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The Conservation Status of Marine Bony Shorefishes of the Greater Caribbean

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GREATER CARIBBEAN



The IUCN Red List of Threatened Species™

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Executive Summary

The greater Caribbean biogeographic region covered in this report (representing 38 countries and territories) encompasses an outstanding marine bony shorefish richness of approximately 1,360 species, with many (53%) being endemic.

While information on the conservation status of greater Caribbean seagrasses, mangrove, reef-building corals, sea cucumbers, cone snails and the marine mammals, birds, sea turtles and sharks and rays is currently available through the IUCN Red List – relatively few information is readily available on the many bony shorefishes of the area. This report addresses such imbalance by providing an overview of the conservation status of greater Caribbean shorefishes, with detailed information available through the IUCN Red List.

Across the total number (1,360) of bony shorefishes reviewed in this work, 5% of these species (6% of endemics) have been determined to be at risk of extinction (meeting the IUCN Criteria of either Critically Endangered, Endangered, or Vulnerable). This estimate rises to a precautionary 13% of species threatened (19% of endemics) when shorefishes now recognized by IUCN to be Data Deficient (possibly threatened species) are included within threatened species estimates. Four of the species reviewed (*Lucifuga simile*; *Epinephelus drummondhayi*; *Epinephelus itajara*; *Hyporthodus nigritus*) were categorized as Critically Endangered – indicating an extremely high extinction risk, and a need for immediate management actions to reverse these population trends. Key threats to shorefishes from the greater Caribbean highlight overexploitation of fishery stocks, degradation of coral reef habitats (by a variety of impacts), predation by introduced species (typically the non-native lionfishes),

and the ongoing loss of important nearshore habitats (such as mangrove, seagrass and hardbottom habitats).

Biogeographically, based on this report, south Florida has the richest bony shorefish diversity, followed closely by Belize and the Bay Islands of Honduras. Offshore oceanic areas have the lowest richness due to the resource-poor environment and low opportunity for niche diversification.

While this report has substantially improved the knowledge on marine biodiversity of the greater Caribbean, recommendations include: systematic planning to address multi-threat scenarios; improved resources for typically under-resourced fishery agencies; expansion of fishery catch and effort statistics acquisition programs; estimation of fundamental demographic parameters for key species, increased knowledge for poorly known species and their distributions within the greater Caribbean area; an initial focus of local conservation investment at the identified ‘hotspots’ for threatened species; delineation of marine ‘Key Biodiversity Areas’ within the greater Caribbean to assist in prioritization of future conservation investments; protection of spawning aggregation sites for socio-economically critical species; a review of fishery regulations with the objective of enabling the sustainable use of the area’s rich fisheries; improvement of supporting datasets (such as nearshore bathymetry) for advancing conservation and fishery management decisions; expanded research into larval connectivity patterns at regional meso- and macro-scales; and standardized knowledge concerning the effectiveness of the area’s many Marine Protected Areas.

Résumé

La région biogéographique de la Grande Caraïbe couvre 38 pays et territoires. Elle abrite une richesse remarquable d'espèces de poissons osseux côtiers, avec approximativement 1 360 espèces dont une large proportion (53%) est endémique.

Une grande quantité d'information est déjà disponible sur la Liste rouge des espèces menacées de l'IUCN™ sur l'état de conservation des algues marines, mangroves, coraux formant des récifs, concombres de mer, escargots de mer, mammifères et oiseaux marins, tortues marines, requins et raies. En revanche il existait peu d'information sur les nombreux poissons osseux côtiers de la région. Ce rapport vient combler ce vide en fournissant une vue d'ensemble du statut de conservation de ces espèces au niveau du bassin de la Grande Caraïbe, avec des informations détaillées accessibles sur la Liste rouge de l'IUCN.

Sur le nombre total (1 360) d'espèces de poissons osseux côtiers évalués au cours de ce travail, 5% (6% parmi les espèces endémiques) ont été identifiées comme étant menacées d'extinction (remplissant les Critères pour les Catégories En danger critique d'extinction, En danger ou Vulnérable). Cette estimation s'élève à 13% d'espèces menacées (19% parmi les endémiques) quand on ajoute les espèces de poissons côtiers listées actuellement dans la Catégorie Données insuffisantes (potentiellement menacées) dans l'estimation du nombre d'espèces menacées. Quatre des espèces évaluées (*Lucifuga simile*; *Epinephelus drummondhayi*; *Epinephelus itajara*; *Hyporthodus nigritus*) ont été classées dans la Catégorie En danger critique d'extinction, ce qui indique un risque d'extinction extrêmement élevé et la nécessité de mettre en place des mesures de gestion immédiates pour inverser la tendance de leurs populations.

Les principales menaces pesant sur les poissons de la Grande Caraïbe sont la surexploitation des stocks halieutiques, la dégradation des récifs coralliens (par une multitude d'impacts), la prédation par des espèces introduites (particulièrement les poissons-lion), et

la perte d'habitats côtiers importants (comme les mangroves, les herbiers marins et les habitats à fond dur).

D'après les données de ce rapport, c'est au sud de la Floride que l'on trouve la plus grande diversité en poissons côtiers osseux, suivie de près par le Belize et Bay Islands au Honduras. Les zones océaniques offshore sont celles avec la plus petite richesse spécifique du fait d'un environnement pauvre en ressources et du manque d'opportunités pour ces espèces de diversifier leurs niches écologiques.

Ce rapport augmente de façon substantielle nos connaissances sur la biodiversité marine de la Grande Caraïbe. Les recommandations incluent: la planification systématique pour faire face aux scénarios avec menaces multiples; l'augmentation des ressources pour les agences de pêche insuffisamment loties; l'expansion des programmes d'acquisition de données sur l'effort de pêche; l'estimation des paramètres démographiques fondamentaux pour les espèces-clés; l'amélioration des connaissances sur les espèces peu connues et leur distribution dans la Grande Caraïbe; une focalisation initiale des investissements locaux pour la conservation des « points chauds » identifiés pour les espèces menacées; la délinéation des zones clés pour la biodiversité (KBAs) dans la région de manière à prioriser les futurs investissements; la protection des zones de reproduction pour les espèces d'importance socio-économique; une revue des régulations sur la pêche qui aurait pour objectif de permettre l'utilisation durable des riches zones de pêche de la région; l'amélioration des jeux de données (comme la bathymétrie côtière) afin de guider les décisions relatives à la gestion des pêches et les actions de conservation; une recherche accrue sur les schémas de connectivité au stade larvaire aux échelles régionales, méso et macro; et la normalisation des connaissances sur l'efficacité des nombreuses Aires marines protégées de la région.

Resumen ejecutivo

La región del Gran Caribe cubierta en este reporte (representando 38 países y territorios) incluye una increíble riqueza de peces óseos marinos costeros con 1360 especies, muchas de ellas (53%) endémicas.

Si bien actualmente se dispone de información en la Lista Roja de la UICN sobre el estado de conservación de varios grupos de la región, tales como pastos marinos, manglares, corales de arrecifes, pepinos de mar, caracoles cono, mamíferos, aves y tortugas marinas, y tiburones y rayas, existe muy poca información sobre los peces óseos marinos costeros. Este reporte aborda este desequilibrio, proporcionando una visión general del estado de conservación de los peces óseos marinos costeros del Caribe, con información detallada disponible a través de la Lista Roja de la UICN.

Considerando el número total de peces óseos marinos costeros revisados en este trabajo (1360), se determinó que el 5% de las especies (6% de las endémicas) están en riesgo de extinción (cumplen con los criterios de la UICN para alguna de las categorías de En Peligro Crítico, En Peligro o Vulnerable). Esta estimación se eleva a un precautorio 13% de especies amenazadas (19% de las endémicas) cuando se incluyen a las especies evaluadas como DD (posiblemente amenazadas) dentro de las especies en riesgo de extinción. Cuatro de las especies revisadas (*Lucifuga simile*; *Epinephelus drummondhayi*; *Epinephelus itajara*; *Hyporthodus nigritus*) están en la categoría de En Peligro Crítico –indicando un riesgo de extinción extremadamente alto y la necesidad de acciones de manejo inmediatas para revertir esas tendencias poblacionales.

Entre las principales amenazas para los peces óseos marinos costeros de la región del Gran Caribe se destacan la sobre-explotación de los stocks pesqueros, la degradación de los hábitats de arrecifes de corales (por una variedad de impactos), la depredación por especies

introducidas (principalmente el pez león exótico) y la perdida continua de importantes hábitats costeros (tales como manglares, pastizales marinos y hábitats de fondos duros).

Biogeográficamente hablando, los resultados de este informe muestran que el sur de Florida tiene la mayor riqueza de peces óseos, seguido de cerca por Belice y las islas de la Bahía de Honduras. Las áreas oceánicas mar adentro tienen la riqueza más baja, debido al ambiente pobre en recursos y la baja oportunidad para la diversificación de nichos.

Si bien este informe ha mejorado sustancialmente los conocimientos sobre la biodiversidad marina del Gran Caribe, las recomendaciones incluyen: planificación sistemática para hacer frente a los escenarios de amenazas múltiples; mejores recursos para las agencias pesqueras, típicamente con escasos recursos; ampliación de programas de adquisición de estadísticas de captura y esfuerzo pesquero; estimación de parámetros demográficos fundamentales para especies clave, aumento del conocimiento de especies poco conocidas y sus distribuciones en el área del Gran Caribe; un enfoque inicial de la inversión local de conservación en los “hotspots” de especies amenazadas; delimitación de “Áreas Clave de Biodiversidad” marinas dentro del Gran Caribe para ayudar en la priorización de futuras inversiones en conservación; protección de los sitios de agregación de desove de especies socioeconómicamente críticas; revisión de las regulaciones pesqueras con el objetivo de facilitar el uso sostenible de las ricas pesquerías de la zona; mejora de los datos de apoyo (tales como batimetría costera) para optimizar las decisiones de conservación y gestión pesquera; ampliación de la investigación sobre los patrones de conectividad larvaria a escala regional de meso y macro-escala; y conocimientos estandarizados sobre la efectividad de las numerosas áreas marinas protegidas de la zona.

Commonly used Abbreviations

Red List Categories

EX	Extinct
EW	Extinct in the Wild
CR	Critically Endangered
EN	Endangered
VU	Vulnerable
NT	Near Threatened
LC	Least Concern
DD	Data Deficient
NE	Not Evaluated

Red List Terminology

AOO	Area of Occupancy
EOO	Extent of Occurrence
GL	Generation Length

International Organizations

IUCN	International Union for Conservation of Nature
SSC	Species Survival Commission
SSG	Species Specialist Group
RLA	Red List Authority
MBU	Marine Biodiversity Unit
BAU	Biodiversity Assessment Unit
FAO	Food and Agriculture Organization
STRI	Smithsonian Tropical Research Institute
WCMC	World Conservation Monitoring Centre
RFMO	Regional Fishery Management Organization

Areas of Biological Importance

KBA	Key Biodiversity Area
MPA	Marine Protected Area
SPAW	Specially Protected Areas and Wildlife

Chapter 1. Background

1.1 The Greater Caribbean Biogeographic Region

The greater Caribbean biogeographic region contains the highest marine species richness in the Atlantic Ocean and is considered a global biodiversity hotspot for tropical reef species (Roberts et al. 2002). In this study, the greater Caribbean (Figure 1) was defined according to the biogeography of shorefishes reported by Robertson and Cramer (2014). Geopolitically, the region is comprised of 38 countries and territories, many of which are insular entities whose current domestic economies are highly supported by tourism and other industries that are dependent on the marine environment (CARSEA 2007, Burke et al. 2011). Approximately 1,360 marine bony shorefishes inhabit the region, half of which are endemic (Robertson and Cramer 2014).

1.2 Diversity and endemism

Of the 1,360 marine bony shorefishes, 53% are endemic, which is the highest degree of endemism in the Atlantic Ocean. Robertson and Cramer (2014) reported that 45% of all greater Caribbean shorefishes are endemic ($n=1,559$; includes elasmobranchs, which are mostly not endemic). Miloslavich et al. (2010) reported that 45% of 1,336 fishes restricted to the Caribbean Sea (includes elasmobranchs) were endemic and that this may be higher if the entire greater Caribbean is considered. Smith et al. (2002) reported that 23% of 987 greater Caribbean fishes present in fisheries were endemic. However, Smith et al. acknowledged that if gobies and other non-fished diminutive groups had been included, the endemism rate would have been higher.

Figure 1: Greater Caribbean biogeographic region as defined for this project.

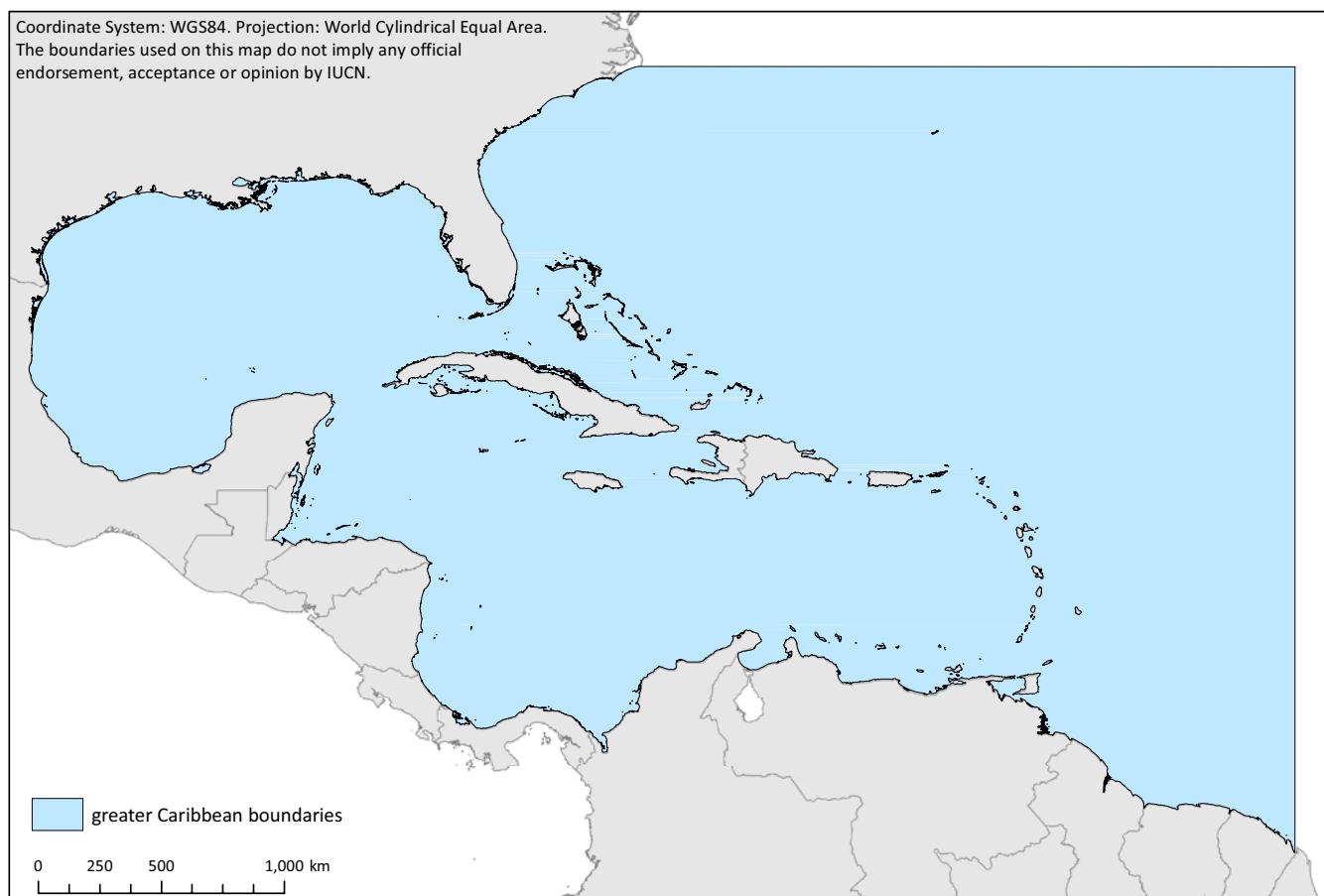


Table 1: Richness of marine bony shorefishes in the greater Caribbean. This richness includes the number of nominal species, genera and families in each order, as well as the number and percentage of endemic species.

