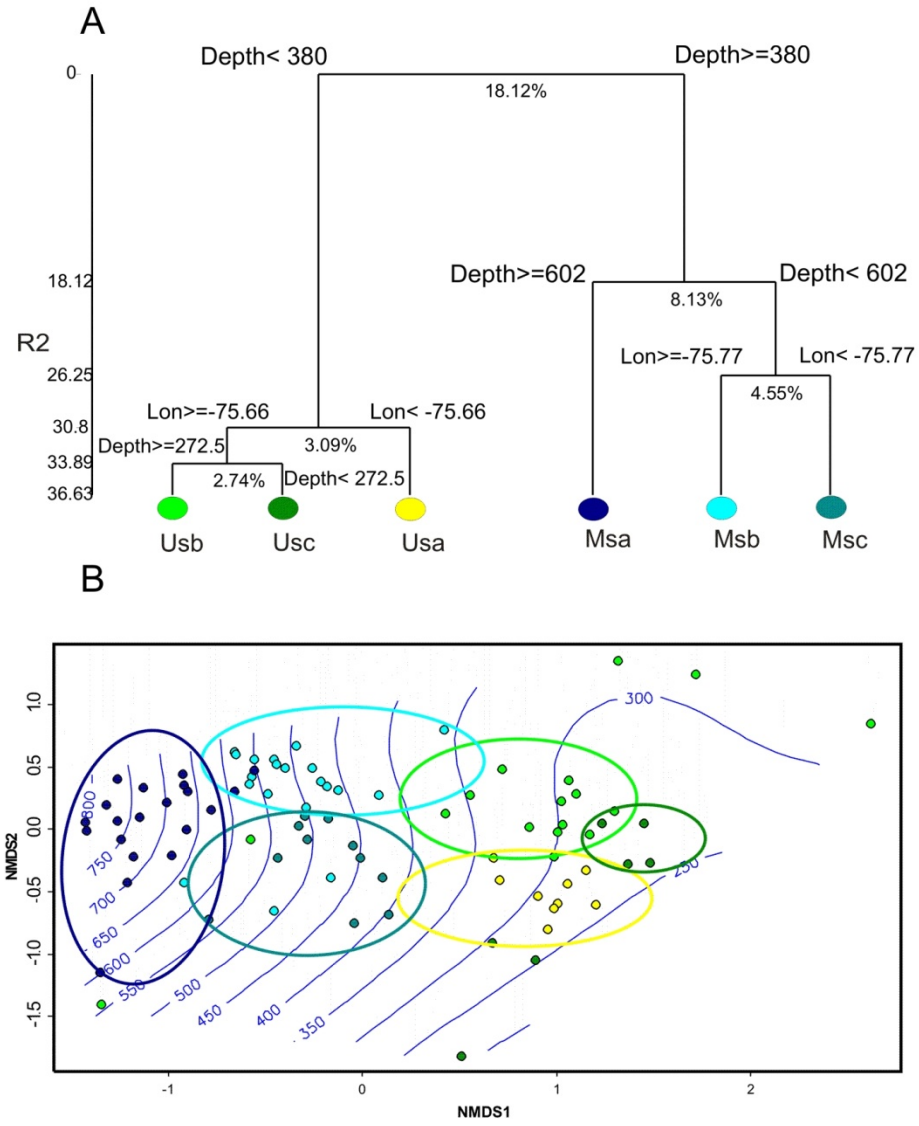


Figure 9. (A) Groups obtained by multivariate regression tree analysis based on abundance data. (B) Ordinal representation (NMDS) of the data including an ordisurf function indicating the depth where the sites are located. Identified groups are represented by different colors: MSa dark blue; MSb cyan; MSc dark cyan; USa yellow; USb green; USc dark green.

### 6.3.2. Species composition and indicator species

In the upper slope group within the fish assemblage (USa) present between 200 to 380 m depth and located southwest of the meridian 75.66°W, the dominant fish order in number of species (Figure 10) is Perciformes (spiny-rayed fishes – 23.4%) followed by Lophiiformes (anglerfishes – 12.5%), Scorpaeniformes (rockfishes – 12.5%), Gadiformes (cods and relatives –10.9%), and Ophiidiformes (cusk eels and brotulas – 7.8%). In the groups formed northeast of the meridian 75.66°W (USb, USc), Perciformes is also the order with the highest number of species in both cases, been always more than 15% of the total fish fauna. In the USb group (stations located below 272 m) that order was followed by Gadiformes (12%), Scorpaeniformes (9.8%), Anguilliformes, and Lophiiformes (eels and anglerfishes, respectively – 7.6% each). In the group USc (sites located at depths above 272 m) the order Perciformes was followed by Scorpaeniformes (14.1%), Anguilliformes (10.9%), Lophiiformes (10.9%), and Gadiformes (9.4%). Inside the middle slope fish fauna, in the group MSa located at depths below 602 m, the dominant fish order in number of species is Gadiformes (25%), followed by Anguilliformes (17%), Stomiiformes (10.9%), Ophidiiformes (9.4%), and Perciformes (9.4%). The group MSb (20 sites located northeast to the meridian 75.77°W) is dominated by Gadiformes and Perciformes (13.5% each), followed by the Stomiiformes (11.2%), Anguilliformes (10.1%), and Lophiiformes and Scorpaeniformes (each one with 9.0% of the species). In the group MSc (11 sites located southwest to the above mentioned meridian) the fish fauna is dominated by Perciformes (20.3%), followed by Gadiformes (13.6%), Lophiiformes (10.2%), and Myctophiiformes and Scorpaeniformes (each with 8.5% of the total number of species). Diversity and evenness were calculated for the different assemblages using the Shannon Wiener indexes, but no significant difference was found among them. The upper slope assemblage (USb), that includes the stations located northeast to the meridian 75.66°W between 272 and 380 m, and the middle slope assemblage (MSb), that includes the sites located northeast to the meridian 75.77°W between 380 to 602 m, are the groups that exhibit the highest values of species richness and abundances (Annex 3).

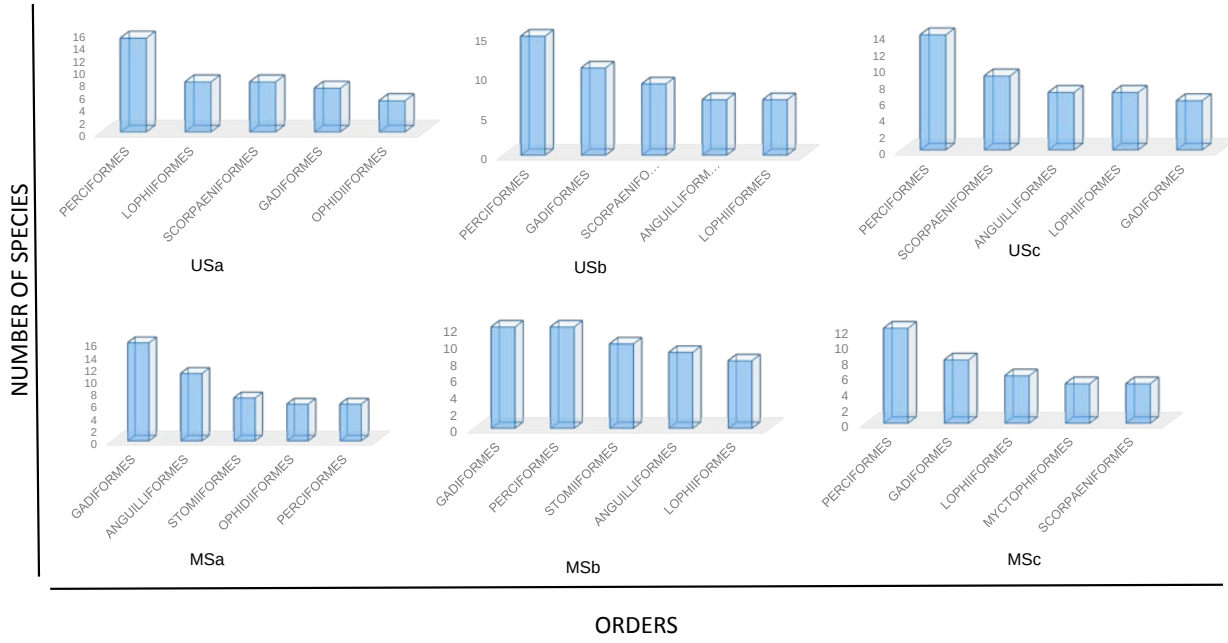


Figure 10. D**ominant fish orders in terms of number of species (≥7%) included in the d**ifferent fish assemblages of the Caribbean coast of Colombia.

Among the 186 species, the indicator species analysis revealed 61 that respond to the division between the upper slope clusters and the middle slope clusters. *Neobythites gilli*, *Coelorinchus caribbaeus*, *Synagrops bellus*, *Poecilopsetta inermis*, *Bembrops anatirostris*, and *Argentina striata* are the indicator species with the highest association values for the upper slope clusters formed (Annex 3). The middle slope clusters were characterized by *Nezumia aequalis*, *Dibranchus atlanticus*, *Laemonema goodebeanorum*, *Halosaurus ovenii*, *Neoscopelus macrolepidotus*, and *Bathygadus macrops*. Within the upper slope node the sites located to the southwestern of the 75.66 °W were characterized by the indicator species *Zenion hololepis*, *Chaunax suttkusi*, *Chlorophthalmus agassizi*, *Antigonia combatia*, *Poecilopsetta inermis*, and *Argentina striata*; in the northeastern sites the species with the highest association values were *Coelorinchus caribbaeus* and *Pontinus longispinis*. Inside the bathymetrical division that was found in the northeastern sites those with depths below 272 m were characterized by the presence of *Antigonia capros*, *A. combatia*, and *Parasudis truculenta*. Within the middle slope node, the stations located below 602 m depth were characterized by the

indicator species *Monomitopus agassizii*, *Pseudophichthys splendens*, *Halosaurus guentheri*, *Dibranchus atlanticus*, and *Halosaurus ovenii*. Inside the geographical division that was found among the sites located between 380 to 602 m, those located southwestern of the 75.77° W were characterized by *Chaunax suttkusi*, *Neoscopelus microchir*, *Coloconger meadi*, *Hymenocephalus italicus*, and *Poecilopsetta inermis*. The sites located northeastern have *Bathygadus macrops*, *Laemonema goodebeanorum*, *Nezumia aequalis*, *Neoscopelus macrolepidotus*, *Myxine mccoskeri*, *Coelorinchus caelorhinchus*, *Symphurus marginatus*, and *Peristedion greyae* as indicator species (Table 5).

Table 5. Indicator species characterizing the obtained groups with the highest association values based in species mean abundances and its frequencies of occurrence in the group.

| | Indicator species | Indicator value | Probability |
|---|---|---|---|
| USa | *Zenion hololepis* | 0,766 | 0,001 |
| | *Chaunax suttkusi* | 0,7501 | 0,001 |
| | *Chlorophthalmus agassizi* | 0,6875 | 0,005 |
| | *Antigonia combatia* | 0,63 | 0,001 |
| | *Poecilopsetta inermis* | 0,5738 | 0,046 |
| | *Argentina striata* | 0,5243 | 0,036 |
| USb | *Antigonia capros* | 0,7143 | 0,001 |
| | *Antigonia combatia* | 0,5595 | 0,004 |
| | *Parasudis truculenta* | 0,5329 | 0,008 |
| USc | *No indicator spp* | | |
| MSa | *Monomitopus agassizii* | 0,876 | 0,001 |
| | *Pseudophichthys splendens* | 0,849 | 0,001 |
| | *Halosaurus guentheri* | 0,65 | 0,001 |
| | *Dibranchus atlanticus* | 0,592 | 0,010 |
| | *Halosaurus ovenii* | 0,524 | 0,030 |
| MSb | *Bathygadus macrops* | 0,85 | 0,001 |
| | *Laemonema goodebeanorum* | 0,7155 | 0,001 |
| | *Nezumia aequalis* | 0,6431 | 0,006 |
| | *Neoscopelus macrolepidotus* | 0,6266 | 0,011 |
| | *Myxine mccoskeri* | 0,6172 | 0,005 |
| | *Coelorinchus caelorhinchus* | 0,5956 | 0,037 |
| | *Symphurus marginatus* | 0,5864 | 0,012 |
| | *Peristedion greyae* | 0,5 | 0,011 |
| MSc | *Chaunax suttkusi* | 0,6619 | 0,005 |
| | *Neoscopelus microchir* | 0,6364 | 0,001 |
| | *Coloconger meadi* | 0,5745 | 0,002 |

| Indicator species | Indicator value | Probability |
|---|---|---|
| *Hymenocephalus italicus* | 0,5672 | 0,019 |
| *Poecilopsetta inermis* | 0,5157 | 0,008 |

Related to the third hypothesis of this study (iii – $H_0$3), that is if there is a positive correlation among fish demersal fauna and the topography of the slope, the data do not support any relationship with the available landscape data. The MRT do not find this variable as an important factor to influencing fish distribution patterns of the obtained assemblages.

## 6.4. DISCUSSION

The Colombian Caribbean continental slope is characterized by six demersal fish assemblages arranged first by depth and then by geographical location (east – west). Distribution of marine fauna influenced by the bathymetrical gradient and geographical location has been described in several latitudes (eg. Koslow 1993; Fujita et al. 1995; Bergstad et al. 2008). Increased sampling over the last decades has confirmed the global presence of depth zonation for the demersal fauna (Carney 2005). In the North Atlantic, Koslow (1993) described distributional patterns of the deep demersal fish fauna in three principal dimensions: depth (shallow strata: upper to mid-slope and deeper strata: mid-slope to rise), latitudinal (tropical/subtropical, temperate, and boreal clusters), and longitudinal or amphiatlantic. Merrett and Haedrich (1997) described the bathymetrical subdivision of the demersal deep-sea fishes for the North Atlantic (NA) Basin in four strata. The Colombian (C) bathymetrical subdivision found in this study fits in two of those strata, an upper slope (200 to 399 m for NA and 200 to 380 for C), middle slope (400-1999 m for the NA and 400 – 1000 m for C). In the Gulf of Mexico a depth zonation was also found (Powell et al. 2003) that corresponds to that found in the Colombian Caribbean continental slope. A longitudinal differentiation was also detected in the Gulf of Mexico in terms of diversity and richness of species among the east and west but with some differences in the sampling design. In Colombia, studies on distribution of demersal fish fauna were concentrated mainly in waters shallower than 200 m depth and restricted to specific regions (e. g. García et al. 1998; Manjarrés et al.1998; Páramo et al. 2009). But in the last two decades research in deep environments has been boosted towards the completion of biodiversity inventories and a better understanding of the ecosystems and fauna present in the Colombian Caribbean continental margin (e.g. Reyes et al. 2005; INVEMAR 2010; Gracia et al. 2011).

An approach to the deep-sea demersal fish assemblages of the upper slope (200 to 550 m) was described by Páramo et al. (2012). That study found three different assemblages influenced by depth, shallow (200 –

300 m), middle (300 – 400 m), and deep (400 – 550 m). In that study, the highest diversity of deep-sea demersal fishes was found in the Guajira region, similar results to that presented by Polanco et al. (2010) in a preliminary list and description of Colombian Caribbean demersal fishes found between 20 and 800 m summarizing most of the results of three of the four projects included in the present analysis (Macrofauna I, Macrofauna II, and ANH I). Vides (2011), analyzing the megabenthic fauna collected during the three Colombian projects mentioned before, found also a bathymetrical zonation (shallow strata: 20-150 m; middle strata: 150-400 m, and deep strata: 400-900 m) with the higher species richness values in the Guajira region. In the present study, the deep-sea demersal fish fauna exhibit two clusters between 275 m and 602 m (USb and MSb), located northeastern of the meridian 75° W, with the highest values of species richness and total number of individuals among all assemblages (see values Annex 3), even though statistical analysis showed no significant differences in terms of diversity index among clusters. The present and the previous results of the studies made in the area clearly point out that the northeastern part of the Colombian Caribbean continental slope exhibits higher values of faunal biodiversity compared to the southwestern. But the studies made by Polanco et al. (2010) and Vides (2011) included the shallow water sites located in the continental shelf above 200 m depth in the analysis, that do not make the results entirely comparable. However, that may suggest that these high values of fauna biodiversity go also further in the continental shelf to the northeastern part of the Colombian Caribbean. In terms of assemblages, those found in the present study comprise the three strata suggested by Paramo et al. (2012) in two different assemblages with a certain grade of overlapping among the boundaries, differences that can be due to the different sampling methods, design, and efforts of the two studies.

A general geographical variation east - west have been found in different faunal groups such as corals (Santodomingo et al. 2013), molluscs (Ardila et al. 2003), echinoderms (Benavides-Serrato and Borrero-Pérez 2010), bryozoans (Flórez-Romero et al. 2007) and fishes where deep-sea stations were considered. That suggest a combination of different physical conditions (oceanographic and geomorphological) in the

Colombian Caribbean influencing the organisms. Oceanographic conditions in a regional level such as the hydrodynamic of the currents with the Panama Colombia Gyre (Andrade and Barton 2000), the eastward flow along the central and South American Caribbean coast (Andrade et al. 2003) and some eddies that traversed the Caribbean in a westward direction (Andrade and Barton 2000) may affect the distribution of the organisms in processes such as the dispersion of larvae and eggs (Stanley et al 2012), flux for carbon transport and organic matter supply. And, local level conditions for the Colombian Caribbean such as the Guajira upwelling system (Andrade and Barton 2005) and the riverine inflow with the freshwater and sediment discharge (Restrepo et al 2006) increasing also the concentration of nutrients and the flux of particulate organic matter (Lutz et al. 2007; Watlinga et al. 2013) in different gradients for the east and west. Together with the geomorphological puzzle of the region, with four different sections with particular characteristics: Guajira, Tayrona, Magdalena and the Sinú part (Rangel-Buitrago and Idarraga 2010), conditions that have been proved to affect the distribution of life in those environments (Koslow 1993; Powell et al. 2003, D' Onghia et al. 2004, Ross and Quattrini 2007, 2009).

Within the major oceans at slope depths the deep-sea habitat is more or less continuous with soft bottoms and less frequent hard bottoms areas with the presence of some features such as submarine canyons, seamounts and vents, among others (Tyler 2003). Although knowledge about Colombian deep-sea geomorphology below 200 m is poor, such influence of the geomorphological features over the deep-sea megabenthos was suggested by Santodomingo et al. (2007). They stated the presence of hard-bottom substrata inferred from the presence of branching azooxanthellate corals (invertebrates forming structural matrix) as principal components in some stations. At a global scale is well known that most of the megabenthic fauna in the deep-sea environments is associated with that kind of substrata (Tyler 2003, Freiwald and Roberts 2005). This previous evidence of the presence of structured communities of invertebrates forming deep-sea coral reefs in the area (Reyes et al. 2005; Santodomingo et al. 2007, 2013), and the described distribution patterns of the deep-sea demersal fishes, may support the idea of the presence of hard substrata

patches within the continental break and the middle upper slope. Páramo et al. (2012) and Santodomingo et al. (2013) maintain that the existence of such invertebrates biodiversity aggregations in the upper slope of the northeastern Caribbean were associated with the significant upwelling off the Guajira Peninsula that increases the concentration of nutrients in the water (Andrade et al. 2003; Andrade and Barton 2005) and, therefore, creates suitable conditions for the occurrence of azooxantellate coral communities (Santodomingo et al. 2013). These are providing, at the same time, the necessary resource availability for mobile fauna, such as demersal fishes, to aggregate.

Bathymetric differences in ordinal composition of demersal deep-sea fishes have been previously defined for the North Atlantic Basin with 15 orders in the upper slope which increases to 21 orders in the middle slope (Merrett and Haedrich 1997). In the corresponding depths in the Colombian Caribbean, a maximum of 21 orders in the upper slope and 20 in the middle slope were found comparing the numbers of orders and families known at that time (Polanco et al. 2010) to the values reported by Merrett and Haedrich (1997) for the North Atlantic Basin, differences that could be due to the dissimilar conditions between temperate and tropic environments. There, species within orders are also variable between zones, with Rajiformes, Scorpaeniformes, and Pleuronectiformes dominating in the upper slope and Squaliformes, Gadiformes, and Ophidiiformes in the middle slope (Merrett and Haedrich 1997). Compared to the ordinal arrangement proposed by Merrett and Haedrich (1997) inside the different obtained assemblages, the indicator species follow the same general tendency of the ordinal arrangement found in the North Atlantic.

The fact that the study could not find any relation among fish demersal fauna and the topography of the slope could be possibly due to the completely different scales of the available data about landscape of the bottom and the sampled stations of those projects, causing an uncertain approach. It is clear that further mapping effort of the deep-sea bottom in the Caribbean Colombian slope has to be done to explore the correlation between it and the inhabiting fauna.

It is important to remark that this analysis was done with the 186 species collected during the cruises developed by INVEMAR. But if the complete assessment for the deep-sea waters of the Colombian Caribbean is taken into account with historical data it comprises 346 species, most of them with a bathymetrical range that includes the continental slope, the ecological analysis was performed only with about 54% of the ichthyofauna reported for the area. This fact indicates that our knowledge of the fish communities living at those depths still remains incomplete.

# 7. CHAPTER III: Spatial description of demersal fish biodiversity patterns within the Colombian Caribbean continental slope.

## 7.1. INTRODUCTION

Investigation on deep-sea habitats and their fauna began in the late 19th century around the world (Ramirez-Llodra et al. 2010); systematic studies in depths below 200 m began just two decades ago in the Colombian Caribbean. Most of the studies have focused on the characterization of deep-sea fauna by large taxonomic groups and some environmental settings collected with the available technology. In spite of the use of incipient technology, new knowledge has been obtained, new reports of species for the region (e.g. Lattig and Reyes 2001, Borrero-Pérez and Benavides-Serrato 2004), new species described for science (e.g. Lattig and Cairns 2000, Lemaitre and Bermúdez 2000; Saavedra et al. 2001, 2003; Ardila and Díaz 2002; Gracia et al. 2004; Gracia and Ardila 2009; Reyes et al. 2009; Polanco and Fernholm 2014, among others), and evidence of new habitats/ecosystems have been gathered from the continental shelf near the shelf break to the upper slope (>1000 m) (Reyes et al. 2005; Santodomingo et al. 2007, 2013; Gracia et al. 2011). Although, the baseline information for those environments is far from complete, it is necessary to begin working with the available knowledge towards an adequate management of resources facing the increase of industrial interest in some potential deep-sea resources. The lack of data from the open ocean is one of the main causes why most of the conservation strategies such as the marine protected areas are in coastal and continental shelf regions. Nevertheless, this last decade a new option for protecting the marine environment is available: in 2010 the Convention on Biological Diversity (CBD) created a process to officially approve Ecologically or Biologically Significant Areas (EBSAs). EBSAs´ purpose is to allow scientist to identify areas that are particularly important to the function of marine ecosystems: “the area should contain unique, rare or endemic creatures and /or habitats; have a special role in the survival or recovery of threatened species; be vulnerable, fragile or slow to recover once harmed; have high biological productivity; and/or have high biological diversity” (Weaver and

Johnson 2012). Twenty two areas had been designated as EBSAs in the wider Caribbean and western mid-Atlantic region (Secretariat of the Convention on Biological Diversity 2014). Three of those designated areas are located in the Colombian Caribbean region: Seaflower, the upper continental slope region of Sinú, and the upper continental slope region of Magdalena. Those areas were designated as EBSAs because of their high biological biodiversity in shallow, coastal (Seaflower) and deep waters (the slope of the Sinú region and Magdalena region). Those advances have enabled us to identify and prioritize some deep-sea habitats/ecosystems in the Colombian Caribbean (Reyes et al. 2005; Santodomingo et al. 2007, 2013; Gracia et al. 2011). The available recent and historical information analyzed in the preceding chapters give us some approach about which and where species occur and the existence of a structure of the continental slope fish community in the deep sea. Now, the next step should be to make an initial approach to the geographic areas that harbour important aggregations of deep-sea demersal fishes. This goal will add support to the tracking of sites of high biological biodiversity that correspond to one of the seven criterias considering to identifying a EBSA. Deep-sea fish assemblages have been studied in other regions (e. g. Ross and Quattrini 2009) concluding that complexity of habitats may be associated with greatest species richness. Do those aggregations of biodiversity of deep-sea demersal fishes exist in the Colombian Caribbean slope? In this chapter the species distributions of the historical and recent data collected in the area were used to examine the existence of those ichthyofauna aggregations in terms of number of species, associated to their environmental settings.

## 7.2. MATERIALS AND METHODS

To visualize areas with aggregations of biodiversity in a gradient of colors, from dark colors for the stations with high number of species to light colors for those stations characterized by low number of species. The presence-absence dataset of fish species collected by each of the four main cruises with collections below 200 m depth in the Colombian Caribben region between 1957-2010 (*R/V Oregon* I, *R/V Oregon* II, *R/V Pillsbury* and *R/V* ) were mapped separately. Different samples per cruise were spatialized via a vector layer type point (Samplings) and using as a reference the geographic coordinate system WGS 84. A sole range was defined for the four cruises based on the maximum number of species collected. An arbitrary grid (fishnet) was created from an array of square of 10 min per side, measured in geographic coordinates unities (Degrees, Minutes and Seconds); its boundaries were defined based on the spatial distribution of the samplings taken by cruise ships, as it is shown in Figure *11*.

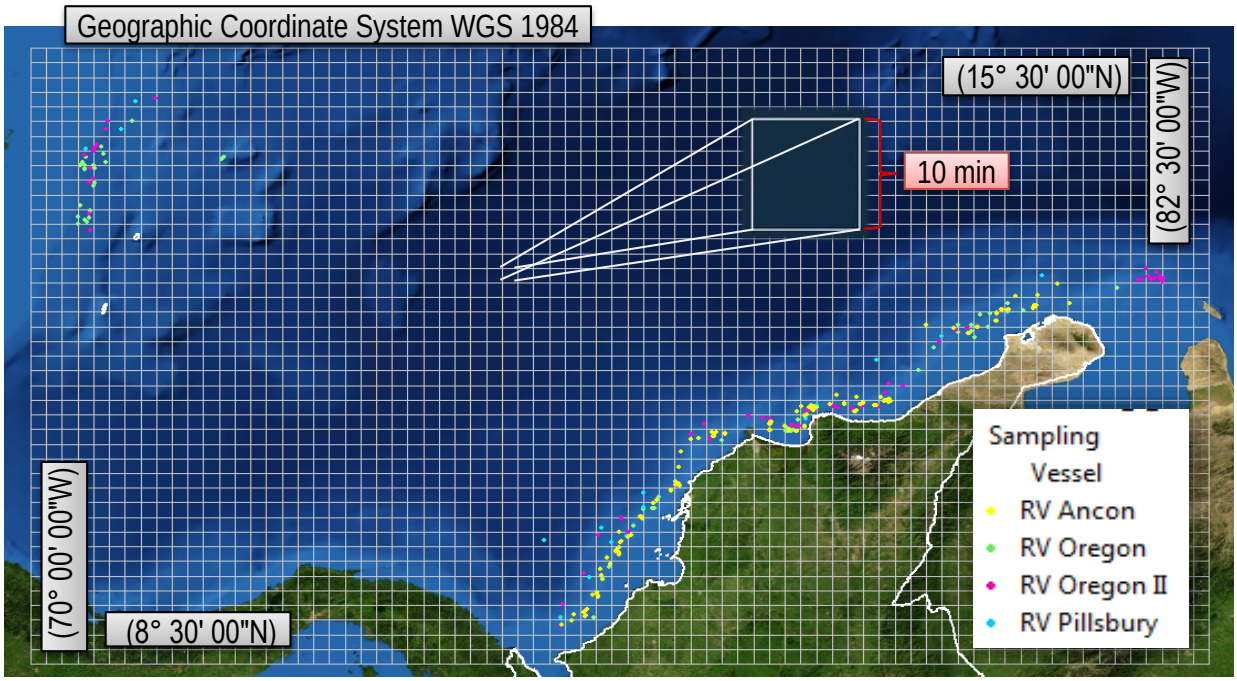


Figure 11. Grid of 10 minutes per side used to spatialize the main cruise collection samplings points in the Colombian Caribbean territorial waters.

First, a locality selection is made, then those squares spatially intersecting sampling points are chosen and thereafter at each of them the corresponding color value is assigned for the largest species range obtained (Figure 12). This exercise is done with each cruise creating a single view of the distribution. After that, an overlaying of the different cruise collection samplings is done, selecting as unit (squares) the value with the largest range of species number (Figure 13).

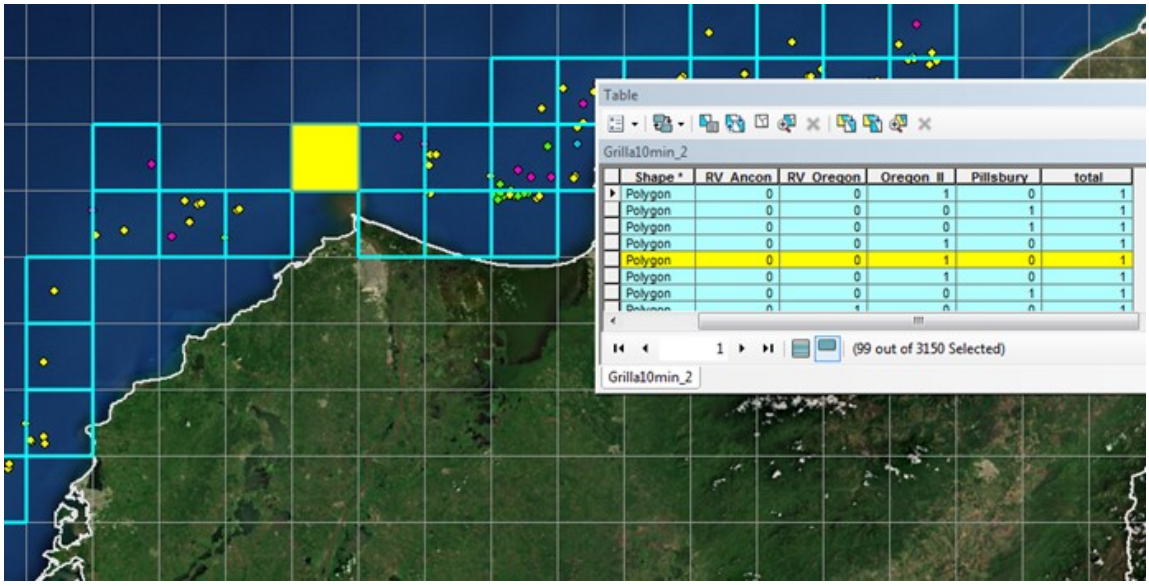


Figure 12. Corresponding color value for the largest species range obtained in the square area is assigned.

Figure 13. Overlaying process of the different spatial analysis scenarios of the four main cruises with colletions of deep-sea demersal fish fauna.

A spatial analysis was generated using as a guide the methodological basis of the rasterization process and/or algebraic maps to overlay the information, which is based on performing comparable spatial analysis from a minimum unit of study (pixel) under different conditions; in this case, the minimum unit is each square of the grid and the conditions are the different cruises.This whole exercise was carried out using ArcGis software version 10.2.1.

## 7.3. RESULTS

Four different maps have been obtained from the spatialization of the different samples per cruise (Annex 4). The *R/V Oregon*, which sampled 59 stations, had two localities with aggregations of more than 15% of the total species collected in that cruise. One locality (station OI4902), situated in the southwestern part of Colombia west of isla Tortuguilla offshore the Córdoba Province at 700 m depth, exhibits the highest number of species collected (36). The second one (station OI3565), situated in the northwest Colombian Caribbean insular region about 100 km away of Old Providence Island at 439-457 m depth, got 31 species (Figure 14).

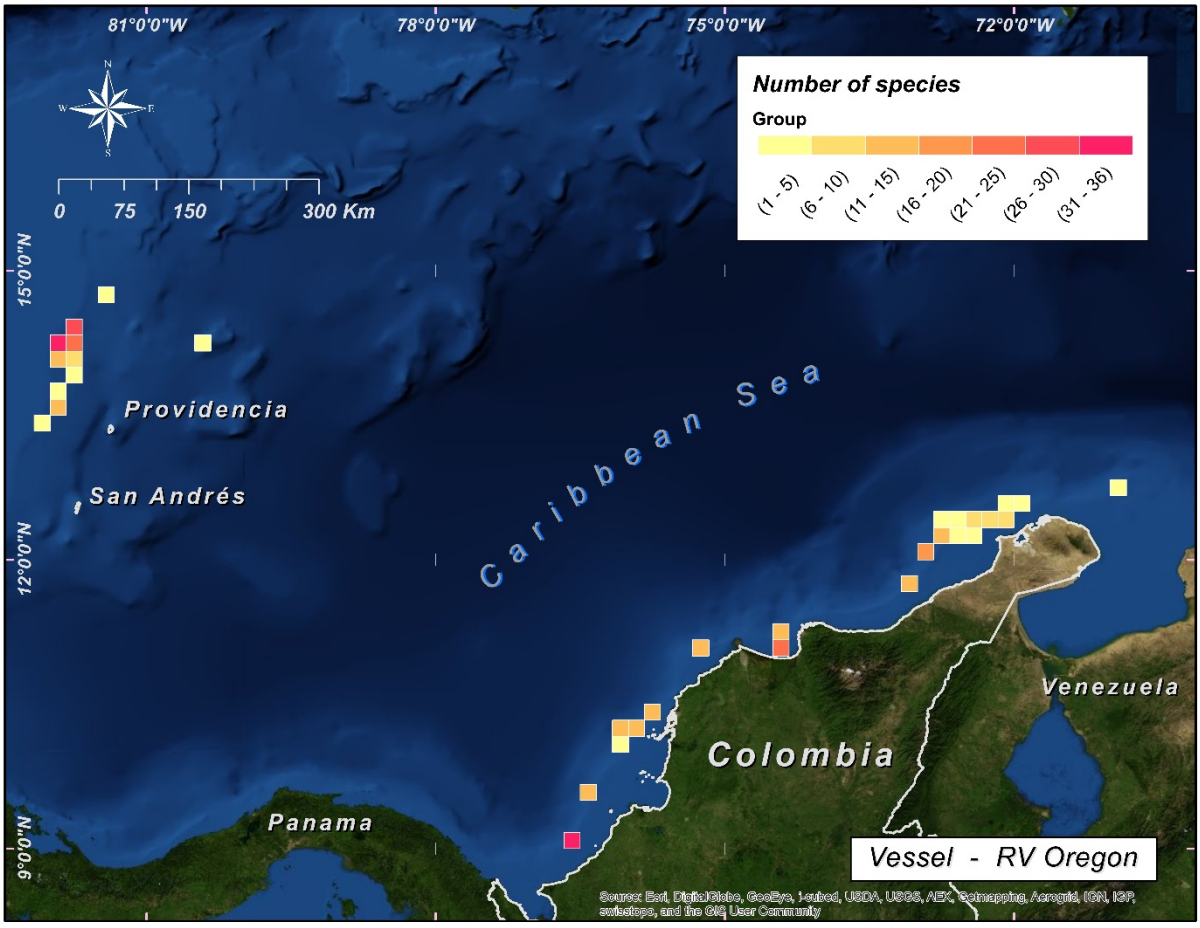


Figure 14. Map of the Colombian Caribbean showing the distribution of areas with the highest values of deep-sea fish species in a grid of 10 minutes per side collected by the R/V Oregon.

The *R/V Oregon II*, which sampled 56 stations, exhibits two locations with aggregations of more than 10.8% of the total species collected in that cruise. One locality (OII10195), situated in the Colombian Caribbean insular region about 100 km northwest of Old Providence Island at 449 m, with 19 species collected and other locality (OII10289), situated in the northeastern part of Colombia offshore and eastern to theTayrona National Natural Park at 357 m (Figure 15), with 17 species.

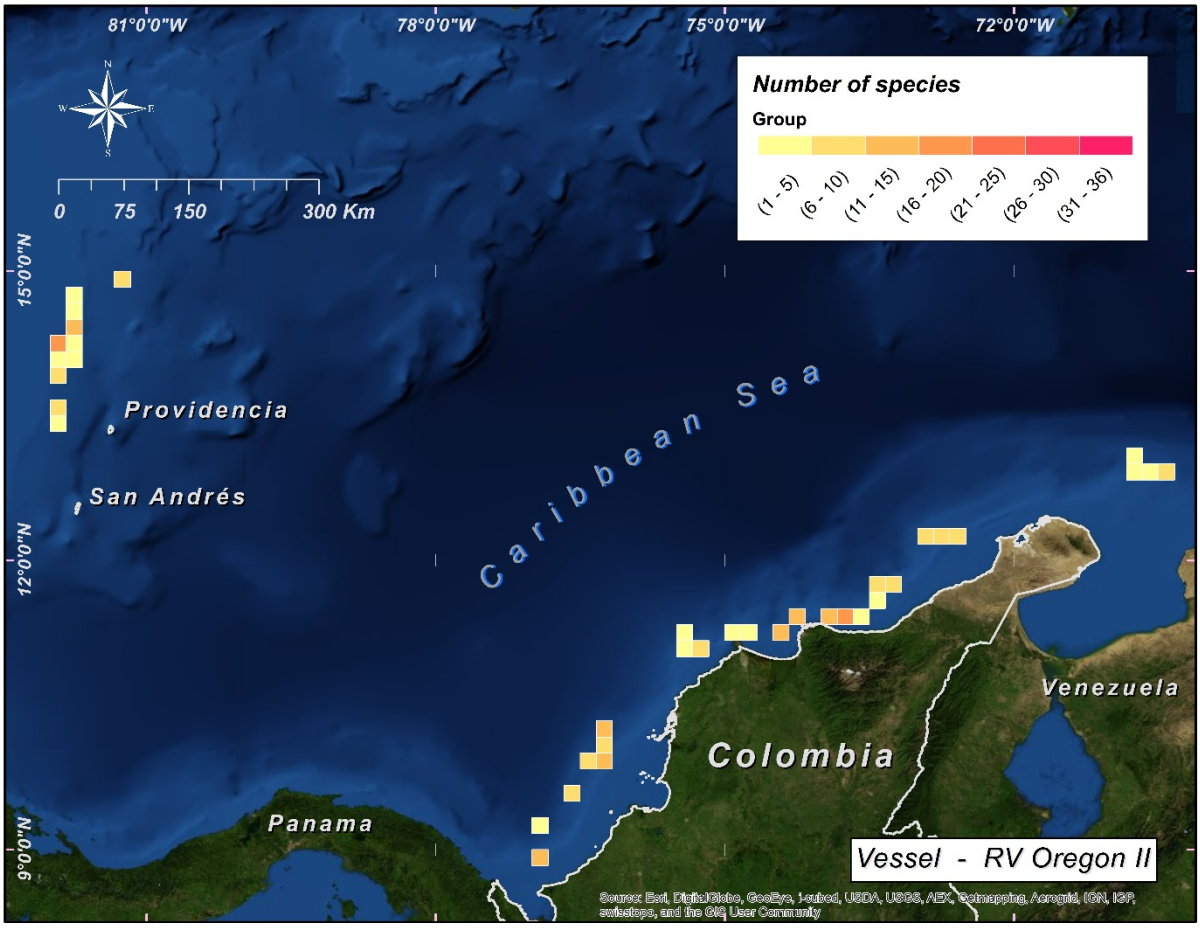


Figure 15. Map of the Colombian Caribbean showing the distribution of the areas with the highest values of deep-sea fish species in a grid of 10 minutes per side collected by the R/V Oregon II.

The *R/V Pillsbury*, which sampled 18 stations, exhibits three localities with aggregations of more than 25% of the total species collected in that cruise. One of them (PIL373), located in the southwestern part of Colombia

about 50 km west of San Bernardo Islands at 439-477 m, exhibits the largest number of species collected (36) and the other two locations (PIL1355, PIL1356), placed in the insular region more than 100 km north of Old Providence Island at 450-576 m and 296-375 m, with 35 and 34 collected species respectively (Figure 16).

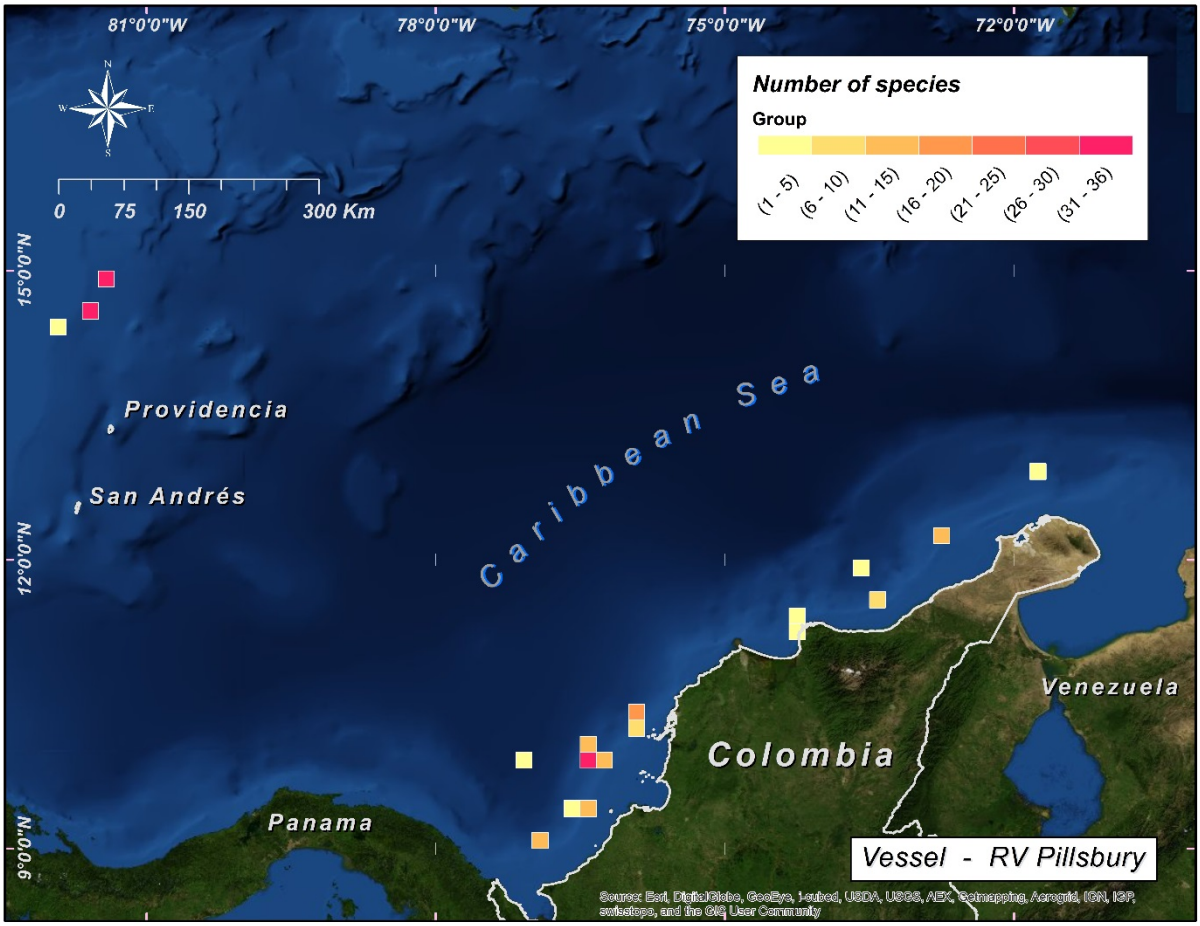


Figure 16. Map of the Colombian Caribbean showing the distribution of the areas with the highest values of deep-sea fish species in a grid of 10 minutes per side collected by the R/V Pillsbury.

The *R/V Ancon*, which sampled 131 stites, exhibits three localities with aggregations of more than 16% of the total species collected in this cruise. Two locations (E15, E16) situated in the northeastern part of Colombia offshore Cabo de la Vela in the Guajira Peninsula between 296–310 m, with 31 and 30 species collected

respectively, and other locality (E112) situated in the northeastern part of Colombia offshore and east of theTayrona National Natural Park at 300 m, also with 30 species collected (Figure 17).

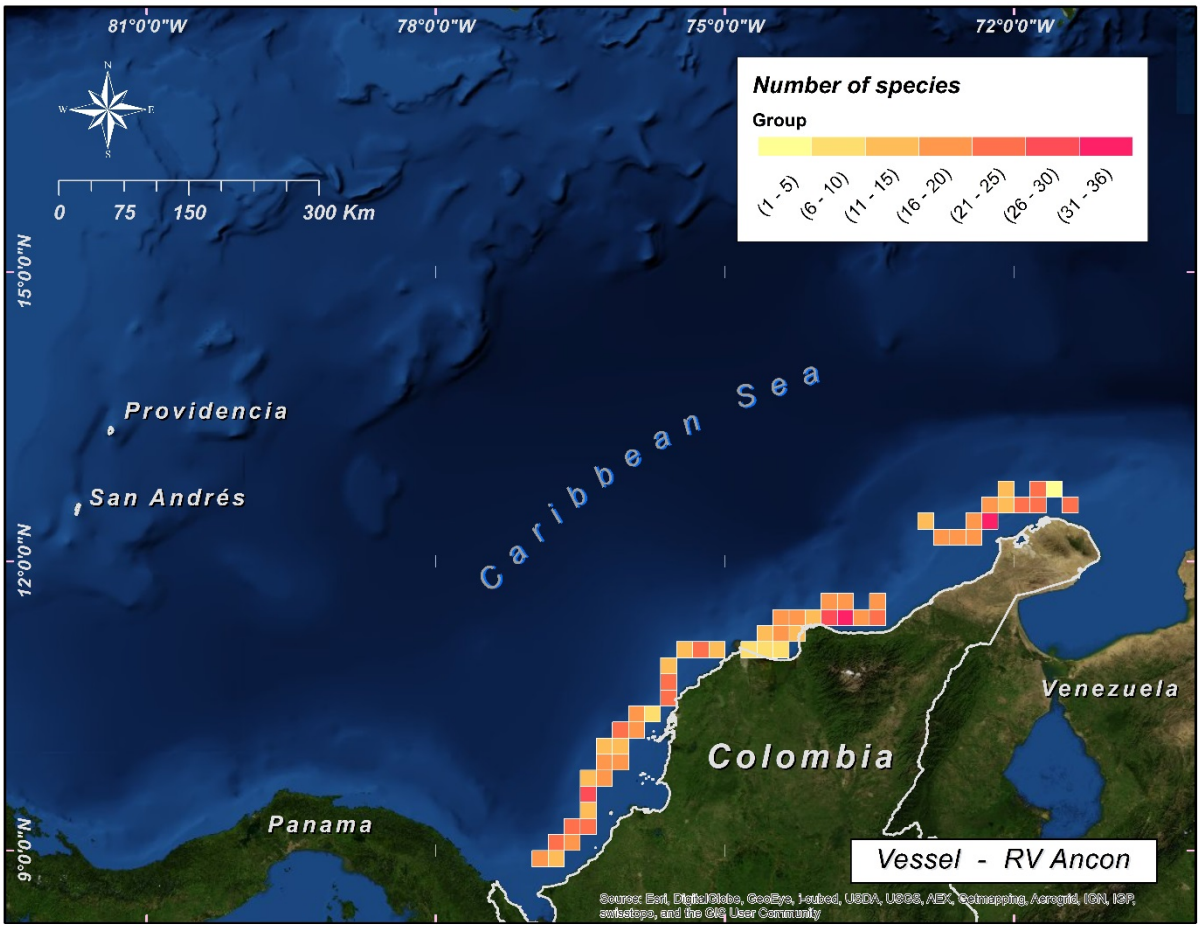


Figure 17. Map of the Colombian Caribbean showing the distribution of the areas with highest values of deep-sea fish species in a grid of 10 minutes per side collected by the R/V .

After doing the spatial analysis overlaying data from all four of the main cruises, four areas can be described as points of aggregations of biodiversity in terms of demersal deep-sea fish species (Figure 18).

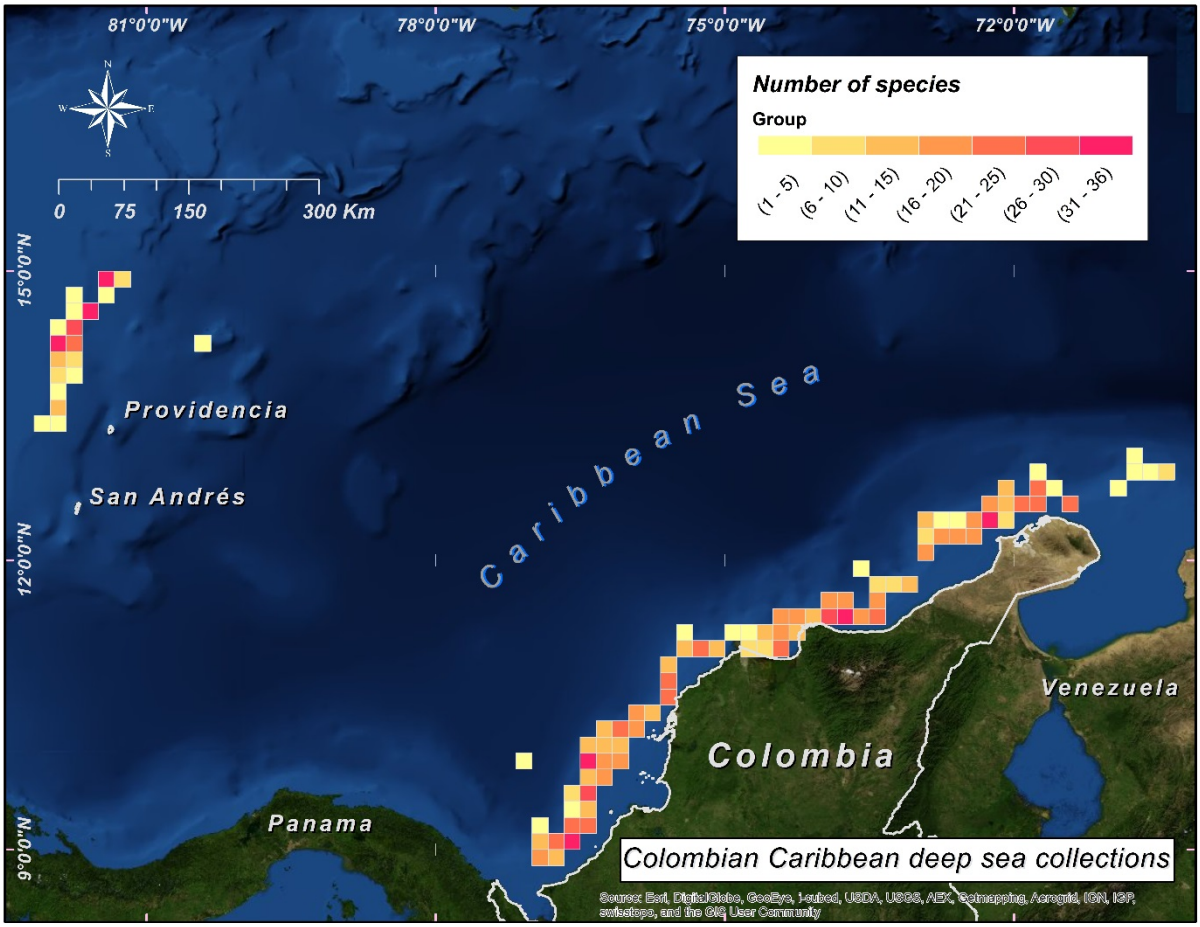


Figure 18. Map of the Colombian Caribbean showing the distribution of the largest numbers of deep-sea fish species in a grid of 10 minutes per side overlaying the four main cruises with collections in the study area.

The first one, a northeastern area along the continental coast of Colombia offshore Cabo de la Vela around 300 m depth, where two stations with large number of species were found. This area is close to two sites where some evidences of the presence of structural corals were found. In one of the sites, unstained *Lophelia* skeletons were collected, indicating that the species could have occurred there in the recent past, or that it could be living there now and forming coral banks in the surrounding waters (Reyes et al. 2005). The other site nearby (E 315, 70 m depth, INVEMAR-ICP 2013) is characterized by the presence of *Cladocora debilis*, mentioned by Reyes et al. (2005) as one of the main structural coral in the Guajira region. A second area, also located in the northeastern part of the country but southwest to the previous one, was found offshore, east of the Tayrona National Natural Park, including two different stations also described with large number

of species in two of the considered cruises. The stations are set in depths around 300 m and are located relatively near to a station (INV048, 70 m depth) in the southern part of Guajira region that is also characterized by the presence of structural corals, such as *C. debilis,* as the main matrix builders, with its sympodial budding and recumbent shapes, providing numerous surfaces on which sponges, bryozoans, octocorals, and tunicates can settle (Reyes et al. 2005). Other scleractinian species such as *Madracis myriaster*, *Anomocora fecunda*, *Anomocora prolifera*, and *Paracyathus pulchellus* were also found there. A station (INV019, around 200 m depth) off the Santa Marta region characterized by the presence of 13 scleractinian species was also found nearby. The most abundant species there were *M. myriaster*, *Coenosmilia arbuscula*, *A. fecunda*, and the solitary *Polymices fragilis*. There, the stony corals are characterized by bushy shaped colonies (*M. myriaster*, *A. fecunda*, and *C. arbuscula*) or individual polyps (*P. fragilis* and *Javania cailleti*), both forms with strong bases attached directly to the rock (Reyes et al. 2005).

A third area with remarkable aggregation of fish species was detected along the southwestern continental coast of the country with two stations. One of them offshore of San Bernardo Islands around 439 and 477 m, located near to the area recently declared as the Deep-sea Coral Natural National Park because of the findings of several lines of evidence, such as the presence of the structural coral *M. myriaster* as the dominant species and other additional 18 scleractinians corals and a total of 115 species of invertebrates and fishes (Reyes et al. 2005) and a second deeper station located offshore Tortuguilla Island around 700 m depth. A last area around the Colombian Caribbean insular territory was also found: four different stations located north and northwest Providencia Island between 300 and 500 m depths exhibit large numbers of deep-sea demersal fish species.

## 7.4. DISCUSSION

Within this deep-sea demersal fish fauna analysis, based on the main collections developed along the deep-sea research history in the Colombian Caribbean, the fish fauna of the upper slope does not seem to be horizontally continuous as was stated before for the North Atlantic coast for the upper-middle slope (Koslow 1993). Inside the two major zones, found in the community structure analysis in the previous chapter (Northwestern-Southeastern), different areas can be recognized, suggesting aggregations of species. Four areas were found exhibiting large numbers of species along the continental and insular slopes of the Colombian Caribbean. Trying to understand why those four areas have relatively large amount of species, attention has to be turned to the physical and biological settings of the deep-sea floor and the water column in the Colombian Caribbean surrounding those areas. An analisis at a local level demonstrates the characteristics that contribute to different habitats that support higher biodiversity at those specific sites, corresponding with the general statement for deep attributes presented by Ramirez-Llodra et al. (2010).

In terms of physical settings, using the Benthic Terrain Modeler (BTM), available at a gross sacle, it can be observed that the different agregations areas of demersal fish species detected are located in association with territory that exhibit a variety of seabed features that *per se* provide appropriated conditions to shelter more diverse deep-sea faunal communities (Figure 19). Ramírez-Llodra et al. (2010) affirmed that seamounts, canyons or cold-water corals have increased productivity due to specific physical processes, such as topographic modifications of currents and enhanced transport of detrital particles and available hard substrate for settlement of sessile invertebrates.

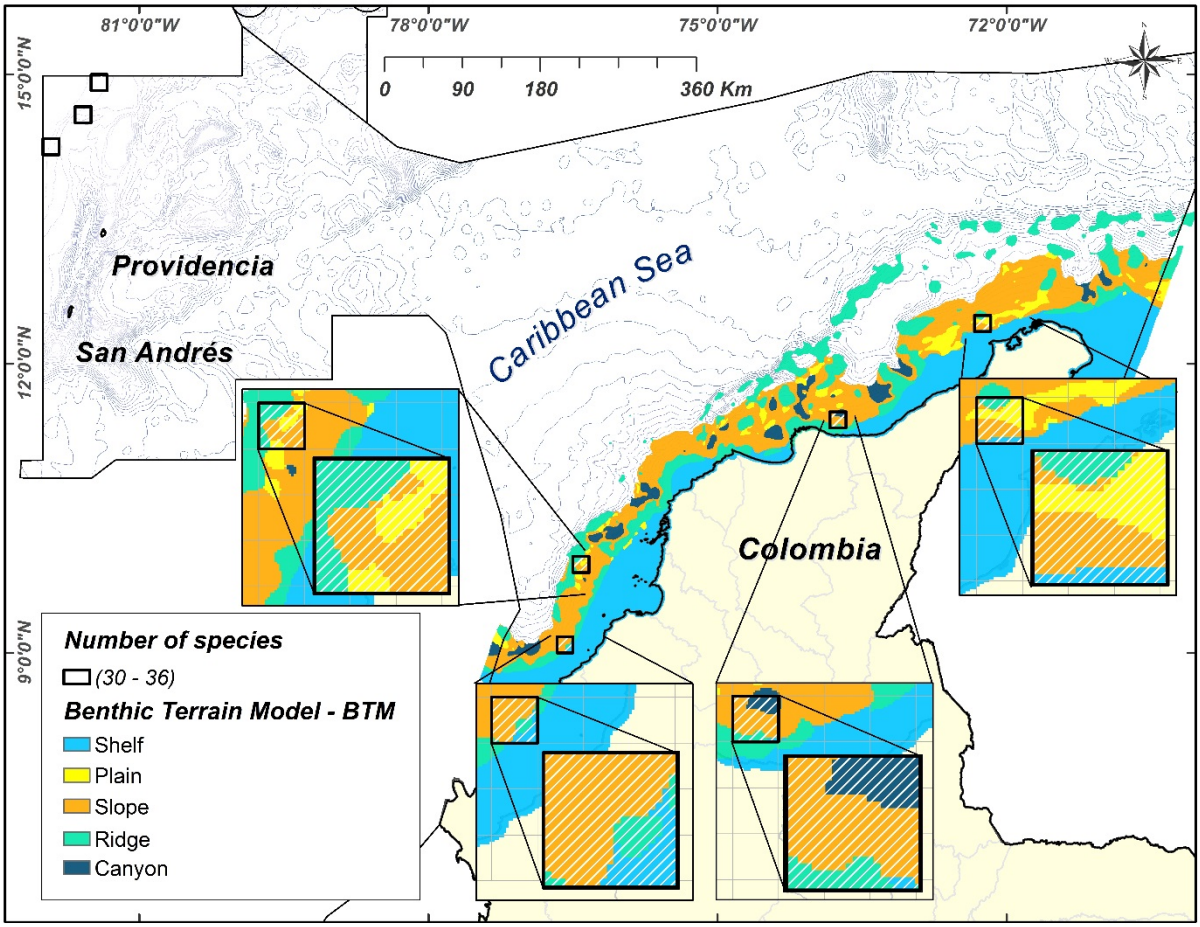


Figure 19. Benthic terrain model of the Colombian Caribbean showing the distribution of the areas with the highest values of deep-sea fish species in a grid of 10 minutes per side and some of the geomorphological features detected around.

Inside the northeastern zone, identified in the previous chapter, two areas had been found with increased of fish species diversity. One, in the southern part of La Guajira region bordering with the Magdalena region, that can be associated to the presence of one of the stronger geomorphological feature of this northeastern region, La Aguja Canyon (Figure 19). The canyon may be influencing the area with the transport and flux of organic matter (Siegenthaler and Sarmiento 1993). Add to the fact that canyons have hard bottom areas which can provide attachment areas with invertebrate fauna as corals and sponge typically setting out there increasing the food resources, shelter for fishes and increase fish biodiversity and abundances (Hecker et al.1983). Within this area, the stations with high concentrations of fish species are located near the inner

reach of La Aguja Canyon, described by Restrepo and Ojeda (2010). Another area is far north offshore of El Cabo de la Vela. Lithologically, this area presents deepwater mudstones associated with turbidite sediments from the Oligocene age of the Siamana formation. The formation includes two components deposited in shallow environments: the compound of conglomerates with clasts of limestone, cretaceous cherts, and metamorphic rocks below; while the upper member is a succession of limestones, locally formations composed of reef origin (Ramírez 2007). Distribution that can be also observed in the paleogeography and lithofacies image of the upper Miocene / Plio-Pleistocene of the Guajira Basin found in the Seismic Atlas of Colombia (Figure 20). The existence of similar kind of substrata (calcareous platform) has been previously stated by Vernette et al. (1983) in the southwestern waters of Colombia.

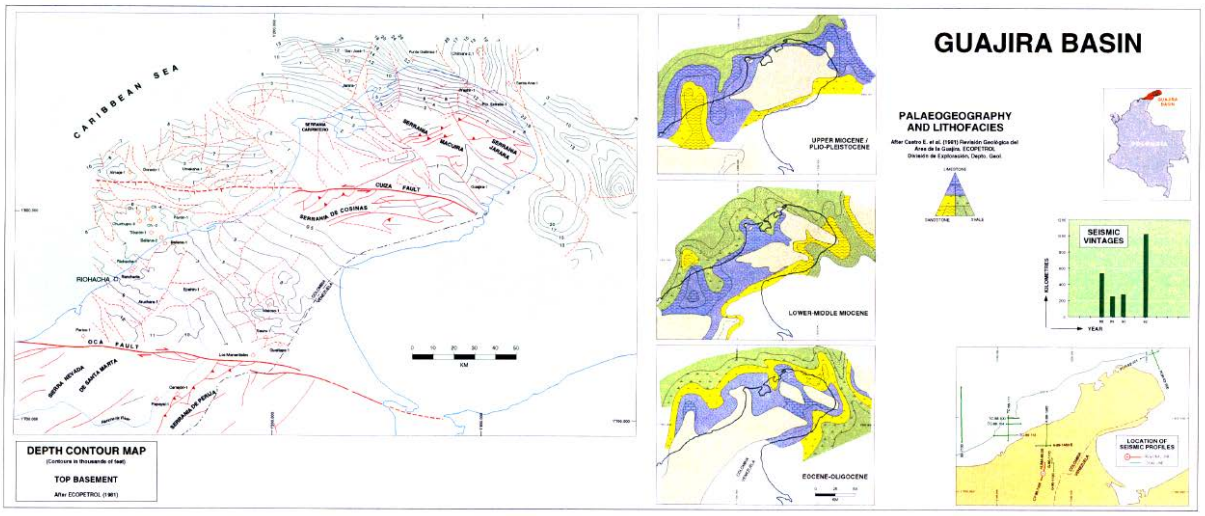


Figure 20. Image of the paleogeography and litofacies of the Guajira Basin. Evidencing the limestone sucesion present in the Continenatl shelf break and upper slope in offshore waters of El Cabo de la Vela. Take from the Seismic Atlas of Colombia (Cediel et al. 1998).

Also the area is directly influenced by the significant cold-water upwelling off the Guajira Peninsula that increases the concentration of nutrients in the water (Andrade et al. 2003; Andrade and Barton 2005; Paramo et al. 2011). Creating, hence, suitable conditions for the occurrence of azooxanthellate coral communities

(Santodomingo et al. 2013), providing, at the same time, the necessary resource availability for mobile fauna such as demersal fishes to aggregate. Both areas are included within the Significant Marine Biodiversity Areas detected for the Colombian Caribbean continental slope (Alonso Carvajal et al. 2010).

A third area with remarkable increases of fish species was detected along the southwestern continental coast with two areas that exhibit elevated numbers of fish species. This area is included in the Accretionary Sinú Prism that comprises a complex variety of seabed features as sites with evidence of benthic mud-gas seepage from beneath the seafloor (Santodomingo et al. 2007), drainage systems, anticlinal ridges with associated faults, seabed mounds, and mass-transport systems such as slumps and debris flows (Rangel-Buitrago and Idarraga 2010). Santodomingo et al. (2007) described two different seabed types present in the area associated with habitat–forming species. A sandy mud substrata and hardgrounds (mainly limestone outcrops) that together with the irregular topography shelter different structural invertebrate species, adjacent to shallow fringing coral reefs off San Bernardo and Rosario Islands. This area is also highly influeneced by the riverine inflow (Restrepo 2006), that increase the concentration of nutrients and the flux of particulate organic matter (Lutz et al. 2007; Watlinga et al. 2013). Recently the continental slope of this zone was declared as one of the EBSA in the Western Caribbean region (WC). It was selected as an important region range from 150 to 1750 m depth, characterized by complex undersea geological formations including cold-water corals and cold seeps ecosystems that suggest high levels of diversity and possibly endemism (Secretariat of the Convention on Biological Diversity 2014).

The region near San Andrés and Providencia Islands was declared as another EBSA of the WC due to its conditions of Marine Protected Area and UNESCO Biosphere Reserve comprising the largest open-ocean coral reefs in the Caribbean. That includes a complex of rare, unique, remote and unusual ecosystems (coral reefs, atolls, seagrass beds and mangroves), with little anthropogenic influence that support significant levels of marine biodiversity (Secretariat of the Convention on Biological Diversity 2014). But, in this case, my results

add support to extend this high level of marine biodiversity to the continental slope of this insular region to 600 m depth, given the four areas of increased numbers of fish species found there in the upper and middle slope. Lithologically, this area presents bioclastic limestones as can be also observed in the paleogeography and litofacies image of the Cays Basin found in the Seismic Atlas of Colombia (Figure *21*). This fact may suggest also the presence of deep-sea habitats adjacent to shallow coral patch reefs, pinnacles or atolls present in the area (Díaz et al. 2000).

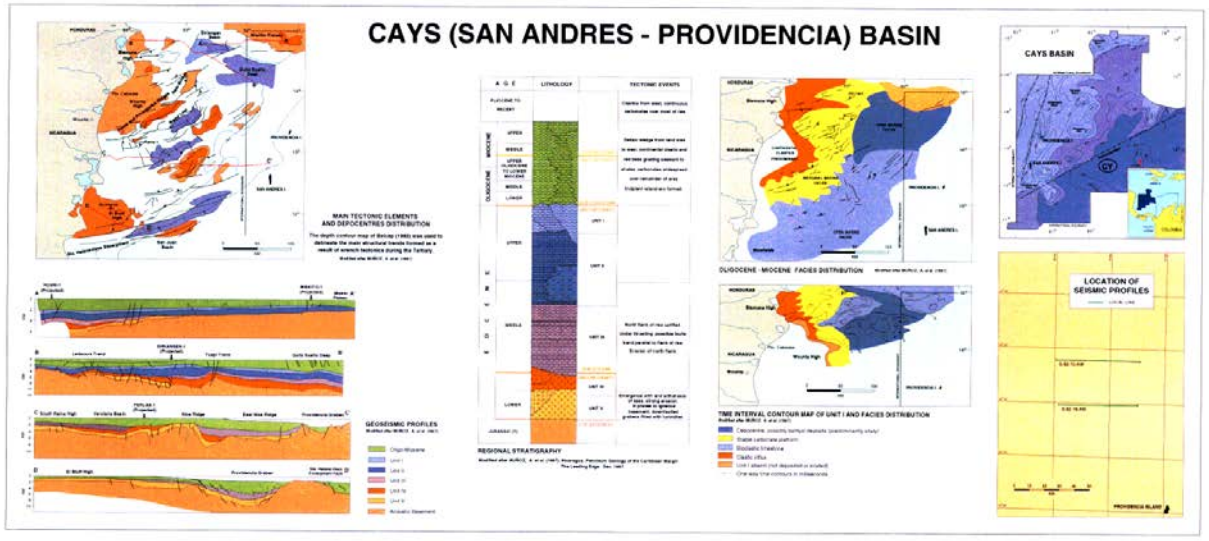


Figure 21. Image of the paleogeography and litofacies of the Cays of San Andres and Providencia basin. Evidencing the Bioclastic limestone sucesion present in the offshore waters of the Cays basin. Take from the Seismic Atlas of Colombia (Cediel et al. 1998).

The scarce knowledge of the deep-sea fauna in the Caribbean region, including fishes, limits the discussion of the biological settings to resource availability, leaving aside predator-prey relationships and intraspecific and interspecific competition due to the absence of consistent biological information in the region. The three identified continental areas are located near to sites where different evidence of the presence of azooxanthellate coral bioherms have been gathered (Reyes et al. 2005; INVEMAR-ICP 2013; Santodomingo

et al. 2013). The presence of *Cladocora debilis* and *Madracis myriaster* and skeletons of *Lophelia pertusa*, among other structural corals, have been reported in those sites, as well as a high diversity of other invertebrates associated with the biological structures (Reyes et al. 2005; INVEMAR-ICP 2013; Santodomingo et al. 2013). Reyes et al. (2005) stated that the presence of different topographic features or specific communities, such as the reef-forming corals, provide characteristics that make possible a relative increase of biodiversity in the surrounding soft bottoms areas, as I found here with the fish community. For the insular area the scenario is different and the aggregation of biodiversity under the light of the actual knowledge may be due to the seafloor heterogeneity of the insular region with availability of hard substrata that facilitates the settlement of suspension feeders and a wide range of habitats. Those fish diversity areas support the idea of the presence of deep-sea reef areas between the continental shelf break and the middle slope along the continental slope of the Colombian Caribbean or special physical factors as the geomorphological and hydrographical features that provide to the fish community the resources need to proliferate. Added to the isolation of those areas as a product of the distance from human activities that can also help.

It is important to keep in mind that this is an approach that uses an arbitrary grid to make the spatial interpretation and that the capture effort is different in each of the considered cruises. However, the fact that the different results of the cruises validate the same areas of aggregations of deep-sea fish biodiversity, presenting geographically close stations with large species numbers, add support to the need of future research around those sites.

# 8. CONCLUSIONS

In Colombian Caribbean territorial waters, 343 species of demersal deep-sea fishes, representing over 80% of the total estimated species for the Caribbean Basin, have been collected. In terms of deep-sea fish species and families and, compared to other regions, the Colombian Caribbean deep-sea shows a high degree of biodiversity. As a result of the work reported here, several species have been additionally reported for the Caribbean region, around one hundred species increased their global known bathymetric range, and new species have been described as products of the last fifteen years of study. It is clear that with additional detailed taxonomic revisions and further exploration of deeper waters in the Colombian Caribbean, additional discoveries will be made.

Fish assemblages in the Colombian Caribbean slope are zoned by depth and geographical location. The highest values of species richness and total number of individuals for the deep-sea demersal fish fauna were found northeast of the meridian 75.77° W, between 275 and 602 m, possibly indicating a boundary of structural communities of invertebrates forming deep-sea reefs in the lower part of the upper slope and the upper part of the middle slope causing this increase of fish biodiversity. No relation was found between fish demersal fauna data and topography, possibly due to the scarse data about the bottom landscape and the limited number of sampled stations.

Four sites on the Colombian Caribbean, three of them in the continental slope and one in the insular slope, were identified as areas of high biodiversity. This is remarkable as they match previous findings of deep-sea reef ecosystems or appropriate substrata with a wide range of habitat heterogeneity. Under the light of what is known today, the continental slope of Colombian Caribbean territorial waters have specific physical and biological conditions that enhance the existence ecosystems that tend to aggregate biodiversity.

These results highlight the need of studying deep-sea ecosystems with new technology. This study also indicates that information on deep-sea fauna and ecosystems is still scarce in the Colombian Caribbean. Further research has to be done using the appropriate technology (multibeam sonar, benthic landers, AUVs, ROVs) to map and explore the seafloor as a further approach to the structure and real extent of those ecosystems.

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# 10. APPENDIX

*Annex 1. Annotated species list*

MYXINIFORMES

MYXINIDAE

*Eptatretus aceroi* (Polanco & Fernholm, in press). Benthic, 705 m. Holotype, INV PEC8257 (1, 10°43.8´ N 75°37.2´ W).

*Eptatretus ancon* (Mok, Saavedra-Díaz & Acero P. 2001). Bathydemersal, 476 – 705 m. Holotype, INV PEC2412 (220.3 TL, 11°29.4´ N 73°27´ W), INV PEC8264 (4, 10°43.8´ N 75°37.2´ W), INV PEC8265 (1, 11°12´ N 74°30´ W). These records extend the bathymetric range of the species.

*Eptatretus caribbeaus* Fernholm 1982. Bathydemersal, 365 – 439 m. Holotype, MCZ 40409 (331 TL, 16°55.2´ N 81°12´ W), Paratypes, UF 27894 (1, 345 TL, 14°7.8´ N 81°55.2´ W), UF 27895 (1, 364 TL, 16°49.8´ N 81°21´ W), USNM 218405 (1, 364 TL, without coordinates R/V Canopus, 365 m).

*Eptatretus multidens* Fernholm & Hubbs 1981. Bathydemersal, 494 – 613 m. Holotype, USNM 218401 (600 TL, 12°52.2´ N 70°43.2´ W), Paratype, USNM 218402 (1, 377 TL, 12°52.2´ N 70°43.2´ W), UF 172568 (1, 12°54´ N 70°19.8´ W), UF 172569 (1, 12°54´ N 70°39´ W).

