

# State of research of the Osteichthyes fish related to coral reefs in the Honduran Caribbean with catalogued records

## Estado del conocimiento de los peces osteíctios asociados a los arrecifes de coral en el Caribe de Honduras, con registros catalogados

Anarda Isabel Salgado Ordoñez<sup>1</sup>, Julio Enrique Mérida Colindres<sup>1\*</sup> & Gustavo Adolfo Cruz<sup>1</sup>

### ABSTRACT

Research on Honduran coral reef fish has been isolated and scattered. A list of fish species related to coral reefs was consolidated to establish a compiled database with updated taxonomy. The study was conducted between October 2017 and December 2018. Using primary and secondary sources, all potential species in the Western Atlantic were considered, and their actual presence was confirmed using catalogued records published in peer-reviewed journals that included Honduras. In addition, the specimens kept in the Museum of Natural History of *Universidad Nacional Autónoma de Honduras* were added. Once the list was consolidated, the taxonomic status of each species was updated based on recent literature. A total of 159 species and 76 genera were registered in 32 families. The family with the most species was Labrisomidae with 27 species (17%). Five families had more than five 5 genera registered, while four 4 were represented by more than 16 species, which is equivalent to 42% genera and 51% species. Gobiidae was represented by 10 genera (13%) and 21 species (13%), of which two 2 were endemic: *Tigrigobius rubrigenis* and *Elacatinus lobeli*. In turn, Grammatidae was represented by one endemic species *Lipogramma idabeli* (1.8%). The species *Diodon holocanthus* and *Sphoeroides testudineus* represent the first catalogued records for Honduras.

**Keywords:** Bleniidae, Chaenopsidae, Clinidae, fish database, Serranidae

### RESUMEN

Las investigaciones en peces de arrecife en Honduras han sido aisladas y dispersas. Se consolidó una lista de especies de peces asociadas a los arrecifes de coral, con el objetivo de establecer una base compilada con su taxonomía actualizada. Este estudio se desarrolló entre octubre de 2017 y diciembre de 2018. Se consideró las especies potenciales incluidas en el Atlántico occidental, basadas en fuentes primarias y secundarias, así como se confirmó su presencia mediante registros catalogados publicados de revistas de revisión por pares que incluyeran Honduras. Además, se

1 Museo de Historia Natural, Universidad Nacional Autónoma de Honduras, Boulevard Suyapa 11101, Tegucigalpa, Francisco Morazán Honduras. [anarda.salgado@unah.edu.hn](mailto:anarda.salgado@unah.edu.hn), [julio.merida@unah.edu.hn](mailto:julio.merida@unah.edu.hn)\*

incorporó especímenes depositados en el Museo de Historia Natural de la Universidad Nacional Autónoma de Honduras. Una vez consolidada la lista, se actualizó el estado taxonómico de cada especie, con base en la literatura reciente. En total, se registraron 159 especies y 76 géneros en 32 familias. La familia con más especies fue Labrisomidae con 27 (17%). Cinco familias registraron más de 5 géneros y cuatro estuvieron representadas por más de 16 especies, equivalentes al 42% de géneros y al 51% de especies. Gobiidae estuvo representada por 10 géneros (13%) y 21 especies (13%), de las cuales dos fueron endémicas: *Tigrigobius rubrigenis* y *Elacatinus lobeli*. A su vez, Grammatidae estuvo representada con una especie endémica *Lipogramma idabeli* (1.8%). Las especies *Diodon holocanthus* y *Sphoeroides testudineus* representan los primeros registros catalogados para Honduras.

**Palabras clave:** Bleniidae, Chaenopsidae, Clinidae, base de datos de peces, Serridae

## INTRODUCTION

Taxonomic inventories are used to measure site diversity (Magurran, 1988). In addition, the number and/or presence of species have been adopted to compare sites (Gotelli and Colwell, 2001). Therefore, richness is fundamental in biodiversity, biogeography, and conservation biology studies (Fourrière *et al.* 2016). Since species can shift their distribution through time due to different factors (environmental, ecological, or anthropogenic) and taxonomy changes and new species are registered, it is important to update local inventories (Fourrière *et al.* 2016; Galván-Villa *et al.* 2016). No comprehensive checklist of Honduran coral reef fish is available; in fact, only two scientific studies have been conducted on Honduran coral reef fish (Greenfield & Johnson, 1981; Clifton & Clifton, 1998). Consequently, our objective is to generate and updated a compiled list

based on the current taxonomic status of fish families related to coral reefs in the Honduran Caribbean.

## MATERIALS AND METHODS

The study was conducted between October 2017 and December 2018. All potential species listed for the Western Atlantic that included Honduras were considered (Floeter *et al.* 2008). This list was complemented with other primary and secondary sources, such as journals, catalogues, and databases (Acero, 1985; Carpenter, 2002a; Carpenter, 2002b; Robertson & Van Tassell, 2019; Eschmeyer *et al.* 2019; World of Register of Marine Species-WoRMS Editorial Board, 2019; Froese & Pauly, 2019). Since defining species as 'reef fish' is difficult (Bellwood & Wainwright, 2002; Rocha, 2003), the lists of reef fish families proposed by Thresher (1991) and Bellwood (1996) were the ones used as a criterion. After a basic list was prepared, articles were consulted to confirm records of occurrence of

species in Honduras and to search for any taxonomic changes in taxa to update the list. Most species were added to the list based on reported scientific collections in peer-reviewed journals. In addition, specimens in the fish collection of the Museum of Natural History of *Universidad Nacional Autónoma de Honduras* at the University's main campus (*Ciudad Universitaria*) (UNAH-CU) were also included. Each species listed was reviewed to ensure the correct taxonomic synonym. Nelson *et al.* (2016) was followed for the suprageneric classification, while Eschmeyer *et al.* (2019) and WoRMS (2019) were followed for the species generic and current taxonomic status. WoRMS (2019) was used when there were inconsistencies on the taxonomic classification.

## RESULTS

The following are the most important results. Two new families were found (Chaenopsidae and Labrisomidae), which were originally considered part of another family (Clinidae). In addition, twenty-one species had changes in their taxonomy (genera and/or species) and one family had changes in one genus. Eight species were also found to be misspelled (Tables 1 and 2). *Gramma linki* was mentioned to occur in Central America (Colin, 1974; Starck & Colin, 1978; Acero, 1985; Smith-Vaniz &

Böhlke, 1991), and *Lipogramma evides*, *L. klayi*, and *Hypleurochilus aequipinnis* were mentioned to occur in Honduras (Acero, 1985), as well as *Clepticus parrae* (= *C. parrai*) and *Scarus isieri* (= *S. isierti*) (Clifton & Clifton, 1998); however, there was no confirmation or catalogued records in Honduras of any of them. Clifton & Clifton (1998) erroneously assigned the specific epithet *bahamensis* to the genus *Coralliozetus* and placed this genus under Labrisomidae, although Stephens (1961) originally added it to the family Chaenopsidae together with *Emblemariopsis bahamensis*. In Belize and Honduras (B-H), Greenfield & Johnson (1981) published occurrences of *Emblemariopsis leptocirris* (first record in B-H), *E. pricei* (B-H), and *E. signifera* (B-H). Nevertheless, no data for *E. bahamensis* is presented for Honduras, hence, its presence needs to be confirmed in that region. On other hand, the genus *Coralliozetus* is represented only by one species in Belize: *C. cardonae*. However, it is listed in Fishbase to be in Honduras (Froese & Pauly, 2019) based on Acero (1985), who lists only one *Coralliozetus* species (*Coralliozetus* sp.) for Colombia as part of the subfamily Chaenopsinae and the family Clinidae. Accordingly, since *E. bahamensis* was not registered for Honduras or any other species of the genus *Coralliozetus*, none of them were included on this paper. As to *Lucayablennius zingaro*, Clifton &

Clifton (1998) locate this genus as part of the family Labrisomidae. Böhlke identified *Lucaya zingaro* in 1957 and subsequently proposed changing it from *Lucaya* to *Lucayablennius* given *Lucaya* was already preoccupied (Böhlke 1958), maintaining the *zingaro* species type (*Lucaya zingaro* = *Lucayablennius zingaro*) and the original description of the species under the subfamily Chaenopsinae (Böhlke, 1957) (= Chaenopsidae). Therefore, the species is part of Chaenopsidae, rather than Labrisomidae. Kähnsbauer (1972) reported *Eupomacentrus fuscus* and *E. flavilatus*, while Emery & Allen (1980) indicated that *Eupomacentrus* is a synonym of *Stegastes*, which historically precedes *Eupomacentrus* Bleeker. Consequently, the criterion followed here was Emery and Allen's for the genus synonym. For Allen (1991), *S. flaviatus* is distributed throughout the eastern Pacific. Accordingly, since the

identity of these specimens reported by Kähnsbauer (1972) should be reviewed, *S. flaviatus* was not included on the list. On the other hand, *Abudefduf saxatilis* was classified under the family Labridae by Kähnsbauer (1972), even though it belongs to Pomacentridae. Similarly, *Stathmonotus sthali tekla* was presented as part of the family Labrisomidae by Greenfield & Johnson (1981), although in the latest revision of the genus *Stathmonotus* conducted by Springer (1955) it was classified under Chaenopsidae. Given that Nelson et al. (2016), Hastings and Springer (2009), and Patzner et al. (2009) included *Stathmonotus* as part of Chaenopsidae, this was the criterion followed. Six species listed by Randall (1996) were confirmed since it is a recognized source, which makes their identification reliable, even though these species need catalogue records.