Order	Family	Genus	Species	Endemic Species	% Endemic Species
Acipenseriformes	1	1	2	0	0
Albuliformes	1	1	2	1	50
Anguilliformes	9	45	91	36	40
Atheriniformes	2	6	16	11	69
Aulopiformes	2	4	13	3	23
Batrachoidiformes	1	7	22	17	77
Beloniformes	3	15	31	4	13
Beryciformes	2	8	12	5	42
Clupeiformes	3	18	46	20	43
Cyprinodontiformes	3	4	13	11	85
Elopiformes	1	2	3	1	33
Gadiformes	4	4	9	3	33
Gobiesociformes	1	6	25	21	84
Lampriformes	2	2	2	0	0
Lophiiformes	3	9	22	16	73
Mugiliformes	1	1	7	2	29
Ophidiiformes	3	19	62	54	87
Osmeriformes	1	2	2	1	50
Perciformes	59	261	773	438	57
Pleuronectiformes	4	16	68	33	49
Scorpaeniformes	4	8	43	19	44
Siluriformes	1	6	16	5	31
Syngnathiformes	4	13	29	14	48
Tetraodontiformes	7	20	50	10	20
Zeiformes	1	1	1	0	0

1.3 Assessment of extinction risk: the IUCN Red List of Threatened Species

The Red List began in the 1960s as a series of books and has since evolved into an extensive open-access database maintained by the IUCN Species Programme on www.iucnredlist.org. Consequently, the Red List is a powerful

tool that is useful to a variety of stakeholders, including policy makers, scientists that analyze biodiversity patterns and protected area managers (Hoffmann et al. 2008).

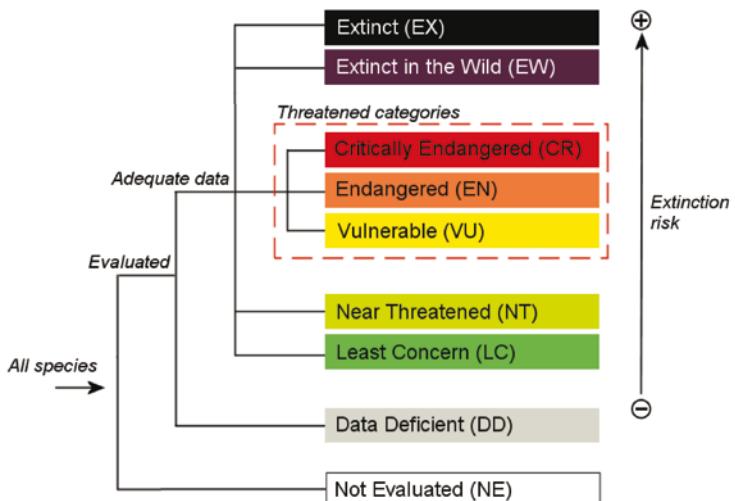
Building the Red List requires an extensive network of scientific experts who provide information and guidance to systematically estimate extinction risk in thousands of

taxa across the globe (Lamoreux et al. 2003). Depending on the quantitative knowledge of threats impacting a species' population and/or geographic range per Red List protocol, a species is assigned to one of nine extinction risk categories (Mace et al. 2008, Figure 2). Results from Red List assessments conducted across a taxonomic group or geographic regions highlight at-risk species and localities; thus, assessments are used to inform conservation priorities (Rodrigues et al. 2006, Schmitt 2011). Red List assessments also highlight priorities for directed research, such as needs for specific ecological surveys and studies on the impact of certain threats (Vié et al. 2009, Elfes et al. 2013).

The IUCN Red List Categories and Criteria reflect the principles in extinction risk theory (Mace et al. 2008) and are the most robust system for quantifying extinction risk at the species level for terrestrial and marine biota (Butchart et al. 2005, De Grammont and Cuarón 2006, Hoffman et al. 2008). These Categories and Criteria rely on a protocol of standardized methodologies for transparency of application across the taxonomic spectrum, reproducibility of results for replication and an objective protocol for identifying and minimizing uncertainty in the assessment process.

The Red List categories for global assessments (Figure 2) are: Extinct (EX), Extinct in the Wild (EW), Critically Endangered (CR), Endangered (EN), Vulnerable (VU), Near Threatened (NT), Least Concern (LC), Data Deficient (DD), and Not Evaluated (NE). Five criteria are used quantitatively to evaluate the relative extinction risk of species: A (population size reduction), B (restricted geographic range), C (small population size and measured decline), D (very small and/or restricted populations) and E (quantitative analysis) (IUCN 2012).

Figure 2: The nine IUCN Red List Categories.



Species meeting quantitative thresholds associated with either one or more of the five criteria (i.e., A-E) are listed in one of the three threatened categories (CR, EN or VU) depending on the highest threshold it qualifies under. For species nearly qualifying as threatened, but not fully meeting all of the thresholds for a threatened species under any criteria and potentially meet the thresholds in the near future, an assignment of Near Threatened is warranted. Where no known major threats to a species are detected, or the species does not reach the thresholds in Criteria A–E, it is assessed as Least Concern. Species classified as Least Concern are deemed to have a lower risk of extinction. In situations where available data do not allow adequate application of the Red List Criteria, such as inability to quantify known threats (i.e., fishing pressure), unknown extent of distribution due to taxonomic uncertainty or lack of important habitat and ecology data (such as generation length, fecundity, maximum age etc.), a species is assigned to the category of Data Deficient and marked as a priority for research. Finally, most of the world's species have not yet been assessed against the Red List Criteria and therefore are Not Evaluated (IUCN 2012).

Each of the five Red List Criteria addresses one or both of the two extinction risk paradigms: (1) very small populations experiencing ongoing decline and/or facing elevated risks of extinction due to ongoing threats and (2) populations of species experiencing, have experienced or likely experiencing population declines at rates that are biologically unfeasible for the population to remain viable in the wild (Mace et al. 2008). Criterion A addresses species experiencing significant population declines, using generation length (the average age of the parents of a cohort) as a baseline measurement for a population's turnover rate. This criterion is generally used

for wide-ranging species facing identifiable threat(s) that cause a population reduction beyond a species' ability to naturally sustain itself. Criterion B addresses species with a measurable extinction risk based on restricted range size, usually calculated as an Extent of Occurrence (EOO) < 20,000 km² or an Area of Occupancy (AOO) < 2,000 km², accompanied with continued decline of AOO or EOO and/or severe fragmentation of existing habitat. Criterion C measures the relative extinction risk of a species by small population size and an observed, inferred or estimated continued decline of the number of mature individuals in a population. Criterion D identifies species at risk of extinction due to extremely small and/or restricted populations, while Criterion E relies on computer generated population modeling to quantify current and future threats to the persistence of the species in the wild.

1.4 Project Objectives

Prior to these Red List assessments, only one-quarter of the greater Caribbean marine bony shorefishes were officially assessed under Red List Criteria, limiting the ability to understand the most pervasive threats and conservation needs of this ecologically and economically important group. Several regional and national-level

initiatives (e.g., Caribbean Challenge Initiative) are currently working to alleviate the multitude of stressors affecting marine species by improving the hundreds of established marine protected areas as well as delineating new protected areas. However, the lack of a comprehensive baseline on the status of marine biodiversity in the Caribbean hampers the development of effective conservation actions. Thus, the primary objectives of this project were to:

- Compile and assess comprehensive and peer-reviewed information on the distribution and conservation status of marine bony shorefishes in the Caribbean, through the training and collaboration of specialist networks.
- Record existing conservation actions during the species assessments and develop recommendations of further actions that should be taken for the species.
- Collate information to facilitate conservation and sustainable management of the biodiversity of the Caribbean (e.g. mapping information), including information needed to begin the process of identifying Key Biodiversity Areas (KBAs).
- Provide the basis for safeguarding livelihoods of people who rely on biodiversity through providing information on species and habitats.

Reef fishes in Roatán, Honduras © Noel Wingers



Chapter 2. Assessment methodology

2.1 Geographic scope

The greater Caribbean area extends from Cape Hatteras, North Carolina in the USA, south to at least French Guiana, including Bermuda, the Gulf of Mexico, and the Caribbean Sea (Robertson and Cramer 2014). For the purposes of this report, the southern extent of the area of interest was drawn at the border of French Guiana and Brazil (Figure 1).

2.2 Taxonomic scope

This study defines a shorefish as a species inhabiting areas from estuaries to the continental shelf edge, to a depth limit of less than 200 m, including demersal and pelagic species occurring over the continental shelf and sometimes extending into deeper oceanic water. Data from scientific literature and consultation with ichthyologists compiled a list of 1,360 species that was completed in 2014, exclusion of species that met the aforementioned criteria was not intentional and was based on the best available data at that time. Shorefishes described after the publication of these assessments include *Pinnichthys prolata* (Hastings & Findley 2015), *Coryphopterus curasub* Baldwin & Robertson 2015, *Scorpaenodes barrybrownii* Pitassy & Baldwin 2016, *Psilotris laetariae* Van Tassell & Young 2016, *Psilotris laurae* Van Tassell, Tornabene & Baldwin 2016, *Varicus cephalocellatus* Gilmore, Van Tassell, and Baldwin 2016, *Varicus decorum* Van Tassell, Baldwin and Tornabene 2016, *Varicus lacerta* Tornabene, Robertson & Baldwin 2016, *Varicus veliguttatus* Van Tassell, Baldwin and Gilmore 2016, *Lipogramma levinsoni* Baldwin, Nonaka & Robertson 2016, and *Lipogramma haberi* Baldwin, Nonaka & Robertson 2016. Sharks, rays and chimaeras (class Chondrichthyes) were not included because their conservation status has been addressed by Dulvy et al. (2014). All taxonomy was standardized against the Catalog of Fishes (Eschmeyer et al. 2015) maintained by the Institute for Biodiversity Science and Sustainability at the California Academy of Sciences, which is recognized as the global authority on fish taxonomy.

2.3 Preliminary assessments and pre-workshop data collection

Extinction risk categories for each shorefish were assessed under quantitative methods developed by the IUCN Red

List (Mace et al. 2008, IUCN 2012). Supporting material required to inform each assessment included: distribution, population status and trends, habitat and ecology (including life history), use and trade, threats and conservation measures. The Marine Biodiversity Unit (MBU) staff compiled these data into the IUCN Species Information Service (SIS) database.

2.4 Red List assessment workshops

Experts in fish taxonomy, biology and population dynamics participated in IUCN Red List assessment workshops to review and improve the information in each species account. A facilitator trained in the IUCN Red List methods provided guidance to these experts to determine an appropriate extinction risk category.

The assessments included in this report are outcomes from many Red List workshops. Prior to this initiative, 372 Caribbean marine bony shorefish species were already published on the Red List as part of a clade-based approach to assess the world's marine vertebrates. Three workshops, Barbados in 2010, Jamaica in 2012 and Trinidad in 2013, were attended by 32 experts (see Appendix I) to review nearly 1,000 unassessed Caribbean shorefishes. Information obtained from seven workshops, that were part of separate global initiatives held between 2009-2011, also contributed to species assessments (see Table 2).

Participants at the first greater Caribbean IUCN Red List assessment workshop in Barbados, March 2011. © Kent Carpenter



Participants at the second greater Caribbean IUCN Red List assessment workshop in Jamaica, August 2012. © Kent Carpenter



Participants at the third greater Caribbean IUCN Red List assessment workshop in Trinidad, January 2013. © Christi Linardich



Table 2. List of the 10 workshops where 1,000 previously unassessed Caribbean shorefish species were evaluated for inclusion on the Red List.

Taxonomic Group	Workshop location	Year
Sciaenidae	Brazil	2009
Pomacentridae	Fiji	2010
Caribbean diminutive shorefishes	Barbados	2010
Anguilliformes	USA	2011
Tetraodontiformes	China	2011
Centropomidae, Mugilidae, Ariidae	Brazil	2011
Lutjanidae and Haemulidae	The Bahamas	2011
Gulf of Mexico endemic fishes	USA	2011
Caribbean shorefishes	Jamaica	2012
Caribbean shorefishes	Trinidad	2013

All five Red List criteria were considered during the assessment process; however, these shorefishes were primarily assessed under Criteria A (population decline) or B (restricted range). Due to the inherent difficulties in estimating the number of individuals in a fish population, data required to qualify under Criteria C, D, or E were often lacking. On occasion, a species was assessed under Criteria D2 based on a very small area of occupancy or number of locations and a serious plausible threat.

2.5 Post-workshop editing

After workshops, each species' assessment was reviewed and outstanding questions resolved through further consultations with experts, as well as with members of the IUCN Species Survival Commission marine fishes Species Specialist Groups and Red List Authorities. Additional comments and further up-to-date information from these sources were included in the assessments and changes to the Red List category and criteria from the workshop were considered. When necessary, distribution maps were also revised to more accurately reflect the known distribution of each species.

Staff at the MBU and BAU first checked for consistency in the application of the Red List categories and criteria. Each assessment was peer-reviewed by knowledgeable reviewers outside of the workshop process. A final review and consistency check was completed by the IUCN Red List Unit, the division of the IUCN Global Species Programme responsible for maintaining the Red List website. The resulting final IUCN Red List assessments are a product of scientific consensus and exchange among numerous experts, and are backed by relevant literature and data sources. All species assessments were published on the IUCN Red List website (www.iucnredlist.org) as of June 2016.

2.6 Methodology for spatial analyses

Species' polygonal distribution maps were drawn to include all known and inferred occurrences based on data sourced from published literature, expert knowledge and point records. Researchers at the Smithsonian Tropical Research Institute that compiled point data on fish records made a substantial contribution to refining the species distributions (Robertson and Cramer 2014, Robertson and Van Tassell 2015). Points representing fish vagrants or non-native occurrences were omitted. All distributions were digitized in ArcGIS 10.1. Nearshore distributions were standardized by clipping the generalized distribution to a buffer that represented either

100 km from the shoreline or 200 m bathylines, whichever was farther from the shoreline. In the few cases where a species significantly inhabited the continental slope, the distribution polygon was standardized to a maximum depth of 300 m. Maps of oceanic species were digitized by hand.

Each distribution map shapefile was converted into a square grid raster of 5 x 5 km cell size, based on the

smallest distribution polygon in the data set (32 km^2), following the protocols laid out by Rahbek (2005). By adding together the number of species that occupy each grid cell, maps of overall richness, endemic richness, DD richness and threatened richness were created. Symbology in the maps was classified by Jenks natural breaks into six classes with a color scheme of light to dark, where the highest scoring cells (class 6) are the darkest color.

Lutjanus campechanus (Red Snapper), Vulnerable © Ross Robertson, www.stri.org/sfgc



Chapter 3. The Status and Distribution of Caribbean Bony Shorefishes

3.1 Conservation status of marine bony shorefishes

The best estimate for the proportion of threatened marine bony shorefishes in the Caribbean is 5%. Given the uncertainty on the real status of the species listed as Data Deficient, the percentage of threatened species may be 5% if none of the Data Deficient species are threatened, or up to about 13% if all the Data Deficient species are threatened (Table 3). The proportion threatened of endemic marine bony shorefishes is higher than when all species are included.

Table 3. Range of percentage of threatened Caribbean marine bony shorefishes, using the estimators recommended in IUCN (2011). N = 1,360 for all species and N = 725 for the endemic species.

Parameter	Equation	All	Endemics
Lower Bound	$(CR+EN+VU)/Assessed$	5%	6%
Midpoint	$(CR+EN+VU)/(Assessed-DD)$	5%	7%
Upper Bound	$(CR+EN+VU+DD)/Assessed$	13%	19%

Table 4. List of Caribbean marine bony shorefishes assessed (N = 65) as threatened (Critically Endangered - CR, Endangered - EN, or Vulnerable - VU).