*Eptatretus wayuu* Mok, Saavedra-Díaz & Acero P. 2001. Bathydemersal, 300 -306 m. Holotype, INV PEC2410 (216 TL, 12°24´ N 72°15´ W), Paratype, INV PEC2411 (1, 194 TL, 12°24´ N 72°15´ W).

*Myxine mccoskeri* Wisner & McMillan 1995. Bathydemersal, 406 –1380 m. *Holotype, SIO70-363 (201 TL, 9°39´ N 78°60´ W), Paratype, SIO70-363 (2, 117-170 TL, 9°39´ N 78°60´ W), SIO90-117 (1, 235 TL, 11°46´ N 67°05´ W)*, USNM 325212 (2, 225-245 TL, 11°30´ N 70°30´ W), MCZ 41634 (1, 254 TL, 11°34.8´ N 62°58.8´ W), MCZ 48809 (2, 218-264 TL, 11°36´ N 62°52.2´ W); UF 222741 (2, 13°1.2´ N 71°55.2´ W), UF 223243 (1, 9°28.8´ N 76°26.4´ W), UF 228722 (2, 11°30´ N 73°26.4´ W), UF 229884 (2, 12°13.2´ N 72°49.8´ W), INV PEC2413 (1, 12°29.4´ N 72°15.6´ W), INV PEC2414 (2, 12°29.4´ N 72°15.6´ W), INV PEC2415 (1, 12°19.2´ N 72°42.6´ W), INV PEC2416 (1, 12°19.2´ N 72°42.6´ W), INV PEC2417 (1, 11°29.4´ N 73°27´ W), INV PEC2418 (1, 11°27´ N 73°42´ W), INV PEC2419 (5, 11°27´ N 73°42´ W), INV PEC2420 (111°27´ N 73°42´ W), INV PEC2421 (3, 11°27.6´ N 73°51.6´ W), INV PEC2422 (2, 11°27´ N 74°1.8´ W), INV PEC2423 (1, 11°24.6´ N 74°9.6´ W), INV PEC2424 (3, 11°19.2´ N 74°16.8´ W), INV PEC2425 (7, 11°15.6´ N 74°38.4´ W), INV PEC2426 (1, 10°28.8´ N 75°42.6´ W), INV PEC2427 (1, 11°7.8´ N 75°13.8´ W), INV PEC2428 (1, 11°7.2´ N 75°8.4´ W), INV PEC3275 (1, 9°53.4´ N 76°13.8´ W), INV PEC3276 (2, 10°10.2´ N 76°1.8´ W), INV PEC3927 (1, 11°28.2´ N 73°40.2´ W), INV PEC4427 (1, 10°32.4´ N 75°39´ W), INV PEC4428 (4, 11°28.2´ N 73°40.2´ W), INV PEC4429 (2, 12°31.8´ N 72°12´ W), INV PEC4430 (1, 12°31.8´ N 72°11.4´ W), INV PEC4431 (1, 12°31.8´ N 72°11.4´ W), INV PEC4432 (1, 12°31.8´ N 72°11.4´ W), INV PEC8253 (1, 12°36´ N 71°28.8´ W), INV PEC8254 (1, 12°41.4´ N 71°49.2´ W), INV PEC 8255 (2, 9°3.6´ N 76°44.4´ W), INV PEC8256 (6, 9°17.4´ N 76°31.8´ W), INV PEC8258 (3, 11°8.4´ N 75°16.2´ W), INV PEC8259 (2, 11°12´ N 74°30´ W), INV PEC8260 (1, 11°25.2´ N 74°19.2´ W), INV PEC8261 (1, 11°33.6´ N 73°57´ W), INV

PEC8262 (4, 11°32.4′ N 73°44.4′ W), INV PEC8263 (4, 11°31.8′ N 73°28.8′ W). Additional specimens in Wisner and McMillan (1995). These records extend the bathymetric range of the species.

*Myxine robinsorum* Wisner & McMillan 1995. Bathydemersal, 783 –1768 m. *Holotype, SI090-149 (475 TL, 11°37′ N 60°50′ W), Paratype, SI090-149 (1, 510 TL, 11°37′ N 60°50′ W),* MCZ 101239 (1, 460 TL, 10°3′ N 76°27′ W). Additional specimens in Wisner and McMillan (1995) and in the MHNMC (unedited data).

CHIMAERIFORMES

RHINOCHIMAERIDAE

*Neoharriotta carri* Bullis & Carpenter 1966 – Pale Sicklefin Chimaera, Quimera Pálida con Hocico Largo, Chimère à Nex Mou Pale (FAO) – Bathydemersal, 311-556 m. Holotype, USNM 188888 (798 TL, 9°0′ N 81°22.8′ W), Paratypes, USNM 188889 (1, 9°13.2′ N 81°30′ W), USNM 188890 (1, 11°10.2′ N 74°27′ W), (1)USNM 188891 (1, 11°9.6′ N 74°24.6′ W), USNM 188892 (1, 11°9′ N 74°26.4′ W), MCZ 47840 (1, 221 TL, 9°3′ N 81°22.2′ W); USNM 188893 (1, 11°9′ N 74°26.4′ W), USNM 222830 (2, 11°49.2′ N 69°24′ W), USNM 400687 (1, 9°25.2′ N 80°18.6′ W), USNM 400689 (1, 8°55.2′ N 81°7.2′ W), USNM 400695 (1, 9°14.4′ N 81°34.8′ W), USNM 400696 (1, 9°40.2′ N 78°49.2′ W), USNM 400697 (1, 9°14.4′ N 81°34.8′ W). Additional specimens in Bullis and Carpenter (1966) and Didier and Stehmann (1996).

*Rhinochimaera atlantica* Holt & Byrne 1909 – Atlantic Spearnose Chimaera, Quimera Hocico Largo, Chimère à Nex Mou (FAO) – Bathydemersal, 914–1470 m. USNM 222743 (1, 10°9′ N 76°13.8′ W), USNM 400698 (1, 9°47.4′ N 79°42′ W).

CHIMAERIDAE

*Chimaera cubana* Howell Rivero 1936 - Cuban Chimaera, Quimera Cubana, Chimère de Cuba (FAO) – Bathydemersal, 234-448 m. USNM 222711 (1, 429 TL, 16°45′ N 81°27′ W), USNM 222800 (5, 300-406 TL, 15°37.8′ N 61°15′ W), INVPEC 6201 (1, 719 TL, 14°1.8′ N 81°11.4′ W). Specimens' lengths from Caldas et al. (2009).

*Hydrolagus alberti* Bigelow & Schroeder 1951 – Gulf Chimaera, Quimera del Golfo, Chimère Golfe (FAO) – Bathydemersal, 388–962 m. USNM 188031 (2, 14°10.2′ N 81°49.8′ W), USNM 222754 (1, 11°25.8′ N 74°13.8′ W), USNM 222772(2, 12°6′ N 72°55.2′ W), USNM 222794 (10, 11°40.2′ N 62°33′ W), USNM 222803 (1, 11°49.2′ N 69°24′ W), USNM 400690 (1, 9°46.8′ N 79°25.8′ W), USNM 400694 (1, 9°1.8′ N 81°3.6′ W), USNM 400699 (1, 9°22.8′ N 77°55.2′ W), MCZ 40059 (1, 16°40.8′ N 82°19.8′ W), MCZ 40062 (1, 375 TL, 14°7.8′ N 81°49.2′ W), MCZ 40179 (3, 145–185 TL, 16°55.2′ N 81°10.2′ W), MCZ 40197 (1, 325 TL, 13°30′ N 82°0′ W), MCZ 40351 (1, 11°34.8′ N 62°40.8′ W), MCZ 40400 (1, 310 TL, 13°39′ N 81°52.2′ W), MCZ 41755 (4, 12°25.2′ N 82°15′ W), MCZ 42011 (1, 12°34.8′ N 82°19.2′ W), MCZ 52283 (2, 11°34.8′ N 62°58.8′ W), UF 31329 (1, 11°12′ N 74°24′ W), UF 166641 (2, 16°45′ N 82°36′ W), UF 173134 (1, 9°12′ N 81°10.8′ W), UF 174153 (1, 9°16.8′ N 81°9′ W), UF 222669 (1, 9°10.2′ N 80°55.8′ W), UF 226970 (5, 16°4.8′ N 61°24′ W), UF 232909 (1, 12°52.2′ N 70°37.2′ W), INV PEC2429 (1, 11°30′ N 73°26.4′ W), INV PEC3852 (1, 12°31.8′ N 72°12′ W), INV PEC7909 (1, 11°22.2′ N 74°22.2′ W), INV PEC7910 (1, 8°59.4′ N 76°45.6′ W), INV PEC8277 (2, 11°33.6′ N 73°57′ W).

*Hydrolagus mirabilis* (Collett 1904) – Large-eyed Rabbitfish, Quimera Ojona, Chimère à Gros Yeux (FAO) – Bathydemersal, 987–1259 m. USNM 400691 (1, 10°7.2′ N 82°53.4′ W), USNM 400702 (1, 9°21′ N 81°37.2′ W), UF 177007 (1, 10°10.2′ N 76°13.8′ W). These records extend the bathymetric range of the species.

CARCHARHINIFORMES

SCYLIORHINIDAE

As stated in Moore et al. (2003), this group needs a revision due to the dificulty to separate the nominal species with the available keys and literature.

*Apristurus canutus* Springer & Heemstra 1979 – Hoary Catshark, Pejegato Cano, Holbiche Grise (FAO) – Bathydemersal, 530 – 914 m. *Paratype, USNM 206180 (5, 388-428 16° 52.8´ N 61°52.8´W)*; USNM 221254 (1, 12°6´ N 72°55.2´ W), USNM 221293 (1, 11°36´ N 62°46.2´ W). Additional specimens in Springer (1979).

*Apristurus parvipinnis* Springer & Heemstra 1979 – Smallfin Catshark, Pejegato Mocho, Holbiche Petites Ailes (FAO) - Bathydemersal, 719–1006 m. Paratypes, USNM 220969 (1,395 TL, 9°19.8´ N 81°24´ W); USNM 201906 (2, 9°1.8´ N 76°31.8´ W), USNM 221499 (3, 10°15.6´ N 76°0´ W), USNM 268106 (2, 10°9´ N 76°13.8´ W), USNM 221291 (1, 9°19.8´ N 81°24´ W), USNM 221496 (1, 12°1.8´ N 69°21´ W), USNM 221505 (2, 11°54´ N 69°18´ W), USNM 221522 (1, 11°43.8´ N 68°43.2´ W), USNM 400753 (1, 12°10.2´ N 82°40.8´ W). Specimens' lengths in Springer (1979).

*Apristurus riveri* Bigelow & Schroeder 1944 – Broadgill Catshark, Pejegato Agallón, Holbiche Grandes Oreilles (FAO) – Bathydemersal, 860–1052 m. USNM 221534 (1, 10°15.6´ N 76°0´ W), USNM 201760 (5, 9°19.8´ N 81°24´ W), USNM 221526 (2, 11°43.8´ N 68°43.2´ W), USNM 221528 (1, 16°48´ N 82°33´ W), UF 224207 (1, 11°48´ N 66°6.6´ W).

*Galeus arae* (Nichols 1927) – Marbled Cat Shark (AFS) Pintarroja Rabolija, Chien a Queue Rude (FAO) – Bathydemersal, 366–732 m. USNM 221310 (1, 16°34.8´ N 80°4.2´ W), USNM 221327 (5, 12°22.8´ N 82°28.8´ W), USNM 221329 (15, 14°22.8´ N 81°45´ W), USNM 221347 (5, 13°31.2´ N 81°54´ W), USNM 221348 (1, 12°24´ N 82°24´ W), USNM 221656 (7, 13°58.2´ N 81°52.8´ W), USNM 402345 (1, 9°36´ N 76°22.2´ W), MCZ 40070 (2, 225-270 TL, 16°40.8´ N 82°19.8´ W), MCZ 40151 (7, 225 – 240 TL, 13°33´ N 81°55.2´ W), MCZ 40160 (1, 318 TL, 13°34.2´ N 81°52.8´ W), MCZ 40169 (8, 13°31.2´ N 81°54´ W), MCZ 40180 (4, 215-240 TL, 13°33´ N 81°55.2´ W), MCZ 40191 (2, 280-300 TL, 16°39´ N 81°1.2´ W), MCZ 40205 (1, 225 TL, 16°43.2´ N 82°43.8´ W), MCZ 40401 (3, 13°39´ N 81°52.2´ W), UF 12577 (4, 12°25.8´ N 82°24´ W), UF 101265 (1, 12°34.8´ N 82°19.2´ W), UF 101267 (3, 12°22.8´ N 82°28.8´ W), UF 101282 (5, 12°25.8´ N 82°24´ W), UF 101283 (2, 12°31.2´ N 82°21´ W), UF 148245 (6, 16°45´ N 82°36´ W), UF 226575 (3, 16°4.8´ N 61°24´ W), UF 229212 (1, 14°34.8´ N 81°31.8´ W). Additional specimens in Compagno (1988).

*Galeus cadenati* Springer 1966 – Longfin Sawtail Catshark (FAO) – Bathydemersal, 439-549 m. Holotype, USNM 231724 (303 TL, 9°13.2´ N 80°43.8´ W), Paratypes, USNM 220416 (1, 9°16.2´ N 81°37.2´ W), USNM 220417 (2, 9°0´ N 81°22.8´ W), USNM 221382 (1, 9°13.2´ N 80°43.2´ W), USNM 221414 (1, 9°15´ N 81°31.8´ W), USNM 221418 (2, 9°0´ N 81°22.8´ W), USNM 231725 (1, 9°13.2´ N 80°43.2´ W); USNM 221368 (2, 9°36´ N 76°22.2´ W), USNM 221364 (1, 9°3´ N 81°18´ W). Additional specimens in Konstantinou and Cozzi (1998).

*Schroederichthys maculatus* Springer 1966 –Narrowtail Catshark, Pejegato Rabo Fino, Holbiche Petite Queue (FAO) – Bathydemersal, 274–410 m. Holotype, USNM 185556 (328 TL, 16°39´ N 82°28.8´ W), Paratype, USNM 185557, (1, 335 TL, 16°39´ N 82°28.8´ W), USNM 221650 (2, 11°24´ N 73°46.8´ W), USNM 187690 (7, 14°10.2´ N 81°58.2´ W), UF 229707 (10, 14°54´ N 81°23.4´ W). Additional specimens in Springer (1979) and Compagno (1988).

*Scyliorhinus boa* Goode & Bean 1896 – Boa Catshark, Alitán Boa, Rousette Boa (FAO) – Bathydemersal, 283–576 m. USNM 221532 (1, 11°9´ N 74°25.8´ W), USNM 221563 (3, 12°16.2´ N 72°40.2´ W), USNM 221560 (1, 11°27´ N 73°42´ W), USNM 187731 (1, 9°0´ N 81°22.8´ W), USNM 221568 (1, 11°36´ N 62°52.2´ W), UF 27979 (3, 11°25.8´ N 73°40.8´ W), UF 222965 (1, 9°57´ N 76°10.8´ W), UF 224213 (1, 12°13.2´ N 72°49.8´ W), UF 229705 (1, 14°54´ N 81°23.4´ W), INV PEC2430 (1, 11°26.4´ N 73°33´ W), INV PEC4556 (1, 11°22.8´ N 73°44.4´ W). Additional specimens in Springer (1979).

*Scyliorhinus hesperius* Springer 1966 – Whitesaddled Catshark, Alitán Ensillado, Rousette Selle Blanche (FAO) – Bathydemersal, 320-641 m. Holotype USNM 187732 (415 TL, 9°3´ N 81°22.2´ W); USNM 221653 (1, 10°24´ N 75°49.8´ W), USNM 221654 (2, 10°16.2´ N 75°54.6´ W), USNM 402344 (1, 12°16.2´ N 72°40.2´ W), USNM 405705 (1, 9°0´ N 81°22.8´ W), MCZ 42985 (1, 16°39´ N 82°28.8´ W), UF 27959 (1, 16°39´ N 82°45´ W), UF 27980 (2, 11°25.8´ N 73°40.8´ W), UF 223244 (1, 9°28.8´ N 76°26.4´ W). Additional specimens in Springer (1966, 1979) and Compagno (1988). These record extend the bathymetric range of the species.

SQUALIFORMES

SQUALIDAE

*Squalus cubensis* Howell Rivero 1936 – Cuban Dogfish, Cazón Aguijón Cubano (AFS), Aiguillat Cubain (FAO) – Benthopelagic, 274-366 m. USNM 187718 (1, 12°25.2´ N 82°15´ W), USNM 187727 (1, 9°3´ N 81°22.2´ W), USNM 220584 (1, 11°24´ N 73°46.8´ W), UF 223558 (1, 9°57.6´ N 78°31.2´ W).

*Squalus mitsukurii* Jordan & Snyder 1903 – Shortspine Dogfish, Cazón Aguijón Galludo (AFS), Aiguillat Épinette - Benthopelagic, 457 m. USNM 220966 (2, 13°37.2´ N 81°52.8´ W).

CENTROPHORIDAE

*Centrophorus granulosus* (Bloch & Schneider 1801) - Gulper Shark, Quelvacho, Squale-chagrin Commun (FAO) – Bathydemersal, 200-465 m. INV PEC2281 (1, 850 TL, 11°16.01´ N 74°12.151´ W), INV PEC7064 (1, 876 TL, 11° 15.73' N 74° 36.86' W), INV PEC7065 (1, 1069 TL, 11° 15.73' N, 74° 36.86' W). Specimens' lengths from Hernández-Hamón and Núñez (1998).

*Centrophorus squamosus* (Bonnaterre 1788) - Leafscale Gulper Shark, Quelvacho Negro, Squale-chagrin de l'Atlantique (FAO) – Bathydemersal, 670 m. INV PEC9006 (1, 12°46.77´ N 71°60´ W).

ETMOPTERIDAE

*Etmopterus bullisi* Bigelow & Schroeder 1957 – Lined Lanternshark, Tollo Lucero Rayado, Sagre Chien (FAO) – Bathydemersal, 274-640 m. USNM 220229 (1, 11°24´ N 73°46.8´ W), USNM 220230 (1, 15°34.2´ N 61°10.2´ W), USNM 220255 (3, 15°42´ N 61°7.8´ W), UF 27961 (1, 12°34.8´ N 82°16.2´ W).

*Etmopterus carteri* Springer & Burgess 1985 – Cylindrical Lanternshark (FAO) – Bathydemersal, 283 – 356 m. Holotype, USNM 206090 (190 TL, 11°9´ N 74°25.8´ W), Paratypes, USNM 206091 (1, 190 TL, 11°9´ N 74°26.4´ W), USNM 206092 (4, 180-212 TL, 11°9´ N 74°25.8´ W), UF 40691 (5, 190-204 TL, 11°9´ N 74°25.8´ W).

*Etmopterus perryi* Springer & Burgess 1985 – Dwarf Lanternshark (FAO) – Bathydemersal, 283-435 m. Holotype, USNM 206093 (182 TL, 11°9´ N 74°25.8´ W), Paratypes, USNM 206094 (1, 190 TL, 12°31.2´ N 71°58.2´ W), USNM 206095 (7, 154-191 TL, 11°9´ N 74°25.8´ W), USNM 206221 (2, 184-194 TL, 11°9´ N 74°26.4´ W), UF 27973 (1, 190 TL, 11°25.2´ N 73°55.8´ W), UF 40692 (1, 186 TL, 12°31.2´ N 71°58.2´ W),

UF 40693 (6, 154-193 TL, 11°9´ N 74°25.8´ W), UF 40694 (29, 146-178 TL, 11°36.6´ N 62°46.8´ W); USNM 206220 (58, 102-212 TL, 11°9.6´ N 74°25.2´ W), INV PEC2437 (1, 11°22.2´ N 73°46.2´ W), INV PEC2435 (1, 12°34.2´ N 71°49.8´ W), INV PEC2436 (1, 11°29.4´ N 73°22.8´ W).

*Etmopterus robinsi* Schofield & Burgess 1997 – West Indian Lanternshark (FAO) – Bathydemersal, 549 m. Paratypes, USNM 220287 (1, 264 TL, 16°34.8´ N 80°10.2´ W), USNM 220288 (1, 260 TL, 13°7.2´ N 82°7.8´ W), UF 27960 (1, 252 TL, 14°55.8´ N 81°10.2´ W). Additional specimens in Schofield and Burgess (1997).

*Etmopterus schultzi* Bigelow, Schroeder & Springer 1953 – Fringefin Lanternshark, Tollo Lucero Franjeado, Sagre à Nageoires Frangées (FAO) – Bathydemersal, 329-914 m. USNM 220277 (5, 11°40.2´ N 62°33´ W), USNM 220386 (1, 12°1.8´ N 69°21´ W), USNM 220397 (13, 11°43.2´ N 69°13.2´ W), USNM 220399 (2, 11°25.8´ N 68°25.2´ W), USNM 220419 (6, 11°49.2´ N 69°24´ W), USNM 220423 (3, 11°24´ N 64°25.2´ W), USNM 220424 (2, 11°54´ N 69°18´ W), USNM 220428 (5, 10°49.8´ N 67°48´ W), USNM 220394 (2, 11°9´ N 74°26.4´ W), USNM 220425 (8, 11°34.8´ N 73°25.8´ W), USNM 220443 (1, 11°10.8´ N 74°28.8´ W), USNM 268110 (1, 11°16.8´ N 74°40.2´ W), USNM 268113 (3, 12°10.2´ N 72°52.2´ W), MCZ 40162 (9, 102-190 TL, 16°39´ N 82°28.8´ W), MCZ 41910 (1, 141 TL, 11°34.8´ N 62°58.8´ W), MCZ 61989 (1, 250 TL, 11°34.8´ N 62°37.2´ W), UF 27962 (3, 9°12´ N 81°10.8´ W), UF 27964 (3, 9°16.8´ N 81°9´ W), UF 27972 (3, 9°6´ N 81°15´ W), UF 27975 (3, 11°25.8´ N 73°40.8´ W), UF 27978 (1, 11°12´ N 74°24´ W), UF 165849 (6, 9°4.8´ N 81°18´ W), UF 165850 (1, 9°6´ N 81°15´ W), UF 222615 (1, 9°7.2´ N 81°12´ W), UF 224212 (3, 12°13.2´ N 72°49.8´ W), INV PEC2438 (2, 12°31.8´ N 72°7.8´ W), INV PEC2439 (1, 12°29.4´ N 72°15.6´ W), INV PEC2442 (1, 12°19.2´ N 72°42.6´ W), INV PEC2440 (2, 12°29.4´ N 72°15.6´ W), INV PEC2441 (2, 12°19.2´ N 72°42.6´ W), INV PEC2443 (1, 11°15´ N 74°39´ W), INV PEC8267 (3, 12°41.4´ N 71°49.2´ W), INV PEC8266 (1, 12°36´ N 71°28.8´ W).

*Etmopterus virens* Bigelow, Schroeder & Springer 1953 – Green Lanternshark, Tollo Lucero Verde, Sagre Vert (FAO) – Bathydemersal, 293–585 m. USNM 220447 (14, 11°36.6´ N 62°46.8´ W), USNM 220451 (1, 9°0´ N 81°22.8´ W), USNM 220467 (9, 11°52.8´ N 69°28.2´ W), USNM 220471 (6, 11°36.6´ N 62°46.8´ W), USNM 220473 (8, 9°13.2´ N 80°43.2´ W), USNM 220478 (1, 9°13.2´ N 80°43.2´ W), USNM 220479 (5, 10°3´ N 60°1.2´ W), USNM 398352 (1, 11°58.8´ N 69°30´ W), USNM 220448 (14, 11°27´ N 73°42´ W), USNM 220450 (20, 12°16.2´ N 72°40.2´ W), USNM 220454 (21, 11°34.8´ N 73°25.8´ W), USNM 220474 (15, 12°16.2´ N 72°40.2´ W), USNM 220484 (21, 12°16.2´ N 72°40.2´ W), MCZ 40161 (1, 183 TL, 13°34.2´ N 81°52.8´ W), MCZ 40189 (8, 195-275 TL, 16°39´ N 81°1.2´ W), MCZ 40201 (2, 230-245 TL, 16°43.2´ N 82°43.8´ W), MCZ 40350 (19, 185-240 TL, 11°34.8´ N 62°40.8´ W), MCZ 40358 (15, 115-240 TL, 11°31.2´ N 62°24´ W), MCZ 40399 (1, 250 TL, 13°39´ N 81°52.2´ W), MCZ 61985 (3, 140–190 TL, 11°36´ N 62°52.2´ W), MCZ 61986 (1, 220 TL, 11°40.2´ N 62°40.2´ W ), MCZ 61988 (1, 160 TL, 11°36´ N 62°46.2´ W), MCZ 61990 (1, 224 TL, 11°36´ N 62°52.2´ W), MCZ 61991 (5, 117-218 TL, 11°34.8´ N 62°37.2´ W), MCZ 61992 (4, 1121-230 TL, 11°33´ N 62°30´ W), MCZ 61993 (6, 116-118 TL, 11°34.2´ N 62°49.2´ W), MCZ 61995 (1, 228 TL, 11°15´ N 68°12´ W), MCZ 62001 (12, 195-260 TL, 11°30´ N 62°28.8´ W), UF 15623 (1, 11°34.8´ N 62°37.2´ W), UF 27974 (7, 11°25.2´ N 73°55.8´ W), UF 27976 (5, 11°25.8´ N 73°40.8´ W), UF 27992 (3, 11°36.6´ N 62°46.8´ W), UF 42594 (13, 11°36´ N 62°52.2´ W), UF 101322 (8, 11°34.8´ N 62°37.2´ W), UF 102418 (1, 12°25.2´ N 82°15´ W), INV PEC2432 (1, 12°31.8´ N 72°7.8´ W), INV PEC2431 (2, 12°31.8´ N 72°7.8´ W), INV PEC2434 (1, 12°29.4´ N 72°15.6´ W), INV PEC2433 (1, 12°29.4´ N 72°15.6´ W).

## SQUATINIFORMES

### SQUATINIDAE

This family includes one supposedly well known species in the north western Atlantic (*Squatina dumeril* Lesueur 1818), which seems to be absent from the southern Caribbean to the south of the Gulf of Mexico; its distribution should be clarified.

*Squatina* sp.– Bathydemersal, 247-289 m, USNM 400759 (1, 8°58.2´ N 77°27.6´ W), USNM 400784 (1, 9°15.6´ N 81°40.8´ W), USNM 400796 (1, 9°15.6´ N 81°40.8´ W), MCZ 40156 (1, 255 TL, 11°27´ N 83°10.8´ W). The specific status of this material needs clarification.

TORPEDINIFORMES

TORPEDINIDAE

*Torpedo nobiliana* Bonaparte 1835 – Atlantic Torpedo, Torpedo del Atlántico, Torpille Noire (AFS) – Bathydemersal, 292-366 m. USNM 222488 (1, 12°16.2´ N 72°40.2´ W), INV PEC2445 (1, 11°24.6´ N 74°12´ W). Additional specimens in Bigelow and Schroeder (1965).

RAJIFORMES

RAJIDAE

*Anacanthobatis americanus* Bigelow & Schroeder 1962 – American Spineless Skate (FAO) – Bathydemersal, 402-823 m. Holotype, USNM 196445 (337 TL); Paratypes, MCZ 40364 (1, 327 TL, 11°34.8´ N 62°58.8´ W), MCZ 40365 (1, 327 TL, 11°34.8´ N 62°58.8´ W); MCZ 40366 (1, 329 TL, 11°35´ N 62°41´ W), USNM 222143 (5, 11°40.2´ N 73°15´ W), USNM 222146 (2, 11°12´ N 74°21´ W), MCZ 40780 (1, 11°34.8´ N 62°58.8´ W), MCZ 40781 (1, 11°40.2´ N 62°27´ W), MCZ 41758 (2, 9°15´ N 81°31.8´ W), MCZ 41761 (4, 9°7.2´ N 81°10.2´ W), MCZ 41769 (45, 9°3´ N 81°18´ W), MCZ 42061 (21, 175-135 TL, 9°0´ N 81°22.8´ W), MCZ 47822 (1, 270 TL, 11°52.8´ N 69°25.2´ W), MCZ 47836 (6, 248-320 TL, 11°40.2´ N 62°33´ W), MCZ 48992 (3, 11°52.8´ N 69°25.2´ W), MCZ 48993 (1, 277 SL, 11°9.6´ N 74°28.8´ W), MCZ 48995 (1, 280 TL, 11°16.8´ N 74°21.6´ W), MCZ 49001 (1, 12°1.8´ N 69°21´ W), MCZ 49003 (1, 11°10.8´ N 74°28.8´ W), MCZ 49014 (1, 9°1.8´ N 76°31.8´ W), MCZ 49027 (3, 11°49.2´ N 69°24´ W), MCZ 51058 (4, 12°28.8´ N 72°19.2´ W), MCZ 51064 (2, 275-313 TL, 12°6´ N 72°55.2´ W), MCZ 51807 (1, 360 TL, 12°30´ N 72°7.8´ W), MCZ 51815 (1, 332 TL, 12°28.8´ N 72°19.2´ W), MCZ 164854 (1, 9°1.8´ N 76°31.8´ W), UF 29855 (1, 11°22.8´N 74°16.2´ W), UF 29857 (1, 11°16.8´ N 74°40.2´ W), UF 117468 (1, 11°25.8´ N 73°40.8´ W), UF 117470 (1, 12°54´ N 70°39´ W), UF 118677 (1, 11°40.2´ N 62°33´ W), UF 165845 (3, 12°54´ N 70°37.8´ W), INV PEC2449 (2, 11°7.2´ N 75°8.4´ W), INV PEC2450 (1, 11°7.2´ N 75°8.4´ W), INV PEC2448 (1, 11°27´ N 73°42´ W), INV PEC2446 (1, 11°25.8´ N 74°11.4´ W), INV PEC2447 (1, 12°15.6´ N 72°33´ W), INV PEC7913 (1, 11°22.2´ N 74°22.2´ W), INV PEC8273 (1, 11°31.8´ N 73°28.8´ W), INV PEC8272 (1, 11°25.2´ N 74°19.2´ W), INV PEC8271 (1, 11°8.4´ N 75°16.2´ W), INV PEC8270 (1, 10°43.8´ N 75°37.2´ W), INV PEC8269 (3, 12°41.4´ N 71°49.2´ W), INV PEC 8268 (2, 9°3.6´ N 76°44.4´ W).

*Breviraja mouldi* McEachran & Matheson 1995 – Mould's Shortskate (FAO) – Bathydemersal, 366-777 m, Holotype, MCZ 40200 (378 TL, 16°43.2´ N 82°43.8´ W), Paratypes, MCZ 61441 (8, 154-329 TL, 16°43.2´ N 82°43.8´ W); USNM 222096 (1, 12°43.8´ N 82°16.2´ W), USNM 222203 (1, 14°24´ N 81°48´ W), MCZ 40054 (1, 285 TL, 16°43.2´ N 82°51´ W), MCZ 40055 (1, 290 TL, 16°43.2´ N 82°51´ W), MCZ 40056 (2, 130-130 TL, 16°43.2´ N 82°51´ W), MCZ 40061 (2, 120-140 TL, 16°39´ N 82°25.8´ W), MCZ 40066 (1, 230 TL, 13°22.2´ N 82°4.2´ W), MCZ 40073 (1, 375 TL, 16°42´ N 82°33´ W), MCZ 40074 (1, 335 TL, 16°42´ N 82°33´ W), MCZ 40075 (1, 225 TL, 16°42´ N 82°33´ W), MCZ 40076 (1, 225 TL, 16°42´ N 82°33´ W), MCZ 40080 (1, 310 TL, 16°46.2´ N 82°16.2´ W), MCZ 40081 (1, 262 TL, 13°13.8´ N 82°6´ W), MCZ 40082 (1, 330 TL,

13°13.8′ N 82°6′ W), MCZ 40096 (1, 172 TL, 13°55.8′ N 81°49.8′ W), MCZ 40149 (3, 340 TL, 16°45′ N 82°19.8′ W), MCZ 40150 (1, 230 TL, 16°45′ N 82°19.8′ W), MCZ 40153 (1, 325 TL, 16°54′ N 81°18′ W), MCZ 40155 (2, 80-105 TL, 16°54′ N 81°18′ W), MCZ 40163 (1, 110-247 TL, 13°33′ N 81°55.2′ W), MCZ 40176 (1, 340 TL, 12°43.8′ N 82°13.8′ W), MCZ 40177 (2, 115-220 TL, 14°40.2′ N 81°25.2′ W), MCZ 40181 (1, 350 TL, 16°52.2′ N 81°30′ W), MCZ 40202 (1, 340 TL, 16°43.2′ N 82°22.2′ W), MCZ 40203 (4, 86-132 TL, 16°40.8′ N 82°19.8′ W), MCZ 40207 (1, 168 TL, 12°49.8′ N 82°12′ W), MCZ 40216 (9, 95-335 TL, 16°40.8′ N 82°40.2′ W), MCZ 40354 (2, 183-195 TL, 13°7.2′ N 82°7.8′ W), MCZ 41749 (1, 14°10.2′ N 81°49.8′ W), MCZ 41760 (7, 12°31.2′ N 82°21′ W), MCZ 41767 (4, 12°34.8′ N 82°19.2′ W), MCZ 41996 (1, 16°34.8′ N 80°10.2′ W), MCZ 42008 (5, 16°57′ N 81°19.2′ W), MCZ 161564 (1, 12°25.2′ N 82°15′ W), MCZ 40187 (2, 16°45′ N 82°25.2′ W), MCZ 40188 (1, 16°45′ N 82°25.2′ W), UF 29853 (5, 9°6′ N 81°15′ W), UF 231632 (1, 14°34.8′ N 81°31.8′ W). Additional specimens and specimens' lengths in McEachran and Matheson (1985). These record extend the bathymetric range of the species.

*Breviraja nigriventralis* McEachran & Matheson 1985 – Blackbelly Shortskate (FAO) – Bathydemersal, 457-777 m, MCZ 41768 (2, 9°3′ N 81°18′ W), MCZ 41770 (4, 9°0′ N 81°22.8′ W), MCZ 48996 (1, 163 TL, 11°40.8′ N 68°57′ W), MCZ 49017 (1, 365 TL, 11°40.8′ N 68°57′ W), MCZ 51809 (4, 115-162 TL, 9°36′ N 76°22.2′ W), MCZ 51811 (1, 225TL, 12°28.8′ N 72°19.2′ W), MCZ 164855 (1, 12°30′ N 72°7.8′ W), UF 29854 (2, 8°55.8′ N 76°52.8′ W), UF 123758 (1, 9°6′ N 81°15′ W), INV PEC2451 (1, 11°27′ N 73°42′ W), INV PEC2453 (1, 11°27′ N 73°42′ W), INV PEC2452 (1, 11°27′ N 73°42′ W), INV PEC8274 (1, 12°41.4′ N 71°49.2′ W).

*Cruriraja rugosa* Bigelow & Schroeder 1958 – Wrinkled Limbedskate (FAO) – Bathydemersal, 439-1006 m. MCZ 40048 (1, 138 TL, 13°30′ N 82°0′ W), MCZ 40051 (1, 247 TL, 16°42′ N 82°33′ W), MCZ 40052 (1, 228 TL, 16°42′ N 82°33′ W), MCZ 40053 (1, 392 TL, 16°42′ N 82°33′ W), MCZ 40068 (4, 13°58.2′ N 81°49.2′ W), MCZ 40077 (1, 390 TL, 16°46.2′ N 82°16.2′ W), MCZ 40078 (1,258 TL, 16°46.2′ N 82°16.2′ W), MCZ 40079 (1, 250 TL, 16°46.2′ N 82°16.2′ W), MCZ 40083 (1, 120 TL, 13°13.8′ N 82°6′ W), MCZ 40086 (1, 415 TL, 14°7.8′ N 81°49.2′ W), MCZ 40087 (2, 138-155 TL, 14°7.8′ N 81°49.2′ W), MCZ 40088 (1, 366 TL, 13°13.2′ N 82°13.2′ W), MCZ 40089 (3, 178 TL, 13°13.2′ N 82°13.2′ W), MCZ 40172 (2, 90-150 TL, 13°33′ N 81°55.2′ W), MCZ 40173 (1, 185 TL, 13°18′ N 82°12′ W), MCZ 40175 (2, 80-90 TL, 12°34.8′ N 82°19.2′ W), MCZ 40178 (1, 165 TL, 14°40.2′ N 81°25.2′ W), MCZ 40182 (1, 370 TL, 16°42′ N 82°36′ W), MCZ 40184 (1, 130-320 TL, 16°45′ N 82°25.2′ W), MCZ 40185 (1, 92 TL, 13°25.2′ N 82°1.2′ W), MCZ 40198 (3, 160-360 TL, 16°43.2′ N 82°22.2′ W), MCZ 40204 (1, 125 TL, 16°43.2′ N 82°43.8′ W), MCZ 40206 (1, 90 TL, 12°49.8′ N 82°12′ W), MCZ 40215 (1, 420 TL, 16°40.8′ N 82°40.2′ W), MCZ 40224 (3, 144-172 TL, 13°55.8′ N 81°49.8′ W), MCZ 40355 (1, 13°7.2′ N 82°7.8′ W), MCZ 40356 (2, 110-148 TL, 13°7.2′ N 82°7.8′ W), MCZ 40362 (1, 12°40.2′ N 82°18′ W), MCZ 41750 (2, 14°18′ N 81°43.8′ W), MCZ 41756 (3, 16°34.8′ N 80°4.2′ W), MCZ 41757 (2, 9°3′ N 81°18′ W), MCZ 41763 (2, 12°25.2′ N 82°15′ W), MCZ 41771 (1, 192 TL, 14°22.8′ N 81°45′ W), MCZ 41772 (2, 14°10.2′ N 81°49.8′ W), MCZ 41801 (3, 14°10.2′ N 81°55.2′ W), MCZ 41933 (6, 92-145 TL, 16°34.8′ N 80°10.2′ W), MCZ 41964 (12, 195-410 TL, 16°57′ N 81°19.2′ W), MCZ 41970 (6, 16°34.8′ N 80°10.2′ W), MCZ 41986 (2, 12°34.8′ N 82°19.2′ W), MCZ 42007 (1, 16°57′ N 81°19.2′ W), MCZ 48994 (1, 360 TL, 10°15.6′ N 76°0′ W), MCZ 49002 (3, 11°54′ N 69°22.8′ W), MCZ 164867 (1, 130 TL, 9°1.8′ N 76°31.8′ W), MCZ 164869 (1, 100 TL, 11°40.2′ N 62°33′ W), UF 29850 (11, 16°45′ N 82°36′ W), UF 29851 (2, 14°55.8′ N 81°10.2′ W), UF 222616 (1, 9°7.2′ N 81°12′ W), UF 222752 (3, 10°16.8′ N 76°0′ W), UF 226576 (2, 16°4.8′ N 61°24′ W).

*Dactylobatus clarkii* (Bigelow & Schroeder 1958) – Clark's Fingerskate (FAO) – Bathydemersal, 366-549 m. MCZ 40072 (1, 365 TL, 13°22.2′ N 82°4.2′ W), MCZ 40208 (1, 255 TL, 12°49.8′ N 82°12′ W), MCZ 42160 (1, 176 TL, 9°3′ N 81°22.2′ W), MCZ 42163 (1, 228 TL, 14°10.2′ N 81°55.2′ W), MCZ 48988 (1, 275 TL, 11°15′ N 68°12′ W), MCZ 48999 (2, 11°9.6′ N 74°28.8′ W), MCZ 51069 (1, 12°28.8′ N 72°19.2′ W), MCZ

51797 (1, 330 TL, 9°36´ N 76°22.2´ W), MCZ 51810 (2, 370-375 TL, 12°30´ N 72°7.8´ W), INV PEC2454 (1, 12°29.4´ N 72°15.6´ W), INV PEC2455 (1, 11°29.4´ N 73°27´ W).

*Dipturus bullisi* (Bigelow & Schroeder 1962) – Lozenge Skate, Raya Triangular (AFS), Raie de Bullis (FAO) – Bathydemersal, 201-439 m. MCZ 41336 (1, 11°30´ N 62°28.8´ W), MCZ 47829 (1, 370 TL, 11°36.6´ N 62°46.8´ W), MCZ 48990 (1, 13°12.6´ N 82°15.6´ W), MCZ 51020 (3, 9°4.2´ N 81°25.2´ W), MCZ 89502 (1, 234 TL, 12°25.2´ N 82°15´ W), UF 29860 (1, 12°18´ N 72°40.8´ W), INV PEC2456 (1, 11°25.2´ N 74°12.6´ W), INV PEC3278 (1, 9°45.6´ N 76°15´ W), INV PEC3277 (1, 9°15.6´ N 76°28.8´ W).

*Dipturus garricki* (Bigelow & Schroeder 1958) - Garrick's Wingedskate (FAO) – Bathydemersal, 306-622 m, UF 123764 (1, 8°55.8´ N 76°52.8´ W), INV PEC2457 (1, 12°15.6´ N 72°33´ W). These records extend the bathymetric range of the species.

*Dipturus teevani* (Bigelow & Schroeder 1951) – Prickly Brown Ray, Raya Piel de Lija, Raie Rugueuse (FAO) – Bathydemersal, 402-604 m. MCZ 40049 (1, 13°30´ N 82°0´ W), MCZ 40071 (1, 350 TL, 16°43.2´ N 82°51´ W), MCZ 40159 (1, 233 TL, 13°33´ N 81°55.2´ W), MCZ 40210 (1, 242 TL, 12°49.8´ N 82°12´ W), MCZ 40211 (1, 370 TL, 16°40.8´ N 81°1.8´ W), MCZ 41901 (1, 14°10.2´ N 81°49.8´ W), MCZ 41999 (2, 14°10.2´ N 81°55.2´ W), MCZ 45201 (3, 175-260 TL, 14°10.2´ N 81°55.2´ W), UF 29856 (1, 11°25.8´ N 73°40.8´ W). Additional specimens in Jacob and McEachran (1994).

*Fenestraja ishiyamai* (Bigelow & Schroeder 1962) – Ishiyama's Windowskate (FAO) – Bathydemersal, 503-558 m. Holotype USNM 196447 (338 TL, 13°18.0´ N 82°12.0´ W), MCZ 40097 (1, 226 TL, 13°55.8´ N 81°49.8´ W). Additional specimens in Bigelow and Schroeder (1962).

*Fenestraja sinusmexicanus* (Bigelow & Schroeder 1950) – Gulf Skate, Raya Pigmea (AFS) – Bathydemersal, 485-503 m. MCZ 40154 (4, 105-130 mm TL, 13°34.2´ N 81°52.8´ W), MCZ 51068 (2, 12°28.8´ N 72°19.2´ W), MCZ 59218 (1, 13°33´ N 81°55.2´ W). These records extend the bathymetric range of the species.

*Gurgesiella atlantica* (Bigelow & Schroeder 1962) – Atlantic Abyssalskate (FAO) – Bathydemersal, 338-705 m. Holotype USNM 196444 (450 TL, 13°19.8´ N 82°1.8´ W). USNM 222255 (1, 12°43.8´ N 82°16.2´ W), USNM 222256 (1, 14°24´ N 81°48´ W), USNM 222258 (1, 11°25.8´ N 74°13.8´ W), USNM 222261 (1, 11°12´ N 74°21´ W), MCZ 40041 (1, 437 TL, 12°33´ N 82°19.8´ W), MCZ 40042 (1, 447 TL, 13°13.2´ N 82°13.2´ W), MCZ 40047 (1, 408 TL, 13°30´ N 82°0´ W), MCZ 40166 (1, 416 TL, 13°31.2´ N 81°54´ W), MCZ 40170 (1, 275 TL, 13°33´ N 81°55.2´ W), MCZ 40209 (1, 230 TL, 12°49.8´ N 82°12´ W), MCZ 40371 (2, 400-425TL, 11°31.2´ N 62°24´ W), MCZ 40730 (1, 11°33´ N 62°30´ W), MCZ 40770 (1, 11°40.2´ N 62°40.2´ W), MCZ 40771 (1, 481 TL, 11°34.2´ N 62°49.2´ W), MCZ 40773 (1, 11°34.8´ N 62°58.8´ W), MCZ 40777 (1, 11°36´ N 62°46.2´ W), MCZ 40778 (1, 11°34.8´ N 62°37.2´ W), MCZ 41759 (4, 14°10.2´ N 81°49.8´ W), MCZ 41969 (2, 440-460 TL, 9°0´ N 81°22.8´ W), MCZ 41971 (9, 265-450 TL, 12°34.8´ N 82°19.2´ W), MCZ 41974 (5, 12°22.8´ N 82°28.8´ W), MCZ 41982 (4, 9°13.2´ N 81°30´ W), MCZ 47818 (1, 182 TL, 11°42´ N 69°4.8´ W), MCZ 47828 (1, 410 TL, 12°1.2´ N 61°53.4´ W), MCZ 47830 (2, 491-518 TL, 11°43.2´ N 69°13.2´ W), MCZ 47832 (1, 476 TL, 11°46.2´ N 69°16.8´ W), MCZ 49008 (1, 10°57´ N 67°1.8´ W), MCZ 49015 (1, 11°24´ N 64°25.2´ W), MCZ 49016 (1, 10°57´ N 67°1.8´ W), MCZ 49019 (1, 11°10.2´ N 68°7.8´ W), MCZ 51804 (4, 135-447 TL, 9°46.8´ N 79°25.2´ W), MCZ 51805 (1, 415 TL, 12°28.8´ N 72°19.2´ W), MCZ 147990 (1, 190 TL, 10°55.2´ N 67°1.2´ W), MCZ 164858 (1, 120 TL, 14°16.2´ N 81°55.2´ W), MCZ 164860 (1, 96 TL, 11°52.2´ N 69°27´ W), MCZ 164871 (4, 96-190 TL, 10°16.2´ N 75°54.6´ W), UF 29859 (1, 11°40.8´ N 73°24´ W), UF 117467 (1, 11°25.8´ N 73°40.8´ W), UF 165846 (1, 12°54´ N 70°37.8´ W), INV PEC2460 (1, 11°7.8´ N 75°13.8´ W), INV PEC2459 (1, 11°27´ N 74°1.2´ W), INV PEC2458 (1, 11°27´ N 73°42´ W), INV PEC8275 (1, 12°41.4´ N 71°49.2´ W ), INV PEC8276 (1, 10°43.8´ N 75°37.2´ W). Additional specimens in Bigelow & Schroeder (1962). These records extend the bathymetric range of the species.

*Leucoraja caribbaea* (McEachran 1977) – Maya Skate, Raya Maya (AFS) – Bathydemersal, 296-393 m. USNM 222065 (2, 14°16.8´ N 81°55.2´ W), USNM 222286 (2, 14°24´ N 81°48´ W), UF 229254 (2, 14°54´ N 81°23.4´ W). Additional specimens in McEachran (1977).

*Leucoraja garmani (*Whitley 1939) – Rosette Skate (AFS), Raya de Garman, Rai Rosette (FAO) – Bathydemersal, 549 m. MCZ 41981 (4, 13°58.2´ N 81°49.2´ W). This record extends the bathymetric range of the species.

ALBULIFORMES

HALOSAURIDAE

*Aldrovandia affinis* (Günther 1877) - Bathypelagic, 523-3971 m. USNM 319701 (1, 10°10.2´ N 76°13.8´ W), UF 222358 (18, 9°0´ N 77°25.2´ W), UF 222570 (4, 10°16.2´ N 76°3´ W), UF 223771 (1, 9°40.8´ N 77°59.4´ W), UF 226857 (1, 11°48´ N 66°6.6´ W), UF 228504 (4, 17°54´ N 78°25.2´ W), UF 230572 (711°24.6´ N 67°10.2´ W), UF 231007 (4, 17°44.4´ N 64°58.8´ W), UF 231696 (1, 9°52.2´ N 79°35.4´ W), UF 231700 (2, 9°1.8´ N 76°52.8´ W), UF 231988 (1, 11°46.2´ N 67°6´ W), UF 232321 (6, 14°16.8´ N 60°45´ W), UF 232688 (1, 16°58.2´ N 79°28.2´ W), UF 232689 (2, 15°6´ N 63°30´ W), UF 232763 (2, 16°55.2´ N 62°43.2´ W). These records extend the bathymetric range of the species.

*Aldrovandia gracilis* Goode & Bean 1896. Bathypelagic, 1079-1865 m. USNM 214337 (1, 10°10.2´ N 76°13.8´ W), USNM 319501 (3, 10°55.8´ N 67°37.8´ W), UF 39193 (1, 9°31.8´ N 76°37.8´ W), UF 222749 (3, 13°1.2´ N 71°55.2´ W), UF 228534 (1, 18°16.2´ N 78°31.2´ W), UF 231699 (12, 11°24.6´ N 67°10.2´ W).

*Halosaurus guentheri* Goode & Bean 1896. Bathypelagic, 276-1629 m. USNM 319453 (1, 11°40.8´ N 68°57´ W), USNM 319503 (5, 11°43.8´ N 68°43.2´ W), USNM 319565 (12, 12°6´ N 72°55.2´ W), USNM 319573 (3, 12°1.8´ N 69°21´ W), USNM 319574 (11, 9°7.2´ N 81°10.2´ W), MCZ 45933 (2, 385-425 SL, 11°54´ N 69°18´ W), MCZ 51980 (6, 9°19.8´ N 81°24´ W), MCZ 59134 (3, 9°1.8´ N 76°31.8´ W), UF 202105 (1, 16°48´ N 82°33´ W), UF 202334 (1, 16°42´ N 82°33´ W), UF 222569 (5, 10°16.2´ N 76°3´ W), UF 222656 (8, 9°10.2´ N 80°55.8´ W), UF 226984 (1, 11°48´ N 66°6.6´ W), UF 227046 (6, 11°34.8´ N 64°34.8´ W), UF 234127 (1, 12°52.2´ N 70°37.2´ W), UF 183452 (6, 9°7.2´ N 81°12´ W), INV PEC7916 (2, 11°22.2´ N 74°22.2´ W), INV PEC7915 (6, 12°21´ N 73°0´ W), INV PEC7914 (3, 12°40.8´ N 72°3.6´ W), INV PEC8302 (1, 11°32.4´ N 73°44.4´ W), INV PEC8303 (1, 11°31.8´ N 73°28.8´ W), INV PEC8301 (1, 11°8.4´ N 75°16.2´ W), INV PEC8300 (2, 10°34.8´ N 75°39.6´ W), INV PEC8299 (6, 10°54.6´ N 75°36´ W), INV PEC8298 (6, 11°3´ N 75°29.4´ W), INV PEC8297 (1, 10°0´ N 76°15.6´ W), INV PEC8296 (1, 9°42.6´ N 76°22.8´ W), INV PEC8295 (6, 9°3.6´ N 76°44.4´ W), INV PEC8294 (1, 8°57´ N 76°51.6´ W). Additional specimens in MacDowell (1963). These records extend the bathymetric range of the species.

*Halosaurus ovenii* Johnson 1864. Bathypelagic, 276-1097 m. USNM 214338 (1, 11°12´ N 74°21´ W), USNM 319507 (1, 9°36´ N 76°22.2´ W), USNM 319520 (1, 9°3´ N 81°18´ W), USNM 319530 (2, 14°12´ N 81°42´ W), USNM 319545 (5, 11°52.8´ N 69°25.2´ W), USNM 319549 (3, 11°42´ N 69°4.8´ W), USNM 319559 (3, 9°7.2´ N 81°10.2´ W), USNM 319572 (12, 9°0´ N 81°22.8´ W), USNM 319576 (4, 11°54´ N 69°22.8´ W), USNM 319591 (1, 11°40.8´ N 68°57´ W), USNM 319594 (1, 11°25.8´ N 73°58.8´ W), MCZ 28014 (1, 16°0´ N 61°46.2´ W), MCZ 28158 (1, 13°58.8´ N 61°4.8´ W), MCZ 40622 (1, 16°43.2´ N 82°22.2´ W), MCZ 40801 (1, 16°43.2´ N 82°43.8´ W), MCZ 40802 (1, 13°7.2´ N 82°7.8´ W), MCZ 45939 (1, 9°1.8´ N 76°31.8´ W), MCZ 45942 (1, 362 TL, 11°16.8´ N 74°21.6´ W), MCZ 51962 (1, 11°46.2´ N 68°48´ W), MCZ 51979 (11, 14°10.2´ N 81°49.8´ W), UF 39083 (1, 14°22.2´ N 81°49.2´ W), UF 39084 (2, 8°55.8´ N 76°52.8´ W), UF 39086 (3, 10°0´ N 76°10.2´ W), UF 39093 (1, 16°34.8´ N 80°4.2´ W), UF 39266 (1, 12°25.2´ N 82°15´ W), UF 181675 (6, 9°3´ N 81°18´ W), UF 222614 (6, 9°7.2´ N 81°12´ W), UF 222640 (1, 11°34.2´ N 62°10.8´

W), UF 222751 (3, 10°16.8′ N 76°0′ W), UF 228776 (2, 11°30′ N 73°26.4′ W), UF 229200 (2, 14°34.8′ N 81°31.8′ W), UF 231465 (1, 12°42′ N 61°5.4′ W), UF 232906 (1, 12°52.8′ N 70°28.8′ W), UF 232907 (1, 12°52.8′ N 70°31.2′ W), UF 232908 (1, 12°48′ N 70°24′ W), UF 232911 (2, 12°54′ N 70°37.8′ W), INV PEC2467 (1, 11°20.4′ N 74°16.2′ W), INV PEC2466 (2, 11°19.2′ N 74°16.8′ W), INV PEC2465 (1, 11°27′ N 74°1.8′ W), INV PEC2464 (1, 11°27.6′ N 73°52.2′ W), INV PEC2463 (1, 11°29.4′ N 73°27′ W), INV PEC2462 (1, 12°19.2′ N 72°42.6′ W), INV PEC2461 (1, 11°13.8′ N 74°39′ W), INV PEC2468 (1, 11°7.8′ N 75°13.8′ W), INV PEC3280 (1, 9°53.4′ N 76°13.8′ W), INV PEC3281 (1, 10°10.2′ N 76°1.8′ W), INV PEC3279 (1, 9°30.6′ N 76°27′ W), INV PEC4338 (1, 10°32.4′ N 75°39′ W), INV PEC4339 (1, 12°31.8′ N 72°12′ W), INV PEC7918 (2, 8°59.4′ N 76°45.6′ W), INV PEC7917 (1, 11°22.2′ N 74°22.2′ W), INV PEC8292 (2, 11°32.4′ N 73°44.4′ W), INV PEC8291 (1, 11°33.6′ N 73°57′ W), INV PEC8290 (3, 11°12′ N 74°30′ W), INV PEC8289 (6, 11°8.4′ N 75°16.2′ W), INV PEC8288 (1, 10°34.8′ N 75°39.6′ W), INV PEC8287 (5, 10°43.8′ N 75°37.2′ W), INV PEC8286 (2, 11°3′ N 75°29.4′ W), INV PEC8285 (1, 10°0′ N 76°15.6′ W), INV PEC8284 (5, 9°42.6′ N 76°22.8′ W), INV PEC8283 (10, 9°34.2′ N 76°27.6′ W), INVPEC8282 (1, 9°17.4′ N 76°31.8′ W), INV PEC8281 (1, 9°3.6′ N 76°44.4′ W), INV PEC8280 (4, 8°57′ N 76°51.6′ W), INV PEC8278 (1, 12°36′ N 71°28.8′ W), INV PEC8279 (2, 12°41.4′ N 71°49.2′ W), INV PEC8293 (1, 11°31.8′ N 73°28.8′ W). Additional specimens in MacDowell (1963).

NOTACANTHIDAE

*Notacanthus chemnitzii* Bloch 1788 – Snubnosed Spiny Eel, Tapir à Grandes Écaillles (AFS) - Bathydemersal, 724-758 m. INV PEC8304 (1, 10°0′ N 76°15.6′ W). First record for the region.

*Polyacanthonotus merretti* Sulak, Crabtree & Hureau 1984. Bathydemersal, 679-718 m. USNM 204216 (1, 9°7.2′ N 81°10.2′ W), INV PEC8305 (1, 11°3′ N 75°29.4′ W). Additional specimens in Crabtree et al. (1985).

ANGUILLIFORMES

MORINGUIDAE

*Neoconger mucronatus* Girard 1858 – Ridged Eel, Anguila Fideo Aquillada (AFS) – Demersal, 265 m. INV PEC7929 (1, 12°32.4′ N 71°52.2′ W). This records extends the bathymetric range of the species.

MURAENIDAE

*Gymnothorax conspersus* Poey 1867 – Saddled Moray (AFS) – Bathydemersal, 256 – 439 m. USNM 221241 (1, 10°58.8′ N 66°0′ W), ANSP 116364 (1, 11°12′ N 74°21′ W), ANSP 107091 (2, 11°9.6′ N 74°24.6′ W), ANSP 107095 (2, 12°16.8′ N 72°31.2′ W), UF 30246 (1, 11°3′ N 75°18′ W), UF 174143 (1, 11°25.2′ N 73°55.8′ W), INV PEC2469 (1, 12°24′ N 72°15′ W), INV PEC7930 (1, 12°19.8′ N 72°27.6′ W). These records extend the bathymetric range of the species.

*Gymnothorax polygonius* Poey 1875 – Polygon Moray, Morena Polígona (AFS) – Demersal, 200-206 m. INV PEC3282 (1, 11°23.4′ N 74°12′ W), INV PEC2470 (1, 11°23.4′ N 74°12′ W).

SYNAPOBRANCHIDAE

*Atractodenchelys phrix* Robins & Robins 1970. Bathydemersal, 393-488 m. Holotype, ANSP 114437 (380 TL, 11°36′ N 62°52.2′ W), USNM 270794 (1, 9°0′ N 81°22.8′ W), INV PEC2471 (1, 11°29.4′ N 73°27′ W). These records extend the bathymetric range of the species.

*Dysommina rugosa* Ginsburg 1951.Bathydemersal, 450-733 m. ANSP 94214 (1, 11°36´ N 62°46.2´ W), ANSP 137427 (1, 10°16.8´ N 76°0´ W), UF 232234 (1, 14°34.8´ N 81°31.8´ W). Additional specimens in Robins and Robins (1970).

*Ilyophis brunneus* Gilbert 1891 - Muddy Arrowtooth Eel (Fishbase) - Bathydemersal, 664-1239 m. USNM 212185 (1, 11°43.8´ N 68°43.2´ W), UF 222355 (2, 9°0´ N 77°25.2´ W), UF 222474 (1, 9°7.2´ N 81°12´ W), UF 223496 (1, 10°16.2´ N 76°3´ W), UF 232323 (1, 14°16.8´ N 60°45´ W), INV PEC7921 (2, 12°40.8´ N 72°3.6´ W), INV PEC7923 (2, 11°22.2´ N 74°22.2´ W), INV PEC7922 (3, 12°21´ N 73°0´ W), INV PEC8330 (1, 11°33.6´ N 73°57´ W), INV PEC8329 (1, 11°3´ N 75°29.4´ W). Anderson et al. (1985) said that the species appears to be restricted to bathyal depths in the Caribbean but the present bathimetric range for the Caribbean extends its distribution to the slope.

*Synaphobranchus affinis* Günther 1877 - Grey Cutthroat Eel (Fishbase) - Bathydemersal, 732 m, ANSP 110855 (1, 9°1.8´ N 76°31.8´ W).

*Synaphobranchus oregoni* Castle 1960. Bathydemersal, 265-1574 m. USNM 400726 (1, 10°10.8´ N 82°52.2´ W), ANSP 110830 (3, 10°55.8´ N 67°37.8´ W), ANSP 110835 (3, 11°43.8´ N 68°43.2´ W), ANSP 110847 (1, 11°3´ N 67°52.8´ W), ANSP 110856 (2, 11°3´ N 67°52.8´ W), ANSP 126144 (1, 10°9´ N 76°13.8´ W), ANSP 110852 (4, 10°15.6´ N 76°0´ W), ANSP 110870 (5, 12°6´ N 72°55.2´ W), UF 221879 (4, 10°16.2´ N 76°3´ W), UF 222655 (1, 9°10.2´ N 80°55.8´ W), UF 228256 (3, 11°48´ N 66°6.6´ W), UF 230391 (1, 11°37.2´ N 68°42´ W), INV PEC7920 (1, 12°19.8´ N 72°27.6´ W).

OPHICHTHIDAE

*Ophichthus cruentifer* (Goode & Bean 1896) – Margined Snake Eel (AFS) - Demersal, 496-718 m. INV PEC3934 (1, 12°31.8´ N 72°12´ W), INV PEC8331 (1, 11°3´ N 75°29.4´ W). These records extend the bathymetric range of the species.

*Ophichthus puncticeps* (Kaup 1859) – Palespotted Eel (AFS) – Demersal, 295-940 m. *Holotype (ZMH 192) collected in Venezuela in Puerto Cabello, without coordinates.* INV PEC7927 (1, 12°20.4´ N 72°27´ W), INV PEC7928 (1, 12°21´ N 73°0´ W). Information on the holotype in Kaup (1859). These records extend the bathymetric range of the species.

COLOCONGRIDAE

*Coloconger meadi* Kanazawa 1957. Bathydemersal, 218-990 m. USNM 198757 (2, 10°16.2´ N 75°54.6´ W), USNM 268806 (1, 12°6´ N 72°55.2´ W), USNM 158880 (2, 13°39´ N 81°52.2´ W), USNM 179242 (5, 14°10.2´ N 81°55.2´ W), USNM 187809 (1, 14°10.2´ N 81°55.2´ W), USNM 193543 (2, 12°34.8´ N 82°19.2´ W), USNM 193557 (1, 12°25.8´ N 82°24´ W), USNM 193561 (2, 9°3´ N 81°18´ W), USNM 193573 (5, 9°0´ N 81°22.8´ W), USNM 193614 (1, 9°19.8´ N 81°24´ W), USNM 193615 (15, 9°7.2´ N 81°10.2´ W), USNM 193616 (3, 14°18´ N 81°43.8´ W), USNM 198743 (4, 11°40.2´ N 62°33´ W), USNM 198752 (1, 10°49.8´ N 67°48´ W), USNM 198763 (6, 11°54´ N 69°22.8´ W), USNM 268805 (1, 10°49.8´ N 67°48´ W), USNM 268807 (1, 14°10.2´ N 81°49.8´ W), USNM 400788 (1, 9°42´ N 78°36.6´ W), ANSP 109603 (1, 14°12´ N 81°42´ W), ANSP 126173 (2, 8°55.8´ N 76°52.8´ W), ANSP 126133 (1, 11°12´ N 74°24´ W), ANSP 109613 (4, 11°16.8´ N 74°21.6´ W), ANSP 114157 (1, 9°36´ N 76°22.2´ W), ANSP 109603 (1, 14°12´ N 81°42´ W), ANSP 109614 (2, 12°25.2´ N 82°22.8´ W), MCZ 57928 (1, 11°36´ N 62°46.2´ W), UF 211407 (6, 14°10.2´ N 81°49.8´ W), UF 222628 (2, 9°7.2´ N 81°12´ W), UF 222643 (10, 11°34.2´ N 62°10.8´ W), UF 229666 (1, 11°30´ N 73°26.4´ W), UF 229668 (1, 11°45.6´ N 61°29.4´ W), UF 232693 (2, 12°52.8´ N 70°28.8´ W), INV PEC2473 (1, 12°29.4´ N 72°15.6´ W), INV PEC2472 (1, 11°23.4´ N 74°12.6´ W), INV PEC3285 (1, 9°49.2´ N 76°16.2´

W), INV PEC3291 (1, 10°10.2´ N 76°1.8´ W), INV PEC3286 (1, 10°10.2´ N 76°1.8´ W), INV PEC3284 (1, 9°30´ N 76°27´ W), INV PEC3289 (2, 9°30´ N 76°27´ W), INV PEC3288 (1, 9°18.6´ N 76°29.4´ W), INV PEC3287 (1, 10°10.2´ N 76°1.8´ W), INV PEC3290 (1, 10°10.2´ N 76°1.8´ W), INV PEC4066 (1, 9°46.8´ N 76°18´ W), INV PEC7932 (1, 9°37.8´ N 76°21.6´ W), INV PEC7931 (1, 10°19.8´ N 75°54´ W), INV PEC8340 (2, 11°12´ N 74°30´ W), INV PEC8341 (2, 11°25.2´ N 74°19.2´ W), INV PEC8342 (3, 11°32.4´ N 73°44.4´ W), INV PEC8333 (4, 12°41.4´ N 71°49.2´ W), INV PEC8337 (2, 11°3´ N 75°29.4´ W), INV PEC8336 (1, 9°42.6´ N 76°22.8´ W), INV PEC8335 (5, 9°34.2´ N 76°27.6´ W), INV PEC8334 (1, 8°57´ N 76°51.6´ W), INV PEC8339 (1, 11°8.4´ N 75°16.2´ W), INV PEC8338 (4, 10°54.6´ N 75°36´ W). These records extend the bathymetric range of the species.

MURAENESOCIDAE

*Cynoponticus savanna* (Bancroft 1831) – Guayana Pike-Conger, Morenocio Guayanés, Morénésoce Coungré (FAO) – Demersal, 746 m. INV PEC8332 (1, 9°42.6´ N 76°22.8´ W). This record extends the bathymetric range of the species.

NEMICHTHYIDAE

*Avocettina infans* (Günther 1878) - Avocet Snipe-Eel (Fishbase) - Mesopelagic, 350-1046 m. ANSP 112061 (2, 11°42´ N 68°43.2´ W), ANSP 112060 (3, 9°1.8´ N 76°31.8´ W), MCZ 28047 (1, 500 SL, 13°10.2´ N 61°18.6´ W), MCZ 28168 (1, 13°55.2´ N 61°6´ W), MCZ 45954 (1, 11°21´ N 67°7.8´ W), MCZ 47790 (1, 11°21´ N 67°7.8´ W), MCZ 147401 (2, 400-440 SL, 13°12´ N 72°46.8´ W), MCZ 147402 (1, 580 SL, 11°22.2´ N 65°1.2´ W), MCZ 169505 (1, 15°18´ N 61°26.4´ W), UF 222990 (1, 11°31.8´ N 67°39.6´ W), UF 227875 (1, 11°31.8´ N 67°39.6´ W).

*Labichthys carinatus* Gill & Ryder 1883. Mesopelagic, 940-991 m. MCZ 28167 (1, 15°18´ N 61°26.4´ W), INV PEC7919 (1, 12°21´ N 73°0´ W).

*Nemichthys scolopaceus* Richardson 1848 – Slender Snipe Eel, Tijera Esbelta, Avocette Ruban (AFS) - Mesopelagic, 300-777 m. ANSP 126140 (1, 9°6´ N 81°15´ W), ANSP 112033 (1, 11°40.2´ N 62°33´ W), ANSP 112032 (1, 11°9.6´ N 74°28.8´ W), ANSP 112030 (1, 11°10.2´ N 74°27´ W), ANSP 109593 (27, 9°1.8´ N 76°31.8´ W), ANSP 112052 (1, 9°1.8´ N 76°31.8´ W), ANSP 112040 (1, 14°12´ N 81°42´ W), MCZ 147233 (1, 410 TL, 13°4.2´ N 73°12´ W), MCZ 147254 (1, 931 TL, 11°21´ N 67°7.8´ W), INV PEC3931 (1, 11°28.2´ N 73°40.2´ W).

CONGRIDAE

*Acromycter atlanticus* Smith 1989. Bathydemersal, 503-549 m. Holotype, USNM 158882 (285 TL, 13°34.2´ N 81°52.8´ W), USNM 158877 (1,260 TL, 13°22.2´ N 82°4.2´ W).

*Bathycongrus bullisi* (Smith & Kanazawa 1977) – Bullish Conger, Congrio Disparatado (AFS) – Bathydemersal, 229-549 m. Holotype, USNM 198768 (1), USNM 400773 (1, 8°55.2´ N 81°7.2´ W), USNM 400789 (1, 9°15.6´ N 81°40.8´ W), USNM 198769 (1, 580 TL, 11°49.8´ N 73°4.8´ W), USNM 198674 (1,510 TL, 11°9.6´ N 74°24.6´ W), USNM 198767 (1, 438 TL, 10°24´ N 75°49.8´ W), USNM 198770 (1, 511 TL, 11°9´ N 74°26.4´ W), USNM 185653 (1, 303 TL, 11°31.2´ N 62°24´ W), USNM 193594 (1, 9°3´ N 81°22.2´ W), USNM 193596 (2, 148-453 TL, 9°3´ N 81°18´ W), USNM 193612 (1, 446 TL, 9°18´ N 80°22.2´ W), ANSP 109616 (2, 16°39´ N 81°1.2´ W), ANSP 114947 (1, 11°27´ N 73°42´ W), ANSP 122923 (1, 11°25.8´ N 73°40.8´ W), ANSP 126536 (5, 11°3´ N 75°18´ W), INV PEC3283 (1, 9°57.6´ N 76°7.8´ W), INV PEC2475 (1, 11°12´ N 74°17.4´ W). Additional specimens and specimens' lengths in Smith and Kanazawa (1977). These records extend the bathymetric range of the species.

*Bathycongrus dubius* (Breder 1927) - Dubious Conger (AFS) – Bathydemersal, 234-607 m. USNM 158915 (1, 9°40.8´ N 59°46.8´ W), USNM 158886 (1, 325 TL, 16°39' N 81°01' W), USNM 158887 (1, 224 TL, 16°41' N 81°02' W), USNM 158922 (1, 261TL, 16°38' N 82°34' W), USNM 195903 (7, 262-339 TL, 11°30´ N 62°28.8´ W), UF 229469 (6, 10°54.6´ N 66°18´ W), UF 229599 (2, 11°18.6´ N 68°22.2´ W).

*Bathycongrus thysanochilus* (Reid 1934) - Bathydemersal, 234-439 m.USNM 179238 (1, 9°4.2´ N 81°25.2´ W), USNM 193542 (1, 14°7.8´ N 81°55.2´ W), UF 233397 (1, 214 TL, 10°54.7´ N 66°17.8´ W).

*Bathycongrus vicinalis* (Garman 1899) – Neighbor Conger, Congrio Vecino (AFS) – Bathydemersal, 366-503 m. USNM 158885 (1, 302 TL, 13°33´ N 81°55.2´ W), USNM 193565 (1, 290 TL, 14°7.8´ N 81°55.2´ W), ANSP 122924 (1, 462 TL, 11°25.8´ N 73°40.8´ W). Specimens' lengths in Smith and Kanazawa (1977).

*Bathyuroconger vicinus* (Vaillant 1888) - Large-toothed Conger (Fishbase). Bathydemersal, 613-914 m. USNM 193605 (1, 9°7.2´ N 81°10.2´ W), USNM 193611 (8, 9°19.8´ N 81°24´ W), USNM 218914 (1, 11°52.8´ N 69°25.2´ W), USNM 268836 (1, 11°3´ N 67°52.8´ W), USNM 268841 (2, 11°54´ N 69°22.8´ W), USNM 268843 (3, 9°1.8´ N 76°31.8´ W), USNM 268844 (1, 11°52.8´ N 69°25.2´ W), USNM 268845 (1, 11°54´ N 69°18´ W), USNM 268850 (1, 10°49.8´ N 67°48´ W), USNM 268855 (1, 11°40.8´ N 68°57´ W), ANSP 114922 (1, 11°3´ N 67°52.8´ W), ANSP 126130 (1, 12°54´ N 70°39´ W), ANSP 126131 (1, 12°54´ N 70°39´ W), ANSP 126132 (2, 8°55.8´ N 76°52.8´ W), UF 222630 (1, 9°7.2´ N 81°12´ W), INV PEC8327 (1, 11°32.4´ N 73°44.4´ W), INV PEC8326 (1, 10°54.6´ N 75°36´ W).

*Japonoconger caribbeus* Smith & Kanazawa 1977. Bathydemersal, 329-576 m. Holotype, USNM 198685 (500 TL, 11°9´ N 74°26.4´ W), Paratypes, USNM 198666 (1, 455 TL, 11°10.2´ N 68°7.8´ W), USNM 198667 (1, 425 TL, 12°28.2´ N 72°25.8´ W), USNM 198671 (1, 406 TL, 11°46.2´ N 69°16.8´ W), USNM 198677 (3, 430-502 TL, 12°16.2´ N 72°40.2´ W), ANSP 114153 (1, 383 TL, 11°10.2´ N 74°27´ W), ANSP 114154 (1, 395 TL, 11°36´ N 62°46.2´ W), ANSP 126136 (1, 444 TL, 11°27´ N 73°42´ W), ANSP 126973 (1, 356 TL, 12°13.2´ N 72°49.8´ W); USNM 400787 (1, 9°14.4´ N 81°34.8´ W), ANSP 130199 (2, 379-444 TL, 12°52' N 70°43' W), UF 228785 (1, 321TL, 12°13.3' N 72°50'W), INV PEC2476 (1, 11°29.4´ N 73°27´ W), INV PEC2477 (1, 11°27.6´ N 73°51.6´ W). Specimens' lengths in Smith and Kanazawa (1977).