Table 1. Genus and species for Honduras with sources and taxonomic status changed and authorities proposing the change followed in this study

Cuadro 1. Género y especies con su fuente para Honduras que han cambiado su estatus taxonómico con la referencia de autoridad que propone el cambio y que se sigue en este estudio

Reported as	Reported by	Current status	Authority reference
<i>Adioryx coruscus</i>	Clifton & Clifton (1998)	<i>Sargocentron coruscum</i>	Matsuura & Shimizu (1982); Randall (1996); Smith-Vaniz <i>et al.</i> (1999); Floeter <i>et al.</i> (2008)
<i>Adioryx vexillarius</i>	Clifton & Clifton (1998)	<i>Sargocentrum vexillarium</i>	Matsuura & Shimizu (1982); Randall (1996); Smith-Vaniz <i>et al.</i> (1999); Floeter <i>et al.</i> (2008)
<i>Alectis crinitus</i>	Clifton & Clifton (1998)	<i>Alectis ciliaris</i>	Nichols (1920); Floeter <i>et al.</i> (2008)

Reported as	Reported by	Current status	Authority reference
<i>Arcos rubiginosus</i>	Clifton & Clifton (1998)	<i>Acyrtus rubiginosus</i>	Böhlke & Chaplin (1993); Eschmeyer <i>et al.</i> (2019); Froese & Pauly (2019); WoRMS (2019);
<i>Chaetodon aculeatus</i>	Clifton & Clifton (1998)	<i>Prognathodes aculeatus</i>	Burgess (1978); Fessler & Westneat (2007); Littlewood <i>et al.</i> (2004) Nelson <i>et al.</i> (2016)
<i>Elacatinus rubrigenis</i>	Victor (2010)	<i>Tigrigobius rubrigenis</i>	Victor (2014)
<i>Epinephelus cruentatus</i>	Clifton & Clifton (1998)	<i>Cephalopholis cruentata</i>	Craig <i>et al.</i> (2001); Eschmeyer <i>et al.</i> (2019); WoRMS (2019)
<i>Epinephelus fulvus</i>	Clifton & Clifton (1998)	<i>Cephalopholis fulva</i>	Eschmeyer <i>et al.</i> (2019); WoRMS (2019)
<i>Gobiosoma oceanops</i>	Clifton & Clifton (1998)	<i>Elecantinus oceanops</i>	Hoese & Reader (2001)
<i>Gobiosoma xanthiprora</i>	Clifton & Clifton (1998)	<i>Elecantinus xanthiprora</i>	Hoese & Reader (2001)
<i>Halicampus crinitus</i>	Acero (1985)	<i>Micrognathus crinitus</i>	Dawson (1982b)
<i>Heteroconger halis</i>	Clifton & Clifton (1998)	<i>Heteroconger longissimu</i>	Saldanha <i>et al.</i> (1986); Floeter <i>et al.</i> (2008)
<i>Labrisomus albigenys</i>	Greenfield & Johnson (1981); Acero (1985), and Floeter <i>et al.</i> (2008)	<i>Brockius albigenys</i>	Lin & Hastings (2013)
<i>Lactophrys polygonia</i>	Clifton & Clifton (1998)	<i>Acanthostracion polygonius</i>	De Astarloa & Figuero (1995); Smith-Vaniz <i>et al.</i> (1999)
<i>Lactophrys polygonia</i>	Clifton & Clifton (1998)	<i>Acanthostracion polygonius</i>	WoRMS (2019)
<i>Lactophrys quadricornis</i>	Clifton & Clifton (1998)	<i>Acanthostracion quadricornis</i>	De Astarloa & Figuero, (1995); Smith-Vaniz <i>et al.</i> (1999)
<i>Micrognathus ensenadae</i>	Clifton & Clifton (1998)	<i>Micrognathus crinitus</i>	Acero (1985); Dawson (1982b)
<i>Micrognathus tectus</i>	Dawson (1978)	<i>Anarchopterus tectus</i>	Acero (1985); Dawson (1982b)
<i>Priacanthus cruentatus</i>	Clifton & Clifton (1998)	<i>Heteropriacanthus cruentatus</i>	Fitch & Crooke (1984); Starnes (1988)
<i>Rypticus brachyrhinus</i>	Courtenay 1967	<i>Rypticus randalli</i>	Guimarães (1999), WoRMS (2019)
<i>Stathmonotus sthali tekla</i>	Greenfield & Johnson (1981)	<i>Stathmonotus tekla</i>	Hastings & Springer (2009); Paztner <i>et al.</i> (2009)
<i>Stegastes dorsopunicans</i>	Clifton & Clifton (1998)	<i>Stegastes adustus</i>	Smith-Vaniz <i>et al.</i> (1999)

Table 2. Misspelled families, genera, and species with bibliographic source for Honduras and the authority reference followed in this study

Cuadro 2. Familias, géneros y especies, con su fuente bibliográfica para Honduras, mal escritos y la referencia de la autoridad que se sigue en este estudio

Misspelled	Reported by	Current status	Authority reference
Grammidae	Clifton & Clifton (1998)	Grammatidae	Sheiko (2013); Steykal (1980); Floeter <i>et al.</i> (2008); Nelson (2016)
<i>Liopogramma</i>	Nelson <i>et al.</i> (2016)	<i>Lipogramma</i>	Böhlke (1960)
<i>Chromis cyaneus</i>	Clifton & Clifton (1998)	<i>Chromis cyanea</i>	Smith-Vaniz & Emerit (1980)
<i>Chromis insulatus</i>	Clifton & Clifton (1998)	<i>Chromis insolata</i>	Smith-Vaniz & Emerit (1980)
<i>Chromis multilineatus</i>	Clifton & Clifton (1998)	<i>Chromis multilineata</i>	Smith-Vaniz & Emerit (1980)
<i>Clepticus parrai</i>	Clifton & Clifton (1998)	<i>Clepticus parrae</i>	Eschmeyer <i>et al.</i> (2017)
<i>Haemulon plumieri</i>	Clifton & Clifton (1998); Jaxion-Harm <i>et al.</i> (2012)	<i>Haemulon plumierii</i>	Jaxion-Harm <i>et al.</i> (2012)
<i>Lipogramma regium</i>	Carpenter (2002a)	<i>Lipogramma regia</i>	Robins & Colin (1979)
<i>Lipogramma trilineatum</i>	Carpenter (2002a)	<i>Lipogramma trilineata</i>	Randall (1963)
<i>Scarus iserti</i>	Clifton & Clifton (1998)	<i>Scarus iseri</i>	Eschmeyer <i>et al.</i> (2018)

Even though 412 species (representing 162 genera and 40 families) were initially found from different sources, the list based on catalogue records reflects 159 species (76 genera in 32 families) (Table 3). Five families registered more than five genera, of which four were represented by more than 16 species (42% genera and 51% species). Gobiidae is represented by 10 genera (13%) and 21 species (13%), while Chaenopsidae and Serranidae are represented by 6 genera each and Labrisomidae and Blenniidae by 5. Labrisomidae is the family

represented by the most species (27, 17%), followed by Gobiidae (21, 13%), Serranidae (17, 10%), Apogonidae (16, 10%), and Chaenopsidae (10, 6 %). These families represent 42% of genera and 57% of species. However, according to Floeter *et al.* (2008) Gobiidae and Serranidae are the most speciose families for the entire northwestern Atlantic. Gobiidae has two endemic species: *Tigrigobius rubrigenis* and *Elacatinus lobeli*, which are shared with Belize, and Grammatidae has one endemic species, *Lipogramma idabeli*, representing 1.8% of endemics. The

paper also presents the first records (UNAH-CU 0302), which were for *Sphoeroides testudineus* (UNAH-CU 0301) and *Diodon holocanthus* (UNAH-CU 0302), which were collected by G.A. Cruz in 1998 in Cayos Cochinos.

Table 3. List of fish related to coral reefs with catalogued records in the Honduran Caribbean and their current status and selected references, with plus sign the new registers of species

Cuadro 3. Lista de peces asociados a los arrecifes de coral con registros catalogados en el Caribe de Honduras, con su estatus actual y referencias selectas, con signo de más los nuevos registros de especies

No.	Order and family	Genus/species	References
1	PHYLUM CHORDATA Class OSTEICHTHYES Order ANGUILLIFORMES Muraenidae Rafinesque, 1815	<i>Echidna catenata</i> (Bloch, 1795)	(Floeter <i>et al.</i> 2008; Carpenter, 2002a; Clifton & Clifton, 1998; Kähnsbauer, 1972)
2	Order AULOPIFORMES Synodontidae Gill, 1861	<i>Synodus foetens</i> (Linnaeus, 1766)	(Frale, <i>et al.</i> 2013; Floeter <i>et al.</i> 2008; Carpenter, 2002a; Anderson <i>et al.</i> 1975)
3		<i>Synodus intermedius</i> (Spix & Agassiz, 1829)	(Frale <i>et al.</i> 2013; Floeter <i>et al.</i> 2008; Carpenter, 2002a; Clifton & Clifton, 1998; Anderson <i>et al.</i> 1975)
4	Order HOLOCENTRIFORMES Holocentridae Bonaparte, 1833	<i>Holocentrus adscensionis</i> (Osbeck, 1765)	(Floeter <i>et al.</i> 2008; Carpenter, 2002b; Clifton & Clifton, 1998; Kähnsbauer, 1972)
5		<i>Sargocentron vexillarium</i> (Poey, 1860)	(Floeter <i>et al.</i> 2008; Carpenter, 2002b; Clifton & Clifton, 1998; Randall, 1996)
6	Order BATRACHOIDIFORMES Batrachoididae Jordan, 1896	<i>Porichthys bathoiketes</i> Gilbert, 1968	(Carpenter, 2002a; Gilbert, 1968)
7		<i>Porichthys porosissimus</i> (Cuvier, 1829)	(Gilbert, 1968)
8	Order KURTIFORMES Apogonidae Günther, 1859	<i>Apogon aurolineatus</i> (Mowbray, 1927)	(Floeter <i>et al.</i> 2008; Carpenter, 2002a; Greenfield & Johnson, 1990)
9		<i>Apogon binotatus</i> (Poey, 1867)	(Floeter <i>et al.</i> 2008; Carpenter, 2002a; Greenfield & Johnson, 1990)
10		<i>Apogon lachneri</i> Böhlke, 1959	(Floeter <i>et al.</i> 2008; Carpenter, 2002a; Greenfield & Johnson, 1990)
11		<i>Apogon maculatus</i> (Poey, 1860)	(Floeter <i>et al.</i> 2008; Carpenter, 2002a; Clifton & Clifton, 1998; Greenfield & Johnson, 1990)