Family	Species Name	Category	Endemic?
Bythitidae	<i>Lucifuga simile</i>	CR	yes
Epinephelidae	<i>Epinephelus drummondhayi</i>	CR	yes
Epinephelidae	<i>Epinephelus itajara</i>	CR	no
Epinephelidae	<i>Hyporthodus nigritus</i>	CR	no
Atherinopsidae	<i>Menidia colei</i>	EN	yes
Atherinopsidae	<i>Menidia conchorum</i>	EN	yes
Batrachoididae	<i>Sanopus reticulatus</i>	EN	yes
Batrachoididae	<i>Sanopus splendidus</i>	EN	yes
Bythitidae	<i>Lucifuga lucayana</i>	EN	yes
Bythitidae	<i>Ogilbichthys ferocis</i>	EN	yes
Engraulidae	<i>Anchoa choerostoma</i>	EN	yes
Epinephelidae	<i>Epinephelus striatus</i>	EN	yes
Fundulidae	<i>Fundulus persimilis</i>	EN	yes
Gobiidae	<i>Elacatinus atronasus</i>	EN	yes
Gobiidae	<i>Elacatinus centralis</i>	EN	yes
Gobiidae	<i>Elacatinus jarocho</i>	EN	yes
Gobiidae	<i>Gobiosoma spilotum</i>	EN	yes

Family	Species Name	Category	Endemic?
Gobiidae	<i>Tigrigobius harveyi</i>	EN	yes
Labridae	<i>Halichoeres burekiae</i>	EN	yes
Labridae	<i>Halichoeres socialis</i>	EN	yes
Malacanthidae	<i>Lopholatilus chamaeleonticeps</i>	EN	no
Scombridae	<i>Thunnus thynnus</i>	EN	no
Serranidae	<i>Hypoplectrus castroaguirrei</i>	EN	yes
Acipenseridae	<i>Acipenser brevirostrum</i>	VU	no
Ariidae	<i>Notarius neogranatensis</i>	VU	yes
Ariidae	<i>Sciades parkeri</i>	VU	no
Balistidae	<i>Balistes capriscus</i>	VU	no
Batrachoididae	<i>Sanopus astrifer</i>	VU	yes
Batrachoididae	<i>Sanopus greenfieldorum</i>	VU	yes
Batrachoididae	<i>Vladichthys gloverensis</i>	VU	yes
Bythitidae	<i>Lucifuga spelaeotes</i>	VU	yes
Chaenopsidae	<i>Emblemaria pricei</i>	VU	yes
Clupeidae	<i>Alosa aestivalis</i>	VU	no
Epinephelidae	<i>Hyporthodus flavolimbatus</i>	VU	no
Epinephelidae	<i>Hyporthodus niveatus</i>	VU	no
Epinephelidae	<i>Mycteroperca interstitialis</i>	VU	no
Fundulidae	<i>Fundulus grandissimus</i>	VU	yes
Fundulidae	<i>Fundulus jenkinsi</i>	VU	yes
Gobiidae	<i>Coryphopterus alloides</i>	VU	yes
Gobiidae	<i>Coryphopterus eidolon</i>	VU	yes
Gobiidae	<i>Coryphopterus hyalinus</i>	VU	yes
Gobiidae	<i>Coryphopterus lipernes</i>	VU	yes
Gobiidae	<i>Coryphopterus personatus</i>	VU	yes
Gobiidae	<i>Coryphopterus thrix</i>	VU	yes
Gobiidae	<i>Coryphopterus tortugae</i>	VU	yes
Gobiidae	<i>Coryphopterus venezuelae</i>	VU	yes
Gobiidae	<i>Ctenogobius claytonii</i>	VU	yes

Family	Species Name	Category	Endemic?
Gobiidae	<i>Elacatinus cayman</i>	VU	yes
Gobiidae	<i>Elacatinus prochilos</i>	VU	yes
Gobiidae	<i>Gobiosoma hildebrandi</i>	VU	yes
Gobiidae	<i>Psilotris boehlkei</i>	VU	yes
Gobiidae	<i>Tigrigobius redimiculus</i>	VU	yes
Istiophoridae	<i>Kajikia albida</i>	VU	no
Istiophoridae	<i>Makaira nigricans</i>	VU	no
Labridae	<i>Lachnolaimus maximus</i>	VU	yes
Lutjanidae	<i>Lutjanus campechanus</i>	VU	yes
Lutjanidae	<i>Lutjanus cyanopterus</i>	VU	no
Lutjanidae	<i>Rhomboptilus aurorubens</i>	VU	no
Megalopidae	<i>Megalops atlanticus</i>	VU	no
Molidae	<i>Mola mola</i>	VU	no
Pomatomidae	<i>Pomatomus saltatrix</i>	VU	no
Pristigasteridae	<i>Neoopisthopterus cubanus</i>	VU	yes
Scombridae	<i>Thunnus obesus</i>	VU	no
Serranidae	<i>Hypoplectrus maya</i>	VU	yes
Syngnathidae	<i>Hippocampus erectus</i>	VU	no

3.2 Spatial distribution of species

Coral reef in Roatán, Honduras © Noel Wingers

Overall species richness

In the greater Caribbean, shorefish richness patterns show higher species numbers near the coast, with variable “hotspots” identified depending on which group of shorefishes is being considered (Figures 3-6). Generally, shorefish richness patterns are influenced by: 1) distribution of widespread species; 2) degree of geographic isolation; 3) local currents and water temperature; 4) complexity of habitats available; and 5) degree of sampling effort. In the greater Caribbean, even the majority of endemics are widely distributed presumably due to the generally high level of connectivity in the region (Robertson and Cramer 2014). This could be driving the richness patterns seen in this study to some degree (Orme et al. 2005, Pimm et al. 2014). According to Cowen et al. (2006), the Caribbean is not lacking for complexity in

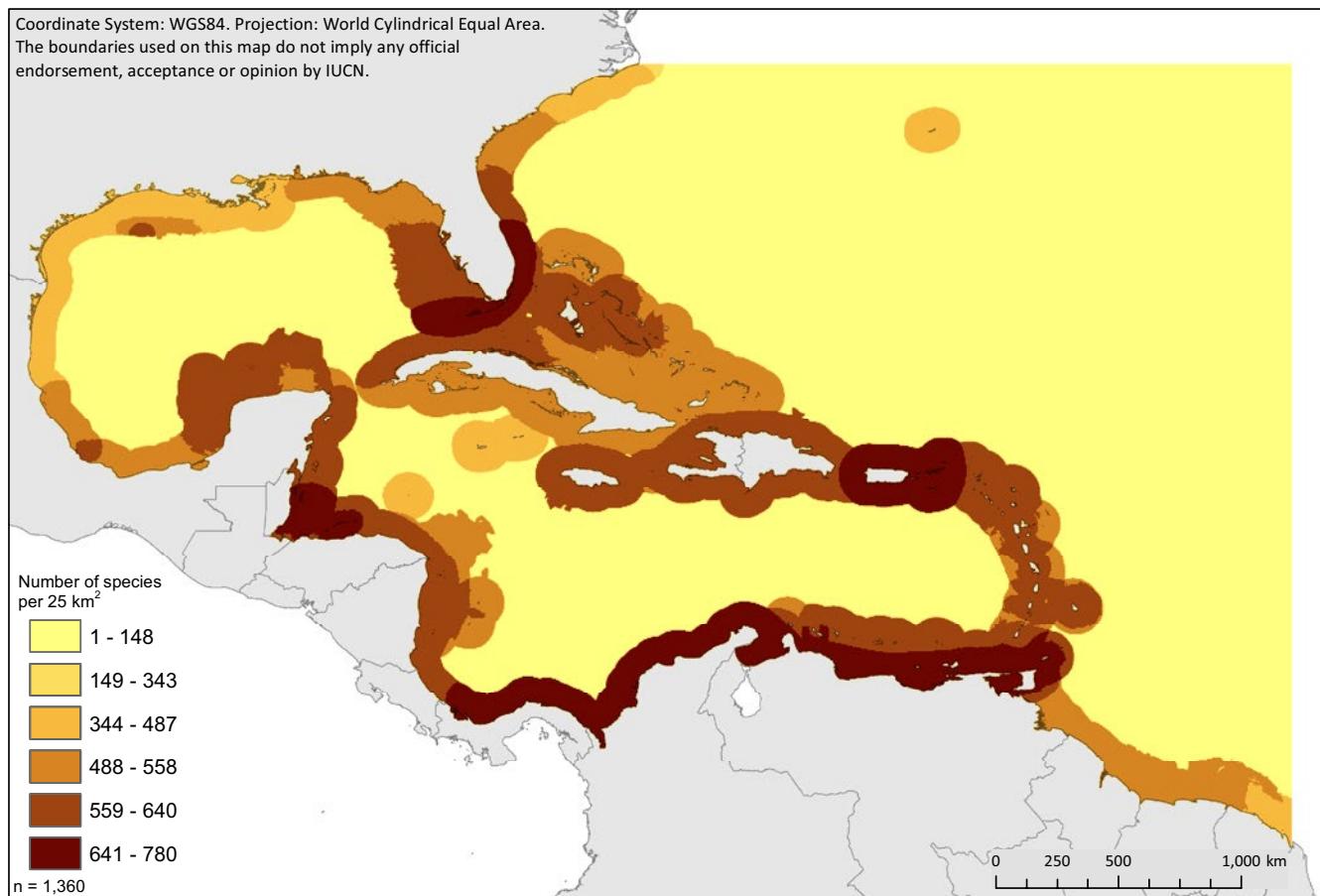


subregional connectivity. Using point data in a cluster analysis, Robertson and Cramer (2014) found the highest number of shorefishes along the Central American coast from Mexico to Panama, as well as all the offshore islands except Bermuda and Tobago. These findings are similar to this IUCN Red List assessment, but describe a much larger area of high richness.

The area with most species ($N = 645-780$), south Florida, fits several of the five aforementioned high richness drivers: it is well-studied, it has a large area of complex reef and the chance of settlement by propagules from Caribbean reefs is likely amplified by its position in the Florida Straits, which is where the Florida Current transitions into the Gulf Stream. Cuba shares these characteristics, but low sampling effort in this area (Miloslavich et al. 2010) may be inhibiting it from appearing as a hotspot. In an extensive review, Claro et al. (2001) listed 950 marine bony fishes, including subspecies and non-shorefishes as recorded from Cuba. The same case with the Colombian Archipelago of San Andres, Old Providence and Santa Catalina, that includes a complex of rare, unique, remote and unusual ecosystems as barrier and fringing reefs, lagoons, atolls, seagrass and seaweed

beds, mangroves and beaches that for the main areas can reach 522 shorefish species listed (Bolaños-Cubillos et al. 2015) with many unsampled areas. Other areas with high richness include Belize and the Bay Islands of Honduras, which are part of the Mesoamerican Reef Complex. This latter area is recognized for its substantial mangrove, seagrass and coral reef habitat (Robertson and Cramer 2014) and is somewhat isolated from areas to the north and south (Cowen et al. 2006). As mentioned before, the Central American coast is also relevant but extending to the southern Caribbean region in the coast of Colombia and Venezuela with a high complexity of habitats throughout the shore ecosystems. High richness in the Leeward Islands (Puerto Rico to Dominica) may be due to high sampling effort as compared to nearby areas such as Hispaniola (Miloslavich et al. 2010), or its relative isolation from the remaining eastern Caribbean (Cowen et al. 2006). Curaçao was likely identified as a hotspot due to recent specialized sampling that discovered species currently known only from that locality (Baldwin and Robertson 2013, 2014, Baldwin and Johnson 2014). The Bahamas is a hotspot in the richness of endemics, but not in overall species; this may be partially explained by its geographic separation from the majority of the

Figure 3. Number of marine bony shorefish species in the greater Caribbean per 25 km² grid cell. The total number of species is displayed in the bottom left.



Caribbean (Cowen *et al.* 2006). The hotspots of shorefish diversity in the greater Caribbean do not appear to be driven by a single factor, but rather by the interaction of various drivers throughout the region.

The oceanic zone has the lowest fish richness due to its resource-poor environment and low opportunity for niche diversification (Helfman *et al.* 2009). In the nearshore area, low richness in the northwestern Gulf of Mexico, the Carolinas (U.S.) and French Guiana is due to multiple factors, including especially the lack of complex habitat types (Robertson and Cramer 2014). Bermuda has a low richness because it is geographically separated from the rest of the region (Smith-Vaniz *et al.* 1999, Smith-Vaniz and Collette 2013). Low richness in the Cayman Islands is not well understood, but the area is separated from the eastern Caribbean by the Cayman Trough, which is an extremely deep undersea volcanic rift (Miloslavich *et al.* 2010).

Endemic species richness

Areas of high richness in endemics are located in similar areas to those of high overall species richness. However, in

this case, most of the southern Caribbean coast including Trinidad and Tobago are excluded, with only a patchy concentration of endemics around some specific points such as the Bahamas, Curaçao, the Rosario and San Bernardo Islands in Colombia, and Margarita Island in Venezuela (Figure 4).

Threatened species richness

The richness of threatened species does not show clear patterns since about half of the species (31 out of 65) are widely distributed throughout the region (Figure 5). Measuring the vulnerability of an area based only on the distribution of threatened species can cause mismatches to occur because threat processes may not be homogenous across the entire range of a species (Wilson *et al.* 2005). For example, the Bluefish (*Pomatomus saltatrix*) is globally listed as Vulnerable due to overexploitation in many of its subpopulations resulting in a global population decline of 39-53% over three generation lengths; however, the greater Caribbean subpopulation is considered to be stable.

Figure 4. Number of endemic marine bony shorefish species in the greater Caribbean per 25 km² grid cell. The total number of species is displayed in the bottom left.