*Parabathymyrus oregoni* Smith & Kanazawa 1977 – Flapnose Conger, Congrio Nariz Colgada (AFS) – Bathydemersal, 314 m. INV PEC2474 (2, 12°34.2´ N 71°49.8´ W).

*Pseudophichthys splendens* (Lea 1913) - Purplemouth Conger (Fishbase) - Demersal, 204-813 m. USNM 158876 (2, 12°19.2´ N 82°27´ W), USNM 193604 (1, 14°10.2´ N 81°49.8´ W), USNM 198053 (4, 9°3´ N 81°18´ W), USNM 268830 (1, 9°0´ N 81°22.8´ W), ANSP 112051 (1, 9°7.2´ N 81°10.2´ W), MCZ 59003 (1, 11°36´ N 62°46.2´ W), UF 222629 (2, 298-322 TL, 9°7.2´ N 81°12´ W), UF 222642 (12, 132-340 TL, 11°34.2´ N 62°10.8´ W), UF 223241 (1, 290 TL, 9°28.8´ N 76°26.4´ W), UF 228782 (2, 274-301 TL, 12°13.2´ N 72°49.8´ W), UF 229472 (1, 16°6´ N 61°18.6´ W), UF 229652 (1, 282 TL, 11°30´ N 73°26.4´ W), UF 232679 (1, 12°54´ N 70°37.8´ W), INV PEC2478 (1, 11°9.6´ N 74°40.2´ W), INV PEC7924 (3, 12°40.8´ N 72°3.6´ W), INV PEC7925 (4, 11°22.2´ N 74°22.2´ W), INV PEC7926 (2, 11°3.6´ N 75°25.2´ W), INV PEC8314 (5, 11°3´ N 75°29.4´ W), INV PEC8313 (2, 10°0´ N 76°15.6´ W), INV PEC8312 (5, 9°42.6´ N 76°22.8´ W), INV PEC8311 (2, 9°34.2´ N 76°27.6´ W), INV PEC8310 (6, 9°17.4´ N 76°31.8´ W), INV PEC8309 (2, 9°3.6´ N 76°44.4´ W), INV PEC8308 (1, 8°57´ N 76°51.6´ W), INV PEC8307 (8, 12°41.4´ N 71°49.2´ W), INV PEC8306 (1, 12°36´ N 71°28.8´ W), INV PEC8322 (9, 11°31.8´ N 73°28.8´ W), INV PEC8321 (12, 11°32.4´ N 73°44.4´ W), INV PEC8320 (5, 11°33.6´ N 73°57´ W), INV PEC8319 (16, 11°25.2´ N 74°19.2´ W), INV PEC8315 (19, 10°54.6´ N 75°36´ W), INV PEC8317 (8, 10°34.8´ N 75°39.6´ W), INV PEC8316 (5, 10°43.8´ N 75°37.2´ W), INV PEC8318 (1, 11°8.4´ N 75°16.2´ W).

*Rhynchoconger flavus* (Goode & Bean 1896) – Yellow Conger, Congrio Amarillo (AFS) – Demersal, 732 m. USNM 198735 (1, 9°1.8′ N 76°31.8′ W). This record extends the bathymetric range of the species.

*Rhynchoconger gracilior* (Ginsburg 1951) – Whiptail Conger, Congrio Grácil (AFS) – Bathydemersal, 209-375 m. USNM 158909 (2, 383-395 TL, 16°37.8′ N 81°39′ W), USNM 158910 (2, 374-383 TL, 16°36′ N 82°37.2′ W), USNM 193550 (1, 288 TL, 16°25.8′ N 81°34.8′ W), USNM 193560 (1, 417 TL, 16°45′ N 81°27′ W), USNM 193593 (6, 285-347 TL, 16°25.8′ N 81°34.8′ W), USNM 218910 (2, 294-460 TL, 10°58.8′ N 66°0′ W), USNM 268821 (2, 275-366 TL, 14°7.8′ N 81°55.8′ W), UF 229241 (1, 335 TL, 14°54′ N 81°23.4′ W), UF 229645 (1, 109 TL, 15°13.8′ N 81°25.8′ W), UF 229649 (1, 581 TL, 10°54.6′ N 66°18′ W).

*Xenomystax austrinus* Smith & Kanazawa 1989. Bathydemersal, 458-732 m. Holotype, USNM 198746 (802 TL, 9°1.8′ N 76°31.8′ W). Paratypes, ANSP 109591 (1, 552 TL, 11°10.8′ N 74°28.8′ W), ANSP 114856 (1, 315 TL, 11°40.2′ N 73°15′ W), ANSP 114877 (1, 430 TL, 11°25.8′ N 74°13.8′ W), ANSP 126444 (1, 890 TL, 8°55.8′ N 76°52.8′ W), ANSP 131993 (1, 760 TL, 11°12′ N 74°24′ W), ANSP 133011 (1, 723 TL, 12° 52' N 70° 43' W), USNM 193559 (1, 326 TL, 9°3′ N 81°18′ W), USNM 198680 (1, 742 TL, 10°16.2′ N 75°54.6′ W), USNM 198771 (1, 1000 TL, 12°28.2′ N 72°25.8′ W), USNM 200319 (1, 463 TL, 16° 58' N 87° 53' W), USNM 201239 (3, 487-765 TL, 12°28.8′ N 72°19.2′ W), INV PEC4278 (1, 11°28.2′ N 73°40.2′ W), INV PEC3855 (1, 12°31.8′ N 72°12′ W), INV PEC3856 (1, 11°28.2′ N 73°40.2′ W).

*Xenomystax bidentatus* (Reid 1940). Demersal, 296-732 m. USNM 158931 (1, 476 TL, 16°43.2′ N 82°43.8′ W), USNM 193592 (3, 481-505 TL, 16°58.2′ N 87°52.8′ W), UF 202769 (1, 525 TL, 16°46.2′ N 82°16.2′ W), UF 229674 (1, 419 TL, 11°18.6′ N 68°22.2′ W), UF 232910 (1, 12°52.2′ N 70°19.8′ W), INV PEC2479 (1, 11°27′ N 73°42′ W), INV PEC2480 (1, 11°27.6′ N 73°51.6′ W), INV PEC2482 (1, 11°24.6′ N 74°9.6′ W), INV PEC2481 (1, 11°27′ N 74°1.8′ W), INV PEC8323 (2, 12°41.4′ N 71°49.2′ W), INV PEC8325 (1, 11°12′ N 74°30′ W), INV PEC8324 (1, 11°8.4′ N 75°16.2′ W). These records extend the bathymetric range of the species.

*Xenomystax congroides* Smith & Kanazawa 1989 – Bristletooth Conger (AFS) – Bathydemersal, 210-439 m. Paratypes, USNM 217442 (2, 188-222 TL, 10°42′ N 67°52.8′ W), UF 229675 (1, 417 TL, 10°54.6′ N 66°18′ W). USNM 198668 (2, 390-438 TL, 10°24′ N 75°49.8′ W), USNM 198672 (2, 452-490 TL, 11°49.8′ N 73°4.8′ W), USNM 198675 (5, 353-538 TL, 12°16.8′ N 72°31.2′ W), USNM 158889 (5, 245-500 TL, 9°52.8′ N 59°52.8′ W), USNM 158925 (6, 334-437 TL, 9°40.8′ N 59°46.8′ W), USNM 193549 (2, 308-316 TL, 12°22.8′ N 82°28.8′ W), USNM 193554 (1, 255 TL, 14°7.8′ N 81°55.2′ W), USNM 193567 (4, 376-428 TL, 12°25.8′ N 82°25.8′ W), USNM 193568 (5, 251-410 TL, 9°1.8′ N 81°25.8′ W), USNM 193595 (13, 350-420 TL, 9°18′ N 80°22.2′ W), USNM 193602 (19, 210-445 TL, 9°4.2′ N 81°25.2′ W), USNM 195902 (1, 876 TL, 11°30′ N 62°28.8′ W), USNM 196176 (2, 476-750 TL, 11°30′ N 62°28.8′ W), USNM 217440 (1, 435 TL, 9°40.2′ N 79°7.2′ W), USNM 268827 (12, 175-372 TL, 11°27′ N 83°10.8′ W), ANSP 131757 (1, 225 TL, 13°25.8′ N 81°52.2′ W), UF 229677 (6, 372-425 TL, 14°54′ N 81°23.4′ W), UF 233480 (2, 9°13.2′ N 80°43.2′ W), INV PEC3294 (2, 9°57.6′ N 76°7.8′ W), INV PEC2486 (1, 11°12′ N 74°17.4′ W), INV PEC2484 (1, 12°24′ N 72°16.2′ W), INV PEC2485 (1, 12°24′ N 72°16.2′ W), INV PEC2483 (1, 12°24′ N 72°15′ W), INV PEC3293 (2, 9°57′ N 76°9.6′ W), INV PEC3292 (3, 9°57.6′ N 76°7.8′ W).

NETTASTOMATIDAE

*Facciolella* sp. Bathydemersal, 274-594 m. USNM 158937 (1, 13°19.8′ N 82°1.8′ W), USNM 193551 (1, 9°3′ N 81°22.2′ W), USNM 193564 (1, 12°22.8′ N 82°28.8′ W), ANSP 114861 (1, 14°1.2′ N 81°49.8′ W), ANSP 126520 (1 clear and stain specimen, 13°37.2′ N 81°52.8′ W), ANSP 106151 (1, 400 TL, 11°15′ N 68°12′

W), ANSP 106187 (1, 635 TL, 11°58.2′ N 69°30′ W), ANSP 110070 (1, 595 TL, 11°36′ N 62°52.2′ W), ANSP 112044 (1, 384 TL, 11°58.8′ N 69°30′ W), ANSP 115536 (1 clear and stain specimen, 11°36′ N 62°52.2′ W), ANSP 117050 (1, 11°18′ N 68°16.2′ W), ANSP 117058 (2, 367–595 TL, 11°36′ N 62°52.2′ W), ANSP 117072 (1, 11°46.2′ N 69°16.2′ W), ANSP 117083 (1, 268 TL, 11°10.2′ N 68°7.8′ W), ANSP 126186 (2, 11°25.8′ N 73°40.8′ W), ANSP 114861 (1, 14°1.2′ N 81°49.8′ W), MCZ 55541 (1, 11°36′ N 62°52.2′ W), INV PEC2487 (1, 12°24′ N 72°15′ W), INV PEC2488 (1, 11°27′ N 73°42′ W), INV PEC2489 (1, 11°27.6′ N 73°51.6′ W), INV PEC2490 (1, 11°20.4′ N 74°16.2′ W), INV PEC2491 (1, 11°12′ N 74°17.4′ W), INV PEC2492 (1, 11°5.4′ N 75°15.6′ W).

*Hoplunnis megista* Smith & Kanazawa 1989. Bathydemersal, 366-421 m. Holotype, USNM 193613 (1, 695 TL, 9°3′ N 81°22.2′ W), Paratypes, ANSP 126447 (1, 1095 TL, 11°3′ N 75°18′ W), ANSP 138773 (1 clear and stain specimen, 9°3′ N 81°22.2′ W), USNM 193598 (3, 660-905 TL, 12°22.8′ N 82°28.8′ W), USNM 220039 (2, 910-917 TL, 9°46.8′ N 79°25.2′ W), ANSP 147544 (1, 770 TL, 9°3′ N 81°22.2′ W), UF 177173 (1, 11°3′ N 75°18′ W).

*Hoplunnis similis* Smith 1989. Bathydemersal, 201-375 m. Paratypes, ANSP 135423 (1, 345 TL, 14°54′ N 81°23.4′ W), USNM 217404 (7, 378-493 TL, 14°10.2′ N 81°57.5′ W), USNM 193548 (4, 321-449 TL, 16°45′ N 81°27′ W). USNM 193555 (3, 312-501 TL, 12°25.8′ N 82°25.8′ W), USNM 193556 (1, 375 TL, 16°49.8′ N 81°21′ W), USNM 217406 (2, 418 TL, 14°12′ N 81°57′ W). These records extend the bathymetric range of the species.

*Hoplunnis tenuis* Ginsburg 1951 –Spotted Pickeconger, Serpentina Dientona (AFS) – Bathydemersal, 201-640 m. USNM 179236 (2, 397-495 TL, 9°4.2′ N 81°25.2′ W), USNM 198734 (2, 12°16.2′ N 72°40.2′ W), USNM 198745 (2, 12°16.8′ N 72°31.2′ W), USNM 193546 (1, 417 TL, 9°3′ N 81°22.2′ W), USNM 193553 (2, 286-413 TL, 9°4.2′ N 81°25.2′ W), USNM 217391 (1, 10°42′ N 67°52.8′ W), USNM 217392 (1, 13°12.6′ N 82°15.6′ W), USNM 217393 (3, 14°12′ N 81°57′ W), USNM 217394 (2, 10°58.8′ N 66°0′ W), USNM 217396 (3, 289-330 TL, 9°40.2′ N 79°7.2′ W), USNM 217397 (7, 10°42′ N 67°52.8′ W), ANSP 114958 (1, 448 TL, 14°24′ N 81°48′ W), ANSP 133019 (2, 175-340 TL, 14°16.8′ N 81°55.2′ W), ANSP 138393 (1, 452 TL, 14°24′ N 81°48′ W), UF 177006 (1, 9°16.8′ N 81°9′ W), UF 181849 (1, 11°25.8′ N 73°40.8′ W), UF 229679 (2, 14°54′ N 81°23.4′ W). These records extend the bathymetric range of the species.

*Nettastoma melanurum* Rafinesque 1810 - Blackfin Sorcerer (Fishbase) - Bathydemersal, 622-841 m. USNM 198754 (1, 727 TL, 9°1.8′ N 76°31.8′ W), USNM 219848 (3, 598-780 TL, 16°52.8′ N 61°52.8′ W), ANSP 126445 (1, 635 TL, 8°55.8′ N 76°52.8′ W), INV PEC8328 (1, 11°33.6′ N 73°57′ W).

*Venefica procera* (Goode & Bean 1883). Bathydemersal, 860-1794 m. USNM 193600 (2, 9°19.8′ N 81°24′ W), USNM 268839 (1, 9°19.8′ N 81°24′ W), USNM 400748 (1, 10°12′ N 82°46.8′ W), ANSP 106521 (1, 920 TL, 11°12′ N 67°39′ W), ANSP 107099 (5, 634-798 TL, 11°3′ N 67°52.8′ W), ANSP 110069 (1, 790 TL, 11°43.8′ N 68°43.2′ W), ANSP 115510 (1 clear and stain specimen, 11°3′ N 67°52.8′ W), ANSP 117816 (1, 970 TL, 10°55.8′ N 67°37.8′ W), UF 179408 (2, 16°58.2′ N 79°28.2′ W), UF 222356 (9, 9°0.2′ N 77°25.3′ W ), UF 222808 (1, 563 TL, 10°3′ N 76°27′ W), UF 223231 (2, 430-735 TL, 9°52.2′ N 79°35.4′ W).

ARGENTINIFORMES

ARGENTINIDAE

*Argentina brucei* Cohen & Atsaides 1969 - Bruce Argentina (Fishbase) - Benthopelagic, 219-457 m. Holotype, USNM 203029 (117 TL, 9°13.2′ N 81°30′ W), Paratype, MCZ 45937 (6, 113-127 TL, 11°9.5' N 74°24.5' W). USNM 159353 (1, 16°39′ N 82°25.8′ W), USNM 159356 (3, 9°40.8′ N 59°46.8′ W), USNM 185093 (1,

16°36'N 82°37'W), USNM 187753 (1, 9°18′ N 80°22.2′ W), USNM 187793 (7, 11°27′ N 83°10.8′ W), USNM 187833 (7, 9°12′ N 81°30′ W), USNM 187837 (2, 9°13.2′ N 81°30′ W), USNM 188016 (5, 12°22.8′ N 82°28.8′ W), USNM 200429 (6, 9°40.2′ N 79°7.2′ W), USNM 203031 (4, 12°31.2′ N 82°21′ W), USNM 203047 (5, 9°4.2′ N 81°25.2′ W), USNM 188973 (2, 11°9′ N 74°25.8′ W), USNM 203030 (2, 11°58.8′ N 69°30′ W), USNM 203033 (1, 11°52.2′ N 69°27′ W), USNM 203048 (2, 11°52.8′ N 69°28.2′ W), USNM 203049 (1, 10°45′ N 66°37.2′ W), USNM 238003 (1, 11°25.8′ N 73°58.8′ W), USNM 238004 (2, 11°12′ N 74°21′ W), USNM 238006 (5, 11°24′ N 73°46.8′ W), USNM 238007 (5, 13°25.8′ N 81°52.2′ W), USNM 238026 (1, 11°27′ N 73°42′ W), USNM 402347 (1, 12°19.2′ N 72°34.2′ W), ANSP 98604 (14, 16°45' N 81°27' W), INV PEC4199 (1, 10°31.8′ N 75°37.2′ W), INV PEC4203 (2, 11°22.8′ N 73°44.4′ W), INV PEC4201 (1, 10°33′ N 75°37.2′ W), INV PEC4202 (2, 11°22.8′ N 73°44.4′ W), INV PEC7933 (1, 12°32.4′ N 71°52.2′ W), INV PEC7934 (1, 12°19.8′ N 72°27.6′ W), INV PEC8343 (6, 10°22.2′ N 75°51.6′ W). Additional specimens in Cohen and Atsaides (1969).

*Argentina stewarti* Cohen & Atsaides 1969. Benthopelagic, 366-457 m. Holotype, USNM 202996 (144 SL, 14°10.2′ N 81°55.2′ W), Paratypes, USNM 187790 (6, 14°10.2′ N 81°55.2′ W), USNM 202997 (1, 14°10.2′ N 81°55.2′ W), USNM 202998 (4, 12°31.2′ N 82°21′ W), USNM 203572 (1, 12°22.8′ N 82°28.8′ W). Additional specimens in Cohen and Atsaides (1969).

*Argentina striata* Goode & Bean 1896 – Striated Argentine, Argentina Estriada, Argentine Striée (AFS) – Benthopelagic, 206-500 m. USNM 238024 (1, 12°13.2′ N 72°28.8′ W), USNM 238019 (3, 12°19.2′ N 72°34.2′ W), USNM 238020 (1, 11°25.2′ N 73°55.8′ W), USNM 200430 (1, 12°30′ N 72°7.8′ W), USNM 203002 (1, 11°52.2′ N 69°27′ W), USNM 203003 (5, 10°58.8′ N 66°0′ W), USNM 203046 (1, 10°45′ N 66°37.2′ W), UF 102431 (4, 11°36.6′ N 62°46.8′ W), UF 110418 (1, 14°16.2′ N 81°55.2′ W), UF 166540 (1, 11°34.8′ N 73°25.8′ W), INV PEC2500 (14, 11°28.8′ N 73°24′ W), INV PEC2501 (1, 11°28.8′ N 73°24′ W), INV PEC2502 (1, 11°26.4′ N 73°33′ W), INV PEC2503 (2, 11°27′ N 73°42′ W), INV PEC2504 (4, 11°22.2′ N 73°46.2′ W), INV PEC2505 (3, 11°25.2′ N 74°10.8′ W), INV PEC2506 (2, 11°25.2′ N 74°12.6′ W), INV PEC2507 (1, 11°24.6′ N 74°12′ W), INV PEC2508 (1, 11°12′ N 74°17.4′ W), INV PEC2509 (1, 11°12′ N 74°17.4′ W), INV PEC2510 (1, 10°28.2′ N 75°42.6′ W), INV PEC2511 (2, 10°28.8′ N 75°42.6′ W), INV PEC2512 (4, 11°5.4′ N 75°15.6′ W), INV PEC2513 (1, 11°7.8′ N 75°13.8′ W), INV PEC3249 (1, 11°26.4′ N 73°31.8′ W), INV PEC3295 (1, 9°3′ N 76°36.6′ W), INV PEC3296 (1, 9°16.2′ N 76°28.8′ W), INV PEC3297 (1, 9°27.6′ N 76°25.8′ W), INV PEC3298 (1, 9°27.6′ N 76°26.4′ W), INV PEC3299 (1, 9°45.6′ N 76°15′ W), INV PEC3300 (3, 9°16.2′ N 76°28.8′ W), INV PEC3301 (1, 9°27.6′ N 76°25.8′ W), INV PEC3302 (4, 9°45.6′ N 76°15′ W), INV PEC3303 (3, 9°57.6′ N 76°7.8′ W), INV PEC3304 (1, 9°27.6′ N 76°26.4′ W), INV PEC3305 (1, 10°9′ N 76°0.6′ W), INV PEC2493 (2, 11°9.6′ N 74°39′ W), INV PEC2494 (5, 12°34.2′ N 71°49.8′ W), INV PEC2495 (1, 12°34.2′ N 71°49.8′ W), INV PEC2496 (7, 12°24′ N 72°15′ W), INV PEC2497 (13, 12°24′ N 72°16.2′ W), INV PEC2498 (1, 12°15′ N 72°33.6′ W), INV PEC2499 (21, 12°15.6′ N 72°33′ W).

*Glossanodon pygmaeus* Cohen 1958 – Pygmy Argentine (AFS) – Benthopelagic, 219-576 m. USNM 185098 (1, 11°27′ N 83°10.8′ W), USNM 187832 (1, 14°10.2′ N 81°58.2′ W), USNM 187842 (2, 12°25.8′ N 82°25.8′ W), USNM 200436 (1, 9°40.2′ N 79°7.2′ W), USNM 238035 (2, 14°16.8′ N 81°55.2′ W), UF 102449 (11, 14°10.2′ N 81°58.2′ W), UF 181713 (1, 14°22.8′ N 81°45′ W), UF 229201 (1, 14°34.8′ N 81°31.8′ W), UF 229252 (272, 14°54′ N 81°23.4′ W).

OPISTHOPROCTIDAE

*Opisthoproctus soleatus* Vaillant 1888 - Barrel-eye (Fishbase) - Mesopelagic, 374-702 m. MCZ 66396 (1, 21 SL, 11°3′ N 77°43.8′ W), UF 227090 (1, 9°16.2′ N 81°37.2′ W), INV PEC8345 (1, 9°34.2′ N 76°27.6′ W).

MICROSTOMATIDAE

*Xenophthalmichthys danae* Regan 1925. Meso to bathypelagic, 365-550 m. *Holotype ZMUC P19548*, MCZ 60356 (1, 13°51´ N 70°15´ W), MCZ 60357 (1, 12°43.8´ N 74°10.2´ W), INV PEC2514 (1, 11°27´ N 74°1.8´ W).

BATHYLAGIDAE

*Dolicholagus longirostris* (Maul 1948) - Longsnout Blacksmelt (Fishbase) – Meso to bathypelagic, 700-2000 m. UF 222365 (1, 9°0´ N 77°25.2´ W), UF 222721 (1, 13°4.8´ N 71°32.4´ W), UF 222828 (1, 12°55.2´ N 72°4.2´ W), UF 222854 (2, 12°39´ N 61°46.8´ W), UF 222877 (1, 13°1.8´ N 61°40.2´ W), UF 222998 (3, 11°31.8´ N 67°39.6´ W), UF 224683 (3, 11°31.8´ N 67°39.6´ W), UF 226480 (1, 12°50.4´ N 62°1.8´ W), INV PEC7935 (1, 12°40.8´ N 72°3.6´ W). These records extend the bathymetric range of the species.

ALEPOCEPHALIDAE

*Alepocephalus australis* Barnard 1923 - Small Scaled Brown Slickhead (Fishbase) – Bathypelagic, 1097-1317 m. USNM 215585 (1, 10°10.2´ N 76°13.8´ W), USNM 215586 (1, 11°13.8´ N 75°21´ W), USNM 215587 (2, 11°7.2´ N 75°30´ W), USNM 215588 (2, 9°58.2´ N 76°28.8´ W).

*Bathytroctes microlepis* Günther 1878 - Smallscale Smooth-head - Bathypelagic, 1097 m. USNM 215497 (3, 10°10.2´ N 76°13.8´ W).

*Conocara macropterum* (Vaillant 1888) - Longfin Smooth-head (Fishbase) - Bathypelagic, 1097-1768 m. USNM 215596 (1, 11°7.2´ N 75°30´ W), USNM 215597 (6, 9°58.2´ N 76°28.8´ W), USNM 215600 (9, 10°10.2´ N 76°13.8´ W), UF 222354 (4, 9°0´ N 77°25.2´ W), UF 222810 (1, 10°3´ N 76°27´ W).

*Leptoderma macrops* Vaillant 1886 - Grenadier Smooth-head (Fishbase) – Meso to bathypelagic, 640-914 m. UF 39268 (12, 12°6´ N 72°55.2´ W).

*Narcetes stomias* (Gilbert 1890) - Blackhead Salmon (Fishbase) - Bathypelagic, 1783-1865 m. USNM 215509 (6, 9°10.8´ N 76°51´ W), UF 227049 (1, 11°24.6´ N 67°10.2´ W).

*Rouleina attrita* (Vaillant 1888) - Softskin Smooth-head (Fishbase) – Meso to bathypelagic, 686 -1865 m. USNM 215486 (2, 11°7.2´ N 75°30´ W), USNM 215484 (2, 9°58.2´ N 76°28.8´ W), UF 222353 (2, 9°0´ N 77°25.2´ W), UF 227806 (3, 11°24.6´ N 67°10.2´ W), UF 232823 (1, 16°55.2´ N 62°43.2´ W).

*Talismania antillarum* (Goode & Bean 1896) - Antillean Smooth-head (Fishbase) – Meso to bathypelagic, 457-805 m. USNM 215553 (4, 11°22.8´ N 74°16.2´ W), USNM 215554 (1, 16°49.2´ N 82°18´ W), USNM 215555 (1, 9°4.8´ N 81°18´ W), USNM 215557 (4, 9°6´ N 81°15´ W).

*Talismania homoptera* (Vaillant 1888) - Hairfin Smooth-head (Fishbase) – Meso to bathypelagic, 594-1061 m. USNM 211202 (1, 12°13.2´ N 82°31.8´ W), USNM 215563 (1, 9°4.8´ N 81°18´ W), USNM 215569 (2, 9°16.8´ N 81°9´ W), UF 222577 (1, 10°16.2´ N 76°3´ W), UF 232694 (1, 13°0´ N 70°40.2´ W), INV PEC8344 (2, 10°54.6´ N 75°36´ W).

*Xenodermichthys copei* (Gill 1884) - Bluntsnout Smooth-head (Fishbase ) – Meso to bathypelagic, 366-914 m. USNM 215524 (10, 11°12´ N 74°24´ W), USNM 215525 (9, 11°40.8´ N 73°24´ W), USNM 215527 (8, 8°55.8´ N 76°52.8´ W), USNM 215529 (1, 11°13.2´ N 74°25.8´ W), USNM 215535 (1, 11°22.8´ N 74°16.2´

W), USNM 215539 (1, 11°13.2′ N 74°25.8′ W), USNM 205466 (2, 12°13.2′ N 82°31.8′ W), USNM 215522 (43, 11°52.8′ N 69°25.2′ W), USNM 215526 (8, 9°4.8′ N 81°18′ W), USNM 215528 (17, 12°54′ N 70°19.8′ W), USNM 215532 (1, 9°6′ N 81°15′ W), USNM 215536 (3, 9°16.8′ N 81°9′ W), UF 138775 (4, 12°55.2′ N 70°16.2′ W), UF 166412 (6, 12°36′ N 72°7.8′ W), UF 166413 (2, 11°52.8′ N 69°25.2′ W), UF 166511 (1, 11°9′ N 74°29.4′ W), UF 166517 (4, 11°24′ N 64°25.2′ W), UF 166518 (1, 11°54′ N 69°18′ W), UF 167028 (1, 12°6′ N 72°55.2′ W), UF 167276 (12, 12°1.8′ N 69°21′ W), UF 172439 (7, 12°54′ N 70°39′ W), UF 181551 (1, 11°52.8′ N 69°25.2′ W), UF 234151 (1, 12°52.8′ N 70°31.2′ W).

STOMIIFORMES

GONOSTOMATIDAE

*Gonostoma atlanticum* Norman 1930 - Atlantic Fangjaw (Fishbase) - Meso to bathypelagic, 200-1500 m. MCZ 97069 (8, 26-38 SL, 11°3′ N 77°43.8′ W), MCZ 141923 (35, 45-66 SL, 13°51′ N 70°15′ W), MCZ 141972 (5, 27-40 SL, 13°31.8′ N 71°24′ W), MCZ 141973 (1, 63 SL, 13°12′ N 72°46.8′ W), MCZ 141974 (6, 31-53 SL, 13°4.2′ N 73°12′ W), MCZ 141977 (7, 23-44 SL, 12°55.8′ N 73°49.2′ W), MCZ 141978 (5, 22-37 SL, 12°52.2′ N 74°0′ W), MCZ 141979 (1, 36 SL, 12°43.8′ N 74°10.2′ W), MCZ 141980 (3, 27-43 SL, 12°37.8′ N 74°10.8′ W), MCZ 141981 (1, 26 SL, 11°3′ N 77°43.8′ W), MCZ 141984 (1, 26 SL, 14°19.8′ N 78°16.2′ W), MCZ 142082 (1, 57 SL, 11°45′ N 65°33′ W), MCZ 142083 (7, 44-68 SL, 11°22.2′ N 65°1.2′ W), MCZ 142085 (4, 12-95 SL, 11°30′ N 65°19.2′ W), UF 222710 (17, 13°7.8′ N 62°4.8′ W), UF 222731 (6, 13°4.8′ N 71°32.4′ W), UF 222976 (1, 11°32.4′ N 67°39′ W), UF 223013 (1, 12°39′ N 61°46.8′ W), UF 227597 (4, 13°8.4′ N 61°55.2′ W), INV PEC4426 (1, 12°31.8′ N 72°12′ W).

*Gonostoma elongatum* Günther 1878 - Elongated Bristlemouth (Fishbase) - Meso to bathypelagic, 200-2970 m. USNM 313688 (33, 12°36′ N 72°7.8′ W), USNM 330309 (5, 12°36′ N 72°7.8′ W), USNM 402346 (9, 9°1.8′ N 76°31.8′ W), USNM 402350 (2, 12°36′ N 72°7.8′ W), USNM 201287 (1, 11°43.8′ N 68°43.2′ W), USNM 325559 (1, 15°40.2′ N 61°9′ W), USNM 325561 (2, 15°42′ N 61°18′ W), USNM 325566 (2, 15°42′ N 61°7.8′ W), USNM 385880 (50, 12°36′ N 72°7.8′ W), MCZ 28027 (1, 14°32.4′ N 61°6.6′ W), MCZ 42194 (3, 11°21′ N 67°7.8′ W), MCZ 42317 (1, 15°53.4′ N 65°1.2′ W), MCZ 45402 (1, 12°0′ N 65°4.8′ W), MCZ 45980 (1, 126 SL, 11°9.6′ N 74°28.8′ W), MCZ 51342 (1, 11°42′ N 68°43.2′ W), MCZ 57930 (1, 11°36′ N 62°46.2′ W), MCZ 141365 (4, 120-170 SL, 11°45′ N 65°33′ W), MCZ 141372 (6, 57-108 SL, 17°7.8′ N 79°34.8′ W), MCZ 141384 (15, 24-162 SL, 11°37.2′ N 65°31.8′ W), MCZ 141395 (34, 33-92 SL, 12°43.8′ N 74°10.2′ W), MCZ 141403 (30, 17-119 SL, 13°4.2′ N 73°12′ W), MCZ 141415 (16, 20-110 SL, 12°55.8′ N 73°49.2′ W), MCZ 141447 (14, 27-94 SL, 12°9′ N 78°30′ W), MCZ 141449 (4, 12-95 SL, 11°30′ N 65°19.2′ W), MCZ 141450 (4, 29-125 SL, 11°45′ N 65°33′ W), MCZ 141451 (8, 26-86 SL, 17°7.2′ N 64°10.2′ W), MCZ 141453 (13, 22-79 SL, 13°51′ N 70°15′ W), MCZ 141454 (5, 24-103 SL, 17°4.2′ N 79°25.8′ W), UF 222627 (2, 9°7.2′ N 81°12′ W), UF 222724 (3, 13°4.8′ N 71°32.4′ W), UF 222787 (8, 11°32.4′ N 67°33′ W), UF 222821 (1, 12°55.2′ N 72°4.2′ W), UF 222978 (10, 11°32.4′ N 67°39′ W), UF 222994 (3, 11°31.8′ N 67°39.6′ W), UF 223034 (1, 10°26.4′ N 76°0′ W), UF 224442 (2, 13°3′ N 71°47.4′ W), UF 227721 (1, 11°40.2′ N 68°15.6′ W), UF 227735 (7, 9°55.8′ N 76°19.8′ W), UF 227786 (1, 9°54.6′ N 77°3′ W), UF 228017 (1, 13°1.2′ N 71°55.2′ W), UF 228032 (1, 11°32.4′ N 67°33′ W), UF 229180 (1, 11°32.4′ N 67°33′ W), INV PEC2515 (1, 11°7.2′ N 75°8.4′ W), INV PEC3893 (1, 12°31.8′ N 72°12′ W), INV PEC4331 (1, 11°28.2′ N 73°40.2′ W), INV PEC7938 (1, 11°22.2′ N 74°22.2′ W), INV PEC7936 (1, 12°40.8′ N 72°3.6′ W), INV PEC7937 (1, 12°21′ N 73°0′ W), INV PEC8346 (1, 9°34.2′ N 76°27.6′ W), INV PEC8347 (1, 11°32.4′ N 73°44.4′ W). Additional specimens in Grey (1964).

*Triplophos hemingi* (McArdle 1901). Meso to bathypelagic, 300-733 m. USNM 203296 (5, 9°1.8′ N 76°31.8′ W), USNM 203283 (3, 11°54′ N 69°22.8′ W), USNM 203383 (2, 11°54′ N 69°22.8′ W), USNM 203384 (16, 12°36′ N 72°7.8′ W), USNM 203385 (1, 11°24′ N 64°25.2′ W), USNM 316479 (2, 12°36′ N 72°7.8′ W), UF

180249 (1, 16°34.8′ N 80°4.2′ W), UF 180250 (1, 11°9′ N 74°29.4′ W), UF 182193 (3, 12°52.8′ N 70°28.8′ W), UF 222763 (1, 10°16.8′ N 76°0′ W), INV PEC2517 (2, 11°27′ N 73°42′ W), INV PEC2516 (5, 11°25.8′ N 74°11.4′ W), INV PEC4332 (1, 11°22.8′ N 73°44.4′ W), INV PEC8348 (1, 11°32.4′ N 73°44.4′ W). Additional specimens in Grey (1964).

STERNOPTYCHIDAE

*Argyripnus atlanticus* Maul 1952. Meso to benthopelagic, 260-280 m. INV PEC3353 (1, 9°57.6′ N 76°7.8′ W).

*Argyropelecus aculeatus* Valenciennes 1850 -Lovely Hatchetfish (Fishbase) - Meso to bathypelagic, 200-1750. USNM 197452 (1, 9°3′ N 81°22.2′ W), MCZ 42200 (1, 14°0′ N 65°4.8′ W), MCZ 42293 (1, 16°0′ N 65°1.2′ W), MCZ 42530 (1, 15°53.4′ N 65°1.2′ W), MCZ 137454 (3, 47-56 SL, 11°37.2′ N 65°31.8′ W), MCZ 137465 (25, 7-49 SL, 12°37.8′ N 74°10.8′ W), MCZ 137478 (78, 9-49 SL, 13°31.8′ N 71°24′ W), MCZ 137486 (36, 9-50 SL, 12°52.2′ N 74°0′ W), MCZ 137495 (44, 7-55 SL, 15°1.2′ N 67°28.2′ W), MCZ 137497 (39, 9-68 SL, 14°19.8′ N 78°16.2′ W), MCZ 137498 (27, 6-57 SL, 16°57′ N 79°25.2′ W), MCZ 137499 (14, 9-39 SL, 11°3′ N 77°43.8′ W), MCZ 137614 (6, 7-18 SL, 15°10.8′ N 66°58.8′ W), MCZ 137615 (10, 7-19 SL, 15°10.8′ N 66°58.8′ W), MCZ 137616 (2, 12-14 SL, 13°51′ N 70°15′ W), MCZ 137617 (47, 10-28 SL, 13°31.8′ N 71°24′ W), MCZ 137621 (11, 10-34 SL, 12°43.8′ N 74°10.2′ W), MCZ 137623 (1, 10 SL, 11°3′ N 77°43.8′ W), MCZ 137624 (4, 8-14 SL, 11°1.8′ N 77°54′ W), MCZ 137806 (3, 32-36 SL, 12°43.8′ N 74°10.2′ W), MCZ 137814 (56, 8-31 SL, 13°4.2′ N 73°12′ W), UF 202322 (1, 16°43.2′ N 82°51′ W), UF 202324 (1, 16°39′ N 82°28.8′ W), UF 222369 (1, 9°0′ N 77°25.2′ W), UF 222743 (3, 13°1.2′ N 71°55.2′ W), UF 222788 (6, 11°32.4′ N 67°33′ W), UF 222820 (3, 12°55.2′ N 72°4.2′ W), UF 222924 (2, 9°54′ N 79°25.8′ W), UF 222962 (1, 9°57′ N 76°10.8′ W), UF 222970 (7, 11°32.4′ N 67°39′ W), UF 222983 (18, 9°52.8′ N 76°20.4′ W), UF 222989 (3, 11°31.8′ N 67°39.6′ W), UF 223133 (3, 12°50.4′ N 62°1.8′ W), UF 223203 (11, 9°55.8′ N 76°19.8′ W), UF 227783 (1, 9°50.5′ N 78°39.3′ W), UF 227784 (2, 9°25.2′ N 77°34.8′ W), UF 230487 (1, 16°48′ N 82°33′ W), INV PEC2518 (1, 12°31.8′ N 72°7.8′ W), INV PEC3307 (1, 9°53.4′ N 76°13.8′ W), INV PEC3989 (1, 10°32.4′ N 75°39′ W), INV PEC3990 (1, 11°22.8′ N 73°44.4′ W), INV PEC8354 (1, 9°3.6′ N 76°44.4′ W), INV PEC8355 (1, 9°17.4′ N 76°31.8′ W). These records extend the bathymetric range of the species.

*Maurolicus muelleri* (Gmelin 1789) – Daisy Pearlside, Marguerite Perlée (AFS) – Meso to bathypelagic, 234 m. USNM 300871 (1, 11°24′ N 73°46.8′ W).

*Polyipnus asteroides* Schultz 1938. Benthopelagic, 274-567 m. USNM 298936 (3, 10°0′ N 76°10.2′ W), USNM 298940 (8, 11°25.2′ N 73°55.8′ W), USNM 298945 (1, 11°12′ N 74°24′ W), USNM 298946 (1, 54.9 SL, 11°22.8′ N 74°16.2′ W), USNM 320807 (3, 11°9.6′ N 74°24.6′ W), USNM 327634 (9, 11°27′ N 73°42′ W), USNM 331201 (5, 11°12′ N 74°21′ W), USNM 331202 (2, 11°9.6′ N 74°24.6′ W), USNM 327060 (1, 11°24′ N 73°46.8′ W), USNM 197453 (82, 9°3′ N 81°22.2′ W), USNM 295951 (1, 11°52.8′ N 69°28.2′ W), USNM 298949 (1, 9°12′ N 81°10.8′ W), USNM 327006 (3, 14°24′ N 81°48′ W), USNM 327090 (1, 13°37.2′ N 81°52.8′ W), MCZ 98422 (2, 70-74 SL, 11°25.2′ N 73°55.8′ W), UF 97228 (4, 12°1.2′ N 61°53.4′ W), UF 110467 (13, 9°3′ N 81°22.2′ W), UF 202331 (2, 16°42′ N 82°33′ W), INV PEC2519 (1, 11°25.8′ N 74°11.4′ W),INV PEC2520 (2, 12°34.2′ N 71°49.8′ W), INV PEC2521 (19, 12°24′ N 72°15′ W),INV PEC2522 (25, 12°24′ N 72°16.2′ W), INV PEC2523 (1, 11°29.4′ N 73°22.8′ W), INV PEC2524 (5, 11°22.2′ N 73°45′ W), INV PEC2525 (1, 11°12′ N 74°17.4′ W), INV PEC2526 (31, 11°5.4′ N 75°15.6′ W), INV PEC2527 (1, 11°5.4′ N 75°15.6′ W), INV PEC2528 (8, 11°5.4′ N 75°15.6′ W), INV PEC2529 (4, 11°7.8′ N 75°13.8′ W), INV PEC3258 (1, 11°25.8′ N 74°11.4′ W), INV PEC3308 (2, 9°57′ N 76°9.6′ W), INV PEC4549 (1, 10°32.4′ N 75°39′ W). These records extend the bathymetric range of the species.

*Polyipnus clarus* Harold 1994 – Slope Hatchetfish, Dix-bars à Épines Courtes (AFS) – Mesopelagic to bathydemersal, 265-1500 m. MCZ 42291 (1, 32.6 SL, 11°21´ N 67°7.8´ W), MCZ 66695 (1, 43 SL, 11°30´ N 65°19.2´ W), MCZ 90568 (1, 39.5 SL, 12°1.2´ N 65°1.2´ W), MCZ 90569 (1, 34 SL, 13°51´ N 70°15´ W), MCZ 90570 (1, 37 SL, 12°52.2´ N 74°0´ W), MCZ 90571 (4, 16-22 SL, 11°19.8´ N 64°40.2´ W), MCZ 90572 (3, 18-20 SL, 11°22.2´ N 65°1.2´ W), INV PEC7946 (1, 12°20.4´ N 72°27´ W), INV PEC7947 (3, 12°19.8´ N 72°27.6´ W). These records extend the bathymetric range of the species.

*Polyipnus laternatus* Garman 1899. Mesopelagic to bathydemersal, 366-549 m. USNM 298237 (3, 10°0´ N 76°10.2´ W), USNM 298924 (12, 14°55.8´ N 81°10.2´ W), USNM 179050 (17, 12°22.8´ N 82°28.8´ W), UF 110470 (9, 12°22.8´ N 82°28.8´ W). These records extend the bathymetric range of the species.

*Sonoda megalophthalma* Grey 1959. Meso to benthopelagic, 503-549 m. *Holotype, FMNH 65981 (58 SL, 13°25´ N 82°1´ W), Paratypes, FMNH 65982-86 (2, 13°25´ N 82°1´ W),* USNM 201350 (1, 14°7.8´ N 81°49.2´ W). Information about the holotype and paratypes in Grey (1959).

*Sternoptyx diaphana* Hermann 1781 - Diaphanous Hatchetfish (Fishbase) - Meso to bathypelagic, 225 - 2000 m. Neotype, MCZ 46402 (1, 28.4 SL, 11°06'N, 78°21'W), MCZ 28123 (1, 16 SL, 13°55.2´ N 61°6´ W), MCZ 51340 (3, 11°42´ N 68°43.2´ W), MCZ 55298 (1, 15°53.4´ N 65°1.2´ W), MCZ 66686 (35, 13-27 SL, 11°37.2´ N 65°31.8´ W), MCZ 134489 (2, 9-10 SL, 11°30´ N 65°19.2´ W), MCZ 134490 (6, 9-12 SL, 11°37.2´ N 65°31.8´ W), MCZ 134730 (16, 15-29 SL, 13°12´ N 72°46.8´ W), MCZ 134737 (4, 17-34 SL, 11°19.8´ N 64°40.2´ W), MCZ 134748 (2, 9-18 SL, 13°12´ N 72°46.8´ W), MCZ 134749 (2, 20-27 SL, 13°4.2´ N 73°12´ W), MCZ 134750 (1, 19 SL, 12°43.8´ N 74°10.2´ W), MCZ 134751 (1, 18 SL, 12°37.8´ N 74°10.8´ W), MCZ 134752 (2, 13-22 SL, 12°9´ N 78°30´ W), MCZ 134801 (2, 16-18 SL, 11°45´ N 65°33´ W), MCZ 134803 (3, 18-19 SL, 11°30´ N 65°19.2´ W), UF 222700 (32, 12°48´ N 61°43.8´ W), UF 222736 (16, 13°4.8´ N 71°32.4´ W), UF 222742 (1, 13°1.2´ N 71°55.2´ W), UF 222817 (1, 10°3´ N 76°27´ W), UF 222824 (7, 12°55.2´ N 72°4.2´ W), UF 222928 (12, 9°54´ N 79°25.8´ W), UF 222992 (5, 11°31.8´ N 67°39.6´ W), UF 223033 (4, 10°26.4´ N 76°0´ W), UF 223148 (11, 13°1.8´ N 61°40.2´ W), UF 223196 (6, 11°40.2´ N 68°15.6´ W), UF 223198 (3, 13°3´ N 71°47.4´ W), UF 223772 (5, 9°25.2´ N 77°34.8´ W), UF 224555 (9, 12°48´ N 61°43.8´ W), UF 227787 (3, 12°59.4´ N 61°38.4´ W), INV PEC7948 (1, 12°40.8´ N 72°3.6´ W), INV PEC8357 (1, 11°25.2´ N 74°19.2´ W), INV PEC8356 (1, 9°42.6´ N 76°22.8´ W).

PHOSICHTHYIDAE

*Ichthyococcus ovatus* (Cocco 1838) - Lightfish (Fishbase) - Meso to bathypelagic, 210-1519 m. USNM 339162 (3, 11°3´ N 77°43.8´ W), MCZ 42302 (1, 14°0´ N 65°4.8´ W), MCZ 58630 (4, 12°43.8´ N 74°10.2´ W), MCZ 140635 (1, 39 SL, 13°4.2´ N 73°12´ W), MCZ 140636 (3, 18 -33 SL, 16°57´ N 79°25.2´ W), UF 223036 (1, 10°26.4´ N 76°0´ W).

*Pollichthys mauli* (Poll 1953) – Stareye Lightfish, Cyclothone étoilé (AFS) – Meso to bathypelagic, 200-1500 m. MCZ 140155 (21, 14-40 SL, 15°1.2´ N 67°28.2´ W), MCZ 140157 (1, 36 SL, 13°31.8´ N 71°24´ W), MCZ 140159 (7, 14-38 SL, 13°4.2´ N 73°12´ W), MCZ 140162 (1, 31 SL, 12°55.8´ N 73°49.2´ W), MCZ 140163 (4, 17-57 SL, 12°52.2´ N 74°0´ W), MCZ 140164 (6, 27-31 SL, 12°43.8´ N 74°10.2´ W), MCZ 140166 (2, 34-35 SL, 11°3´ N 77°43.8´ W), MCZ 140167 (5, 25-37 SL, 11°1.8´ N 77°54´ W), MCZ 140169 (1, 12°9´ N 78°30´ W), MCZ 140171 (7, 16-31 SL, 14°19.8´ N 78°16.2´ W), MCZ 140175 (1, 44 SL, 17°7.8´ N 79°34.8´ W), MCZ 140177 (4, 23-41 SL, 17°52.8´ N 80°43.8´ W), MCZ 140283 (1, 37 SL, 11°30´ N 65°19.2´ W), MCZ 140393 (19, 24-45 SL, 11°3´ N 77°43.8´ W), MCZ 140399 (39, 15-42 SL, 16°57´ N 79°25.2´ W), INV PEC2530 (1, 11°7.2´ N 75°7.8´ W), INV PEC3309 (1, 10°10.2´ N 76°1.8´ W), INV PEC3957 (1, 10°33´ N 75°37.2´ W), INV PEC7942 (1, 11°9´ N 74°27´ W), INV PEC8349 (1, 8°57´ N 76°51.6´ W), INV PEC8350 (1, 9°34.2´ N 76°27.6´ W). These records extend the bathymetric range of the species.

*Polymetme thaeocoryla* Parin & Borodulina 1990. Mesopelagic to bathydemersal, 274-914 m. USNM 325538 (2, 11°12´ N 74°21´ W), USNM 325537 (1, 11°3´ N 67°52.8´ W), USNM 199507 (18, 9°3´ N 81°22.2´ W), USNM 203281 (11, 12°25.8´ N 82°24´ W), USNM 203282 (1, 11°46.2´ N 69°16.8´ W), USNM 342890 (4, 11°58.8´ N 69°30´ W), USNM 304214 (15, 11°36.6´ N 62°46.8´ W), USNM 304215 (4, 12°25.8´ N 82°24´ W), USNM 327033 (4, 13°37.2´ N 81°52.8´ W), UF 15584 (1, 12°25.8´ N 82°24´ W), UF 39087 (3, 11°25.2´ N 73°55.8´ W), UF 136764 (8, 14°22.8´ N 81°45´ W), UF 136781 (1, 12°22.8´ N 82°28.8´ W), UF 183482 (4, 12°1.2´ N 61°53.4´ W), UF 202333 (2, 16°42´ N 82°33´ W), UF 203904 (1, 16°43.2´ N 82°51´ W), UF 209164 (1, 11°36´ N 62°52.2´ W), UF 222935 (9, 9°57´ N 76°10.8´ W), INV PEC2533 (1, 11°5.4´ N 75°15.6´ W), INV PEC2534 (1, 11°7.8´ N 75°13.8´ W), INV PEC2531 (1, 12°34.2´ N 71°50.4´ W), INV PEC2532 (1, 11°12´ N 74°17.4´ W), INV PEC3310 (1, 9°57.6´ N 76°7.8´ W), INV PEC7940 (1, 10°19.8´ N 75°54´ W), INV PEC8351 (1, 9°3.6´ N 76°44.4´ W), INV PEC8692 (1, 9°34.2´ N 76°27.6´ W), INV PEC8352 (1, 11°31.8´ N 73°28.8´ W).

*Yarrella blackfordi* Goode & Bean 1896. Meso to bathypelagic (Fishbase), 500- 1006 m. USNM 201292 (3, 11°43.8´ N 68°43.2´ W), MCZ 57929 (1, 11°36´ N 62°46.2´ W), MCZ 85925 (1, 180 SL, 9°1.8´ N 76°31.8´ W), MCZ 90006 (1, 11°49.2´ N 69°24´ W), UF 39082 (1, 14°55.8´ N 81°10.2´ W), UF 222626 (1, 9°7.2´ N 81°12´ W), UF 222654 (10, 11°34.2´ N 62°10.8´ W), INV PEC7939 (1, 11°3.6´ N 75°25.2´ W). These records extend the bathymetric range of the species.

STOMIIDAE

*Aristostomias grimaldii* Zugmayer 1913. Meso to bathypelagic, 640 m. USNM 405585 (1, 11°40.8´ N 73°24´ W).

*Aristostomias xenostoma* Regan & Trewavas 1930. Meso to bathypelagic, 400-100 m. USNM 296597 (1, 9°1.8´ N 76°31.8´ W), MCZ 48891 (1, 12°1.2´ N 65°1.2´ W), UF 166393 (1, 13°57´ N 69°22.2´ W), UF 222733 (1, 13°4.8´ N 71°32.4´ W).

*Astronesthes macropogon* Goodyear & Gibbs 1970. Meso to bathypelagic, 225-1865 m. Paratype, USNM 203621 (18, 12°36´ N 72°7.8´ W), MCZ 47762 (1, 12°1.2´ N 65°1.2´ W), MCZ 133317 (1, 32 SL, 12°55.8´ N 73°49.2´ W), MCZ 133318 (1, 29 SL, 12°37.8´ N 74°10.8´ W), MCZ 133319 (1, 23 SL, 14°19.8´ N 78°16.2´ W), MCZ 133334 (1, 32 SL, 11°19.8´ N 64°40.2´ W), MCZ 133336 (2, 18-21 SL, 11°37.2´ N 65°31.8´ W), UF 165829 (1, 12°3´ N 74°15´ W), UF 222720 (1, 13°4.8´ N 71°32.4´ W).

*Chauliodus sloani* Bloch & Schneider 1801 - Sloane's Viperfish (Fishbase) - Meso to bathypelagic, 200-2072 m. USNM 187046 (1, 11°31.8´ N 62°40.2´ W), USNM 199500 (4, 12°25.8´ N 82°24´ W), USNM 200848 (1, 14°10.2´ N 81°55.2´ W), USNM 200867 (1, 9°1.8´ N 76°31.8´ W), USNM 200975 (11, 9°16.2´ N 81°37.2´ W), USNM 200976 (6, 9°3´ N 81°22.2´ W), USNM 200977 (29, 9°0´ N 81°22.8´ W), USNM 200984 (12, 11°31.2´ N 60°51´ W), USNM 200985 (1, 12°1.2´ N 61°53.4´ W), USNM 201282 (16, 9°0´ N 81°22.8´ W), USNM 201283 (2, 11°10.2´ N 65°7.2´ W), USNM 301655 (1, 11°25.2´ N 73°55.8´ W), USNM 306795 (3, 12°43.8´ N 82°16.2´ W), USNM 359199 (1, 11°52.8´ N 69°28.2´ W), USNM 359203 (4, 11°40.2´ N 62°33´ W), USNM 359217 (2, 10°9´ N 76°13.8´ W), USNM 359218 (6, 10°0´ N 76°10.2´ W), USNM 359219 (1, 11°19.2´ N 74°52.8´ W), USNM 359229 (6, 9°0´ N 81°22.8´ W), USNM 359230 (3, 12°36´ N 72°7.8´ W), USNM 359237 (2, 9°12´ N 81°10.8´ W), USNM 359239 (2, 9°10.8´ N 76°51´ W), USNM 359240 (1, 9°31.8´ N 76°37.8´ W), USNM 359241 (3, 10°10.2´ N 76°13.8´ W), USNM 359242 (1, 11°13.2´ N 74°25.8´ W), USNM 359243 (1, 11°25.2´ N 73°55.8´ W), USNM 359244 (1, 11°40.8´ N 73°24´ W), USNM 359245 (1, 12°10.2´ N 72°52.2´ W), USNM 359312 (1, 11°52.2´ N 69°27´ W), USNM 359313 (1, 11°3´ N 67°52.8´ W), USNM 359314 (1, 11°24´ N 64°25.2´ W), USNM 359316 (1, 11°9.6´ N 74°24.6´ W), USNM 359317 (1, 11°49.8´ N 73°4.8´ W), USNM 359321 (2, 11°36.6´ N 62°46.8´ W), USNM 359322 (4, 12°36´ N 72°7.8´ W), USNM

359324 (2, 12°24´ N 82°24´ W), USNM 359353 (5, 12°34.8´ N 82°16.2´ W), ANSP 109582 (1, 11°34.2´ N 62°49.2´ W), MCZ 42207 (2, 12°0´ N 65°4.8´ W), MCZ 42210 (2, 11°21´ N 67°7.8´ W), MCZ 42265 (1, 12°1.2´ N 65°1.2´ W), MCZ 51341 (3, 11°42´ N 68°43.2´ W), MCZ 55175 (1, 13°12´ N 72°46.8´ W), MCZ 128963 (4, 101-236 SL, 11°19.8´ N 64°40.2´ W), MCZ 129271 (4, 132-173 SL, 13°31.8´ N 71°24´ W), MCZ 129279 (20, 25-115 SL, 13°51´ N 70°15´ W), MCZ 129298 (1, 95 SL, 15°1.2´ N 67°28.2´ W), MCZ 129314 (6, 26-119 SL, 12°43.8´ N 74°10.2´ W), MCZ 129367 (5, 29-128 SL, 12°55.8´ N 73°49.2´ W), MCZ 129368 (8, 35-130 SL, 12°9´ N 78°30´ W), MCZ 129373 (1, 24-125 SL, 12°37.8´ N 74°10.8´ W), MCZ 130084 (1, 88 SL, 17°7.2´ N 64°10.2´ W), MCZ 130086 (8, 21-50 SL, 13°4.2´ N 73°12´ W), MCZ 130087 (1, 34 SL, 12°52.2´ N 74°0´ W), MCZ 130090 (1, 20 SL, 14°19.8´ N 78°16.2´ W), MCZ 130092 (4, 42-59 SL, 16°57´ N 79°25.2´ W), MCZ 130093 (3, 51-56 SL, 17°7.8´ N 79°34.8´ W), MCZ 130095 (1, 22 SL, 17°52.8´ N 80°43.8´ W), MCZ 130270 (1, 45 SL, 11°30´ N 65°19.2´ W), UF 15626 (1, 11°36.6´ N 62°46.8´ W), UF 110484 (12, 9°3´ N 81°18´ W), UF 222635 (2, 9°7.2´ N 81°12´ W), UF 222719 (1, 13°4.8´ N 71°32.4´ W), UF 222792 (2, 11°32.4´ N 67°33´ W), UF 222966 (1, 9°57´ N 76°10.8´ W), UF 222979 (1, 11°32.4´ N 67°39´ W), UF 223226 (1, 9°55.8´ N 79°0´ W), UF 224443 (1, 13°3´ N 71°47.4´ W), UF 227624 (1, 11°40.2´ N 68°15.6´ W), UF 227736 (2, 9°55.8´ N 76°19.8´ W), INV PEC2536 (1, 12°19.2´ N 72°42.6´ W), INV PEC2537 (1, 11°27´ N 74°1.8´ W), INV PEC2538 (1, 11°19.2´ N 74°16.8´ W), INV PEC3311 (2, 9°53.4´ N 76°13.8´ W), INV PEC3312 (1, 9°52.8´ N 76°14.4´ W), INV PEC3991 (1, 11°28.2´ N 73°40.2´ W), INV PEC3992 (1, 9°47.4´ N 76°17.4´ W), INV PEC3993 (1, 9°47.4´ N 76°17.4´ W),INV PEC3994 (1, 10°32.4´ N 75°39´ W), INV PEC4550 (1, 11°28.2´ N 73°40.2´ W), INV PEC7944 (1, 11°30.6´ N 73°23.4´ W), INV PEC7945 (2, 9°7.8´ N 76°36´ W), INV PEC8358 (1, 12°41.4´ N 71°49.2´ W), INV PEC8359 (1, 9°34.2´ N 76°27.6´ W), INV PEC8360 (1, 10°0´ N 76°15.6´ W).

*Echiostoma barbatum* Lowe 1843 - Threadfin Dragonfish (Fishbase) - Meso to bathypelagic, 613-843 m. MCZ 35164 (1, 36 SL, 12°5.4´ N 61°49.8´ W), MCZ 132703 (1, 290 SL, 11°22.2´ N 65°1.2´ W), UF 172570 (1, 12°54´ N 70°39´ W).

*Eustomias acinosus* Regan & Trewavas 1930. Meso to bathypelagic, 200-576 m. MCZ 91722 (1, 80 SL, 17°7.8´ N 79°34.8´ W), UF 165641 (1, 14°34.8´ N 81°31.8´ W).

*Eustomias schmidti* Regan & Trewavas 1930 Schmidt's Dragonfish (Fishbase). Meso to bathypelagic, 450-1500 fishbase hasta 150 m. UF 165643 (1, 14°34.8´ N 81°31.8´ W), UF 222895 (1, 12°55.2´ N 72°4.2´ W).

*Heterophotus ophistoma* Regan & Trewavas 1929 - Wingfin Snaggletooth (Fishbase) - Meso to bathypelagic in fishbase, 640-1006 m. USNM 289358 (4, 11°40.8´ N 73°24´ W).

*Malacosteus niger* Ayres 1848 - Stoplight Loosejaw (Fishbase) - Meso to bathypelagic, 400-2735 m. USNM 200882 (1, 9°1.8´ N 76°31.8´ W), USNM 200960 (1, 9°19.8´ N 81°24´ W), USNM 201284 (1, 11°42´ N 68°43.2´ W), MCZ 42397 (1, 12°0´ N 65°4.8´ W), MCZ 42398 (1, 14°0´ N 65°4.8´ W), MCZ 47765 (1, 12°1.2´ N 65°1.2´ W), MCZ 131834 (1, 55 SL, 11°19.8´ N 64°40.2´ W), UF 172951 (1, 13°25.8´ N 61°30´ W), UF 222681 (1, 9°1.8´ N 76°52.8´ W). These records extend the bathymetric range of the species.

*Stomias affinis* Günther 1887 - Gunther's Boafish (Fishbase) - Meso to bathypelagic, 225-1500 m. USNM 200457 (3, 9°1.8´ N 76°31.8´ W), USNM 358758 (1, 11°10.2´ N 65°7.2´ W), USNM 358759 (1, 16°49.2´ N 82°18´ W), MCZ 42383 (1, 12°0´ N 65°4.8´ W), MCZ 128659 (1, 127 SL, 11°19.8´ N 64°40.2´ W), MCZ 128789 (1, 120 SL, 13°12´ N 72°46.8´ W), MCZ 129595 (1, 25 SL, 12°55.8´ N 73°49.2´ W), MCZ 129596 (1, 86 SL, 12°52.2´ N 74°0´ W), MCZ 129597 (5, 31-50 SL, 12°43.8´ N 74°10.2´ W), UF 222684 (1, 9°1.8´ N 76°52.8´ W), UF 222730 (3, 13°4.8´ N 71°32.4´ W), UF 222897 (1, 12°55.2´ N 72°4.2´ W), UF 223064 (1, 12°32.4´ N 61°54´ W), UF 224439 (1, 13°3´ N 71°47.4´ W), UF 227724 (1, 11°40.2´ N 68°15.6´ W), UF 234688 (1, 11°32.4´ N 67°33´ W), INV PEC2535 (1, 11°27´ N 74°1.8´ W).

*Stomias longibarbatus* (Brauer 1902). Meso to bathypelagic, 225-1519 m. MCZ 58787 (2, 13°51´ N 70°15´ W), MCZ 129118 (1, 272 SL, 12°55.8´ N 73°49.2´ W), UF 223744 (1, 10°26.4´ N 76°0´ W). These records extend the bathymetric range of the species.

ATELEOPODIFORMES

ATELEOPODIDAE

*Ijimaia antillarum* Howell Rivero 1935. Demersal, 329-823 m. USNM 405608 (3, 14°24´ N 81°48´ W), USNM 405613 (2, 11°25.2´ N 73°55.8´ W), USNM 405612 (1, 11°12´ N 74°24´ W), USNM 404939 (1, 12°10.2´ N 72°52.2´ W), USNM 405611 (1, 14°16.8´ N 81°55.2´ W), USNM 397839 (1, 11°12´ N 74°21´ W), USNM 405615 (1, 11°16.8´ N 74°40.2´ W), USNM 187891 (1, 14°22.8´ N 81°45´ W), USNM 232751 (3, 11°43.2´ N 69°13.2´ W), INV PEC2539 (1, 11°27.6´ N 73°51.6´ W), INV PEC8412 (2, 12°36´ N 71°28.8´ W), INV PEC8414 (2, 9°34.2´ N 76°27.6´ W), INV PEC8413 (1, 12°41.4´ N 71°49.2´ W).

AULOPIFORMES

SYNODONTIDAE

*Saurida brasiliensis* Norman 1935 - Largescale Lizardfish, Chile Brasileño (AFS), Anoli Brasil (FAO) - Demersal, 270 m. INV PEC4876 (1, 9°45.6´ N 76°15.6´ W).

*Saurida caribbaea* Breder 1927 – Smallscale Lizardfish, Chile Caribeño (AFS), Anolis des Caraïbes (FAO) – Demersal, 200-375 m. UF 136794 (2, 14°10.2´ N 81°58.2´ W), UF 229249 (42, 14°54´ N 81°23.4´ W), INV PEC3338 (2, 9°3´ N 76°36.6´ W), INV PEC2565 (1, 11°9.6´ N 74°39´ W), INV PEC2566 (2, 11°9.6´ N 74°39´ W), INV PEC2567 (2, 11°23.4´ N 74°12´ W), INV PEC2568 (1, 11°29.4´ N 73°22.8´ W).

*Saurida normani* Longley 1935 – Shortjaw Lizardfish, Chile Espinoso (AFS), Anoli Norman (FAO) – Benthic, 252-375 m. USNM 384340 (5, 13°28.2´ N 82°1.2´ W), USNM 400779 (1, 8°58.2´ N 77°27.6´ W), UF 136827 (6, 14°10.2´ N 81°58.2´ W), UF 229265 (10, 14°54´ N 81°23.4´ W).

*Saurida* n. sp. Benthic, 952-1281 m. UF 222679 (2, 9°1.8´ N 76°52.8´ W).

CHLOROPHTHALMIDAE

*Chlorophthalmus agassizi* Bonaparte 1840 – Shortnose Greeneye, Ojiverde Chato, Oeil-vert Camus (AFS) – Bathydemersal, 200-789 m. USNM 200439 (15, 12°25.2´ N 82°15´ W), USNM 268435 (4, 9°13.2´ N 80°43.2´ W), ANSP 171173 (1, 11°34.2´ N 62°49.2´ W), MCZ 41838 (2, 11°30´ N 62°28.8´ W), MCZ 48978 (1, 11°52.8´ N 69°25.2´ W), MCZ 95859 (1, 11°49.2´ N 69°24´ W), UF 110489 (3, 14°16.2´ N 81°55.2´ W), UF 110496 (15, 14°10.2´ N 81°55.2´ W), UF 110504 (2, 9°13.2´ N 81°30´ W), UF 110505 (2, 11°36.6´ N 62°46.8´ W), UF 110533 (7, 11°33´ N 62°30´ W), UF 222938 (89, 9°57´ N 76°10.8´ W), UF 229214 (22, 14°34.8´ N 81°31.8´ W), UF 229256 (30, 14°54´ N 81°23.4´ W), UF 231483 (2, 14°34.8´ N 81°31.8´ W), UF 231654 (3, 14°34.8´ N 81°31.8´ W), INV PEC2540 (2, 11°25.8´ N 74°11.4´ W), INV PEC2541 (1, 9°49.2´ N 76°16.2´ W),INV PEC2542 (1, 12°34.2´ N 71°49.8´ W), INV PEC2543 (3, 12°31.8´ N 72°7.8´ W), INV PEC2544 (2, 12°24´ N 72°15´ W), INV PEC2545 (1, 12°24´ N 72°16.2´ W), INV PEC2546 (3, 12°15.6´ N 72°33´ W), INV PEC2547 (1, 11°29.4´ N 73°22.8´ W), INV PEC2548 (1, 11°28.8´ N 73°24´ W), INV PEC2549 (3, 11°26.4´ N 73°31.8´ W), INV PEC2550 (12, 11°26.4´ N 73°33´ W), INV PEC2551 (3, 11°27´ N 73°42´ W), INV PEC2552 (1, 11°27.6´ N 73°51.6´ W), INV PEC2553 (11, 11°25.2´ N 74°10.8´ W), INV PEC2554 (8, 11°24.6´ N 74°9.6´ W), INV PEC2555 (1, 11°25.2´ N 74°12.6´ W), INV PEC2556 (1, 11°25.8´ N 74°13.2´ W), INV PEC2557 (2, 11°25.8´ N 74°13.2´ W), INV PEC2558 (1, 11°19.2´ N 74°16.8´ W), INV PEC2559 (2, 11°12´

N 74°17.4′ W), INV PEC2560 (1, 10°28.8′ N 75°42.6′ W), INV PEC2561 (3, 11°5.4′ N 75°15.6′ W), INV PEC3313 (5, 9°3′ N 76°36.6′ W), INV PEC3315 (1, 9°30′ N 76°27′ W), INV PEC3316 (1, 9°49.2′ N 76°16.2′ W),INV PEC3317 (1, 9°49.2′ N 76°15.6′ W), INV PEC3318 (1, 9°53.4′ N 76°13.8′ W), INV PEC3319 (1, 10°10.2′ N 76°1.8′ W), INV PEC3320 (1, 9°16.2′ N 76°28.8′ W), INV PEC3321 (2, 9°27.6′ N 76°25.8′ W), INV PEC3322 (2, 9°27.6′ N 76°26.4′ W), INV PEC3323 (1, 9°30.6′ N 76°27′ W), INV PEC3324 (4, 9°45.6′ N 76°15′ W), INV PEC3325 (1, 9°15.6′ N 76°28.8′ W), INV PEC3326 (2, 9°30′ N 76°27′ W), INV PEC3327 (3, 9°57′ N 76°9.6′ W), INV PEC3328 (4, 10°9′ N 76°0.6′ W), INV PEC3329 (2, 10°10.2′ N 76°1.8′ W), INV PEC3330 (1, 10°9′ N 76°0.6′ W), INV PEC3331 (1, 10°10.2′ N 76°1.8′ W), INV PEC4065 (1, 9°47.4′ N 76°17.4′ W), INV PEC4269 (1, 9°47.4′ N 76°17.4′ W), INV PEC4271 (1, 9°45′ N 76°15.6′ W), INV PEC4272 (5, 9°45.6′ N 76°15.6′ W), INV PEC4273 (4, 9°46.8′ N 76°18′ W), INV PEC4274 (1, 12°31.8′ N 72°12′ W), INV PEC7952 (3, 12°33′ N 71°52.2′ W), INV PEC7953 (13, 12°32.4′ N 71°52.2′ W), INV PEC7954 (11, 12°20.4′ N 72°27′ W), INV PEC7955 (1, 12°19.8′ N 72°27.6′ W), INV PEC7956 (2, 9°37.8′ N 76°21.6′ W), INV PEC7957 (1, 8°59.4′ N 76°45.6′ W), INV PEC8373 (1, 12°36′ N 71°28.8′ W), INV PEC8374 (1, 12°41.4′ N 71°49.2′ W), INV PEC8375 (1, 9°17.4′ N 76°31.8′ W), INV PEC8376 (1, 10°0′ N 76°15.6′ W), INV PEC8377 (1, 10°54.6′ N 75°36′ W), INV PEC8378 (1, 10°43.8′ N 75°37.2′ W), INV PEC8379 (10, 10°22.2′ N 75°51.6′ W), INV PEC8380 (1, 11°12′ N 74°30′ W).

*Parasudis truculenta* (Goode & Bean 1896) – Longnose Lancetfish, Lanzón Picudo, Cavalo Féroce (AFS) – Demersal, 265-530 m. USNM 159065 (9, 10°3′ N 60°1.2′ W), USNM 200523 (4, 9°13.2′ N 80°43.2′ W), USNM 330099 (3, 11°9.6′ N 74°24.6′ W), ANSP 80989 (24, 9°16.8′ N 59°19.2′ W), MCZ 57922 (1, 11°36′ N 62°46.2′ W), MCZ 63332 (1, 11°36′ N 62°52.2′ W), UF 110507 (1, 9°4.2′ N 81°25.2′ W), UF 110531 (5, 12°22.8′ N 82°28.8′ W), UF 110532 (1, 16°49.8′ N 81°21′ W), UF 110538 (6, 14°16.2′ N 81°55.2′ W), UF 110545 (2, 14°0′ N 81°49.8′ W), UF 110546 (2, 9°13.2′ N 80°43.2′ W), UF 110548 (2, 11°33′ N 62°30′ W), UF 207004 (3, 11°34.8′ N 62°40.8′ W), UF 207078 (4, 11°36′ N 62°52.2′ W), UF 222939 (4, 9°57′ N 76°10.8′ W), INV PEC2562 (1, 11°25.8′ N 74°11.4′ W), INV PEC2563 (1, 12°34.2′ N 71°49.8′ W), INV PEC4275 (1, 11°22.8′ N 73°44.4′ W), INV PEC7961 (2, 12°19.8′ N 72°27.6′ W), INV PEC7960 (2, 12°20.4′ N 72°27′ W), INV PEC7959 (2, 12°32.4′ N 71°52.2′ W), INV PEC7958 (2, 12°33′ N 71°52.2′ W), INV PEC8381 (1, 12°36′ N 71°28.8′ W).

NOTOSUDIDAE

*Scopelosaurus smithii* Bean 1925. Benthopelagic, 622-1500 m. USNM 214073 (1, 8°55.8′ N 76°52.8′ W), MCZ 127093 (1, 11°30′ N 65°19.2′ W).

IPNOPIDAE

*Bathypterois bigelowi* Mead 1958. Bathydemersal, 373-940 m. *Holotype CNHM 64435 (1, 124.5 SL)*; UF 110570 (1, 11°40.2′ N 62°33′ W), UF 201998 (1, 12°19.2′ N 82°27′ W), UF 201999 (1, 13°13.2′ N 82°13.2′ W), UF 222936 (6, 9°57′ N 76°10.8′ W), UF 227703 (1, 11°26.4′ N 74°10.2′ W), UF 230405 (3, 14°34.8′ N 81°31.8′ W), UF 232685 (1, 12°51′ N 70°30′ W), INV PEC2564 (1, 11°27.6′ N 73°51.6′ W), INV PEC3333 (1, 9°30′ N 76°27′ W), INV PEC3334 (2, 10°10.2′ N 76°1.8′ W), INV PEC3335 (2, 10°10.2′ N 76°1.8′ W), INV PEC3336 (2, 10°10.2′ N 76°1.8′ W), INV PEC3337 (2, 10°10.2′ N 76°1.8′ W), INV PEC3898 (1, 9°47.4′ N 76°17.4′ W), INV PEC3899 (1, 11°28.2′ N 73°40.2′ W), INV PEC4340 (3, 9°47.4′ N 76°17.4′ W), INV PEC7949 (3, 12°21′ N 73°0′ W), INV PEC7950 (2, 11°30.6′ N 73°23.4′ W), INV PEC7951 (1, 9°37.8′ N 76°21.6′ W), INV PEC8382 (1, 12°49.8′ N 71°36.6′ W),INV PEC8383 (1, 9°3.6′ N 76°44.4′ W), INV PEC8384 (1, 11°3′ N 75°29.4′ W), INV PEC8385 (7, 10°43.8′ N 75°37.2′ W), INV PEC8386 (2, 10°34.8′ N 75°39.6′ W), INV PEC8387 (3, 11°8.4′ N 75°16.2′ W), INV PEC8388 (2, 11°12′ N 74°30′ W). Additional specimens in Mead (1958).