No.	Order and family	Genus/species	References
12		<i>Apogon phenax</i> Böhlke & Randall, 1968	(Floeter <i>et al.</i> 2008; Carpenter, 2002a; Randall, 1996; Greenfield & Johnson, 1990)
13		<i>Apogon pillionatus</i> Böhlke & Randall, 1968	(Floeter <i>et al.</i> 2008; Carpenter, 2002a; Clifton & Clifton, 1998; Greenfield & Johnson, 1990)
14		<i>Apogon planifrons</i> Longley & Hildebrand, 1940	(Floeter <i>et al.</i> 2008; Carpenter, 2002a; Greenfield & Johnson, 1990)
15		<i>Apogon pseudomaculatus</i> Longley, 1932	(Floeter <i>et al.</i> 2008; Carpenter, 2002a; Clifton & Clifton, 1998; Greenfield & Johnson, 1990)
16		<i>Apogon quadrisquamatus</i> Longley, 1934	(Floeter <i>et al.</i> 2008; Carpenter, 2002a; Greenfield & Johnson, 1990)
17		<i>Apogon robbyi</i> Gilbert & Tyler, 1997	(Floeter <i>et al.</i> 2008; Carpenter, 2002b; Gilbert & Tyler, 1997)
18		<i>Apogon townsendi</i> (Breder, 1927)	(Floeter <i>et al.</i> 2008; Carpenter, 2002a; Clifton & Clifton, 1998; Greenfield & Johnson, 1990)
19		<i>Astrapogon puncticulatus</i> (Poey, 1867)	(Floeter <i>et al.</i> 2008; Carpenter, 2002a; Clifton & Clifton, 1998; Greenfield & Johnson, 1990)
20		<i>Astrapogon stellatus</i> (Cope, 1867)	(Floeter <i>et al.</i> 2008; Carpenter, 2002a; Greenfield & Johnson, 1990)
21		<i>Phaeoptyx conklini</i> (Silvester, 1915)	(Floeter <i>et al.</i> 2008; Carpenter, 2002a; Greenfield & Johnson, 1990)
22		<i>Phaeoptyx pigmentaria</i> (Poey, 1860)	(Floeter <i>et al.</i> 2008; Carpenter, 2002a; Greenfield & Johnson, 1990)
23		<i>Phaeoptyx xenus</i> (Böhlke & Randall, 1968)	(Floeter <i>et al.</i> 2008; Carpenter, 2002a; Clifton & Clifton, 1998; Greenfield & Johnson, 1990)
24	Order GOBIIFORMES Gobiidae Cuvier, 1816	<i>Bollmannia boqueronensis</i> Evermann & Marsh, 1899	(Van Tassell <i>et al.</i> 2012; Floeter <i>et al.</i> 2008; Gilbert, 1971)
25		<i>Chriolepis fisheri</i> Herre, 1942	(Van Tassell, 2011; Dennis <i>et al.</i> 2004)
26		<i>Coryphopterus dicrus</i> Böhlke & Robins, 1960	(Floeter <i>et al.</i> 2008; Greenfield & Johnson, 1999; Clifton & Clifton, 1998)
27		<i>Coryphopterus glaucofraenum</i> Gill, 1863	(Floeter <i>et al.</i> 2008; Greenfield & Johnson, 1999; Clifton & Clifton, 1998; Hanlon & Kaufman, 1976)
28		<i>Coryphopterus kuna</i> Victor, 2007	(Victor <i>et al.</i> 2010)
29		<i>Coryphopterus personatus</i> (Jordan & Thompson, 1905)	(Floeter <i>et al.</i> 2008; Hepburn <i>et al.</i> 2005; Greenfield & Johnson, 1999; Clifton & Clifton, 1998)



No.	Order and family	Genus/species	References
30		<i>Elacatinus colini</i> Randall & Lobel, 2009	(Victor, 2014; Van Tassell, 2011; Randall & Lobel, 2009)
31		<i>Elacatinus dilepis</i> (Robins & Böhlke, 1964)	(Floeter <i>et al.</i> 2008; Greenfield & Johnson, 1999; Clifton & Clifton, 1998)
32		<i>Elacatinus evelynae</i> (Böhlke & Robins, 1968)	(Floeter <i>et al.</i> 2008; Greenfield & Johnson, 1999)
33		<i>Elacatinus lobeli</i> Randall & Colin, 2009	(Victor, 2014; Van Tassell, 2011; Randall & Colin, 2009)
34		<i>Elacatinus lori</i> Colin, 2002	(Floeter <i>et al.</i> 2008; Taylor & Helber, 2006; Colin, 2002; Victor, 2014)
35		<i>Elacatinus oceanops</i> (Jordan, 1904)	(Floeter <i>et al.</i> 2008; Taylor & Hellber, 2006; Clifton & Clifton, 1998)
36		<i>Gnatholepis thompsoni</i> Jordan, 1904	(Floeter <i>et al.</i> 2008; Greenfield & Johnson, 1999; Clifton & Clifton, 1998)
37		<i>Gobiosoma yucatanum</i> Dawson, 1971	(Floeter <i>et al.</i> 2008; Greenfield & Thomerson, 1997)
38		<i>Lythrypnus crocodilus</i> (Beebe & Tee-Van, 1928)	(Van Tassell, 2011; Floeter <i>et al.</i> 2008; Smith-Vaniz & Böhlke, 1991; Greenfield, 1988)
39		<i>Lythrypnus nesiotus</i> Böhlke & Robins, 1960	(Floeter <i>et al.</i> 2008; Greenfield, 1988)
40		<i>Psilotris alepis</i> Ginsburg, 1953	(Floeter <i>et al.</i> 2008; Greenfield & Johnson, 1999; Greenfield, 1993; Van Tassell, 2011)
41		<i>Psilotris batrachodes</i> Böhlke, 1963	(Floeter <i>et al.</i> 2008; Greenfield 1993; Van Tassell, 2011)
42		<i>Psilotris kaufmani</i> Greenfield Findley & Johnson, 1993	(Floeter <i>et al.</i> 2008; Greenfield 1993; Van Tassell, 2011)
43		<i>Pycnomma roosevelti</i> Ginsburg, 1939	(Floeter <i>et al.</i> 2008; Dennis <i>et al.</i> 2004; Greenfield & Johnson, 1999; Van Tassell, 2011)
44		<i>Tigrigobius rubrigenis</i> Victor, 2010	(Victor, 2014; Victor <i>et al.</i> 2010)
45	Order GOBIIFORMES Subseries Ovalentaria Pomacentridae Bonaparte, 1831	<i>Abudefduf saxatilis</i> (Linnaeus, 1758)	(Floeter <i>et al.</i> 2008; Capenter, 2002a; Jaxion-Harm <i>et al.</i> 2012; Clifton & Clifton, 1998; Kähnsbauer, 1972)
46		<i>Chromis insolata</i> (Cuvier, 1830)	(Floeter <i>et al.</i> 2008; Clifton & Clifton, 1998; Randall, 1996)
47		<i>Stegastes partitus</i> (Poey, 1868)	(Floeter <i>et al.</i> 2008; Hepburn <i>et al.</i> 2009; Clifton & Clifton, 1998)
48		<i>Stegastes fuscus</i> (Cuvier, 1830)	(Kähnsbauer, 1972)

No.	Order and family	Genus/species	References
49	Opistognathidae Bonaparte, 1835	<i>Opistognathus gilberti</i> Böhlke, 1967	(Floeter <i>et al.</i> 2008; Carpenter, 2002b; Randall, 1996)
50		<i>Opistognathus maxillosus</i> Poey, 1860	(Floeter <i>et al.</i> 2008; Carpenter, 2002b; Smith-Vaniz, 1997)
51		<i>Opistognathus whitehursti</i> (Longley, 1927)	(Floeter <i>et al.</i> 2008; Carpenter, 2002b; Smith-Vaniz, 1997)
52	Order BLENNIIFORMES Tripterygiidae Whitley, 1931	<i>Enneanectes altivelis</i> Rosenblatt, 1960	(Victor, 2013; Floeter <i>et al.</i> 2008; Greenfield & Johnson, 1990; Greenfield & Johnson, 1981)
53		<i>Enneanectes atrorus</i> Rosenblatt, 1960	(Floeter <i>et al.</i> 2008; Greenfield & Johnson 1981)
54		<i>Enneanectes boehlkei</i> Rosenblatt, 1960	(Victor, 2013; Floeter <i>et al.</i> 2008; Greenfield & Johnson, 1990; Greenfield & Johnson, 1981)
55		<i>Enneanectes jordani</i> (Evermann & Marsh, 1899)	(Floeter <i>et al.</i> 2008; Greenfield & Johnson, 1981)
56		<i>Enneanectes pectoralis</i> (Fowler, 1941)	(Floeter <i>et al.</i> 2008; Greenfield & Johnson, 1981)
57	Dactyloscopidae Gill, 1859	<i>Dactyloscopus poeyi</i> Gill, 1861	(Floeter <i>et al.</i> 2008; Dawson, 1982a)
58		<i>Dactyloscopus tridigitatus</i> Gill, 1859	(Floeter <i>et al.</i> 2008; Dawson, 1982a)
59		<i>Gillellus uranidea</i> Böhlke, 1968	(Dawson, 1982a)
60		<i>Platygillellus rubrocinctus</i> (Longley, 1934)	(Floeter <i>et al.</i> 2008; Dawson, 1982a)
61	Blenniidae Rafinesque, 1810	<i>Entomacrodus nigricans</i> Gill, 1859	(Floeter <i>et al.</i> 2008; Greenfield and Johnson, 1990; Acero, 1985; Greenfield & Johnson, 1981)
62		<i>Hypoleurochilus aequipinnis</i> (Gunther, 1861)	(Acero 1985; Greenfield & Johnson, 1981)
63		<i>Hypoleurochilus springeri</i> Randall, 1966	(Floeter <i>et al.</i> 2008; Carpenter, 2002b; Acero, 1985; Greenfield & Johnson, 1981)
64		<i>Lupinoblennius dispar</i> Herre, 1942	(Greenfield & Johnson, 1981)
65		<i>Ophioblennius atlanticus</i> (Valenciennes, 1836)	(Clifton & Clifton, 1998; Greenfield & Johnson, 1990; Acero, 1985; Greenfield & Johnson, 1981)
66		<i>Scartella cristata</i> (Linnaeus, 1758)	(Floeter <i>et al.</i> 2008; Clifton & Clifton, 1998; Greenfield & Johnson, 1990; Acero, 1985; Greenfield & Johnson, 1981)
67	Labrisomidae Clark Hubbs, 1952	<i>Brockius albigenys</i> (Beebe & Tee-Van, 1928)	(Acero, 1985; Greenfield & Johnson, 1981)