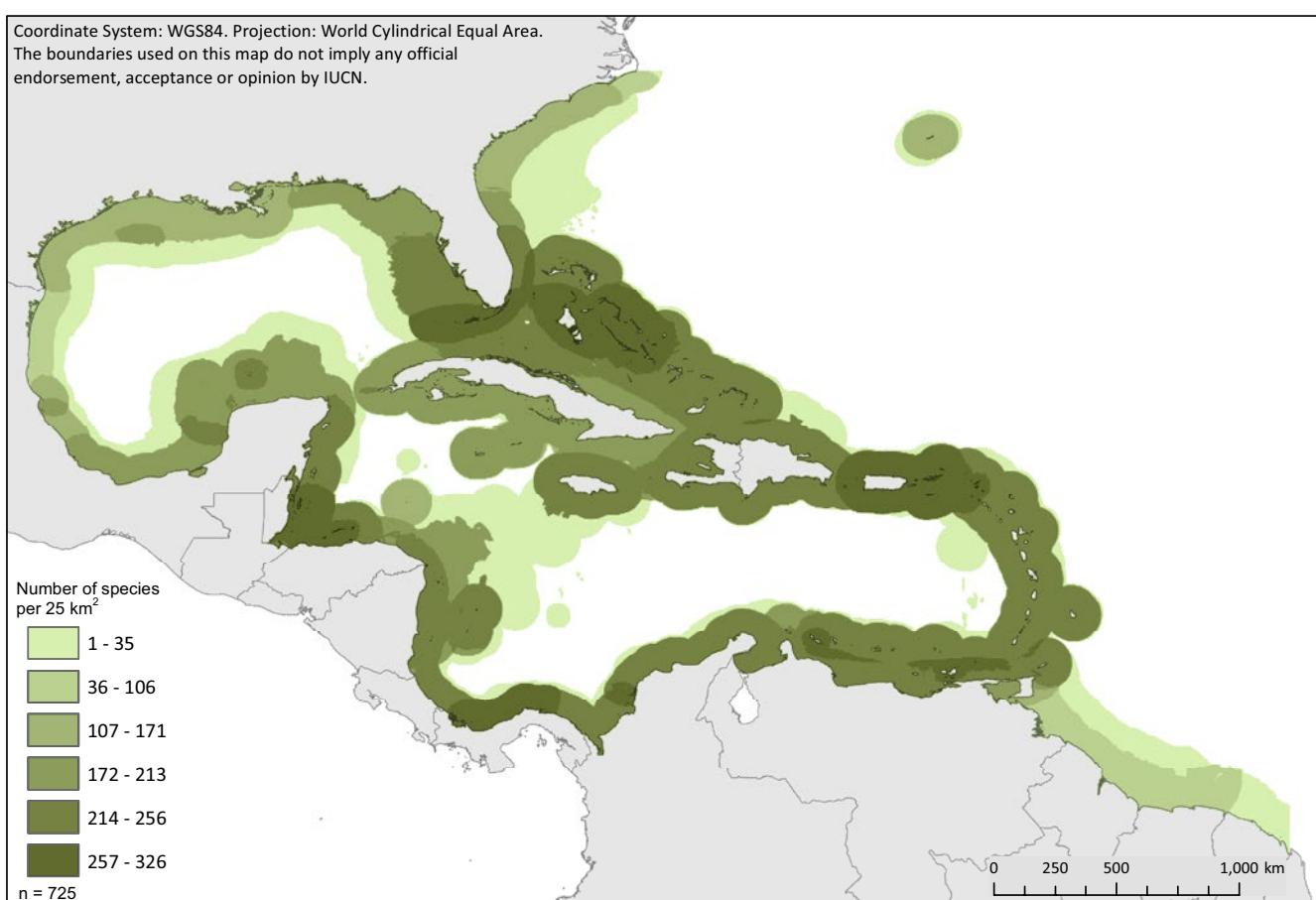
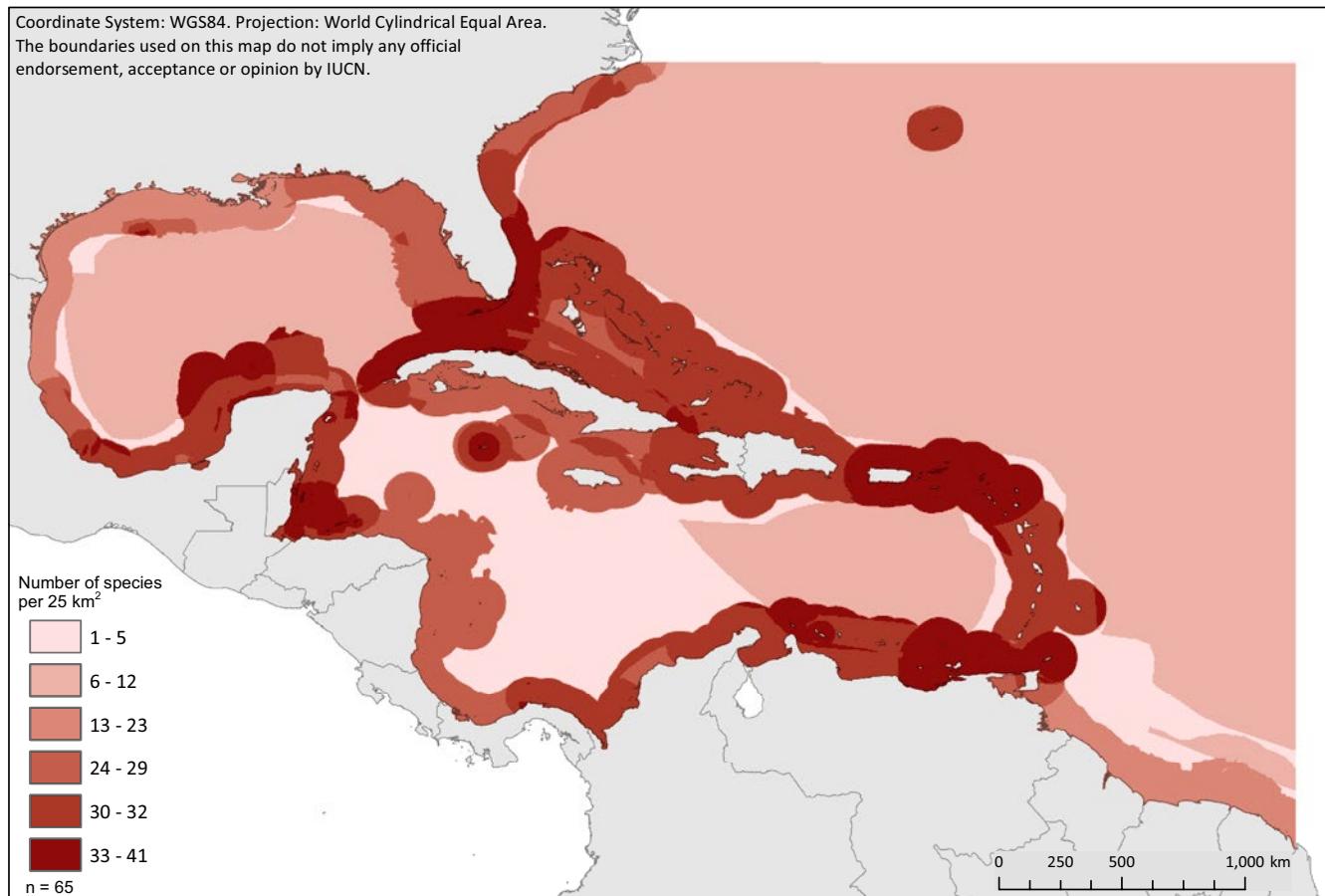


Figure 5: Number of threatened marine bony shorefish species (assessed as CR, EN or VU) in the greater Caribbean per 25 km² grid cell. The total number of species is displayed in the bottom left.



Data Deficient species richness

Since 72% of the 114 DD species are known from limited records their richness patterns are likely driven by sampling bias (Figure 6). Deep and cryptic species are typically under-represented in this Red List assessment, as appropriate sampling methods (often expensive to conduct) have been implemented only rarely within the greater Caribbean area (e.g., Williams 2002, Williams and Mounts 2003, Smith-Vaniz et al. 2006, Williams et al. 2010, Baldwin and Johnson 2014). As such, conducting a gap analysis between reef habitat and locations where rotenone and/or deep sampling methods have been applied in the greater Caribbean may guide priorities for biodiversity surveys as well as improve knowledge on species with unexplained distribution gaps (e.g., Bini et al. 2006). However, Venezuela is a hotspot for DD species due to reasons beyond sampling. For example, the Venezuelan Grouper (*Mycteroperca cidi*) and Tropical Flounder (*Paralichthys tropicus*) have their global population centers restricted mostly to Venezuela, but the impact that fishing may have on their population is unquantified. Less charismatic, limited range species

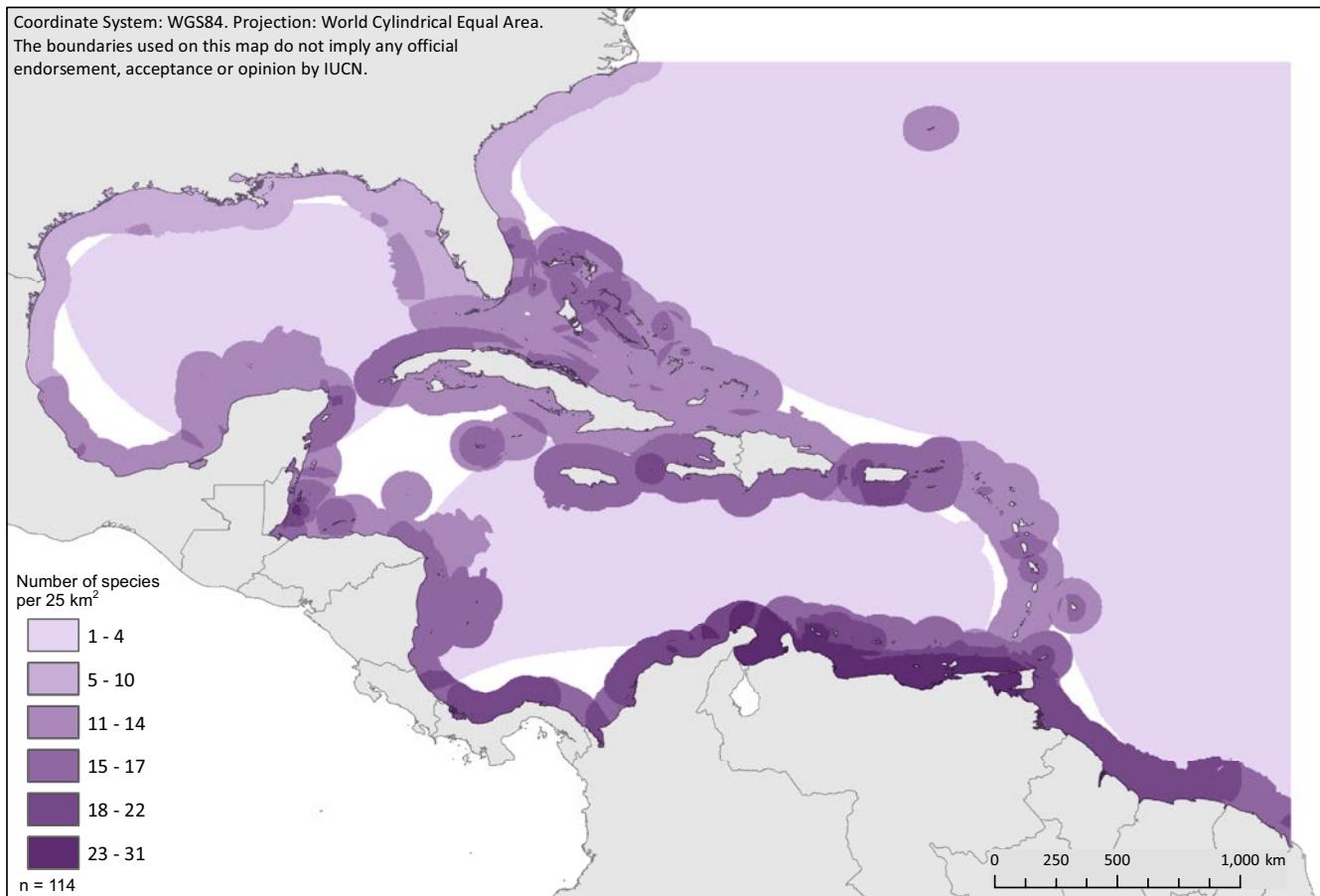
Mycteroperca cidi (Venezuelan Grouper), Data Deficient © Luiz Rocha



such as Blackburn's Anchovy (*Anchoviella blackburni*), the Shortstriped Round Herring (*Jenkinsia parvula*), the Backwaters Silverside (*Membras analis*) and the Wayuu Sea-Catfish (*Cathorops wayuu*), depend on sensitive shallow water habitats where decline is likely occurring, but is unknown.

Furthermore, the majority of the DD species for which basic distribution and biology data are available are

Figure 6: Number of marine bony shorefish species in the greater Caribbean assessed as Data Deficient per 25 km² grid cell. The total number of species is displayed in the bottom left.



Paralichthys tropicus (Tropical Flounder), Data Deficient © James Van Tassell, www.stri.org/sfgc



widely distributed, which likely contributes to ambiguity in richness patterns. Nieto et al. (2015) suggested that the factors behind DD richness hotspots in European marine fishes may be related to areas with high fishing pressure and low availability of catch data, while also mentioning that fish diversity in the European region is relatively well-known. The greater Caribbean, however, is a region where both basic diversity knowledge as well as the availability of fishery data varies widely by country.

3.3 Major threats

In the greater Caribbean, the key threat to bony shorefishes is fishery overexploitation (Table 5). Coral reef degradation and invasive lionfish predation are threats that commonly occur together. The fourth most common threat is estuarine degradation (e.g., mangrove and seagrass habitats, often key nursery areas) due to pollution and coastal development. The two final threats are specific to four restricted range species: anchialine cave degradation for three Caribbean cavefishes (*Lucifuga spp.*) and the construction of a pier complex within the habitat of the endemic toadfish, *Sanopus reticulatus*.

Table 5. Number of threatened bony shorefishes by threat type. Some species are impacted by more than one threat.

Threat	Species
Overexploitation	26
Coral degradation	24
Invasive lionfish predation	21
Estuary degradation	15
Mangrove degradation	5
Seagrass degradation	2
Dams/freshwater diversion	3
Competition with invasives	4
Anchialine cave degradation	3
Pier complex construction	1

Acropora cervicornis (Staghorn Coral) Critically Endangered © Noel Wingers



Overexploitation

Overexploitation directly impacts half the species listed as both NT and threatened in the greater Caribbean. Fishes commonly comprising reef fisheries represent over half of the overexploited species (22 in the greater Caribbean). With the exception of three endemics (*Epinephelus drummondhayi*, *E. striatus* and *Lutjanus campechanus*), most of the five snappers (Lutjanidae) and 11 groupers (Epinephelidae) globally listed as either NT or threatened have distributions that extend into the southwestern Atlantic, but a large proportion of their overall population is within the greater Caribbean. Many heavily fished snapper and grouper species, as well as some jacks (Carangidae) and other families, also form spawning aggregations that greatly increase their vulnerability to overfishing, with a wide array of management responses (Heyman and Kjerfve 2008; Russell et al. 2012).

Beyond the reef-complex fishes, the long-lived Golden Tilefish (*Lopholatilus chamaeleonticeps*) supports a U.S. fishery of relatively recent importance. Unfortunately, exploitation in the Gulf of Mexico caused an estimated 66% decline in its spawning stock biomass over the past three generation lengths. In addition, six of the highly

valued tunas and billfishes are threatened, even though their global distributions extend well beyond the greater Caribbean. Other species are declining due to both overfishing and habitat destruction, including four anadromous fishes (e.g., the Blueback Herring, *Alosa aestivalis*), two marine catfishes (*Notarius neogranatensis* and *Sciades parkeri*), and the large-bodied Southern Flounder (*Paralichthys lethostigma*). Collection for the aquarium trade along with habitat degradation is a concern for the Lined Seahorse (*Hippocampus erectus*) and the Dwarf Seahorse (*H. zosterae*).

Implementing strict management activities is an effective tool to rebuild exploited fish populations (NMFS 2015). Where strict management is not implemented, harvested fish populations typically continue to decline (Worm et al. 2009, Worm and Branch 2012). An example is provided by stocks of the Red Snapper (*Lutjanus campechanus*), which are on a trajectory to recovery in U.S. waters due to intensive management by RFMOs in the Gulf of Mexico and south Atlantic coast of the U.S. Furthermore, continuing overexploitation can change overall population structure and displace trophic linkages that support ecological resiliency in marine ecosystems.

Habitat degradation

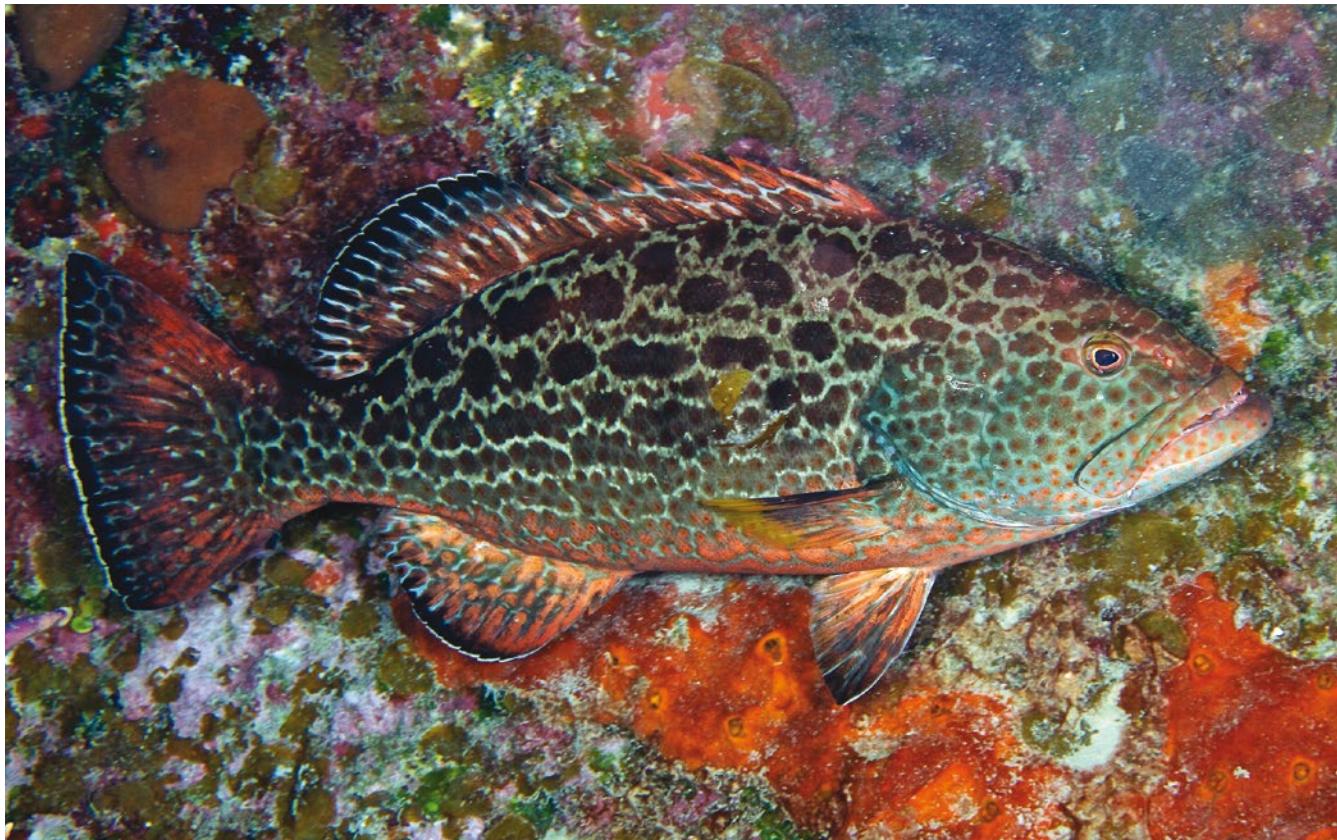
Coral degradation

A Red List assessment of the world's reef-building corals confirms that the largest proportion of NT and threatened corals occurs in the Caribbean (Carpenter et al. 2008). A recent comprehensive study on the status of greater Caribbean reefs reported an overall average decline in coral cover of 59% that began in the mid-1970s (Jackson et al. 2014). Human overpopulation, overfishing, and disease outbreaks drive this decline which decimates *Acropora* corals and the grazing sea urchin, *Diadema antillarum*. Extreme heating events associated with climate change are also likely contributing. The level of decline, however, varied highly across the region. Some localities recorded no decline (e.g. Bermuda), while the most severe declines occurred in the northeastern Caribbean and the Florida Keys.