*Bathypterois grallator* (Goode & Bean 1886) - Tripodfish (Fishbase) - Bathydemersal, 2983-2970 m. UF 230607 (1, 9°54.6´ N 77°3´ W).

*Bathypterois phenax* Parr 1928 - Blackfin Spiderfish (Fishbase) - Bathydemersal, 1235-1865 m. UF 222809 (5, 10°3´ N 76°27´ W), UF 223237 (1, 9°52.2´ N 79°35.4´ W), UF 227702 (1, 11°24.6´ N 67°10.2´ W).

*Bathypterois quadrifilis* Günther 1878. Bathydemersal, 686-1281 m. MCZ 27925 (3, 13°10.2´ N 61°18.6´ W), MCZ 27927 (1, 12°9.6´ N 61°46.8´ W), UF 222359 (9, 9°0´ N 77°25.2´ W), UF 222571 (6, 10°16.2´ N 76°3´ W), UF 222657 (3, 9°10.2´ N 80°55.8´ W), UF 222670 (4, 9°1.8´ N 76°52.8´ W), UF 226989 (4, 11°48´ N 66°6.6´ W), UF 230833 (6, 16°55.2´ N 62°43.2´ W). Additional specimens in Mead (1966).

*Bathypterois viridensis* (Roule 1916). Bathydemersal, 276-1066 m. UF 222641 (2, 11°34.2´ N 62°10.8´ W), UF 230777 (1, 11°48´ N 66°6.6´ W), INV PEC8389 (1, 8°57´ N 76°51.6´ W), INV PEC8390 (3, 9°3.6´ N 76°44.4´ W), INV PEC8391 (4, 9°34.2´ N 76°27.6´ W), INV PEC8392 (2, 10°43.8´ N 75°37.2´ W), INV PEC8393 (2, 11°25.2´ N 74°19.2´ W), INV PEC8394 (1, 11°33.6´ N 73°57´ W), INV PEC8395 (1, 11°31.8´ N 73°28.8´ W). Additional specimens in Mead (1966). These records extend the bathymetric range of the species.

*Bathytyphlops sewelli* (Norman 1939). Bathydemersal, 4197 m. UF 230677 (1, 13°46.2´ N 71°19.2´ W).

PARALEPIDIDAE

*Lestrolepis intermedia* (Poey 1868). Epi, Meso to bathypelagic, 450-576 m. UF 183518 (4, 14°34.8´ N 81°31.8´ W).

*Stemonosudis rothschildi* Richards 1967 - Rothschild's Barracudina (Fishbase) - Meso to bathypelagic, 450-576 m. UF 163008 (1, 14°34.8´ N 81°31.8´ W), UF 181269 (1, 12°34.8´ N 82°16.2´ W), UF 231656 (3, 14°34.8´ N 81°31.8´ W).

GIGANTURIDAE

*Gigantura chuni* Brauer 1901 - Gigantura (Fishbase) - Meso to bathypelagic, 450-576 m. UF 165572 (1, 14°34.8´ N 81°31.8´ W). This record extends the bathymetric range of the species.

MYCTOPHIFORMES

NEOSCOPELIDAE

*Neoscopelus microchir* Matsubara 1943 - Shortfin Neoscopelid (Fishbase) - Meso to bathypelagic, 300-803 m. MCZ 126208 (2, 97-115 SL, 11°49.2´ N 69°24´ W), MCZ 126213 (1, 102 SL, 13°39´ N 81°52.2´ W), UF 178641 (1, 11°25.2´ N 73°55.8´ W), UF 222937 (14, 9°57´ N 76°10.8´ W), INV PEC3342 (2, 9°53.4´ N 76°13.8´ W), INV PEC3343 (3, 9°30´ N 76°27´ W), INV PEC3344 (1, 9°30.6´ N 76°27´ W), INV PEC3345 (3, 9°30´ N 76°27´ W), INV PEC3346 (1, 9°45.6´ N 76°15´ W), INV PEC3347 (1, 10°10.2´ N 76°1.8´ W), INV PEC7962 (1, 11°22.2´ N 74°22.2´ W),INV PEC7963 (1, 10°19.8´ N 75°54´ W), INV PEC7964 (3, 9°37.8´ N 76°21.6´ W), INV PEC7965 (1, 9°7.8´ N 76°36´ W), INV PEC7966 (1, 8°59.4´ N 76°45.6´ W). These records extend the bathymetric range of the species.

*Neoscopelus macrolepidotus* Johnson 1863 - Large-scaled Lantern fish (Fishbase) - Bathypelagic, 276-914 m. USNM 207951 (1, 11°10.2´ N 65°7.2´ W), USNM 327095 (1, 10°9´ N 76°13.8´ W), USNM 358034 (7, 11°40.2´ N 62°33´ W), USNM 369260 (1, 11°52.2´ N 69°27´ W), USNM 402351 (1, 9°19.8´ N 81°24´ W), USNM 404941 (26, 9°0´ N 81°22.8´ W), USNM 404942 (2, 9°1.8´ N 76°31.8´ W), USNM 405610 (3, 11°10.8´

N 74°28.8′ W), MCZ 28166 (1, 129 SL, 13°55.2′ N 61°6′ W), MCZ 49714 (1, 133 SL, 11°49.2′ N 69°24′ W), MCZ 57918 (2, 105-106 SL, 11°36′ N 62°46.2′ W), MCZ 96961 (1, 77 SL, 9°1.8′ N 76°31.8′ W), MCZ 126210 (1, 79 SL, 11°52.8′ N 69°25.2′ W), MCZ 126212 (1, 120 SL, 11°49.2′ N 69°24′ W), MCZ 128155 (4, 19-44 SL, 13°51′ N 70°15′ W), UF 15633 (3, 16°34.8′ N 80°10.2′ W), UF 119384 (6, 14°10.2′ N 81°49.8′ W), UF 176814 (3, 10°0′ N 76°10.2′ W), UF 181292 (3, 12°34.8′ N 82°16.2′ W), UF 181852 (1, 10°9′ N 76°13.8′ W), UF 202423 (1, 13°19.8′ N 82°1.8′ W), UF 216245 (1, 11°24′ N 64°25.2′ W), UF 222612 (1, 9°7.2′ N 81°12′ W), UF 222638 (2, 11°34.2′ N 62°10.8′ W), UF 222756 (2, 10°16.8′ N 76°0′ W), UF 223246 (1, 9°28.8′ N 76°26.4′ W), UF 229211 (5, 14°34.8′ N 81°31.8′ W), UF 230403 (7, 14°34.8′ N 81°31.8′ W), UF 231512 (3, 14°34.8′ N 81°31.8′ W), UF 231653 (1, 14°34.8′ N 81°31.8′ W), INV PEC2569 (1, 12°31.8′ N 72°7.8′ W), INV PEC2570 (2, 12°29.4′ N 72°15.6′ W), INV PEC2571 (4, 12°24′ N 72°15′ W), INV PEC2572 (5, 12°24′ N 72°16.2′ W), INV PEC2573 (6, 12°19.2′ N 72°42.6′ W), INV PEC2574 (1, 12°19.2′ N 72°42.6′ W), INV PEC2575 (7, 11°29.4′ N 73°27′ W), INV PEC2576 (1, 11°30′ N 73°26.4′ W), INV PEC2577 (25, 11°27′ N 73°42′ W), INV PEC2578 (9, 11°27′ N 73°42′ W), INV PEC2579 (8, 11°27.6′ N 73°52.2′ W), INV PEC2580 (1, 11°27.6′ N 73°52.2′ W), INV PEC2581 (1, 11°27.6′ N 73°52.2′ W), INV PEC2582 (9, 11°27.6′ N 73°51.6′ W), INV PEC2583 (1, 11°24.6′ N 74°14.4′ W), INV PEC2584 (4, 11°19.2′ N 74°16.8′ W), INV PEC2585 (6, 11°20.4′ N 74°16.2′ W), INV PEC2586 (5, 11°15.6′ N 74°38.4′ W),INV PEC2587 (2, 11°7.8′ N 75°13.8′ W), INV PEC2588 (1, 11°7.2′ N 75°8.4′ W), INV PEC2589 (3, 11°7.2′ N 75°7.8′ W), INV PEC3339 (2, 9°18.6′ N 76°29.4′ W), INV PEC3340 (1, 10°10.2′ N 76°1.8′ W), INV PEC3341 (1, 9°53.4′ N 76°13.8′ W), INV PEC3932 (1, 12°31.8′ N 72°12′ W), INV PEC3933 (1, 12°31.8′ N 72°12′ W), INV PEC4436 (23, 10°32.4′ N 75°39′ W), INV PEC4437 (5, 10°32.4′ N 75°39′ W), INV PEC4438 (2, 12°31.8′ N 72°12′ W), INV PEC4439 (1, 12°31.8′ N 72°11.4′ W), INV PEC4440 (4, 11°22.8′ N 73°44.4′ W), INV PEC4441 (8, 11°28.2′ N 73°40.2′ W), INV PEC4442 (1, 11°28.2′ N 73°40.2′ W), INV PEC4443 (1, 9°46.8′ N 76°18′ W), INV PEC8396 (5, 12°36′ N 71°28.8′ W), INV PEC8397 (1, 12°41.4′ N 71°49.2′ W), INV PEC8398 (4, 8°57′ N 76°51.6′ W), INV PEC8399 (9, 9°3.6′ N 76°44.4′ W), INV PEC8400 (9, 9°17.4′ N 76°31.8′ W), INV PEC8401 (25, 9°34.2′ N 76°27.6′ W), INV PEC8402 (4, 9°42.6′ N 76°22.8′ W), INV PEC8403 (1, 10°0′ N 76°15.6′ W), INV PEC8404 (6, 10°54.6′ N 75°36′ W), INV PEC8405 (6, 10°43.8′ N 75°37.2′ W), INV PEC8406 (10, 10°34.8′ N 75°39.6′ W), INV PEC8407 (2, 11°12′ N 74°30′ W), INV PEC8408 (3, 11°32.4′ N 73°44.4′ W). Additional specimens in Burgess and Branstetter (1985). These records extend the bathymetric range of the species.

MYCTOPHIDAE

*Bolinichthys supralateralis* (Parr 1928) - Stubby Lanternfish (Fishbase) - Meso to bathypelagic, 200-1750 m. MCZ 42344 (1, 11°21′ N 67°7.8′ W), MCZ 123723 (2, 15-25 SL, 13°51′ N 70°15′ W), MCZ 123724 (7, 17-33 SL, 13°31.8′ N 71°24′ W), MCZ 123725 (2, 15-15.5 SL, 13°4.2′ N 73°12′ W), MCZ 123726 (1, 17.5 SL, 12°55.8′ N 73°49.2′ W), MCZ 123780 (1, 23 SL, 11°45′ N 65°33′ W), MCZ 123781 (1, 23 SL, 11°19.8′ N 64°40.2′ W), MCZ 123782 (5, 44 SL, 11°30′ N 65°19.2′ W), MCZ 123783 (2, 21-56 SL, 11°37.2′ N 65°31.8′ W), UF 222581 (1, 10°16.2′ N 76°3′ W), UF 222757 (1, 10°16.8′ N 76°0′ W), UF 224883 (2, 12°50.4′ N 62°1.8′ W), UF 224979 (1, 12°48′ N 61°43.8′ W), UF 226406 (1, 13°4.8′ N 71°32.4′ W), UF 228936 (3, 13°7.8′ N 62°4.8′ W), UF 229587 (3, 13°8.4′ N 61°55.2′ W). These records extend the bathymetric range of the species.

*Diaphus bertelseni* Nafpaktitis 1966 - Bertelsen's Lanternfish (Fishbase) - Meso to bathypelagic, 200-274 m. USNM 327061 (2, 11°24′ N 73°46.8′ W), MCZ 91383 (1, 36 SL, 13°31.8′ N 71°24′ W).

*Diaphus dumerilii* (Bleeker 1856). Mesopelagic, 200-1750 m. USNM 300836 (3, 9°4.2′ N 81°25.2′ W), USNM 327028 (3, 14°16.8′ N 81°55.2′ W), USNM 327029 (2), USNM 327029 (23, 12°25.8′ N 82°25.8′ W), USNM 327083 (1, 9°4.2′ N 81°25.2′ W), USNM 327118 (1, 11°15′ N 68°13.2′ W), MCZ 120894 (26, 13.5-57 SL,

13°4.2′ N 73°12′ W), MCZ 120896 (8, 12.5-52 SL, 12°55.8′ N 73°49.2′ W), MCZ 120897 (12, 20-53 SL, 12°37.8′ N 74°10.8′ W), MCZ 120899 (30, 15-36 SL, 12°9′ N 78°30′ W), MCZ 120914 (17, 18-49 SL, 11°37.2′ N 65°31.8′ W), MCZ 121153 (9, 12-25 SL, 17°7.2′ N 64°10.2′ W), MCZ 121155 (1, 20 SL, 15°1.2′ N 67°28.2′ W), MCZ 121156 (8, 13-44 SL, 13°51′ N 70°15′ W), MCZ 121157 (5, 15-54 SL, 13°31.8′ N 71°24′ W), MCZ 121158 (2, 21-23.5 SL, 13°12′ N 72°46.8′ W), MCZ 121160 (10, 12-29 SL, 12°43.8′ N 74°10.2′ W), MCZ 121295 (7, 16-45 SL, 11°45′ N 65°33′ W), MCZ 121296 (1, 60 SL, 11°19.8′ N 64°40.2′ W), MCZ 121297 (2, 41-52 SL, 11°22.2′ N 65°1.2′ W), MCZ 121298 (4, 27-50 SL, 11°30′ N 65°19.2′ W), UF 224878 (5, 12°50.4′ N 62°1.8′ W), UF 224926 (2, 13°1.2′ N 71°55.2′ W), UF 224945 (8, 11°32.4′ N 67°39′ W), UF 224966 (2, 9°25.2′ N 77°34.8′ W), UF 224973 (8, 12°48′ N 61°43.8′ W), UF 225000 (9, 11°31.8′ N 67°39.6′ W), UF 226312 (1, 13°9′ N 61°42.6′ W), UF 228927 (9, 13°7.8′ N 62°4.8′ W), UF 229062 (1, 12°59.4′ N 61°38.4′ W), UF 229178 (4, 11°32.4′ N 67°33′ W), UF 229195 (3, 9°55.8′ N 76°19.8′ W), UF 229390 (2, 9°52.8′ N 76°20.4′ W). These records extend the bathymetric range of the species.

*Diaphus effulgens* (Goode & Bean 1896) - Headlight Fish (Fishbase) - Meso to bathypelagic, 365-477 m. USNM 300748 (1, 12°22.8′ N 82°28.8′ W), MCZ 110092 (1, 12 SL, 15°1.2′ N 67°28.2′ W), UF 229366 (3, 9°57′ N 76°10.8′ W).

*Diaphus garmani* Gilbert 1906 - Garman's Lanternfish (Fishbase) - Meso to bathypelagic, 200-1829 m. USNM 300728 (1, 9°4.2′ N 81°25.2′ W), USNM 301657 (1, 9°10.8′ N 76°51′ W), MCZ 120657 (2, 15-16 SL, 15°1.2′ N 67°28.2′ W), MCZ 120660 (2, 13-14.5 SL, 13°4.2′ N 73°12′ W), MCZ 120661 (1, 13.5 SL, 12°37.8′ N 74°10.8′ W), MCZ 120663 (1, 18 SL, 11°3′ N 77°43.8′ W), MCZ 120676 (1, 38 SL, 11°45′ N 65°33′ W), MCZ 120677 (1, 24 SL, 11°22.2′ N 65°1.2′ W), UF 224876 (1, 12°50.4′ N 62°1.8′ W), UF 226404 (1, 13°4.8′ N 71°32.4′ W), INV PEC2590 (1, 11°22.2′ N 73°45′ W), INV PEC2591 (1, 11°22.2′ N 73°46.2′ W), INV PEC3348 (1, 9°3′ N 76°36.6′ W), INV PEC3349 (1, 9°30.6′ N 76°27′ W), INV PEC3350 (1, 9°53.4′ N 76°13.8′ W), INV PEC3351 (1, 10°10.2′ N 76°1.8′ W).

*Diaphus lucidus* (Goode & Bean 1896) - Spotlight Lanternfish (Fishbase) - Meso to bathypelagic, 200-1519 m. USNM 327032 (1, 11°46.2′ N 68°48′ W), USNM 327165 (4, 9°1.8′ N 76°31.8′ W), USNM 402356 (2, 11°24′ N 73°46.8′ W), MCZ 120326 (4, 19-77 SL, 13°51′ N 70°15′ W), MCZ 120327 (4, 41-67 SL, 13°31.8′ N 71°24′ W), MCZ 120328 (1, 20-61 SL, 13°4.2′ N 73°12′ W), MCZ 120330 (14, 13.5-84 SL, 12°43.8′ N 74°10.2′ W), MCZ 120419 (1, 25 SL, 12°55.8′ N 73°49.2′ W), MCZ 120421 (11, 16-42 SL, 12°9′ N 78°30′ W), MCZ 120455 (1, 45 SL, 11°45′ N 65°33′ W), UF 223740 (1, 10°26.4′ N 76°0′ W), UF 224907 (1, 9°2.4′ N 77°33.6′ W), UF 224917 (1, 9°12′ N 77°34.8′ W), UF 226417 (1, 11°40.2′ N 68°15.6′ W), UF 229367 (3, 9°57′ N 76°10.8′ W), UF 229578 (1, 13°8.4′ N 61°55.2′ W), INV PEC7968 (5, 11°9′ N 74°27′ W).

*Diaphus rafinesquii* (Cocco 1838) - White-spotted Lanternfish (Fishbase) - Meso to bathypelagic, 329 m. USNM 327014 (1, 11°9.6′ N 74°24.6′ W).

*Diaphus splendidus* (Brauer 1904) - Horned Lanternfish (Fishbase) - Meso to bathypelagic, 200-2150 m. MCZ 118341 (15, 11.5-70 SL, 13°4.2′ N 73°12′ W), MCZ 118344 (61, 13-62 SL, 12°9′ N 78°30′ W), MCZ 118507 (9, 11-20 SL, 17°7.2′ N 64°10.2′ W), MCZ 118509 (1, 23 SL, 15°1.2′ N 67°28.2′ W), MCZ 118511 (13, 11-63 SL, 13°51′ N 70°15′ W), MCZ 118512 (2, 11.5-14 SL, 13°31.8′ N 71°24′ W), MCZ 118515 (12, 14-65 SL, 12°55.8′ N 73°49.2′ W), MCZ 118516 (4, 21.4-34 SL, 12°37.8′ N 74°10.8′ W), MCZ 118517 (1, 55 SL, 17°7.8′ N 79°34.8′ W), MCZ 118599 (1, 73 SL, 11°22.2′ N 65°1.2′ W), MCZ 118600 (1, 52 SL, 11°22.2′ N 65°1.2′ W), MCZ 118602 (2, 18-50 SL, 11°30′ N 65°19.2′ W), MCZ 118603 (2, 21-26 SL, 11°37.2′ N 65°31.8′ W), UF 223743 (1, 10°26.4′ N 76°0′ W), UF 224776 (1, 13°1.8′ N 61°40.2′ W), UF 224797 (2, 12°32.4′ N 61°54′ W), UF 224871 (9, 12°50.4′ N 62°1.8′ W), UF 224891 (2, 12°55.2′ N 72°4.2′ W), UF 224913 (1, 9°12′ N 77°34.8′ W), UF 224944 (4, 11°32.4′ N 67°39′ W), UF 224970 (3, 12°48′ N 61°43.8′ W), UF 226319 (3, 13°9′ N 61°42.6′ W), UF 226411 (1, 11°40.2′ N 68°15.6′ W), UF 228923 (7, 13°7.8′ N 62°4.8′ W), UF

229184 (1, 11°32.4´ N 67°33´ W), UF 229194 (3, 9°55.8´ N 76°19.8´ W), UF 229384 (1, 12°39´ N 61°46.8´ W), UF 229580 (7, 13°8.4´ N 61°55.2´ W), UF 229631 (1, 12°57.6´ N 61°46.2´ W).

*Diaphus taaningi* Norman 1930 - Slopewater Lanternfish (Fishbase) - Meso to bathypelagic, 350-710 m. USNM 327079 (1, 13°58.2´ N 81°52.8´ W), MCZ 91712 (3, 12-42 SL, 11°22.2´ N 65°1.2´ W), UF 224485 (1, 10°39´ N 64°54.6´ W). These records extend the bathymetric range of the species.

*Lampadena luminosa* (Garman 1899) - Luminous Lanternfish (Fishbase) - Meso to bathypelagic, 200-500 m. MCZ 102982 (1, 65 SL, 11°22.2´ N 65°1.2´ W), UF 229389 (1, 9°52.8´ N 76°20.4´ W), INV PEC3354 (1, 9°30´ N 76°27´ W).

*Lepidophanes guentheri* (Goode & Bean 1896) - Gunther's Lanternfish (Fishbase) - Meso to bathypelagic, 200-2150 m. MCZ 108473 (8, 16-50 SL, 13°31.8´ N 71°24´ W), MCZ 108475 (15, 15-57 SL, 13°4.2´ N 73°12´ W), MCZ 108566 (28, 18-50 SL, 11°30´ N 65°19.2´ W), MCZ 108656 (13, 15-52 SL, 12°55.8´ N 73°49.2´ W), MCZ 108657 (12, 16-29.5 SL, 12°43.8´ N 74°10.2´ W), MCZ 108658 (16, 15.5-48 SL, 12°37.8´ N 74°10.8´ W), MCZ 108804 (11, 10-52 SL, 11°45´ N 65°33´ W), MCZ 108805 (1, 53 SL, 11°19.8´ N 64°40.2´ W), MCZ 108806 (5, 33-47 SL, 11°22.2´ N 65°1.2´ W), MCZ 108963 (1, 22 SL, 16°0´ N 64°58.8´ W), MCZ 108964 (4, 12°1.2´ N 65°1.2´ W), UF 224882 (17, 12°50.4´ N 62°1.8´ W), UF 224896 (13, 12°55.2´ N 72°4.2´ W), UF 224921 (1, 9°12´ N 77°34.8´ W), UF 224931 (2, 13°1.2´ N 71°55.2´ W), UF 224941 (3, 11°32.4´ N 67°39´ W), UF 224980 (10, 12°48´ N 61°43.8´ W), UF 226414 (6, 11°40.2´ N 68°15.6´ W), UF 226460 (1, 10°26.4´ N 76°0´ W), UF 228098 (5, 13°4.8´ N 71°32.4´ W), UF 229063 (1, 12°59.4´ N 61°38.4´ W), UF 229186 (8, 11°32.4´ N 67°33´ W), UF 229377 (3, 12°39´ N 61°46.8´ W), UF 229388 (3, 9°52.8´ N 76°20.4´ W), UF 229585 (1, 13°8.4´ N 61°55.2´ W), UF 229633 (3, 12°57.6´ N 61°46.2´ W). These records extend the bathymetric range of the species.

*Myctophum nitidulum* Garman 1899 - Pearly Lanternfish (Fishbase) - Meso to bathypelagic, 200-1750 m. USNM 327008 (1, 11°10.2´ N 65°7.2´ W), MCZ 42333 (3, 14°0´ N 65°4.8´ W), MCZ 105954 (3, 10-11 SL, 15°10.8´ N 66°58.8´ W), MCZ 105955 (1, 19 SL, 13°31.8´ N 71°24´ W), MCZ 105958 (1, 28 SL, 12°37.8´ N 74°10.8´ W). MCZ 106132 (1, 11°21´ N 67°7.8´ W), UF 224881 (1, 12°50.4´ N 62°1.8´ W), UF 224911 (3, 9°2.4´ N 77°33.6´ W), UF 224951 (2, 11°32.4´ N 67°39´ W), UF 228930 (2, 13°7.8´ N 62°4.8´ W), UF 229188 (1, 9°55.8´ N 76°19.8´ W), INV PEC7970 (1, 11°8.4´ N 74°23.4´ W). These records extend the bathymetric range of the species.

POLYMIXIIFORMES

POLYMIXIIDAE

*Polymixia lowei* Günther 1859 – Beardfish, Cola de Maguey (AFS) – Bathydemersal, 200-940 m. USNM 202139 (1, 9°4.2´ N 81°25.2´ W), USNM 202147 (6, 9°12´ N 81°30´ W) , USNM 202152 (4, 12°31.2´ N 82°21´ W), USNM 202155 (4, 11°49.8´ N 73°4.8´ W), USNM 214219 (1, 11°3´ N 75°18´ W), USNM 214220 (2, 11°25.8´ N 73°58.8´ W), USNM 185284 (11, 9°40.8´ N 59°46.8´ W) , USNM 185401 (1, 10°3´ N 60°1.2´ W), USNM 197489 (6, 14°10.2´ N 81°55.2´ W), USNM 202149 (9, 9°40.2´ N 79°7.2´ W), USNM 202153 (5, 14°7.8´ N 81°55.2´ W), USNM 202176 (4, 10°58.8´ N 66°0´ W), USNM 202742 (2, 10°45´ N 66°37.2´ W), USNM 398653 (4, 14°16.8´ N 81°55.2´ W), ANSP 105710 (1, 14°7.8´ N 81°55.2´ W), ANSP 144889 (3, 11°34.2´ N 62°49.2´ W), MCZ 45944 (3, 113-116 SL, 12°46.2´ N 70°58.8´ W), MCZ 161040 (3, 13°31.8´ N 71°24´ W), UF 44347 (4, 11°33´ N 62°30´ W), UF 125490 (1, 11°34.8´ N 62°37.2´ W), UF 138547 (3, 14°22.8´ N 81°45´ W), UF 172582 (1, 12°19.2´ N 72°34.2´ W), UF 207079 (1, 11°36´ N 62°52.2´ W), UF 222945 (32, 9°57´ N 76°10.8´ W), UF 229207 (6, 14°34.8´ N 81°31.8´ W ), UF 230400 (3, 14°34.8´ N 81°31.8´ W), UF 231481 (1, 14°34.8´ N 81°31.8´ W), INV PEC-3356 (1, 9°27.6´ N 76°26.4´ W), INV PEC-

2596 (1, 11°26.4′ N 73°33′ W), INV PEC-2597 (1, 11°22.2′ N 73°45′ W), INV PEC-2598 (1, 11°22.2′ N 73°46.2′ W), INV PEC-3362 (1, 9°57′ N 76°9.6′ W), INV PEC-3361 (1, 9°30.6′ N 76°27′ W), INV PEC-3360 (1, 9°16.2′ N 76°28.8′ W), INV PEC-3359 (1, 9°16.2′ N 76°28.8′ W), INV PEC-3358 (1, 10°10.2′ N 76°1.8′ W), INV PEC-3357 (1, 9°45.6′ N 76°15′ W), INV PEC-3355 (1, 9°18.6′ N 76°29.4′ W), INV PEC-2595 (1, 11°26.4′ N 73°33′ W), INV PEC-2594 (1, 12°24′ N 72°16.2′ W), INV PEC-2593 (3, 12°24′ N 72°15′ W), INV PEC-2592 (1, 12°34.2′ N 71°49.8′ W), INV PEC-7974 (6, 12°19.8′ N 72°27.6′ W), INV PEC-7973 (2, 12°32.4′ N 71°52.2′ W), INV PEC-7975 (3, 12°21′ N 73°0′ W), INV PEC-7976 (1, 10°19.8′ N 75°54′ W), INV PEC-7972 (2, 11°9′ N 74°27′ W), INV PEC-8415 (15, 10°22.2′ N 75°51.6′ W). These records extend the bathymetric range of the species.

*Polymixia nobilis* Lowe 1836 – Stout Beardfish, Chivato de Fondo, Poisson Chèvre Robuste (FAO) – Bathydemersal, 366-640 m. USNM 202120 (4, 9°36′ N 76°22.2′ W), UF 183597 (2, 14°22.8′ N 81°45′ W), UF 43232 (1, 14°7.8′ N 81°55.2′ W), UF 231494 (59, 16°2.4′ N 61°23.4′ W), INV PEC2599 (2, 11°25.8′ N 74°11.4′ W), INV PEC7971 (2, 9°37.8′ N 76°21.6′ W).

GADIFORMES

BREGMACEROTIDAE

*Bregmaceros atlanticus* Goode & Bean 1886 – Antenna Codlet, Bacalete Antena (AFS) - Epi to mesopelagic, 200-2735 m. MCZ 52939 (1, 11°52.8′ N 69°25.2′ W), MCZ 109140 (1, 25 SL, 13°12′ N 72°46.8′ W), MCZ 109141 (1, 32 SL, 13°12′ N 72°46.8′ W), MCZ 109142 (5, 15-38 SL, 13°4.2′ N 73°12′ W), MCZ 109143 (3, 12.5-34 SL, 12°37.8′ N 74°10.8′ W), MCZ 109144 (1, 15 SL, 12°9′ N 78°30′ W), MCZ 109176 (4, 24-44 SL, 11°30′ N 65°19.2′ W), MCZ 109177 (1, 37 SL, 11°30′ N 65°19.2′ W), MCZ 109178 (1, 29 SL, 11°37.2′ N 65°31.8′ W), MCZ 109205 (3, 27-38 SL, 12°55.8′ N 73°49.2′ W), MCZ 168278 (5, 12-43 SL, 13°31.8′ N 71°24′ W), UF 165805 (3, 13°25.8′ N 61°30′ W), UF 222692 (3, 12°48′ N 61°43.8′ W), UF 222745 (1, 13°1.2′ N 71°55.2′ W), UF 222963 (1, 9°57′ N 76°10.8′ W), UF 223032 (1, 10°26.4′ N 76°0′ W), UF 223042 (5, 12°39′ N 61°46.8′ W), UF 223673 (2, 12°59.4′ N 61°38.4′ W), UF 224573 (1, 12°39′ N 61°46.8′ W), UF 226481 (6, 12°50.4′ N 62°1.8′ W), UF 227723 (3, 11°40.2′ N 68°15.6′ W), INV PEC2863 (1, 11°27.6′ N 73°52.2′ W), INV PEC2864 (3, 11°27.6′ N 73°51.6′ W), INV PEC2865 (1, 11°27.6′ N 73°51.6′ W), INV PEC2866 (1, 11°25.2′ N 74°10.8′ W), INV PEC2867 (2, 11°15.6′ N 74°38.4′ W), INV PEC2868 (1, 11°7.2′ N 75°7.8′ W), INV PEC3447 (3, 10°10.2′ N 76°1.8′ W), INV PEC3448 (1, 10°9′ N 76°0.6′ W), INV PEC3449 (1, 11°23.4′ N 74°12′ W), INV PEC8008 (3, 9°7.8′ N 76°36′ W), INV PEC8005 (2, 11°30.6′ N 73°23.4′ W), INV PEC8007 (4, 9°37.8′ N 76°21.6′ W), INV PEC8006 (4, 10°19.8′ N 75°54′ W), INV PEC8470 (1, 9°17.4′ N 76°31.8′ W), INV PEC8471 (1, 9°34.2′ N 76°27.6′ W), INV PEC8467 (1, 12°36′ N 71°28.8′ W), INV PEC8472 (1, 11°12′ N 74°30′ W), INV PEC8468 (1, 8°57′ N 76°51.6′ W), INV PEC8469 (1, 9°3.6′ N 76°44.4′ W).

MACROURIDAE

*Bathygadus favosus* Goode & Bean 1886. Bathydemersal, 640-1281 m. Holotype, MCZ 27974 (1, 344 TL, 14°31.9′ N 61°7.5′ W), MCZ 43004 (2, 10°55.8′ N 67°37.8′ W), MCZ 43005 (4, 10°55.8′ N 67°37.8′ W), UF 123707 (5, 10°15.6′ N 76°0′ W), UF 123708 (5, 12°6′ N 72°55.2′ W), UF 123712 (1, 16°37.8′ N 79°52.8′ W), UF 137356 (7, 11°46.2′ N 68°48′ W), UF 137371 (6, 10°55.8′ N 67°37.8′ W), UF 165803 (1, 16°58.2′ N 79°28.2′ W), UF 202109 (1, 16°48′ N 82°33′ W), UF 202474 (3, 16°48′ N 82°33′ W), UF 222362 (11, 9°0′ N 77°25.2′ W), UF 222481 (3, 10°16.2′ N 76°3′ W), UF 222660 (3, 9°10.2′ N 80°55.8′ W), UF 222673 (5, 9°1.8′ N 76°52.8′ W), UF 226856 (1, 11°48′ N 66°6.6′ W), UF 226874 (2, 9°28.8′ N 76°34.2′ W).

*Bathygadus macrops* Goode & Bean 1885 - Bullseye Grenadier (Fishbase) - Bathypelagic, 296-962 m. MCZ 57925 (1, 11°36´ N 62°46.2´ W), UF 39562 (2, 10°49.8´ N 67°48´ W), UF 39573 (3, 11°10.8´ N 74°28.8´ W), UF 39576 (2, 12°6´ N 72°55.2´ W), UF 39583 (3, 11°49.2´ N 69°24´ W), UF 39584 (16, 11°52.8´ N 69°25.2´ W), UF 39585 (3, 11°54´ N 69°22.8´ W), UF 39589 (3, 12°28.2´ N 72°25.8´ W), UF 115437 (1, 11°10.2´ N 74°27´ W), UF 115440 (2, 11°24´ N 64°25.2´ W), UF 115441 (2, 16°37.8´ N 79°52.8´ W), UF 118010 (3, 9°1.8´ N 76°31.8´ W), UF 118020 (3, 11°54´ N 69°22.8´ W), UF 118021 (3, 9°3´ N 81°18´ W), UF 137300 (2, 11°9´ N 74°29.4´ W), UF 137397 (1, 11°52.8´ N 69°25.2´ W), UF 222486 (2, 11°40.2´ N 62°33´ W), UF 222661 (1, 9°10.2´ N 80°55.8´ W), UF 229307 (2, 12°13.2´ N 72°49.8´ W), INV PEC2700 (1, 11°24.6´ N 74°14.4´ W), INV PEC2701 (1, 11°19.2´ N 74°16.8´ W), INV PEC2702 (2, 11°19.2´ N 74°16.8´ W), INV PEC2703 (6, 11°15.6´ N 74°38.4´ W), INV PEC2705 (1, 11°7.2´ N 75°8.4´ W), INV PEC2706 (3, 11°7.2´ N 75°8.4´ W), INV PEC2707 (5, 11°7.2´ N 75°7.8´ W), INV PEC2699 (1, 11°27.6´ N 73°51.6´ W), INV PEC2698 (3, 11°27.6´ N 73°52.2´ W), INV PEC2697 (4, 11°27´ N 73°42´ W), INV PEC2696 (1, 11°27´ N 73°42´ W), INV PEC2695 (1, 11°30´ N 73°26.4´ W), INV PEC2692 (1, 12°24´ N 72°16.2´ W), INV PEC2691 (2, 12°29.4´ N 72°15.6´ W), INV PEC2690 (1, 12°31.8´ N 72°7.8´ W), INV PEC2694 (20, 11°29.4´ N 73°27´ W), INV PEC2704 (1, 11°7.8´ N 75°13.8´ W), INV PEC2689 (1, 12°34.2´ N 71°50.4´ W), INV PEC2693 (8, 12°19.2´ N 72°42.6´ W), INV PEC4091 (2, 11°28.2´ N 73°40.2´ W), INV PEC4090 (6, 11°28.2´ N 73°40.2´ W), INV PEC4092 (3, 12°31.8´ N 72°12´ W), INV PEC4354 (2, 11°22.8´ N 73°44.4´ W), INV PEC4353 (1, 12°31.8´ N 72°11.4´ W), INV PEC4355 (1, 12°31.8´ N 72°11.4´ W), INV PEC4352 (2, 10°32.4´ N 75°39´ W), INV PEC8010 (2, 11°3.6´ N 75°25.2´ W), INV PEC8009 (2, 12°40.8´ N 72°3.6´ W), INV PEC8479 (1, 10°0´ N 76°15.6´ W), INV PEC8486 (2, 11°31.8´ N 73°28.8´ W), INV PEC8485 (8, 11°32.4´ N 73°44.4´ W), INV PEC8484 (3, 11°33.6´ N 73°57´ W), INV PEC8483 (5, 11°12´ N 74°30´ W), INV PEC8482 (6, 11°8.4´ N 75°16.2´ W), INV PEC8481 (2, 10°34.8´ N 75°39.6´ W), INV PEC8480 (4, 10°43.8´ N 75°37.2´ W), INV PEC8478 (12, 9°34.2´ N 76°27.6´ W), INV PEC8477 (2, 9°17.4´ N 76°31.8´ W), INV PEC8476 (1, 8°57´ N 76°51.6´ W), INV PEC8475 (3, 12°41.4´ N 71°49.2´ W), INV PEC8474 (15, 12°41.4´ N 71°49.2´ W), INV PEC8473 (14, 12°36´ N 71°28.8´ W). These records extend the bathymetric range of the species.

*Bathygadus melanobranchus* Vaillant 1888 - Vaillant's Grenadier (Fishbase). Bathydemersal, 604-1097 m. USNM 216160 (3, 9°7.2´ N 81°10.2´ W), USNM 288485 (1, 9°19.8´ N 81°24´ W), UF 39494 (1, 11°46.2´ N 68°48´ W), UF 39577 (5, 12°6´ N 72°55.2´ W), UF 118018 (9, 11°52.8´ N 69°25.2´ W), UF 118062 (1, 9°1.8´ N 76°31.8´ W), UF 118064 (1, 11°54´ N 69°22.8´ W), UF 137350 (1, 16°37.8´ N 79°52.8´ W), UF 137355 (1, 10°55.8´ N 67°37.8´ W), UF 137358 (4, 10°49.8´ N 67°48´ W), UF 176955 (1, 11°52.8´ N 69°25.2´ W), UF 222480 (4, 10°16.2´ N 76°3´ W), UF 222619 (5, 9°7.2´ N 81°12´ W), UF 222758 (3, 10°16.8´ N 76°0´ W), UF 223104 (1, 13°4.8´ N 71°32.4´ W), INV PEC8492 (9, 11°31.8´ N 73°28.8´ W), INV PEC8491 (5, 11°32.4´ N 73°44.4´ W), INV PEC8489 (2, 11°8.4´ N 75°16.2´ W), INV PEC8488 (5, 10°54.6´ N 75°36´ W), INV PEC8487 (6, 11°3´ N 75°29.4´ W), INV PEC8490 (3, 11°33.6´ N 73°57´ W).

*Cetonurus globiceps* (Vaillant 1884) - Globehead Grenadier (Fishbase). Bathypelagic, 952-1768 m. UF 222352 (2, 9°0´ N 77°25.2´ W), UF 222675 (1, 9°1.8´ N 76°52.8´ W), UF 222811 (4, 10°3´ N 76°27´ W), UF 232273 (1, 14°16.8´ N 60°45´ W).

*Coelorinchus caelorhincus* (Risso 1810) – Saddled Grenadier, Granadero Tristón (AFS) - Benthopelagic, 218-1079 m. USNM 394066 (2, 14°10.2´ N 81°49.8´ W), MCZ 57927 (1, 11°36´ N 62°46.2´ W), MCZ 27795 (1, 11°43.2´ N 69°9.6´ W), MCZ 44960 (1, 275 TL, 10°16.2´ N 75°54.6´ W), MCZ 60980 (1, 11°36´ N 62°52.2´ W), UF 12569 (1, 12°31.2´ N 82°21´ W), UF 18160 (1, 15°45´ N 80°45´ W), UF 18162 (1, 12°1.2´ N 61°53.4´ W), UF 18163 (1, 15°36´ N 61°13.2´ W), UF 18174 (7, 11°58.2´ N 69°30´ W), UF 18175 (2, 11°36.6´ N 62°46.8´ W), UF 18189 (3, 11°31.2´ N 60°51´ W), UF 42240 (3, 11°46.2´ N 69°15´ W), UF 106601 (9, 11°40.2´ N 62°33´ W), UF 106622 (3, 11°58.8´ N 69°30´ W), UF 106623 (5, 11°49.2´ N 69°24´ W), UF 106638 (3, 11°49.2´ N 69°24´ W), UF 106642 (3, 12°22.8´ N 82°28.8´ W), UF 106654 (1, 12°31.2´ N 82°21´

W), UF 106656 (4, 11°52.2′ N 69°27′ W), UF 106657 (2, 11°10.2′ N 74°27′ W), UF 106658 (1, 11°52.8′ N 69°25.2′ W), UF 106660 (2, 11°34.8′ N 62°37.2′ W), UF 106661 (14, 11°52.8′ N 69°28.2′ W), UF 107037 (3, 11°9.6′ N 74°28.8′ W), UF 107046 (7, 14°10.2′ N 81°55.2′ W), UF 107049 (1, 11°10.2′ N 74°27′ W), UF 107053 (5, 12°25.8′ N 82°24′ W), UF 107055 (25, 11°58.8′ N 69°30′ W), UF 107065 (1, 12°6′ N 72°55.2′ W), UF 107066 (1, 11°49.2′ N 69°24′ W), UF 107068 (3, 16°49.8′ N 81°21′ W), UF 107083 (4, 10°16.2′ N 75°54.6′ W), UF 107091 (1, 12°28.8′ N 72°19.2′ W), UF 118136 (2, 11°10.8′ N 74°28.8′ W), UF 118137 (4, 11°54′ N 69°22.8′ W), UF 137399 (1, 10°55.8′ N 67°37.8′ W), UF 207317 (1, 11°34.8′ N 62°58.8′ W), UF 222618 (1, 9°7.2′ N 81°12′ W), UF 222646 (2, 11°34.2′ N 62°10.8′ W), UF 222949 (2, 9°57′ N 76°10.8′ W), UF 226800 (2, 12°13.2′ N 72°49.8′ W), UF 226896 (1, 11°30′ N 73°26.4′ W), UF 229204 (2, 14°34.8′ N 81°31.8′ W), UF 230404 (1, 14°34.8′ N 81°31.8′ W), UF 232677 (2, 12°52.8′ N 70°28.8′ W), INV PEC3389 (1, 9°18.6′ N 76°29.4′ W), INV PEC3390 (1, 9°30.6′ N 76°27′ W), INV PEC3391 (1, 9°49.2′ N 76°15.6′ W), INV PEC3392 (3, 9°18.6′ N 76°29.4′ W), INV PEC3393 (7, 9°18′ N 76°29.4′ W), INV PEC2719 (9, 11°27′ N 73°42′ W), INV PEC3255 (1, 11°25.8′ N 74°13.2′ W), INV PEC2708 (5, 11°25.8′ N 74°11.4′ W), INV PEC2709 (1, 11°23.4′ N 74°12.6′ W), INV PEC2710 (1, 12°34.2′ N 71°50.4′ W), INV PEC2711 (25, 12°31.8′ N 72°7.8′ W), INV PEC2712 (3, 12°29.4′ N 72°15.6′ W), INV PEC2713 (25, 12°29.4′ N 72°15.6′ W), INV PEC2714 (29, 12°15.6′ N 72°33′ W), INV PEC2715 (8, 12°19.2′ N 72°42.6′ W), INV PEC2716 (7, 12°19.2′ N 72°42.6′ W), INV PEC2717 (13, 11°29.4′ N 73°27′ W), INV PEC2718 (2, 11°30′ N 73°26.4′ W), INV PEC2720 (1, 11°27′ N 73°42′ W), INV PEC2721 (8, 11°27′ N 73°42′ W), INV PEC2722 (4, 11°22.2′ N 73°45′ W), INV PEC2723 (7, 11°27.6′ N 73°52.2′ W), INV PEC2724 (9, 11°27.6′ N 73°51.6′ W), INV PEC2725 (1, 11°27′ N 74°1.8′ W), INV PEC2726 (10, 11°25.2′ N 74°10.8′ W), INV PEC2727 (2, 11°25.8′ N 74°13.2′ W), INV PEC2728 (18, 11°19.2′ N 74°16.8′ W), INV PEC2729 (2, 11°15′ N 74°39′ W), INV PEC3394 (2, 9°30′ N 76°27′ W), INV PEC3395 (1, 9°52.8′ N 76°14.4′ W), INV PEC3396 (1, 10°10.2′ N 76°1.8′ W), INV PEC3397 (4, 10°10.2′ N 76°1.8′ W), INV PEC2730 (5, 11°15.6′ N 74°38.4′ W), INV PEC2731 (2, 11°7.8′ N 75°13.8′ W), INV PEC2732 (2, 11°7.8′ N 75°13.8′ W), INV PEC2733 (3, 11°7.2′ N 75°8.4′ W), INV PEC2734 (6, 11°7.2′ N 75°8.4′ W), INV PEC2735 (13, 11°7.2′ N 75°7.8′ W), INV PEC3398 (1, 9°49.2′ N 76°16.2′ W), INV PEC3399 (1, 9°53.4′ N 76°13.8′ W), INV PEC3400 (1, 9°16.2′ N 76°28.8′ W), INV PEC4096 (5, 12°31.8′ N 72°11.4′ W), INV PEC4356 (1, 9°45′ N 76°15.6′ W), INV PEC4357 (2, 9°46.8′ N 76°18′ W), INV PEC4358 (3, 12°31.8′ N 72°12′ W), INV PEC4359 (1, 11°28.2′ N 73°40.2′ W), INV PEC4360 (6, 11°28.2′ N 73°40.2′ W), INV PEC4361 (1, 12°31.8′ N 72°12′ W), INV PEC4093 (13, 10°32.4′ N 75°39′ W), INV PEC4094 (15, 10°32.4′ N 75°39′ W), INV PEC4095 (7, 11°28.2′ N 73°40.2′ W), INV PEC8028 (3, 9°37.8′ N 76°21.6′ W), INV PEC8027 (1, 11°30.6′ N 73°23.4′ W), INV PEC8544 (12, 12°41.4′ N 71°49.2′ W), INV PEC8545 (6, 10°43.8′ N 75°37.2′ W), INV PEC8543 (21, 12°36′ N 71°28.8′ W), INV PEC8546 (9, 10°34.8′ N 75°39.6′ W), INV PEC8547 (1, 11°8.4′ N 75°16.2′ W), INV PEC8548 (4, 11°12′ N 74°30′ W), INV PEC8549 (1, 11°31.8′ N 73°28.8′ W), INV PEC8542 (26, 12°36′ N 71°28.8′ W).

*Coelorinchus caribbaeus* (Goode & Bean 1885) – Blackfin Grenadier, Granadero Caribeño (AFS) – Bathydemersal, 218-500 m. USNM 74322 (1, 9°30.6′ N 76°25.8′ W), UF 42241 (2, 11°9′ N 74°29.4′ W), UF 85976 (5, 9°4.2′ N 81°25.2′ W), UF 106644 (6, 11°9.6′ N 74°24.6′ W), UF 118065 (1, 11°46.2′ N 69°15′ W), UF 118077 (1, 11°36.6′ N 62°46.8′ W), UF 118080 (4, 9°3′ N 81°22.2′ W), UF 118081 (4, 11°49.2′ N 69°24′ W), UF 226879 (1, 10°54.6′ N 66°18′ W), INV PEC2760 (16, 11°12′ N 74°17.4′ W), INV PEC3404 (1, 9°57.6′ N 76°7.8′ W), INV PEC3403 (1, 9°27.6′ N 76°25.8′ W), INV PEC3402 (1, 9°16.2′ N 76°28.8′ W), INV PEC3401 (1, 9°3′ N 76°36.6′ W), INV PEC2744 (16, 12°15′ N 72°33.6′ W), INV PEC2743 (58, 12°24′ N 72°16.2′ W), INV PEC2742 (97, 12°24′ N 72°15′ W), INV PEC2741 (34, 12°34.2′ N 71°49.8′ W), INV PEC2740 (8, 12°34.2′ N 71°50.4′ W), INV PEC2757 (1, 11°24.6′ N 74°9.6′ W), INV PEC2745 (7, 12°15.6′ N 72°33′ W), INV PEC2746 (1, 12°15.6′ N 72°33′ W), INV PEC2747 (3, 11°29.4′ N 73°27′ W), INV PEC2748 (24, 11°29.4′ N 73°22.8′ W), INV PEC2749 (1, 11°29.4′ N 73°22.8′ W), INV PEC2750 (8, 11°28.8′ N 73°24′ W), INV PEC2751 (9, 11°26.4′ N 73°31.8′ W), INV PEC2752 (13, 11°26.4′ N 73°33′ W), INV PEC2753 (2, 11°22.2′ N 73°45′ W), INV PEC2754 (12, 11°22.2′ N 73°46.2′ W), INV PEC2755 (1, 11°27.6′ N 73°52.2′

W), INV PEC2756 (5, 11°24.6′ N 74°9.6′ W), INV PEC2758 (2, 11°25.2′ N 74°12.6′ W), INV PEC2759 (14, 11°12′ N 74°17.4′ W), INV PEC3405 (1, 9°16.2′ N 76°28.8′ W), INV PEC2761 (1, 10°28.8′ N 75°42.6′ W), INV PEC2762 (14, 11°5.4′ N 75°15.6′ W), INV PEC2763 (18, 11°5.4′ N 75°15.6′ W), INV PEC2764 (3, 11°7.8′ N 75°13.8′ W), INV PEC2736 (1, 11°13.8′ N 74°39′ W), INV PEC2737 (6, 11°13.8′ N 74°39′ W), INV PEC2738 (2, 11°25.8′ N 74°11.4′ W), INV PEC2739 (4, 11°23.4′ N 74°12.6′ W), INV PEC4365 (4, 11°22.8′ N 73°44.4′ W), INV PEC4364 (10, 11°22.8′ N 73°44.4′ W), INV PEC4363 (4, 10°33′ N 75°37.2′ W), INV PEC4362 (8, 10°31.8′ N 75°37.2′ W), INV PEC8023 (19, 12°32.4′ N 71°52.2′ W), INV PEC8026 (1, 11°3.6′ N 75°25.2′ W), INV PEC8024 (3, 12°20.4′ N 72°27′ W), INV PEC8020 (1, 11°8.4′ N 74°23.4′ W), INV PEC8019 (4, 11°9′ N 74°27′ W), INV PEC8021 (1, 11°9′ N 74°22.8′ W), INV PEC8022 (3, 12°33′ N 71°52.2′ W), INV PEC8025 (6, 12°19.8′ N 72°27.6′ W).

*Coryphaenoides mexicanus* (Parr 1946) - Mexican Grenadier (Fishbase). Bathydemersal, 732-1459 m. USNM 402385 (1, 9°48.6′ N 82°16.2′ W), UF 39495 (1, 11°46.2′ N 68°48′ W), UF 39563 (1, 10°49.8′ N 67°48′ W), UF 39575 (1, 10°15.6′ N 76°0′ W), UF 39599 (1, 10°55.8′ N 67°37.8′ W).

*Coryphaenoides zaniophorus* (Vaillant 1888) - Thickbeard Grenadier (Fishbase). Bathydemersal, 586-914 m. USNM 219875 (1, 11°40.8′ N 73°24′ W), MCZ 43067 (1, 9°7.2′ N 81°10.2′ W), UF 39491 (1, 11°54′ N 69°18′ W), UF 39578 (1, 12°6′ N 72°55.2′ W), UF 39598 (3, 11°16.8′ N 74°21.6′ W), UF 119366 (1, 11°49.2′ N 69°24′ W), UF 119368 (1, 11°52.8′ N 69°25.2′ W), INV PEC8042 (2, 12°21′ N 73°0′ W), INV PEC8041 (5, 12°40.8′ N 72°3.6′ W), INV PEC8557 (1, 11°8.4′ N 75°16.2′ W), INV PEC8558 (1, 11°33.6′ N 73°57′ W).

*Gadomus arcuatus* (Goode & Bean 1886) - Doublethread Grenadier (Fishbase). Bathypelagic, 586-1066 m. USNM 188990 (2, 16°34.8′ N 80°4.2′ W), UF 39493 (1, 11°54′ N 69°18′ W), UF 118055 (4, 15°45′ N 80°45′ W), UF 119347 (2, 16°34.8′ N 80°4.2′ W), UF 119361 (2, 11°52.8′ N 69°25.2′ W), UF 125713 (2, 11°3′ N 67°52.8′ W), UF 125719 (1, 11°54′ N 69°22.8′ W), UF 202106 (3, 16°48′ N 82°33′ W), UF 222622 (2, 9°7.2′ N 81°12′ W), UF 226980 (1, 11°48′ N 66°6.6′ W), INV PEC8494 (1, 9°34.2′ N 76°27.6′ W), INV PEC8495 (1, 9°42.6′ N 76°22.8′ W), INV PEC8496 (1, 10°0′ N 76°15.6′ W), INV PEC8497 (1, 11°3′ N 75°29.4′ W), INV PEC8498 (1, 10°34.8′ N 75°39.6′ W), INV PEC8499 (1, 11°8.4′ N 75°16.2′ W), INV PEC8500 (1, 11°33.6′ N 73°57′ W).

*Gadomus dispar* (Vaillant 1888). Bathydermersal, 457-914 m. USNM 220163 (1, 16°34.8′ N 80°4.2′ W), UF 39580 (1, 12°6′ N 72°55.2′ W), UF 125547 (1, 9°1.8′ N 76°31.8′ W), UF 137372 (2, 11°10.2′ N 74°27′ W). These records extend the bathymetric range of the species.

*Gadomus longifilis* (Goode & Bean 1885) - Threadfin Grenadier (Fishbase). Bathypelagic, 576-1629 m. USNM 400794 (1, 9°46.8′ N 79°25.8′ W), MCZ 28145 (1, 14°31.8′ N 61°7.8′ W), MCZ 28146 (1, 16°3′ N 61°52.2′ W), UF 125530 (1, 10°15.6′ N 76°0′ W), UF 125538 (1, 11°46.2′ N 68°48′ W), UF 125541 (1, 11°54′ N 69°22.8′ W), UF 125554 (8, 11°54′ N 69°18′ W), UF 125556 (4, 10°55.8′ N 67°37.8′ W), UF 125560 (8, 11°3′ N 67°52.8′ W), UF 137383 (1, 9°0′ N 77°25.2′ W), UF 202107 (2, 16°48′ N 82°33′ W), UF 222479 (33, 10°16.2′ N 76°3′ W), UF 222621 (4, 9°7.2′ N 81°12′ W), UF 222665 (1, 9°10.2′ N 80°55.8′ W), UF 222674 (4, 9°1.8′ N 76°52.8′ W), UF 222760 (1, 10°16.8′ N 76°0′ W), UF 226981 (5, 11°48′ N 66°6.6′ W), UF 227512 (3, 11°34.8′ N 64°34.8′ W), UF 229859 (1, 13°21′ N 61°2.4′ W), INV PEC8501 (3, 9°3.6′ N 76°44.4′ W), INV PEC8502 (1, 9°17.4′ N 76°31.8′ W), INV PEC8503 (2, 9°42.6′ N 76°22.8′ W).

*Hymenocephalus aterrimus* Gilbert 1905 - Blackest Whiptail (Fishbase). Bathypelagic, 576-842 m. UF 126813 (1, 15°36′ N 61°9′ W), UF 126822 (2, 9°1.8′ N 76°31.8′ W), UF 126823 (4, 15°36′ N 61°9′ W), UF 226906 (4, 13°21′ N 61°2.4′ W). Additional specimens' in Marshall (1973).

*Hymenocephalus billsam* Marshall & Iwamoto 1973. Bathydemersal, 373-1006 m. Holotype, USNM 198181 (17°49.2′ N 66°10.8′ W), Paratype,USNM 209263 (7, 9°0′ N 81°22.8′ W); MCZ 43021 (1, 16°48′ N 82°33′ W), MCZ 43044 (3, 16°34.8′ N 80°10.2′ W), MCZ 43045 (8, 12°25.8′ N 82°24′ W), MCZ 43047 (6, 10°10.2′ N 59°54′ W), MCZ 43048 (5, 16°58.2′ N 87°52.8′ W), UF 110721 (5, 15°36′ N 61°13.2′ W), UF 222952 (14, 9°57′ N 76°10.8′ W), UF 230406 (1, 14°34.8′ N 81°31.8′ W), UF 232687 (19, 12°52.2′ N 70°19.8′ W). Additional sepcimens' in Marshall (1973).

*Hymenocephalus italicus* Giglioli 1884 - Glasshead Gremadier (Fishbase). Benthopelagic 286-940 m, USNM 219874 (5, 12°10.2′ N 72°52.2′ W), USNM 364272 (1, 10°0′ N 76°10.2′ W), USNM 336610 (1, 14°22.8′ N 81°45′ W), USNM 336611 (5, 12°34.8′ N 82°19.2′ W), MCZ 28058 (1, 12°3′ N 61°46.2′ W), MCZ 28149 (3, 15°25.2′ N 61°27′ W), MCZ 28150 (1, 13°58.8′ N 61°4.8′ W), MCZ 43025 (5, 9°3′ N 81°22.2′ W), MCZ 57926 (1, 11°36′ N 62°46.2′ W), MCZ 60981 (2, 11°36′ N 62°52.2′ W), UF 41341 (19, 11°58.2′ N 69°30′ W), UF 109902 (10, 11°52.8′ N 69°28.2′ W), UF 117643 (5, 10°16.2′ N 75°54.6′ W), UF 117644 (9, 11°58.8′ N 69°30′ W), UF 117646 (10, 12°1.2′ N 61°53.4′ W), UF 117647 (3, 11°40.2′ N 62°33′ W), UF 117664 (1, 11°54′ N 69°22.8′ W), UF 119348 (1, 11°40.2′ N 62°27′ W), UF 119370 (1, 11°46.2′ N 69°15′ W), UF 207595 (1, 11°40.2′ N 62°40.2′ W), UF 183530 (1, 14°34.8′ N 81°31.8′ W), INV PEC2781 (1, 11°24.6′ N 74°9.6′ W), INV PEC2770 (9, 12°19.2′ N 72°42.6′ W), INV PEC2771 (4, 11°29.4′ N 73°27′ W), INV PEC2772 (2, 11°30′ N 73°26.4′ W), INV PEC2773 (2, 11°28.8′ N 73°24′ W), INV PEC2774 (21, 11°27′ N 73°42′ W), INV PEC2775 (10, 11°27′ N 73°42′ W), INV PEC2776 (7, 11°27.6′ N 73°52.2′ W), INV PEC2777 (20, 11°27.6′ N 73°51.6′ W), INV PEC3406 (2, 9°30.6′ N 76°27′ W), INV PEC3407 (2, 9°53.4′ N 76°13.8′ W), INV PEC3408 (1, 9°18.6′ N 76°29.4′ W), INV PEC3409 (1, 9°27.6′ N 76°25.8′ W), INV PEC3410 (8, 9°30.6′ N 76°27′ W), INV PEC3411 (23, 9°30′ N 76°27′ W), INV PEC3412 (4, 9°49.2′ N 76°16.2′ W), INV PEC3413 (8, 9°53.4′ N 76°13.8′ W), INV PEC3414 (4, 10°10.2′ N 76°1.8′ W), INV PEC3415 (5, 10°10.2′ N 76°1.8′ W), INV PEC3416 (1, 9°30.6′ N 76°27′ W), INV PEC3417 (1, 9°15.6′ N 76°28.8′ W), INV PEC2765 (12, 12°31.8′ N 72°7.8′ W), INV PEC2766 (1, 12°29.4′ N 72°15.6′ W), INV PEC2767 (23, 12°29.4′ N 72°15.6′ W), INV PEC2768 (3, 12°24′ N 72°16.2′ W), INV PEC2769 (21, 12°19.2′ N 72°42.6′ W), INV PEC2778 (1, 11°27.6′ N 73°51.6′ W), INV PEC2779 (1, 11°27.6′ N 73°51.6′ W), INV PEC2780 (1, 11°27.6′ N 73°51.6′ W), INV PEC2782 (4, 11°24.6′ N 74°12′ W), INV PEC2783 (3, 11°25.8′ N 74°13.2′ W), INV PEC4366 (2, 11°22.8′ N 73°44.4′ W), INV PEC4367 (1, 11°28.2′ N 73°40.2′ W), INV PEC8039 (2, 9°7.8′ N 76°36′ W), INV PEC8038 (2, 9°37.8′ N 76°21.6′ W), INV PEC8037 (7, 10°19.8′ N 75°54′ W), INV PEC8036 (2, 11°22.2′ N 74°22.2′ W), INV PEC8035 (3, 11°30.6′ N 73°23.4′ W), INV PEC8034 (1, 12°21′ N 73°0′ W), INV PEC8040 (8, 8°59.4′ N 76°45.6′ W), INV PEC8573 (1, 11°31.8′ N 73°28.8′ W), INV PEC8572 (2, 11°32.4′ N 73°44.4′ W), INV PEC8571 (1, 11°25.2′ N 74°19.2′ W), INV PEC8570 (1, 10°34.8′ N 75°39.6′ W), INV PEC8569 (8, 9°34.2′ N 76°27.6′ W), INV PEC8568 (1, 9°17.4′ N 76°31.8′ W), INV PEC8567 (1, 8°57′ N 76°51.6′ W). Additional sepcimens in Marshall (1973).

*Kuronezumia bubonis* (Iwamoto 1974). Bulbous Rattail, Benthopelagic. 549-732 m. Paratype, USNM 210592 (2, 9°1.8′ N 76°31.8′ W); USNM 266492 (1, 14°10.2′ N 81°49.8′ W).

*Malacocephalus laevis* (Lowe 1843) - Softhead Grenadier (Fishbase). Bathydermersal, 329-641 m. MCZ 43064 (1, 9°3′ N 81°22.2′ W), MCZ 43065 (2, 14°22.8′ N 81°45′ W), MCZ 43066 (1, 9°13.2′ N 80°43.2′ W), MCZ 44992 (2, 300-415 SL, 10°54′ N 67°7.8′ W), MCZ 44993 (5, 234-305 SL, 10°16.2′ N 75°52.8′ W), MCZ 45001 (6, 10°54′ N 67°7.8′ W), MCZ 45013 (6, 10°16.2′ N 75°54.6′ W), UF 109909 (1, 12°22.8′ N 82°28.8′ W), UF 118101 (2, 15°36′ N 61°13.2′ W), UF 118103 (1, 14°24′ N 81°48′ W), UF 118104 (1, 10°57′ N 67°1.8′ W), UF 118106 (1, 11°24′ N 64°25.2′ W), UF 118168 (1, 11°52.8′ N 69°28.2′ W), UF 137422 (1, 15°34.2′ N 61°10.2′ W), UF 143703 (5, 12°1.2′ N 61°53.4′ W), UF 231495 (1, 16°2.4′ N 61°23.4′ W), UF 234440 (2, 13°16.8′ N 61°55.8′ W). Additional sepcimens in Marshall (1973).

*Malacocephalus occidentalis* Goode & Bean 1885 – Western Softhead Grenadier, Granadero Carapacho, Queue-de-Rat d'Amerique (AFS) – Bathydemersal, 218-812 m. USNM 400746 (1, 9°25.2′ N 80°18.6′ W), USNM 400756 (1, 9°25.2′ N 80°18.6′ W), USNM 156905 (1, 9°40.8′ N 59°46.8′ W), ANSP 101243 (2, 11°34.2′ N 62°49.2′ W), MCZ 28081 (1, 11°27′ N 62°10.8′ W), MCZ 43011 (3, 10°3′ N 60°1.2′ W), MCZ 43012 (2, 12°25.8′ N 82°24′ W), MCZ 43013 (2, 14°22.8′ N 81°45′ W), MCZ 43014 (3, 9°3′ N 81°22.2′ W), MCZ 44982 (1, 282 SL, 10°54′ N 67°7.8′ W), MCZ 44994 (3, 10°16.2′ N 75°54.6′ W), MCZ 45007 (1, 11°9′ N 74°28.2′ W), MCZ 45133 (15, 14°10.2′ N 81°55.2′ W), MCZ 51321 (1, 9°13.2′ N 80°43.2′ W), UF 18172 (2, 11°36.6′ N 62°46.8′ W), UF 23997 (1, 11°58.8′ N 69°30′ W), UF 117593 (2, 16°49.8′ N 81°21′ W), UF 117594 (2, 12°31.2′ N 82°21′ W), UF 118045 (1, 11°42′ N 69°4.8′ W), UF 118046 (1, 9°46.8′ N 79°25.2′ W), UF 118056 (4, 11°9.6′ N 74°24.6′ W), UF 118172 (1, 12°25.2′ N 82°15′ W), UF 119357 (1, 11°40.2′ N 62°27′ W), UF 119358 (1, 12°22.8′ N 82°28.8′ W), UF 126835 (2, 10°57′ N 67°1.8′ W), UF 137429 (5, 11°52.2′ N 69°27′ W), UF 137434 (2, 12°25.8′ N 82°24′ W), UF 207316 (7, 11°40.2′ N 62°40.2′ W), UF 207320 (3, 11°36′ N 62°52.2′ W), UF 222950 (4, 9°57′ N 76°10.8′ W), UF 223240 (1, 9°28.8′ N 76°26.4′ W), UF 229267 (1, 14°54′ N 81°23.4′ W), UF 229306 (1, 12°13.2′ N 72°49.8′ W), UF 230397 (2, 14°34.8′ N 81°31.8′ W), UF 183531 (2, 14°34.8′ N 81°31.8′ W), INV PEC3231 (1, 11°23.4′ N 74°12.6′ W), INV PEC3230 (2, 11°25.8′ N 74°11.4′ W), INV PEC3238 (1, 11°29.4′ N 73°22.8′ W), INV PEC3232 (1, 12°34.2′ N 71°50.4′ W), INV PEC3233 (1, 12°34.2′ N 71°49.8′ W), INV PEC3234 (1, 12°34.2′ N 71°49.8′ W), INV PEC3235 (1, 12°29.4′ N 72°15.6′ W), INV PEC3239 (2, 11°28.8′ N 73°24′ W), INV PEC3240 (1, 11°27′ N 73°42′ W), INV PEC3241 (2, 11°27′ N 73°42′ W), INV PEC3242 (1, 11°22.2′ N 73°46.2′ W), INV PEC3243 (1, 11°27.6′ N 73°51.6′ W), INV PEC3237 (4, 11°29.4′ N 73°27′ W), INV PEC3236 (3, 12°24′ N 72°16.2′ W), INV PEC3248 (1, 11°7.2′ N 75°8.4′ W), INV PEC3247 (1, 11°5.4′ N 75°15.6′ W), INV PEC3418 (1, 9°18′ N 76°29.4′ W), INV PEC3419 (2, 9°30′ N 76°27′ W), INV PEC3420 (2, 9°52.8′ N 76°14.4′ W), INV PEC3421 (2, 10°10.2′ N 76°1.8′ W), INV PEC3422 (2, 9°53.4′ N 76°13.8′ W), INV PEC3246 (1, 11°5.4′ N 75°15.6′ W), INV PEC3245 (1, 11°15.6′ N 74°38.4′ W), INV PEC3244 (4, 11°25.8′ N 74°13.2′ W), INV PEC4097 (1, 11°28.2′ N 73°40.2′ W), INV PEC4370 (1, 11°22.8′ N 73°44.4′ W), INV PEC4372 (1, 9°46.8′ N 76°18′ W), INV PEC4369 (1, 10°31.8′ N 75°37.2′ W), INV PEC4368 (8, 9°47.4′ N 76°17.4′ W), INV PEC4371 (1, 11°22.8′ N 73°44.4′ W), INV PEC4098 (5, 10°32.4′ N 75°39′ W), INV PEC4099 (1, 10°32.4′ N 75°39′ W), INV PEC4100 (4, 9°46.8′ N 76°18′ W), INV PEC8015 (1, 11°30.6′ N 73°23.4′ W), INV PEC8016 (3, 10°19.8′ N 75°54′ W), INV PEC8017 (1, 9°37.8′ N 76°21.6′ W), INV PEC8018 (2, 8°59.4′ N 76°45.6′ W), INV PEC8559 (2, 12°36′ N 71°28.8′ W), INV PEC8560 (3, 12°41.4′ N 71°49.2′ W), INV PEC8566 (1, 11°12′ N 74°30′ W), INV PEC8565 (1, 11°8.4′ N 75°16.2′ W), INV PEC8564 (2, 10°43.8′ N 75°37.2′ W), INV PEC8563 (2, 9°34.2′ N 76°27.6′ W), INV PEC8562 (1, 9°17.4′ N 76°31.8′ W), INV PEC8561 (1, 9°3.6′ N 76°44.4′ W).

*Nezumia aequalis* (Günther 1878) - Common Atlantic Grenadier (Fishbasse). Benthopelagic, 274-1768 m. USNM 219877 (9, 12°34.8′ N 82°19.2′ W), MCZ 28051 (2, 17°8.4′ N 62°42′ W), MCZ 28052 (3, 17°11.4′ N 62°46.2′ W), MCZ 28054 (1, 12°3.6′ N 61°47.4′ W), MCZ 28055 (2, 17°41.4′ N 64°55.8′ W), MCZ 28056 (1, 13°58.8′ N 61°4.8′ W), MCZ 43026 (3, 16°34.8′ N 80°10.2′ W), MCZ 44991 (2, 162-192 SL, 10°55.2′ N 67°55.8′ W), UF 23998 (1, 16°34.8′ N 80°4.2′ W), UF 42243 (1, 12°25.8′ N 82°24′ W), UF 110728 (3, 16°43.8′ N 61°57′ W), UF 117991 (3, 12°43.8′ N 82°16.2′ W), UF 117995 (1, 17°37.2′ N 63°0′ W), UF 117996 (1, 17°15′ N 62°22.2′ W), UF 117997 (7, 15°37.8′ N 61°12′ W), UF 117999 (4, 11°24′ N 64°25.2′ W), UF 118115 (2, 14°10.2′ N 81°49.8′ W), UF 118119 (4, 12°25.2′ N 82°15′ W), UF 118155 (1, 11°58.2′ N 69°30′ W), UF 118161 (3, 11°10.8′ N 74°28.8′ W), UF 118162 (5, 16°58.2′ N 87°52.8′ W), UF 119353 (8, 9°0′ N 81°22.8′ W), UF 119355 (8, 15°45′ N 80°45′ W), UF 119362 (3, 15°36′ N 61°9′ W), UF 137345 (3, 17°13.8′ N 63°1.2′ W), UF 137351 (3, 9°3′ N 81°18′ W), UF 137407 (7, 11°49.2′ N 69°24′ W), UF 137409 (4, 11°52.2′ N 69°27′ W), UF 137410 (3, 10°49.8′ N 67°48′ W), UF 137435 (10, 11°54′ N 69°22.8′ W), UF 137446 (1, 11°25.8′ N 74°13.8′ W), UF 137447 (5, 11°40.2′ N 62°33′ W), UF 137449 (7, 11°52.8′ N 69°25.2′ W), UF 137458 (3, 11°9.6′ N 74°28.8′ W), UF 137469 (3, 15°39′ N 61°10.2′ W), UF 137473 (1, 11°10.2′ N

74°27´ W), UF 207318 (11, 11°34.8´ N 62°58.8´ W), UF 222620 (1, 9°7.2´ N 81°12´ W), UF 222647 (25, 11°34.2´ N 62°10.8´ W), UF 222812 (1, 10°3´ N 76°27´ W), UF 222953 (4, 9°57´ N 76°10.8´ W), UF 223238 (2, 9°28.8´ N 76°26.4´ W), UF 229210 (3, 14°34.8´ N 81°31.8´ W), UF 230402 (7, 14°34.8´ N 81°31.8´ W), UF 231484 (1, 14°34.8´ N 81°31.8´ W), INV PEC3430 (1, 9°30´ N 76°27´ W), INV PEC3429 (1, 9°18´ N 76°29.4´ W), INV PEC3432 (2, 10°10.2´ N 76°1.8´ W), INV PEC2784 (2, 11°13.8´ N 74°39´ W), INV PEC2785 (22, 12°31.8´ N 72°7.8´ W), INV PEC2786 (7, 12°29.4´ N 72°15.6´ W), INV PEC2787 (13, 12°29.4´ N 72°15.6´ W), INV PEC2788 (1, 12°24´ N 72°15´ W), INV PEC2789 (1, 12°24´ N 72°16.2´ W), INV PEC2790 (6, 12°19.2´ N 72°42.6´ W), INV PEC2791 (2, 12°19.2´ N 72°42.6´ W), INV PEC2792 (6, 11°29.4´ N 73°27´ W), INV PEC2793 (5, 11°27´ N 73°42´ W), INV PEC2794 (5, 11°27´ N 73°42´ W), INV PEC2795 (10, 11°27.6´ N 73°52.2´ W), INV PEC2796 (17, 11°27.6´ N 73°51.6´ W), INV PEC2797 (2, 11°27´ N 74°1.2´ W), INV PEC2798 (1, 11°27´ N 74°1.8´ W), INV PEC2799 (3, 11°25.2´ N 74°10.8´ W), INV PEC2800 (1, 11°24.6´ N 74°14.4´ W), INV PEC2801 (2, 11°25.8´ N 74°13.2´ W), INV PEC2802 (15, 11°19.2´ N 74°16.8´ W), INV PEC2803 (1, 11°20.4´ N 74°16.2´ W), INV PEC2804 (1, 11°15´ N 74°39´ W), INV PEC2805 (12, 11°15.6´ N 74°38.4´ W), INV PEC2806 (1, 11°12´ N 74°17.4´ W), INV PEC2807 (4, 11°7.8´ N 75°13.8´ W), INV PEC2808 (11, 11°7.2´ N 75°8.4´ W), INV PEC2809 (10, 11°7.2´ N 75°7.8´ W), INV PEC2810 (1, 11°7.2´ N 75°7.8´ W), INV PEC2811 (1, 11°7.2´ N 75°7.8´ W), INV PEC3423 (2, 9°18.6´ N 76°29.4´ W), INV PEC3424 (1, 9°49.2´ N 76°15.6´ W), INV PEC3425 (2, 9°52.8´ N 76°14.4´ W), INV PEC3426 (1, 10°10.2´ N 76°1.8´ W), INV PEC3427 (1, 9°6´ N 76°37.2´ W), INV PEC3428 (2, 9°18.6´ N 76°29.4´ W), INV PEC3431 (2, 9°49.2´ N 76°16.2´ W), INV PEC4373 (1, 10°32.4´ N 75°39´ W), INV PEC4374 (1, 10°32.4´ N 75°39´ W), INV PEC4375 (5, 11°28.2´ N 73°40.2´ W), INV PEC4376 (4, 9°46.8´ N 76°18´ W), INV PEC4101 (14, 12°31.8´ N 72°12´ W), INV PEC4378 (4, 11°28.2´ N 73°40.2´ W), INV PEC4379 (3, 11°28.2´ N 73°40.2´ W), INV PEC4380 (11, 11°28.2´ N 73°40.2´ W), INV PEC4381 (1, 9°47.4´ N 76°17.4´ W), INV PEC4377 (11, 12°31.8´ N 72°11.4´ W), INV PEC8032 (6, 11°22.2´ N 74°22.2´ W), INV PEC8031 (2, 11°30.6´ N 73°23.4´ W), INV PEC8030 (4, 12°21´ N 73°0´ W), INV PEC8029 (6, 12°40.8´ N 72°3.6´ W), INV PEC8033 (1, 11°3.6´ N 75°25.2´ W), INV PEC8526 (1, 12°49.8´ N 71°36.6´ W), INV PEC8525 (31, 12°36´ N 71°28.8´ W), INV PEC8529 (1, 9°17.4´ N 76°31.8´ W), INV PEC8528 (1, 8°57´ N 76°51.6´ W), INV PEC8530 (4, 9°34.2´ N 76°27.6´ W), INV PEC8527 (32, 12°41.4´ N 71°49.2´ W), INV PEC8541 (7, 11°31.8´ N 73°28.8´ W), INV PEC8540 (12, 11°32.4´ N 73°44.4´ W), INV PEC8539 (7, 11°33.6´ N 73°57´ W), INV PEC8538 (10, 11°25.2´ N 74°19.2´ W), INV PEC8537 (23, 11°12´ N 74°30´ W), INV PEC8536 (19, 11°8.4´ N 75°16.2´ W), INV PEC8535 (9, 10°43.8´ N 75°37.2´ W), INV PEC8534 (2, 10°54.6´ N 75°36´ W), INV PEC8533 (6, 11°3´ N 75°29.4´ W), INV PEC8532 (1, 10°0´ N 76°15.6´ W), INV PEC8531 (2, 9°42.6´ N 76°22.8´ W).