No.	Order and family	Genus/species	References
68		<i>Brockius nigricinctus</i> (Howell Rivero, 1936)	(Floeter <i>et al.</i> 2008; Carpenter, 2002b; Acero, 1985; Greenfield & Johnson, 1981)
69		<i>Labrisomus bucciferus</i> (Poey, 1868)	(Floeter <i>et al.</i> 2008; Carpenter, 2002b; Acero, 1985; Greenfield & Johnson, 1981)
70		<i>Labrisomus gobio</i> (Valenciennes, 1836)	(Floeter <i>et al.</i> 2008; Clifton & Clifton, 1998; Greenfield & Johnson, 1981)
71		<i>Labrisomus guppyi</i> (Norman, 1922)	(Floeter <i>et al.</i> 2008; Carpenter, 2002b; Greenfield & Johnson, 1990; Acero, 1985; Greenfield & Johnson, 1981)
72		<i>Labrisomus haitiensis</i> Beebe & Tee-Van, 1928	(Floeter <i>et al.</i> 2008; Acero, 1985; Greenfield & Johnson, 1981)
73		<i>Labrisomus kalisherai</i> (Jordan, 1904)	(Floeter <i>et al.</i> 2008; Carpenter, 2002b; Greenfield & Johnson, 1990; Acero, 1985; Greenfield & Johnson, 1981)
74		<i>Labrisomus nuchipinnis</i> (Quoy & Gaimard, 1824)	(Floeter <i>et al.</i> 2008; Carpenter, 2002b; Clifton & Clifton, 1998; Greenfield and Johnson, 1990; Greenfield & Johnson, 1981; Kähnsbauer, 1972)
75		<i>Malacoctenus aurolineatus</i> Smith, 1957	(Floeter <i>et al.</i> 2008; Carpenter, 2002b; Clifton & Clifton, 1998; Greenfield and Johnson, 1990; Greenfield & Johnson, 1981)
76		<i>Malacoctenus boehlkei</i> Springer, 1959	(Floeter <i>et al.</i> 2008; Clifton & Clifton, 1998; Acero, 1985; Greenfield & Johnson, 1981)
77		<i>Malacoctenus delalandii</i> (Valenciennes, 1836)	(Floeter <i>et al.</i> 2008; Acero, 1985; Greenfield & Johnson, 1981)
78		<i>Malacoctenus erdmani</i> Smith, 1957	(Floeter <i>et al.</i> 2008; Acero, 1985; Greenfield & Johnson, 1990; Greenfield & Johnson, 1981)
79		<i>Malacoctenus gilli</i> (Steindachner, 1867)	(Floeter <i>et al.</i> 2008; Carpenter, 2002b; Clifton & Clifton, 1998; Greenfield & Johnson, 1990; Acero, 1985; Greenfield & Johnson, 1981)
80		<i>Malacoctenus macropus</i> (Poey, 1868)	(Floeter <i>et al.</i> 2008; Carpenter, 2002b; Greenfield & Johnson, 1990; Acero, 1985; Greenfield & Johnson, 1981)
81		<i>Malacoctenus triangulatus</i> Springer, 1959	(Floeter <i>et al.</i> 2008; Clifton & Clifton, 1998; Greenfield & Johnson, 1990; Acero, 1985; Greenfield & Johnson, 1981)
82		<i>Paraclinus cingulatus</i> (Evermann & Marsh, 1899)	(Floeter <i>et al.</i> 2008; Carpenter, 2002b; Acero, 1985; Greenfield & Johnson, 1981)

No.	Order and family	Genus/species	References
83		<i>Paraclinus fasciatus</i> (Steindachner, 1876)	(Floeter <i>et al.</i> 2008; Carpenter, 2002b; Acero, 1985; Greenfield & Johnson, 1981)
84		<i>Paraclinus nigripinnis</i> (Steindachner, 1867)	(Floeter <i>et al.</i> 2008; Carpenter, 2002b; Acero, 1985; Greenfield & Johnson, 1990; Greenfield & Johnson, 1981)
85		<i>Stathmonotus hemphilli</i> Bean, 1885	(Acero, 1985; Greenfield & Johnson, 1981)
86		<i>Starksia atlantica</i> Longley, 1934	(Floeter <i>et al.</i> 2008; Acero, 1985; Greenfield & Johnson, 1981)
87		<i>Starksia elongata</i> Gilbert, 1971	(Floeter <i>et al.</i> 2008; Acero, 1985; Greenfield & Johnson, 1981)
88		<i>Starksia hassi</i> Klausewitz, 1958	(Floeter <i>et al.</i> 2008; Carpenter, 2002b; Acero, 1985)
89		<i>Starksia lepicoelia</i> Böhlke & Springer, 1961	(Floeter <i>et al.</i> 2008; Carpenter, 2002b; Acero, 1985; Greenfield & Johnson, 1981)
90		<i>Starksia langi</i> Baldwin & Castillo, 2011	(Baldwin <i>et al.</i> 2011)
91		<i>Starksia nanodes</i> Böhlke & Springer, 1961	(Floeter <i>et al.</i> 2008; Acero, 1985; Greenfield & Johnson, 1981)
92		<i>Starksia occidentalis</i> Greenfield, 1979	(Floeter <i>et al.</i> 2008; Carpenter, 2002b; Acero, 1985; Greenfield & Johnson, 1981)
93		<i>Starksia starcki</i> Gilbert, 1971	(Floeter <i>et al.</i> 2008; Carpenter, 2002b; Acero, 1985; Greenfield & Johnson, 1981)
94	Chaenopsidae Gill, 1865	<i>Acanthemblemaria aspera</i> (Longley, 1927)	(Floeter <i>et al.</i> 2008; Carpenter, 2002a; Clifton & Clifton, 1998; Acero, 1985; Greenfield & Johnson, 1981)
95		<i>Acanthemblemaria spinosa</i> Metzelaar, 1919	(Floeter <i>et al.</i> 2008; Carpenter, 2002a; Clifton & Clifton, 1998; Greenfield & Johnson, 1990; Acero, 1985; Greenfield & Johnson, 1981)
96		<i>Emblemaria hyltoni</i> Johnson & Greenfield, 1976	(Victor, 2010; Floeter <i>et al.</i> 2008; Greenfield & Johnson, 1981; Acero, 1985; Acero, 1984; Johnson & Greenfield, 1976)
97		<i>Emblemariopsis leptocirris</i> Stephens, 1970	(Floeter <i>et al.</i> 2008; Clifton & Clifton, 1998; Acero, 1984; Greenfield & Johnson, 1981)
98		<i>Emblemariopsis pricei</i> Greenfield, 1975	(Victor, 2010; Floeter <i>et al.</i> 2008; Clifton & Clifton, 1998; Acero, 1984; Greenfield & Johnson, 1981)

No.	Order and family	Genus/species	References
99		<i>Emblemariopsis signifer</i> (Ginsburg, 1942)	(Floeter <i>et al.</i> 2008; Smith-Vaniz & Böhlke, 1991; Greenfield & Johnson, 1981)
100		<i>Hemiemblemaria simulus</i> Longley & Hildebrand, 1940	(Floeter <i>et al.</i> 2008; Carpenter, 2002a; Clifton & Clifton, 1998; Greenfield & Johnson, 1990; Acero, 1985; Greenfield & Johnson, 1981)
101		<i>Lucayablennius zingaro</i> (Böhlke, 1957)	(Floeter <i>et al.</i> 2008; Carpenter, 2002a; Acero, 1985; Acero, 1984; Greenfield & Johnson, 1981)
102		<i>Stathmonotus hemphillii</i> Bean, 1885	(Floeter <i>et al.</i> 2008; Robins & Ray, 1986; Greenfield & Johnson, 1981)
103		<i>Stathmonotus tekla</i> Nichols, 1910	(Floeter <i>et al.</i> 2008; Hardy, 2003; Greenfield & Johnson, 1981)
104	Order GOBIESOCIFORMES Gobiesocidae Bleeker, 1859	<i>Acyrtus rubiginosus</i> (Poey, 1868)	(Floeter <i>et al.</i> 2008; Carpenter, 2002a; Clifton & Clifton, 1998; Johnson & Greenfield, 1983)
105		<i>Derilissus kremnobates</i> Fraser, 1970	(Floeter <i>et al.</i> 2008; Fraser, 1970)
106		<i>Gobiesox punctulatus</i> (Poey, 1876)	(Floeter <i>et al.</i> 2008; Johnson & Greenfield, 1983; Smith, 1997)
107		<i>Tomicodon rupestris</i> (Poey, 1860)	(Floeter <i>et al.</i> 2008; Williams & Tyler, 2003)
108	Order CARANGIFORMES Carangidae Rafinesque, 1815	<i>Caranx hippos</i> (Linnaeus, 1766)	(Floeter <i>et al.</i> 2008; Smith -Vaniz & Carpenter, 2007; Smith <i>et al.</i> 2002; Clifton & Clifton, 1998)
109		<i>Caranx latus</i> Agassiz, 1831	(Floeter <i>et al.</i> 2008; Smith <i>et al.</i> 2002; Clifton & Clifton, 1998; Kähnsbauer, 1972)
110	Order PLEURONECTIFORMES Bothidae Smitt, 1892	<i>Monolene megalepis</i> Woods, 1961	(Floeter <i>et al.</i> 2008; Carpenter, 2002b; Woods, 1961)
111		<i>Trichopsetta melasma</i> Anderson & Gutherz, 1967	(Floeter <i>et al.</i> 2008; Carpenter, 2002b; Anderson & Gutherz, 1967)
112	Order SYNGNATHIFORMES Syngnathidae Bonaparte 1831	<i>Anarchopterus tectus</i> (Dawson, 1978)	(Floeter <i>et al.</i> 2008; Acero, 1985; Dawson, 1978)
113		<i>Micrognathus crinitus</i> (Jenyns, 1842)	(Clifton & Clifton, 1998; Acero, 1985; Dawson, 1982b)
114		<i>Syngnathus caribbaeus</i> Dawson, 1979	(Dawson, 1982b)