Across the Caribbean, reef complexity has drastically deteriorated due to the loss of acroporid corals and mass bleaching events in 1998 and 2005 (Alvarez-Filip et al. 2009). Though the number of coral obligate fishes in the Caribbean is low, the majority of the shorefishes utilize hardbottom reef structure in some way (Robertson and Cramer 2014). Studies conducted in the Caribbean have demonstrated that high complexity reefs support high

Hippocampus zosterae (Dwarf Seahorse), Data Deficient © Ross Robertson, www.stri.org/sfgc





fish richness (Gratwicke and Speight 2005), especially of those fishes that are small-bodied (Pratchett et al. 2008). Coral degradation is recorded as a threat for 31% of the NT and threatened species. Five coral-dependent toadfishes (Batrachoididae) are distributed only in areas between the Campeche Bank (Mexico) to Belize, which also contains several areas where coral decline has been documented (Jackson et al. 2014). Furthermore, small-bodied reef specialists, such as the cryptic, live-bearing brotulas (Bythitidae) are potentially highly vulnerable to loss of reef complexity. Of the 25 Bythitidae species that occur in the greater Caribbean, all are endemic and 11

are only known to inhabit reefs; one is listed as threatened and four are DD.

Nearshore habitat degradation and freshwater diversions

Nearshore degradation, including estuaries, is driven by overexploitation (of fish and shellfish populations), coastal construction and destruction of aquatic plants (including seagrasses and mangroves) and pollution via terrestrially sourced nutrient runoff (Lotze et al. 2006). Many coastal shorefishes can use shallow, non-coralline hardbottom habitats as settlement and nursery areas (e.g.,



Lindeman and Snyder 1999). These latter habitats can be common in the region including the Florida Keys and the north coasts of almost all islands in the Greater and Lesser Antilles. In some areas, these habitats are buried by large dredge and fill projects which can also degrade deeper coral reef habitats via turbidity impacts. In addition, the hypoxic conditions caused by eutrophication and harmful algal blooms stresses euryhaline fishes dependent on estuarine environments (Valiela et al. 1997, Steidinger 2009). Within the greater Caribbean, impacts on marine biodiversity from a large hypoxic zone associated with the Mississippi-Atchafalaya River Basin in the northern Gulf of Mexico and harmful algal blooms off Florida are concerning (Rabalais et al. 2007, Flaherty and Landsberg 2011). Estuarine degradation is recorded as a threat for 24% of the NT and threatened species reviewed as part of this Red List assessment. Six of these are restricted range Gulf of Mexico endemics that are also estuary specialists. In addition, two threatened estuarine gobies (*Gobiosoma hildebrandi* and *G. spilotum*) are restricted to areas near the Panama Canal, where considerable habitat modification has negatively impacted their populations.

Fishes which utilize riverine habitats for spawning are threatened by dams limiting habitat availability, destroying spawning sites and decreasing egg survival (Pringle et al. 2000). River flow alteration also negatively impacts downstream estuaries by altering salinity gradients.

Mangrove and seagrass degradation

Wetland habitats, such as mangroves and seagrasses, support important ecosystem linkages with coral reefs and provide essential habitat for fishes throughout the greater Caribbean (Beck et al. 2001, Mumby et al. 2004). The loss of mangroves is largely caused by pollution and deforestation for urbanization. However, effective legislation to protect and restore mangroves has been increasing in many areas of the Caribbean (FAO 2007). For example, in the northern Gulf of Mexico mangrove habitat has expanded and is well-protected in a large portion of that region (Karnauskas et al. 2013). Mangrove degradation is recorded as a threat for 11% of the NT and threatened species. Population declines of the Mangrove Blenny (*Lupinoblennius vinctus*), which is a

Mangroves and oyster reef in Fakahatchee Bay, Florida, USA © Christi Linardich



mangrove specialist, are inferred to mirror the rate of mangrove decline, which was estimated by Wilkie and Fortuna (2003) at 3% annually since 1980.

Seagrasses, which also provide important habitat, are impacted by factors such as pollution, reduced water clarity, coastal development, dredging, storms and damage by boat props (Orth et al. 2006, Waycott et al. 2009). Seagrass degradation is recorded as a threat for 7% of the NT and threatened species. In addition, the overexploited Yellowfin Grouper (*Mycteroperca venenosa*) and Mutton Snapper (*Lutjanus analis*) utilize seagrass during their juvenile stages. Degradation in seagrass communities was documented in 43% of 17 sites across the greater Caribbean (Van Tussenbroek et al. 2014). However, the primary drivers of the declines were not specifically identified. Florida Bay holds the largest expanse of seagrass flats in the Gulf of Mexico and is a significant site in the greater Caribbean as well. Between the late 1980s and 1990s, about half of the seagrass cover in this area was lost during a large die-off event caused by eutrophication (Matheson et al. 1999).

Cave degradation

Three species in the genus *Lucifuga* are assessed as threatened due to cave habitat degradation. These live-bearing, blind fishes occur in small subpopulations that are restricted to a limited number of Bahamian and Cuban anchialine (partial marine/fresh) caves. These

Coryphopterus eidolon (Pallid Goby), Vulnerable © Frank Krasovec



unusual environments are located within the terrestrial landscape and are connected to saltwater via subterranean passages (Moller et al. 2006), and a number have become dumps for trash and sewage or been disturbed by hydrological manipulation (Proudlove 2001). In addition, freshwater species that have been introduced into some caves likely compete with *Lucifuga* spp. (García-Machado et al. 2011).

Invasive lionfish

The recent unprecedented invasion of two Pacific Ocean lionfishes (*Pterois miles* and *P. volitans*) throughout the greater Caribbean is a unique threat to native shorefishes. Lionfish are successful invaders since they are generalist

Lucifuga spelaeotes (New Providence Cusk Eel), Vulnerable © Keith Pamper





Invasive Red Lionfish, *Pterois volitans* © Carlos & Allison Estapé - www.carlosestape.photoshelter.com

feeders, utilize a variety of habitats, and have fast growth, high fecundity, lack known predators, and wide larval dispersal capabilities (Côté et al. 2013). In the Bahamas, where lionfish density is exceptionally high, declines in small native reef fish richness and reductions in biomass by an average of 65% over a two-year period have been documented (Green et al. 2012, Albins 2015). Similar effects of lionfish were not detected on Belizean reefs, however, the density of the invader in this area has not yet reached the level of the Bahamas (Hackerott 2014). Beyond direct effects from predation on small fishes, longer-term ecosystem-scale impacts could be realized in the future (Albins 2015). Lionfish were first recorded in the Gulf of Mexico at the end of 2009 (Aguilar-Perera and Tuz-Sulub 2010), and is now considered established (Switzer et al. 2015).

The preferred prey items of lionfish are small (less than 15 cm total length), shallow-bodied species, especially those that rest on or hover just above the substrate (Green and

Côté 2014). To date, more than 100 fishes have been reported in stomach content studies throughout the Caribbean (e.g., Morris and Akins 2009, Muñoz et al. 2011, Valdez-Moreno et al. 2012, Côté et al. 2013, Dahl and Patterson 2014, Eddy et al. 2016), with many more species likely undetected. Commonly consumed taxa include reef-associated species, especially squirrelfishes, cardinalfishes, grunts, gobies, blennies, basslets, small labrids and damselfishes.

Many of the NT and threatened species impacted by coral degradation also have been affected by lionfish. Gobies from the genus *Coryphopterus* are often some of the most frequently consumed fish (Côté et al. 2013, Albins 2015). In fact, eight out of the twelve western Atlantic members of this genus are listed as VU and one as DD. Clearly, well-designed surveys will be extremely valuable to monitor and understand the conservation status of these at-risk fishes.

3.4 Conservation measures in place

Marine Protected Areas (MPAs) have been established in the greater Caribbean to alleviate threats to marine biodiversity; however, only a small percentage of these MPAs are effective, with many lacking comprehensive management plans (Burke et al. 2011, Bustamante et al. 2014, Knowles et al. 2015). To address this deficiency, capacity development is currently being pursued through regional or national-level initiatives. Most countries in the area are signatories of the Convention for Biological Diversity (CBD), under which the Aichi Biodiversity Targets 11 and 12 specifically provide conservation goals to protect at least 10% of the world's coastal and marine area by 2020, to prioritize areas important for biodiversity and ecosystem services and to implement actions to prevent extinction events (CBD 2010, 2014). The Specially Protected Areas and Wildlife (SPAW) Protocol of the Cartagena Convention, an important legal framework under which many of the region's conservation bodies operate, relies on conditions that are advised by the presence of threatened biodiversity (UNEP 2010). The Caribbean Challenge Initiative, managed by The Nature Conservancy, is a region-specific example where ten countries have pledged to place at least 20% of their marine area under MPA coverage by 2020. The wide acceptance of these goals sets precedence for conserving areas with threatened biodiversity.

Curasub and team sampling biodiversity for the Smithsonian Deep Reef Observation Project (DROP) © Barry Brown, Substation Curaçao



3.5 Research and conservation needs

Accurately tracking progress toward conservation targets is dependent on improving spatial data across the entire region (Brooks et al. 2004), especially since many threatened fishes are widely distributed. Development of GIS data layers that are either completely unavailable, of poor resolution, or cover only a subset of the greater Caribbean, such as nearshore bathymetry and important shorefish habitats (i.e., estuaries and rocky reef), would greatly improve future conservation management planning. Systematically rating the effectiveness of each MPA in the greater Caribbean area would better enable the conservation community to track the true progress of biodiversity management (Boonzaier and Pauly 2015, Pressey et al. 2015). Due to sparse sampling, the knowledge of greater Caribbean shorefish diversity remains incomplete in several areas and environments (as partially reflected in this report through the DD species). In addition, the lack of basic fishery data in many areas reduces the possibility to manage populations appropriately and would unknowingly lead to overexploitation. Investing in standardized, long-term habitat monitoring programs would also improve our awareness of at-risk species.

Chapter 4. Conclusions

4.1 Overview

As can be seen from the outline of threats to marine environments of the greater Caribbean derived from this IUCN Red List assessment, fish species are vulnerable to over-harvesting, deforestation, coastal development and impacts of agricultural expansion (especially run-off pollutants), with habitat degradation and invasive species (such as lionfish) as additional threats to marine biodiversity. These threats in turn affect Caribbean communities of people who rely on these marine species, and the richness of the Caribbean marine environment for livelihood. Lack of basic data on species and habitat health, out-of-date information, and poorly studied areas mean that often little is known about species and ecosystem health in the region. This scenario makes it difficult to improve national and regional level government and public understanding and knowledge regarding the need for investment in and support for implementation of conservation plans. To conserve the fish species that are so vital for the continued human health, culture and livelihoods of Caribbean communities of people, the knowledge on these species and their habitats must be significantly improved. Extinction risk assessments of these shorefishes may change as the knowledge on impacts from climate change progresses.

This IUCN Red List assessment identified marine bony shorefish species from the greater Caribbean that are at

risk globally, according to the IUCN Red List Categories and Criteria. The status of species is based on evaluations conducted by a network of scientist experts who carried out biodiversity assessments. Complete assessments are freely available on the IUCN Red List website: <http://www.iucnredlist.org>. Major threats are identified for each taxonomic group, and recommendations for conservation action are suggested.

4.2 Recommendations

Based on the comprehensive IUCN Red List assessments for all marine bony shorefishes in the greater Caribbean, the following recommendations are provided.

1. Elaborate systematic conservation planning addressing multi-threat scenarios to the area's shorefishes and accounts for user conflicts.
2. Conduct research into the conservation status of DD shorefish species through increasing sampling effort in key areas and environments.
3. Marine Key Biodiversity Areas (using information from this IUCN Red List assessment) should be identified for the greater Caribbean.
4. Actions to regulate fishing effort to sustainable levels should be prioritized. Currently, there is limited information within the greater Caribbean to properly guide fishery decisions. It is expected that increased investment in standardized, long-term habitat and population monitoring programs would improve knowledge contributing to fishery management decisions. Regulating pollution inputs and coastal

Fishing vessels off La Ceiba, Honduras © Christi Linardich



- construction practices would also help restore and protect important fish habitat. Major priorities from in-region fishery managers and advocates may include: expansion of fishery catch and effort statistics acquisition programs; estimation of fundamental demographic parameters for key species; protection of spawning aggregation sites for socio-economically critical species; improved enforcement resources for typically under-resourced fishery agencies.
5. Regarding the scale of understanding of shorefish species' distributions, some spatial data layers are currently either unavailable, of poor resolution, or cover only a subset of the greater Caribbean, such as nearshore bathymetry and important shorefish habitats. Investment in improving the resolution of these layers would improve future conservation assessment activities.
 6. Developing a standardized methodology to track progress in the effectiveness of each MPA would improve decision-making for regional conservation investment.
 7. Improving communication and reporting of available information to build understanding and knowledge on shorefish and their threats, and hence conservation investment and implementation support by government and the relevant public bodies.

4.3 Application of project results

Comprehensive species-specific extinction risk assessments for the marine bony shorefishes of the Caribbean were published on the Red List of Threatened Species. The compiled information for each species is freely available to download from the IUCN Red List website (www.iucnredlist.org). The compiled data can be used to support future research and enable monitoring and conservation action at national and Caribbean-wide levels. This is especially true for Data Deficient species and threatened or Near Threatened species too. As new information or data become available over time, species will be re-assessed and data contained in the Red List will be amended.

One of the most effective ways to use IUCN Red List assessments for conservation is in identifying and delineating key biodiversity areas (KBAs). The KBA concept is based on the vulnerability (holds at least one threatened species) or irreplaceability (holds a significant proportion of a species' global population) of a site (Eken et al. 2004, Langhammer et al. 2007, IUCN 2016). The systematic nature of the KBA methodology attempts to reduce the confusion associated with delineating marine conservation priorities and improves the overall efficiency of implementing action (Edgar et al. 2008). The most recent publication on the IUCN Red List of bony shorefishes provides a solid platform upon which the

nomination of marine KBAs can be built. An example of a potential candidate KBA in the Caribbean based on marine bony shorefishes is an area encompassing coral reefs in Veracruz, Mexico. No fewer than ten threatened shorefishes occur off Veracruz, five of which have restricted ranges. At least three reefs have been removed and used as building material during the 17th and 18th centuries (Horta-Puga 2007). Prior to recent and ongoing reef removal related to port expansion, the estimated area of remaining reefs was already small (approximately 22 km² according to UNEP-WCMC et al. 2010) and degraded (Jackson et al. 2014). Sediment plumes created by dredging likely jeopardize the survival of these stressed corals (Erfemeijer et al. 2012). Furthermore, invasive lionfish were first recorded in Veracruz in the past four years (Santander-Monsalvo et al. 2012) and its populations may expand to threatening levels if culling is not employed. The Veracruz Reef System is internationally recognized as a UNESCO Biosphere Reserve and has been designated as a national park since 1992; however, no effective management plan is in place and the Mexican government recently reconfigured the boundaries of the park to expand operations of the Port of Veracruz onto part of the reef (Ortiz-Lozano et al. 2013). A coral reef restoration and nursery program is being implemented, but its potential for effectiveness, alongside ongoing degradation, is not known. In addition, recent biological surveys of understudied reefs in Veracruz revealed a surprising number of new, non-cryptic shorefishes. These new findings may indicate that more species remain to be discovered. New quantitative thresholds need to be applied (IUCN 2016) by engagement with regional species experts, identification of key stakeholders and delineation of the proposed area in a GIS framework.