*Nezumia cyrano* Marshall & Iwamoto 1973. Bathypelagic, 549-1061 m. Holotype, USNM 198184 (1, 255 SL, 9°19.8´ N 81°24´ W); Paratype, USNM 205876 (5, 160-180 SL, 10°15.6´ N 76°0´ W), MCZ 43063 (4, 9°19.8´ N 81°24´ W); UF 125604 (1, 11°52.8´ N 69°25.2´ W), UF 126803 (2, 10°49.8´ N 67°48´ W), UF 126808 (1, 11°10.8´ N 74°28.8´ W), UF 137510 (21, 11°3´ N 67°52.8´ W), UF 222350 (1, 10°16.2´ N 76°3´ W), UF 222663 (1, 9°10.2´ N 80°55.8´ W). These records extend the bathymetric range of the species.

*Nezumia suilla* Marshall & Iwamoto 1973. Bathydemersal, 604-1066 m. Holotype, USNM 198183 (1, 9°19.8´ N 81°24´ W), Paratype, USNM 213542 (1, 9°19.8´ N 81°24´ W), MCZ 43062 (4, 9°19.8´ N 81°24´ W), UF 222349 (3, 10°16.2´ N 76°3´ W), UF 222664 (1, 9°10.2´ N 80°55.8´ W), UF 222759 (1, 10°16.8´ N 76°0´ W), UF 226855 (2, 11°48´ N 66°6.6´ W), UF 226983 (4, 11°48´ N 66°6.6´ W), UF 229304 (2, 9°7.2´ N 81°12´ W). Additional sepcimens in Marshall (1973). These records extend the bathymetric range of the species.

*Sphagemacrurus grenadae* (Parr 1946) - Pugnose Grenadier (Fishbase). Bathypelagic, 684-1768 m. Holotype, USNM 47625; USNM 219876 (3, 11°7.2´ N 75°30´ W), MCZ 43027 (1, 9°19.8´ N 81°24´ W), MCZ 43036 (10, 9°19.8´ N 81°24´ W), UF 137495 (5, 10°55.8´ N 67°37.8´ W), UF 137503 (2, 11°43.8´ N 68°43.2´ W), UF 137504 (1, 11°49.2´ N 68°46.8´ W), UF 222351 (3, 9°0´ N 77°25.2´ W), UF 222662 (1, 9°10.2´ N

80°55.8′ W), UF 222813 (1, 10°3′ N 76°27′ W), UF 226982 (1, 11°48′ N 66°6.6′ W), UF 227802 (3, 11°34.8′ N 64°34.8′ W), UF 229526 (1, 11°37.2′ N 68°42′ W). These records extend the bathymetric range of the species.

*Trachonurus sulcatus* (Goode & Bean 1885) - Bristly Grenadier (Fishbase). Bathypelagic, 732-1212 m. USNM 400708 (1, 9°11.4′ N 81°0′ W), USNM 400709 (1, 10°10.8′ N 82°52.2′ W), USNM 400742 (1, 10°42.6′ N 83°14.4′ W), USNM 266494 (1, 16°31.8′ N 83°24′ W), UF 41339 (1, 16°34.8′ N 80°4.2′ W), UF 41363 (2, 16°49.2′ N 82°18′ W), UF 137491 (1, 10°15.6′ N 76°0′ W).

*Trachonurus villosus* (Günther 1877) - Furry Whiptail (Fishbase). Bathypelagic, 814-1050 m. UF 24002 (1, 10°15.6′ N 76°0′ W), UF 222348 (4, 10°16.2′ N 76°3′ W).

*Ventrifossa macropogon* Marshall 1973 - Longbeard Grenadier (Fishbase). Bathydemersal, 406-775 m. Holotype, USNM 198187 (1, 16°34.8′ N 80°10.2′ W), Paratypes, USNM 213541 (4, 16°34.8′ N 80°10.2′ W), MCZ 43058 (6, 16°34.8′ N 80°10.2′ W); MCZ 28053 (1, 15°25.2′ N 61°27′ W), MCZ 43051 (1, 9°0′ N 59°0′ W), MCZ 43052 (3, 9°0′ N 81°22.8′ W), MCZ 43055 (1, 16°58.2′ N 87°52.8′ W), MCZ 43056 (1, 10°10.2′ N 59°54′ W), MCZ 43057 (1, 12°25.2′ N 82°15′ W), UF 117920 (8, 11°7.2′ N 68°6′ W), UF 117921 (2, 11°46.2′ N 69°16.8′ W), UF 117922 (3, 15°36′ N 61°13.2′ W), UF 117924 (1, 11°54′ N 69°22.8′ W), UF 117925 (1, 17°6′ N 62°16.8′ W), UF 117992 (1, 16°34.8′ N 80°10.2′ W), UF 127223 (1, 11°52.8′ N 69°25.2′ W), UF 127226 (1, 17°24′ N 62°28.2′ W), UF 127231 (1, 17°40.8′ N 62°50.4′ W), UF 127232 (4, 12°1.2′ N 61°53.4′ W), UF 127238 (1, 11°52.8′ N 69°28.2′ W), UF 127239 (1, 16°51′ N 82°13.8′ W), UF 222645 (1, 11°34.2′ N 62°10.8′ W), UF 229309 (1, 12°13.2′ N 72°49.8′ W), UF 230398 (2, 14°34.8′ N 81°31.8′ W), INV PEC8554 (2, 10°34.8′ N 75°39.6′ W), INV PEC8555 (2, 11°12′ N 74°30′ W).

*Ventrifossa mucocephalus* Marshall 1973 - Slimehead Grenadier (Fishbase). Bathydemersal, 450-812 m. USNM 206498 (6, 9°1.8′ N 76°31.8′ W), MCZ 43060 (2, 12°25.2′ N 82°15′ W), MCZ 43072 (3, 16°34.8′ N 80°10.2′ W), UF 117929 (2, 12°43.8′ N 82°16.2′ W), UF 230409 (3, 14°34.8′ N 81°31.8′ W), INV PEC8551 (1, 9°3.6′ N 76°44.4′ W), INV PEC8552 (1, 10°54.6′ N 75°36′ W), INV PEC8553 (1, 10°34.8′ N 75°39.6′ W).

MORIDAE

*Gadella imberbis* (Vaillant 1888) - Beardless Codling (Fishbase). Benthopelagic, 229-812 m. USNM 224124 (1, 12°25.8′ N 82°25.8′ W), USNM 273286 (8, 12°34.8′ N 82°19.2′ W), UF 117913 (1, 11°40.2′ N 62°33′ W), UF 117918 (2, 11°36.6′ N 62°46.8′ W), UF 137542 (2, 11°34.8′ N 62°37.2′ W), UF 202115 (3, 13°19.8′ N 82°1.8′ W), UF 222959 (1, 9°57′ N 76°10.8′ W), INV PEC3436 (1, 9°3′ N 76°36.6′ W), INV PEC2827 (1, 11°27.6′ N 73°51.6′ W), INV PEC2826 (1, 11°22.2′ N 73°46.2′ W), INV PEC2825 (1, 11°29.4′ N 73°27′ W), INV PEC2824 (1, 11°29.4′ N 73°27′ W), INV PEC2823 (1, 12°31.8′ N 72°7.8′ W), INV PEC3437 (2, 9°30′ N 76°27′ W), INV PEC2828 (1, 11°24.6′ N 74°14.4′ W), INV PEC8520 (1, 9°3.6′ N 76°44.4′ W), INV PEC8521 (1, 9°34.2′ N 76°27.6′ W), INV PEC8522 (1, 11°25.2′ N 74°19.2′ W), INV PEC8523 (1, 11°32.4′ N 73°44.4′ W).

*Laemonema goodebeanorum* Meléndez & Markle 1997. Benthopelagic, 265-914 m. USNM 45965 (2, 11°43.2′ N 69°9.6′ W), USNM 232480 (2, 11°40.2′ N 73°15′ W), Paratype, USNM 304409 (1, 9°46.8′ N 79°25.2′ W), MCZ 45983 (1, 202 SL, 11°52.8′ N 69°25.2′ W); USNM 304537 (4, 11°10.8′ N 74°28.8′ W), USNM 304538 (14, 14°10.2′ N 81°49.8′ W), USNM 304545 (13, 12°34.8′ N 82°19.2′ W), USNM 304547 (5, 12°24′ N 82°24′ W), USNM 304552 (4, 11°40.2′ N 62°33′ W), USNM 304561 (2, 11°9.6′ N 74°28.8′ W), USNM 304563 (15, 11°58.2′ N 69°30′ W), USNM 304564 (10, 14°10.2′ N 81°55.2′ W), USNM 304565 (1, 14°22.8′ N 81°45′ W), USNM 304566 (2, 11°52.8′ N 69°25.2′ W), USNM 304575 (3, 13°39′ N 81°52.2′ W),

USNM 304609 (8, 11°12′ N 74°21′ W), USNM 304611 (3, 15°45′ N 80°45′ W), USNM 304612 (15, 12°25.2′ N 82°15′ W), USNM 304613 (20, 9°0′ N 81°22.8′ W), USNM 304617 (11, 9°3′ N 81°18′ W), USNM 304619 (1, 11°54′ N 69°22.8′ W), USNM 304623 (1, 11°49.2′ N 69°24′ W), USNM 304632 (1, 13°39′ N 81°52.2′ W), USNM 304635 (3, 9°13.2′ N 80°43.2′ W), USNM 304647 (1, 10°10.2′ N 59°54′ W), USNM 304649 (2, 13°39′ N 81°52.2′ W), USNM 304650 (3, 11°58.8′ N 69°30′ W), USNM 304660 (15, 9°3′ N 81°18′ W), USNM 304661 (20, 12°25.8′ N 82°24′ W), USNM 304675 (1, 10°10.2′ N 59°54′ W), USNM 304676 (1, 12°6′ N 72°55.2′ W), USNM 304679 (5, 12°24′ N 82°24′ W), USNM 304681 (1, 11°3′ N 75°18′ W), USNM 304685 (2, 11°49.2′ N 69°24′ W), USNM 304686 (3, 9°16.2′ N 81°37.2′ W), USNM 304694 (1, 14°10.2′ N 81°55.2′ W), USNM 304696 (2, 9°3′ N 81°18′ W), USNM 304699 (1, 11°52.8′ N 69°28.2′ W), USNM 304700 (1, 11°10.8′ N 74°28.8′ W), USNM 304701 (2, 11°49.2′ N 69°24′ W), USNM 304706 (1, 13°7.2′ N 82°7.8′ W), USNM 304711 (1, 11°25.8′ N 73°58.8′ W), USNM 304714 (1, 13°37.2′ N 81°52.8′ W), USNM 304717 (1, 11°40.2′ N 73°15′ W), USNM 304720 (1, 9°15′ N 81°31.8′ W), USNM 304722 (1, 9°13.2′ N 81°30′ W), USNM 304725 (1, 11°27′ N 73°42′ W), USNM 304726 (1, 12°19.2′ N 72°34.2′ W), USNM 304727 (1, 11°54′ N 69°22.8′ W), USNM 304733 (1, 9°15′ N 81°31.8′ W), MCZ 48947 (1, 220 SL, 9°1.8′ N 76°31.8′ W), MCZ 48954 (1, 250 SL, 11°49.2′ N 69°24′ W), UF 45373 (1, 14°10.2′ N 81°49.8′ W), UF 45459 (39, 11°40.2′ N 62°33′ W), UF 101628 (1, 12°52.8′ N 70°34.8′ W), UF 101911 (2, 14°10.2′ N 81°49.8′ W), UF 222958 (16, 9°57′ N 76°10.8′ W), UF 223249 (2, 9°28.8′ N 76°26.4′ W), UF 229215 (6, 14°34.8′ N 81°31.8′ W), UF 230610 (1, 11°26.4′ N 74°10.2′ W), UF 231734 (3, 14°34.8′ N 81°31.8′ W), INV PEC3445 (1, 9°30′ N 76°27′ W), INV PEC3444 (1, 9°49.2′ N 76°16.2′ W), INV PEC2830 (4, 11°25.8′ N 74°11.4′ W), INV PEC2831 (1, 12°31.8′ N 72°7.8′ W), INV PEC2832 (14, 12°31.8′ N 72°7.8′ W), INV PEC2833 (7, 12°29.4′ N 72°15.6′ W), INV PEC2834 (25, 12°29.4′ N 72°15.6′ W), INV PEC2837 (50, 12°19.2′ N 72°42.6′ W), INV PEC2838 (7, 12°19.2′ N 72°42.6′ W), INV PEC2839 (12, 11°29.4′ N 73°27′ W), INV PEC2840 (1, 11°30′ N 73°26.4′ W), INV PEC2841 (2, 11°27′ N 73°42′ W), INV PEC2842 (3, 11°27′ N 73°42′ W), INV PEC2843 (3, 11°27.6′ N 73°52.2′ W), INV PEC2844 (4, 11°27.6′ N 73°51.6′ W), INV PEC2845 (1, 11°27.6′ N 73°51.6′ W), INV PEC2846 (2, 11°27′ N 74°1.2′ W), INV PEC2849 (1, 11°24.6′ N 74°14.4′ W), INV PEC2852 (8, 11°20.4′ N 74°16.2′ W), INV PEC2853 (2, 11°20.4′ N 74°16.2′ W), INV PEC2854 (1, 11°15′ N 74°39′ W), INV PEC2855 (5, 11°15.6′ N 74°38.4′ W), INV PEC2856 (2, 11°7.8′ N 75°13.8′ W), INV PEC2857 (4, 11°7.8′ N 75°13.8′ W), INV PEC2858 (6, 11°7.2′ N 75°8.4′ W), INV PEC2859 (4, 11°7.2′ N 75°7.8′ W), INV PEC2829 (2, 11°13.8′ N 74°39′ W), INV PEC3438 (1, 9°6′ N 76°37.2′ W), INV PEC3439 (1, 9°18.6′ N 76°29.4′ W), INV PEC3440 (1, 9°18′ N 76°29.4′ W), INV PEC2847 (2, 11°27′ N 74°1.8′ W), INV PEC2848 (12, 11°25.2′ N 74°10.8′ W), INV PEC2836 (2, 12°24′ N 72°16.2′ W), INV PEC2835 (2, 12°24′ N 72°15′ W), INV PEC3441 (1, 9°52.8′ N 76°14.4′ W), INV PEC3442 (1, 9°30.6′ N 76°27′ W), INV PEC3443 (1, 9°49.2′ N 76°16.2′ W), INV PEC2850 (8, 11°25.8′ N 74°13.2′ W), INV PEC2851 (14, 11°19.2′ N 74°16.8′ W), INV PEC4391 (1, 10°32.4′ N 75°39′ W), INV PEC4395 (1, 10°32.4′ N 75°39′ W), INV PEC4394 (2, 11°28.2′ N 73°40.2′ W), INV PEC4393 (2, 11°28.2′ N 73°40.2′ W), INV PEC4392 (1, 11°22.8′ N 73°44.4′ W), INV PEC4103 (9, 12°31.8′ N 72°12′ W), INV PEC4102 (19, 12°31.8′ N 72°11.4′ W), INV PEC7998 (9, 11°30.6′ N 73°23.4′ W), INV PEC7999 (1, 11°3.6′ N 75°25.2′ W), INV PEC8001 (1, 9°37.8′ N 76°21.6′ W), INV PEC8002 (1, 9°7.8′ N 76°36′ W), INV PEC7997 (1, 12°32.4′ N 71°52.2′ W), INV PEC8000 (2, 10°19.8′ N 75°54′ W), INV PEC8519 (4, 11°31.8′ N 73°28.8′ W), INV PEC8518 (14, 11°12′ N 74°30′ W), INV PEC8517 (26, 11°12′ N 74°30′ W), INV PEC8516 (17, 11°8.4′ N 75°16.2′ W), INV PEC8507 (42, 12°36′ N 71°28.8′ W), INV PEC8508 (13, 12°41.4′ N 71°49.2′ W), INV PEC8509 (12, 12°41.4′ N 71°49.2′ W), INV PEC8510 (17, 12°41.4′ N 71°49.2′ W), INV PEC8511 (17, 12°41.4′ N 71°49.2′ W), INV PEC8512 (5, 8°57′ N 76°51.6′ W), INV PEC8513 (1, 9°17.4′ N 76°31.8′ W), INV PEC8514 (11, 10°43.8′ N 75°37.2′ W), INV PEC8515 (5, 10°34.8′ N 75°39.6′ W).

MERLUCIIDAE

*Merluccius albidus* (Mitchill 1818) – Offshore Hake, Merlu du Large (AFS) – Bathydemersal, 219-990 m. USNM 184940 (1, 9°40.8′ N 59°46.8′ W), USNM 205223 (1, 12°28.2′ N 72°25.8′ W), USNM 205233 (1, 11°40.2′ N 62°33′ W), USNM 205237 (3, 12°24′ N 82°24′ W), USNM 205243 (1, 12°22.8′ N 82°28.8′ W), USNM 205244 (1, 11°40.2′ N 73°15′ W), USNM 205245 (1, 12°21′ N 72°40.2′ W), USNM 205246 (1, 11°9.6′ N 74°28.8′ W), USNM 205247 (1, 11°58.8′ N 69°30′ W), USNM 205248 (1, 11°49.8′ N 73°4.8′ W), USNM 205249 (1, 11°49.2′ N 69°24′ W), USNM 205251 (1, 11°58.8′ N 69°30′ W), USNM 205253 (1, 12°21′ N 72°40.2′ W), USNM 205257 (3, 11°3′ N 75°18′ W), USNM 205259 (1, 12°16.2′ N 72°40.2′ W), USNM 205260 (1, 11°49.2′ N 69°24′ W), USNM 205262 (1, 11°34.8′ N 73°25.8′ W), USNM 206194 (2, 13°37.2′ N 81°52.8′ W), USNM 206197 (1, 11°25.8′ N 73°58.8′ W), USNM 206198 (3, 14°10.2′ N 81°49.8′ W), USNM 206204 (1, 10°54′ N 67°7.8′ W), USNM 208168 (4, 9°4.2′ N 81°25.2′ W), USNM 208169 (2, 10°24′ N 75°49.8′ W), USNM 208174 (1, 13°58.2′ N 81°52.8′ W), USNM 208181 (2, 13°37.2′ N 81°52.8′ W), USNM 208205 (1, 11°36′ N 68°19.8′ W), USNM 208215 (1, 14°22.8′ N 81°45′ W), USNM 208228 (1, 11°24′ N 73°46.8′ W), USNM 208230 (1, 11°52.8′ N 69°28.2′ W), USNM 208235 (3, 14°1.2′ N 81°49.8′ W), USNM 208236 (1, 11°49.8′ N 73°4.8′ W), USNM 400774 (1, 9°42′ N 78°36.6′ W), USNM 405609 (1, 9°40.2′ N 79°7.2′ W), ANSP 145216 (1, 11°34.2′ N 62°49.2′ W), MCZ 40407 (1, 16°36′ N 82°37.2′ W), MCZ 41625 (1, 9°40.8′ N 59°46.8′ W), MCZ 44127 (14, 14°10.2′ N 81°55.2′ W), MCZ 49199 (2, 9°3′ N 81°22.2′ W), MCZ 52689 (4, 16°34.8′ N 80°10.2′ W), UF 126353 (5, 11°36.6′ N 62°46.8′ W), UF 140772 (1, 12°22.8′ N 82°28.8′ W), UF 229244 (3, 14°54′ N 81°23.4′ W), UF 229506 (3, 14°34.8′ N 81°31.8′ W), UF 231733 (1, 14°34.8′ N 81°31.8′ W), INV PEC3451 (1, 10°9′ N 76°0.6′ W), INV PEC3450 (1, 10°9′ N 76°0.6′ W), INV PEC4383 (2, 12°34.8′ N 71°51′ W), INV PEC8574 (1, 11°12′ N 74°30′ W).

*Steindachneria argentea* Goode & Bean 1896 – Luminous Hake, Mollera Luminosa (AFS) – Bathydemersal, 200-775 m. MCZ 43083 (1, 10°31.2′ N 64°36′ W), MCZ 43086 (1, 11°30′ N 62°28.8′ W), UF 18173 (1, 11°36.6′ N 62°46.8′ W), UF 45306 (3, 11°9.6′ N 74°25.2′ W), UF 45314 (3, 11°33′ N 62°30′ W), UF 45315 (2, 11°9′ N 74°29.4′ W), UF 45318 (1, 11°10.2′ N 74°27′ W), UF 45320 (3, 12°22.8′ N 82°28.8′ W), UF 45321 (3, 11°9.6′ N 74°28.8′ W), UF 45322 (3, 11°49.8′ N 73°4.8′ W), UF 45336 (4, 11°3′ N 75°10.2′ W), UF 45337 (4, 11°9.6′ N 74°24.6′ W), UF 45339 (1, 14°24′ N 81°48′ W), UF 45340 (7, 12°34.8′ N 82°19.2′ W), UF 45341 (4, 10°24′ N 75°49.8′ W), UF 45343 (3, 9°13.2′ N 80°43.2′ W), UF 45357 (3, 11°24′ N 73°46.8′ W), UF 207321 (1, 11°36′ N 62°52.2′ W), UF 222948 (18, 9°57′ N 76°10.8′ W), UF 233604 (1, 11°34.8′ N 62°37.2′ W), INV PEC2815 (1, 12°34.2′ N 71°50.4′ W), INV PEC2816 (7, 12°34.2′ N 71°49.8′ W), INV PEC2817 (1, 12°34.2′ N 71°49.8′ W), INV PEC3434 (1, 10°10.2′ N 76°1.8′ W), INV PEC3433 (2, 9°53.4′ N 76°13.8′ W), INV PEC3435 (2, 10°10.2′ N 76°1.8′ W), INV PEC2819 (1, 12°24′ N 72°15′ W), INV PEC3645 (5, 12°34.2′ N 71°49.8′ W), INV PEC2818 (2, 12°24′ N 72°15′ W), INV PEC2813 (1, 11°25.8′ N 74°11.4′ W), INV PEC2814 (2, 11°23.4′ N 74°12′ W), INV PEC2812 (3, 11°25.8′ N 74°11.4′ W), INV PEC2822 (1, 11°5.4′ N 75°15.6′ W), INV PEC2821 (2, 11°24.6′ N 74°14.4′ W), INV PEC2820 (1, 12°24′ N 72°16.2′ W), INV PEC4118 (1, 10°32.4′ N 75°39′ W), INV PEC4548 (1, 10°32.4′ N 75°39′ W), INV PEC8004 (2, 11°8.4′ N 74°23.4′ W), INV PEC8003 (1, 11°9′ N 74°27′ W), INV PEC8504 (1, 12°36′ N 71°28.8′ W), INV PEC8505 (1, 10°34.8′ N 75°39.6′ W). These records extend the bathymetric range of the species.

PHYCIDAE

*Urophycis cirrata* (Goode & Bean 1896) – Gulf Hake, Merluza Barbona del Golfo (AFS), Phycis du Golfe (FAO) – Benthic bathydemersal en fishbase, 274-812 . USNM 218168 (2, 11°58.2′ N 69°30′ W), USNM 218173 (3, 11°24′ N 73°46.8′ W), USNM 218174 (4, 11°30′ N 62°28.8′ W), USNM 218193 (1, 12°30′ N 72°7.8′ W), INV PEC8524 (1, 9°3.6′ N 76°44.4′ W). These records extend the bathymetric range of the species.

OPHIDIIFORMES

OPHIDIIDAE

*Bassozetus robustus* Smith & Radcliffe 1913 - Robust Assfish (Fishbase). Bathydemersal, 1240-1435 m. UF 234122 (1, 11°57´ N 73°31.8´ W).

*Bathyonus laticeps* (Günther 1878). Benthic bathydemersal, 2983-4197 m. UF 230435 (4, 9°54.6´ N 77°3´ W), UF 234123 (2, 13°46.2´ N 71°19.2´ W).

*Benthocometes robustus* (Goode & Bean 1886). Bathydemersal, 303-500 m. USNM 396084 (2, 12°52.2´ N 82°9´ W), UF 222961 (3, 9°57´ N 76°10.8´ W), INV PEC7991 (2, 9°7.8´ N 76°36´ W), INV PEC8444 (1, 10°22.2´ N 75°51.6´ W). These records extend the bathymetric range of the species.

*Dicrolene introniger* Goode & Bean 1883 - Digitate Cusk eel (Fishbase). Bathydemersal, 664-1796 m. USNM 210622 (14, 9°19.8´ N 81°24´ W), MCZ 28020 (1, 15°29.4´ N 61°34.8´ W), UF 167034 (3, 11°13.8´ N 75°21´ W), UF 176949 (7, 9°58.2´ N 76°28.8´ W), UF 176961 (2, 10°9´ N 76°13.8´ W), UF 202110 (2, 16°48´ N 82°33´ W), UF 202699 (1, 16°48´ N 82°33´ W), UF 222361 (2, 9°0´ N 77°25.2´ W), UF 222575 (5, 10°16.2´ N 76°3´ W), UF 222624 (1, 9°7.2´ N 81°12´ W), UF 222658 (5, 9°10.2´ N 80°55.8´ W), UF 222746 (4, 13°1.2´ N 71°55.2´ W), UF 222814 (2, 10°3´ N 76°27´ W), UF 226858 (1, 11°48´ N 66°6.6´ W), UF 230385 (1, 11°46.2´ N 67°6´ W), UF 230444 (1, 11°34.8´ N 64°34.8´ W), UF 230488 (1, 16°48´ N 82°33´ W), UF 230620 (2, 14°16.8´ N 60°45´ W), UF 234126 (1, 16°58.2´ N 79°28.2´ W), INV PEC7993 (2, 12°21´ N 73°0´ W), INV PEC7994 (1, 11°22.2´ N 74°22.2´ W), INV PEC7992 (1, 12°40.8´ N 72°3.6´ W), INV PEC8439 (4, 9°3.6´ N 76°44.4´ W), INV PEC8440 (2, 11°3´ N 75°29.4´ W), INV PEC8441 (2, 10°54.6´ N 75°36´ W), INV PEC8442 (5, 11°32.4´ N 73°44.4´ W), INV PEC8443 (1, 11°31.8´ N 73°28.8´ W). These records extend the bathymetric range of the species.

*Lamprogrammus brunswigi* (Brauer 1906). Benthopelagic, 1317 m. USNM 227655 (1, 11°13.8´ N 75°21´ W).

*Lamprogrammus niger* Alcock 1891. Bathypelagic, 800-1079 m. USNM 304750 (2, 10°15.6´ N 76°0´ W), USNM 395809 (1, 10°15.6´ N 76°0´ W), MCZ 42506 (1, 11°21´ N 67°7.8´ W), MCZ 49046 (1, 314 SL, 9°19.8´ N 81°24´ W), MCZ 49864 (1, 135 SL, 11°21´ N 67°7.8´ W), UF 101412 (1, 11°3´ N 67°52.8´ W), UF 101421 (1, 10°55.8´ N 67°37.8´ W), UF 202478 (1, 16°48´ N 82°33´ W), UF 222573 (1, 10°16.2´ N 76°3´ W), UF 223855 (1, 9°25.2´ N 77°34.8´ W).

*Lepophidium brevibarbe* (Cuvier 1829) – Blackedge Cusk-eel, Congriperla Clarín (AFS), Brotule Barbiche (FAO) – Demersal, 210-488 m. UF 202323 (1, 16°39´ N 82°28.8´ W), UF 234507 (1, 11°30´ N 60°46.2´ W). INV PEC2606 (1, 12°34.2´ N 71°50.4´ W), INV PEC2607 (1, 12°34.2´ N 71°50.4´ W), INV PEC2608 (5, 12°34.2´ N 71°49.8´ W), INV PEC2609 (1, 12°24´ N 72°15´ W), INV PEC2610 (10, 12°24´ N 72°15´ W), INV PEC2611 (1, 12°24´ N 72°15´ W), INV PEC2615 (1, 11°26.4´ N 73°33´ W), INV PEC2616 (1, 11°5.4´ N 75°15.6´ W), INV PEC2612 (5, 12°24´ N 72°16.2´ W), INV PEC2613 (1, 11°29.4´ N 73°27´ W), INV PEC2614 (2, 11°26.4´ N 73°31.8´ W), INV PEC3363 (1, 9°16.2´ N 76°28.8´ W), INV PEC5368 (1, 11°22.8´ N 73°44.4´ W). Additional records in the area in Robins et al. (2012). These records extend the bathymetric range of the species.

*Lepophidium cultratum* Robins, Robins & Brown 2012 - Blackear Cusk-eel (Fishbase). Benthopelagic, 210-329 m. Holotype, UF 211765 (1, 9°18´ N 80°22.2´ W); Paratypes, UF 135183 (29, 9°18´ N 80°22.2´ W), UF 180029 (1, 9°13.2´ N 80°43.2´ W), UF 211507 (1, 9°12´ N 81°30´ W), UF 211764 (15, 9°4.2´ N 81°25.2´ W), UF 221794 (8, 10°42´ N 67°52.8´ W), UF 229528 (5, 9°40.2´ N 79°7.2´ W); UF 179384 (1, 10°42´ N 67°52.8´ W), UF 202711 (4, 16°37.8´ N 81°39´ W), UF 202621 (1, 11°27´ N 83°10.8´ W), UF 211766 (7, 16°45´ N

81°27´ W), UF 215378 (2, 12°16.8´ N 72°31.2´ W), UF 215420 (4, 11°9.6´ N 74°24.6´ W). Additional records in the area in Robins et al. (2012).

*Lepophidium entomelan* Robins, Robins & Brown 2012 - Blackthroat Cusk-eel (Fishbase). Demersal, 274-604 m. UF 182956 (4, 13°25.8´ N 81°52.2´ W), UF 182957 (1, 14°24´ N 81°48´ W), UF 183125 (16, 17°28.8´ N 87°57.6´ W), UF 211406 (2, 14°10.2´ N 81°49.8´ W), UF 211501 (9, 14°7.8´ N 81°55.2´ W). Additional records in the area in Robins et al. (2012). These records extend the bathymetric range of the species.

*Lepophidium kallion* Robins 1959 - Palenose Cusk-eel (Fishbase). Bathydemersal, 219-238 m. UF 216114 (1, 14°15.6´ N 80°27´ W). Additional records in the area in Robins et al. (2012). These records extend the bathymetric range of the species.

*Lepophidium marmoratum* (Goode & Bean 1885) – Marbled Cusk-eel, Congriperla Marmoleada (AFS) – Bathydemersal, 243-375 m. UF 223736 (1, 17°26.4´ N 87°55.2´ W), UF 229553 (1, 17°28.8´ N 87°57.6´ W), UF 229609 (1, 14°54´ N81°23.4´ W), UF 234457 (4, 17°24´ N 87°56.4´ W). Additional records in the area in Robins et al. (2012).

*Lepophidium robustum* Robins, Robins & Brown 2012. Benthopelagic, 200-210 m. Paratype, UF 234499 (2, 11°16.8´ N 74°16.8´ W). Additional records in the area in Robins et al. (2012).

*Lepophidium staurophor* Robins 1959 – Barred Cusk-eel, Congriperla Rayada (AFS) – Bathydemersal, 219-485 m. *Holotype, FMNH 64383 (1, 236 SL)*; Paratype, UF 202349 (1, 11°34.2´ N 83°7.2´ W); UF 211521 (1, 16°25.8´ N 81°34.8´ W), UF 211597 (1, 12°25.8´ N 82°25.8´ W), UF 211768 (3, 12°25.8´ N 82°25.8´ W), UF 223732 (1, 14°7.8´ N 81°55.8´ W), UF 223734 (1, 13°12.6´ N 82°15.6´ W), UF 229503 (2, 14°7.8´ N 81°52.2´ W), UF 234545 (3, 14°54´ N 81°23.4´ W). Additional records in the area in Robins et al. (2012).

*Lepophidium zophochir* Robins, Robins & Brown 2012 - Sooty Cusk-eel (Fishbase). Demersal, 210-375 m. UF 182960 (3, 11°9.6´ N 74°24.6´ W), UF 182961 (1, 10°42´ N 67°52.8´ W), UF 215277 (6, 11°9´ N 74°25.8´ W), UF 215414 (3, 11°49.8´ N 73°4.8´ W), UF 229240 (25, 14°54´ N 81°23.4´ W), UF 234452 (8, 16°45´ N 81°27´ W). Additional records in the area in Robins et al. (2012). These records extend the bathymetric range of the species.

*Lepophidium* sp. – Benthic, 206-280 m. INV PEC2618 (1, 10°28.2´ N 75°42.6´ W), INV PEC2617 (1, 11°9.6´ N 74°39´ W).

*Luciobrotula corethromycter* Cohen 1964. Bathydemersal, 549-1768 m. Holotype, USNM 188547 (9°19.8´ N 81°24´ W); *Paratypes, FMNH 66454 (1, 435 SL), MCZ 42930 (1, 277 SL)*; USNM 395816 (1, 12°28.2´ N 72°25.8´ W), (1), USNM 218267 (1, 11°52.8´ N 69°25.2´ W), USNM 218268 (1, 12°52.2´ N 70°43.2´ W), USNM 218270 (2, 11°40.8´ N 68°57´ W), USNM 218271 (1, 11°52.8´ N 69°25.2´ W), UF 176894 (1, 12°54´ N 70°39´ W), UF 222650 (1, 11°34.2´ N 62°10.8´ W), UF 222816 (1, 10°3´ N 76°27´ W), INV PEC7995 (1, 11°22.2´ N 74°22.2´ W), INV PEC8416 (1, 9°17.4´ N 76°31.8´ W), INV PEC8418 (2, 11°33.6´ N 73°57´ W), INV PEC8419 (1, 11°32.4´ N 73°44.4´ W). Additional specimens' in Cohen (1964).

*Monomitopus agassizii* (Goode & Bean 1896). Benthopelagic, 457-1768 m. USNM 267747 (5, 16°37.8´ N 79°52.8´ W), MCZ 28135 (1, 14°42.6´ N 61°13.2´ W), MCZ 28136 (1, 14°31.8´ N 61°7.8´ W), MCZ 28137 (1, 12°46.2´ N 61°25.2´ W), MCZ 28141 (1, 16°2.4´ N 61°49.2´ W), MCZ 28142 (1, 13°10.2´ N 61°18.6´ W), MCZ 28143 (2, 15°25.2´ N 61°27´ W), MCZ 48943 (2, 11°52.8´ N 69°25.2´ W), MCZ 49043 (2, 164-183 SL, 9°7.2´ N 81°10.2´ W), MCZ 49044 (11, 16°58.2´ N 87°52.8´ W), UF 101420 (4, 16°34.8´ N 80°4.2´ W), UF 101615 (2, 9°6´ N 81°15´ W), UF 178679 (13, 12°54´ N 70°31.2´ W), UF 202108 (6, 16°48´ N 82°33´ W), UF 222363 (7, 9°0´ N 77°25.2´ W), UF 222574 (29, 10°16.2´ N 76°3´ W), UF 222623 (10, 9°7.2´ N 81°12´

W), UF 222659 (1, 9°10.2′ N 80°55.8′ W), UF 222676 (1, 9°1.8′ N 76°52.8′ W), UF 222754 (8, 10°16.8′ N 76°0′ W), UF 222815 (1, 10°3′ N 76°27′ W), UF 230420 (1, 14°16.8′ N 60°45′ W), UF 230451 (3, 16°6′ N 61°18.6′ W), UF 230452 (9, 16°43.8′ N 61°57′ W), UF 230453 (7, 16°55.2′ N 62°43.2′ W), UF 230486 (4, 16°48′ N 82°33′ W), UF 232675 (2, 12°52.8′ N 70°28.8′ W), UF 222747 (1, 13°1.2′ N 71°55.2′ W), INV PEC7987 (6, 12°40.8′ N 72°3.6′ W), INV PEC7988 (10, 12°21′ N 73°0′ W), INV PEC7989 (11, 11°22.2′ N 74°22.2′ W), INV PEC7990 (1, 11°3.6′ N 75°25.2′ W), INV PEC8420 (4, 8°57′ N 76°51.6′ W), INV PEC8421 (19, 9°3.6′ N 76°44.4′ W), INV PEC8422 (2, 9°17.4′ N 76°31.8′ W), INV PEC8423 (9, 9°34.2′ N 76°27.6′ W), INV PEC8424 (11, 9°42.6′ N 76°22.8′ W), INV PEC8425 (12, 10°0′ N 76°15.6′ W), INV PEC8426 (11, 11°3′ N 75°29.4′ W), INV PEC8427 (21, 10°54.6′ N 75°36′ W), INV PEC8428 (1, 10°43.8′ N 75°37.2′ W), INV PEC8429 (11, 10°34.8′ N 75°39.6′ W), INV PEC8430 (8, 11°8.4′ N 75°16.2′ W), INV PEC8431 (14, 11°25.2′ N 74°19.2′ W), INV PEC8432 (2, 11°33.6′ N 73°57′ W), INV PEC8433 (9, 11°32.4′ N 73°44.4′ W), INV PEC8434 (4, 11°31.8′ N 73°28.8′ W). These records extend the bathymetric range of the species.

*Neobythites gilli* Goode & Bean 1885 – Twospot Brotula, Brótula Amarillenta (AFS) – Benthopelagic, 204-500 m. INV PEC2651 (10, 11°25.2′ N 74°12.6′ W), INV PEC3376 (5, 10°9′ N 76°0.6′ W), INV PEC3256 (1, 11°24.6′ N 74°9.6′ W), INV PEC3257 (1, 11°25.2′ N 74°12.6′ W), INV PEC2631 (1, 12°34.2′ N 71°49.8′ W), INV PEC2632 (1, 12°34.2′ N 71°49.8′ W), INV PEC2633 (1, 12°34.2′ N 71°49.8′ W), INV PEC2634 (1, 12°34.2′ N 71°49.8′ W), INV PEC2635 (48, 12°24′ N 72°15′ W), INV PEC2636 (1, 12°24′ N 72°15′ W), INV PEC2637 (1, 12°24′ N 72°15′ W), INV PEC2638 (34, 12°24′ N 72°16.2′ W), INV PEC2639 (1, 12°24′ N 72°16.2′ W), INV PEC2640 (1, 12°24′ N 72°16.2′ W), INV PEC2641 (2, 12°15′ N 72°33.6′ W), INV PEC2642 (47, 12°15.6′ N 72°33′ W), INV PEC2643 (18, 11°29.4′ N 73°22.8′ W), INV PEC2644 (23, 11°28.8′ N 73°24′ W), INV PEC2645 (25, 11°26.4′ N 73°31.8′ W), INV PEC2646 (22, 11°26.4′ N 73°33′ W), INV PEC2647 (14, 11°22.2′ N 73°46.2′ W), INV PEC2648 (3, 11°27.6′ N 73°52.2′ W), INV PEC2649 (17, 11°25.2′ N 74°10.8′ W), INV PEC2650 (16, 11°24.6′ N 74°9.6′ W), INV PEC2652 (1, 11°15′ N 74°39′ W), INV PEC2653 (7, 11°12′ N 74°17.4′ W), INV PEC2654 (11, 11°12′ N 74°17.4′ W), INV PEC2655 (2, 10°28.2′ N 75°42.6′ W), INV PEC2656 (2, 10°28.8′ N 75°42.6′ W), INV PEC2657 (2, 11°5.4′ N 75°15.6′ W), INV PEC2658 (3, 11°7.8′ N 75°13.8′ W), INV PEC2659 (13, 11°7.8′ N 75°13.8′ W), INV PEC3373 (1, 9°45.6′ N 76°15.6′ W), INV PEC3374 (1, 9°57.6′ N 76°7.8′ W), INV PEC3375 (5, 10°9′ N 76°0.6′ W), INV PEC2619 (2, 11°9.6′ N 74°39′ W), INV PEC2620 (1, 11°9.6′ N 74°40.2′ W), INV PEC2621 (137, 12°34.2′ N 71°50.4′ W), INV PEC2622 (1, 12°34.2′ N 71°50.4′ W), INV PEC2623 (1, 12°34.2′ N 71°50.4′ W), INV PEC2624 (1, 12°34.2′ N 71°50.4′ W), INV PEC2625 (1, 12°34.2′ N 71°50.4′ W), INV PEC2626 (1, 12°34.2′ N 71°50.4′ W), INV PEC2627 (1, 12°34.2′ N 71°50.4′ W), INV PEC2628 (315, 12°34.2′ N 71°49.8′ W), INV PEC2629 (1, 12°34.2′ N 71°49.8′ W), INV PEC2630 (1, 12°34.2′ N 71°49.8′ W), INV PEC3364 (1, 9°16.2′ N 76°28.8′ W), INV PEC3365 (1, 9°27.6′ N 76°26.4′ W), INV PEC3366 (1, 9°45.6′ N 76°15′ W), INV PEC3367 (1, 9°57′ N 76°9.6′ W), INV PEC3368 (1, 10°9′ N 76°0.6′ W), INV PEC3369 (2, 9°3′ N 76°36.6′ W), INV PEC3370 (8, 9°16.2′ N 76°28.8′ W), INV PEC3371 (6, 9°27.6′ N 76°25.8′ W), INV PEC3372 (11, 9°45.6′ N 76°15′ W), INV PEC5377 (3, 10°33′ N 75°37.2′ W), INV PEC5373 (7, 11°22.8′ N 73°44.4′ W), INV PEC5384 (15, 11°22.8′ N 73°44.4′ W), INV PEC5383 (6, 10°31.8′ N 75°37.2′ W), INV PEC5378 (5, 9°45.6′ N 76°15.6′ W), INV PEC7980 (1, 12°20.4′ N 72°27′ W), INV PEC7979 (11, 12°32.4′ N 71°52.2′ W), INV PEC7978 (3, 12°33′ N 71°52.2′ W), INV PEC7977 (1, 11°8.4′ N 74°23.4′ W), INV PEC7982 (2, 9°7.8′ N 76°36′ W), INV PEC7981 (1, 12°19.8′ N 72°27.6′ W), INV PEC8438 (9, 10°22.2′ N 75°51.6′ W).

*Neobythites marginatus* Goode & Bean 1886 – Stripefin Brotula (AFS) – Benthopelagic, 218-1380 m. USNM 309267 (1, 13°58.2′ N 81°52.8′ W), USNM 309270 (1, 13°37.2′ N 81°52.8′ W), USNM 309272 (10, 14°10.2′ N 81°55.2′ W), USNM 340899 (2, 14°7.8′ N 81°55.2′ W), USNM 340911 (1, 9°15′ N 81°31.8′ W), USNM 340913 (1, 11°10.2′ N 68°7.8′ W), USNM 340914 (1, 9°0′ N 81°22.8′ W), MCZ 28156 (1, 130 SL, 14°43.8′ N 61°11.4′ W), MCZ 57919 (1, 11°36′ N 62°46.2′ W), UF 101601 (1, 10°0′ N 76°10.2′ W), UF 202332 (1, 16°42′ N 82°33′ W), UF 211506 (13, 14°22.8′ N 81°45′ W), UF 222960 (12, 9°57′ N 76°10.8′ W), UF 230280

(1, 16°4.8′ N 61°24′ W), UF 230447 (1, 12°13.2′ N 72°49.8′ W), UF 183532 (1, 13°1.2′ N 71°55.2′ W), INV PEC3378 (1, 9°30.6′ N 76°27′ W), INV PEC3379 (2, 9°53.4′ N 76°13.8′ W), INV PEC2676 (1, 11°7.2′ N 75°7.8′ W), INV PEC2677 (1, 11°7.2′ N 75°7.8′ W), INV PEC3377 (1, 9°18.6′ N 76°29.4′ W), INV PEC2663 (1, 11°23.4′ N 74°12.6′ W), INV PEC2662 (3, 11°25.8′ N 74°11.4′ W), INV PEC2661 (6, 11°9.6′ N 74°40.2′ W), INV PEC2660 (2, 11°13.8′ N 74°39′ W), INV PEC2671 (1, 11°19.2′ N 74°16.8′ W), INV PEC2670 (2, 11°27.6′ N 73°51.6′ W), INV PEC2669 (2, 11°27.6′ N 73°52.2′ W), INV PEC2668 (2, 11°27′ N 73°42′ W), INV PEC2667 (1, 11°27′ N 73°42′ W), INV PEC2666 (3, 11°29.4′ N 73°27′ W), INV PEC2665 (1, 12°19.2′ N 72°42.6′ W), INV PEC2664 (3, 12°29.4′ N 72°15.6′ W), INV PEC2675 (2, 11°7.2′ N 75°8.4′ W), INV PEC2674 (2, 11°7.8′ N 75°13.8′ W), INV PEC2673 (1, 11°15′ N 74°39′ W), INV PEC2672 (2, 11°20.4′ N 74°16.2′ W), INV PEC3382 (1, 9°53.4′ N 76°13.8′ W), INV PEC3381 (2, 9°30.6′ N 76°27′ W), INV PEC3380 (1, 10°9′ N 76°0.6′ W), INV PEC5370 (1, 10°32.4′ N 75°39′ W), INV PEC5371 (2, 9°47.4′ N 76°17.4′ W), INV PEC5372 (1, 9°46.8′ N 76°18′ W), INV PEC7986 (4, 8°59.4′ N 76°45.6′ W), INV PEC7985 (7, 9°7.8′ N 76°36′ W), INV PEC7984 (8, 9°37.8′ N 76°21.6′ W), INV PEC7983 (10, 10°19.8′ N 75°54′ W), INV PEC8437 (1, 11°12′ N 74°30′ W), INV PEC8436 (3, 10°43.8′ N 75°37.2′ W), INV PEC8435 (1, 12°36′ N 71°28.8′ W). These records extend the bathymetric range of the species.

*Neobythites monocellatus* Nielsen 1999. Benthopelagic, 229-347 m. Holotype, USNM 309234 (1, 9°52.8′ N 59°52.8′ W); Paratypes, USNM 185417 (14, 9°40.8′ N 59°46.8′ W), USNM 309241 (3, 9°40.8′ N 59°46.8′ W); USNM 340897 (1, 11°9.6′ N 74°24.6′ W), USNM 402355 (1, 11°49.8′ N 73°4.8′ W), USNM 350204 (11, 9°52.8′ N 59°52.8′ W).

*Neobythites multiocellatus* Nielsen, Uiblein & Mincarone 2009. Benthopelagic, 200-1380 m. *Holotype, ZMUC P771207*, USNM 402353 (1, 11°3′ N 75°10.2′ W), USNM 402352 (1, 11°24′ N 73°46.8′ W), USNM 309243 (1, 9°40.2′ N 79°7.2′ W), USNM 405716 (4, 9°18′ N 80°22.2′ W), USNM 340921 (5, 14°10.2′ N 81°58.2′ W), MCZ 45974 (6, 111, 124 SL, 11°9.6′ N 74°25.2′ W), MCZ 49040 (9, 103-127 SL, 9°4.2′ N 81°25.2′ W), UF 183533 (1, 13°1.2′ N 71°55.2′ W). These records extend the bathymetric range of the species.

*Neobythites ocellatus* Günther 1887. Benthopelagic, 200-357 m. USNM 309247 (1, 11°3′ N 75°10.2′ W), USNM 64600 (1, 9°30.6′ N 76°25.8′ W), USNM 309249 (17, 11°9.6′ N 74°24.6′ W), USNM 340915 (2, 11°49.8′ N 73°4.8′ W), USNM 309250 (3, 11°49.8′ N 73°4.8′ W), USNM 200553 (9, 11°9′ N 74°25.8′ W), USNM 309232 (1, 11°9′ N 74°26.4′ W), USNM 309236 (1, 11°3′ N 75°18′ W), USNM 340918 (1, 11°24′ N 73°46.8′ W), USNM 204356 (1, 11°24′ N 73°46.8′ W), USNM 309237 (4, 11°24′ N 73°46.8′ W), USNM 340924 (8, 12°25.8′ N 82°25.8′ W), USNM 309227 (4, 14°16.8′ N 81°55.2′ W), USNM 340919 (2, 12°25.8′ N 82°25.8′ W), USNM 309237 (4, 11°24′ N 73°46.8′ W), USNM 309247 (1, 11°3′ N 75°10.2′ W), USNM 309242 (1, 10°58.8′ N 66°0′ W), USNM 405711 (5, 9°40.2′ N 79°7.2′ W), USNM 309248 (7, 9°18′ N 80°22.2′ W), USNM 309250 (3, 11°49.8′ N 73°4.8′ W).

*Penopus microphthalmus* (Vaillant 1888). Bathydemersal, 1006-1097 m. UF 172670 (1, 10°10.2′ N 76°13.8′ W), UF 176954 (1, 11°43.8′ N 68°43.2′ W).

*Pycnocraspedum* sp. Benthopelagic, 329 m. USNM 227388 (1, 14°16.8′ N 81°55.2′ W). This genus needs a complete revision due to the scarce information in the original description of the species.

*Xyelacyba myersi* Cohen 1961 - Gargoyle Cusk (Fishbase). Bathydemersal, 1271-1463 m. UF 172668 (1, 9°58.2′ N 76°28.8′ W), UF 172669 (1, 9°31.8′ N 76°37.8′ W), UF 176350 (1, 9°58.2′ N 76°28.8′ W).

BYTHITIDAE

*Calamopteryx robinsorum* Cohen 1973 – Teacher Brotula, Brótula del Maestro (AFS) –Demersal, 200-219 m. USNM 359299 (1, 10°4.2´ N 76°6´ W).

*Cataetyx laticeps* Koefoed 1927. Bathydemersal, 1097-1485 m. UF 176892 (1, 11°7.2´ N 75°30´ W), UF 232257 (1, 11°57´ N 73°31.8´ W).

*Diplacanthopoma brachysoma* Günther 1887. Bathydemersal, 274-789 m. MCZ 48972 (1, 11°52.8´ N 69°25.2´ W), MCZ 49035 (1, 189 SL, 12°25.2´ N 82°15´ W), MCZ 49036 (1, 117 SL, 16°57´ N 81°19.2´ W), UF 101613 (1, 12°10.2´ N 72°52.2´ W), UF 222625 (1, 9°7.2´ N 81°12´ W), UF 226798 (3, 16°4.8´ N 61°24´ W), INV PEC2686 (1, 11°15´ N 74°39´ W), INV PEC2687 (1, 11°12´ N 74°17.4´ W), INV PEC2688 (1, 11°12´ N 74°17.4´ W), INV PEC3383 (2, 9°18.6´ N 76°29.4´ W), INV PEC3384 (1, 9°49.2´ N 76°16.2´ W), INV PEC3385 (1, 9°49.2´ N 76°15.6´ W), INV PEC3386 (2, 9°53.4´ N 76°13.8´ W), INV PEC3387 (1, 9°18´ N 76°29.4´ W), INV PEC3388 (1, 9°52.8´ N 76°14.4´ W), INV PEC2678 (1, 11°29.4´ N 73°27´ W), INV PEC2679 (1, 11°26.4´ N 73°31.8´ W), INV PEC2680 (1, 11°27´ N 73°42´ W), INV PEC2681 (1, 11°27´ N 73°42´ W), INV PEC2682 (1, 11°27.6´ N 73°52.2´ W), INV PEC2683 (1, 11°27.6´ N 73°51.6´ W), INV PEC2684 (1, 11°25.2´ N 74°10.8´ W), INV PEC2685 (1, 11°19.2´ N 74°16.8´ W), INV PEC5351 (1, 10°32.4´ N 75°39´ W), INV PEC5350 (1, 10°32.4´ N 75°39´ W), INV PEC5349 (1, 9°46.8´ N 76°18´ W), INV PEC5352 (1, 10°32.4´ N 75°39´ W), INV PEC7996 (1, 9°37.8´ N 76°21.6´ W), INV PEC8452 (1, 10°34.8´ N 75°39.6´ W), INV PEC8453 (10, 11°8.4´ N 75°16.2´ W), INV PEC8450 (1, 10°54.6´ N 75°36´ W), INV PEC8449 (1, 11°3´ N 75°29.4´ W), INV PEC8448 (5, 9°34.2´ N 76°27.6´ W), INV PEC8447 (2, 9°17.4´ N 76°31.8´ W), INV PEC8446 (2, 12°41.4´ N 71°49.2´ W), INV PEC8445 (2, 12°36´ N 71°28.8´ W), INV PEC8457 (1, 11°31.8´ N 73°28.8´ W), INV PEC8456 (2, 11°32.4´ N 73°44.4´ W), INV PEC8455 (1, 11°33.6´ N 73°57´ W), INV PEC8454 (6, 11°25.2´ N 74°19.2´ W), INV PEC8451 (5, 10°43.8´ N 75°37.2´ W). These records extend the bathymetric range of the species.

*Saccogaster* sp. 640-914 m. USNM 226592 (1, 12°6´ N 72°55.2´ W).

*Saccogaster staigieri* Cohen & Nielsen 1972. Bathydemersal, 356 m. UF 185647 (1, 12°19.2´ N 72°34.2´ W).

APHYONIDAE

*Barathronus bicolor* Goode & Bean 1886. Bathypelagic, 597-1406 m. Holotype, MCZ 28077 (1, 120 SL, 16°3´ N 61°52.2´ W); USNM 202105 (2, 11°54´ N 69°22.8´ W), USNM 202113 (1, 11°52.8´ N 69°25.2´ W), MCZ 45999 (1, 11°52.8´ N 69°25.2´ W), UF 176351 (1, 17°37.8´ N 63°48´ W), UF 176354 (1, 9°58.2´ N 76°28.8´ W), UF 176355 (1, 10°10.2´ N 76°13.8´ W), UF 176957 (1, 10°9´ N 76°13.8´ W), UF 222651 (1, 11°34.2´ N 62°10.8´ W), UF 222755 (1, 10°16.8´ N 76°0´ W), UF 226986 (1, 11°48´ N 66°6.6´ W), UF 230384 (1, 11°46.2´ N 67°6´ W), INV PEC8466 (2, 11°31.8´ N 73°28.8´ W), INV PEC8463 (1, 11°8.4´ N 75°16.2´ W), INV PEC8459 (1, 8°57´ N 76°51.6´ W), INV PEC8460 (1, 9°3.6´ N 76°44.4´ W), INV PEC8464 (1, 11°25.2´ N 74°19.2´ W), INV PEC8465 (1, 11°32.4´ N 73°44.4´ W), INV PEC8462 (1, 9°34.2´ N 76°27.6´ W), INV PEC8461 (2, 9°17.4´ N 76°31.8´ W).

BATRACHOIDIFORMES

BATRACHOIDIDAE

*Porichthys bathoiketes* Gilbert 1968. Bathydemersal, 201-375 m. *Holotype, USNM 187846 (1, 86 SL, 12°25.8´ N 82°25.8´ W)*; Paratype, USNM 200607 (1, 12°25.8´ N 82°25.8´ W); USNM 302022 (1, 14°16.8´ N 81°55.2´ W), UF 19231 (2, 12°25.8´ N 82°25.8´ W), UF 19236 (1, 12°28.2´ N 82°28.2´ W), UF 229246 (1, 14°54´ N 81°23.4´ W). Additional specimens in Gilbert (1968). These records extend the bathymetric range of the species.

*Porichthys plectrodon* Jordan & Gilbert 1882 – Atlantic Midshipman, Sapo Aleta Pintada (AFS) – Demersal, 204-304 m. UF 13009 (4, 9°40.2´ N 79°7.2´ W), UF 13015 (4, 10°42´ N 67°52.8´ W), INV PEC2870 (1, 11°26.4´ N 73°31.8´ W), INV PEC2869 (1, 11°9.6´ N 74°40.2´ W). These records extend the bathymetric range of the species.

LOPHIIFORMES

LOPHIIDAE

*Lophiodes beroe* Caruso 1981 – White Anglerfish (FAO) – Bathydemersal, 512-585 m. USNM 213650 (1, 12°25.2´ N 82°15´ W), USNM 213644 (1, 9°36´ N 76°22.2´ W), MCZ 40923 (1, 13°25.2´ N 82°1.2´ W). Additional records in Caruso (1981).

*Lophiodes monodi* (Le Danois 1971) – Club Bait Anglerfish (FAO) – Bathydemersal, 313-585 m. Holotype, USNM 208343; *Paratypes, MNHN 1970-65 (1, 196 SL).* USNM 213640 (2, 12°31.2´ N 82°21´ W), USNM 213642 (1, 12°34.8´ N 82°19.2´ W), UF 211078 (1, 12°34.8´ N 82°19.2´ W), UF 232946 (1, 14°10.2´ N 81°55.2´ W), UF 232948 (1, 12°25.2´ N 82°15´ W), INV PEC3455 (1, 9°30.6´ N 76°27´ W), INV PEC3454 (1, 9°27.6´ N 76°26.4´ W), INV PEC3453 (1, 9°49.2´ N 76°15.6´ W), INV PEC3452 (1, 9°49.2´ N 76°16.2´ W). Additional specimens in Caruso (1981). These records extend the bathymetric range of the species.

*Lophiodes reticulatus* Caruso & Suttkus 1979 – Goosefish, Rape Hocicón (AFS), Baudroie Reticulée (FAO) – Bathydemersal, 200-293 m. USNM 216982 (1, 9°40.2´ N 79°7.2´ W), MCZ 40927 (1, 16°37.8´ N 81°39´ W), MCZ 45977 (1, 11°9´ N 74°25.8´ W), UF 175107 (1, 9°12´ N 81°30´ W), INV PEC2871 (2, 11°23.4´ N 74°12´ W).

*Lophius gastrophysus* Miranda Ribeiro 1915 – Blackfin Goosefish, Rape Pescador (AFS), Baudroie Pêcheuse (FAO) – Bathydemersal, 286-562 m. ANSP 119941 (2, 11°31.2´ N 62°24´ W), MCZ 44212 (1, 11°36´ N 62°52.2´ W), MCZ 44227 (1, 330 SL, 11°10.2´ N 74°27´ W), INV PEC2874 (1, 12°19.2´ N 72°42.6´ W), INV PEC2873 (1, 12°15´ N 72°33.6´ W), INV PEC2877 (1, 11°27.6´ N 73°52.2´ W), INV PEC2875 (1, 11°28.8´ N 73°24´ W), INV PEC2876 (1, 11°26.4´ N 73°31.8´ W), INV PEC2872 (1, 12°24´ N 72°15´ W), INV PEC8607 (2, 12°36´ N 71°28.8´ W). Additional specimens in Caruso (1983).

CHAUNACIDAE

*Chaunax pictus* Lowe 1846 - Pink Frogmouth (Fishbase). Bathydemersal, 270-504 m. USNM 394310 (2, 14°16.8´ N 81°55.2´ W), ANSP 103207 (3, 14°10.2´ N 81°58.2´ W), UF 229243 (3, 14°54´ N 81°23.4´ W), INV PEC3456 (1, 9°45.6´ N 76°15.6´ W), INV PEC2881 (1, 11°5.4´ N 75°15.6´ W), INV PEC2880 (2, 11°25.2´ N 74°12.6´ W), INV PEC2878 (1, 11°28.8´ N 73°24´ W), INV PEC2879 (1, 11°27´ N 73°42´ W), INV PEC5767 (3, 9°45.6´ N 76°15.6´ W), INV PEC5752 (1, 11°28.2´ N 73°40.2´ W), INV PEC5768 (2, 9°46.8´ N 76°18´ W), INV PEC5769 (1, 10°32.4´ N 75°39´ W), INV PEC5770 (1, 10°32.4´ N 75°39´ W), INV PEC5771 (1, 11°22.8´ N 73°44.4´ W), INV PEC5750 (1, 9°45.6´ N 76°15.6´ W), INV PEC5777 (2, 11°22.8´ N 73°44.4´ W), INV PEC5776 (1, 10°33´ N 75°37.2´ W).

*Chaunax suttkusi* Caruso 1989. Bathydemersal, 274-1328 m. Holotype, UF 30461 (1, 140 SL, 11°40´ N 62°33´ W); USNM 187849 (4, 14°10.2´ N 81°49.8´ W), USNM 187856 (1, 12°31.2´ N 82°21´ W), USNM 188220 (12, 12°22.8´ N 82°28.8´ W), USNM 188222 (6, 12°31.2´ N 82°21´ W), USNM 394311 (1, 14°16.8´ N 81°55.2´ W), USNM 400752 (1, 9°1.8´ N 77°26.4´ W), ANSP 97621 (2, 13°39´ N 81°52.2´ W), ANSP 105215 (1, 9°1.8´ N 76°31.8´ W), ANSP 185123 (31, 14°10.2´ N 81°58.2´ W), UF 28679 (1, 9°16.8´ N 81°9´

W), UF 30440 (3, 9°13.2′ N 81°30′ W), UF 30442 (3, 14°10.2′ N 81°55.2′ W), UF 30444 (4, 14°10.2′ N 81°55.2′ W), UF 30445 (2, 9°13.2′ N 80°43.2′ W), UF 30449 (2, 12°34.8′ N 82°19.2′ W), UF 30451 (1, 13°52.8′ N 60°49.8′ W), UF 30452 (5, 12°31.2′ N 82°21′ W), UF 30453 (5, 16°49.8′ N 81°21′ W), UF 30454 (2, 16°34.8′ N 80°10.2′ W), UF 30458 (6, 12°22.8′ N 82°28.8′ W), UF 30459 (5, 9°13.2′ N 80°43.2′ W), UF 30462 (1, 14°55.8′ N 81°10.2′ W), UF 30463 (1, 14°19.8′ N 81°49.8′ W), UF 30465 (2, 10°0′ N 76°10.2′ W), UF 46812 (1, 11°40.2′ N 62°33′ W), UF 222567 (1, 10°16.2′ N 76°3′ W), UF 222617 (4, 9°7.2′ N 81°12′ W), UF 222750 (2, 10°16.8′ N 76°0′ W), UF 222954 (38, 9°57′ N 76°10.8′ W), UF 223247 (1, 9°28.8′ N 76°26.4′ W), UF 226801 (1, 12°13.2′ N 72°49.8′ W), UF 229239 (14, 14°54′ N 81°23.4′ W), UF 230410 (2, 14°34.8′ N 81°31.8′ W), UF 231479 (2, 14°34.8′ N 81°31.8′ W), INV PEC2900 (1, 11°7.2′ N 75°8.4′ W), INV PEC3466 (8, 9°27.6′ N 76°25.8′ W), INV PEC3467 (5, 9°49.2′ N 76°16.2′ W), INV PEC3468 (1, 9°45.6′ N 76°15′ W), INV PEC3469 (4, 9°53.4′ N 76°13.8′ W), INV PEC3470 (2, 10°9′ N 76°0.6′ W), INV PEC3471 (4, 10°10.2′ N 76°1.8′ W), INV PEC3472 (1, 10°10.2′ N 76°1.8′ W), INV PEC3473 (1, 9°16.2′ N 76°28.8′ W), INV PEC3474 (1, 9°30.6′ N 76°27′ W), INV PEC3475 (1, 9°30′ N 76°27′ W), INV PEC2882 (1, 12°24′ N 72°16.2′ W), INV PEC2883 (1, 12°19.2′ N 72°42.6′ W), INV PEC2884 (7, 11°29.4′ N 73°27′ W), INV PEC2885 (4, 11°30′ N 73°26.4′ W), INV PEC2886 (3, 11°27′ N 73°42′ W), INV PEC3457 (4, 9°16.2′ N 76°28.8′ W), INV PEC3458 (1, 9°4.8′ N 76°37.8′ W), INV PEC3459 (1, 9°15.6′ N 76°28.8′ W), INV PEC3460 (4, 9°18′ N 76°29.4′ W), INV PEC3461 (3, 9°18.6′ N 76°29.4′ W), INV PEC3462 (7, 9°30′ N 76°27′ W), INV PEC3463 (7, 9°52.8′ N 76°14.4′ W), INV PEC3464 (5, 9°30.6′ N 76°27′ W), INV PEC3465 (1, 9°57.6′ N 76°7.8′ W), INV PEC2887 (3, 11°27′ N 73°42′ W), INV PEC2888 (2, 11°27.6′ N 73°52.2′ W), INV PEC2889 (1, 11°27.6′ N 73°52.2′ W), INV PEC2890 (4, 11°25.2′ N 74°10.8′ W), INV PEC2891 (1, 11°24.6′ N 74°9.6′ W), INV PEC2892 (1, 11°25.2′ N 74°12.6′ W), INV PEC2893 (1, 11°24.6′ N 74°14.4′ W), INV PEC2894 (1, 11°19.2′ N 74°16.8′ W), INV PEC2895 (1, 11°15′ N 74°39′ W), INV PEC2896 (1, 10°28.8′ N 75°42.6′ W), INV PEC2897 (3, 11°5.4′ N 75°15.6′ W), INV PEC2898 (4, 11°5.4′ N 75°15.6′ W), INV PEC3476 (1, 9°18.6′ N 76°29.4′ W), INV PEC3477 (2, 9°3′ N 76°36.6′ W), INV PEC3478 (1, 9°6′ N 76°37.2′ W), INV PEC2899 (2, 11°7.2′ N 75°8.4′ W), INV PEC8060 (4, 9°37.8′ N 76°21.6′ W), INV PEC8061 (2, 8°59.4′ N 76°45.6′ W), INV PEC8058 (1, 11°30.6′ N 73°23.4′ W), INV PEC8059 (3, 10°19.8′ N 75°54′ W), INV PEC8576 (1, 12°41.4′ N 71°49.2′ W), INV PEC8585 (1, 11°25.2′ N 74°19.2′ W), INV PEC8584 (1, 11°12′ N 74°30′ W), INV PEC8583 (1, 11°8.4′ N 75°16.2′ W), INV PEC8582 (3, 10°22.2′ N 75°51.6′ W), INV PEC8581 (3, 10°43.8′ N 75°37.2′ W), INV PEC8580 (2, 10°0′ N 76°15.6′ W), INV PEC8579 (1, 9°34.2′ N 76°27.6′ W), INV PEC8577 (2, 8°57′ N 76°51.6′ W), INV PEC8578 (2, 9°3.6′ N 76°44.4′ W). Additional specimens in Caruso (1989). These records extend the bathymetric range of the species.