No.	Order and family	Genus/species	References
115	Order LABRIFORMES Labridae Cuvier 1816	<i>Bodianus pulchellus</i> (Poey, 1860)	(Floeter <i>et al.</i> 2008; Carpenter, 2002b; Feddern, 1963)
116		<i>Halichoeres radiatus</i> (Linnaeus, 1758)	(Floeter <i>et al.</i> 2008; Carpenter, 2002b; Rocha & Rosa, 2001; Humann & DeLoach, 2014)
117	Scaridae Rafinesque 1810	<i>Sparisoma rubripinne</i> (Valenciennes, 1840)	(Floeter <i>et al.</i> 2008; Carpenter, 2002b; De Moura <i>et al.</i> 2001; Clifton & Clifton, 1998)
118	Order PERCIFORMES Mullidae Rafinesque 1815	<i>Mulloidichthys martinicus</i> (Cuvier, 1829)	(Floeter <i>et al.</i> 2008; Carpenter, 2002b; Clifton & Clifton, 1998)
119		<i>Mullus auratus</i> Jordan & Gilbert, 1882	(Floeter <i>et al.</i> 2008; Carpenter, 2002b)
120		<i>Pseudupeneus maculatus</i> (Bloch, 1793)	(Floeter <i>et al.</i> 2008; Carpenter, 2002b; Clifton & Clifton, 1998)
121	Kuhliidae Jordan & Evermann 1896	<i>Kuhlia mugil</i> (Foster, 1801)	(Schneider, 1995)
122	Serranidae Swainson 1839	<i>Cephalopholis fulva</i> (Linnaeus, 1758)	(Floeter <i>et al.</i> 2008; Carpenter, 2002a; Clifton & Clifton, 1998; Smith, 1971)
123		<i>Epinephelus guttatus</i> (Linnaeus, 1758)	(Floeter <i>et al.</i> 2008; Carpenter, 2002b; Clifton & Clifton, 1998; Smith, 1971)
124		<i>Epinephelus morio</i> (Valenciennes, 1828)	(Floeter <i>et al.</i> 2008; Carpenter, 2002b; Smith, 1971)
125		<i>Epinephelus striatus</i> (Bloch, 1792)	(Floeter <i>et al.</i> 2008; Carpenter, 2002b; Clifton & Clifton, 1998; Randall, 1996; Kähnsbauer, 1972; Smith, 1971)
126		<i>Hypoplectrus indigo</i> (Poey, 1851)	(Floeter <i>et al.</i> 2008; Carpenter, 2002b; Whiteman <i>et al.</i> 2007; Humann & DeLoach, 2014; Domeier, 1994; Goodson & Weisgerber, 1985)
127		<i>Hypoplectrus nigricans</i> (Poey, 1852)	(Puebla <i>et al.</i> 2014; Holt <i>et al.</i> 2011; Floeter <i>et al.</i> 2008; Whiteman, 2007; Carpenter, 2002b)
128		<i>Hypoplectrus puella</i> (Cuvier, 1828)	(Puebla <i>et al.</i> 2014; Holt <i>et al.</i> 2011; Puebla <i>et al.</i> 2009; Floeter <i>et al.</i> 2008; Whiteman, 2007; Carpenter, 2002b)
129		<i>Hypoplectrus unicolor</i> (Walbaum, 1792)	(Puebla <i>et al.</i> 2014; Floeter <i>et al.</i> 2008; Carpenter, 2002b; Clifton & Clifton, 1998)
130		<i>Mycteroperca bonaci</i> (Poey, 1860)	(Floeter <i>et al.</i> 2008; Clifton & Clifton, 1998; Smith, 1971)
131		<i>Rypticus bornoi</i> Beebe & Tee-Van, 1928	(Floeter <i>et al.</i> 2008; Guimarães, 1999)

No.	Order and family	Genus/species	References
132		<i>Rypticus randalli</i> Courtenay, 1967	(Courtenay, 1967; Guimarães, 1999)
133		<i>Rypticus saponaceus</i> (Bloch & Schneider, 1801)	(Floeter <i>et al.</i> 2008; Guimarães, 1999)
134		<i>Rypticus subbifrenatus</i> Gill, 1861	(Baldwin & Weigt, 2012; Floeter <i>et al.</i> 2008; Guimarães, 1999)
135		<i>Serranus chionaraia</i> Robins & Starck, 1961	(Robins & Starck, 1961)
136		<i>Serranus luciopercanus</i> (Poey, 1852)	(Smith, 1997; Robins & Starck, 1961)
137		<i>Serranus maytagi</i> (Robins & Starck, 1961)	(Smith, 1997; Robins & Starck, 1961)
138		<i>Serranus tortugarum</i> (Longley, 1935)	(Floeter <i>et al.</i> 2008; Clifton & Clifton, 1998; Robins & Starck, 1961)
139	Chaetodontidae Rafinesque, 1815	<i>Prognathodes aculeatus</i> (Poey, 1860)	(Floeter <i>et al.</i> 2008; Carpenter, 2002a; Clifton & Clifton, 1998; Hubbs, 1963)
140	Haemulidae Gill, 1885	<i>Haemulon aurolineatum</i> Cuvier, 1830	(Jaxion-Harm <i>et al.</i> 2012; Floeter <i>et al.</i> 2008; Carpenter, 2002a; Clifton & Clifton, 1998; Courtenay, 1961)
141		<i>Haemulon bonariense</i> Cuvier, 1830	(Floeter <i>et al.</i> 2008; Carpenter, 2002; Courtenay, 1961)
142		<i>Haemulon flavolineatum</i> (Desmarest, 1832)	(Jaxion-Harm <i>et al.</i> 2012; Floeter <i>et al.</i> 2008; Carpenter, 2002a; Clifton & Clifton, 1998; Courtenay, 1961)
143		<i>Haemulon plumierii</i> (Lacepede, 1801)	(Jaxion-Harm <i>et al.</i> 2012; Floeter <i>et al.</i> 2008; Carpenter, 2002a; Clifton & Clifton, 1998; Kähsbauer, 1972)
144		<i>Haemulon sciurus</i> (Shaw, 1803)	(Jaxion-Harm <i>et al.</i> , 2012; Floeter <i>et al.</i> 2008; Carpenter, 2002a; Clifton & Clifton, 1998; Humann & DeLoach, 2014; Courtenay, 1961)
145	Grammatidae Jordan, 1887	<i>Lipogramma idabeli</i> Tornabene, Robertson & Baldwin, 2018	(Tornabene <i>et al.</i> 2018)
146	Lutjanidae Gill, 1861	<i>Lutjanus apodus</i> (Walbaum, 1792)	(Jaxion-Harm <i>et al.</i> 2012; Floeter <i>et al.</i> 2008; Carpenter, 2002b; Clifton & Clifton, 1998; Kähsbauer, 1972)
147	Order SCORPAENIFORMES Scorpaenidae Risso, 1827	<i>Pontinus nematophthalmus</i> (Gunther, 1860)	(Floeter <i>et al.</i> 2008; Eschmeyer, 1969)
148		<i>Scorpaena agassizii</i> Goode & Bean, 1896	(Eschmeyer, 1965)

No.	Order and family	Genus/species	References
149		<i>Scorpaena grandicornis</i> Cuvier, 1829	(Floeter <i>et al.</i> 2008; Carpenter, 2002b; Clifton & Clifton, 1998; Eschmeyer, 1965)
150	Order ACANTHURIFORMES Acanthuridae Bonaparte, 1835	<i>Acanthurus chirurgus</i> (Bloch, 1787)	(Floeter <i>et al.</i> 2008; Carpenter, 2002a; Clifton & Clifton, 1998; Randall, 1996)
151		<i>Acanthurus coeruleus</i> Bloch & Schneider, 1801	(Floeter <i>et al.</i> 2008; Carpenter, 2002a; Clifton & Clifton, 1998; Randall, 1996)
152	Order TETRAODONTIFORMES Ostraciidae Rafinesque, 1810	<i>Acanthostracion polygonius</i> Poey, 1876	(Floeter <i>et al.</i> 2008; Carpenter, 2002b; Clifton & Clifton, 1998; Tyler, 1965a, Tyler, 1965b)
153	Monacanthidae Nardo, 1843	<i>Cantherhines pullus</i> (Ranzani, 1842)	(Floeter <i>et al.</i> 2008; Carpenter, 2002b; Clifton & Clifton, 1998; Randall, 1964)
154	Tetraodontidae Bonaparte, 1831	<i>Sphoeroides greeleyi</i> Gilbert, 1900	(Figueiredo & Menezes, 2000)
155		<i>Sphoeroides testudineus</i> (Linnaeus, 1758) (+)	Code: MHN-CU 0301, actual paper
156		<i>Sphoeroides yergeri</i> Shipp, 1972	(Shipp, 1972)
157	Diodontidae Bonaparte, 1835	<i>Chilomycterus antennatus</i> (Cuvier, 1816)	(Floeter <i>et al.</i> 2008; Clifton & Clifton, 1998; Randall, 1996)
158		<i>Chilomycterus reticulatus</i> (Linnaeus, 1758)	(Floeter <i>et al.</i> 2008; Eschmeyer <i>et al.</i> 1983)
159		<i>Diodon holocanthus</i> (+) Linnaeus, 1758	(Floeter <i>et al.</i> 2008; Clifton & Clifton, 1998). Code: MHN-CU 0302, actual paper

## DISCUSSION

Only 38% of the species, 46% of the genera, and 80% of the families mentioned in the literature were confirmed. This is not surprising. Floeter *et al.* (2008) only found 40 out of 48 families reported by Thresher (1991) and Bellwood (1996). Any occurrence mentioned in secondary sources regarding Honduras is based

on a possible presence, if the species is reported in reefs of neighboring countries.