Data in each species account provide a key resource for decision-makers, policy-makers, resource managers, environmental planners and NGOs. Many Caribbean countries are signatories to international conventions aimed at conserving biodiversity which are particularly relevant to the conservation and protection of species and their habitats. The challenge now is to ensure that results from this Red List assessment are used to inform such Conventions and policies, to identify priority sites for biodiversity conservation and to prepare and implement species recovery plans for the identified threatened species in the greater Caribbean. For example, information generated by Red List assessments can track the progress of actions to prevent extinction events as needed to meet Aichi Biodiversity Target 12.

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Appendix I: Participating experts at the Caribbean IUCN Red List workshops

Table AI.1: List of participating experts and affiliations organized alphabetically by first name, at the first Caribbean shorefishes workshop in Barbados (2010).

Expert Name	Affiliation
Frank Pezold	Texas A&M University, Corpus Christi (USA)
Hazel Oxenford	University of the West Indies - Cave Hill (Barbados)
James Van Tassell	American Museum of Natural History (USA)
Jean-Luc Bouchereau	Université des Antilles et de la Guyane
Jeffrey T. Williams	Smithsonian National Museum of Natural History (USA)
Karl A. Aiken	University of the West Indies - Mona (Jamaica)
Kent E. Carpenter	Old Dominion University / IUCN-GMSA (USA)
Luke Tornabene	Texas A&M University, Corpus Christi (USA)
Matthew Craig	University of Puerto Rico - Mayaguez/Groupers and Wrasses SSG (USA)
Richard Grant Gilmore Jr.	Estuarine, Coastal and Ocean Science, Inc. (USA)
Thomas Fraser	Florida Museum of Natural History (USA)

Table AI.2: List of participating experts and affiliations organized alphabetically by first name, at the first Caribbean shorefishes workshop in Jamaica (2012).

Expert Name	Affiliation
Andrea Polanco Fernandez	Instituto de Investigaciones Marinas y Costeras - Invemar (Colombia)
Brian Zane	Montego Bay Marine Park Trust (Jamaica)
Bruce B. Collette	National Marine Fisheries Service/NOAA/Tuna and Billfishes SSG (USA)
David Ross Robertson	Smithsonian Tropical Research Institute (Panama)
Dayne Buddo	Univ. of the West Indies (Jamaica)
Fabian Pina Amargos	Centro de Investigaciones de Ecosistemas Costeros (Cuba)
Georgina Milagrosa Bustamante	Caribbean Marine Protected Area Management Network (USA)
J. Jed Brown	Qatar University (Qatar)
Jeffrey T. Williams	Smithsonian National Museum of Natural History (USA)
Karl A. Aiken	University of the West Indies - Mona (Jamaica)
Kent E. Carpenter	Old Dominion University / IUCN-GMSA (USA)
Lyda Marcela Grijalba Bendeck	Universidad Jorge Tadeo Lozano (Colombia)
Monique Curtis	National Environment & Planning Agency (Jamaica)
Richard Grant Gilmore Jr.	Estuarine, Coastal and Ocean Science, Inc. (USA)
Thomas Munroe	National Marine Fisheries Service/NOAA (USA)
William D. Anderson Jr.	Grice Marine Biological Laboratory (USA)
William Eschmeyer	Florida Museum of Natural History and California Academy of Sciences (USA)
William Smith-Vaniz	Florida Museum of Natural History (USA)

Table AI.3: List of participating experts and affiliations organized alphabetically by first name, at the first Caribbean shorefishes workshop in Trinidad (2013).

Expert Name	Affiliation
Andrea Polanco Fernandez	Instituto de Investigaciones Marinas y Costeras - Invemar (Colombia)
Arturo Acero Pizarro	Universidad Nacional de Colombia sede Caribe (Colombia)
Barry Russell	Museum and Art Gallery of the Northern Territory (Australia)
Bruce B. Collette	National Marine Fisheries Service/NOAA/Tuna and Billfishes SSG (USA)
David Ross Robertson	Smithsonian Tropical Research Institute (Panama)
Fabian Pina Amargos	Centro de Investigaciones de Ecosistemas Costeros (Cuba)
Hazel Oxenford	University of the West Indies - Cave Hill (Barbados)
James K. Dooley	Adelphi University (USA)
Jean-Philippe Marechal	Observatoire du Milieu Marin Martiniquais (Martinique)
John D. McEachran	Texas A&M University, College Station (USA)
Jon A. Moore	Florida Atlantic University (USA)
Karl A. Aiken	University of the West Indies - Mona (Jamaica)
Kent E. Carpenter	Old Dominion University / IUCN-GMSA (USA)
Robert H. Robins	Florida Museum of Natural History (USA)
Rosemarie Kishore	Institute of Marine Affairs (Trinidad and Tobago)
Susan Singh-Renton	Caribbean Regional Fisheries Mechanism (St. Vincent and the Grenadines)
Thomas Munroe	National Marine Fisheries Service/NOAA (USA)

Appendix II: Red List status of marine bony fishes of the greater Caribbean

Table A2.1: List of 1,360 marine bony shorefishes assessed (alphabetical by order, family and then by species name). The global Red List categories (CR = Critically Endangered, EN = Endangered, VU = Vulnerable, NT = Near Threatened, LC = Least Concern, DD = Data Deficient) and endemism are also listed.

Order	Family	Species Name	Global	Endemic?
Acipenseriformes	Acipenseridae	<i>Acipenser brevirostrum</i>	VU	no
Acipenseriformes	Acipenseridae	<i>Acipenser oxyrinchus</i>	NT	no
Albuliformes	Albulidae	<i>Albula nemoptera</i>	DD	no
Albuliformes	Albulidae	<i>Albula vulpes</i>	NT	yes
Anguilliformes	Chlopsidae	<i>Catesbya pseudomuraena</i>	DD	yes
Anguilliformes	Chlopsidae	<i>Chilorhinus suensonii</i>	LC	yes
Anguilliformes	Chlopsidae	<i>Chlopsis bicolor</i>	LC	no
Anguilliformes	Chlopsidae	<i>Chlopsis dentatus</i>	DD	yes
Anguilliformes	Chlopsidae	<i>Kaupichthys hyoprorooides</i>	LC	no
Anguilliformes	Chlopsidae	<i>Kaupichthys nuchalis</i>	LC	yes
Anguilliformes	Chlopsidae	<i>Robinsia catherinae</i>	LC	no
Anguilliformes	Congridae	<i>Ariosoma analis</i>	LC	no
Anguilliformes	Congridae	<i>Ariosoma balearicum</i>	LC	no
Anguilliformes	Congridae	<i>Conger esculentus</i>	LC	yes
Anguilliformes	Congridae	<i>Conger oceanicus</i>	LC	no
Anguilliformes	Congridae	<i>Conger triporiceps</i>	LC	yes
Anguilliformes	Congridae	<i>Gnathophis bracheatopos</i>	LC	yes
Anguilliformes	Congridae	<i>Heteroconger camelopardalis</i>	LC	no
Anguilliformes	Congridae	<i>Heteroconger longissimus</i>	LC	no
Anguilliformes	Congridae	<i>Heteroconger luteolus</i>	LC	yes
Anguilliformes	Congridae	<i>Paraconger caudilimbatus</i>	LC	no
Anguilliformes	Congridae	<i>Rhynchoconger flavus</i>	LC	yes
Anguilliformes	Congridae	<i>Rhynchoconger gracilior</i>	LC	yes
Anguilliformes	Congridae	<i>Rhynchoconger guppyi</i>	LC	yes
Anguilliformes	Congridae	<i>Uroconger syringinus</i>	LC	no
Anguilliformes	Heterenchelyidae	<i>Pythonichthys sanguineus</i>	LC	yes

Order	Family	Species Name	Global	Endemic?
Anguilliformes	Moringuidae	<i>Moringua edwardsi</i>	LC	no
Anguilliformes	Moringuidae	<i>Neoconger mucronatus</i>	LC	no
Anguilliformes	Muraenesocidae	<i>Cynoponticus savanna</i>	LC	no
Anguilliformes	Muraenidae	<i>Anarchias similis</i>	LC	no
Anguilliformes	Muraenidae	<i>Channomuraena vittata</i>	LC	no
Anguilliformes	Muraenidae	<i>Echidna catenata</i>	LC	no
Anguilliformes	Muraenidae	<i>Enchelycore anatina</i>	LC	no
Anguilliformes	Muraenidae	<i>Enchelycore carychroa</i>	LC	no
Anguilliformes	Muraenidae	<i>Enchelycore nigricans</i>	LC	no
Anguilliformes	Muraenidae	<i>Gymnothorax funebris</i>	LC	no
Anguilliformes	Muraenidae	<i>Gymnothorax hubbsi</i>	LC	yes
Anguilliformes	Muraenidae	<i>Gymnothorax kolpos</i>	LC	yes
Anguilliformes	Muraenidae	<i>Gymnothorax maderensis</i>	LC	no
Anguilliformes	Muraenidae	<i>Gymnothorax miliaris</i>	LC	no
Anguilliformes	Muraenidae	<i>Gymnothorax moringa</i>	LC	no
Anguilliformes	Muraenidae	<i>Gymnothorax nigromarginatus</i>	LC	yes
Anguilliformes	Muraenidae	<i>Gymnothorax ocellatus</i>	LC	no
Anguilliformes	Muraenidae	<i>Gymnothorax polygonius</i>	LC	no
Anguilliformes	Muraenidae	<i>Gymnothorax saxicola</i>	LC	no
Anguilliformes	Muraenidae	<i>Gymnothorax vicinus</i>	LC	no
Anguilliformes	Muraenidae	<i>Monopenchelys acuta</i>	LC	no
Anguilliformes	Muraenidae	<i>Muraena retifera</i>	LC	no
Anguilliformes	Muraenidae	<i>Muraena robusta</i>	LC	no
Anguilliformes	Muraenidae	<i>Uropterygius macularius</i>	LC	no
Anguilliformes	Nettastomatidae	<i>Hoplunnis diomediana</i>	LC	yes
Anguilliformes	Nettastomatidae	<i>Hoplunnis macrura</i>	LC	no
Anguilliformes	Nettastomatidae	<i>Hoplunnis tenuis</i>	LC	no
Anguilliformes	Nettastomatidae	<i>Nettenchelys pygmaea</i>	LC	yes
Anguilliformes	Nettastomatidae	<i>Saurenchelys cognita</i>	LC	yes
Anguilliformes	Ophichthidae	<i>Ahlia egmontis</i>	LC	no
Anguilliformes	Ophichthidae	<i>Aplatophis chauliodus</i>	LC	yes
Anguilliformes	Ophichthidae	<i>Aprognathodon platyventris</i>	LC	yes

Order	Family	Species Name	Global	Endemic?
Anguilliformes	Ophichthidae	<i>Apterichtus ansp</i>	LC	no
Anguilliformes	Ophichthidae	<i>Apterichtus kendalli</i>	LC	no
Anguilliformes	Ophichthidae	<i>Bascanichthys bascanium</i>	LC	yes
Anguilliformes	Ophichthidae	<i>Bascanichthys inopinatus</i>	DD	yes
Anguilliformes	Ophichthidae	<i>Bascanichthys scuticaris</i>	LC	yes
Anguilliformes	Ophichthidae	<i>Callechelys bilinearis</i>	LC	no
Anguilliformes	Ophichthidae	<i>Callechelys guineensis</i>	LC	no
Anguilliformes	Ophichthidae	<i>Callechelys muraena</i>	LC	yes
Anguilliformes	Ophichthidae	<i>Callechelys springeri</i>	DD	yes
Anguilliformes	Ophichthidae	<i>Caralophia loxochila</i>	LC	no
Anguilliformes	Ophichthidae	<i>Echiophis intertinctus</i>	LC	no
Anguilliformes	Ophichthidae	<i>Echiophis punctifer</i>	LC	no
Anguilliformes	Ophichthidae	<i>Ehadophis akkistikos</i>	LC	yes
Anguilliformes	Ophichthidae	<i>Gordiichthys ergodes</i>	DD	yes
Anguilliformes	Ophichthidae	<i>Gordiichthys irretitus</i>	LC	yes
Anguilliformes	Ophichthidae	<i>Gordiichthys leibyi</i>	LC	no
Anguilliformes	Ophichthidae	<i>Gordiichthys randalli</i>	LC	yes
Anguilliformes	Ophichthidae	<i>Ichthyapus ophioneus</i>	LC	no
Anguilliformes	Ophichthidae	<i>Letharchus velifer</i>	LC	yes
Anguilliformes	Ophichthidae	<i>Myrichthys breviceps</i>	LC	no
Anguilliformes	Ophichthidae	<i>Myrichthys ocellatus</i>	LC	no
Anguilliformes	Ophichthidae	<i>Myrophis anterodorsalis</i>	LC	yes
Anguilliformes	Ophichthidae	<i>Myrophis platyrhynchus</i>	LC	no
Anguilliformes	Ophichthidae	<i>Myrophis plumbeus</i>	LC	no
Anguilliformes	Ophichthidae	<i>Myrophis punctatus</i>	LC	no
Anguilliformes	Ophichthidae	<i>Ophichthus cylindroideus</i>	LC	no
Anguilliformes	Ophichthidae	<i>Ophichthus gomesii</i>	LC	no
Anguilliformes	Ophichthidae	<i>Ophichthus hyposagmatus</i>	LC	yes
Anguilliformes	Ophichthidae	<i>Ophichthus melanoporus</i>	LC	yes
Anguilliformes	Ophichthidae	<i>Ophichthus ophis</i>	LC	no
Anguilliformes	Ophichthidae	<i>Ophichthus puncticeps</i>	LC	yes
Anguilliformes	Ophichthidae	<i>Ophichthus rex</i>	LC	yes

Order	Family	Species Name	Global	Endemic?
Anguilliformes	Ophichthidae	<i>Ophichthus spinicauda</i>	LC	yes
Anguilliformes	Ophichthidae	<i>Pseudomyrophis frio</i>	LC	no
Anguilliformes	Ophichthidae	<i>Pseudomyrophis fugesae</i>	LC	no
Anguilliformes	Ophichthidae	<i>Quassiremus ascensionis</i>	LC	no
Anguilliformes	Synaphobranchidae	<i>Dysomma anguillare</i>	LC	no
Atheriniformes	Atherinidae	<i>Atherinomorus stipes</i>	LC	no
Atheriniformes	Atherinidae	<i>Hypoatherina harringtonensis</i>	LC	yes
Atheriniformes	Atherinopsidae	<i>Atherinella beani</i>	DD	yes
Atheriniformes	Atherinopsidae	<i>Atherinella blackburni</i>	LC	no
Atheriniformes	Atherinopsidae	<i>Atherinella brasiliensis</i>	LC	no
Atheriniformes	Atherinopsidae	<i>Atherinella milleri</i>	LC	yes
Atheriniformes	Atherinopsidae	<i>Melanorhinus microps</i>	LC	yes
Atheriniformes	Atherinopsidae	<i>Membras analis</i>	DD	yes
Atheriniformes	Atherinopsidae	<i>Membras argentea</i>	DD	yes
Atheriniformes	Atherinopsidae	<i>Membras martinica</i>	LC	no
Atheriniformes	Atherinopsidae	<i>Menidia beryllina</i>	LC	yes
Atheriniformes	Atherinopsidae	<i>Menidia clarkhubbsi</i>	DD	yes
Atheriniformes	Atherinopsidae	<i>Menidia colei</i>	EN	yes
Atheriniformes	Atherinopsidae	<i>Menidia conchorum</i>	EN	yes
Atheriniformes	Atherinopsidae	<i>Menidia menidia</i>	LC	no
Atheriniformes	Atherinopsidae	<i>Menidia peninsulae</i>	LC	yes
Aulopiformes	Chlorophthalmidae	<i>Parasudis truculenta</i>	LC	no
Aulopiformes	Synodontidae	<i>Saurida brasiliensis</i>	LC	no
Aulopiformes	Synodontidae	<i>Saurida caribbaea</i>	LC	no
Aulopiformes	Synodontidae	<i>Saurida normani</i>	LC	no
Aulopiformes	Synodontidae	<i>Saurida suspicio</i>	LC	yes
Aulopiformes	Synodontidae	<i>Synodus bondi</i>	LC	no
Aulopiformes	Synodontidae	<i>Synodus foetens</i>	LC	yes
Aulopiformes	Synodontidae	<i>Synodus intermedius</i>	LC	no
Aulopiformes	Synodontidae	<i>Synodus macrostigmus</i>	LC	yes
Aulopiformes	Synodontidae	<i>Synodus poeyi</i>	LC	no
Aulopiformes	Synodontidae	<i>Synodus saurus</i>	LC	no