## OGCOCEPHALIDAE

*Dibranchus atlanticus* Peters 1876 – Atlantic Batfish, Malthe Atlantique (AFS) – Bathydemersal, 274-1318 m. USNM 45642 (2, 11°43.2′ N 69°9.6′ W), USNM 207812 (1, 10°49.8′ N 67°48′ W), USNM 367211 (4, 11°16.8′ N 74°21.6′ W), USNM 370522 (10, 9°15′ N 81°31.8′ W), USNM 388894 (2, 12°16.2′ N 72°40.2′ W), USNM 388897 (2, 14°1.2′ N 81°49.8′ W), USNM 388901 (4, 11°43.8′ N 68°43.2′ W), USNM 388902 (1, 11°9.6′ N 74°24.6′ W), USNM 388942 (1, 12°43.8′ N 82°16.2′ W), USNM 388944 (3, 11°25.8′ N 74°13.8′ W), USNM 388953 (12, 12°25.2′ N 82°15′ W), USNM 388954 (8, 12°22.8′ N 82°28.8′ W), USNM 388955 (1, 9°0′ N 81°22.8′ W), USNM 389000 (1, 11°34.8′ N 73°25.8′ W), ANSP 101268 (1, 11°34.2′ N 62°49.2′ W), MCZ 28067 (1, 12°3.6′ N 61°48.6′ W), MCZ 28069 (1, 12°3′ N 61°46.2′ W), MCZ 28070 (1, 12°3.6′ N 61°47.4′ W), MCZ 28071 (1, 13°58.8′ N 61°4.8′ W), MCZ 28073 (1, 15°25.2′ N 61°27′ W), MCZ 54142 (1, 11°42′ N 68°43.2′ W), MCZ 57921 (1, 11°36′ N 62°46.2′ W), MCZ 146983 (1, 11°36′ N 62°52.2′ W), UF 28680 (1, 9°16.8′ N 81°9′ W), UF 85434 (3, 11°34.8′ N 62°37.2′ W), UF 85515 (5, 9°15′ N 81°31.8′ W), UF 85516 (4, 9°3′ N 81°18′ W), UF 85520 (6, 12°25.2′ N 82°15′ W), UF 85521 (2, 12°22.8′ N 82°28.8′ W), UF

85526 (3, 9°13.2′ N 80°43.2′ W), UF 85528 (3, 11°33′ N 62°30′ W), UF 85532 (7, 12°25.8′ N 82°24′ W), UF 85544 (4, 16°57′ N 81°19.2′ W), UF 85546 (1, 14°10.2′ N 81°55.2′ W), UF 86042 (2, 14°10.2′ N 81°58.2′ W), UF 86057 (2, 11°40.2′ N 62°33′ W), UF 86061 (1, 10°0′ N 76°10.2′ W), UF 86062 (1, 11°18′ N 74°43.8′ W), UF 86063 (5, 8°55.8′ N 76°52.8′ W), UF 86064 (1, 14°19.8′ N 81°49.8′ W), UF 86065 (2, 14°55.8′ N 81°10.2′ W), UF 217309 (2, 17°58.2′ N 63°52.8′ W), UF 222568 (11, 10°16.2′ N 76°3′ W), UF 222611 (4, 9°7.2′ N 81°12′ W), UF 222639 (1, 11°34.2′ N 62°10.8′ W), UF 222668 (1, 9°10.2′ N 80°55.8′ W), UF 222761 (7, 10°16.8′ N 76°0′ W), UF 222956 (2, 9°57′ N 76°10.8′ W), UF 223250 (1, 9°28.8′ N 76°26.4′ W), UF 229108 (2, 11°26.4′ N 74°10.2′ W), UF 229294 (2, 11°30′ N 73°26.4′ W), UF 232820 (1, 12°55.2′ N 71°46.8′ W), UF 233388 (2, 18°29.4′ N 63°24.6′ W), UF 233544 (3, 12°52.2′ N 70°45′ W), UF 233545 (3, 16°43.8′ N 61°57′ W), UF 233546 (19, 11°30′ N 73°26.4′ W), INV PEC2904 (3, 12°29.4′ N 72°15.6′ W), INV PEC2905 (8, 12°29.4′ N 72°15.6′ W), INV PEC2906 (2, 12°24′ N 72°15′ W), INV PEC2907 (2, 12°19.2′ N 72°42.6′ W), INV PEC2908 (1, 12°19.2′ N 72°42.6′ W), INV PEC2909 (6, 12°19.2′ N 72°42.6′ W), INV PEC2910 (5, 11°29.4′ N 73°27′ W), INV PEC2925 (6, 11°7.2′ N 75°7.8′ W), INV PEC3544 (6, 10°10.2′ N 76°1.8′ W), INV PEC3545 (3, 10°10.2′ N 76°1.8′ W), INV PEC3546 (1, 9°18′ N 76°29.4′ W) , INV PEC3547 (1, 9°49.2′ N 76°15.6′ W), INV PEC3548 (1, 9°18.6′ N 76°29.4′ W), INV PEC2913 (1, 11°27′ N 73°42′ W), INV PEC2914 (3, 11°27′ N 73°42′ W), INV PEC2915 (2, 11°27.6′ N 73°52.2′ W), INV PEC2916 (1, 11°27′ N 74°1.2′ W), INV PEC2917 (1, 11°24.6′ N 74°14.4′ W), INV PEC2918 (1, 11°25.8′ N 74°13.2′ W), INV PEC2919 (2, 11°19.2′ N 74°16.8′ W), INV PEC3549 (1, 9°30.6′ N 76°27′ W), INV PEC3550 (3, 9°6′ N 76°37.2′ W), INV PEC3551 (3, 9°16.2′ N 76°28.8′ W), INV PEC3552 (1, 9°6′ N 76°37.2′ W), INV PEC2920 (8, 11°20.4′ N 74°16.2′ W), INV PEC2911 (2, 11°30′ N 73°26.4′ W), INV PEC2912 (1, 11°29.4′ N 73°22.8′ W), INV PEC3542 (3, 9°53.4′ N 76°13.8′ W), INV PEC2921 (1, 11°20.4′ N 74°16.2′ W), INV PEC2922 (2, 11°7.8′ N 75°13.8′ W), INV PEC2923 (4, 11°7.8′ N 75°13.8′ W), INV PEC2924 (1, 11°7.2′ N 75°8.4′ W), INV PEC2903 (3, 12°31.8′ N 72°7.8′ W), INV PEC2902 (3, 11°13.8′ N 74°39′ W), INV PEC2901 (1, 11°13.8′ N 74°39.6′ W), INV PEC3483 (6, 9°49.2′ N 76°15.6′ W), INV PEC3482 (4, 9°49.2′ N 76°16.2′ W), INV PEC3481 (16, 9°30′ N 76°27′ W), INV PEC3480 (4, 9°30.6′ N 76°27′ W), INV PEC3479 (2, 9°27.6′ N 76°25.8′ W), INV PEC3259 (2, 11°27.6′ N 73°51.6′ W), INV PEC3543 (1, 9°52.8′ N 76°14.4′ W), INV PEC5757 (1, 10°32.4′ N 75°39′ W), INV PEC5758 (1, 11°28.2′ N 73°40.2′ W), INV PEC5759 (3, 12°31.8′ N 72°12′ W), INV PEC5760 (2, 11°28.2′ N 73°40.2′ W), INV PEC5761 (1, 10°32.4′ N 75°39′ W), INV PEC5808 (2, 9°46.8′ N 76°18′ W), INV PEC5737 (1, 10°32.4′ N 75°39′ W), INV PEC5738 (1, 10°32.4′ N 75°39′ W), INV PEC5740 (1, 10°32.4′ N 75°39′ W), INV PEC5747 (1, 10°32.4′ N 75°39′ W), INV PEC5755 (4, 12°31.8′ N 72°11.4′ W), INV PEC8049 (6, 12°40.8′ N 72°3.6′ W), INV PEC8050 (3, 12°21′ N 73°0′ W), INV PEC8051 (1, 11°30.6′ N 73°23.4′ W), INV PEC8052 (2, 11°30.6′ N 73°24′ W), INV PEC8053 (7, 11°22.2′ N 74°22.2′ W), INV PEC8054 (3, 11°3.6′ N 75°25.2′ W), INV PEC8055 (1, 10°19.8′ N 75°54′ W), INV PEC8056 (2, 9°37.8′ N 76°21.6′ W), INV PEC8057 (3, 9°7.8′ N 76°36′ W), INV PEC8598 (35, 10°34.8′ N 75°39.6′ W), INV PEC8599 (35, 11°8.4′ N 75°16.2′ W), INV PEC8597 (17, 10°43.8′ N 75°37.2′ W), INV PEC8596 (6, 10°54.6′ N 75°36′ W), INV PEC8595 (6, 11°3′ N 75°29.4′ W), INV PEC8594 (5, 10°0′ N 76°15.6′ W), INV PEC8593 (3, 9°42.6′ N 76°22.8′ W), INV PEC8592 (11, 9°34.2′ N 76°27.6′ W), INV PEC8591 (6, 9°17.4′ N 76°31.8′ W), INV PEC8590 (1, 9°3.6′ N 76°44.4′ W), INV PEC8589 (2, 8°57′ N 76°51.6′ W), INV PEC8588 (5, 12°41.4′ N 71°49.2′ W), INV PEC8587 (1, 12°49.8′ N 71°36.6′ W), INV PEC8586 (11, 12°36′ N 71°28.8′ W), INV PEC8604 (12, 11°31.8′ N 73°28.8′ W), INV PEC8603 (3, 11°32.4′ N 73°44.4′ W), INV PEC8602 (5, 11°33.6′ N 73°57′ W), INV PEC8601 (25, 11°25.2′ N 74°19.2′ W), INV PEC8600 (2, 11°12′ N 74°30′ W). Additional specimens in Bradbury (1999). These records extend the bathymetric range of the species.

*Dibranchus tremendus* Bradbury 1999. Bathydemersal, 1006-1865 m. Holotype, UF 25923 (1, 192 SL, 9°31.8′ N 76°37.8′ W); Paratypes, USNM 320325 (1, 11°43.8′ N 68°43.2′ W), USNM 320326 (2, 10°55.8′ N 67°37.8′ W), USNM 320327 (1, 10°10.2′ N 76°13.8′ W), UF 25924 (3, 10°10.2′ N 76°13.8′ W), UF 25925

(5, 9°58.2′ N 76°28.8′ W), UF 229293 (1, 11°24.6′ N 67°10.2′ W), UF 232001 (2, 11°46.2′ N 67°6′ W). Additional specimens in Bradbury (1999).

*Halieutichthys aculeatus* (Mitchill 1818) – Pancake Batfish, Murciélago Picudo (AFS) - Benthic, 200-507 m. USNM 367208 (1, 11°3′ N 75°10.2′ W), INV PEC2926 (1, 11°23.4′ N 74°12′ W), INV PEC3492 (2, 9°16.2′ N 76°28.8′ W), INV PEC3490 (5, 11°23.4′ N 74°12′ W), INV PEC3491 (1, 9°3′ N 76°36.6′ W), INV PEC2927 (1, 11°24.6′ N 74°12′ W), INV PEC3493 (1, 9°57.6′ N 76°7.8′ W), INV PEC5804 (1, 9°45′ N 76°15.6′ W), INV PEC5736 (1, 10°32.4′ N 75°39′ W), INV PEC5797 (1, 9°47.4′ N 76°17.4′ W).

*Malthopsis gnoma* Bradbury 1998. Bathydemersal, 280-492 m. USNM 207808 (3, 14°16.8′ N 81°55.2′ W), INV PEC2928 (2, 10°28.8′ N 75°42.6′ W), INV PEC2931 (4, 11°7.8′ N 75°13.8′ W), INV PEC2929 (1, 11°5.4′ N 75°15.6′ W), INV PEC2930 (2, 11°5.4′ N 75°15.6′ W), INV PEC3484 (2, 9°3′ N 76°36.6′ W), INV PEC3553 (2, 9°3′ N 76°36.6′ W), INV PEC3485 (1, 9°2.4′ N 76°37.2′ W), INV PEC5772 (1, 9°45′ N 76°15.6′ W). Additional specimens in Bradbury (1998). These records extend the bathymetric range of the species.

*Ogcocephalus declivirostris* Bradbury 1980 – Slantbrow Batfish, Murciélago Inclinado (AFS) – Demersal, 219-477 m. USNM 392562 (1, 9°40.2′ N 79°7.2′ W), UF 222955 (1, 9°57′ N 76°10.8′ W). These records extend the bathymetric range of the species.

*Ogcocephalus parvus* Longley & Hildebrand 1940 – Roughback Batfish, Murciélago Lomo Áspero (AFS) - Benthic, 303 m. INV PEC8606 (2, 10°22.2′ N 75°51.6′ W). Additional specimens in Bradbury (1980). This record extends the bathymetric range of the species.

*Zalieutes mcgintyi* (Fowler 1952) – Tricorn Batfish, Murciélago Tres Cuernos (AFS) – Demersal, 201-498 m. USNM 392747 (3, 12°22.8′ N 82°28.8′ W), USNM 392749 (3, 14°40.2′ N 81°40.8′ W), USNM 392790 (2, 14°34.8′ N 81°42′ W), USNM 392791 (1, 14°16.8′ N 81°55.2′ W), MCZ 41512 (9, 10°58.8′ N 66°0′ W), UF 41093 (1, 12°28.2′ N 82°28.2′ W), UF 41094 (1, 12°22.8′ N 82°28.8′ W), UF 86595 (2, 14°10.2′ N 81°58.2′ W), UF 229260 (1, 14°54′ N 81°23.4′ W), INV PEC2938 (1, 11°7.8′ N 75°13.8′ W), INV PEC2937 (1, 10°28.8′ N 75°42.6′ W), INV PEC2936 (2, 11°26.4′ N 73°31.8′ W), INV PEC3489 (1, 9°30.6′ N 76°27′ W), INV PEC3488 (1, 9°15.6′ N 76°28.8′ W), INV PEC2932 (2, 12°24′ N 72°15′ W), INV PEC3486 (2, 9°2.4′ N 76°37.2′ W), INV PEC2935 (2, 12°15.6′ N 72°33′ W), INV PEC2934 (1, 12°24′ N 72°16.2′ W), INV PEC2933 (2, 12°24′ N 72°16.2′ W), INV PEC3487 (1, 9°16.2′ N 76°28.8′ W), INV PEC5762 (1, 11°22.8′ N 73°44.4′ W), INV PEC5751 (4, 11°22.8′ N 73°44.4′ W), INV PEC8045 (5, 12°33′ N 71°52.2′ W ), INV PEC8046 (15, 12°32.4′ N 71°52.2′ W), INV PEC8047 (4, 12°20.4′ N 72°27′ W), INV PEC8048 (5, 12°19.8′ N 72°27.6′ W).

MELANOCETIDAE

*Melanocetus murrayi* Günther 1887 - Murray's Abyssal Anglerfish (Fishbase). Bathypelagic, 523-2000 m. MCZ 51283 (1, 11°37.2′ N 65°31.8′ W), MCZ 51284 (1, 11°45′ N 65°33′ W), MCZ 51286 (1, 11°30′ N 65°19.2′ W), UF 23779 (2, 9°31.8′ N 76°37.8′ W), UF 23781 (1, 16°13.2′ N 83°58.8′ W), UF 222371 (1, 9°0′ N 77°25.2′ W), UF 222683 (1, 9°1.8′ N 76°52.8′ W), UF 222822 (1, 12°55.2′ N 72°4.2′ W), UF 222858 (1, 11°40.2′ N 68°15.6′ W), UF 223003 (1, 11°31.8′ N 67°39.6′ W), UF 223031 (1, 10°26.4′ N 76°0′ W), UF 224760 (1, 13°1.8′ N 61°40.2′ W), UF 227388 (2, 13°9′ N 61°42.6′ W), UF 227692 (1, 9°40.8′ N 77°59.4′ W).

DICERATIIDAE

*Bufoceratias wedli* (Pietschmann 1926). Meso to bathypelagic, 493-778 m. UF 23778 (2, 11°12´ N 74°24´ W), UF 23785 (1, 17°24´ N 62°28.2´ W), UF 232711 (1, 13°0´ N 70°40.2´ W), INV PEC4997 (1, 12°31.8´ N 72°11.4´ W).

ONEIROIDAE

*Dolopichthys pullatus* Regan & Trewavas 1932 - Lobed Dreamer (Fishbase). Meso to bathypelagic, 4029 m. UF 232605 (1, 13°46.8´ N 72°37.2´ W). First record for the area.

STEPHANOBERYCIFORMES

STEPHANOBERYCIDAE

*Stephanoberyx monae* Gill 1883. Bathydemersl, 824-1794 m. USNM 208284 (23, 10°55.8´ N 67°37.8´ W), USNM 83892 (23, 16°54´ N 63°12´ W), USNM 214211 (1, 10°55.8´ N 67°37.8´ W), USNM 330952 (1, 10°55.8´ N 67°37.8´ W), MCZ 27928 (1, 81 SL, 16°3´ N 61°52.2´ W), MCZ 27929 (1, 65-83 SL, 13°10.2´ N 61°18.6´ W), MCZ 95235 (2, 89-91 SL, 16°3´ N 61°50.4´ W), UF 222357 (21, 9°0´ N 77°25.2´ W), UF 222579 (1, 10°16.2´ N 76°3´ W), UF 222685 (4, 9°1.8´ N 76°52.8´ W), UF 222744 (3, 13°1.2´ N 71°55.2´ W), UF 222827 (1, 12°55.2´ N 72°4.2´ W), UF 223235 (1, 9°52.2´ N 79°35.4´ W), UF 227578 (5, 11°34.8´ N 64°34.8´ W). These records extend the bathymetric range of the species.

GIBBERICHTHYIDAE

*Gibberichthys pumilus* Parr 1933 - Gibberfish (Fishbase). Bathypelagic, 732 m. USNM 207514 (2, 9°1.8´ N 76°31.8´ W). Additional specimens in de Sylva and Eschmeyer (1977).

BERYCIFORMES

ANOPLOGASTRIDAE

*Anoplogaster cornuta* (Valenciennes 1833) - Common Fangtooth (Fishbase). Meso to bathypelagic, 300-1463 m. UF 114260 (1, 9°31.8´ N 76°37.8´ W), UF 217861 (1, 12°32.4´ N 61°54´ W), UF 222973 (1, 11°32.4´ N 67°39´ W). Additional specimens in Woods and Sonoda (1973).

DIRETMIDAE

*Diretmoides pauciradiatus* (Woods 1973) - Longwing Spinyfish (Fishbase). Meso to bathypelagic, 200-1043 m. *Holotype FMNH 66797*; USNM 405708 (1, 11°13.8´ N 68°12´ W), USNM 334017 (5, 14°10.2´ N 81°49.8´ W), MCZ 52938 (1, 11°49.2´ N 69°24´ W), MCZ 84318 (1, 12°55.8´ N 73°49.2´ W), MCZ 84319 (1, 12°37.8´ N 74°10.8´ W), MCZ 84321 (1, 13°12´ N 72°46.8´ W), UF 15638 (1, 12°25.2´ N 82°15´ W), UF 165677 (1, 11°25.2´ N 73°55.8´ W), UF 174163 (1, 8°55.8´ N 76°52.8´ W), UF 174164 (1, 12°54´ N 70°39´ W), UF 174165 (2, 11°25.2´ N 73°55.8´ W), UF 231655 (1, 14°34.8´ N 81°31.8´ W), UF 233380 (1, 16°55.2´ N 62°43.2´ W). Additional specimens' and information about the holotype in Woods and Sonoda (1973) and Post and Quero (1981). These records extend the bathymetric range of the species.

TRACHICHTHYIDAE

*Gephyroberyx darwinii* (Johnson 1866) – Big Roughy (AFS), Reloj de Darwin, Hoplostète de Darwin (FAO) - Benthopelagic, 300-375 m. USNM 266277 (1, 12°18´ N 72°40.8´ W), INV PEC3494 (1, 9°16.2´ N 76°28.8´ W), INV PEC4006 (1, 11°22.8´ N 73°44.4´ W). Additional specimens in Woods and Sonoda (1973).

*Hoplostethus occidentalis* Woods 1973 – Western Roughy, Reloj Occidental (FAO) – Bathypelagic, 256-576 m. USNM 214192 (1, 11°25.8´ N 73°58.8´ W), USNM 214193 (1, 11°3´ N 75°18´ W), USNM 214196 (5, 14°22.8´ N 81°45´ W), USNM 214199 (2, 14°7.8´ N 81°55.2´ W), USNM 214201 (1, 11°3´ N 75°18´ W), USNM 214204 (2, 11°27´ N 73°42´ W), USNM 304362 (1, 11°25.8´ N 74°13.8´ W), USNM 304373 (1, 14°24´ N 81°48´ W), USNM 304379 (1, 14°1.2´ N 81°49.8´ W), USNM 304382 (2, 11°12´ N 74°21´ W), USNM 304384 (1, 13°25.8´ N 81°52.2´ W), USNM 404945 (20, 11°9.6´ N 74°24.6´ W), USNM 404946 (40, 11°9.6´ N 74°24.6´ W), USNM 214191 (3, 9°0´ N 81°22.8´ W), USNM 214194 (1, 9°13.2´ N 80°43.2´ W), USNM 214195 (2, 9°15´ N 81°31.8´ W), USNM 304367 (1, 9°0´ N 81°22.8´ W), USNM 304382 (2, 11°12´ N 74°21´ W), USNM 304384 (1, 13°25.8´ N 81°52.2´ W), ANSP 143591 (10, 11°34.2´ N 62°49.2´ W), MCZ 40527 (1, 16°40.8´ N 82°19.8´ W), MCZ 152943 (10, 48-88 SL, 10°58.8´ N 66°0´ W), UF 110034 (6, 9°3´ N 81°22.2´ W), UF 125240 (3, 11°36.6´ N 62°46.8´ W), UF 125241 (5, 11°9.6´ N 74°25.2´ W), UF 165676 (1, 12°19.2´ N 72°34.2´ W), UF 207434 (1, 11°34.8´ N 62°58.8´ W), UF 222944 (4, 9°57´ N 76°10.8´ W), INV PEC2950 (1, 11°7.8´ N 75°13.8´ W), INV PEC2941 (11, 12°24´ N 72°16.2´ W), INV PEC2942 (1, 12°24´ N 72°16.2´ W), INV PEC2943 (1, 12°19.2´ N 72°42.6´ W), INV PEC2944 (2, 11°29.4´ N 73°22.8´ W), INV PEC2945 (1, 11°28.8´ N 73°24´ W), INV PEC2946 (1, 11°26.4´ N 73°31.8´ W), INV PEC2947 (1, 11°25.8´ N 74°13.2´ W), INV PEC2948 (2, 11°12´ N 74°17.4´ W), INV PEC2949 (1, 11°12´ N 74°17.4´ W), INV PEC2940 (1, 12°34.2´ N 71°49.8´ W), INV PEC2939 (6, 12°34.2´ N 71°49.8´ W), INV PEC4007 (1, 10°33´ N 75°37.2´ W), INV PEC4568 (26, 11°22.8´ N 73°44.4´ W), INV PEC4569 (2, 11°22.8´ N 73°44.4´ W), INV PEC8065 (1, 9°37.8´ N 76°21.6´ W), INV PEC8063 (30, 12°33´ N 71°52.2´ W), INV PEC8064 (51, 12°32.4´ N 71°52.2´ W), INV PEC8608 (3, 12°36´ N 71°28.8´ W). Additional specimens in Woods and Sonoda (1973). These records extend the bathymetric range of the species.

BERYCIDAE

*Beryx splendens* Lowe 1834 – Splendid Alfonsino, Alfonsino Besugo, Béryx long (FAO) - Benthopelagic, 366-576 m. UF 231658 (1, 14°34.8´ N 81°31.8´ W), UF 233710 (1, 12°21´ N 72°31.2´ W).

HOLOCENTRIDAE

*Ostichthys trachypoma* (Günther 1859) – Bigeye Soldierfish (AFS) – Demersal, 200-265 m. INV PEC3495 (1, 11°23.4´ N 74°12´ W), INV PEC8062 (1, 12°32.4´ N 71°52.2´ W). Additional specimens in Woods and Sonoda (1973).

ZEIFORMES

PARAZENIDAE

*Cyttopsis rosea* (Lowe 1843) – Red Dory, San Pedro Rojo (AFS), San Pierre Rouge (FAO) – Meso to bathypelagic, 260-585 m. USNM 187873 (6, 12°31.2´ N 82°21´ W), USNM 187876 (11, 14°10.2´ N 81°55.2´ W), USNM 304460 (13, 14°22.8´ N 81°45´ W), USNM 359295 (4, 9°13.2´ N 81°30´ W), USNM 371552 (3, 9°15´ N 81°31.8´ W), USNM 371554 (2, 12°25.2´ N 82°15´ W), USNM 371561 (4, 14°10.2´ N 81°55.2´ W), USNM 371642 (4, 14°10.2´ N 81°55.2´ W), USNM 371643 (4, 12°34.8´ N 82°19.2´ W), USNM 371647 (2, 11°36.6´ N 62°46.8´ W), USNM 371659 (1, 10°0´ N 76°10.2´ W), USNM 371661 (2, 14°24´ N 81°48´ W), USNM 371662 (6, 12°31.2´ N 82°21´ W), USNM 377946 (1, 12°10.2´ N 72°52.2´ W), USNM 377979 (1, 12°52.2´ N 70°43.2´ W), USNM 377989 (3, 12°18´ N 72°40.8´ W), USNM 404943 (1, 9°1.8´ N 76°31.8´ W),

USNM 405603 (1, 11°9.6′ N 74°24.6′ W), USNM 405604 (1, 14°10.2′ N 81°58.2′ W), USNM 405605 (2, 11°9.6′ N 74°24.6′ W), USNM 405606 (2, 12°16.2′ N 72°40.2′ W), MCZ 60815 (1, 11°36′ N 62°52.2′ W), UF 125672 (3, 16°57′ N 81°19.2′ W), UF 125674 (3, 12°25.8′ N 82°24′ W), UF 125675 (1, 9°3′ N 81°18′ W), UF 125677 (4, 11°9.6′ N 74°25.2′ W), UF 125678 (3, 9°3′ N 81°22.2′ W), UF 125680 (1, 11°36.6′ N 62°46.8′ W), UF 125681 (2, 14°7.8′ N 81°55.2′ W), UF 125682 (2, 12°22.8′ N 82°28.8′ W), UF 125683 (1, 14°0′ N 81°49.8′ W), UF 125684 (2, 9°4.2′ N 81°25.2′ W), UF 125685 (1, 16°1.2′ N 81°7.8′ W), UF 168747 (6, 16°45′ N 82°36′ W), UF 172429 (13, 16°39′ N 82°45′ W), UF 176817 (1, 11°25.2′ N 73°55.8′ W), UF 222931 (3, 9°57′ N 76°10.8′ W), UF 229248 (2, 14°54′ N 81°23.4′ W), INV PEC2964 (1, 11°29.4′ N 73°22.8′ W), INV PEC3514 (1, 10°10.2′ N 76°1.8′ W), INV PEC2966 (1, 11°26.4′ N 73°33′ W), INV PEC2967 (5, 11°22.2′ N 73°46.2′ W), INV PEC2968 (1, 11°27′ N 74°1.8′ W), INV PEC2969 (1, 11°12′ N 74°17.4′ W), INV PEC2970 (1, 11°5.4′ N 75°15.6′ W), INV PEC2959 (2, 11°25.8′ N 74°11.4′ W), INV PEC2960 (1, 12°31.8′ N 72°7.8′ W), INV PEC2961 (1, 12°29.4′ N 72°15.6′ W), INV PEC2962 (3, 12°24′ N 72°15′ W), INV PEC2963 (3, 12°24′ N 72°16.2′ W), INV PEC3515 (1, 9°3′ N 76°36.6′ W), INV PEC3516 (1, 9°6′ N 76°37.2′ W), INV PEC3517 (1, 9°16.2′ N 76°28.8′ W), INV PEC3518 (1, 9°45.6′ N 76°15.6′ W), INV PEC3519 (1, 10°10.2′ N 76°1.8′ W), INV PEC3511 (1, 9°2.4′ N 76°37.2′ W), INV PEC3512 (1, 9°16.2′ N 76°28.8′ W), INV PEC3513 (1, 9°57.6′ N 76°7.8′ W), INV PEC2965 (1, 11°28.8′ N 73°24′ W), INV PEC4636 (3, 11°22.8′ N 73°44.4′ W), INV PEC4637 (1, 10°33′ N 75°37.2′ W), INV PEC8069 (1, 10°19.8′ N 75°54′ W), INV PEC8068 (1, 12°20.4′ N 72°27′ W). Additional specimens' in Tyler et al. (2003).

*Parazen pacificus* Kamohara 1935 - Parazen (Fishbase). Bathydemersal, 274-411 m. USNM 187807 (1, 12°22.8′ N 82°28.8′ W), USNM 187892 (2, 9°4.2′ N 81°25.2′ W), USNM 187893 (1, 14°10.2′ N 81°58.2′ W), USNM 327769 (1, 10°24′ N 75°49.8′ W), USNM 364277 (2, 14°16.8′ N 81°55.2′ W), USNM 381485 (4, 12°31.2′ N 82°21′ W), UF 125493 (3, 12°31.2′ N 82°21′ W), UF 125494 (1, 16°39′ N 82°28.8′ W), UF 125497 (3, 16°49.8′ N 81°21′ W), UF 172431 (1, 16°39′ N 82°45′ W), UF 229257 (2, 14°54′ N 81°23.4′ W). Additional specimens in Tyler et al. (2003).

ZENIONTIDAE

*Zenion hololepis* (Goode & Bean 1896). Bathydemersal, 200-641 m. USNM 184938 (1, 13°39′ N 81°52.2′ W), USNM 187860 (3, 14°7.8′ N 81°55.2′ W), USNM 187864 (20, 9°13.2′ N 80°43.2′ W), USNM 320055 (3, 14°7.8′ N 81°55.2′ W), USNM 327842 (4, 11°58.8′ N 69°30′ W), USNM 342167 (1, 11°49.2′ N 69°24′ W), USNM 359296 (9, 11°49.2′ N 69°24′ W), USNM 371562 (10, 9°13.2′ N 80°43.2′ W), USNM 371563 (6, 16°49.8′ N 81°21′ W), USNM 371663 (3, 9°13.2′ N 80°43.2′ W), USNM 377986 (19, 12°18′ N 72°40.8′ W), MCZ 42255 (1, 51 SL, 14°0′ N 65°4.8′ W), MCZ 57876 (2, 18 SL, 14°19.8′ N 78°16.2′ W), UF 106219 (1, 11°9′ N 74°25.8′ W), UF 117045 (98, 15°36.6′ N 61°15′ W), UF 117256 (3, 12°25.8′ N 82°24′ W), UF 117257 (2, 12°25.2′ N 82°15′ W), UF 117260 (2, 9°13.2′ N 81°30′ W), UF 117265 (6, 12°31.2′ N 82°21′ W), UF 117266 (6, 14°7.8′ N 81°55.2′ W), UF 117269 (1, 15°30′ N 63°37.8′ W), UF 117290 (11, 14°10.2′ N 81°58.2′ W), UF 117292 (2, 11°36.6′ N 62°46.8′ W), UF 117293 (4, 9°12′ N 81°30′ W), UF 117295 (4, 11°9.6′ N 74°25.2′ W), UF 117299 (5, 12°22.8′ N 82°28.8′ W), UF 117300 (4, 14°0′ N 81°49.8′ W), UF 117301 (5, 14°10.2′ N 81°55.2′ W), UF 168748 (1, 16°45′ N 82°36′ W), UF 172430 (25, 16°39′ N 82°45′ W), UF 178384 (1, 16°4.2′ N 61°25.8′ W), UF 222932 (40, 9°57′ N 76°10.8′ W), UF 223252 (2, 9°28.8′ N 76°26.4′ W), UF 226938 (1, 9°57.6′ N 78°31.2′ W), UF 227756 (1, 9°52.8′ N 76°20.4′ W), UF 227791 (2, 9°55.8′ N 76°19.8′ W), UF 229203 (2, 14°34.8′ N 81°31.8′ W), UF 229245 (7, 14°54′ N 81°23.4′ W), UF 230407 (2, 14°34.8′ N 81°31.8′ W), INV PEC3507 (1, 9°57′ N 76°9.6′ W), INV PEC3508 (11, 10°9′ N 76°0.6′ W), INV PEC3509 (7, 10°9′ N 76°0.6′ W), INV PEC2955 (1, 11°24.6′ N 74°12′ W), INV PEC2956 (6, 11°12′ N 74°17.4′ W), INV PEC2957 (3, 11°12′ N 74°17.4′ W), INV PEC2958 (1, 11°12′ N 74°17.4′ W), INV PEC2951 (5, 12°15.6′ N 72°33′ W), INV PEC2952 (8, 11°29.4′ N 73°22.8′ W), INV PEC2953 (1, 11°29.4′ N 73°22.8′ W), INV PEC3506 (2, 9°52.8′ N 76°14.4′ W), INV PEC3505 (3, 9°45.6′ N 76°15′ W), INV

PEC3504 (1, 9°27.6′ N 76°26.4′ W), INV PEC3503 (1, 9°27.6′ N 76°25.8′ W), INV PEC3502 (1, 9°16.2′ N 76°28.8′ W), INV PEC3501 (1, 9°2.4′ N 76°37.2′ W), INV PEC3500 (4, 9°3′ N 76°36.6′ W), INV PEC3499 (1, 9°57.6′ N 76°7.8′ W), INV PEC3498 (1, 9°27.6′ N 76°26.4′ W), INV PEC2954 (1, 11°27.6′ N 73°51.6′ W), INV PEC3496 (1, 9°16.2′ N 76°28.8′ W), INV PEC3497 (1, 9°18.6′ N 76°29.4′ W), INV PEC4382 (1, 9°45′ N 76°15.6′ W), INV PEC8066 (2, 10°19.8′ N 75°54′ W), INV PEC8067 (1, 9°37.8′ N 76°21.6′ W), INV PEC8610 (9, 10°22.2′ N 75°51.6′ W). Additional specimens in Tyler et al. (2003).

GRAMMICOLEPIDAE

*Grammicolepis brachiusculus* Poey 1873 – Thorny Tinselfish, Palissade à Épines Plates (AFS) – Bathypelagic, 366-662 m. USNM 227936 (1, 11°40.2′ N 73°15′ W), USNM 278741 (1, 12°34.8′ N 82°19.2′ W), USNM 278742 (1, 9°13.2′ N 80°43.2′ W), USNM 371553 (5, 9°13.2′ N 81°30′ W), MCZ 44910 (2, 9°36′ N 76°22.2′ W).

*Xenolepidichthys dalgleishi* Gilchrist 1922 – Spotted Tinselfish (AFS) - Benthopelagic, 200-503 m. USNM 307584 (19, 12°25.8′ N 82°24′ W), USNM 320013 (1, 14°10.2′ N 81°55.2′ W), USNM 320016 (8, 9°3′ N 81°22.2′ W), USNM 322673 (24, 12°34.8′ N 82°19.2′ W), USNM 334019 (8, 14°10.2′ N 81°55.2′ W), USNM 341954 (4, 11°25.8′ N 73°58.8′ W), USNM 359294 (1, 11°49.8′ N 69°22.8′ W), USNM 371658 (1, 13°37.2′ N 81°52.8′ W), USNM 377985 (10, 12°18′ N 72°40.8′ W), USNM 377993 (22, 12°52.2′ N 82°9′ W), USNM 377997 (5, 13°58.2′ N 81°52.8′ W), USNM 404936 (1, 14°10.2′ N 81°58.2′ W), USNM 404947 (11, 12°34.8′ N 82°19.2′ W), USNM 405588 (2, 14°22.8′ N 81°45′ W), USNM 405616 (2, 11°49.8′ N 73°4.8′ W), ANSP 142856 (1, 11°34.2′ N 62°49.2′ W), MCZ 57869 (1, 12 SL, 13°4.2′ N 73°12′ W), MCZ 57871 (1, 18 SL, 12°37.8′ N 74°10.8′ W), MCZ 57872 (2, 14 SL, 13°31.8′ N 71°24′ W), MCZ 96173 (1, 39 SL, 14°19.8′ N 78°16.2′ W), UF 40101 (4, 12°34.8′ N 82°19.2′ W), UF 40102 (4, 9°3′ N 81°22.2′ W), UF 116589 (1, 12°22.8′ N 82°28.8′ W), UF 117551 (1, 11°25.2′ N 73°55.8′ W), UF 124040 (2, 14°10.2′ N 81°55.2′ W), UF 124041 (1, 16°49.8′ N 81°21′ W), UF 124044 (2, 16°49.8′ N 81°21′ W), UF 126020 (1, 12°22.8′ N 82°28.8′ W), UF 210618 (1, 11°40.2′ N 62°27′ W), UF 222930 (5, 9°57′ N 76°10.8′ W), UF 227679 (1, 13°8.4′ N 61°55.2′ W), INV PEC8070 (3, 11°9′ N 74°22.8′ W), INV PEC8072 (1, 9°37.8′ N 76°21.6′ W), INV PEC8071 (2, 12°19.8′ N 72°27.6′ W). Additional records in Tyler et al. (2003).

SCORPAENIFORMES

SCORPAENIDAE

*Ectreposebastes imus* Garman 1899 – Midwater Scorpionfish, Rascacio Profundo, Rascasse Profunde (AFS) – Meso to bathypelagic, 400-576 m. MCZ 56714 (1, 11°19.8′ N 64°40.2′ W), UF 167288 (1, 14°34.8′ N 81°31.8′ W), UF 174129 (3, 11°12′ N 74°24′ W). Additional records in the area in Eschmeyer and Collette (1966).

*Helicolenus dactylopterus* (Delaroche 1809) – Blackbelly Rosefish, Chèvre imperial (AFS), Sébaste Chèvre (FAO) - Bathydemersal, 293-662 m. USNM 214261 (1, 11°40.2′ N 73°15′ W), ANSP 111462 (1, 11°34.2′ N 62°49.2′ W), UF 213507 (1, 11°46.2′ N 69°15′ W), UF 214015 (2, 11°49.8′ N 69°22.8′ W), UF 214019 (1, 10°55.2′ N 67°1.2′ W), UF 214359 (1, 12°46.2′ N 70°58.8′ W), UF 216207 (1, 11°52.2′ N 69°27′ W), UF 216208 (1, 11°25.8′ N 68°25.2′ W). Additional records in the area in Eschmeyer (1969).

*Neomerinthe beanorum* (Evermann & Marsh 1900) – Spotwing Scorpionfish (FAO) – Demersal, 110-300 m. USNM 265920 (1, 9°40.2′ N 79°7.2′ W), UF 121702 (6, 9°4.2′ N 81°25.2′ W), UF 121705 (1, 9°18′ N 80°22.2′ W), UF 222213 (2, 8°58.2′ N 81°26.4′ W), UF 228900 (5, 9°40.2′ N 79°7.2′ W), INV PEC3541 (1,

11°23.4´ N 74°12´ W), INV PEC4515 (1, 11°22.8´ N 73°44.4´ W), INV PEC4504 (1, 9°45´ N 76°15.6´ W). Additional records in the area in Eschmeyer (1969).

*Phenacoscorpius nebris* Eschmeyer 1965 – Short-tube Scorpionfish (FAO) – Bathydemersal, 300-402 m. Holotype, USNM 231727 (1, 84.2 SL, 12°46.2´ N 70°58.8´ W); Paratype, UF 216163 (2, 10°54´ N 67°7.8´ W); INV PEC3571 (1, 9°16.2´ N 76°28.8´ W). Specimen's lenght from Eschmeyer (1965a). These records extend the bathymetric range of the species.

*Pontinus longispinis* Goode & Bean 1896 – Longspine Scorpionfish, Lapón Mariposa (AFS), Rascasse Épineux (FAO) – Demersal, 200-492 m. USNM 214259 (1). UF specimen's lengths from Eschmeyer (1969), UF 214013 (2, 73-95 SL, 11°52.8´ N 69°28.2´ W), UF 216178 (2, 101-132 SL, 11°49.8´ N 73°4.8´ W), UF 216186 (3, 118-148 SL, 11°10.8´ N 68°10.8´ W), UF 216193 (9, 76-117 SL, 10°45´ N 66°37.2´ W), UF 216198 (4, 94-188 SL, 11°30´ N 60°46.2´ W), UF 216199 (4, 143-164 SL, 11°10.2´ N 68°7.8´ W), UF 216206 (1, 171 SL, 10°24´ N 75°49.8´ W), UF 216209 (4, 105-205 SL, 11°49.2´ N 69°24´ W), UF 217314 (5, 52-145 SL, 11°9.6´ N 74°24.6´ W), UF 222212 (1, 141 SL, 9°2.4´ N 81°24´ W), UF 234178 (1, 11°16.8´ N 74°16.8´ W), INV PEC2994 (1, 11°25.2´ N 74°10.8´ W), INV PEC2982 (4, 12°34.2´ N 71°50.4´ W), INV PEC2983 (1, 12°34.2´ N 71°49.8´ W), INV PEC2984 (25, 12°34.2´ N 71°49.8´ W), INV PEC3572 (1, 10°9´ N 76°0.6´ W), INV PEC3573 (2, 11°23.4´ N 74°12´ W), INV PEC3000 (1, 11°7.8´ N 75°13.8´ W), INV PEC2999 (2, 11°7.8´ N 75°13.8´ W), INV PEC2998 (1, 11°5.4´ N 75°15.6´ W), INV PEC2997 (2, 11°12´ N 74°17.4´ W), INV PEC2996 (1, 11°15´ N 74°39´ W), INV PEC2995 (1, 11°25.2´ N 74°12.6´ W), INV PEC2993 (1, 11°22.2´ N 73°45´ W), INV PEC2989 (8, 12°15.6´ N 72°33´ W), INV PEC2990 (1, 11°29.4´ N 73°22.8´ W), INV PEC2988 (4, 12°15´ N 72°33.6´ W), INV PEC2992 (3, 11°26.4´ N 73°33´ W), INV PEC2991 (3, 11°26.4´ N 73°31.8´ W), INV PEC2987 (5, 12°24´ N 72°16.2´ W), INV PEC2986 (1, 12°24´ N 72°15´ W), INV PEC2981 (1, 11°9.6´ N 74°40.2´ W), INV PEC2985 (11, 12°24´ N 72°15´ W), INV PEC4113 (1, 11°22.8´ N 73°44.4´ W), INV PEC4534 (1, 10°33´ N 75°37.2´ W), INV PEC8091 (2, 12°32.4´ N 71°52.2´ W), INV PEC8090 (4, 12°33´ N 71°52.2´ W). Additional records in the area in Eschmeyer (1969). These records extend the bathymetric range of the species.

*Pontinus nematophthalmus* (Günther 1860) – Spinythroat Scorpionfish, Lapón Aleta Baja (AFS) – Demersal, 200-700 m. *Lectotype, BMNH 2007.11.9.1.* INV PEC3003 (3, 11°23.4´ N 74°12´ W), INV PEC3574 (5, 11°23.4´ N 74°12´ W), INV PEC3001 (1, 11°13.8´ N 74°39´ W), INV PEC3002 (21, 11°23.4´ N 74°12´ W), INV PEC4535 (2, 9°45´ N 76°15.6´ W), INV PEC8613 (1, 12°41.4´ N 71°49.2´ W). *Information of the Lectotype Eschmeyer (2014).* These records extend the bathymetric range of the species.

*Pontinus rathbuni* Goode & Bean 1896 – Highfin Scorpionfish (AFS) – Demersal, 200-357 m. UF 216211 (1, 197 SL, 10°24´ N 75°49.8´ W), UF 234208 (2, 10°54.6´ N 66°18´ W), INV PEC3575 (6, 11°23.4´ N 74°12´ W), INV PEC8092 (1, 12°32.4´ N 71°52.2´ W). Specimen's length from Eschmeyer (1969). These records extend the bathymetric range of the species.

*Setarches guentheri* Johnson 1862 – Deepwater Scorpionfish, Rascacio Serrano, Rascasse Serran (FAO) – Benthic benthopelagic en fishbase, 200-640 m. USNM 188189 (8, 14°10.2´ N 81°55.2´ W), USNM 214231 (3, 11°25.8´ N 73°58.8´ W), ANSP 101191 (1,54 SL, 11°34.2´ N 62°49.2´ W), Specimens' length from Eschmeyer and Collette (1966),UF 38492 (10, 11°30´ N 60°46.2´ W), UF 124384 (1, 12°25.2´ N 82°15´ W), UF 124386 (2, 9°13.2´ N 81°30´ W), UF 124387 (1, 12°25.8´ N 82°24´ W), UF 124392 (2, 11°36.6´ N 62°46.8´ W), UF 124393 (6, 14°10.2´ N 81°55.2´ W), UF 124398 (5, 14°22.8´ N 81°45´ W), UF 138997 (1, 9°3´ N 81°22.2´ W), UF 172453 (2, 14°7.8´ N 81°52.2´ W), UF 172454 (4, 14°24´ N 81°48´ W), UF 181669 (5, 14°16.8´ N 81°55.2´ W), UF 207314 (1, 11°40.2´ N 62°40.2´ W), UF 207319 (1, 11°36´ N 62°52.2´ W), UF 207435 (1, 11°36´ N 62°52.2´ W), UF 213508 (5, 11°46.2´ N 69°15´ W), UF 214018 (1, 10°54´ N 67°7.8´ W), UF 214263 (4, 11°46.2´ N 69°16.2´ W), UF 215365 (1, 109 SL, 11°9.6´ N 74°25.2´ W), UF 215374 (1,

11°43.2′ N 69°13.2′ W), UF 216195 (11, 47-149 SL, 11°30′ N 60°46.2′ W), UF 216268 (5,57-90 SL, 11°31.2′ N 60°51′ W), UF 222196 (8, 9°57′ N 76°10.8′ W), UF 222211 (2, 9°2.4′ N 81°24′ W), UF 228896 (3, 16°2.4′ N 61°23.4′ W), INV PEC3584 (1, 11°23.4′ N 74°12′ W), INV PEC3583 (1, 10°10.2′ N 76°1.8′ W), INV PEC3582 (1, 10°10.2′ N 76°1.8′ W), INV PEC3581 (1, 9°57′ N 76°9.6′ W), INV PEC3580 (1, 9°49.2′ N 76°15.6′ W), INV PEC3579 (3, 9°45.6′ N 76°15.6′ W), INV PEC3578 (1, 9°45.6′ N 76°15′ W); INV PEC3577 (1, 9°30′ N 76°27′ W), INV PEC3576 (1, 9°16.2′ N 76°28.8′ W), INV PEC3007 (1, 11°20.4′ N 74°16.2′ W), INV PEC3006 (1, 11°26.4′ N 73°33′ W), INV PEC3005 (1, 11°26.4′ N 73°33′ W), INV PEC3004 (1, 11°13.8′ N 74°39′ W), INV PEC4545 (1, 10°32.4′ N 75°39′ W), INV PEC4544 (25, 10°31.8′ N 75°37.2′ W), INV PEC4543 (1, 10°32.4′ N 75°39′ W), INV PEC4547 (1, 10°33′ N 75°37.2′ W), INV PEC4546 (4, 9°45.6′ N 76°15.6′ W), INV PEC8087 (3, 9°37.8′ N 76°21.6′ W), INV PEC8089 (4, 8°59.4′ N 76°45.6′ W), INV PEC8088 (6, 9°7.8′ N 76°36′ W), INV PEC8612 (109, 10°22.2′ N 75°51.6′ W).

TRIGLIDAE

*Bellator brachychir* (Regan 1914) – Shortfin Searobin, Rubio Aleticorta (AFS) – Demersal, 200-375 m. UF 103156 (11, 14°10.2′ N 81°58.2′ W), UF 108021 (25, 16°7.8′ N 81°13.2′ W), UF 108076 (18, 16°45′ N 81°27′ W), UF 110613 (1, 16°25.8′ N 81°34.8′ W), UF 110665 (3, 9°12′ N 81°30′ W), UF 110671 (3, 9°40.2′ N 79°7.2′ W), UF 110677 (2, 11°3′ N 75°10.2′ W), UF 110737 (1, 9°18′ N 80°22.2′ W), UF 229242 (26, 14°54′ N 81°23.4′ W), INV PEC4580 (1, 11°22.8′ N 73°44.4′ W). These records extend the bathymetric range of the species.

*Bellator egretta* (Goode & Bean 1896) – Streamer Searobin, Rubio Gallardete (AFS) – Demersal, 200-229 m. USNM 205430 (1, 12°25.8′ N 82°25.8′ W), MCZ 57738 (1, 12°28.8′ N 82°25.8′ W), MCZ 57746 (3, 13°12.6′ N 82°15.6′ W), INV PEC3008 (1, 11°23.4′ N 74°12′ W).

*Prionotus beanii* Goode 1896 – Bean's Searobin, Gallinita, Grondin de Bean (FAO) – Demersal, 219-229 m. USNM 185400 (4, 9°52.8′ N 59°52.8′ W), UF 78927 (1, 12°19.8′ N 72°21′ W). These records extend the bathymetric range of the species.

*Prionotus stearnsi* Jordan & Swain 1885 – Shortwing Searobin, Rubio Pequeño (AFS), Grondin Aîle-courte (FAO) – Demersal, 265-314 m. ANSP 149272 (8, 73-89 SL, 14°10.2′ N 81°58.2′ W), INV PEC3009 (3, 12°24′ N 72°15′ W), INV PEC3010 (2, 11°22.2′ N 73°46.2′ W), INV PEC3011 (1, 11°22.2′ N 73°46.2′ W), INV PEC8094 (3, 12°19.8′ N 72°27.6′ W), INV PEC8093 (2, 12°20.4′ N 72°27′ W). These records extend the bathymetric range of the species.

PERISTEDIIDAE

*Peristedion ecuadorense* Teague 1961 – Pyramid Nose Armoured Searobin (FAO) – Bathydemersal, 296-914 m. ANSP 149261 (2, 130-159 SL, 15°45′ N 80°45′ W), UF 102385 (2, 11°54′ N 69°18′ W), UF 102386 (1, 12°10.2′ N 72°52.2′ W), UF 102387 (2, 9°46.8′ N 79°25.2′ W), UF 102390 (1, 10°9′ N 76°13.8′ W), UF 102391 (2, 10°0′ N 76°10.2′ W), UF 102393 (2, 11°43.2′ N 69°13.2′ W), UF 102397 (1, 10°57′ N 67°1.8′ W), UF 102687 (11, 12°22.8′ N 82°28.8′ W), UF 102688 (1, 11°10.2′ N 74°27′ W), UF 102689 (1, 11°49.2′ N 69°24′ W), UF 102693 (2, 16°57′ N 81°19.2′ W), UF 102697 (1, 9°7.2′ N 81°10.2′ W), UF 102701 (1, 9°0′ N 81°22.8′ W), UF 102704 (5, 10°16.2′ N 75°54.6′ W), UF 102705 (1, 11°40.2′ N 62°33′ W), UF 102710 (2, 15°39′ N 61°10.2′ W), UF 102711 (1, 15°36′ N 61°9′ W), UF 102719 (12, 12°25.8′ N 82°24′ W), UF 123570 (3, 9°57′ N 76°10.8′ W), UF 223251 (1, 9°28.8′ N 76°26.4′ W), INV PEC3013 (1, 11°22.2′ N 73°45′ W), INV PEC3014 (3, 11°15′ N 74°39′ W), INV PEC3012 (1, 12°19.2′ N 72°42.6′ W), INV PEC4623 (1, 11°28.2′ N

73°40.2´ W), INV PEC8081 (1, 11°22.2´ N 74°22.2´ W), INV PEC8617 (1, 12°41.4´ N 71°49.2´ W). These records extend the bathymetric range of the species.

*Peristedion gracile* Goode & Bean 1896 – Slender Searobin, Vaquita Blindada de Cortés (AFS) – Bathydemersal, 200-940 m. INV PEC3018 (1, 12°34.2´ N 71°49.8´ W), INV PEC3017 (2, 12°34.2´ N 71°49.8´ W), INV PEC3019 (1, 12°24´ N 72°15´ W), INV PEC3016 (1, 12°34.2´ N 71°50.4´ W), INV PEC3021 (1, 12°15.6´ N 72°33´ W), INV PEC3020 (1, 12°15.6´ N 72°33´ W), INV PEC3015 (1, 11°23.4´ N 74°12´ W), INV PEC3749 (1, 9°52.8´ N 76°14.4´ W), INV PEC3748 (1, 9°53.4´ N 76°13.8´ W), INV PEC3747 (1, 9°30´ N 76°27´ W), INV PEC3022 (1, 11°26.4´ N 73°33´ W), INV PEC3023 (1, 11°25.2´ N 74°10.8´ W), INV PEC3024 (1, 11°24.6´ N 74°9.6´ W), INV PEC3025 (1, 11°25.8´ N 74°13.2´ W), INV PEC8086 (1, 8°59.4´ N 76°45.6´ W), INV PEC8084 (4, 12°19.8´ N 72°27.6´ W), INV PEC8085 (1, 12°21´ N 73°0´ W), INV PEC8083 (1, 12°20.4´ N 72°27´ W). Additional specimens in Kawai (2008). These records extend the bathymetric range of the species.

*Peristedion greyae* Miller 1967 – Alligator Searobin (AFS) - Benthic, 265-803 m. ANSP 101602 (1, 126 SL, 9°3´ N 81°22.2´ W), ANSP 149270 (7, 142-186 SL, 10°16.2´ N 75°54.6´ W), UF 102775 (1, 11°9´ N 74°29.4´ W), UF 102778 (2, 11°40.2´ N 62°27´ W), UF 102779 (2, 14°10.2´ N 81°49.8´ W), UF 102781 (2, 11°34.8´ N 62°58.8´ W), UF 102784 (24, 9°0´ N 81°22.8´ W), UF 102790 (2, 11°52.8´ N 69°28.2´ W), UF 102791 (1, 11°9´ N 74°26.4´ W), UF 102792 (17, 11°9.6´ N 74°28.8´ W), UF 102797 (4, 13°37.2´ N 81°52.8´ W), UF 102799 (1, 14°0´ N 81°49.8´ W), UF 102802 (1, 12°25.8´ N 82°24´ W), UF 102808 (3, 11°49.2´ N 69°24´ W), UF 102816 (2, 13°58.2´ N 81°52.8´ W), UF 102821 (1, 11°34.8´ N 62°40.8´ W), UF 102822 (1, 11°36´ N 62°46.2´ W), UF 102825 (3, 12°16.2´ N 72°40.2´ W), UF 102826 (5, 11°58.8´ N 69°30´ W), UF 102929 (2, 11°34.8´ N 62°37.2´ W), UF 102930 (2, 14°10.2´ N 81°55.2´ W), UF 102945 (2, 16°57´ N 81°19.2´ W), UF 102951 (1, 11°15´ N 68°13.2´ W), UF 102952 (2, 11°52.2´ N 69°27´ W), UF 102954 (14, 11°9.6´ N 74°28.8´ W), UF 102978 (14, 12°34.8´ N 82°19.2´ W), UF 102982 (1, 11°36.6´ N 62°46.8´ W), UF 102983 (1, 11°10.2´ N 74°27´ W), UF 102995 (1, 11°10.2´ N 74°27´ W), UF 103027 (1, 12°18´ N 72°40.8´ W), UF 103028 (1, 11°25.2´ N 73°55.8´ W), UF 103029 (2, 11°12´ N 74°21´ W), UF 125810 (1, 9°6´ N 81°15´ W), INV PEC3034 (1, 11°7.8´ N 75°13.8´ W), INV PEC3031 (2, 11°29.4´ N 73°27´ W), INV PEC3026 (1, 11°13.8´ N 74°39´ W), INV PEC3027 (3, 11°25.8´ N 74°11.4´ W), INV PEC3033 (2, 11°15´ N 74°39´ W), INV PEC3029 (1, 12°24´ N 72°16.2´ W), INV PEC3030 (2, 12°19.2´ N 72°42.6´ W), INV PEC3032 (1, 11°27´ N 73°42´ W), INV PEC3028 (1, 12°29.4´ N 72°15.6´ W), INV PEC4632 (1, 11°22.8´ N 73°44.4´ W), INV PEC4629 (3, 12°31.8´ N 72°12´ W), INV PEC4630 (1, 12°31.8´ N 72°11.4´ W), INV PEC4631 (1, 10°32.4´ N 75°39´ W), INV PEC8079 (1, 12°32.4´ N 71°52.2´ W), INV PEC8080 (1, 11°22.2´ N 74°22.2´ W), INV PEC8618 (2, 10°22.2´ N 75°51.6´ W). Additional specimens in Miller (1967). These records extend the bathymetric range of the species.

*Peristedion imberbe* Poey 1861 – Tropical Slender Armoured Searobin (FAO) – Bathydemersal, 219-519 m. UF 182845 (41, 11°36.6´ N 62°46.8´ W), UF 183607 (2, 16°25.8´ N 81°34.8´ W), INV PEC3601 (1, 10°10.2´ N 76°1.8´ W). These records extend the bathymetric range of the species.

*Peristedion longispatha* Goode & Bean 1886 – Widehead Armoured Searobin (FAO) – Bathydemersal, 366-775 m. *Holotype, MCZ 28009 (1, 178 SL)*; ANSP 149271 (4, 92-124 SL, 9°3´ N 81°22.2´ W), UF 94514 (6, 11°10.2´ N 74°27´ W), UF 94515 (4, 9°15´ N 81°31.8´ W), UF 109794 (1, 16°57´ N 81°19.2´ W), UF 109795 (2, 9°16.2´ N 81°37.2´ W), UF 109796 (3, 14°10.2´ N 81°55.2´ W), UF 115981 (4, 13°58.2´ N 81°52.8´ W), UF 128133 (1, 16°49.8´ N 81°21´ W), UF 128136 (1, 11°25.8´ N 74°13.8´ W), UF 128138 (1, 9°46.8´ N 79°25.2´ W), UF 134741 (2, 14°0´ N 81°49.8´ W), UF 138961 (2, 10°0´ N 76°10.2´ W), UF 138963 (4, 9°13.2´ N 80°43.2´ W), UF 222941 (12, 9°57´ N 76°10.8´ W), INV PEC3591 (1, 10°10.2´ N 76°1.8´ W), INV PEC3590 (1, 10°10.2´ N 76°1.8´ W), INV PEC3589 (1, 9°52.8´ N 76°14.4´ W), INV PEC3588 (1, 9°30.6´ N 76°27´ W),

INV PEC3592 (1, 9°30´ N 76°27´ W), INV PEC3593 (1, 10°10.2´ N 76°1.8´ W), INV PEC3038 (1, 11°7.8´ N 75°13.8´ W), INV PEC3037 (1, 11°7.8´ N 75°13.8´ W), INV PEC3036 (1, 11°19.2´ N 74°16.8´ W), INV PEC3035 (1, 11°29.4´ N 73°27´ W), INV PEC4633 (1, 9°46.8´ N 76°18´ W), INV PEC4121 (1, 10°32.4´ N 75°39´ W), INV PEC4120 (4, 10°32.4´ N 75°39´ W), INV PEC8078 (2, 9°37.8´ N 76°21.6´ W), INV PEC8077 (1, 10°19.8´ N 75°54´ W), INV PEC8621 (2, 10°34.8´ N 75°39.6´ W), INV PEC8620 (3, 10°43.8´ N 75°37.2´ W), INV PEC8619 (2, 9°34.2´ N 76°27.6´ W). Additional specimens in Kawai (2008).

*Peristedion miniatum* Goode 1880 – Armored Searobin, Malarmat à Dix Aiguillons (AFS) - Benthic, 229-914 m. USNM 156868 (2, 9°40.8´ N 59°46.8´ W), MCZ 57736 (1, 12°16.8´ N 72°31.2´ W), UF 103034 (1, 10°55.2´ N 67°55.8´ W), UF 124401 (1, 11°10.8´ N 68°10.8´ W), UF 124423 (1, 11°3´ N 67°52.8´ W), UF 128121 (3, 11°15´ N 68°13.2´ W), UF 134735 (1, 11°9.6´ N 74°25.2´ W), UF 135079 (1, 10°45´ N 66°37.2´ W), UF 135081 (1, 12°16.8´ N 72°31.2´ W), UF 135082 (1, 12°16.2´ N 72°40.2´ W), UF 135085 (2, 12°6´ N 72°55.2´ W), UF 139021 (4, 11°49.2´ N 69°24´ W), INV PEC3046 (1, 11°25.2´ N 74°10.8´ W), INV PEC3051 (1, 11°7.8´ N 75°13.8´ W), INV PEC3044 (1, 11°22.2´ N 73°45´ W), INV PEC3043 (2, 12°15.6´ N 72°33´ W), INV PEC3042 (2, 12°24´ N 72°16.2´ W), INV PEC3041 (1, 12°24´ N 72°15´ W), INV PEC3040 (1, 12°24´ N 72°15´ W), INV PEC3045 (1, 11°27.6´ N 73°51.6´ W), INV PEC3050 (1, 11°5.4´ N 75°15.6´ W), INV PEC3049 (1, 11°5.4´ N 75°15.6´ W), INV PEC3048 (1, 11°25.2´ N 74°12.6´ W), INV PEC3047 (3, 11°25.2´ N 74°12.6´ W), INV PEC3039 (1, 12°34.2´ N 71°49.8´ W), INV PEC4634 (1, 11°22.8´ N 73°44.4´ W).

*Peristedion* sp1. Benthic, 313-640 m. UF 183609 (1, 9°13.2´ N 80°43.2´ W), UF 228639 (1, 16°2.4´ N 61°23.4´ W), UF 183606 (1, 14°34.8´ N 81°31.8´ W), INV PEC3600 (1, 9°27.6´ N 76°26.4´ W).

*Peristedion* sp2. Benthic, 219-375 m. UF 109833 (21, 16°25.8´ N 81°34.8´ W), UF 109837 (11, 14°10.2´ N 81°58.2´ W), UF 229255 (3, 14°54´ N 81°23.4´ W).

*Peristedion truncatum* (Günther 1880) - Black Armoured Searobin (Fishbase). Bathydemersal, 288-914 m. USNM 199072 (1, 13°39´ N 81°52.2´ W), ANSP 149262 (23, 114-149 SL, 12°25.2´ N 82°15´ W), ANSP 149268 (4, 135-150 SL, 11°54´ N 69°22.8´ W), UF 183590 (1, 12°25.8´ N 82°24´ W), UF 183582 (3, 11°49.2´ N 69°24´ W), UF 183587 (1, 13°58.2´ N 81°52.8´ W), UF 183583 (3, 11°58.8´ N 69°30´ W), UF 183588 (1, 11°34.8´ N 62°37.2´ W), UF 183592 (4, 14°10.2´ N 81°55.2´ W), UF 183593 (1, 11°15´ N 68°13.2´ W), UF 183604 (3, 11°9.6´ N 74°28.8´ W), UF 183608 (8, 12°34.8´ N 82°19.2´ W), UF 184949 (1, 12°18´ N 72°40.8´ W), UF 183589 (1, 13°37.2´ N 81°52.8´ W), UF 183604 (4, 11°9.6´ N 74°28.8´ W), UF 183586 (1, 11°52.8´ N 69°28.2´ W), UF 102827 (1, 11°3´ N 67°52.8´ W), UF 183605 (9, 9°0´ N 81°22.8´ W), UF 125775 (2, 16°51´ N 82°13.8´ W), UF 125807 (5, 12°22.8´ N 82°28.8´ W), UF 125808 (1, 16°34.8´ N 80°4.2´ W), UF 125811 (2, 13°58.2´ N 81°52.8´ W), UF 125819 (2, 9°12´ N 81°10.8´ W), UF 125821 (2, 16°34.8´ N 80°10.2´ W), UF 125829 (3, 15°36´ N 61°13.2´ W), UF 125830 (2, 15°34.2´ N 61°10.2´ W), UF 228637 (2, 16°2.4´ N 61°23.4´ W), UF 229202 (1, 14°34.8´ N 81°31.8´ W), INV PEC3596 (1, 9°15.6´ N 76°28.8´ W), INV PEC3597 (1, 9°30.6´ N 76°27´ W), INV PEC3599 (1, 10°10.2´ N 76°1.8´ W), INV PEC3598 (1, 10°10.2´ N 76°1.8´ W).

PERCIFORMES

ACROPOMATIDAE

*Neoscombrops atlanticus* Mochizuki & Sano 1984. Benthopelagic, 200-500 m. USNM 270532 (3, 11°9.6´ N 74°25.2´ W), USNM 394232 (11, 11°9.6´ N 74°24.6´ W), USNM 229532 (2, 11°3´ N 75°10.2´ W), USNM 402382 (1, 9°47.4´ N 79°42´ W), INV PEC3052 (1, 11°27´ N 73°42´ W), INV PEC3053 (1, 11°12´ N 74°17.4´ W), INV PEC4083 (1, 9°45.6´ N 76°15.6´ W). These records extend the bathymetric range of the species.

*Synagrops bellus* (Goode & Bean 1896) – Blackmouth Bass (AFS) – Bathydemersal, 293-890 m. USNM 159335 (3, 10°3´ N 60°1.2´ W), USNM 393781 (2, 11°40.2´ N 62°33´ W), USNM 393782 (2, 11°52.8´ N 69°25.2´ W), USNM 393783 (2, 11°49.2´ N 69°24´ W), USNM 393784 (1, 11°49.2´ N 69°24´ W), USNM 393785 (4, 12°31.2´ N 82°21´ W), USNM 393787 (2, 11°31.2´ N 60°51´ W), USNM 359300 (1, 9°1.8´ N 76°31.8´ W), USNM 359301 (6, 11°3´ N 75°10.2´ W), USNM 359303 (4, 8°55.8´ N 76°52.8´ W), USNM 359304 (9, 14°10.2´ N 81°58.2´ W), USNM 359305 (1, 12°28.2´ N 72°25.8´ W), USNM 359306 (4, 11°9.6´ N 74°25.2´ W), USNM 359307 (1, 12°19.2´ N 72°34.2´ W), USNM 359308 (1, 13°37.2´ N 81°52.8´ W), USNM 392729 (2, 11°3´ N 75°10.2´ W), USNM 393796 (1, 11°10.8´ N 74°28.8´ W), USNM 394226 (1, 11°25.8´ N 74°13.8´ W), ANSP 101291 (1, 11°34.2´ N 62°49.2´ W), MCZ 49774 (1, 43 SL, 13°12´ N 72°46.8´ W), MCZ 49930 (2, 9°1.8´ N 76°31.8´ W), UF 134636 (5, 11°33´ N 62°30´ W), UF 134640 (2, 11°36.6´ N 62°46.8´ W), UF 134642 (5, 16°49.8´ N 81°21´ W), UF 134644 (2, 9°13.2´ N 81°30´ W), UF 134651 (5, 14°0´ N 81°49.8´ W), UF 134653 (2, 11°40.2´ N 62°33´ W), UF 172855 (3, 9°6´ N 81°15´ W), UF 172856 (5, 9°16.8´ N 81°9´ W), UF 207433 (2, 11°40.2´ N 62°40.2´ W), UF 207436 (5, 11°36´ N 62°52.2´ W), UF 222946 (21, 9°57´ N 76°10.8´ W), UF 229216 (5, 14°34.8´ N 81°31.8´ W), UF 229253 (144, 14°54´ N 81°23.4´ W), UF 230396 (2, 14°34.8´ N 81°31.8´ W), UF 231635 (1, 14°34.8´ N 81°31.8´ W), INV PEC3069 (2, 11°26.4´ N 73°33´ W), INV PEC3070 (3, 11°27´ N 73°42´ W), INV PEC3071 (1, 11°22.2´ N 73°45´ W), INV PEC3072 (1, 11°22.2´ N 73°46.2´ W), INV PEC3073 (1, 11°27.6´ N 73°52.2´ W), INV PEC3074 (1, 11°27´ N 74°1.2´ W), INV PEC3075 (1, 11°25.2´ N 74°10.8´ W), INV PEC3076 (1, 11°24.6´ N 74°12´ W), INV PEC3068 (1, 11°28.8´ N 73°24´ W), INV PEC3067 (1, 11°29.4´ N 73°27´ W), INV PEC3066 (1, 12°15.6´ N 72°33´ W), INV PEC3065 (22, 12°15.6´ N 72°33´ W), INV PEC3064 (1, 12°15´ N 72°33.6´ W), INV PEC3063 (2, 12°24´ N 72°16.2´ W), INV PEC3062 (1, 12°24´ N 72°16.2´ W), INV PEC3057 (1, 12°34.2´ N 71°50.4´ W), INV PEC3056 (6, 11°23.4´ N 74°12´ W), INV PEC3264 (1, 10°9´ N 76°0.6´ W), INV PEC3263 (1, 9°45.6´ N 76°15´ W), INV PEC3262 (1, 9°27.6´ N 76°25.8´ W), INV PEC3261 (3, 9°16.2´ N 76°28.8´ W), INV PEC3260 (1, 9°3´ N 76°36.6´ W), INV PEC3061 (1, 12°29.4´ N 72°15.6´ W), INV PEC3060 (3, 12°31.8´ N 72°7.8´ W), INV PEC3059 (1, 12°31.8´ N 72°7.8´ W), INV PEC3058 (2, 12°34.2´ N 71°49.8´ W), INV PEC3055 (1, 11°9.6´ N 74°40.2´ W), INV PEC3054 (1, 11°9.6´ N 74°39´ W), INV PEC4069 (1, 9°46.8´ N 76°18´ W), INV PEC4145 (2, 9°45´ N 76°15.6´ W), INV PEC4146 (2, 9°45.6´ N 76°15.6´ W), INV PEC4151 (2, 11°22.8´ N 73°44.4´ W), INV PEC4152 (1, 11°22.8´ N 73°44.4´ W), INV PEC4141 (7, 10°31.8´ N 75°37.2´ W), INV PEC8111 (2, 10°19.8´ N 75°54´ W), INV PEC8108 (20, 12°32.4´ N 71°52.2´ W), INV PEC8110 (6, 12°19.8´ N 72°27.6´ W), INV PEC8109 (1, 12°20.4´ N 72°27´ W), INV PEC8107 (1, 12°33´ N 71°52.2´ W), INV PEC8625 (5, 10°22.2´ N 75°51.6´ W), INV PEC8622 (4, 12°36´ N 71°28.8´ W), INV PEC8623 (1, 12°41.4´ N 71°49.2´ W), INV PEC8624 (1, 9°17.4´ N 76°31.8´ W).

*Synagrops pseudomicrolepis* Schultz 1940. Bathydemersal, 247-457 m. USNM 359292 (9, 14°0´ N 81°49.8´ W), USNM 270651 (4, 12°22.8´ N 82°28.8´ W), USNM 270801 (7, 14°16.8´ N 81°55.2´ W), USNM 229539 (1, 90.1 SL, 14°24´ N 81°48´ W), USNM 392696 (1, 9°4.2´ N 81°25.2´ W), UF 92349 (1, 9°13.2´ N 80°43.2´ W), UF 134713 (4, 14°22.8´ N 81°45´ W), UF 134714 (4, 12°22.8´ N 82°28.8´ W), UF 134717 (1, 16°49.8´ N 81°21´ W), UF 138950 (4, 9°3´ N 81°22.2´ W), UF 139145 (6, 14°0´ N 81°49.8´ W), INV PEC3270 (5, 10°9´ N 76°0.6´ W), INV PEC3269 (2, 9°45.6´ N 76°15´ W), INV PEC3268 (2, 9°16.2´ N 76°28.8´ W), INV PEC3266 (3, 9°3´ N 76°36.6´ W), INV PEC3267 (2, 9°2.4´ N 76°37.2´ W). Additional specimens in Mejía et al. (2001).

*Synagrops spinosus* Schultz 1940 – Keelcheek Bass, Farolito Cachetiquillada (AFS) – Bathydemersal, 200-750 m. USNM 359249 (2, 11°3´ N 75°10.2´ W), USNM 359246 (2, 76.9-77.5 SL, 13°25.8´ N 81°52.2´ W), USNM 359247 (1, 84.1 SL, 12°19.2´ N 72°34.2´ W), USNM 156836 (1, 9°52.8´ N 59°52.8´ W), USNM 156954 (2, 9°40.8´ N 59°46.8´ W), USNM 186440 (4, 9°52.8´ N 59°52.8´ W), USNM 186446 (1, 9°24´ N 59°40.8´ W), USNM 156812 (1, 11°27´ N 83°10.8´ W), USNM 186450 (3, 9°40.8´ N 59°46.8´ W), USNM 197481 (1, 12°31.2´ N 82°21´ W), USNM 229544 (1, 12°22.8´ N 82°28.8´ W), USNM 392692 (2, 11°36´ N 68°19.8´ W),

USNM 392693 (2, 10°45´ N 66°37.2´ W), USNM 392704 (3, 13°12.6´ N 82°15.6´ W), ANSP 192551 (3, 11°34.2´ N 62°49.2´ W), UF 118180 (1, 11°34.8´ N 62°37.2´ W), UF 183602 (3, 11°33´ N 62°30´ W), UF 183598 (2, 16°49.8´ N 81°21´ W), UF 183596 (9, 14°54´ N 81°23.4´ W), INV PEC3273 (2, 10°9´ N 76°0.6´ W), INV PEC3079 (1, 12°34.2´ N 71°49.8´ W), INV PEC3078 (1, 12°34.2´ N 71°50.4´ W), INV PEC3077 (2, 12°34.2´ N 71°50.4´ W), INV PEC3272 (1, 9°27.6´ N 76°26.4´ W), INV PEC3083 (1, 11°25.2´ N 74°10.8´ W), INV PEC3082 (3, 12°15.6´ N 72°33´ W), INV PEC3081 (1, 12°15.6´ N 72°33´ W), INV PEC3080 (1, 12°24´ N 72°15´ W), INV PEC8115 (2, 12°20.4´ N 72°27´ W), INV PEC8114 (3, 12°40.8´ N 72°3.6´ W), INV PEC8112 (4, 12°33´ N 71°52.2´ W), INV PEC8113 (13, 12°32.4´ N 71°52.2´ W), INV PEC8626 (2, 10°22.2´ N 75°51.6´ W). These records extend the bathymetric range of the species.

*Synagrops trispinosus* Mochizuki & Sano 1984 – Threespine Bass, Farolito Tres Espinas (AFS) – Bathydemersal, 200-525 m. USNM 359251 (8, 63-105 SL, 11°8.4´ N 74°28.8´ W), USNM 229553 (4, 11°3´ N 75°10.2´ W), USNM 229554 (1, 11°3´ N 75°10.2´ W), USNM 159422 (2, 16°36´ N 82°37.2´ W), USNM 186439 (2, 16°52.2´ N 81°30´ W), USNM 186436 (2, 10°3´ N 60°1.2´ W), USNM 197482 (8, 9°12´ N 81°30´ W), USNM 229555 (6, 13°12.6´ N 82°15.6´ W), USNM 229569 (1, 9°40.8´ N 59°46.8´ W), USNM 232320 (6, 10°45´ N 66°37.2´ W), USNM 232321 (1, 10°45´ N 66°37.2´ W), USNM 364274 (1, 11°25.8´ N 73°30´ W), UF 183603 (2, 14°0´ N 81°49.8´ W), UF 229261 (75, 14°54´ N 81°23.4´ W), INV PEC3274 (1, 81.7 SL, 9°52.8´ N 76°14.4´ W), INV PEC8106 (1, 12°19.8´ N 72°27.6´ W). Specimen's length in Mejía et al. (2001).

*Verilus sordidus* Poey 1860. Demersal, 201 m. USNM 289485 (1, 11°25.8´ N 73°30´ W).

SYMPHYSANODONTIDAE

*Symphysanodon berryi* Anderson 1970 – Slope Bass (AFS) – Bathydemersal, 200-284 m. USNM 382937 (1, 12°28.2´ N 82°28.2´ W), MCZ 49899 (1, 41 SL, 13°45´ N 61°15´ W), INV PEC3602 (1, 9°57.6´ N 76°7.8´ W), INV PEC3603 (2, 9°57´ N 76°9.6´ W).