## CONCLUSIONS

Most of the catalogued species (17%) belong to Labrisomidae, while most of the genera (13%) belong to Gobiidae, including two endemic species: *T. rubrigenis* and *E. lobeli*.



Results show that from the 412 species, 162 genera, and 40 families believed to inhabit the reefs of Honduras, only 159 species, 76 genera, and 32 families are actually registered. The numbers obtained from secondary sources and databases could overestimate the diversity of species in Honduras. This review could also underestimate the number of species since it is not based on systematic fieldwork. Therefore, systematic sampling focused on the collection of samples for morphological and molecular records is necessary to fully document the diversity of this group of fish in Honduras.

## ACKNOWLEDGMENTS

We would like to thank Philip A. Hastings (University of California, San Diego) and Patrick Moldowan (University of Toronto, Ontario, Canada) for their assistance and Brandon People (Clemson University, South Carolina) for editing this manuscript. We also thank REVMAR's evaluation committee, and the Journal's editor, Nidya Nova-Bustos, and translator, Elieth Salazar-Alpizar for their contributions.

## BIBLIOGRAPHY

Acero, A. (1984). The Chaenopsine blennies of the Southwestern Caribbean (Pisces: Clinidae: Chaenopsinae) I. Systematic

analysis and zoogeography. *An. Inst. Inv. Mar. Punta Betin*, 14, 29-46.

- Acero, A. (1985). Zoogeographical implications of the distribution of selected families of Caribbean coral reef fishes. *Proc. Fifth Intern. Coral Reef Congress*, 5, 433-438.
- Allen, G. R. (1991). *Damselfishes of the world*. Melle Germany. Aquarium Systems. Mentor, Ohio, EE. UU.: Mergus Publishers.
- Anderson, W. W., Gehringer, J. W. & Berry, F. H. (1975). The correlation between numbers of vertebrae and lateral-line scales in western Atlantic lizardfishes (Synodontidae). *Fish. Bull.*, 73, 202-206.
- Anderson, W. W. & Gutherz, E. J. (1967). Revision of the flatfish genus *Trichopsetta* (Bothidae) with descriptions of three new species. *Bull. Mar. Sci.*, 17(4), 892-913.
- Baldwin, C. C., Castillo, C. I. & Weigt, L. A. (2011). Seven new species within Western Atlantic *Starksia atlantica*, *S. lepicoelia*, and *S. sluiteri* (Teleostei, Labrisomidae), with comments on congruence of DNA barcodes and species. *ZooKeys*, 79, 1-21. Retrieved from <https://doi.org/10.3897/zookeys.79.1045>
- Baldwin, C. C. & Weigt, L. A. (2012). A new species of soapfish (Teleostei: Serranidae: Rypiticus), with redescription of *R. subbifrenatus* and comments on the use of DNA barcoding in systematic studies. *Copeia*, 1, 23-36. Retrieved from <https://doi.org/10.1643/CG-11-035>
- Bellwood, D. R. (1996). The Eocene fishes of Monte Bolca: the earliest coral reef fish assemblage. *Coral Reefs*, 15(1), 11-19.
- Bellwood, D. R. (1998). What are reef fishes? Comment on the report by Dr. Robertson: Do coral reef fish faunas have a distinctive taxonomic structure? *Coral Reefs*, 17(2), 187-189. Re-

- trieved from <https://doi.org/10.1007/s003380050114>
- Bellwood, D. R. & Wainwright, P. C. (2002). *The history and biogeography of fishes on coral reefs*. In P. S. Sale (Ed.), *Coral Reef Fishes: dynamic and diversity in a complex ecosystem* (pp. 5-32). San Diego, USA: Elsevier. Retrieved from <https://doi.org/10.1016/B978-012615185-5/50003-7>
- Böhlke, J. E. (1957). A Review of the Blenny genus *Chaenopsis*, and the description of a related new genus from the Bahamas. *Proc. Acad. Nat. Sci. Philadelphia.*, 109, 81- 103.
- Böhlke, J. E. (1958). Substitute names for *Nystactes Böhlke* and *Lucaya Böhlke*, Preoccupied. *Copeia*, 1, 59.
- Böhlke, J. E. & Randall, J. E. (1963). The fishes of the Western Atlantic serranoid genus *Gramma*. *Proc. Acad. Nat. Sci. Philadelphia*, 115, 33-52.
- Böhlke, J. E. & Chaplin, C. C. (1993). *Fishes of the Bahamas and adjacent tropical waters*. Austin, USA: University of Texas Press.
- Burgess, W. E. (1978). *Butterflyfishes of the World: a monograph of the family Chaetodontidae*. New Jersey, EE. UU.: TFH Publications, Inc.
- Carpenter, K. E. (2002a). *FAO Species Identification Guide for Fishery Purposes and American Society of Ichthyologists and Herpetologists Special Publication No. 5. The living marine resources of the Western Central Atlantic. Volume 2: Bony fishes part 1 (Acipenseridae to Grammatidae)*. Rome, Italy: FAO.
- Carpenter, K. E. (2002b). *FAO Species Identification Guide for Fishery Purposes and American Society of Ichthyologists and Herpetologists Special Publication No. 5. The living marine resources of the Western Central Atlantic. Volume 3: Bony fishes part 2 (Opistognathidae to Molidae), sea turtles and marine mammals*. Rome, Italy: FAO.
- Clifton, K. E. & Clifton, L. M. (1998). A survey of fishes from various coral reef habitats within the Cayos Cochinos Marine Reserve, Honduras. *Rev. Bio. Trop.*, 46(Supl. 3), 109-124.
- Colin, P. L. (1974). Observation and collection of deep-reef fishes off the coasts of Jamaica and British Honduras (Belize). *Mar. Biol.*, 24(1), 29-38.
- Colin, L. (2002). A new species of sponge-dwelling *Elacatinus* (Pisces: Gobiidae) from the western Caribbean. *Zootaxa*, 106(1), 1-7.
- Courtenay, W. R. (1961). Western Atlantic fishes of the genus *Haemulon* (Pomadasyidae): systematic status and juvenile pigmentation. *Bull. Mar. Sci.*, 11(1), 66-149.
- Courtenay, W. R. (1967). Atlantic Fishes of the Genus *Rypticus* (Grammistidae). *Proc. Acad. Nat. Sci. Philadelphia*, 119, 241-293.
- Craig, M. T., Pondella, D. J., Franck, J. P. C. & Hafner, J. C. (2001). On the status of the serranid fish genus *Epinephelus*: evidence for paraphyly based upon 16S rDNA sequence. *Mol. Phylogenet. Evol.*, 19(19), 121-130.
- Dawson, C. E. (1978). *Micrognathus vittatus* (Kaup), a Junior Synonym of *M. crenatus* (Jenyns), with Description of the Insular Pipefish, *M. tectus*, New Sp. *Copeia*, 1, 13-16.
- Dawson, C. E. (1982a). Atlantic sand star-gazers (Pisces: Dactyloscopidae), with description of one new genus and seven new species. *Bull. Mar. Sci.*, 32(1), 14-85.
- Dawson, C. E. (1982b). Family Syngnathidae. In J. E. Böhlke *et al.* (Eds.), *Fishes of the Western North Atlantic, Part 8. Gasterosteiformes, Syngnathoidei* (pp 1-172), Memoir 1. New Haven, Con-