Order	Family	Species Name	Global	Endemic?
Aulopiformes	Synodontidae	<i>Synodus synodus</i>	LC	no
Aulopiformes	Synodontidae	<i>Trachinocephalus myops</i>	LC	no
Batrachoidiformes	Batrachoididae	<i>Amphichthys cryptocentrus</i>	LC	no
Batrachoidiformes	Batrachoididae	<i>Batrachoides gilberti</i>	LC	yes
Batrachoidiformes	Batrachoididae	<i>Batrachoides manglae</i>	LC	yes
Batrachoidiformes	Batrachoididae	<i>Batrachoides surinamensis</i>	LC	no
Batrachoidiformes	Batrachoididae	<i>Opsanus beta</i>	LC	yes
Batrachoidiformes	Batrachoididae	<i>Opsanus dichrostomus</i>	LC	yes
Batrachoidiformes	Batrachoididae	<i>Opsanus pardus</i>	LC	yes
Batrachoidiformes	Batrachoididae	<i>Opsanus phobetron</i>	LC	yes
Batrachoidiformes	Batrachoididae	<i>Opsanus tau</i>	LC	no
Batrachoidiformes	Batrachoididae	<i>Porichthys oculofrenum</i>	DD	yes
Batrachoidiformes	Batrachoididae	<i>Porichthys pauciradiatus</i>	LC	yes
Batrachoidiformes	Batrachoididae	<i>Porichthys pectorodon</i>	LC	no
Batrachoidiformes	Batrachoididae	<i>Sanopus astrifer</i>	VU	yes
Batrachoidiformes	Batrachoididae	<i>Sanopus barbatus</i>	LC	yes
Batrachoidiformes	Batrachoididae	<i>Sanopus greenfieldorum</i>	VU	yes
Batrachoidiformes	Batrachoididae	<i>Sanopus johnsoni</i>	DD	yes
Batrachoidiformes	Batrachoididae	<i>Sanopus reticulatus</i>	EN	yes
Batrachoidiformes	Batrachoididae	<i>Sanopus splendidus</i>	EN	yes
Batrachoidiformes	Batrachoididae	<i>Thalassophryne maculosa</i>	LC	yes
Batrachoidiformes	Batrachoididae	<i>Thalassophryne megalops</i>	LC	yes
Batrachoidiformes	Batrachoididae	<i>Thalassophryne nattereri</i>	LC	no
Batrachoidiformes	Batrachoididae	<i>Vladichthys gloverensis</i>	VU	yes
Beloniformes	Belonidae	<i>Ablettes hians</i>	LC	no
Beloniformes	Belonidae	<i>Platybelone argalus</i>	LC	no
Beloniformes	Belonidae	<i>Strongylura marina</i>	LC	no
Beloniformes	Belonidae	<i>Strongylura notata</i>	LC	yes
Beloniformes	Belonidae	<i>Strongylura timucu</i>	LC	no
Beloniformes	Belonidae	<i>Tylosurus acus ssp. acus</i>	LC	no
Beloniformes	Belonidae	<i>Tylosurus crocodilus ssp. crocodilus</i>	LC	no
Beloniformes	Exocoetidae	<i>Cheilopogon cyanopterus</i>	LC	no

Order	Family	Species Name	Global	Endemic?
Beloniformes	Exocoetidae	<i>Cheilopogon exsiliens</i>	LC	no
Beloniformes	Exocoetidae	<i>Cheilopogon furcatus</i>	LC	no
Beloniformes	Exocoetidae	<i>Cheilopogon heterurus</i>	LC	no
Beloniformes	Exocoetidae	<i>Cheilopogon melanurus</i>	LC	no
Beloniformes	Exocoetidae	<i>Cypselurus comatus</i>	LC	no
Beloniformes	Exocoetidae	<i>Exocoetus obtusirostris</i>	LC	no
Beloniformes	Exocoetidae	<i>Exocoetus volitans</i>	LC	no
Beloniformes	Exocoetidae	<i>Hirundichthys affinis</i>	LC	no
Beloniformes	Exocoetidae	<i>Hirundichthys speculiger</i>	LC	no
Beloniformes	Exocoetidae	<i>Hirundichthys volador</i>	LC	no
Beloniformes	Exocoetidae	<i>Parexocoetus billianus</i>	LC	no
Beloniformes	Exocoetidae	<i>Prognichthys glaphyrae</i>	LC	no
Beloniformes	Exocoetidae	<i>Prognichthys occidentalis</i>	LC	no
Beloniformes	Hemiramphidae	<i>Chriodorus atherinoides</i>	LC	yes
Beloniformes	Hemiramphidae	<i>Euleptorhamphus velox</i>	LC	no
Beloniformes	Hemiramphidae	<i>Hemiramphus balao</i>	LC	no
Beloniformes	Hemiramphidae	<i>Hemiramphus bermudensis</i>	LC	yes
Beloniformes	Hemiramphidae	<i>Hemiramphus brasiliensis</i>	LC	no
Beloniformes	Hemiramphidae	<i>Hyporhamphus collettei</i>	LC	yes
Beloniformes	Hemiramphidae	<i>Hyporhamphus meeki</i>	LC	no
Beloniformes	Hemiramphidae	<i>Hyporhamphus roberti</i>	LC	no
Beloniformes	Hemiramphidae	<i>Hyporhamphus unifasciatus</i>	LC	no
Beloniformes	Hemiramphidae	<i>Oxyporhamphus micropterus similis</i>	LC	no
Beryciformes	Anomalopidae	<i>Kryptophanaron alfredi</i>	LC	yes
Beryciformes	Holocentridae	<i>Corniger spinosus</i>	LC	no
Beryciformes	Holocentridae	<i>Holocentrus adscensionis</i>	LC	no
Beryciformes	Holocentridae	<i>Holocentrus rufus</i>	LC	no
Beryciformes	Holocentridae	<i>Myripristis jacobus</i>	LC	no
Beryciformes	Holocentridae	<i>Neoniphon marianus</i>	LC	yes
Beryciformes	Holocentridae	<i>Ostichthys trachypoma</i>	LC	no
Beryciformes	Holocentridae	<i>Plectrypops retrospinis</i>	LC	no

Order	Family	Species Name	Global	Endemic?
Beryciformes	Holocentridae	<i>Sargocentron bullisi</i>	LC	no
Beryciformes	Holocentridae	<i>Sargocentron coruscum</i>	LC	yes
Beryciformes	Holocentridae	<i>Sargocentron poco</i>	LC	yes
Beryciformes	Holocentridae	<i>Sargocentron vexillarium</i>	LC	yes
Clupeiformes	Clupeidae	<i>Alosa aestivalis</i>	VU	no
Clupeiformes	Clupeidae	<i>Alosa alabamae</i>	NT	yes
Clupeiformes	Clupeidae	<i>Alosa chrysocloris</i>	LC	yes
Clupeiformes	Clupeidae	<i>Alosa sapidissima</i>	LC	no
Clupeiformes	Clupeidae	<i>Brevoortia gunteri</i>	LC	yes
Clupeiformes	Clupeidae	<i>Brevoortia patronus</i>	LC	yes
Clupeiformes	Clupeidae	<i>Brevoortia smithi</i>	LC	yes
Clupeiformes	Clupeidae	<i>Brevoortia tyrannus</i>	LC	no
Clupeiformes	Clupeidae	<i>Etrumeus sadina</i>	LC	no
Clupeiformes	Clupeidae	<i>Harengula clupeola</i>	LC	no
Clupeiformes	Clupeidae	<i>Harengula humeralis</i>	LC	yes
Clupeiformes	Clupeidae	<i>Harengula jaguana</i>	LC	no
Clupeiformes	Clupeidae	<i>Jenkinsia lamprotaenia</i>	LC	yes
Clupeiformes	Clupeidae	<i>Jenkinsia majua</i>	LC	yes
Clupeiformes	Clupeidae	<i>Jenkinsia parvula</i>	DD	yes
Clupeiformes	Clupeidae	<i>Jenkinsia stolifera</i>	LC	yes
Clupeiformes	Clupeidae	<i>Lile piquitinga</i>	LC	no
Clupeiformes	Clupeidae	<i>Opisthonema oglinum</i>	LC	no
Clupeiformes	Clupeidae	<i>Sardinella aurita</i>	LC	no
Clupeiformes	Engraulidae	<i>Anchoa cayorum</i>	LC	yes
Clupeiformes	Engraulidae	<i>Anchoa choerostoma</i>	EN	yes
Clupeiformes	Engraulidae	<i>Anchoa colonensis</i>	LC	yes
Clupeiformes	Engraulidae	<i>Anchoa cubana</i>	LC	no
Clupeiformes	Engraulidae	<i>Anchoa filifera</i>	LC	no
Clupeiformes	Engraulidae	<i>Anchoa hepsetus</i>	LC	no
Clupeiformes	Engraulidae	<i>Anchoa lamprotaenia</i>	LC	yes
Clupeiformes	Engraulidae	<i>Anchoa lyolepis</i>	LC	no

Order	Family	Species Name	Global	Endemic?
Clupeiformes	Engraulidae	<i>Anchoa mitchilli</i>	LC	no
Clupeiformes	Engraulidae	<i>Anchoa parva</i>	LC	no
Clupeiformes	Engraulidae	<i>Anchoa spinifer</i>	LC	no
Clupeiformes	Engraulidae	<i>Anchoa trinitatis</i>	DD	yes
Clupeiformes	Engraulidae	<i>Anchovia clupeoides</i>	LC	no
Clupeiformes	Engraulidae	<i>Anchoviella blackburni</i>	DD	yes
Clupeiformes	Engraulidae	<i>Anchoviella brevirostris</i>	LC	no
Clupeiformes	Engraulidae	<i>Anchoviella cayennensis</i>	LC	no
Clupeiformes	Engraulidae	<i>Anchoviella elongata</i>	LC	yes
Clupeiformes	Engraulidae	<i>Anchoviella lepidentostole</i>	LC	no
Clupeiformes	Engraulidae	<i>Anchoviella perfasciata</i>	LC	yes
Clupeiformes	Engraulidae	<i>Cetengraulis edentulus</i>	LC	no
Clupeiformes	Engraulidae	<i>Engraulis eurystole</i>	LC	no
Clupeiformes	Engraulidae	<i>Lycengraulis grossidens</i>	LC	no
Clupeiformes	Pristigasteridae	<i>Chirocentrodon bleekerianus</i>	LC	no
Clupeiformes	Pristigasteridae	<i>Neoopisthopterus cubanus</i>	VU	yes
Clupeiformes	Pristigasteridae	<i>Odontognathus compressus</i>	LC	yes
Clupeiformes	Pristigasteridae	<i>Odontognathus mucronatus</i>	LC	no
Clupeiformes	Pristigasteridae	<i>Pellona harroweri</i>	LC	no
Cyprinodontiformes	Cyprinodontidae	<i>Cyprinodon artifrons</i>	LC	yes
Cyprinodontiformes	Cyprinodontidae	<i>Cyprinodon variegatus</i>	LC	no
Cyprinodontiformes	Cyprinodontidae	<i>Floridichthys carpio</i>	LC	yes
Cyprinodontiformes	Cyprinodontidae	<i>Floridichthys polyommus</i>	LC	yes
Cyprinodontiformes	Fundulidae	<i>Fundulus grandis</i>	LC	yes
Cyprinodontiformes	Fundulidae	<i>Fundulus grandissimus</i>	VU	yes
Cyprinodontiformes	Fundulidae	<i>Fundulus jenkinsi</i>	VU	yes
Cyprinodontiformes	Fundulidae	<i>Fundulus majalis</i>	LC	no
Cyprinodontiformes	Fundulidae	<i>Fundulus persimilis</i>	EN	yes
Cyprinodontiformes	Fundulidae	<i>Fundulus pulvereus</i>	LC	yes
Cyprinodontiformes	Fundulidae	<i>Fundulus similis</i>	LC	yes
Cyprinodontiformes	Fundulidae	<i>Fundulus xenicus</i>	LC	yes
Cyprinodontiformes	Poeciliidae	<i>Gambusia rhizophorae</i>	LC	yes

Order	Family	Species Name	Global	Endemic?
Elopiformes	Elopidae	<i>Elops saurus</i>	LC	yes
Elopiformes	Elopidae	<i>Elops smithi</i>	DD	no
Elopiformes	Megalopidae	<i>Megalops atlanticus</i>	VU	no
Gadiformes	Bregmacerotidae	<i>Bregmaceros atlanticus</i>	LC	no
Gadiformes	Bregmacerotidae	<i>Bregmaceros cantori</i>	LC	no
Gadiformes	Bregmacerotidae	<i>Bregmaceros houdei</i>	LC	yes
Gadiformes	Merlucciidae	<i>Merluccius albidus</i>	LC	no
Gadiformes	Merlucciidae	<i>Merluccius bilinearis</i>	NT	no
Gadiformes	Moridae	<i>Physiculus fulvus</i>	LC	no
Gadiformes	Phycidae	<i>Urophycis earllii</i>	LC	yes
Gadiformes	Phycidae	<i>Urophycis floridana</i>	LC	yes
Gadiformes	Phycidae	<i>Urophycis regia</i>	LC	no
Gobiesociformes	Gobiesocidae	<i>Acyrtops amplicirrus</i>	LC	yes
Gobiesociformes	Gobiesocidae	<i>Acyrtops beryllinus</i>	LC	no
Gobiesociformes	Gobiesocidae	<i>Acyrtus artius</i>	LC	no
Gobiesociformes	Gobiesocidae	<i>Acyrtus lanthanum</i>	LC	yes
Gobiesociformes	Gobiesocidae	<i>Acyrtus rubiginosus</i>	LC	yes
Gobiesociformes	Gobiesocidae	<i>Arcos nudus</i>	LC	yes
Gobiesociformes	Gobiesocidae	<i>Derilissus altifrons</i>	LC	yes
Gobiesociformes	Gobiesocidae	<i>Derilissus kremnobates</i>	DD	yes
Gobiesociformes	Gobiesocidae	<i>Derilissus lombardii</i>	DD	yes
Gobiesociformes	Gobiesocidae	<i>Derilissus nanus</i>	DD	yes
Gobiesociformes	Gobiesocidae	<i>Derilissus vittiger</i>	DD	yes
Gobiesociformes	Gobiesocidae	<i>Gobiesox barbatulus</i>	LC	no
Gobiesociformes	Gobiesocidae	<i>Gobiesox lucayanus</i>	LC	yes
Gobiesociformes	Gobiesocidae	<i>Gobiesox nigripinnis</i>	LC	yes
Gobiesociformes	Gobiesocidae	<i>Gobiesox punctulatus</i>	LC	yes
Gobiesociformes	Gobiesocidae	<i>Gobiesox strumosus</i>	LC	no
Gobiesociformes	Gobiesocidae	<i>Tomicodon briggsi</i>	LC	yes
Gobiesociformes	Gobiesocidae	<i>Tomicodon clarkei</i>	DD	yes
Gobiesociformes	Gobiesocidae	<i>Tomicodon cryptus</i>	LC	yes
Gobiesociformes	Gobiesocidae	<i>Tomicodon fasciatus</i>	LC	yes