SERRANIDAE

*Baldwinella aureorubens* (Longley 1935) – Streamer Bass, Cabrilla Cinta (AFS) – Demersal, 204-366 m. UF 166542 (1, 9°4.2´ N 81°25.2´ W), UF 215418 (5, 10°45´ N 66°37.2´ W), UF 217167 (1, 10°24´ N 75°49.8´ W), UF 226939 (1, 9°57.6´ N 78°31.2´ W), INV PEC3089 (1, 11°28.8´ N 73°24´ W), INV PEC3088 (2, 12°15.6´ N 72°33´ W), INV PEC3085 (1, 11°9.6´ N 74°40.2´ W), INV PEC3092 (1, 11°24.6´ N 74°9.6´ W), INV PEC3091 (3, 11°24.6´ N 74°9.6´ W), INV PEC3090 (1, 11°26.4´ N 73°31.8´ W), INV PEC3086 (3, 12°34.2´ N 71°50.4´ W), INV PEC3554 (1, 9°3´ N 76°36.6´ W), INV PEC3555 (1, 9°27.6´ N 76°25.8´ W), INV PEC3556 (1, 9°27.6´ N 76°26.4´ W), INV PEC3557 (1, 9°45.6´ N 76°15´ W), INV PEC3558 (1, 9°45.6´ N 76°15.6´ W), INV PEC3087 (1, 12°24´ N 72°15´ W).

*Bathyanthias cubensis* (Schultz 1958). Bathydemersal, 200-280 m. UF 139224 (1, 11°8.4´ N 74°28.8´ W), UF 212242 (6, 9°12´ N 81°30´ W), INV PEC5026 (1, 123 TL, 9°45´ N 76°15.6´ W). Specimens lengths in Polanco et al. (2012). In the genera *Bathyanthias* further studies must to be done to examine if *B. cubensis* and *B. mexicanus* are the same species as it is stated in McEachran and Felchhem (2005). These records extend the bathymetric range of the species.

*Bullisichthys caribbaeus* Rivas 1971 - Pugnose Bass (Fishbase). Demersal, 219-238 m. UF 38716 (1, 14°15.6´ N 80°27´ W). This record extends the bathymetric range of the species.

*Plectranthias garrupellus* Robins & Starck 1961 – Apricot Bass (AFS) - Demersal, 200-206 m. INV PEC3559 (2, 11°23.4´ N 74°12´ W).

*Plectranthias garrupellus* Robins & Starck 1961 – Apricot Bass (AFS) - Demersal, 200-206 m. INV PEC3559 (2, 11°23.4′ N 74°12′ W).

*Pronotogrammus martinicensis* (Guichenot 1868) – Roughtongue Bass, Serrano Lengua Rasposa (AFS), Coné Langue Rugueuse (FAO) - Demersal, 219-914 m. UF 216113 (1, 14°15.6′ N 80°27′ W), UF 217298 (1, 11°54′ N 69°18′ W). These records extend the bathymetric range of the species.

*Serranus atrobranchus* (Cuvier 1829) – Blackear Bass, Serrano Oreja Negra (AFS) - Demersal, 300 m. INV PEC5066 (1, 11°22.8′ N 73°44.4′ W). This record extends the bathymetric range of the species.

*Serranus phoebe* Poey 1851 – Tattler, Serrano Diana (AFS) - Demersal, 221-214 m. UF 228801 (2, 13°42.6′ N 81°58.2′ W).

OPISTOGNATHIDAE

*Lonchopisthus lemur* (Myers 1935). Bathydemersal, 204-310 m. USNM 217801 (1, 10°45′ N 66°37.2′ W), INV PEC3644 (11, 11°28.8′ N 73°24′ W), INV PEC3094 (1, 12°34.2′ N 71°50.4′ W), INV PEC3108 (1, 10°28.8′ N 75°42.6′ W), INV PEC3107 (1, 11°12′ N 74°17.4′ W), INV PEC3106 (2, 11°12′ N 74°17.4′ W), INV PEC3105 (1, 11°12′ N 74°17.4′ W), INV PEC3104 (4, 11°24.6′ N 74°9.6′ W), INV PEC3103 (1, 11°25.2′ N 74°10.8′ W), INV PEC3102 (3, 11°22.2′ N 73°46.2′ W), INV PEC3101 (8, 11°26.4′ N 73°33′ W), INV PEC3100 (1, 11°26.4′ N 73°31.8′ W), INV PEC3099 (23, 11°26.4′ N 73°31.8′ W), INV PEC3560 (1, 9°27.6′ N 76°25.8′ W), INV PEC3561 (2, 9°45.6′ N 76°15′ W), INV PEC3562 (1, 9°57.6′ N 76°7.8′ W), INV PEC3563 (5, 9°16.2′ N 76°28.8′ W), INV PEC3093 (1, 11°9.6′ N 74°40.2′ W), INV PEC3095 (7, 12°34.2′ N 71°49.8′ W), INV PEC3096 (3, 12°24′ N 72°15′ W), INV PEC3097 (2, 12°24′ N 72°16.2′ W), INV PEC3098 (1, 12°15.6′ N 72°33′ W), INV PEC4450 (2, 11°22.8′ N 73°44.4′ W), INV PEC4449 (6, 11°22.8′ N 73°44.4′ W), INV PEC4448 (1, 9°45.6′ N 76°15.6′ W), INV PEC3936 (1, 9°45.6′ N 76°15.6′ W), INV PEC4446 (1, 9°45′ N 76°15.6′ W), INV PEC4447 (1, 9°45′ N 76°15.6′ W). These records extend the bathymetric range of the species.

*Lonchopisthus micrognathus* (Poey 1860) – Swordtail Jawfish, Bocón Rayado (AFS) - Demersal, 265 m. INV PEC8104 (1, 12°32.4′ N 71°52.2′ W).

EPIGONIDAE

*Epigonus macrops* (Brauer 1906). Bathydemersal, 200-914 m. USNM 207676 (2, 9°1.8′ N 76°31.8′ W), USNM 207678 (4, 12°6′ N 72°55.2′ W), USNM 269782 (3, 10°9′ N 76°13.8′ W), USNM 269826 (1, 11°40.8′ N 73°24′ W), USNM 270517 (2), USNM 381001 (1), USNM 269370 (2), USNM 269774 (1), USNM 270517 (2, 10°9′ N 76°13.8′ W), MCZ 48827 (1, 11°54′ N 69°18′ W), MCZ 48832 (1, 13°45′ N 61°15′ W), MCZ 48833 (2, 13°51′ N 70°15′ W), MCZ 49339 (4, 9°1.8′ N 76°31.8′ W), UF 228855 (1, 10°45′ N 66°37.2′ W). These records extend the bathymetric range of the species.

*Epigonus occidentalis* Goode & Bean 1896 – Western Deepsea Cardinalfish (Fishbase). Bathydemersal, 366-823 m. USNM 207706 (13, 16°34.8′ N 80°10.2′ W), USNM 207707 (2, 14°10.2′ N 81°55.2′ W), USNM 207709 (7, 12°25.8′ N 82°24′ W), USNM 207712 (2, 10°16.2′ N 75°54.6′ W), USNM 269819 (9, 16°34.8′ N 80°10.2′ W), USNM 393862 (2, 11°13.2′ N 74°25.8′ W), USNM 393863 (1, 11°16.8′ N 74°40.2′ W), USNM 393877 (1, 11°12′ N 74°24′ W), USNM 393884 (1, 14°55.8′ N 81°10.2′ W), USNM 156814 (1, 9°0′ N 59°0′ W), USNM 159347 (1, 13°39′ N 81°52.2′ W), USNM 159419 (1, 13°39′ N 81°52.2′ W), USNM 186096 (2, 13°39′ N 81°52.2′ W), USNM 186188 (5, 16°55.2′ N 81°10.2′ W), USNM 197353 (4, 14°10.2′ N 81°49.8′ W), USNM 197476 (4, 14°10.2′ N 81°55.2′ W), USNM 207708 (6, 9°3′ N 81°18′ W), USNM 207710 (10, 14°22.8′ N 81°45′ W), USNM 207711 (2, 14°22.8′ N 81°45′ W), USNM 207713 (1, 9°1.8′ N 76°31.8′ W),

USNM 269780 (3, 12°24´ N 82°24´ W), USNM 269789 (7, 14°7.8´ N 81°55.2´ W), USNM 269815 (8, 12°25.2´ N 82°15´ W), USNM 269818 (1, 9°3´ N 81°18´ W), USNM 270524 (6, 12°25.2´ N 82°15´ W), USNM 393861 (1, 11°52.8´ N 69°25.2´ W), USNM 393871 (4, 9°4.8´ N 81°18´ W), USNM 393873 (1, 11°52.8´ N 69°25.2´ W), USNM 393876 (1, 14°7.8´ N 81°55.2´ W), USNM 393878 (1, 11°40.2´ N 62°33´ W), USNM 394088 (4, 11°49.2´ N 69°24´ W), UF 117783 (1, 14°10.2´ N 81°49.8´ W), UF 117786 (1, 12°25.8´ N 82°24´ W), UF 211404 (15, 14°22.8´ N 81°45´ W), UF 230401 (23, 14°34.8´ N 81°31.8´ W), INV PEC3568 (1, 10°10.2´ N 76°1.8´ W), INV PEC3110 (2, 11°15.6´ N 74°38.4´ W), INV PEC3109 (1, 11°27.6´ N 73°51.6´ W), INV PEC3569 (1, 9°53.4´ N 76°13.8´ W), INV PEC3564 (1, 9°49.2´ N 76°16.2´ W), INV PEC3565 (2, 9°53.4´ N 76°13.8´ W), INV PEC3566 (1, 9°52.8´ N 76°14.4´ W), INV PEC3567 (2, 10°10.2´ N 76°1.8´ W). These records extend the bathymetric range of the species.

*Epigonus pandionis* (Goode & Bean 1881) - Bigeye (Fishbase). Bathydemersal, 275-699 m. USNM 207691 (8, 11°9.6´ N 74°24.6´ W), USNM 207692 (8, 11°9.6´ N 74°24.6´ W), USNM 207699 (3, 9°3´ N 81°22.2´ W), USNM 269776 (1, 11°9.6´ N 74°25.2´ W), USNM 269776 (1, 11°9.6´ N 74°25.2´ W), USNM 269783 (1, 11°49.8´ N 73°4.8´ W), USNM 269812 (1, 11°25.8´ N 73°58.8´ W), USNM 269813 (2, 11°3´ N 75°18´ W), USNM 393859 (1, 12°19.2´ N 72°34.2´ W), USNM 393859 (1, 12°19.2´ N 72°34.2´ W), USNM 393864 (1, 11°25.2´ N 73°55.8´ W), USNM 393881 (3, 12°34.8´ N 82°19.2´ W), USNM 156953 (5, 9°45´ N 59°45´ W), USNM 159223 (1, 9°0´ N 59°0´ W), USNM 159342 (3, 9°16.8´ N 59°19.2´ W), USNM 159343 (2, 16°39´ N 81°1.2´ W), USNM 197477 (9, 14°10.2´ N 81°55.2´ W), USNM 207701 (3, 11°52.8´ N 69°28.2´ W), USNM 207702 (1, 10°16.2´ N 75°54.6´ W), USNM 218803 (7, 11°58.8´ N 69°30´ W), USNM 269781 (1, 16°45´ N 82°36´ W), USNM 270513 (2, 16°57´ N 81°19.2´ W), USNM 270515 (5, 9°0´ N 81°22.8´ W), USNM 393860 (1, 9°12´ N 81°10.8´ W), USNM 393865 (2, 17°34.2´ N 62°42´ W), MCZ 48838 (1, 63.1 SL, 11°9.6´ N 74°24.6´ W), MCZ 48839 (1, 13°4.2´ N 73°12´ W), UF 117791 (1, 9°3´ N 81°22.2´ W), UF 177167 (2, 12°51´ N 70°30´ W), UF 231634 (1, 14°34.8´ N 81°31.8´ W), INV PEC3740 (1, 9°30.6´ N 76°27´ W), INV PEC3118 (1, 11°7.2´ N 75°8.4´ W), INV PEC3117 (1, 11°26.4´ N 73°33´ W), INV PEC3116 (1, 12°19.2´ N 72°42.6´ W), INV PEC3115 (1, 12°29.4´ N 72°15.6´ W), INV PEC3114 (2, 12°29.4´ N 72°15.6´ W), INV PEC3113 (1, 12°31.8´ N 72°7.8´ W), INV PEC3112 (1, 11°25.8´ N 74°11.4´ W), INV PEC3111 (4, 11°25.8´ N 74°11.4´ W). These records extend the bathymetric range of the species.

CARANGIDAE

*Decapterus macarellus* (Cuvier 1833) – Mackerel Scad, Macarela Caballa, Décaptère Faux-maquereau (AFS) – Neritic, outer continental shelf and oceanic surface and epipelagic, 235-1463 m. MCZ 42251 (2, 15°53.4´ N 65°1.2´ W), MCZ 62384 (1, 13°4.2´ N 73°12´ W), UF 167665 (1, 9°31.8´ N 76°37.8´ W). These records extend the bathymetric range of the species.

*Decapterus tabl* Berry 1968 – Redtail Scad (AFS), Macarela Rabo Colorado, Comète Queue Rouge (FAO) - Neritic, outer continental shelf, 200-1500 m. Holotype, USNM 202744 (1, 12°13.2´ N 72°28.8´ W); Paratypes, USNM 202745 (2, 12°13.2´ N 72°28.8´ W), USNM 202746 (4, 11°8.4´ N 74°28.8´ W), USNM 208569 (13, 11°8.4´ N 74°28.8´ W), USNM 208570 (1, 11°8.4´ N 74°28.8´ W); ANSP 109542 (1, 177 SL, 11°8.4´ N 74°28.8´ W), UF 19629 (1, 10°54´ N 67°7.8´ W), UF 226862 (1, 11°40.2´ N 68°15.6´ W), INV PEC3119 (1, 12°29.4´ N 72°15.6´ W), INV PEC4256 (1, 9°47.4´ N 76°17.4´ W), INV PEC8100 (3, 12°32.4´ N 71°52.2´ W). These records extend the bathymetric range of the species.

*Selar crumenophthalmus* (Bloch 1793) – Bigeye Scad, Charrito Ojón, Sélar à Grandes Paupières (AFS) - Neritic, outer continental shelf, 280-400 m. MCZ 42252 (24, 14°0´ N 65°4.8´ W), MCZ 48905 (1, 14°0´ N 65°4.8´ W), INV PEC3848 (1, 9°45´ N 76°15.6´ W). These records extend the bathymetric range of the species.

*Selene brownii* (Cuvier 1816) – Caribbean Moonfish, Jorobado Luna (AFS), Musso Lune (FAO) - Neritic, outer continental shelf, 504 m. INV PEC4265 (1, 11°28.2´ N 73°40.2´ W).

*Trachurus lathami* Nichols 1920 – Rough Scad, Charrito Garretón, Saurel Maxécus (AFS) - Neritic, outer continental shelf, 207-375 m. UF 123863 (1, 12°31.2´ N 71°58.2´ W), UF 140118 (9, 12°13.2´ N 72°28.8´ W). These records extend the bathymetric range of the species.

EMMELICHTHYIDAE

*Erythrocles monodi* Poll & Cadenat 1954 – Atlantic Rubyfish, Conoro, Poisson Rubis (FAO) – Neritic to benthopelagic, 201 m. USNM 205861 (1, 11°12´ N 67°40.2´ W).

LUTJANIDAE

*Pristipomoides macrophthalmus* (Müller & Troschel 1848) – Cardinal Snapper, Pargo Panchito (AFS), Colas Gros Yeux (FAO) – Benthopelagic, 201-289 m. USNM 400747 (1, 8°58.2´ N 77°27.6´ W), UF 38019 (1, 9°12´ N 81°30´ W), UF 226928 (2, 13°28.2´ N 82°1.2´ W), UF 227078 (3, 13°12.6´ N 82°15.6´ W), INV PEC3570 (1, 9°57.6´ N 76°7.8´ W).

*Rhomboplites aurorubens* (Cuvier 1829) – Vermilion Snapper, Besugo (AFS), Pargo Cunaro (FAO) – Demersal, 212-214 m. UF 227084 (1, 13°42.6´ N 81°58.2´ W).

HAEMULIDAE

*Haemulon aurolineatum* Cuvier 1830 – Tomtate, Ronco Jeníguaro (AFS), Gorette Tomtate (FAO) –Demersal, 286-304 m. INV PEC3120 (1, 11°26.4´ N 73°31.8´ W). These records extend the bathymetric range of the species.

*Haemulon boschmae* (Metzelaar 1919) – Bronzestripe Grunt, Ronco Ruyi, Gorette Rui (FAO) – Demersal, 286-304 m. INV PEC3121 (1, 11°26.4´ N 73°31.8´ W). This record extends the bathymetric range of the species.

SCIAENIDAE

*Protosciaena bathytatos* (Chao & Miller 1975) – Deepwater Drum, Corvina de Fondo, Courbine de Fond (FAO) – Demersal, 283-549 m. Holotype, USNM 211514 (1, 9°36´ N 76°22.2´ W); Paratype, USNM 211580 (1, 9°36´ N 76°22.2´ W), USNM 211581 (2, 10°52.2´ N 67°58.2´ W), MCZ 49119 (1, 191 SL, 11°30´ N 60°46.2´ W); USNM 214642 (1, 11°9´ N 74°25.8´ W), USNM 211578 (1, 9°13.2´ N 80°43.2´ W), USNM 211579 (3, 10°43.2´ N 64°28.8´ W), ANSP 126874 (2, 202-251 SL, 11°9´ N 74°26.4´ W), INV PEC3122 (1, 11°5.4´ N 75°15.6´ W).

*Protosciaena trewavasae* (Chao & Miller 1975) – New Grenada Drum, Corvina Granadina, Courbine Grenadine (FAO) – Demersal, 200-219 m. Holotype, USNM 211513 (1, 11°8.4´ N 74°28.8´ W); Paratypes, USNM 211573 (5, 11°8.4´ N 74°28.8´ W), ANSP 126873 (2, 11°3´ N 75°10.2´ W).

MULLIDAE

*Upeneus parvus* Poey 1852 – Dwarf Goatfish, Chivo Rayuelo (AFS), Rouget-souris Mignon (FAO) – Demersal, 300-700 m. UF 228024 (4, 13°4.8´ N 71°32.4´ W), INV PEC4419 (1, 11°22.8´ N 73°44.4´ W). These records extend the bathymetric range of the species.

BATHYCLUPEIDAE

*Bathyclupea argentea* Goode & Bean 1896. Mesopelagic, 402-732 m. USNM 197351 (6), USNM 314027 (8, 9°0′ N 81°22.8′ W), USNM 372712 (3, 9°3′ N 81°18′ W), MCZ 40603 (6, 11°34.8′ N 62°25.2′ W), MCZ 47931 (1, 14°10.2′ N 81°55.2′ W), MCZ 47933 (1, 16°57′ N 81°19.2′ W), MCZ 47934 (1, 10°10.2′ N 59°54′ W), MCZ 47935 (2, 11°52.8′ N 69°28.2′ W), MCZ 47936 (1, 12°43.8′ N 82°16.2′ W), MCZ 47938 (4, 14°22.8′ N 81°45′ W), MCZ 47940 (1, 9°1.8′ N 76°31.8′ W), MCZ 47941 (1, 11°52.8′ N 69°25.2′ W), MCZ 47942 (10, 14°10.2′ N 81°49.8′ W), MCZ 47943 (3, 11°49.2′ N 69°24′ W), MCZ 47944 (9, 9°3′ N 81°18′ W), MCZ 47945 (8, 16°58.2′ N 87°52.8′ W), MCZ 47946 (13, 14°10.2′ N 81°49.8′ W), MCZ 47947 (1, 9°15′ N 81°31.8′ W), MCZ 47948 (7, 9°0′ N 81°22.8′ W), MCZ 93367 (1, 64 SL, 13°51′ N 70°15′ W), UF 121264 (16, 11°52.2′ N 69°27′ W), UF 174127 (1, 17°37.8′ N 63°48′ W), UF 174152 (1, 9°16.8′ N 81°9′ W), UF 202113 (2, 14°7.8′ N 81°49.2′ W), UF 215377 (1, 11°52.8′ N 69°25.2′ W), UF 229199 (3, 14°34.8′ N 81°31.8′ W), INV PEC3125 (2, 11°27.6′ N 73°52.2′ W), INV PEC3124 (2, 11°27.6′ N 73°52.2′ W), INV PEC3123 (1, 11°27′ N 73°42′ W), INV PEC3605 (1, 9°53.4′ N 76°13.8′ W), INV PEC3127 (1, 11°7.8′ N 75°13.8′ W), INV PEC3604 (1, 9°18′ N 76°29.4′ W), INV PEC3126 (1, 11°20.4′ N 74°16.2′ W), INV PEC3739 (1, 10°10.2′ N 76°1.8′ W), INV PEC4087 (1, 10°32.4′ N 75°39′ W), INV PEC4206 (2, 10°32.4′ N 75°39′ W), INV PEC8653 (1, 10°43.8′ N 75°37.2′ W), INV PEC8651 (1, 9°17.4′ N 76°31.8′ W), INV PEC8652 (2, 9°34.2′ N 76°27.6′ W). These records extend the bathymetric range of the species.

*Bathyclupea schroederi* Dick 1962. Meso to benthopelagic, 205-503 m. MCZ 47921 (1, 13°33′ N 81°55.2′ W), MCZ 47922 (2, 14°22.8′ N 81°45′ W), MCZ 47923 (11, 14°10.2′ N 81°55.2′ W), MCZ 47924 (8, 12°34.8′ N 82°19.2′ W), MCZ 47926 (4, 16°57′ N 81°19.2′ W), MCZ 47927 (15, 9°3′ N 81°22.2′ W), MCZ 47928 (6, 12°25.8′ N 82°24′ W), MCZ 55333 (1, 35 SL, 15°42′ N 64°13.2′ W), UF 222943 (3, 9°57′ N 76°10.8′ W). These records extend the bathymetric range of the species.

PERCOPHIDAE

*Bembrops anatirostris* Ginsburg 1955 – Duckbill Flathead, Pico de Pato (AFS) – Bathydemersal, 110-914 m. USNM 304921 (2, 11°9.6′ N 74°24.6′ W), USNM 347278 (1, 12°19.8′ N 72°21′ W), USNM 347279 (4, 11°24′ N 73°46.8′ W), USNM 347283 (3, 11°49.8′ N 73°4.8′ W), USNM 347286 (2, 11°9′ N 74°25.8′ W), USNM 308117 (5, 12°31.2′ N 82°21′ W), USNM 347203 (6, 9°40.2′ N 79°7.2′ W), USNM 347275 (2, 10°54′ N 67°7.8′ W), USNM 347276 (2, 11°10.2′ N 68°7.8′ W), USNM 347284 (2, 9°13.2′ N 81°30′ W), USNM 347285 (8, 9°4.2′ N 81°25.2′ W), ANSP 171161 (4, 11°34.2′ N 62°49.2′ W), UF 15614 (3, 9°3′ N 81°22.2′ W), UF 47054 (2, 9°4.2′ N 81°25.2′ W), UF 47055 (2, 9°3′ N 81°22.2′ W), UF 110019 (1, 15°30′ N 63°37.8′ W), UF 110031 (1, 9°19.8′ N 81°24′ W), UF 110032 (1, 9°13.2′ N 80°43.2′ W), UF 134798 (1, 11°30′ N 60°46.2′ W), UF 134818 (1, 11°36.6′ N 62°46.8′ W), UF 142002 (3, 12°31.2′ N 82°21′ W), UF 142003 (2, 14°10.2′ N 81°58.2′ W), UF 176890 (2, 15°37.8′ N 61°12′ W), UF 229263 (8, 14°54′ N 81°23.4′ W), UF 231493 (1, 16°2.4′ N 61°23.4′ W), UF 232600 (2, 8°58.2′ N 81°26.4′ W), INV PEC3142 (2, 11°26.4′ N 73°33′ W), INV PEC3143 (4, 11°22.2′ N 73°46.2′ W), INV PEC3144 (2, 11°27.6′ N 73°51.6′ W), INV PEC3145 (2, 11°25.2′ N 74°10.8′ W), INV PEC3146 (4, 11°24.6′ N 74°9.6′ W), INV PEC3147 (5, 11°25.2′ N 74°12.6′ W), INV PEC3148 (1, 11°12′ N 74°17.4′ W), INV PEC3140 (2, 11°26.4′ N 73°31.8′ W), INV PEC3141 (3, 11°26.4′ N 73°31.8′ W), INV PEC3742 (1, 9°18.6′ N 76°29.4′ W), INV PEC3741 (1, 9°16.2′ N 76°28.8′ W), INV PEC3138 (1, 11°29.4′ N 73°22.8′ W), INV PEC3746 (1, 9°57′ N 76°9.6′ W), INV PEC3745 (1, 9°57.6′ N 76°7.8′ W), INV PEC3744 (2, 9°27.6′ N 76°26.4′ W), INV PEC3743 (2, 9°27.6′ N 76°25.8′ W), INV PEC3137 (1, 11°29.4′ N 73°27′ W), INV PEC3136 (9, 12°15.6′ N 72°33′ W), INV PEC3135 (1, 12°15.6′ N 72°33′ W), INV PEC3139 (1, 11°28.8′ N 73°24′ W), INV PEC3132 (2, 12°34.2′ N 71°49.8′ W), INV PEC3134 (10, 12°24′ N 72°16.2′ W), INV PEC3133 (10, 12°24′ N 72°15′ W), INV PEC3131 (1, 12°34.2′ N 71°50.4′ W), INV PEC3130 (1, 11°23.4′ N 74°12′ W), INV PEC3129 (1, 11°25.8′ N 74°11.4′ W), INV PEC3128 (4, 11°9.6′ N

74°39´ W), INV PEC3607 (1, 9°57.6´ N 76°7.8´ W), INV PEC3254 (7, 11°29.4´ N 73°27´ W), INV PEC3606 (1, 9°16.2´ N 76°28.8´ W), INV PEC4107 (4, 11°22.8´ N 73°44.4´ W), INV PEC4466 (1, 10°33´ N 75°37.2´ W), INV PEC8097 (3, 12°19.8´ N 72°27.6´ W), INV PEC8095 (2, 12°32.4´ N 71°52.2´ W), INV PEC8096 (1, 12°20.4´ N 72°27´ W), INV PEC8098 (1, 8°59.4´ N 76°45.6´ W), INV PEC8657 (1, 10°22.2´ N 75°51.6´ W). These records extend the bathymetric range of the species.

*Bembrops macromma* Ginsburg 1955. Bathydemersal, 200-375 m. USNM 304929 (2, 14°16.8´ N 81°55.2´ W), UF 15615 (2, 16°7.8´ N 81°13.2´ W), UF 133858 (19, 16°25.8´ N 81°34.8´ W), UF 234685 (9, 14°54´ N 81°23.4´ W). Additional specimens in Thompson and Suttkus (1998).

*Bembrops magnisquamis* Ginsburg 1955. Bathydemersal, 296-375 m. USNM 304924 (4, 12°31.2´ N 82°21´ W), UF 229264 (1, 14°54´ N 81°23.4´ W). Additional specimens in Thompson and Suttkus (1998).

*Bembrops ocellatus* Thompson & Suttkus 1998 - Ocellate Duckbill (Fishbase). Bathydemersal, 366-705 m. USNM 347202 (1, 12°25.8´ N 82°24´ W), USNM 347214 (2, 13°39´ N 81°52.2´ W), USNM 347215 (1, 11°25.8´ N 74°13.8´ W), USNM 347273 (3, 10°16.2´ N 75°54.6´ W), USNM 307592 (3, 14°7.8´ N 81°55.2´ W), USNM 344486 (3, 11°49.2´ N 69°24´ W), USNM 347272 (3, 10°57´ N 67°1.8´ W), MCZ 58429 (1, 11°36´ N 62°46.2´ W), UF 134814 (1, 11°34.8´ N 62°37.2´ W), UF 134822 (1, 9°3´ N 81°22.2´ W), UF 175136 (1, 16°45´ N 82°36´ W), UF 207128 (1, 11°36´ N 62°52.2´ W), UF 222940 (8, 9°57´ N 76°10.8´ W), UF 231480 (1, 14°34.8´ N 81°31.8´ W), INV PEC3150 (1, 11°27.6´ N 73°51.6´ W), INV PEC3608 (1, 9°30.6´ N 76°27´ W), INV PEC3149 (3, 11°27´ N 73°42´ W), INV PEC4452 (1, 9°47.4´ N 76°17.4´ W), INV PEC4455 (1, 10°32.4´ N 75°39´ W), INV PEC4460 (2, 9°46.8´ N 76°18´ W), INV PEC8658 (1, 10°43.8´ N 75°37.2´ W). Additional specimens in Thompson and Suttkus (1998). These records extend the bathymetric range of the species.

*Bembrops quadrisella* Thompson & Suttkus 1998. Bathydemersal, 384-641 m. Paratypes,USNM 304913 (4, 12°25.8´ N 82°24´ W), USNM 347206 (4, 14°10.2´ N 81°55.2´ W), USNM 347207 (3, 14°10.2´ N 81°49.8´ W), USNM 347211 (2, 11°40.2´ N 62°33´ W), USNM 347218 (11, 12°25.2´ N 82°15´ W), USNM 347219 (1, 11°52.8´ N 69°28.2´ W), USNM 347259 (1, 10°54´ N 67°7.8´ W), USNM 347267 (10, 12°34.8´ N 82°19.2´ W); USNM 347270 (3, 11°10.2´ N 68°7.8´ W), UF 47056 (1, 16°34.8´ N 80°10.2´ W), UF 110024 (1, 9°15´ N 81°31.8´ W), UF 110941 (2, 14°22.8´ N 81°45´ W), UF 110942 (1, 11°40.2´ N 62°33´ W), UF 134807 (2, 9°3´ N 81°18´ W), UF 134808 (1, 14°10.2´ N 81°49.8´ W), UF 134815 (1, 12°1.2´ N 61°53.4´ W), UF 175130 (2, 16°45´ N 82°36´ W), UF 175132 (3, 9°12´ N 81°10.8´ W), UF 176085 (3, 10°0´ N 76°10.2´ W), UF 223253 (1, 9°28.8´ N 76°26.4´ W). Additional specimens' in Thompson and Suttkus (1998).

URANOSCOPIDAE

*Kathetostoma cubana* Barbour 1941- Spiny stargazer (Fishbase). Bathydemersal, 229-366 m. UF 37244 (2, 9°12´ N 81°30´ W), UF 233834 (2, 14°10.2´ N 81°58.2´ W), UF 233878 (1, 12°22.8´ N 82°28.8´ W), UF 233881 (2, 12°25.8´ N 82°25.8´ W).

CALLIONYMIDAE

*Foetorepus agassizii* (Goode & Bean 1888) – Spotfin Dragonet, Callionyme à Nageoire Tachetée (AFS) – Bathydemersal, 274-503 m. USNM 188527 (3, 14°10.2´ N 81°58.2´ W), USNM 188536 (1, 12°25.8´ N 82°24´ W). Additional specimens' in Davis (1966).

*Synchiropus dagmarae* Fricke 1985. Bathydemersal, 229-265 m. USNM 372068 (1, 10°45´ N 66°37.2´ W), INV PEC8116 (2, 12°32.4´ N 71°52.2´ W). These records extend the bathymetric range of the species.

GEMPYLIDAE

*Diplospinus multistriatus* Maul 1948 – Striped Escolar, Escolar Rayado (AFS), Escolier Rayé (FAO) – Benthopelagic, 218-555 m. MCZ 136818 (1, 95.5 SL, 12°55.8′ N 73°49.2′ W), MCZ 136820 (1, 115 SL, 12°9′ N 78°30′ W), MCZ 136822 (1, 53 SL, 14°19.8′ N 78°16.2′ W), INV PEC3151 (1, 11°23.4′ N 74°12.6′ W), INV PEC3152 (1, 11°23.4′ N 74°12.6′ W).

*Lepidocybium flavobrunneum* (Smith 1843) – Escolar, Escolar Negro, Escolar (AFS) – Benthopelagic, 1271 m. UF 167025 (3, 9°58.2′ N 76°28.8′ W). This record extends the bathymetric range of the species.

*Neoepinnula americana* (Grey 1953) – American Sackfish, Escolar Americano (AFS), Escolier américain (FAO) – Benthopelagic, 229-500 m. USNM 325900 (3, 11°9.6′ N 74°25.2′ W), USNM 400744 (1, 9°26.4′ N 78°8.4′ W), USNM 366716 (2, 16°43.8′ N 87°55.2′ W), UF 142523 (13, 16°45′ N 81°27′ W), UF 142547 (1, 14°16.2′ N 81°55.2′ W), UF 210642 (2, 14°0′ N 81°49.8′ W), UF 210643 (2, 9°3′ N 81°22.2′ W), UF 210644 (5, 12°31.2′ N 82°21′ W), UF 210645 (6, 12°34.8′ N 82°19.2′ W), UF 210646 (1, 9°18′ N 80°22.2′ W), UF 210648 (1, 9°13.2′ N 81°30′ W), UF 210650 (2, 12°25.8′ N 82°25.8′ W), UF 211012 (1, 14°10.2′ N 81°58.2′ W), UF 229250 (29, 14°54′ N 81°23.4′ W), INV PEC3153 (1, 11°22.2′ N 73°45′ W), INV PEC3617 (1, 10°9′ N 76°0.6′ W), INV PEC3882 (1, 11°22.8′ N 73°44.4′ W), INV PEC8105 (1, 12°33′ N 71°52.2′ W). These records extend the bathymetric range of the species.

*Promethichthys prometheus* (Cuvier 1832) – Roudi Escolar, Escolar Prometeo, Escolier Clair (FAO) - Bentho to mesopelagic, 329-812 m. USNM 322139 (2, 11°25.8′ N 73°58.8′ W), USNM 325903 (2, 11°9′ N 74°26.4′ W), USNM 395523 (2, 11°12′ N 74°21′ W), USNM 395525 (1, 11°3′ N 75°18′ W), USNM 325902 (1, 11°40.8′ N 68°57′ W), USNM 400713 (1, 9°14.4′ N 81°34.8′ W), USNM 400730 (1, 9°46.8′ N 79°25.8′ W), USNM 400765 (1, 8°57′ N 77°25.2′ W), UF 210649 (1, 14°22.8′ N 81°45′ W), UF 210651 (2, 14°10.2′ N 81°55.2′ W), UF 222636 (1, 9°7.2′ N 81°12′ W), INV PEC8659 (1, 9°3.6′ N 76°44.4′ W), INV PEC8660 (2, 9°34.2′ N 76°27.6′ W). Additional specimens in Acero and Rueda (1992). These records extend the bathymetric range of the species.

TRICHIURIDAE

*Benthodesmus simonyi* (Steindachner 1891) – North Atlantic Frostfish, Cintilla del Atlántico, Poisson Sabre Ganse (AFS) - Bentho to mesopelagic, 225-675 m. MCZ 90198 (1, 299 SL, 13°4.2′ N 73°12′ W), MCZ 90206 (1, 227 SL, 12°55.8′ N 73°49.2′ W), UF 42889 (1, 11°9′ N 74°29.4′ W), UF 181275 (1, 16°2.4′ N 61°23.4′ W), UF 202767 (1, 16°46.2′ N 82°16.2′ W), UF 210620 (1, 9°16.2′ N 81°37.2′ W), INV PEC3618 (1, 9°18.6′ N 76°29.4′ W), INV PEC8661 (1, 9°17.4′ N 76°31.8′ W).

*Benthodesmus tenuis* (Günther 1877) – Slender Frostfish, Cintilla, Sabre Fleuret (FAO) - Bentho to mesopelagic, 282-732 m. USNM 322182 (3, 11°25.8′ N 74°13.8′ W), MCZ 45931 (1, 453 SL, 11°10.2′ N 74°27′ W), MCZ 45932 (1, 418 SL, 11°52.8′ N 69°25.2′ W), MCZ 45940 (2, 608-647 SL, 9°1.8′ N 76°31.8′ W), MCZ 82770 (1, 11°19.8′ N 64°40.2′ W), MCZ 82774 (1, 350 SL, 11°36′ N 62°52.2′ W), UF 42892 (2, 11°30′ N 60°46.2′ W), UF 42893 (2, 11°36.6′ N 62°46.8′ W), UF 181556 (1, 11°36.6′ N 62°46.8′ W), UF 210619 (1, 14°10.2′ N 81°49.8′ W), UF 210624 (1, 9°13.2′ N 80°43.2′ W), UF 210626 (1, 16°57′ N 81°19.2′ W), UF 222942 (3, 9°57′ N 76°10.8′ W), INV PEC3160 (1, 11°27.6′ N 73°52.2′ W), INV PEC3159 (1, 11°28.8′ N 73°24′ W), INV PEC3158 (1, 11°29.4′ N 73°22.8′ W), INV PEC3619 (2, 9°16.2′ N 76°28.8′ W), INV PEC3156 (1, 12°24′ N 72°16.2′ W), INV PEC3155 (1, 12°24′ N 72°15′ W), INV PEC3154 (1, 12°34.2′ N 71°50.4′ W), INV PEC3620 (1, 10°10.2′ N 76°1.8′ W), INV PEC3161 (1, 10°28.8′ N 75°42.6′ W), INV PEC3157 (1, 11°30′ N 73°26.4′ W), INV PEC4571 (3, 11°22.8′ N 73°44.4′ W), INV PEC4572 (1, 11°22.8′ N 73°44.4′ W), INV PEC8103 (1, 11°9′ N 74°27′ W), INV PEC8662 (3, 10°22.2′ N 75°51.6′ W).

*Lepidopus altifrons* Parin & Collette 1993 – Crested Scabbardfish (AFS), Pez Cinto Encrestado, Poisson Sabre Crénelé (FAO) - Benthopelagic, 320-457 m. USNM 320005 (1, 11°49.8′ N 73°4.8′ W), USNM 320004 (1, 12°16.2′ N 72°40.2′ W), USNM 320002 (1, 11°9′ N 74°26.4′ W), USNM 159241 (1, 9°45′ N 59°45′ W), USNM 317982 (4, 11°36.6′ N 62°46.8′ W), UF 205404 (2, 11°34.8′ N 62°40.8′ W).

ARIOMMATIDAE

*Ariomma melanum* (Ginsburg 1954) – Brown Driftfish, Pastorcillo Café (AFS) – Bathydemersal, 366-439 m. MCZ 55048 (6, 11°49.8′ N 69°22.8′ W), MCZ 168608 (1, 141 SL, 9°3′ N 81°22.2′ W), MCZ 168614 (2, 140-147 SL, 9°13.2′ N 80°43.2′ W), UF 169276 (1, 12°31.2′ N 71°58.2′ W), UF 217170 (6, 11°30′ N 60°46.2′ W). Additional specimens in Horn (1972).

CAPROIDAE

*Antigonia capros* Lowe 1843 – Deepbody Boarfish, Verraco Alto (AFS) - Benthopelagic, 200-510 m. USNM 159600 (4, 16°36′ N 82°37.2′ W), USNM 187895 (1, 17°52.8′ N 77°55.8′ W), USNM 320064 (5, 10°24′ N 75°49.8′ W), USNM 405602 (1, 12°19.8′ N 72°21′ W), USNM 371672 (1, 11°24′ N 73°46.8′ W), UF 22811 (5, 11°8.4′ N 74°28.8′ W), UF 117313 (1, 17°33′ N 63°34.8′ W), UF 133611 (2, 16°7.8′ N 81°13.2′ W), UF 133616 (1, 9°18′ N 80°22.2′ W), UF 138689 (1, 11°9.6′ N 74°25.2′ W), UF 138691 (1, 12°25.8′ N 82°25.8′ W), UF 147026 (1, 12°28.2′ N 82°28.2′ W), INV PEC2973 (1, 11°23.4′ N 74°12′ W), INV PEC3522 (8, 11°23.4′ N 74°12′ W), INV PEC3520 (1, 9°30.6′ N 76°27′ W), INV PEC3524 (3, 9°27.6′ N 76°26.4′ W), INV PEC2971 (1, 11°9.6′ N 74°39′ W), INV PEC2975 (1, 11°27′ N 74°1.8′ W), INV PEC2974 (3, 11°27′ N 74°1.8′ W), INV PEC3523 (2, 9°45.6′ N 76°15′ W), INV PEC2972 (3, 11°23.4′ N 74°12′ W), INV PEC4253 (4, 9°45′ N 76°15.6′ W), INV PEC4248 (1, 9°45.6′ N 76°15.6′ W), INV PEC8073 (2, 12°32.4′ N 71°52.2′ W), INV PEC8074 (2, 12°19.8′ N 72°27.6′ W), INV PEC8667 (4, 10°22.2′ N 75°51.6′ W).

*Antigonia combatia* Berry & Rathjen 1959 – Shortspine Boarfish (AFS) - Benthopelagic, 200-520 m. USNM 187982 (10, 12°31.2′ N 82°21′ W), USNM 187983 (23, 14°10.2′ N 81°58.2′ W), USNM 188045 (7, 12°25.8′ N 82°25.8′ W), USNM 266583 (3, 10°24′ N 75°49.8′ W), USNM 371646 (1, 14°14.4′ N 80°28.8′ W), USNM 377984 (11, 14°16.8′ N 81°55.2′ W), USNM 405607 (1, 11°3′ N 75°10.2′ W), UF 22810 (6, 14°10.2′ N 81°58.2′ W), UF 126125 (1, 16°1.2′ N 81°7.8′ W), UF 126347 (1, 17°33′ N 63°34.8′ W), UF 126348 (2, 12°22.8′ N 82°28.8′ W), UF 133589 (5, 16°45′ N 81°27′ W), UF 133590 (5, 12°31.2′ N 82°21′ W), UF 133591 (1, 14°22.8′ N 81°45′ W), UF 133593 (1, 11°9.6′ N 74°25.2′ W), UF 133595 (1, 9°12′ N 81°30′ W), UF 233785 (1, 16°49.8′ N 81°21′ W), INV PEC3533 (1, 9°30.6′ N 76°27′ W), INV PEC3534 (10, 9°45.6′ N 76°15′ W), INV PEC3535 (1, 9°45.6′ N 76°15.6′ W), INV PEC3536 (1, 9°49.2′ N 76°16.2′ W), INV PEC3537 (2, 10°9′ N 76°0.6′ W), INV PEC3538 (1, 10°9′ N 76°0.6′ W), INV PEC3539 (7, 11°23.4′ N 74°12′ W), INV PEC2979 (3, 11°27′ N 74°1.8′ W), INV PEC2978 (1, 12°15.6′ N 72°33′ W), INV PEC3532 (13, 9°27.6′ N 76°26.4′ W), INV PEC2977 (1, 11°23.4′ N 74°12′ W), INV PEC3530 (1, 9°15.6′ N 76°28.8′ W), INV PEC3529 (1, 9°16.2′ N 76°28.8′ W), INV PEC3528 (2, 9°57.6′ N 76°7.8′ W), INV PEC3527 (1, 9°45.6′ N 76°15.6′ W), INV PEC3526 (1, 9°27.6′ N 76°25.8′ W), INV PEC3525 (1, 9°16.2′ N 76°28.8′ W), INV PEC2980 (1, 10°28.2′ N 75°42.6′ W), INV PEC2976 (5, 11°23.4′ N 74°12′ W), INV PEC3531 (1, 9°27.6′ N 76°25.8′ W), INV PEC4243 (6, 9°45′ N 76°15.6′ W), INV PEC4244 (6, 9°45.6′ N 76°15.6′ W), INV PEC8075 (4, 12°20.4′ N 72°27′ W), INV PEC8076 (4, 12°19.8′ N 72°27.6′ W).

PLEURONECTIFORMES

PARALICHTHYIDAE

*Ancylopsetta cycloidea* Tyler 1959 – Cyclope Flounder, Lenguado Tres Manchas, Rombou Cyclope (FAO) – Benthic, 200-300 m. USNM 282408 (2, 12°19.8´ N 72°21´ W), USNM 282413 (1, 9°18´ N 80°22.2´ W), MCZ 44134 (1, 193 SL, 10°45´ N 66°37.2´ W), UF 142605 (1, 10°45´ N 66°37.2´ W), UF 142609 (1, 11°8.4´ N 74°28.8´ W), UF 174100 (1, 14°16.8´ N 81°55.2´ W), INV PEC3623 (2, 9°45.6´ N 76°15´ W). These records extend the bathymetric range of the species.

*Ancylopsetta microctenus* Gutherz 1966 – Gutherz's Flounder (FAO) - Benthic, 201-375 m. Holotype, USNM 209017 (1, 194 SL, 16°25.8´ N 81°34.8´ W); Paratype, USNM 209026 (2, 14°10.2´ N 81°58.2´ W); ANSP 102913 (2, 164-166 SL, 16°1.2´ N 81°7.8´ W), UF 19302 (1, 14°10.2´ N 81°58.2´ W), UF 19308 (3, 13°28.2´ N 82°1.2´ W), UF 40679 (1, 14°12´ N 81°57´ W), UF 142656 (1, 14°7.8´ N 81°55.8´ W), UF 211141 (1, 16°52.2´ N 81°30´ W), UF 217381 (1, 14°10.2´ N 81°58.2´ W), UF 229266 (2, 14°54´ N 81°23.4´ W). Additional specimens and information in Gutherz (1966).

*Citharichthys cornutus* (Günther 1880) – Horned Whiff, Lenguado Cornudo (AFS) - Benthic, 201-300 m. USNM 159787 (2, 9°24´ N 59°40.8´ W), USNM 282784 (1, 9°40.2´ N 79°7.2´ W), UF 132815 (5, 9°18´ N 80°22.2´ W), UF 132819 (9, 10°45´ N 66°37.2´ W), UF 132832 (1, 13°12.6´ N 82°15.6´ W), UF 132838 (5, 13°42.6´ N 81°58.2´ W), UF 132842 (8, 14°12´ N 81°57´ W), UF 132880 (2, 12°28.2´ N 82°28.2´ W), INV PEC4718 (1, 11°22.8´ N 73°44.4´ W).

*Citharichthys dinoceros* Goode & Bean 1886 – Spined Whiff, Lenguado Espinoso (AFS) - Benthic, 201-320 m. Holotype, MCZ 27963 (1, 92 SL, 16°9.6´ N 61°29.4´ W); Paratype, MCZ 27962 (1, 46 SL, 13°50.4´ N 61°3.6´ W), USNM 270372 (2, 14°12´ N 81°57´ W), UF 40680 (19, 14°12´ N 81°57´ W), UF 134045 (1, 13°34.8´ N 81°59.4´ W), UF 134051 (2, 12°28.2´ N 82°28.2´ W), UF 134052 (3, 13°42.6´ N 81°58.2´ W).

## POECILOPSETTIDAE

*Poecilopsetta inermis* (Breder 1927) – Caribbean Offshore Flounder (FAO) - Benthic, 229-914 m. USNM 217983 (1, 9°36´ N 76°22.2´ W), USNM 217986 (1, 12°31.2´ N 71°58.2´ W), USNM 217988 (4, 11°12´ N 74°21´ W), USNM 217989 (2, 11°9.6´ N 74°28.8´ W), USNM 217994 (4, 11°25.8´ N 74°13.8´ W), USNM 217995 (4, 10°24´ N 75°49.8´ W), USNM 217997 (10, 11°27´ N 73°42´ W), USNM 217998 (4, 11°24´ N 73°46.8´ W ), USNM 159433 (1, 9°52.8´ N 59°52.8´ W), USNM 159474 (1, 10°3´ N 60°1.2´ W), USNM 217984 (5, 14°7.8´ N 81°55.2´ W), USNM 217987 (7, 12°52.2´ N 82°9´ W), USNM 217992 (12, 14°10.2´ N 81°55.2´ W), USNM 217996 (5, 12°31.2´ N 82°21´ W), UF 133420 (37, 9°3´ N 81°22.2´ W), UF 133425 (1, 12°6´ N 72°55.2´ W), UF 133426 (1, 11°49.8´ N 73°4.8´ W), UF 133427 (8, 14°22.8´ N 81°45´ W), UF 133429 (16, 9°4.2´ N 81°25.2´ W), UF 133430 (4, 12°1.2´ N 61°53.4´ W), UF 133431 (3, 14°16.2´ N 81°55.2´ W), UF 133433 (3, 14°0´ N 81°49.8´ W), UF 133434 (3, 16°49.8´ N 81°21´ W), UF 133435 (1, 11°3´ N 67°52.8´ W), UF 133436 (1, 11°52.2´ N 69°27´ W), UF 133438 (4, 14°10.2´ N 81°58.2´ W), UF 133441 (2, 9°13.2´ N 80°43.2´ W), UF 133445 (1, 9°13.2´ N 81°30´ W), UF 134352 (34, 14°7.8´ N 81°55.2´ W), UF 134359 (58, 9°12´ N 81°30´ W), UF 134360 (47, 12°31.2´ N 82°21´ W), UF 134361 (87, 12°22.8´ N 82°28.8´ W), UF 134362 (9, 11°36.6´ N 62°46.8´ W), UF 134363 (4, 11°49.2´ N 69°24´ W), UF 134364 (8, 9°18´ N 80°22.2´ W), UF 134365 (3, 11°15´ N 68°13.2´ W), UF 134367 (14, 14°7.8´ N 81°55.2´ W), UF 134368 (5, 11°9.6´ N 74°24.6´ W), UF 134369 (4, 11°9.6´ N 74°25.2´ W), UF 134418 (1, 9°13.2´ N 80°43.2´ W), UF 207596 (1, 11°40.2´ N 62°40.2´ W), UF 210963 (1, 16°39´ N 82°28.8´ W), UF 211143 (4, 10°3´ N 60°1.2´ W), UF 211145 (8, 9°45´ N 59°45´ W), UF 229258 (16, 14°54´ N 81°23.4´ W), UF 233671 (2, 10°45´ N 66°37.2´ W), INV PEC3188 (2, 11°5.4´ N 75°15.6´ W), INV PEC3189 (4, 11°5.4´ N 75°15.6´ W), INV PEC3190 (1, 11°7.8´ N 75°13.8´ W), INV PEC3624 (2, 9°3´ N 76°36.6´ W), INV PEC3625 (5, 9°2.4´ N 76°37.2´ W), INV PEC3626 (4, 9°16.2´ N 76°28.8´ W), INV PEC3627 (6, 9°15.6´ N 76°28.8´ W), INV PEC3628 (1, 9°18´ N 76°29.4´ W),

INV PEC3629 (3, 9°27.6′ N 76°25.8′ W), INV PEC3630 (3, 9°27.6′ N 76°26.4′ W), INV PEC3631 (10, 9°30′ N 76°27′ W), INV PEC3632 (7, 9°45.6′ N 76°15′ W), INV PEC3633 (1, 9°45.6′ N 76°15.6′ W), INV PEC3634 (6, 10°9′ N 76°0.6′ W), INV PEC3635 (9, 10°9′ N 76°0.6′ W), INV PEC3636 (1, 10°10.2′ N 76°1.8′ W), INV PEC3166 (3, 11°13.8′ N 74°39′ W), INV PEC3167 (13, 12°34.2′ N 71°50.4′ W), INV PEC3168 (68, 12°34.2′ N 71°49.8′ W), INV PEC3169 (16, 12°24′ N 72°15′ W), INV PEC3170 (15, 12°24′ N 72°16.2′ W), INV PEC3171 (5, 12°15′ N 72°33.6′ W), INV PEC3172 (17, 12°15.6′ N 72°33′ W), INV PEC3173 (3, 11°29.4′ N 73°22.8′ W), INV PEC3174 (15, 11°28.8′ N 73°24′ W), INV PEC3175 (1, 11°28.8′ N 73°24′ W), INV PEC3176 (3, 11°26.4′ N 73°31.8′ W), INV PEC3177 (1, 11°27′ N 73°42′ W), INV PEC3178 (3, 11°25.2′ N 74°10.8′ W), INV PEC3179 (3, 11°24.6′ N 74°9.6′ W), INV PEC3180 (1, 11°24.6′ N 74°9.6′ W), INV PEC3181 (8, 11°25.2′ N 74°12.6′ W), INV PEC3182 (1, 11°25.2′ N 74°12.6′ W), INV PEC3183 (4, 11°24.6′ N 74°12′ W), INV PEC3184 (1, 11°20.4′ N 74°16.2′ W), INV PEC3185 (4, 11°12′ N 74°17.4′ W), INV PEC3186 (8, 11°12′ N 74°17.4′ W), INV PEC3187 (1, 10°28.2′ N 75°42.6′ W), INV PEC4816 (1, 11°22.8′ N 73°44.4′ W), INV PEC4820 (1, 9°45.6′ N 76°15.6′ W), INV PEC4819 (2, 9°45′ N 76°15.6′ W), INV PEC4818 (1, 10°33′ N 75°37.2′ W), INV PEC8125 (3, 9°7.8′ N 76°36′ W), INV PEC8126 (1, 8°59.4′ N 76°45.6′ W), INV PEC8124 (2, 9°37.8′ N 76°21.6′ W), INV PEC8123 (3, 10°19.8′ N 75°54′ W), INV PEC8122 (2, 12°19.8′ N 72°27.6′ W), INV PEC8121 (1, 12°20.4′ N 72°27′ W), INV PEC8120 (1, 12°40.8′ N 72°3.6′ W), INV PEC8119 (7, 12°32.4′ N 71°52.2′ W), INV PEC8118 (2, 12°33′ N 71°52.2′ W), INV PEC8668 (4, 10°22.2′ N 75°51.6′ W). These records extend the bathymetric range of the species.

BOTHIDAE

*Chascanopsetta lugubris* Alcock 1894 – Pelican Flounder, Lenguado Pelicano, Perpiere Pélican (FAO) - Benthic, 366-622 m. USNM 282751 (1, 12°30′ N 72°7.8′ W), USNM 282753 (1, 11°25.8′ N 74°13.8′ W), UF 20631 (5, 11°36.6′ N 62°46.8′ W), UF 172422 (1, 11°27′ N 73°42′ W), UF 173076 (1, 12°52.2′ N 82°9′ W), UF 176860 (1, 8°55.8′ N 76°52.8′ W).

*Monolene atrimana* Goode & Bean 1886 – Longfinned Deepwater Flounder, Blackfinned Deepwater Flounder (FAO) - Benthic, 373-434 m. UF 222968 (3, 9°57′ N 76°10.8′ W).

*Monolene megalepis* Woods 1961 – Spottedfin Deepwater Flounder (FAO) - Benthic, 206-510 m. USNM 356564 (1, 11°24′ N 73°46.8′ W), USNM 236127 (7, 10°42′ N 67°52.8′ W), USNM 286262 (1, 9°40.2′ N 79°7.2′ W), USNM 286264 (1, 10°42′ N 67°52.8′ W), UF 25409 (5, 9°12′ N 81°30′ W), UF 133040 (2, 9°13.2′ N 81°30′ W), UF 133055 (1, 10°45′ N 66°37.2′ W), INV PEC3163 (1, 11°9.6′ N 74°39′ W), INV PEC3622 (1, 9°57.6′ N 76°7.8′ W), INV PEC3164 (1, 11°27′ N 74°1.8′ W), INV PEC3165 (2, 11°27′ N 74°1.8′ W), INV PEC8127 (1, 12°32.4′ N 71°52.2′ W). These records extend the bathymetric range of the species.

*Trichopsetta caribbaea* Anderson & Gutherz 1967 – Caribbean Flounder, Lenguado del Caribe, Perpeire des Caraïbes (FAO) - Benthic, 200-300 m. Holotype, USNM 200414 (1, 156 SL, 17°52.8′ N 77°55.8′ W); Paratype, USNM 200416 (6, 11°8.4′ N 74°28.8′ W); USNM 214581 (4, 11°25.8′ N 73°30′ W), USNM 159519 (3, 9°24′ N 59°40.8′ W), USNM 159586 (2, 9°52.8′ N 59°52.8′ W), USNM 286740 (4, 9°40.2′ N 79°7.2′ W), INV PEC4682 (1, 11°22.8′ N 73°44.4′ W). Additional specimens in Anderson & Gutherz (1967).

CYNOGLOSSIDAE

*Symphurus ginsburgi* Menezes & Benvegnú 1976 - Ginsburg's Tonguefish (Fishbase). Bathydemersal, 296-492 m. INV PEC3202 (1, 11°27.6′ N 73°51.6′ W), INV PEC3203 (1, 11°7.8′ N 75°13.8′ W), INV PEC3201 (1, 11°28.8′ N 73°24′ W), INV PEC3200 (2, 12°19.2′ N 72°42.6′ W), INV PEC3199 (1, 12°24′ N 72°16.2′ W), INV PEC3198 (1, 12°24′ N 72°15′ W). These records extend the bathymetric range of the species.

*Symphurus hernandezi* Saavedra-Díaz, Munroe & Acero P. 2003. Benthic, 204-302 m. USNM 368418 (5, 11°9.6′ N 74°39.6′ W), INV PEC3194 (13, 11°9.6′ N 74°40.2′ W), INV PEC3193 (11, 11°9.6′ N 74°39′ W), INV PEC3192 (18, 11°9.6′ N 74°39′ W), INV PEC3195 (2, 11°9.6′ N 74°40.2′ W), INV PEC3757 (2, 11°9.6′ N 74°40.2′ W), INV PEC3196 (1, 11°25.2′ N 74°10.8′ W), INV PEC3197 (1, 11°24.6′ N 74°12′ W), INV PEC3756 (4, 11°9.6′ N 74°39′ W), INV PEC3758 (3, 11°9.6′ N 74°39′ W), INV PEC3751 (1, 11°9.6′ N 74°39′ W), INV PEC4306 (1, 11°22.8′ N 73°44.4′ W).

*Symphurus marginatus* (Goode & Bean 1886) – Margined Tonguefish (AFS) - Benthic, 265-705 m. USNM 291314 (1, 12°30′ N 72°7.8′ W), UF 33894 (1, 11°25.8′ N 73°40.8′ W), UF 235240 (2, 11°9′ N 74°25.8′ W), INV PEC3209 (3, 12°24′ N 72°16.2′ W), INV PEC3210 (21, 12°19.2′ N 72°42.6′ W), INV PEC3211 (1, 12°19.2′ N 72°42.6′ W), INV PEC3212 (13, 11°29.4′ N 73°27′ W), INV PEC3213 (1, 11°29.4′ N 73°22.8′ W), INV PEC3214 (15, 11°27′ N 73°42′ W), INV PEC3215 (22, 11°27′ N 73°42′ W), INV PEC3216 (14, 11°27.6′ N 73°52.2′ W), INV PEC3217 (46, 11°27.6′ N 73°51.6′ W), INV PEC3218 (2, 11°27.6′ N 73°51.6′ W), INV PEC3219 (4, 11°24.6′ N 74°9.6′ W), INV PEC3220 (2, 11°19.2′ N 74°16.8′ W), INV PEC3221 (1, 11°15′ N 74°39′ W), INV PEC3222 (8, 11°15.6′ N 74°38.4′ W), INV PEC3223 (3, 11°7.2′ N 75°8.4′ W), INV PEC3637 (2, 9°18.6′ N 76°29.4′ W), INV PEC3638 (1, 10°10.2′ N 76°1.8′ W), INV PEC3204 (20, 12°31.8′ N 72°7.8′ W), INV PEC3205 (1, 12°29.4′ N 72°15.6′ W), INV PEC3206 (1, 12°29.4′ N 72°15.6′ W), INV PEC3207 (1, 12°29.4′ N 72°15.6′ W), INV PEC3208 (14, 12°29.4′ N 72°15.6′ W), INV PEC4289 (1, 10°32.4′ N 75°39′ W), INV PEC4292 (8, 11°22.8′ N 73°44.4′ W), INV PEC4291 (2, 11°28.2′ N 73°40.2′ W), INV PEC4290 (8, 11°28.2′ N 73°40.2′ W), INV PEC4288 (1, 12°31.8′ N 72°12′ W), INV PEC4287 (1, 10°32.4′ N 75°39′ W), INV PEC4286 (13, 12°31.8′ N 72°11.4′ W), INV PEC4285 (1, 9°46.8′ N 76°18′ W), INV PEC8131 (1, 12°32.4′ N 71°52.2′ W), INV PEC8132 (7, 11°30.6′ N 73°23.4′ W), INV PEC8683 (2, 10°43.8′ N 75°37.2′ W), INV PEC8681 (14, 12°36′ N 71°28.8′ W), INV PEC8682 (22, 12°41.4′ N 71°49.2′ W), INV PEC8684 (1, 11°8.4′ N 75°16.2′ W), INV PEC8685 (3, 11°12′ N 74°30′ W).

*Symphurus piger* (Goode & Bean 1886) – Deepwater Tonguefish, Lengua Perezosa (AFS) - Benthic, 210-750 m. *Holotype, MCZ 27965 (1, 98 TL) 17°19'30"N 62°50'30"W*; USNM 291030 (2, 9°40.2′ N 79°7.2′ W), UF 235255 (3, 17°38.4′ N 63°27′ W), UF 235283 (2, 11°16.8′ N 74°16.8′ W), UF 235284 (2, 16°25.8′ N 61°36.6′ W), UF 235286 (2, 14°21′ N 81°55.2′ W), INV PEC3228 (1, 11°28.8′ N 73°24′ W), INV PEC3227 (1, 12°24′ N 72°16.2′ W), INV PEC3226 (1, 12°24′ N 72°15′ W), INV PEC3225 (2, 12°24′ N 72°15′ W), INV PEC3224 (1, 11°23.4′ N 74°12′ W), INV PEC4297 (1, 11°22.8′ N 73°44.4′ W), INV PEC8128 (7, 12°32.4′ N 71°52.2′ W), INV PEC8130 (10, 12°19.8′ N 72°27.6′ W), INV PEC8129 (1, 12°40.8′ N 72°3.6′ W). These records extend the bathymetric range of the species.

*Symphurus stigmosus* Munroe 1998 – Blotchfin Tonguefish (AFS) - Benthic, 274-293 m. USNM 327176 (1, 85.7 SL, 14°14.4′ N 80°28.8′ W).

TETRAODONTIFORMES

TRIACANTHODIDAE

*Hollardia hollardi* Poey 1861 - Reticulate Spikefish (Fishbase). Bathydemersal, 329-914 m. USNM 187754 (3, 9°3′ N 81°22.2′ W), USNM 187810 (5, 12°22.8′ N 82°28.8′ W), USNM 187811 (5, 14°22.8′ N 81°45′ W), USNM 289337 (3, 14°1.2′ N 81°49.8′ W), USNM 289375 (1, 14°7.8′ N 81°52.2′ W), ANSP 97752 (6, 89-109.6 SL, 14°10.2′ N 81°55.2′ W), ANSP 100600 (1, 14°10.2′ N 81°49.8′ W), ANSP 103299 (3, 72-128 SL, 14°10.2′ N 81°55.2′ W), ANSP 117491 (2, 14°10.2′ N 81°55.2′ W), ANSP 101979 (1, 11°3′ N 67°52.8′ W), UF 88566 (1, 11°9′ N 74°26.4′ W), UF 88567 (2, 16°43.8′ N 87°55.2′ W), UF 88569 (2, 14°10.2′ N 81°58.2′ W), UF 88570 (3, 14°10.2′ N 81°55.2′ W), UF 88571 (1, 9°3′ N 81°18′ W), UF 181890 (1, 14°1.2′ N 81°49.8′ W), UF 228153 (1, 16°4.8′ N 61°24′ W).

*Parahollardia schmidti* Woods 1959. Demersal, 200-311 m. ANSP 100510 (4, 9°18′ N 80°22.2′ W), ANSP 97751 (3, 14°10.2′ N 81°58.2′ W), ANSP 100128 (4, 61.7-74.5 SL, 14°10.2′ N 81°58.2′ W), ANSP 100599 (1, 9°12′ N 81°30′ W), ANSP 100511 (15, 16°25.8′ N 81°34.8′ W), ANSP 103302 (1, 62-74 SL, 14°10.2′ N 81°58.2′ W), UF 88576 (3, 16°7.8′ N 81°13.2′ W), UF 88578 (2, 16°45′ N 81°27′ W), UF 88580 (3, 16°1.2′ N 81°7.8′ W), UF 88581 (3, 16°45′ N 81°27′ W), UF 88582 (4, 14°10.2′ N 81°58.2′ W), UF 88583 (14, 16°25.8′ N 81°34.8′ W), UF 202710 (1, 16°37.8′ N 81°39′ W), INV PEC3640 (1, 9°57′ N 76°9.6′ W), INV PEC4033 (1, 11°22.8′ N 73°44.4′ W).