- ncticut, EE. UU.: Sears Foundation for Marine Research.
- De Astarloa, J. M. D. & Figueroa E. D. (1995). Scrawled cowfish, *Acanthostracion quadricornis* (Tetraodontiformes: Ostraciidae), collected from Argentine waters. *Jpn. J. Ichthyol.*, 41(4), 466-468.
- De Moura, R. L., de Figueiredo, J. L. & Sazima, I. (2001). A new parrot fish (Scaridae) from Brazil, and revalidation of *Sparisoma amplum* (Ranzani, 1842), *Sparisoma frondosum* (Agassiz, 1831), *Sparisoma axillare* (Steindachner, 1878) and *Scarus trispinosus* (Valenciennes, 1840). *Bull. Mar. Sci.*, 68(3), 505-524.
- Dennis, G. D., Hensley, D. A., Collin, P. L. & Kimmel, J. J. (2004). New records of marine fishes from the Puerto Rican Plateau. *Caribb. J. Sci.*, 40, 70-87.
- Domeier, M. L. (1994). Speciation in the serranid fish *Hypoplectrus*. *Bull. Mar. Sci.*, 54(1), 103-141.
- Emery, A. R. & Allen, G. R. (1980). Stegastes; A senior synonym for the damselfish genus *Eupomacentrus*; Osteological and other evidence, with comments on other genera. *Rec. West. Aust. Mus.*, 8(29), 199-206.
- Eschmeyer, W. N. (1965). Western Atlantic scorpionfishes of the genus *Scorpaena*, including four new species. *Bull. Mar. Sci.*, 15(1), 84-164.
- Eschmeyer, W. N. (1969). A systematic review of the scorpionfishes of the Atlantic ocean (Pisces: Scorpaenidae). *Occas. Pap. Calif. Acad. Sci.*, 79, 1-143.
- Eschmeyer, W. N., Fricke, R. & van der Laan, R. (2019, Eds). Catalog of fishes: genera, species, references. Retrieved on May 2<sup>nd</sup>, 2019 from <http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatmain.asp>
- Feddern, H. A. (1963). Color pattern changes during growth of *Bodianus pulchellus* and *B. rufus* (Pisces: Labridae). *Bull. Mar. Sci.*, 13(2), 224-241.
- Fessler, J. L. & Westneat, M. W. (2007). Molecular phylogenetics of the butterflyfishes (Chaetodontidae): taxonomy and biogeography of a global coral reef fish family. *Mol. Phylogenet. Evol.*, 45(1), 50-68.
- Figueiredo, J. L. & Menezes, N. (2000). *Manual de peixes marinhos do sudeste do Brasil*. VI. Teleostei (5). Brazil: Museu de Zoologia, Universidade de São Paulo.
- Fitch, J. E. & Crooke, S. J. (1984). Revision of Eastern Pacific catalufas (Pisces: Priacanthidae) with description of a new genus and discussion of the fossil record. *Proc. Calif. Acad. Sci.*, 43(19), 301-315.
- Floeter, S. R., Rocha, L. A., Robertson, D. R., Joyeux, J. C., Smith-Vaniz, W. F., Wirtz, P. & Brito, A. (2008). Atlantic reef fish biogeography and evolution. *J. Biogeogr.*, 35(1), 22-47.
- Fourri re, M., Alvarado, J. J., Bocos, A. A. & Cort s, J. (2016). Updated checklist and analysis of completeness of marine fish fauna of Isla del Coco, Pacific of Costa Rica. *Marine Biodiversity.*, 47(3), 813-821. Retrieved from <https://link.springer.com/article/10.1007/s12526-016-0501-6>
- Frale, B. W., Baldwin, C. C., Luther, B. M. & Weigt, L. A. (2013). A new species of Western Atlantic lizardfish (Teleostei: Synodontidae: *Synodus*) and resurrection of *Synodus bondi* Fowler, 1939, as a valid species from the Caribbean with redescrptions of *S. bondi*, *S. foetens* (Linnaeus, 1766), and *S. intermedius* (Agassiz, 1829). *Fish. Bull.*, 111, 122-146.

- Fraser, T. H. (1970). Two new species of the clingfish genus *Derilissus* (Gobiessocidae) from the Western Atlantic. *Copeia*, 1, 38-42.
- Froese, R. & Pauly, D. (2019, Eds.). FishBase. Retrieved on June 28<sup>th</sup>, 2019 from <https://www.fishbase.org/>
- Galván-Villa, C. M., Ríos-Jara, E., Bastida-Izaguirre, D., Hastings, P. H. & Ballart, E. F. (2016). Annotated checklist of marine fishes from the Sanctuary of Bahía Chamela, Mexico with occurrence and biogeographic data. *ZooKeys*, 554, 139-157. <https://doi.org/10.3897/zookeys.554.6106>
- Gilbert, C. R. (1968). Western Atlantic batrachoid fishes of the genus *Porichthys*, including three new species. *Bull. Mar. Sci.*, 18(3), 671-730.
- Gilbert, C. R. (1971). Two new genera and species of Western Atlantic gobiid fishes with vomerine teeth. *Copeia*, 4, 27-38.
- Gilbert, C. R. & Tyler, J. C. (1997). *Apogon robbyi*, a new cardinalfish (Perciformes: Apogonidae) from the Caribbean Sea. *Bull. Mar. Sci.*, 60(3), 764-781.
- Goodson, G. & Weisgerber, P. J. (1985). *Fishes of the Atlantic Coast: Canada to Brazil, Including the Gulf of Mexico, Florida, Bermuda, the Bahamas, and the Caribbean*. Stanford, California, EE. UU.: Stanford University Press.
- Gotelli, N. J. & Colwell, R. K. (2001). Quantifying biodiversity: procedures and pitfalls in the measurement and comparison of species richness. *Ecol. Lett.*, 4, 379-391. Retrieved from <https://doi.org/10.1046/j.1461-0248.2001.00230.x>
- Greenfield, D. W. (1988). A review of the *Lythrypnus mowbrayi* complex (Pisces: Gobiidae), with the description of a new species. *Copeia*, 2, 460-470.
- Greenfield, D. W. (1993). New goby, *Psilotris boehlkei* (Pisces: Gobiidae), from the Western Atlantic, with a key to the species. *Copeia*, 3, 771-775.
- Greenfield, D. W. & Johnson, R. K. (1981). The Blennioid fishes of Belize and Honduras, Central America, with comments on their systematics, ecology, and distribution (Blenniidae, Chaenopsidae, Labrisomidae, Tripterygiidae). *Fieldiana Zool.*, 8, 1-132.
- Greenfield, D. W. & Johnson, R. K. (1990). Heterogeneity in habitat choice in cardinalfish community structure. *Copeia*, 4, 1107-1114.
- Greenfield, D. W. & Johnson, R. K. (1999). Assemblage structure and habitat associations of western Caribbean gobies (Teleostei: Gobiidae). *Copeia*, 2, 251-266.
- Greenfield, D. W. & Thomerson, J. E. (1997). *Fishes of the continental waters of Belize*. Florida, USA: University Press of Florida.
- Guimarães, Z. P. (1999). Revision, phylogeny and comments on biogeography of soapfishes of the genus *Rypticus* (Teleostei: Serranidae). *Bull. Mar. Sci.*, 65(2), 337-379.
- Hanlon, R. T. & Kaufman, L. (1976). Associations of seven West Indian reef fishes with sea anemones. *Bull. Mar. Sci.*, 26(2), 225-232.
- Hardy, J. D. Jr. (2003). *Coral reef fish species*. Washington, USA: NOAA/National Oceanographic Data Center.
- Hastings, P. A. & Springer, V. G. (2009). Recognizing diversity in blennioid fish nomenclature (Teleostei: Blennioidae). *Zootaxa*, 2120(1), 3-14.
- Hepburn, R. I., Mottillo, E. P., Bentzen, P. & Heath, D. D. (2005). Polymorphic microsatellite loci for the masked goby, *Coryphopterus personatus* (Gobiidae). *Conser. Genet.*, 6(6), 1059-1062.

- Hepburn, R. I., Sale, P. F., Dixon, B. & Heath, D. D. (2009). Genetic structure of juvenile cohorts of bicolor damselfish (*Stegastes partitus*) along the Mesoamerican barrier reef: chaos through time. *Coral Reefs*, 28(1), 277-288.
- Holt, B. G., Côté, I. M. & Emerson, B. C. (2011). Searching for speciation genes: molecular evidence for selection associated with colour morphotypes in the Caribbean reef fish genus *Hypoplectrus*. *PLoS One*, 6(6), E20394.
- Hoese, D. F. & Reader, S. A. (2001). Preliminary review of the Eastern Pacific species of *Elacatinus* (Perciformes: Gobiidae). *Rev. Biol. Trop.*, 49(Supl. 1), 157-167.
- Hubbs, C. L. (1963). *Chaetodon aya* and related deep-living butterflyfishes: their variation, distribution and synonymy. *Bull. Mar. Sci.*, 13(1), 133-192.
- Humann, P. & DeLoach, N. (2014). *Reef fish identification: Florida, Caribbean, Bahamas*. (4<sup>th</sup> Ed.). Jacksonville, Florida, USA: New World Publications.
- Jaxion-Harm, J., Saunders, J. & Speight, M. R. (2012). Distribution of fish in seagrass, mangroves and coral reefs: life-stage dependent habitat use in Honduras. *Rev. Biol. Trop.*, 60(2), 683-698.
- Johnson, R. K. & Greenfield, D. W. (1976). A new chaenopsid fish, *Emblemaria hyltoni*, from Isla Roatan, Honduras. *Feldiana Zool.*, 70, 13-28.
- Johnson, R. K. & Greenfield, D. W. (1983). Clingfishes (Gobiesocidae) from Belize and Honduras, Central America, with redescription of *Gobiesox barbatus* Starks. *Northeast Gulf Sci.*, 6(1), 33-49.
- Kähsbauer, P. (1972). Beitrag zur Kenntnis der marinen Fischfauna von Centralamerika. *Annalen des Naturhistorischen Museums in Wien*, 76, 715-731.
- Lin, H-C. & Hastings, P. A. (2013). Phylogeny and biogeography of a shallow water fish clade (Teleostei: Blenniiformes). *BMC Evol. Biol.*, 13(1), 210.
- Littlewood, D. T. J., McDonald, S. M., Gill, A. C. & Cribbb, T. H. (2004). Molecular phylogenetics of *Chaetodon* and the Chaetodontidae (Teleostei: Perciformes) with reference to morphology. *Zootaxa*, 779(1), 1-20.
- Magurran, A. E. (1988). *Ecological diversity and its measurement*. Princeton, New Jersey, EE. UU.: Princeton University Press.
- Matsuura, K. & Shimizu, T. (1982). The squirrelfishes Genus *Adioryx*, a Junior synonym of *Sargocentron*. *Jpn. J. Ichthyol.*, 29(1), 93-94.
- Nelson, J. S., Grande, T. C. & Wilson, M. V. (2016). *Fishes of the World*. (5<sup>th</sup> Ed.). Hoboken, New Jersey, USA: John Wiley & Sons Inc.
- Nichols, J. T. (1920). *Hynniss and Alectis* in the American Museum of Natural History. *Bull. Am. Mus. Nat. Hist.*, 42(4), 285-293.
- Patzner, R. A., Hastings, P. A., Springer, V. G., Wirtz, P. & Gonçalves, E. J. (2009). List of Valid Species of Blennies. In R. A. Patzner, E. J. Gonçalves, P. A. Hastin & B. G. Kapoor (Eds.), *The Biology of Blennies* (pp. 443-473). Enfield, New Hampshire, USA: Science Publishers.
- Puebla, O., Bermingham, E. & Guichard, F. (2009). Estimating dispersal from genetic isolation by distance in a coral reef fish (*Hypoplectrus puella*). *Ecology*, 90(11), 3087-3098.
- Puebla, O., Bermingham, E. & McMillan, W. O. (2014). Genomic atolls of differentiation in coral reef fishes (*Hypoplectrus* spp., Serranidae). *Mol. Ecol.*, 23(21), 5291-5303.
- Randall, J. E. (1963). Three new species and six new records of small serranoid fishes