*Annex 2. Summary information about sampling stations along the Colombian Caribbean continental slope including station number, latitude, longitude, depth, landscape (dt: delta; cs: submarine canyon; es: escarpment; fc: apron; pl: soft continental shelf; ms: plateau ), water mass (AIS: Subantartic Intermediate Water; APC: Deep-sea Caribbean Water), Temperature (T°), Salinity (S), Oxygen (O2), NA – Non available data.*

| Station | Latitude | Longitude | Depth (m) | Landscape | Water mass | T° | S | O2 ppm |
|---|---|---|---|---|---|---|---|---|
| E22 | 11.23 | -74.66 | 400 | dt | AIS | NA | NA | NA |
| E23 | 11.16 | -74.65 | 200 | dt | AIS | NA | NA | NA |
| E18 | 11.43 | -74.19 | 400 | es | AIS | NA | NA | NA |
| E19 | 11.39 | -74.21 | 200 | es | AIS | NA | NA | NA |
| E1 | 12.57 | -71.84 | 300 | es | AIS | NA | NA | NA |
| E2 | 12.53 | -72.13 | 450 | es | AIS | NA | NA | NA |
| E3 | 12.49 | -72.26 | 450 | es | AIS | NA | NA | NA |
| E4 | 12.40 | -72.25 | 300 | es | AIS | NA | NA | NA |
| E6 | 12.25 | -72.56 | 300 | es | AIS | NA | NA | NA |
| E5 | 12.32 | -72.71 | 460 | es | AIS | NA | NA | NA |
| E7 | 11.49 | -73.45 | 500 | dt | AIS | NA | NA | NA |
| E8 | 11.49 | -73.38 | 300 | dt | AIS | NA | NA | NA |
| E9 | 11.44 | -73.53 | 300 | dt | AIS | NA | NA | NA |
| E10 | 11.45 | -73.70 | 500 | dt | AIS | NA | NA | NA |
| E11 | 11.37 | -73.75 | 300 | dt | AIS | NA | NA | NA |
| E12 | 11.46 | -73.86 | 500 | dt | AIS | NA | NA | NA |
| E13 | 11.45 | -74.02 | 500 | dt | AIS | NA | NA | NA |
| E14 | 11.42 | -74.18 | 300 | es | AIS | NA | NA | NA |
| E25 | 11.42 | -74.21 | 300 | es | AIS | NA | NA | NA |
| E16 | 11.41 | -74.24 | 500 | es | AIS | NA | NA | NA |
| E17 | 11.32 | -74.28 | 500 | es | AIS | NA | NA | NA |
| E20 | 11.25 | -74.65 | 470 | dt | AIS | NA | NA | NA |
| E21 | 11.20 | -74.29 | 280 | es | AIS | NA | NA | NA |
| E27 | 10.47 | -75.71 | 280 | dt | AIS | NA | NA | NA |
| E26 | 11.09 | -75.26 | 300 | dt | AIS | NA | NA | NA |
| E24 | 11.13 | -75.23 | 500 | dt | AIS | NA | NA | NA |
| E25 | 11.12 | -75.14 | 500 | fc | AIS | NA | NA | NA |
| E39 | 9.05 | -76.61 | 300 | pl | AIS | NA | NA | NA |
| E38 | 9.10 | -76.62 | 500 | dt | AIS | NA | NA | NA |
| E37 | 9.27 | -76.48 | 300 | dt | AIS | NA | NA | NA |
| E36 | 9.31 | -76.49 | 500 | fc | AIS | NA | NA | NA |
| E35 | 9.46 | -76.43 | 300 | fc | AIS | NA | NA | NA |
| E34 | 9.51 | -76.45 | 500 | fc | AIS | NA | NA | NA |
| E33 | 9.76 | -76.25 | 300 | dt | AIS | NA | NA | NA |
| E32 | 9.82 | -76.27 | 500 | fc | AIS | NA | NA | NA |
| E31 | 9.89 | -76.23 | 500 | fc | AIS | NA | NA | NA |
| E30 | 9.96 | -76.13 | 280 | dt | AIS | NA | NA | NA |

| Station | Latitude | Longitude | Depth (m) | Landscape | Water mass | T° | S | O2 ppm |
|---|---|---|---|---|---|---|---|---|
| E29 | 10.15 | -76.01 | 300 | dt | AIS | NA | NA | NA |
| E28 | 10.17 | -76.03 | 500 | dt | AIS | NA | NA | NA |
| E19 | 11.39 | -74.20 | 200 | dt | AIS | NA | NA | NA |
| E2B | 12.53 | -72.19 | 500 | es | AIS | NA | NA | NA |
| E11 | 11.38 | -73.74 | 300 | dt | AIS | NA | NA | NA |
| E52 | 11.47 | -73.67 | 500 | dt | AIS | NA | NA | NA |
| E67 | 10.55 | -75.62 | 300 | dt | AIS | NA | NA | NA |
| E68 | 10.54 | -75.65 | 500 | dt | AIS | NA | NA | NA |
| E32 | 9.79 | -76.29 | 500 | fc | AIS | NA | NA | NA |
| E33 | 9.76 | -76.26 | 300 | dt | AIS | NA | NA | NA |
| E249 | 11.15 | -74.45 | 300 | es | AIS | NA | NA | NA |
| E250 | 11.14 | -74.39 | 286 | es | AIS | NA | NA | NA |
| E251 | 11.15 | -74.38 | 360 | es | AIS | NA | NA | NA |
| E253 | 12.55 | -71.87 | 265 | es | AIS | 12.4 | 35.5 | 5.5 |
| E254 | 12.54 | -71.87 | 265 | es | AIS | NA | NA | NA |
| E255 | 12.68 | -72.06 | 750 | es | APC | 6.6 | 34.7 | 5.4 |
| E256 | 12.34 | -72.45 | 265 | es | AIS | 14.8 | 35.9 | 5.5 |
| E257 | 12.33 | -72.46 | 265 | es | AIS | NA | NA | NA |
| E258 | 12.35 | -73.00 | 940 | es | APC | 6.3 | 34.8 | 5.7 |
| E259 | 11.51 | -73.39 | 300 | dt | AIS | 13.9 | 35.7 | 5.3 |
| E260 | 11.51 | -73.40 | 300 | dt | AIS | NA | NA | NA |
| E261 | 11.37 | -74.37 | 803 | cs | APC | 7.1 | 34.8 | 5.2 |
| E263 | 11.06 | -75.42 | 500 | fc | AIS | 8.4 | 34.9 | 5.1 |
| E264 | 10.33 | -75.90 | 500 | fc | AIS | 9.7 | 35.1 | 5.0 |
| E266 | 9.63 | -76.36 | 500 | fc | AIS | 11.5 | 35.3 | 5.1 |
| E267 | 9.13 | -76.60 | 500 | fc | AIS | 12.2 | 35.4 | 5.2 |
| E268 | 8.99 | -76.76 | 500 | dt | AIS | 9.5 | 35.0 | 5.0 |
| E273 | 12.60 | -71.48 | 560 | es | AIS | 18.3 | 36.4 | 4.9 |
| E274 | 12.83 | -71.61 | 862 | ms | APC | 8.4 | 34.9 | 4.2 |
| E275 | 12.69 | -71.82 | 701 | fc | APC | 8.2 | 34.9 | 4.2 |
| E276 | 8.95 | -76.86 | 644 | es | AIS | 6.7 | 34.8 | 4.5 |
| E277 | 9.06 | -76.74 | 813 | es | AIS | 6.9 | 34.8 | 4.5 |
| E278 | 9.29 | -76.53 | 676 | es | AIS | 7.5 | 34.8 | 4.4 |
| E279 | 9.57 | -76.46 | 702 | fc | APC | 7.5 | 34.8 | 4.5 |
| E280 | 9.71 | -76.38 | 748 | fc | APC | 7.2 | 34.8 | 4.6 |
| E281 | 10.00 | -76.26 | 758 | es | APC | 7.1 | 34.8 | 4.7 |
| E282 | 11.05 | -75.49 | 718 | es | APC | 7.9 | 34.9 | 4.2 |
| E283 | 10.91 | -75.60 | 761 | es | APC | 7.1 | 34.8 | 4.5 |
| E284 | 10.73 | -75.62 | 705 | es | APC | 10.3 | 35.2 | 4.4 |
| E285 | 10.58 | -75.66 | 776 | es | APC | 8.3 | 34.9 | 4.3 |
| E287 | 10.36 | -75.86 | 323 | ms | AIS | 17.1 | 36.3 | 5.5 |
| E288 | 11.14 | -75.27 | 651 | es | AIS | 8.9 | 34.9 | 4.2 |

| Station | Latitude | Longitude | Depth (m) | Landscape | Water mass | T° | S | O2 ppm |
|---|---|---|---|---|---|---|---|---|
| E289 | 11.20 | -74.50 | 553 | es | AIS | 17.1 | 36.3 | 5.1 |
| E290 | 11.42 | -74.32 | 764 | fc | APC | NA | NA | NA |
| E291 | 11.56 | -73.95 | 780 | fc | APC | NA | NA | NA |
| E292 | 11.54 | -73.74 | 711 | fc | APC | NA | NA | NA |
| E293 | 11.53 | -73.48 | 755 | fc | APC | NA | NA | NA |

*Annex 3. List of deep-sea demersal fish species caught in the Colombian Caribbean slope indicating their presence or absence among the different obtained assemblages.*

| FAMILY | SPECIES | ASSEMBLAGES | | | | | |
|---|---|---|---|---|---|---|---|
| | | USb | USc | USa | MSa | MSb | MSc |
| MYXINIDAE | | | | | | | |
| | *Eptatretus aceroi* | 0 | 0 | 0 | 1 | 0 | 0 |
| | *Eptatretus ancon* | 0 | 0 | 0 | 1 | 1 | 0 |
| | *Eptatretus wayuu* | 1 | 0 | 0 | 0 | 0 | 0 |
| | *Myxine mccoskeri* | 1 | 0 | 1 | 1 | 1 | 1 |
| CHIMAERIDAE | | | | | | | |
| | *Hydrolagus alberti* | 0 | 0 | 0 | 1 | 1 | 1 |
| SCYLIORHINIDAE | | | | | | | |
| | *Scyliorhinus boa* | 1 | 0 | 0 | 0 | 0 | 0 |
| DALATIIDAE | | | | | | | |
| | *Etmopterus perryi* | 1 | 0 | 0 | 0 | 0 | 0 |
| | *Etmopterus schultzi* | 0 | 0 | 0 | 1 | 1 | 0 |
| | *Etmopterus virens* | 0 | 0 | 0 | 0 | 1 | 0 |
| SQUATINIDAE | | | | | | | |
| | *Squatina* sp. | 1 | 0 | 0 | 0 | 0 | 0 |
| TORPEDINIDAE | | | | | | | |
| | *Torpedo nobiliana* | 1 | 0 | 0 | 0 | 0 | 0 |
| RAJIDAE | | | | | | | |
| | *Anacanthobatis americanus* | 1 | 0 | 0 | 1 | 1 | 0 |
| | *Breviraja nigriventralis* | 0 | 0 | 0 | 1 | 1 | 0 |
| | *Dactylobatus clarki* | 0 | 0 | 0 | 0 | 1 | 0 |
| | *Dipturus bullisi* | 1 | 0 | 1 | 0 | 0 | 0 |
| | *Dipturus garricki* | 1 | 0 | 0 | 0 | 0 | 0 |
| | *Gurgesiella atlantica* | 0 | 0 | 0 | 1 | 1 | 0 |
| HALOSAURIDAE | | | | | | | |
| | *Halosaurus guentheri* | 0 | 0 | 0 | 1 | 0 | 0 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | *Halosaurus ovenii* | 0 | 0 | 0 | 1 | 1 | 1 |
| NOTACANTHIDAE | | | | | | | |
| | *Notacanthus cf. chemnitzii* | 0 | 0 | 0 | 1 | 0 | 0 |
| | *Polyacanthonotus merretti* | 0 | 0 | 0 | 1 | 0 | 0 |
| MORINGUIDAE | | | | | | | |
| | *Neoconger mucronatus* | 0 | 1 | 0 | 0 | 0 | 0 |
| MURAENIDAE | | | | | | | |
| | *Gymnothorax conspersus* | 1 | 1 | 0 | 0 | 0 | 0 |
| | *Gymnothorax polygonius* | 0 | 1 | 0 | 0 | 0 | 0 |
| SYNAPHOBRANCHIDAE | | | | | | | |
| | *Atractodenchelys phrix* | 1 | 0 | 0 | 1 | 1 | 1 |
| | *Ilyophis brunneus* | 0 | 0 | 0 | 1 | 0 | 0 |
| | *Synaphobranchus oregoni* | 0 | 1 | 0 | 0 | 0 | 0 |
| OPHICHTHIDAE | | | | | | | |
| | *Ophichthus cruentifer* | 0 | 0 | 0 | 1 | 1 | 0 |
| | *Ophichthus puncticeps* | 0 | 1 | 0 | 1 | 0 | 0 |
| COLOCONGRIDAE | | | | | | | |
| | *Coloconger meadi* | 0 | 1 | 0 | 1 | 1 | 1 |
| MURAENESOCIDAE | | | | | | | |
| | *Cynoponticus savanna* | 0 | 0 | 0 | 1 | 0 | 0 |
| NEMICHTHYIDAE | | | | | | | |
| | *Labichthys carinatus* | 0 | 0 | 0 | 1 | 0 | 0 |
| | *Nemichthys scolopaceus* | 0 | 0 | 0 | 0 | 1 | 0 |
| CONGRIDAE | | | | | | | |
| | *Bathycongrus bullisi* | 1 | 0 | 1 | 0 | 0 | 0 |
| | *Bathyuroconger vicinus* | 0 | 0 | 0 | 1 | 0 | 0 |
| | *Japonoconger caribbeus* | 0 | 0 | 0 | 0 | 1 | 0 |
| | *Parabathymyrus oregoni* | 1 | 0 | 0 | 0 | 0 | 0 |
| | *Pseudophichthys splendens* | 0 | 1 | 0 | 1 | 1 | 0 |
| | *Xenomystax austrinus* | 0 | 0 | 0 | 0 | 1 | 0 |
| | *Xenomystax bidentatus* | 1 | 0 | 0 | 1 | 1 | 0 |
| | *Xenomystax congroides* | 1 | 0 | 1 | 0 | 0 | 0 |
| NETTASTOMATIDAE | | | | | | | |
| | *Facciolella* sp. | 1 | 0 | 0 | 0 | 1 | 0 |
| | *Nettastoma melanurum* | 0 | 0 | 0 | 1 | 0 | 0 |
| ARGENTINIDAE | | | | | | | |
| | *Argentina brucei* | 1 | 1 | 1 | 0 | 0 | 0 |
| | *Argentina striata* | 1 | 1 | 1 | 0 | 1 | 0 |
| OPISTHOPROCTIDAE | | | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | *Opisthoproctus soleatus* | 0 | 0 | 0 | 1 | 0 | 0 |
| MICROSTOMATIDAE | | | | | | | |
| | *Dolicholagus longirostris* | 0 | 0 | 0 | 1 | 0 | 0 |
| | *Xenophthalmichthys danae* | 0 | 0 | 0 | 0 | 1 | 0 |
| ALEPOCEPHALIDAE | | | | | | | |
| | *Talismania homoptera* | 0 | 0 | 0 | 1 | 0 | 0 |
| GONOSTOMATIDAE | | | | | | | |
| | *Gonostoma atlanticum* | 0 | 0 | 0 | 0 | 1 | 0 |
| | *Gonostoma elongatum* | 0 | 0 | 0 | 1 | 1 | 0 |
| | *Triplophos hemingi* | 1 | 0 | 0 | 1 | 1 | 0 |
| STERNOPTYCHIDAE | | | | | | | |
| | *Argyripnus atlanticus* | 0 | 0 | 1 | 0 | 0 | 0 |
| | *Argyropelecus aculeatus* | 1 | 0 | 0 | 1 | 1 | 1 |
| | *Polyipnus asteroids* | 1 | 0 | 1 | 0 | 1 | 0 |
| | *Polyipnus clarus* | 0 | 1 | 0 | 0 | 0 | 0 |
| | *Sternoptyx diaphana* | 0 | 0 | 0 | 1 | 0 | 0 |
| PHOSICHTHYIDAE | | | | | | | |
| | *Pollichthys mauli* | 1 | 0 | 0 | 1 | 1 | 1 |
| | *Polymetme thaeocoryla* | 1 | 0 | 1 | 1 | 1 | 1 |
| | *Yarrella blackfordi* | 0 | 0 | 0 | 0 | 1 | 0 |
| STOMIIDAE | | | | | | | |
| | *Chauliodus sloani* | 1 | 0 | 0 | 1 | 1 | 1 |
| | *Stomias affinis* | 0 | 0 | 0 | 0 | 1 | 0 |
| ATELEOPODIDAE | | | | | | | |
| | *Ijimaia antillarum* | 0 | 0 | 0 | 1 | 1 | 0 |
| SYNODONTIDAE | | | | | | | |
| | *Saurida brasiliensis* | 0 | 0 | 1 | 0 | 0 | 0 |
| | *Saurida caribbaea* | 1 | 1 | 1 | 0 | 0 | 0 |
| CHLOROPHTHALMIDAE | | | | | | | |
| | *Chlorophthalmus agassizi* | 1 | 1 | 1 | 1 | 1 | 1 |
| | *Parasudis truculenta* | 1 | 1 | 0 | 0 | 1 | 0 |
| IPNOPIDAE | | | | | | | |
| | *Bathypterois bigelowi* | 1 | 0 | 0 | 1 | 1 | 1 |
| | *Bathypterois viridensis* | 0 | 0 | 0 | 1 | 0 | 0 |
| NEOSCOPELIDAE | | | | | | | |
| | *Neoscopelus microchir* | 0 | 0 | 1 | 1 | 0 | 1 |
| | *Neoscopelus macrolepidotus* | 1 | 0 | 0 | 1 | 1 | 1 |
| MYCTOPHIDAE | | | | | | | |
| | *Diaphus garmani* | 1 | 0 | 1 | 0 | 0 | 1 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | *Diaphus lucidus* | 1 | 0 | 0 | 0 | 0 | 0 |
| | *Lampadena luminosa* | 0 | 0 | 0 | 0 | 0 | 1 |
| | *Myctophum nitidulum* | 1 | 0 | 0 | 0 | 0 | 0 |
| | *Myctophum selenops* | 0 | 0 | 0 | 0 | 0 | 1 |
| POLYMIXIIDAE | | | | | | | |
| | *Polymixia lowei* | 1 | 1 | 1 | 1 | 0 | 1 |
| | *Polymixia nobilis* | 0 | 0 | 0 | 0 | 1 | 1 |
| BREGMACEROTIDAE | | | | | | | |
| | *Bregmaceros atlanticus* | 1 | 1 | 1 | 1 | 1 | 1 |
| MACROURIDAE | | | | | | | |
| | *Bathygadus macrops* | 1 | 0 | 0 | 1 | 1 | 0 |
| | *Bathygadus melanobranchus* | 0 | 0 | 0 | 1 | 0 | 0 |
| | *Coelorinchus caelorhinchus* | 1 | 1 | 1 | 1 | 1 | 1 |
| | *Coelorinchus caribbaeus* | 1 | 1 | 1 | 0 | 1 | 0 |
| | *Coryphaenoides zaniophorus* | 0 | 0 | 0 | 1 | 0 | 0 |
| | *Gadomus arcuatus* | 0 | 0 | 0 | 1 | 0 | 0 |
| | *Gadomus longifilis* | 0 | 0 | 0 | 1 | 0 | 0 |
| | *Hymenocephalus italicus* | 1 | 0 | 1 | 1 | 1 | 1 |
| | *Malacocephalus occidentalis* | 1 | 1 | 0 | 1 | 1 | 1 |
| | *Nezumia aequalis* | 1 | 0 | 0 | 1 | 1 | 1 |
| | *Ventrifossa macropogon* | 0 | 0 | 0 | 1 | 1 | 0 |
| | *Ventrifossa mucocephalus* | 0 | 0 | 0 | 1 | 0 | 0 |
| MORIDAE | | | | | | | |
| | *Gadella imberbis* | 1 | 0 | 1 | 1 | 1 | 1 |
| | *Laemonema goodebeanorum* | 1 | 1 | 0 | 1 | 1 | 1 |
| | *Physiculus fulvus* | 1 | 0 | 1 | 0 | 0 | 0 |
| MERLUCCIIDAE | | | | | | | |
| | *Merluccius albidus* | 0 | 0 | 1 | 0 | 1 | 0 |
| | *Steindachneria argentea* | 1 | 1 | 0 | 1 | 1 | 1 |
| PHYCIDAE | | | | | | | |
| | *Urophycis cirrata* | 0 | 0 | 0 | 1 | 0 | 0 |
| OPHIDIIDAE | | | | | | | |
| | *Benthocometes robustus* | 0 | 0 | 1 | 0 | 0 | 1 |
| | *Dicrolene introniger* | 0 | 0 | 0 | 1 | 0 | 0 |
| | *Lepophidium brevibarbe* | 1 | 0 | 1 | 0 | 1 | 0 |
| | *Lepophidium* sp. | 0 | 1 | 1 | 0 | 0 | 0 |
| | *Luciobrotula corethromycter* | 0 | 0 | 0 | 1 | 0 | 0 |
| | *Monomitopus agassizii* | 0 | 0 | 0 | 1 | 1 | 0 |
| | *Neobythites gilli* | 1 | 1 | 1 | 0 | 1 | 1 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | *Neobythites marginatus* | 0 | 1 | 1 | 1 | 1 | 1 |
| BYTHITIDAE | | | | | | | |
| | *Diplacanthopoma brachysoma* | 1 | 0 | 0 | 1 | 1 | 1 |
| APHYONIDAE | | | | | | | |
| | *Barathronus bicolor* | 0 | 0 | 0 | 1 | 0 | 0 |
| BATRACHOIDIDAE | | | | | | | |
| | *Porichthys plectrodon* | 1 | 1 | 0 | 0 | 0 | 0 |
| LOPHIIDAE | | | | | | | |
| | *Lophiodes monodi* | 0 | 0 | 1 | 0 | 0 | 1 |
| | *Lophiodes reticulatus* | 0 | 1 | 0 | 0 | 0 | 0 |
| | *Lophius gastrophysus* | 1 | 0 | 0 | 0 | 1 | 0 |
| CHAUNACIDAE | | | | | | | |
| | *Chaunax pictus* | 1 | 0 | 1 | 0 | 1 | 1 |
| | *Chaunax suttkusi* | 1 | 0 | 1 | 1 | 1 | 1 |
| OGCOCEPHALIDAE | | | | | | | |
| | *Dibranchus atlanticus* | 1 | 0 | 1 | 1 | 1 | 1 |
| | *Halieutichthys aculeatus* | 1 | 1 | 1 | 0 | 1 | 1 |
| | *Malthopsis gnoma* | 1 | 0 | 1 | 0 | 1 | 0 |
| | *Ogcocephalus parvus* | 0 | 0 | 1 | 0 | 0 | 0 |
| | *Zalieutes mcgintyi* | 1 | 1 | 1 | 0 | 1 | 1 |
| DICERATIIDAE | | | | | | | |
| | *Bufoceratias wedli* | 0 | 0 | 0 | 0 | 1 | 0 |
| TRACHICHTHYIDAE | | | | | | | |
| | *Gephyroberyx darwinii* | 1 | 0 | 1 | 0 | 0 | 0 |
| | *Hoplostethus occidentalis* | 1 | 1 | 0 | 0 | 1 | 1 |
| HOLOCENTRIDAE | | | | | | | |
| | *Ostichthys trachypoma* | 0 | 1 | 0 | 0 | 0 | 0 |
| PARAZENIDAE | | | | | | | |
| | *Cyttopsis rosea* | 1 | 1 | 1 | 0 | 1 | 1 |
| ZENIONTIDAE | | | | | | | |
| | *Zenion hololepis* | 1 | 0 | 1 | 0 | 1 | 1 |
| GRAMMICOLEPIDIDAE | | | | | | | |
| | *Xenolepidichthys dalgleishi* | 1 | 1 | 0 | 0 | 0 | 1 |
| SCORPAENIDAE | | | | | | | |
| | *Neomerinthe beanorum* | 1 | 1 | 1 | 0 | 0 | 0 |
| | *Phenacoscorpius nebris* | 0 | 0 | 1 | 0 | 0 | 0 |
| | *Pontinus longispinis* | 1 | 1 | 1 | 0 | 1 | 0 |
| | *Pontinus nematophthalmus* | 0 | 1 | 1 | 1 | 1 | 0 |
| | *Pontinus rathbuni* | 0 | 1 | 0 | 0 | 0 | 0 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | *Setarches guentheri* | 1 | 1 | 1 | 0 | 1 | 1 |
| TRIGLIDAE | | | | | | | |
| | *Bellator brachychir* | 1 | 0 | 0 | 0 | 0 | 0 |
| | *Bellator egretta* | 0 | 1 | 0 | 0 | 0 | 0 |
| | *Prionotus stearnsi* | 1 | 1 | 0 | 0 | 0 | 0 |
| PERISTEDIIDAE | | | | | | | |
| | *Peristedion ecuadorense* | 1 | 0 | 0 | 1 | 1 | 0 |
| | *Peristedion gracile* | 1 | 1 | 0 | 1 | 1 | 1 |
| | *Peristedion greyae* | 1 | 1 | 1 | 1 | 1 | 0 |
| | *Peristedion imberbe* | 0 | 0 | 0 | 0 | 0 | 1 |
| | *Peristedion longispatha* | 0 | 0 | 0 | 1 | 1 | 1 |
| | *Peristedion miniatum* | 1 | 0 | 0 | 0 | 1 | 0 |
| | *Peristedion* sp.1 | 0 | 0 | 1 | 0 | 0 | 0 |
| | *Peristedion truncatum* | 0 | 0 | 1 | 0 | 0 | 1 |
| ACROPOMATIDAE | | | | | | | |
| | *Neoscombrops atlanticus* | 1 | 0 | 1 | 0 | 1 | 0 |
| | *Synagrops bellus* | 1 | 1 | 1 | 1 | 1 | 1 |
| | *Synagrops pseudomicrolepis* | 0 | 0 | 1 | 0 | 0 | 0 |
| | *Synagrops spinosus* | 1 | 1 | 1 | 1 | 0 | 0 |
| | *Synagrops trispinosus* | 0 | 1 | 0 | 0 | 0 | 1 |
| SYMPHYSANODONTIDAE | | | | | | | |
| | *Symphysanodon berryi* | 0 | 0 | 1 | 0 | 0 | 0 |
| SERRANIDAE | | | | | | | |
| | *Baldwinella aureorubens* | 1 | 1 | 1 | 0 | 0 | 0 |
| | *Bathyanthias cubensis* | 0 | 0 | 1 | 0 | 0 | 0 |
| | *Plectranthias garrupellus* | 0 | 1 | 0 | 0 | 0 | 0 |
| | *Serranus atrobranchus* | 1 | 0 | 0 | 0 | 0 | 0 |
| OPISTOGNATHIDAE | | | | | | | |
| | *Lonchopisthus lemur* | 1 | 1 | 1 | 0 | 0 | 0 |
| | *Lonchopisthus micrognathus* | 0 | 1 | 0 | 0 | 0 | 0 |
| EPIGONIDAE | | | | | | | |
| | *Epigonus occidentalis* | 0 | 0 | 0 | 0 | 1 | 1 |
| | *Epigonus pandionis* | 1 | 0 | 0 | 0 | 1 | 1 |
| CARANGIDAE | | | | | | | |
| | *Decapterus tabl* | 0 | 1 | 0 | 0 | 1 | 1 |
| | *Selar crumenophthalmus* | 0 | 0 | 1 | 0 | 0 | 0 |
| | *Selene brownii* | 0 | 0 | 0 | 0 | 1 | 0 |
| LUTJANIDAE | | | | | | | |
| | *Pristipomoides macrophthalmus* | 0 | 0 | 1 | 0 | 0 | 0 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| HAEMULIDAE | | | | | | | |
| | *Haemulon aurolineatum* | 1 | 0 | 0 | 0 | 0 | 0 |
| | *Haemulon boschmae* | 1 | 0 | 0 | 0 | 0 | 0 |
| SCIAENIDAE | | | | | | | |
| | *Protosciaena bathytatos* | 1 | 0 | 0 | 0 | 0 | 0 |
| MULLIDAE | | | | | | | |
| | *Upeneus parvus* | 1 | 0 | 0 | 0 | 0 | 0 |
| BATHYCLUPEIDAE | | | | | | | |
| | *Bathyclupea argentea* | 0 | 0 | 0 | 1 | 1 | 1 |
| PERCOPHIDAE | | | | | | | |
| | *Bembrops anatirostris* | 1 | 1 | 1 | 0 | 1 | 1 |
| | *Bembrops ocellatus* | 0 | 0 | 0 | 1 | 1 | 1 |
| CALLIONYMIDAE | | | | | | | |
| | *Synchiropus dagmarae* | 0 | 1 | 0 | 0 | 0 | 0 |
| GEMPYLIDAE | | | | | | | |
| | *Diplospinus multistriatis* | 0 | 1 | 0 | 0 | 0 | 0 |
| | *Neoepinnula americana* | 1 | 1 | 1 | 0 | 0 | 0 |
| | *Promethichthys prometheus* | 0 | 0 | 0 | 1 | 0 | 0 |
| TRICHIURIDAE | | | | | | | |
| | *Benthodesmus simonyi* | 0 | 0 | 0 | 1 | 0 | 1 |
| | *Benthodesmus tenuis* | 1 | 0 | 1 | 0 | 1 | 1 |
| CAPROIDAE | | | | | | | |
| | *Antigonia capros* | 0 | 1 | 1 | 0 | 1 | 1 |
| | *Antigonia combatia* | 1 | 1 | 1 | 0 | 1 | 1 |
| PARALICHTHYIDAE | | | | | | | |
| | *Ancylopsetta cycloidea* | 0 | 0 | 1 | 0 | 0 | 0 |
| | *Citharichthys cornutus* | 1 | 0 | 0 | 0 | 0 | 0 |
| | *Syacium gunteri* | 0 | 0 | 0 | 1 | 0 | 0 |
| PLEURONECTIDAE | | | | | | | |
| | *Poecilopsetta inermis* | 1 | 1 | 1 | 1 | 1 | 1 |
| BOTHIDAE | | | | | | | |
| | *Monolene megalepis* | 0 | 1 | 1 | 0 | 1 | 0 |
| | *Trichopsetta caribbaea* | 1 | 0 | 0 | 0 | 0 | 0 |
| CYNOGLOSSIDAE | | | | | | | |
| | *Symphurus ginsburgi* | 1 | 0 | 0 | 0 | 1 | 0 |
| | *Symphurus hernandezi* | 1 | 1 | 0 | 0 | 0 | 0 |
| | *Symphurus marginatus* | 1 | 1 | 0 | 1 | 1 | 1 |
| | *Symphurus piger* | 1 | 1 | 0 | 1 | 0 | 0 |
| TRIACANTHODIDAE | | | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | *Parahollardia schmidti* | 1 | 0 | 1 | 0 | 0 | 0 |
| | Total number of species | 92 | 59 | 65 | 79 | 89 | 59 |
| | Total number of individuals | 2432 | 532 | 632 | 1352 | 2062 | 572 |

*Annex 4. Deep-sea demersal stations sampled in the Colombian Caribbean by the four main cruises (R/V Oregon I, R/V Oregon II, R/V Pillsbury and R/V ) that collected in the territorial waters. Coordinates and total number of species*

| Vessel | Station | # Species | Latitude | Longitude |
|---|---|---|---|---|
| RV Oregon | 484 | 1 | 11,158333 | -74,475 |
| RV Oregon | 1932 | 1 | 13,966667 | -81,816667 |
| RV Oregon | 4840 | 1 | 11,15 | -74,466667 |
| RV Oregon | 4881 | 1 | 10,266667 | -75,883333 |
| RV Oregon | 4903 | 1 | 10,067 | -76,1 |
| RV Oregon | 4923 | 1 | 12,35 | -72,667 |
| RV Oregon | 4924 | 1 | 12,35 | -72,516667 |
| RV Oregon | 6422 | 1 | 13,583333 | -81,991667 |
| RV Oregon | SB1932 | 1 | 13,966667 | -81,816667 |
| RV Oregon | 1895 | 2 | 14,666667 | -81,416667 |
| RV Oregon | 1920 | 2 | 13,52 | -81,9 |
| RV Oregon | 4834 | 2 | 14,2367 | -80,475 |
| RV Oregon | 1931 | 3 | 13,933333 | -81,833333 |
| RV Oregon | 3572 | 3 | 14,2 | -81,7 |
| RV Oregon | 3573 | 3 | 14,3 | -81,73 |
| RV Oregon | 4396 | 3 | 12,77 | -70,98 |
| RV Oregon | 4832 | 3 | 14,258333 | -80,451667 |
| RV Oregon | 5711 | 3 | 12,217 | -72,483 |
| RV Oregon | 6458 | 3 | 14,125 | -81,93 |
| RV Oregon | 1919 | 4 | 13,5 | -82 |
| RV Oregon | 1922 | 4 | 13,57 | -81,88 |
| RV Oregon | 1933 | 4 | 14,13 | -81,82 |
| RV Oregon | 5692 | 4 | 12,516667 | -71,966667 |
| RV Oregon | 5712 | 4 | 12,333333 | -72,35 |
| RV Oregon | 6420 | 4 | 13,708333 | -81,966667 |
| RV Oregon | 4855 | 5 | 11,275 | -74,358333 |
| RV Oregon | 4921 | 5 | 12,283 | -72,517 |
| RV Oregon | 5688 | 5 | 12,6 | -72,13 |
| RV Oregon | 6460 | 5 | 14,2 | -81,95 |
| RV Oregon | 3615 | 6 | 14,266667 | -81,916667 |
| RV Oregon | 4925 | 6 | 12,467 | -72,433 |
| RV Oregon | 4839 | 7 | 11,15 | -74,491667 |

| | | | | | |
|---|---|---|---|---|---|
| RV Oregon | | 4843 | 7 | 11,141667 | -74,483 |
| RV Oregon | | 5689 | 7 | 12,483 | -72,317 |
| RV Oregon | | 5690 | 7 | 12,5 | -72,13 |
| RV Oregon | | 1921 | 8 | 13,55 | -81,92 |
| RV Oregon | | 3614 | 10 | 14 | -81,833333 |
| RV Oregon | | 4854 | 10 | 11,18 | -74,475 |
| RV Oregon | | 1923 | 11 | 13,65 | -81,87 |
| RV Oregon | | 4841 | 11 | 11,158333 | -74,475 |
| RV Oregon | | 4873 | 11 | 11,046667 | -75,167 |
| RV Oregon | | 4883 | 11 | 10,258333 | -76 |
| RV Oregon | | 5722 | 11 | 9,6 | -76,367 |
| RV Oregon | | 4860 | 12 | 11,15 | -74,433 |
| RV Oregon | | 4880 | 12 | 10,4 | -75,833 |
| RV Oregon | | 4842 | 13 | 11,166667 | -74,45 |
| RV Oregon | | 4859 | 13 | 11,15 | -74,441667 |
| RV Oregon | | 4882 | 13 | 10,27 | -75,906667 |
| RV Oregon | | 4922 | 13 | 12,267 | -72,667 |
| RV Oregon | | 3570 | 14 | 14,13 | -81,92 |
| RV Oregon | | 4858 | 15 | 11,158333 | -74,416667 |
| RV Oregon | | 4911 | 15 | 11,833 | -73,083 |
| RV Oregon | | 4912 | 19 | 12,1 | -72,917 |
| RV Oregon | | 3571 | 23 | 14,17 | -81,83 |
| RV Oregon | | 4838 | 24 | 11,158333 | -74,408333 |
| RV Oregon | | 3566 | 26 | 14,17 | -81,97 |
| RV Oregon | | 3616 | 26 | 14,38 | -81,75 |
| RV Oregon | | 3565 | 31 | 14,17 | -81,92 |
| RV Oregon | | 4902 | 36 | 9,033333 | -76,525 |
| RV Oregon II | | 10191 | 1 | 14,67 | -81,68 |
| RV Oregon II | | 10192 | 1 | 14,58 | -81,7 |
| RV Oregon II | | 11223 | 1 | 14,366667 | -81,816667 |
| RV Oregon II | | 11248 | 1 | 11,3 | -74,733333 |
| RV Oregon II | | 11249 | 1 | 11,317 | -74,883 |
| RV Oregon II | 124 miami lab | | 1 | 12,954 | -70,554 |
| RV Oregon II | 7343-109 | | 1 | 12,883333 | -70,583333 |
| RV Oregon II | 7343-113 | | 1 | 12,866667 | -70,75 |
| RV Oregon II | 7343-123 | | 1 | 12,9 | -70,516667 |
| RV Oregon II | | 11224 | 2 | 14,333333 | -81,833333 |
| RV Oregon II | | 11299 | 2 | 12,87 | -70,72 |
| RV Oregon II | | 11303 | 2 | 12,9 | -70,65 |
| RV Oregon II | | 11310 | 2 | 12,9 | -70,65 |
| RV Oregon II | 7343-111 | | 2 | 12,85 | -70,5 |
| RV Oregon II | 7343-112 | | 2 | 12,866667 | -70,616667 |
| RV Oregon II | 7343-120 | | 2 | 12,883333 | -70,516667 |

| | | | | | |
|---|---|---|---|---|---|
| RV Oregon II | 7343-124 | | 2 | 13 | -70,666667 |
| RV Oregon II | | 10197 | 3 | 14,133333 | -81,866667 |
| RV Oregon II | | 11238 | 3 | 9,183 | -76,85 |
| RV Oregon II | | 11246 | 3 | 11,233 | -75,35 |
| RV Oregon II | | 11250 | 3 | 11,217 | -74,433 |
| RV Oregon II | | 10291 | 4 | 11,43 | -73,5 |
| RV Oregon II | | 11251 | 4 | 11,383 | -74,267 |
| RV Oregon II | | 11276 | 4 | 11,283 | -74,667 |
| RV Oregon II | | 11309 | 4 | 12,9 | -70,65 |
| RV Oregon II | 7343-110 | | 4 | 12,9 | -70,633333 |
| RV Oregon II | | 10198 | 5 | 14,02 | -81,83 |
| RV Oregon II | | 10201 | 5 | 13,43 | -81,87 |
| RV Oregon II | | 10287 | 5 | 11,583 | -73,433 |
| RV Oregon II | | 11245 | 5 | 11,117 | -75,5 |
| RV Oregon II | | 10278 | 6 | 11,667 | -73,25 |
| RV Oregon II | 7343-108 | | 6 | 12,883333 | -70,483333 |
| RV Oregon II | | 11221 | 7 | 14,93 | -81,17 |
| RV Oregon II | | 11239 | 7 | 9,533 | -76,633 |
| RV Oregon II | | 11286 | 7 | 12,167 | -72,867 |
| RV Oregon II | | 10199 | 8 | 13,966667 | -81,883333 |
| RV Oregon II | | 11240 | 8 | 9,967 | -76,483 |
| RV Oregon II | | 11285 | 8 | 11,683 | -73,4 |
| RV Oregon II | | 11290 | 8 | 12,3 | -72,683333 |
| RV Oregon II | | 11243 | 9 | 10,15 | -76,233 |
| RV Oregon II | | 11289 | 9 | 12,317 | -72,567 |
| RV Oregon II | | 10200 | 10 | 13,616667 | -81,883333 |
| RV Oregon II | | 10260 | 10 | 11,05 | -75,3 |
| RV Oregon II | | 10269 | 10 | 11,43 | -73,98 |
| RV Oregon II | | 10288 | 10 | 11,45 | -73,7 |
| RV Oregon II | | 11284 | 10 | 11,2 | -74,4 |
| RV Oregon II | | 11242 | 11 | 10,167 | -76,233 |
| RV Oregon II | | 10268 | 12 | 11,433 | -74,233 |
| RV Oregon II | | 11253 | 12 | 11,433333 | -73,683333 |
| RV Oregon II | | 10267 | 13 | 11,2 | -74,35 |
| RV Oregon II | | 11231 | 13 | 8,933333 | -76,883333 |
| RV Oregon II | | 10196 | 14 | 14,4 | -81,8 |
| RV Oregon II | | 11244 | 14 | 10 | -76,167 |
| RV Oregon II | | 11252 | 14 | 11,416667 | -73,933333 |
| RV Oregon II | | 10289 | 17 | 11,4 | -73,783 |
| RV Oregon II | | 10195 | 19 | 14,28 | -81,92 |
| RV Pillsbury | PIL364 | | 1 | 9,478333 | -76,571667 |
| RV Pillsbury | PIL770 | | 1 | 12,916667 | -71,775 |
| RV Pillsbury | PIL1354 | | 1 | 14,35 | -81,916667 |

| | | | | |
|---|---|---|---|---|
| RV Pillsbury | PIL782 | 2 | 11,95 | -73,533333 |
| RV Pillsbury | PIL346 | 3 | 9,908333 | -77,05 |
| RV Pillsbury | PIL784 | 3 | 11,441667 | -74,166667 |
| RV Pillsbury | PIL785 | 3 | 11,281667 | -74,283333 |
| RV Pillsbury | PIL781 | 6 | 11,501667 | -73,441667 |
| RV Pillsbury | PIL381 | 9 | 10,283333 | -75,998333 |
| RV Pillsbury | PIL391 | 11 | 10,05 | -76,45 |
| RV Pillsbury | PIL776 | 11 | 12,221667 | -72,833333 |
| RV Pillsbury | PIL394 | 12 | 9,476667 | -76,438333 |
| RV Pillsbury | PIL413 | 12 | 9,025 | -76,883333 |
| RV Pillsbury | PIL374 | 13 | 9,95 | -76,176667 |
| RV Pillsbury | PIL387 | 19 | 10,44 | -75,998333 |
| RV Pillsbury | PIL1356 | 34 | 14,898333 | -81,386667 |
| RV Pillsbury | PIL1355 | 35 | 14,583333 | -81,533333 |
| RV Pillsbury | PIL373 | 36 | 9,883333 | -76,336667 |
| RV Ancón | E 1 | 1 | 11,231667 | -74,662 |
| RV Ancón | E 58 | 1 | 9,084167 | -76,62835 |
| RV Ancón | E 91 | 1 | 12,576389 | -71,854722 |
| RV Ancón | E3 | 1 | 11,162083 | -74,663889 |
| RV Ancón | E 260 | 1 | 11,511336 | -73,395036 |
| RV Ancón | E 11 | 2 | 12,53 | -72,132833 |
| RV Ancón | E 251 | 2 | 11,152747 | -74,37685 |
| RV Ancón | E 274 | 3 | 12,825556 | -71,614167 |
| RV Ancón | E 250 | 4 | 11,144789 | -74,38525 |
| RV Ancón | E 33 | 5 | 11,451833 | -74,019 |
| RV Ancón | E 47 | 5 | 10,468667 | -75,709333 |
| RV Ancón | E 57 | 5 | 9,095 | -76,618 |
| RV Ancón | E 13 | 6 | 12,488667 | -72,258167 |
| RV Ancón | E 141 | 6 | 10,529444 | -75,618611 |
| RV Ancón | E 56 | 6 | 9,043167 | -76,616 |
| RV Ancón | E 7 | 6 | 11,390333 | -74,212833 |
| RV Ancón | E 249 | 6 | 11,153333 | -74,453056 |
| RV Ancón | E 17 | 7 | 12,253833 | -72,556833 |
| RV Ancón | E 68 | 7 | 9,755333 | -76,262333 |
| RV Ancón | E 70 | 7 | 9,822333 | -76,259333 |
| RV Ancón | E 20 | 8 | 12,317667 | -72,709 |
| RV Ancón | E 38 | 8 | 11,413833 | -74,196667 |
| RV Ancón | E 39 | 8 | 11,412 | -74,241833 |
| RV Ancón | E 50 | 8 | 11,086333 | -75,2565 |
| RV Ancón | E 60 | 8 | 9,263667 | -76,4835 |
| RV Ancón | E 75 | 8 | 10,1535 | -76,006683 |
| RV Ancón | E 263 | 8 | 11,064458 | -75,418014 |
| RV Ancón | E 143 | 9 | 10,538333 | -75,654722 |

| | | | | |
|---|---|---|---|---|
| RV Ancón | E 149 | 9 | 9,791389 | -76,289444 |
| RV Ancón | E 22 | 9 | 11,497667 | -73,439333 |
| RV Ancón | E 3 | 9 | 11,156667 | -74,650833 |
| RV Ancón | E 4 | 9 | 11,162333 | -74,666833 |
| RV Ancón | E 40 | 9 | 11,434833 | -74,216667 |
| RV Ancón | E 54 | 9 | 11,118167 | -75,129667 |
| RV Ancón | E 62 | 9 | 9,299833 | -76,494167 |
| RV Ancón | E 2 | 10 | 11,229667 | -74,654167 |
| RV Ancón | E 29 | 10 | 11,373 | -73,754833 |
| RV Ancón | E 42 | 10 | 11,336667 | -74,269 |
| RV Ancón | E 44 | 10 | 11,255 | -74,6385 |
| RV Ancón | E 48 | 10 | 10,479 | -75,708 |
| RV Ancón | E 51 | 10 | 11,129 | -75,234833 |
| RV Ancón | E 74 | 10 | 9,945167 | -76,162 |
| RV Ancón | E 92 | 10 | 12,533611 | -72,191667 |
| RV Ancón | E 114 | 11 | 11,467778 | -73,670556 |
| RV Ancón | E 140 | 11 | 10,548889 | -75,622222 |
| RV Ancón | E 153 | 11 | 9,760278 | -76,255278 |
| RV Ancón | E 37 | 11 | 11,415667 | -74,213333 |
| RV Ancón | E 253 | 11 | 12,547025 | -71,865944 |
| RV Ancón | E 259 | 11 | 11,512181 | -73,392761 |
| RV Ancón | E 267 | 11 | 9,125428 | -76,601556 |
| RV Ancón | E 43 | 12 | 11,2545 | -74,653333 |
| RV Ancón | E 69 | 12 | 9,816167 | -76,274167 |
| RV Ancón | E 80 | 12 | 11,385167 | -74,201 |
| RV Ancón | E 268 | 12 | 8,990225 | -76,761892 |
| RV Ancón | E 30 | 13 | 11,374167 | -73,766833 |
| RV Ancón | E 34 | 13 | 11,446167 | -74,025333 |
| RV Ancón | E 36 | 13 | 11,411833 | -74,1605 |
| RV Ancón | E 46 | 13 | 11,195833 | -74,2925 |
| RV Ancón | E 64 | 13 | 9,459833 | -76,435333 |
| RV Ancón | E 76 | 13 | 10,150167 | -76,009167 |
| RV Ancón | E 280 | 13 | 9,708611 | -76,384444 |
| RV Ancón | E 281 | 13 | 10,004167 | -76,255 |
| RV Ancón | E 115 | 14 | 11,470278 | -73,670833 |
| RV Ancón | E 150 | 14 | 9,780556 | -76,295833 |
| RV Ancón | E 154 | 14 | 9,746944 | -76,260556 |
| RV Ancón | E 53 | 14 | 11,115333 | -75,1375 |
| RV Ancón | E 63 | 14 | 9,4615 | -76,428167 |
| RV Ancón | E 72 | 14 | 9,881667 | -76,244833 |
| RV Ancón | E 8 | 14 | 11,385167 | -74,201 |
| RV Ancón | E 258 | 14 | 12,351536 | -72,998064 |
| RV Ancón | E 283 | 14 | 10,911944 | -75,596111 |

| | | | | |
|---|---|---|---|---|
| RV Ancón | E 290 | 14 | 11,423056 | -74,320278 |
| RV Ancón | E 113 | 15 | 11,3825 | -73,735556 |
| RV Ancón | E 12 | 15 | 12,529833 | -72,129167 |
| RV Ancón | E 26 | 15 | 11,437 | -73,55 |
| RV Ancón | E 41 | 15 | 11,322833 | -74,284167 |
| RV Ancón | E 45 | 15 | 11,203 | -74,287667 |
| RV Ancón | E 61 | 15 | 9,314333 | -76,493667 |
| RV Ancón | E 255 | 15 | 12,675269 | -72,055614 |
| RV Ancón | E 256 | 15 | 12,335061 | -72,451097 |
| RV Ancón | E 282 | 15 | 11,0525 | -75,490556 |
| RV Ancón | E 23 | 16 | 11,4905 | -73,3805 |
| RV Ancón | E 28 | 16 | 11,4525 | -73,6965 |
| RV Ancón | E 49 | 16 | 11,087667 | -75,2555 |
| RV Ancón | E 5 | 16 | 11,432 | -74,194833 |
| RV Ancón | E 55 | 16 | 9,045333 | -76,612833 |
| RV Ancón | E 93 | 16 | 12,530833 | -72,201667 |
| RV Ancón | E 261 | 16 | 11,372069 | -74,371492 |
| RV Ancón | E 264 | 16 | 10,330503 | -75,896661 |
| RV Ancón | E 276 | 16 | 8,951111 | -76,861389 |
| RV Ancón | E 287 | 16 | 10,365 | -75,855278 |
| RV Ancón | E 291 | 16 | 11,561111 | -73,951944 |
| RV Ancón | E 25 | 17 | 11,438333 | -73,5295 |
| RV Ancón | E 66 | 17 | 9,504167 | -76,448833 |
| RV Ancón | E 67 | 17 | 9,756 | -76,25335 |
| RV Ancón | E 9 | 17 | 12,5685 | -71,8425 |
| RV Ancón | E 285 | 17 | 10,578889 | -75,664722 |
| RV Ancón | E 24 | 18 | 11,480333 | -73,3995 |
| RV Ancón | E 73 | 18 | 9,961333 | -76,1325 |
| RV Ancón | E 293 | 18 | 11,533056 | -73,477778 |
| RV Ancón | E 18 | 19 | 12,256333 | -72,549333 |
| RV Ancón | E 19 | 19 | 12,318167 | -72,7145 |
| RV Ancón | E 31 | 19 | 11,459167 | -73,865 |
| RV Ancón | E 35 | 19 | 11,4165 | -74,18 |
| RV Ancón | E 65 | 19 | 9,5075 | -76,446 |
| RV Ancón | E 71 | 19 | 9,888667 | -76,233167 |
| RV Ancón | E 14 | 20 | 12,487167 | -72,258167 |
| RV Ancón | E 52 | 20 | 11,132333 | -75,227167 |
| RV Ancón | E 77 | 20 | 10,171167 | -76,025333 |
| RV Ancón | E 257 | 20 | 12,330836 | -72,459631 |
| RV Ancón | E 266 | 20 | 9,631372 | -76,355581 |
| RV Ancón | E 289 | 20 | 11,200556 | -74,5 |
| RV Ancón | E 292 | 20 | 11,538056 | -73,744722 |
| RV Ancón | E 10 | 21 | 12,571667 | -71,833333 |

| | | | | |
|---|---|---|---|---|
| RV Ancón | E 142 | 21 | 10,535 | -75,651389 |
| RV Ancón | E 278 | 21 | 9,288889 | -76,532778 |
| RV Ancón | E 78 | 22 | 10,1705 | -76,029833 |
| RV Ancón | E 273 | 22 | 12,598333 | -71,478611 |
| RV Ancón | E 277 | 22 | 9,057778 | -76,740833 |
| RV Ancón | E 288 | 22 | 11,139722 | -75,268889 |
| RV Ancón | E 59 | 23 | 9,2725 | -76,478167 |
| RV Ancón | E 21 | 25 | 11,492167 | -73,451833 |
| RV Ancón | E 254 | 25 | 12,541964 | -71,869617 |
| RV Ancón | E 275 | 25 | 12,688611 | -71,824722 |
| RV Ancón | E 284 | 25 | 10,734444 | -75,620833 |
| RV Ancón | E 27 | 26 | 11,451 | -73,703333 |
| RV Ancón | E 32 | 26 | 11,4565 | -73,864833 |
| RV Ancón | E 279 | 26 | 9,573611 | -76,459167 |
| RV Ancón | E 16 | 30 | 12,397667 | -72,269833 |
| RV Ancón | E 112 | 31 | 11,381111 | -73,743056 |
| RV Ancón | E 15 | 31 | 12,4005 | -72,250167 |

# 11. RELATED PUBLICATIONS

Three papers have been prepared and are related to this thesis project. Herein are presented the abstract, and methodology of each of the papers. The two last papers can have some changes until the submitted version because they still in preparation process.

Paper 1

A New Species of Hagfish (Myxinidae: *Eptatretus*) From the Colombian Caribbean

A Polanco F and B Fernholm

# A New Species of Hagfish (Myxinidae: *Eptatretus*) from the Colombian Caribbean

Andrea Polanco Fernandez[1] and Bo Fernholm[2]

***Eptatretus aceroi*, new species, is described from one specimen captured on the upper continental slope in Colombian Caribbean waters at 705 m depth. The species can be distinguished from all congeners by having five gill apertures, 3/2 multicuspid teeth in the outer and inner tooth rows, respectively, an extremely slender body with the depth at the vertical through the pharyngocutaneous aperture 2.4% of the total length, and by having a total of 174 slime pores, the highest count in the genus. The species is compared with the other western Atlantic five-gilled species of *Eptatretus*.**

**Se describe a *Eptatretus aceroi* a partir de un espécimen capturado en el talud continental superior del Caribe colombiano a 705 m de profundidad. La especie se distingue de todos sus congéneres por poseer cinco aberturas branquiales, un patrón dental de 3/2 dientes multicúspidos en la hilera externa e interna respectivamente, un cuerpo extremadamente delgado, con un profundidad del cuerpo a nivel del ducto faringocutáneo de 2.4% de la talla total, y por tener un conteo total de poros de 174, el mayor conteo en el género. La especie se compara con otras especies de *Eptatretus* del Atlántico occidental que presentan cinco aberturas branquiales.**

EPTATRETUS Cloquet, 1819 is a worldwide genus with 49 species distributed in all major oceans and characterized by having 4–14 gill apertures. Atlantic species of the genus were reviewed by Fernholm and Hubbs (1981) who redescribed *Paramyxine springeri* as *E. springeri* (Bigelow and Schroeder, 1952), and described *E. minor* and *E. multidens* and two closely related specimens referred to as "*E. multidens*?". One of these specimens was subsequently described as *E. caribbaeus* by Fernholm (1982). Three other forms were also noted and provisionally named as *Eptatretus* sp. A, B, and C (Fernholm and Hubbs, 1981). Shimizu (1983) gave a short description of an unnamed new form of *Eptatretus* collected off the coast of Suriname (*Eptatretus* sp.). Hensley (1985) described *Eptatretus mendozai* from off the southwest coast of Puerto Rico. *Eptatretus menezesi* was described from Brazil by Mincarone (2000) as the first record of the genus from the southwestern Atlantic. *Paramyxine wayuu* and *Quadratus ancon* were described off the Colombian Caribbean coast by Mok et al. (2001). Subsequently, Mincarone and Sampaio (2004) extended the distribution of *Eptatretus multidens* from the southern Caribbean to northeastern Brazil. Fernholm and Quattrini (2008) described *Eptatretus lopheliae*, a western Atlantic species associated with a deep sea ecosystem off the southeastern coast of the United States. That species was recently included in the newly erected genus *Rubicundus* (Fernholm et al., 2013) characterized by having an elongated tubular nostril and pinkish-orange color. In their phylogenetic analysis, Møller and Jones (2007) found that *Paramyxine* and *Quadratus* did not form monophyletic groups, and we follow their suggestion to place these genera in the synonymy of *Eptatretus*, as previously proposed by Fernholm (1998). Prior to this paper, 12 species of *Eptatretus* were known from the western Atlantic, four of them described as five-gilled. While trawling in the Colombian Caribbean Sea, we caught one five-gilled specimen of *Eptatretus* with an unusually high number of slime pores and a slender body compared with congeners. It is described herein and compared with the other five-gilled western Atlantic species of hagfishes.

## MATERIALS AND METHODS

The holotype of the new species was captured by bottom trawl (16 m length, 7.7 m width, 1 m height) during the INVEMAR ANH II cruise, 14–18 November 2009. It was preserved in 70% ethanol after 10% formalin fixation. Methods for counts and measurements follow Fernholm and Hubbs (1981) and Wisner and McMillan (1995). Excised outer and inner tooth plates were photographed. Institutional abbreviations follow Sabaj Pérez (2013).

### *Eptatretus aceroi*, new species

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Figures 1–3

*Holotype.*—INV PEC8257, 58.4 cm total length (TL), sex indeterminate, Colombia, off Cartagena, 10°44'4.1"N, 75°37'15.2"W to 10°43'26.0"N, 75°37'46.0"W, 705 m deep, RV ANCON, station 284, 16 November 2009.

*Diagnosis.*—*Eptatretus aceroi* is diagnosed from all congeners by being the most slender species in the genus with a depth at the pharyngocutaneous duct (PCD) of 2.4% TL (vs. a range of 2.9–15.3% TL), and having the count of 174 total slime pores (vs. 60–130).

*Description of the holotype.*—Proportions and counts given in Table 1. Body slender, worm-like, almost cylindrical, slightly wider than deep at pharyngocutaneous duct, body compressed behind cloaca and forming spatulate tail. Nostril opening at snout tip, not protruding. Eyespots and head grooves absent. Rostrum bluntly conical; unicuspid teeth long, slender, sharp, curved backward near tips; bases of anterior multicusps slightly bulbous. Single medial papilla on inner dorsal surface of nasal sinus. Three pairs of barbels; first pair shorter than second; third pair of barbels longest. First two pairs adjacent to nostril, third pair immediately

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**Fig. 1.** *Eptatretus aceroi*, holotype, INV PEC8257, 584 mm TL. Scale = 2 cm.

adjacent to oral cavity. Ventral finfold moderately developed (0.9% of TL), originating close to pharyngocutaneous aperture and extending to cloaca. Five gill apertures evenly spaced and arranged in a straight line on each side, plus one pharyngocutaneous duct opening on left side separated by a distance of 0.43% TL from last gill aperture (Fig. 2). Six branchial pores intercalated among gill apertures, pharyngocutaneous duct opening on left side. No pharyngocutaneous duct present in the right side, five pores intercalated among gill apertures (Fig. 2). Slime pores segmentally arranged on each side of body, extending from behind head to beyond cloaca. Multicuspid tooth on left side with 2/2 fused-cusps and 13 unicusps in outer row and 12 in inner row; right side with a 3/2 pattern of fused-cusps with 12 unicusps in outer and inner rows (Fig. 3).

***Coloration.***—Preserved specimen light to medium brown body. Head whitish. Body dark brown over ventral and caudal finfold. Slime pores with blackish halo around. Gill apertures with white margins.

***Distribution.***—Holotype captured off Cartagena, Colombia, at a depth of 705 m.

***Etymology.***—*Eptatretus aceroi* is named after Dr. Arturo Acero Pizarro, professor of the Universidad Nacional de Colombia, in recognition of his curiosity about, and important contributions to, the study of Colombian marine fishes.

***Comparisons.***—Five of the 13 western Atlantic species of *Eptatretus* and *Rubicundus* have five gill apertures (*Eptatretus aceroi*, *Eptatretus* sp. B Fernholm and Hubbs, 1981, *Eptatretus* sp. Shimizu, 1983, *E. wayuu*, and *R. lopheliae*). *Eptatretus aceroi* is slimmer than *Eptatretus* sp. B (body width 2.9% vs. 3.7% TL), with a shorter tail (9.4% vs. 14.6% TL), prebranchial length (22.7% vs. 25.0% TL) and first, second, and third barbel lengths (0.3, 0.4, and 0.6 vs. 1.0, 1.2, and 1.5% TL, respectively), a longer trunk (63.5% vs. 56.8% TL), higher number of trunk slime pores (107 vs. 48) and total cusp count (58 vs. 51). *Eptatretus aceroi* differs from *Eptatretus* sp. and *Eptatretus wayuu* by having a higher total cusp count (58 vs. 44

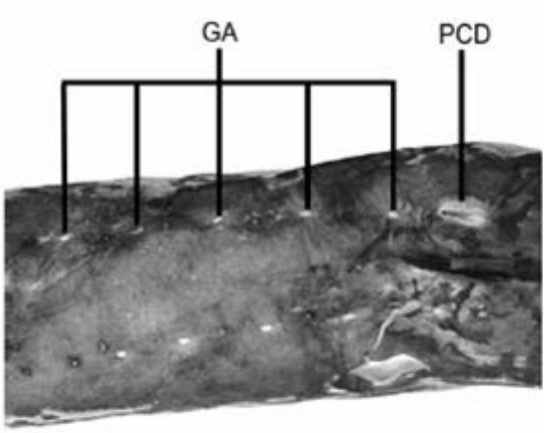


**Fig. 2.** Gill apertures (GA) and pharyngocutaneous duct (PCD) of *Eptatretus aceroi*, holotype, INV PEC8257, 584 mm TL.

and 41–43, respectively); and from *E. wayuu* by having greater branchial length (4.5% vs. 2.9–3.5% TL) and trunk length (63.5% vs. 47.8–50.1% TL); a shorter prebranchial length (22.7% vs. 32.9–33.1% TL) and tail (9.4% vs. 10.9–14.9% TL); a higher number of prebranchial (44 vs. 24), branchial (6 vs. 2), trunk (107 vs. 38–40), and tail slime pores (17 vs. 9); and having the pharyngocutaneous duct opening separated from the last gill aperture. *Eptatretus aceroi* differs from *Rubicundus lopheliae* by not having an elongated tubular nostril, having a longer trunk (63.5% vs. 49.0–53.0% TL), a shorter tail (9.4% vs. 20.4–22.0% TL) and branchial length (4.5% vs. 4.8–5.2% TL); not having the pharyngocutaneous duct opening confluent with the last gill aperture, a higher total cusp count (58 vs. 38–41) and total slime pore count (174 vs. 88–89).

## DISCUSSION

It is significant that *Eptatretus aceroi* was caught in a station in the Colombian Caribbean with clams and mussels of the families Solemyidae, Vesicomydae, Lucinidae, and Thyasiridae, along with empty tubes of vestimentiferan polychaetes of the family Siboglinidae that are typical chemosymbiotic metazoans observed at methane seep sites. In addition to the associated fauna, the geological characteristics of the area, such as accretionary prisms that favor cold seep formation, suggest the presence of such ecosystems in the region (Gracia et al., 2011) and the tolerance of *E. aceroi* to this habitat. Previous to this record, one member of the genus, *E. strickrotti*, was recorded from a hydrothermal vent site on the East Pacific Rise (Møller and Jones, 2007). *Eptatretus strickrotti* shares with *E. aceroi* the slender body shape, high number of slime pores, and a pharyngocutaneous duct opening separated from the last gill aperture on the left side. *Eptatretus strickrotti* differs from *E. aceroi* by having a higher number of gill apertures (12 vs. 5).

## ACKNOWLEDGMENTS

We thank the National Hydrocarbons Agency of Colombia, which funded the INVEMAR-ANH projects that made possible the collection of the holotype. We thank the research team of the Colombian Marine Natural History Museum that carried out the fieldwork, and the Laboratory of Geographical Information System of INVEMAR that provided the cartographic support. Thanks to J. Lazarus and A. Gordillo for the assistance with photography. This paper is a contribution number 1129 of INVEMAR and 385 of CECIMAR.

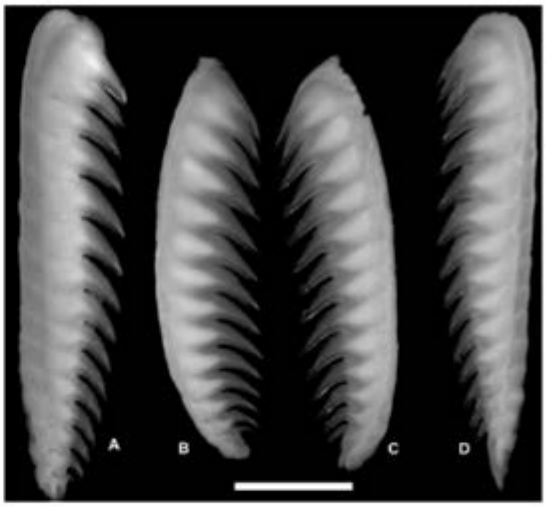


**Fig. 3.** Rows of teeth of *Eptatretus aceroi*: outer (A) and inner (B) rows of left side with 2/2 fused cusps and 13/12 unicusps, respectively; outer (D) and inner (C) rows of right side with 3/2 fused cusps and 12/12 unicusps, respectively. Scale = 1 mm.

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**Table 1.** Measurements and counts of the five-gilled western Atlantic species, *Eptatretus aceroi*, new species, *E.* sp. B (Fernholm and Hubbs, 1981), *E. wayuu* (Mok et al., 2001) *E.* sp. (Shimizu, 1983), and *Rubicundus lopheliae* (Fernholm and Quattrini, 2008). Range given for multiple specimens, * Left + right count for a single specimen. Table adapted from Fernholm and Hubbs (1981).

| | *Eptatretus aceroi* Holotype | *Eptatretus* sp. B | *Eptatretus wayuu* | *Eptatretus* sp. | *Rubicundus lopheliae* |
|---|---|---|---|---|---|
| Number of examined specimens | 1 | 1 | 2 | 1 | 3 |
| Depth of capture (m) | 705 | 590 | 300/306 | 820 | 430–442 |
| Total length TL (mm) | 584 | 308 | 216/194 | 558 | 175–202 |
| Measurements in % of TL | | | | | |
| Prebranchial length | 22.7 | 25.0 | 33.1/32.9 | | 21.0–24.0 |
| Branchial length | 4.5 | 3.9 | 2.9/3.5 | | 4.8–5.2 |
| Trunk length | 63.5 | 56.8 | 47.8/50.1 | | 49.0–53.0 |
| Tail length | 9.4 | 14.6 | 10.9/14.9 | | 20.4–22.0 |
| Body width | 2.9 | 3.7 | 6.0/9.5 | | 4.9–5.2 |
| Body depth | | | | | |
| Including ventral finfold (VFF) | 3.2 | 6.7 | 8.5/9.4 | | 6.5–8.6 |
| Excluding VFF | 2.4 | 6.2 | 7.0/7.7 | | |
| Over cloaca | 2.9 | 4.8 | 7.7/8.7 | | 6.6–7.5 |
| Tail depth | 3.1 | 6.7 | 10.1/11.0 | | 6.9–8.7 |
| Width caudal finfold | 0.7 | | | | |
| VFF length | 61.0 | | | | |
| VFF width | 0.9 | | | | |
| Barbel length | | | | | |
| First | 0.3 | 1.0 | | | |
| Second | 0.4 | 1.2 | | | |
| Third | 0.6 | 1.5 | | | |
| Counts | | | | | |
| Teeth | | | | | |
| Cusps on multicusps | 2/2+3/2 | 3/2 | 3/2 | 3/2 | 3/3–4 |
| Outer unicusps* | 13+12 | 10+10 | 9+9/8+8 | 8+8 | 12–14 |
| Inner unicusps* | 12+12 | 10+11 | 8+7 | 9+9 | 6+6 |
| Total cusps | 58 | 51 | 43/41 | 44 | 38–41 |
| Slime pores | | | | | |
| Prebranchial pores | 44 | 18 | 24 | | 19–21 |
| Branchial pores | 6 | 4 | 2 | | 4 |
| Trunk pores | 107 | 48 | 38/40 | | 45–47 |
| Caudal pores | 17 | 11 | 9 | | 17–20 |
| Total pores | 174 | 81 | 73/75 | 83 | 88–89 |
| Gill apertures* | 5+5 | 5+5 | 5+5 | 5+5 | 5+5 |

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Paper 2

## Annotated list of deepwater fishes from the Caribbean region

ANDREA POLANCO F. and ARTURO ACERO P.

Abstract

Knowledge of the deep-sea fish biodiversity in the Caribbean region is scarce. In this paper, an annotated list of the deep-sea fishes found in most of the Caribbean region is presented, based on a reexamination of museum specimens and records from recent deepwater surveys. That information lead us to present an annotated list of 555 species, 119 families, and 29 orders of fishes occurring below 200 m in the area bordered by the continental coast of Central and South America (from the Cape of Gracias a Dios in the Honduras-Nicaragua border to the mouth of the Orinoco river and to the eastern Caribbean. One hundred and two deepwater fish species have been described from Caribbean region or adjacent waters material. A general taxonomic description of the ichthyofauna composition is given.

Key words: fish fauna, list, deep-sea, Caribbean region, voucher material.

### Materials and methods

The study area was determined following the latest marine biogeographic classification system proposed by Spalding et al. (2007) into marine ecoregions (Marine Ecoregions of the World or MEOW). In this classification the Greater Caribbean is part of the Tropical Northwestern Atlantic Province which comprises nine ecoregions: Western Caribbean, Southwestern Caribbean, Eastern Caribbean, Southern Caribbean, Greater Antilles, Bermuda, Bahamian, Southern Gulf of Mexico, and Floridian. The study is concentrated on the Southern Caribbean, Southwestern Caribbean, and part of the Eastern Caribbean ecoregions. But as stated in Spalding et al. (2007), this classification has been heavily influenced by data from nearshore and intertidal

biotas, and data from deeper waters typically had decreasing influence on boundary definitions. Following such statement, in this paper the complete region of study is referred to as the Caribbean region. This region was designated arbitrary and a priori based on the assumption of relative homogeneous composition of species associated to the predominance of small number of ecosystems in the deep-sea and common oceanographic and topographic features shared among the different basins and ridges (Colombia, Venezuela, and Grenada Basins and Beata and Aves ridges). Caiman Trench and Yucatan Basin are considered separated realms from the one that are object of study here. This division is based on the description of the physical topography of the area and the deep water circulation. Smith et al. (2002) stated that the Caribbean Basin is connected to the Gulf of Mexico through the Yucatan channel which allows passage of water to the channel's maximum sill depth of 2040 m. The Mexico Basin has been suggested to have infrequently exchange of water with adjacent bodies and high rates of residence times in deep-sea waters below 1500 m (NAS, 1990).

The North Atlantic Deep Water, Antartic Intermediate Water, and Subtropical Underwater are the three waters masses that influence the deep-sea environment of the Caribbean region. The upper layers of the North Atlantic Deep Water enter to the Caribbean Basin through the Winward Passage (1540 m) and the Anegada and Jungfern Passages (1800 m) and mix with the Antartic Intermediate Water that enter by several points with sill depths among 800 to 1400 m. The so formed mixture fills the lower reaches of the Caribbean Basin with uniform bottom water (Smith et al., 2002). The Western Boundary current is the most remarkable feature about water displacement in the region. It flows through several passages in the Winward Islands to become the Caribbean current, a warm and strong body of water that moves along the region to reach the Yucatan Chanel (Smith et al., 2002).

The area of coverage was defined by 18° N, corresponding to the southern coast of Jamaica, La Hispaniola, Puerto Rico, and Saint Maarten and 60° W, corresponding to the western coast of Martinique, St Lucia, and

the eastern of Trinidad. In the west and south, it is defined by the corresponding coastal line of Central and South America. In this paper , deep-sea fishes refers to all fishes caught below 200 m, a bathymetric boundary that represents the transition from the continental shelves to the continental slope (Tyler, 2003). All the georeferenced fishes records found below 200 m are included. The species may have a wider depth distribution over the world, but only the bathymetric distribution found in the study area is included here.

The study material primarily comes from the U.S. Coast and Geodetic Survey Steamer Blake, Agassiz-Albatross expedition, the National Marine Fisheries Service of United States cruises on board of the R/V Oregon and R/V Oregon II, the Woods Hole Oceanographic surveys on board of the R/V Atlantis, R/V Chain and R/V Atlantis II and other collects in the RV Gillis, the University of Miami on board of the R/V John Elliot Pillsbury, the cruises of INVEMAR on board of the B/I , and some records that were available from the OSPESCA survey on board of the B/O Miguel Oliver. Other records of different vessels (R/V Gerda, R/V Canopus, R/V Mizar, R/V Geronimo, and R/V Bartlett) added just one record each.

In addition to vouchers (catalogued specimens reviewed to confirm identifications), unverified holotypes and at least one paratype, if existed, of the species described from a location inside the study area were included. Those records are presented with an asterix at the beginning of the corresponding line, as well as some outstanding records that are discussed in the text. Unverified georeferenced records from the literature inside the study area were mentioned as text leading to the reference that contained it. Some unverified types that are included in the text of a species with more examinated material appear in italic writing. Unverified records do not mean unreliable records, just that their identification cannot be confirmed. The majority of the studied material is deposited in the National Museum of Natural History (USNM) - Smithsonian Institution, the Museum of Comparative Zoology (MCZ) – University of Harvard, the Florida Museum of Natural History (UF) - University of Florida, and the Colombian Marine Museum of Natural History (INV PEC) - INVEMAR. A small number of samples were reviewed from the Academy of Natural Sciences of Philadelphia (ANSP) – University

of Drexel. Institutional abbreviations are as listed at http://www.asih.org/codons.pdf (Sabaj Pérez 2013). The arrangement of orders and families follow Nelson (2006) and the spelling and citations of all scientific names follow Eschmeyer (2014). Common species names, when available, are derived from Carpenter 2002 (FAO), Page et al. 2013 (AFS), and Froese and Pauly 2014 (Fishbase). All lengths are given in millimeters after the number of specimens per lot, with the correspondent measurement abbreviation of total length (TL) or standard length (SL) unless indicated differently, such as HL (head length) or FL (fork length). Most lengths were taken from the original description in the case of types, from the museum databases, or from the literature, in the last case the original reference is quoted in the text. The resulting list was compared with the deep-sea fish fauna of the Gulf of Mexico extracted from McEachran (2009), filtrating all the species present below 200 m that have habitats, depths, substrates, and distribution as following: abyssal, benthic, benthopelagic, bathypelagic, burrower, demersal, deep-sea, and mesopelagic. The classification was homogenized following Nelson (2006).

Paper 3

## The benthic ecosystem in the continental slope: An approach from the deep-sea demersal fishes diversity and distribution in the Colombian Caribbean

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Abstract

Knowledge of the benthic deep-sea ecosystems of the continental slope of the Colombian Caribbean has increased in the two last decades. Initially, campaigns were developed to improve the inventory of marine species of the country and then to gain a better understanding of the benthic ecosystem due to the increase of interest for oil and gas exploration. The distribution pattern of the deep-sea demersal fishes in the continental slope is assessed. A multivariate regression tree (MRT) analysis was performed to identify among

different environmental factors which are influencing the fishes distribution, testing hypotheses of correlation between the distributional patterns and the bathymetric (200 to 980 m), geographic (east-west) and topographic (bottom landscape) ranges. Six fish assemblages were found in the Colombian Caribbean slope zoned by depth and geographical location. The results highlighted a northeastern region that presents the higher concentration of species richness and abundances between the lower part of the upper slope and the upper part of the middle slope (275 – 602 m). From a conservation perspective, these data add new support to the existence of deep-sea ecosystems acting as biodiversity hot spots in the Colombian Caribbean continental slope, reinforcing the importance of develop further studies using the appropriate technology towards a good management and protection of the marine resources.

Key words: Deep-sea fishes, Colombian Caribbean, continental slope, demersal fish community, deep-sea.

## Materials and methods

Study area. The Colombian Caribbean is influenced by the three waters masses that influence the deep-sea environment of the Caribbean region: The North Atlantic Deep Water, Antartic Intermediate waters and Subtropical Underwater. The upper layers of the North Atlantic Deep Water enter to the Caribbean Basin through the Winward Passage (1540 m) and the Anegada and Jungfern Passages (1800 m) and mixed with the Antartic Intermediate Water that enter by several points with sill depths among 800 to 1400 m. That forms a mixture that fills the lower reaches of the Caribbean Basin with uniform bottom water (Smith et al., 2002). About the displacement of water in the region, the Western Boundary current is the most remarkable feature. It flows through several passages in the Winward Islands to become the Caribbean current, a warm and strong body of water that moves along the region to reach the Yucatan Chanel (Smith et al., 2002).

The study area is located within 11°50’ N – 71°18’ W (Castilletes) to 08°42’ N – 77°19’ W (Cabo Tiburón) in the continental upper slope of Colombian Caribbean Sea, known as Caribana upper slope (Tabares et al.,

1996). Follow the geomorphological and sedimentary description of the Colombian Caribbean region presented in Rangel and Idarraga (2010), the slope of the Colombian Caribbean is limited between the 200 and 3500 isobaths with amplitude of 100 km, bordering a vast abyssal plain denominated the Colombian Basin. This abyssal zone range in depths between 3500 and 4000 m and limits to the east with the Beata ridge, northwest with the Hess scarp, west with the Panamian arc and to the south with the Colombian continental slope. Tabares et al. (1996) divided the continental slope in two geomorphological different regions. One irregular relief region comprises the slope from South of the Continental shelf in the Guajira region to Barranquilla and from Cartagena and the Morrosquillo Gulf , that is characterized by series of deep trenches and troughs, separated by shallow sills and shelves. And, another regular relief region, located in both extremes of the Colombian Caribbean slope and a central part that is characterized by uniformly tilted bottoms.

Sampling strategy. The data were obtained from bottom trawls catches, on board of the B/I Ancon, an eighteen meters research vessel operated by INVEMAR. Four oceanographic expeditions were made from November 1998 to June 2008 which included samples taking among 200 to 980 m depth (Macrofauna I, Macrofauna II stations below 200 m, ANH I, ANH II projects). A total of 84 stations were sampled using a semi-balloon trawling net with a mouth opening of 9 × 1 m, equipped with a protective bag of polyethylene with 10 mm stretched mesh-size at the cod-end, and operated at 3 knots in 20 minute hauls. On board the samples were washed with water in a 500 mm sieve. Each sample was separated and fixed in 10% formalin and then transported to INVEMAR laboratories. Macrofauna I and II stations were sampled with two trawls of 10 minutes each, the capture of these two trawls were summarized to standardize the four cruises to 20 min sampling. This fact introduces changes that have to be considered in the results. The catch from each station was sorted and identified to the lower level possible and then deposited in the fish collection of the Colombian Marine Natural History Museum (MHNMC) of INVEMAR, accession numbers can be found in the following address http://siam.invemar.org.co/siam/sibm/index.jsp through the name projects mentioned above.

The undersea bottom features used in this study follow the bathymetric interpretation made by Navas et al. (2010) with the Benthic Terrain Modeler (Wright et al. 2005) from the ArcGIS software (ESRI 2004). The nomenclature of the features follows the Intergovernmental Oceanographic Commission Standardization of undersea feature names (IHO-IOC 2001). It must be consider that the bathymetric estimation of the undersea features have a completely different scale of the sampled stations causing an uncertain approach. The stations can be included on the mentioned feature or in an adjacent imperceptible one because of the different scales of work. Temperature, salinity and oxygen data of the bottom (using a mean of the last then meters) of the two last expeditions were available to use as physical factors different of the bottom topography. Those data were used and extrapolated to the nearest station of the Macrofauna projects. The use of different scales of work and the extrapolation of environmental data increase the uncertainty or the results but those assumptions are used in the absence of better options with the actual knowledge of the deep-sea in the region.

Multivariate statistical analyses

The multispecies data set were summarized in an abundance matrix of species in each sampled site of the Colombian Caribbean slope with their respective bathymetry, georeferenced position (latitudinal and longitudinal values), landscape, water mass, temperature, salinity and oxygen values associated to the bottom. Prior to multivariate analyses, a Hellinger transformation was applied to the data set, dividing each species' abundance value by the sum of the species present at the site, and then taking the R2. Then, to produce a model of distribution patterns of fishes for the Colombian Caribbean continental slope based on species-environment data a Multivariate Regression Tree (MRT) was performed. The MRT (De'ath, 2002) is a clustering method which bases its clusters on explanatory variables that act as constraints on the formation of the groups. The tree structure using the 'mvpart' library (De'ath, 2002) is generated by partitioning the whole dataset into mutually exclusive groups. It is grown by successive binary splits of the data, each split

involving a breakpoint in the environmental variable. Each split is chosen to minimize the total multivariate sum of squares within the two groups formed, or maximize the $R^2$ (or equivalently the among-group sum-of-squares) at each division step. The tree with the lowest cross-validation error (CV) was chosen as the best predictive tree. At the end of the procedure, each leaf of the tree is characterized by a number of sites, the multivariate mean of the sites, and the explanatory variable values that define it. A maximum of 1000 random starts in search of the stable solution. All calculations were done through R language functions (R Development Core Team, 2006). To support results of the MRT and to analyze relationship between environmental factors and the distribution pattern of the slope fish assemblages, non-metric multidimensional scaling (NMDS) analyses were performed using the vegan package of R statistical environment (Bockart et al. 2011). The NMDS procedure was used with default options using the Bray-Curtis dissimilarity, instead of the Euclidean distance for ordination, due to the interest in the compositional dissimilarity between the sites rather than in raw differences on abundance of one species or another. A maximum of 1000 random starts in search of the stable solution. To explore the relationships between the distributional patterns and the environmental variables, the relevant variables were overlaid on the ordination using the ordisurf function that fits smooth surfaces using generalized additive models with thin plate splines (Wood 2000). An Indicator Species Analysis (INDVAL) was performed to find indicator species characterizing the obtained groups (Dufrene and Legendre 1997). This method combines information on a species mean abundances and its frequencies of occurrence in the group. In this case that the data were clustering on group sites on the basis of independent data as the environmental variables, the indicator species can be considered related to the ecological conditions of their groups (Bockart et al. 2011). The INDVAL method were performed using the labdsv package of R statistical environment (Bockart et al. 2011).The significance was established using a minimum association value of 0.5.

**Der Lebenslauf wurde aus der elektronischen Version der Arbeit entfernt.**

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