- from Curaçao and Puerto Rico. *Studies on the fauna of Curaçao and other Caribbean Islands*, 19(1), 77-113.
- Randall, J. E. (1964). A revision of the Filefish genera *Amanses* and *Cantherhines*. *Copeia*, 2, 331-361.
- Randall, J. E. (1966). The West Indian blennioid fishes of the genus *Hypoleurochilus*, with the description of a new species. *P. Biol. Soc. Wash.*, 79, 57-72.
- Randall, J. E. (1996). *Caribbean Reef Fishes*. (3<sup>rd</sup> Ed.). Revised and enlarged. New York, USA: TFH Publications Inc.
- Randall, J. E. & Colin, P. L. (2009). *Elacatinus lobeli*, a new cleaning goby from Belize and Honduras. *Zootaxa*, 2173, 31-40.
- Randall, J. E. & Lobel, P. S. (2009). A literature review of the sponge-dwelling gobioid fishes of the genus *Elacatinus* from the Western Atlantic, with description of two new Caribbean species. *Zootaxa*, 2133, 1-19.
- Robertson, D. R. & Van Tassell, J. (2019). Shorefishes of the Greater Caribbean: online information system. Retrieved on June 28th, 2019 from <http://biogeodb.stri.si.edu/>
- Robins, C. R. & Colins, P. L. (1979). Three new Grammid Fishes from the Caribbean Sea. *Bull. Mar. Sci.*, 29(1), 41-52.
- Robins, C. R. & Starck, W. A. (1961). Materials for a revision of *Serranus* and related fish genera. *Proc. Acad. Nat. Sci. Philadelphia*, 113, 259-314.
- Robins, C. R. & Ray, G. C. (1986). *A field guide to Atlantic coast fishes of North America*. Boston, USA: Houghton Mifflin Company.
- Rocha, L. A. (2003). Patterns of distribution and processes of speciation in Brazilian reef fishes. *J. Biogeog.*, 30, 1161-1171.
- Rocha, L. A. & Rosa, R. S. (2001). *Halichoeres brasiliensis* (Bloch, 1791), a valid wrasse species (Teleostei: Labridae) from Brazil, with notes on the Caribbean species *Halichoeres radiatus* (Linnaeus, 1758). *Aqua*, 4(4), 161-166.
- Saldanha, L., Maul, G. E., Biscoito, M. & Andrade, F. (1986). On the identity of *Heteroconger longissimus* Günther 1870 and *Heteroconger halis* (Böhlke 1957) (Pisces: Congridae). *Bocagiana (Funchal)*, 104, 1-17.
- Sheiko, B. A. (2013). On family-group names of extant and fish-like vertebrates of the World. Explorations of the fauna of the seas. St. Petersburg: *Zoological Institute RAS*, 74(82), 1-204.
- Shipp, R. L. (1972). Three new pufferfishes (Tetraodontidae: Sphoeroides) from the Southern Caribbean. *Proc. Acad. Nat. Sci. Philadelphia*, 124, 129-134.
- Smith, C. L. (1971). A revision of the American groupers: *Epinephelus* and allied genera. *Bull. Ame. Mus. Nat. Hist.*, 146(2), 1-180.
- Smith, C. L. (1997). *National audubon society field guide to tropical marine fishes Caribbean, Gulf of Mexico, Florida, Bahamas, Bermuda*. (1<sup>st</sup> Ed.). New York, USA: Knopf Doubleday Publishing Group.
- Smith-Vaniz, W. F. (1997). Five new species of jawfishes (Opistognathus: Opistognathidae) from the Western Atlantic Ocean. *Bull. Mar. Sci.*, 60(3), 1074-1128.
- Smith-Vaniz, W. F. & Emery, A. R. (1980). Redescription and synonymy of the Western Atlantic damselfish *Chromis flavicauda* (Günther). *Bull. Mar. Sci.*, 30 (1), 204-212.
- Smith-Vaniz, W. F. & Böhlke, E. B. (1991). Additions to the Ichthyofauna of the Bahama Islands, with Comments on

- Endemic Species. *Proc. Acad. Nat. Sci. Philadelphia*, 143, 193-206.
- Smith-Vaniz, W. F., Collette, B. B. & Luckhurst, B. B. (1999). *Fishes of Bermuda: history, zoogeography, annotated checklist, and identification keys*. Lawrence, KS, USA: American Society of Ichthyologists and Herpetologists.
- Springer, V. G. (1955). The taxonomic status of the fishes of the genus *Stathmonotus*, including a review of the Atlantic species. *Bull. Mar. Sci. Gulf Caribbean*, 5(1), 66-80.
- Starck, W. A. & Colin, P. L. (1978). *Gamma linki*: a new species of grammid fish from the tropical western Atlantic. *Bull. Mar. Sci.*, 28(1), 146-152.
- Starnes, W. C. (1988). Revision, phylogeny and biogeographic comments on the circumtropical marine percoid fish family Priacanthidae. *Bull. Mar. Sci.*, 43(2), 117-203.
- Stephens, J. S. (1961). A description of a new genus and two new species of Chaenopsid Blennies from the Western Atlantic. *Notulae Naturae*, 349, 1-8.
- Steykal, G. C. (1980). The grammar of family-group names as exemplified by those of fishes. *P. Biol. Soc. Wash.*, 93, 168-177.
- Taylor, M. S. & Hellberg, M. E. (2006). Comparative phylogeography in a genus of coral reef fishes: biogeographic and genetic concordance in the Caribbean. *Mol. Ecol.*, 15(3), 695-707.
- Thresher, R. E. (1991). Geographic variability in the ecology of coral reef fishes: evidence, evolution, and possible implications. In P. F. Sale (Ed.), *The Ecology of Fishes on Coral Reefs* (pp. 401-436). San Diego, California, USA: Academic Press Inc.
- Tornabene, L., Robertson, D. R. & Baldwin, C. C. (2018). A new species of *Lipogramma* from deep reefs of Roatan, Honduras (Teleostei, Grammatidae). *ZooKeys*, 809, 1-79.
- Tyler, J. C. (1965a). The trunkfish genus *Acanthostracion* (Ostraciontidae, Plectognathi) in the Western Atlantic: two species rather than one. *Proc. Acad. Nat. Sci. Philadelphia*, 1-18.
- Tyler, J. C. (1965b). A synopsis of the four species of cowfishes (*Acanthostracion*, *Plectognathi*) in the Atlantic Ocean. *Proc. Acad. Nat. Sci. Philadelphia*, 261-287.
- Van Tassell, J. L. (2011). Gobiiformes of the Americas. In R. A. Patzner, P. A. Gonçalves, P. A. Hastin & B. G. Kapoor (Eds.), *The Biology of Blennies* (pp. 139-176). Enfield, New Hampshire, EE. UU.: Science Publisher.
- Van Tassell, J. L., Tornabene, L. & Colin, P. L. (2012). Review of the Western Atlantic species of *Bollmannia* (Teleostei: Gobiidae: Gobiiosomatini) with the description of a new allied genus and species. *Aqua*, 18(2), 61-95.
- Victor, B. C. (2010). The Redcheek Paradox: the mismatch between genetic and phenotypic divergence among deeply-divided mtDNA lineages in a coral-reef goby, with the description of two new cryptic species from the Caribbean Sea. *J. Ocean Sci. Found.*, 3, 1-16.
- Victor, B. C. (2013). The Caribbean roughhead triplefin (*Enneanectes boehlkei*): DNA barcoding reveals a complex of four West Indian sympatric cryptic species (Teleostei: Blennioidei: Tripterygiidae). *J. Ocean Sci. Found.*, 7, 44-72.
- Victor, B. C. (2014). Three new endemic cryptic species revealed by DNA barcoding of the gobies of the Cayman Islands (Teleostei: Gobiidae). *J. Ocean Sci. Found.*, 15, 25-60.
- Victor, B. C., Vásquez-Yeomans, L., Valdez-Moreno, M. M., Wilk, L., Jones,

- D. L., Lara, M. R., Caldow, C. & Shivji, M. (2010). The larval, juvenile, and adult stages of the Caribbean goby, *Coryphopterus kuna* (Teleostei: Gobiidae): a reef fish with a pelagic larval duration longer than the post-settlement lifespan. *Zootaxa*, 2346, 53-61.
- Whiteman, E. A., Côté, I. M. & Reynolds, J. D. (2007). Ecological differences between hamlet (*Hypoplectrus*: Serranidae) colour morphs: between-morph variation in diet. *J. Fish. Biol.*, 71(1), 235-244.
- Williams, J. T. & Tyler, J. C. (2003). Revision of the Western Atlantic clingfishes of the genus *Tomicodon* (Gobiesocidae), with descriptions of five new species. *Smithson. Contrib. Zool.*, 621, 1-26.
- Woods, L. P. (1961). A new species of flatfish, *Monolene megalepis*, from Puerto Rico and the Western Caribbean Sea. *Copeia*, 2, 192-195.
- WoRMS Editorial Board. (2019). World Register of Marine Species. Retrieved on June 28<sup>th</sup>, 2019 from <http://www.marinespecies.org>.