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Gobiesociformes	Gobiesocidae	<i>Tomicodon lavettsmithi</i>	DD	yes
Gobiesociformes	Gobiesocidae	<i>Tomicodon leurodiscus</i>	LC	yes
Gobiesociformes	Gobiesocidae	<i>Tomicodon reitzae</i>	LC	yes
Gobiesociformes	Gobiesocidae	<i>Tomicodon rhabdotus</i>	LC	yes
Gobiesociformes	Gobiesocidae	<i>Tomicodon rupestris</i>	LC	yes
Lampriformes	Lampridae	<i>Lampris guttatus</i>	LC	no
Lampriformes	Regalecidae	<i>Regalecus glesne</i>	LC	no
Lophiiformes	Antennariidae	<i>Antennarius multiocellatus</i>	LC	no
Lophiiformes	Antennariidae	<i>Antennarius pauciradiatus</i>	LC	yes
Lophiiformes	Antennariidae	<i>Antennarius striatus</i>	LC	no
Lophiiformes	Antennariidae	<i>Antennatus bermudensis</i>	LC	yes
Lophiiformes	Antennariidae	<i>Fowlerichthys ocellatus</i>	LC	yes
Lophiiformes	Antennariidae	<i>Fowlerichthys radiosus</i>	LC	no
Lophiiformes	Antennariidae	<i>Histrio histrio</i>	LC	no
Lophiiformes	Lophiidae	<i>Lophiodes reticulatus</i>	LC	yes
Lophiiformes	Lophiidae	<i>Lophius gastrophysus</i>	LC	no
Lophiiformes	Ogcocephalidae	<i>Halieutichthys aculeatus</i>	LC	yes
Lophiiformes	Ogcocephalidae	<i>Halieutichthys bispinosus</i>	LC	yes
Lophiiformes	Ogcocephalidae	<i>Halieutichthys intermedius</i>	LC	yes
Lophiiformes	Ogcocephalidae	<i>Ogcocephalus corniger</i>	LC	yes
Lophiiformes	Ogcocephalidae	<i>Ogcocephalus cubifrons</i>	LC	yes
Lophiiformes	Ogcocephalidae	<i>Ogcocephalus declivirostris</i>	LC	yes
Lophiiformes	Ogcocephalidae	<i>Ogcocephalus nasutus</i>	LC	yes
Lophiiformes	Ogcocephalidae	<i>Ogcocephalus notatus</i>	LC	no
Lophiiformes	Ogcocephalidae	<i>Ogcocephalus pantostictus</i>	LC	yes
Lophiiformes	Ogcocephalidae	<i>Ogcocephalus parvus</i>	LC	yes
Lophiiformes	Ogcocephalidae	<i>Ogcocephalus pumilus</i>	LC	yes
Lophiiformes	Ogcocephalidae	<i>Ogcocephalus rostellum</i>	LC	yes
Lophiiformes	Ogcocephalidae	<i>Zalieutes mcgintyi</i>	LC	yes
Mugiliformes	Mugilidae	<i>Mugil cephalus</i>	LC	no
Mugiliformes	Mugilidae	<i>Mugil curema</i>	LC	no
Mugiliformes	Mugilidae	<i>Mugil incilis</i>	LC	no

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Mugiliformes	Mugilidae	<i>Mugil liza</i>	DD	no
Mugiliformes	Mugilidae	<i>Mugil margaritae</i>	DD	yes
Mugiliformes	Mugilidae	<i>Mugil rubrioculus</i>	LC	no
Mugiliformes	Mugilidae	<i>Mugil trichodon</i>	LC	yes
Ophidiiformes	Bythitidae	<i>Alionemathichthys minyomma</i>	LC	yes
Ophidiiformes	Bythitidae	<i>Calamopteryx goslinei</i>	LC	yes
Ophidiiformes	Bythitidae	<i>Calamopteryx robinsorum</i>	LC	yes
Ophidiiformes	Bythitidae	<i>Grammonus claudiei</i>	LC	yes
Ophidiiformes	Bythitidae	<i>Gunterichthys longipenis</i>	LC	yes
Ophidiiformes	Bythitidae	<i>Lucifuga lucayana</i>	EN	yes
Ophidiiformes	Bythitidae	<i>Lucifuga simile</i>	CR	yes
Ophidiiformes	Bythitidae	<i>Lucifuga spelaeotes</i>	VU	yes
Ophidiiformes	Bythitidae	<i>Ogilbia boehlkei</i>	LC	yes
Ophidiiformes	Bythitidae	<i>Ogilbia cayorum</i>	LC	yes
Ophidiiformes	Bythitidae	<i>Ogilbia jeffwilliamsi</i>	LC	yes
Ophidiiformes	Bythitidae	<i>Ogilbia mccoskeri</i>	DD	yes
Ophidiiformes	Bythitidae	<i>Ogilbia sabaji</i>	LC	yes
Ophidiiformes	Bythitidae	<i>Ogilbia suarezae</i>	LC	yes
Ophidiiformes	Bythitidae	<i>Ogilbia tyleri</i>	LC	yes
Ophidiiformes	Bythitidae	<i>Ogilbichthys ferocis</i>	EN	yes
Ophidiiformes	Bythitidae	<i>Ogilbichthys haitiensis</i>	DD	yes
Ophidiiformes	Bythitidae	<i>Ogilbichthys kakuki</i>	LC	yes
Ophidiiformes	Bythitidae	<i>Ogilbichthys longimanus</i>	LC	yes
Ophidiiformes	Bythitidae	<i>Ogilbichthys microphthalmus</i>	LC	yes
Ophidiiformes	Bythitidae	<i>Ogilbichthys puertoricoensis</i>	DD	yes
Ophidiiformes	Bythitidae	<i>Ogilbichthys tobagoensis</i>	DD	yes
Ophidiiformes	Bythitidae	<i>Parasaccogaster melanomycter</i>	DD	yes
Ophidiiformes	Bythitidae	<i>Pseudogilbia sanblasensis</i>	DD	yes
Ophidiiformes	Bythitidae	<i>Stygnobrotula latebricola</i>	LC	yes
Ophidiiformes	Carapidae	<i>Carapus bermudensis</i>	LC	no
Ophidiiformes	Carapidae	<i>Echiodon dawsoni</i>	LC	yes
Ophidiiformes	Ophidiidae	<i>Brotula barbata</i>	LC	no

Order	Family	Species Name	Global	Endemic?
Ophidiiformes	Ophidiidae	<i>Lepophidium aporrhox</i>	LC	yes
Ophidiiformes	Ophidiidae	<i>Lepophidium brevibarbe</i>	LC	no
Ophidiiformes	Ophidiidae	<i>Lepophidium collettei</i>	LC	no
Ophidiiformes	Ophidiidae	<i>Lepophidium crossotum</i>	LC	yes
Ophidiiformes	Ophidiidae	<i>Lepophidium cultratum</i>	LC	yes
Ophidiiformes	Ophidiidae	<i>Lepophidium entomelan</i>	LC	yes
Ophidiiformes	Ophidiidae	<i>Lepophidium gilmorei</i>	LC	yes
Ophidiiformes	Ophidiidae	<i>Lepophidium jeannae</i>	LC	yes
Ophidiiformes	Ophidiidae	<i>Lepophidium marmoratum</i>	LC	yes
Ophidiiformes	Ophidiidae	<i>Lepophidium pheromystax</i>	LC	yes
Ophidiiformes	Ophidiidae	<i>Lepophidium profundorum</i>	LC	no
Ophidiiformes	Ophidiidae	<i>Lepophidium robustum</i>	LC	yes
Ophidiiformes	Ophidiidae	<i>Lepophidium staurophor</i>	LC	yes
Ophidiiformes	Ophidiidae	<i>Lepophidium wileyi</i>	LC	yes
Ophidiiformes	Ophidiidae	<i>Lepophidium zophochir</i>	LC	yes
Ophidiiformes	Ophidiidae	<i>Neobythites gilli</i>	LC	yes
Ophidiiformes	Ophidiidae	<i>Neobythites marginatus</i>	LC	yes
Ophidiiformes	Ophidiidae	<i>Neobythites monocellatus</i>	LC	no
Ophidiiformes	Ophidiidae	<i>Neobythites multiocellatus</i>	LC	yes
Ophidiiformes	Ophidiidae	<i>Ophidion antiphonus</i>	LC	yes
Ophidiiformes	Ophidiidae	<i>Ophidion dromio</i>	LC	yes
Ophidiiformes	Ophidiidae	<i>Ophidion grayi</i>	LC	yes
Ophidiiformes	Ophidiidae	<i>Ophidion guianense</i>	LC	yes
Ophidiiformes	Ophidiidae	<i>Ophidion holbrookii</i>	LC	no
Ophidiiformes	Ophidiidae	<i>Ophidion josephi</i>	LC	yes
Ophidiiformes	Ophidiidae	<i>Ophidion lagochila</i>	LC	yes
Ophidiiformes	Ophidiidae	<i>Ophidion marginatum</i>	LC	no
Ophidiiformes	Ophidiidae	<i>Ophidion nocomis</i>	LC	yes
Ophidiiformes	Ophidiidae	<i>Ophidion selenops</i>	LC	yes
Ophidiiformes	Ophidiidae	<i>Otophidium chickcharney</i>	LC	yes
Ophidiiformes	Ophidiidae	<i>Otophidium dormitator</i>	LC	yes
Ophidiiformes	Ophidiidae	<i>Otophidium omostigma</i>	LC	yes

Order	Family	Species Name	Global	Endemic?
Ophidiiformes	Ophidiidae	<i>Parophidion schmidti</i>	LC	yes
Ophidiiformes	Ophidiidae	<i>Petrotyx sanguineus</i>	LC	yes
Osmeriformes	Argentinidae	<i>Argentina striata</i>	LC	no
Osmeriformes	Argentinidae	<i>Glossanodon pygmaeus</i>	LC	yes
Perciformes	Acanthuridae	<i>Acanthurus chirurgus</i>	LC	no
Perciformes	Acanthuridae	<i>Acanthurus coeruleus</i>	LC	no
Perciformes	Acanthuridae	<i>Acanthurus tractus</i>	LC	yes
Perciformes	Acropomatidae	<i>Synagrops bellus</i>	LC	no
Perciformes	Acropomatidae	<i>Synagrops spinosus</i>	LC	no
Perciformes	Acropomatidae	<i>Synagrops trispinosus</i>	LC	yes
Perciformes	Acropomatidae	<i>Verilus sordidus</i>	LC	no
Perciformes	Ammodytidae	<i>Protammodytes sarisa</i>	DD	yes
Perciformes	Apogonidae	<i>Apogon aurolineatus</i>	LC	yes
Perciformes	Apogonidae	<i>Apogon binotatus</i>	LC	yes
Perciformes	Apogonidae	<i>Apogon gouldi</i>	LC	yes
Perciformes	Apogonidae	<i>Apogon lachneri</i>	LC	yes
Perciformes	Apogonidae	<i>Apogon leptocaulus</i>	LC	yes
Perciformes	Apogonidae	<i>Apogon maculatus</i>	LC	yes
Perciformes	Apogonidae	<i>Apogon mosavi</i>	LC	yes
Perciformes	Apogonidae	<i>Apogon phenax</i>	LC	yes
Perciformes	Apogonidae	<i>Apogon pillionatus</i>	LC	yes
Perciformes	Apogonidae	<i>Apogon planifrons</i>	LC	yes
Perciformes	Apogonidae	<i>Apogon pseudomaculatus</i>	LC	no
Perciformes	Apogonidae	<i>Apogon quadrisquamatus</i>	LC	no
Perciformes	Apogonidae	<i>Apogon robbyi</i>	LC	no
Perciformes	Apogonidae	<i>Apogon robinsi</i>	LC	yes
Perciformes	Apogonidae	<i>Apogon townsendi</i>	LC	yes
Perciformes	Apogonidae	<i>Astrapogon alutus</i>	LC	yes
Perciformes	Apogonidae	<i>Astrapogon puncticulatus</i>	LC	no
Perciformes	Apogonidae	<i>Astrapogon stellatus</i>	DD	no
Perciformes	Apogonidae	<i>Paroncheilus affinis</i>	LC	no
Perciformes	Apogonidae	<i>Phaeoptyx conklini</i>	LC	yes

Order	Family	Species Name	Global	Endemic?
Perciformes	Apogonidae	<i>Phaeoptyx pigmentaria</i>	LC	no
Perciformes	Apogonidae	<i>Phaeoptyx xenus</i>	LC	yes
Perciformes	Apogonidae	<i>Zapogon evermanni</i>	LC	no
Perciformes	Ariommatidae	<i>Ariomma bondi</i>	LC	no
Perciformes	Ariommatidae	<i>Ariomma regulus</i>	LC	yes
Perciformes	Blenniidae	<i>Chasmodes bosquianus</i>	LC	no
Perciformes	Blenniidae	<i>Chasmodes longimaxilla</i>	LC	yes
Perciformes	Blenniidae	<i>Chasmodes saburrae</i>	LC	yes
Perciformes	Blenniidae	<i>Entomacrodus nigricans</i>	LC	yes
Perciformes	Blenniidae	<i>Hyleurochilus bermudensis</i>	LC	yes
Perciformes	Blenniidae	<i>Hyleurochilus caudovittatus</i>	LC	yes
Perciformes	Blenniidae	<i>Hyleurochilus geminatus</i>	LC	yes
Perciformes	Blenniidae	<i>Hyleurochilus multifilis</i>	LC	yes
Perciformes	Blenniidae	<i>Hyleurochilus pseudoaequipinnis</i>	LC	no
Perciformes	Blenniidae	<i>Hyleurochilus springeri</i>	LC	yes
Perciformes	Blenniidae	<i>Hypsoblennius exstochilus</i>	LC	yes
Perciformes	Blenniidae	<i>Hypsoblennius bentz</i>	LC	no
Perciformes	Blenniidae	<i>Hypsoblennius invemar</i>	LC	no
Perciformes	Blenniidae	<i>Hypsoblennius ionthas</i>	LC	yes
Perciformes	Blenniidae	<i>Lupinoblennius nicholsi</i>	LC	yes
Perciformes	Blenniidae	<i>Lupinoblennius vinctus</i>	NT	yes
Perciformes	Blenniidae	<i>Ophioblennius macclurei</i>	LC	yes
Perciformes	Blenniidae	<i>Parablennius marmoreus</i>	LC	no
Perciformes	Blenniidae	<i>Scartella cristata</i>	LC	no
Perciformes	Bramidae	<i>Brama dussumieri</i>	LC	no
Perciformes	Bramidae	<i>Pterycombus brama</i>	LC	no
Perciformes	Bramidae	<i>Taractichthys longipinnis</i>	LC	no
Perciformes	Callionymidae	<i>Callionymus bairdi</i>	LC	no
Perciformes	Callionymidae	<i>Diplogrammus pauciradiatus</i>	LC	yes
Perciformes	Callionymidae	<i>Foetorepus agassizii</i>	LC	no
Perciformes	Callionymidae	<i>Foetorepus goodenbeani</i>	LC	no
Perciformes	Callionymidae	<i>Synchiropus dagmarae</i>	LC	yes

Order	Family	Species Name	Global	Endemic?
Perciformes	Caproidae	<i>Antigonia capros</i>	LC	no
Perciformes	Caproidae	<i>Antigonia combatia</i>	LC	no
Perciformes	Carangidae	<i>Alectis ciliaris</i>	LC	no
Perciformes	Carangidae	<i>Caranx bartholomaei</i>	LC	no
Perciformes	Carangidae	<i>Caranx cryos</i>	LC	no
Perciformes	Carangidae	<i>Caranx hippos</i>	LC	no
Perciformes	Carangidae	<i>Caranx latus</i>	LC	no
Perciformes	Carangidae	<i>Caranx lugubris</i>	LC	no
Perciformes	Carangidae	<i>Caranx ruber</i>	LC	no
Perciformes	Carangidae	<i>Chloroscombrus chrysurus</i>	LC	no
Perciformes	Carangidae	<i>Decapterus macarellus</i>	LC	no
Perciformes	Carangidae	<i>Decapterus punctatus</i>	LC	no
Perciformes	Carangidae	<i>Decapterus tabl</i>	LC	no
Perciformes	Carangidae	<i>Elagatis bipinnulata</i>	LC	no
Perciformes	Carangidae	<i>Hemicaranx amblyrhynchus</i>	LC	no
Perciformes	Carangidae	<i>Naucrates ductor</i>	LC	no
Perciformes	Carangidae	<i>Oligoplites palometa</i>	LC	no
Perciformes	Carangidae	<i>Oligoplites saliens</i>	LC	no
Perciformes	Carangidae	<i>Oligoplites saurus ssp. saurus</i>	LC	no
Perciformes	Carangidae	<i>Pseudocaranx dentex</i>	LC	no
Perciformes	Carangidae	<i>Selar crumenophthalmus</i>	LC	no
Perciformes	Carangidae	<i>Selene brownii</i>	LC	no
Perciformes	Carangidae	<i>Selene setapinnis</i>	LC	no
Perciformes	Carangidae	<i>Selene vomer</i>	LC	no
Perciformes	Carangidae	<i>Seriola dumerili</i>	LC	no
Perciformes	Carangidae	<i>Seriola fasciata</i>	LC	no
Perciformes	Carangidae	<i>Seriola rivoliana</i>	LC	no
Perciformes	Carangidae	<i>Seriola zonata</i>	LC	no
Perciformes	Carangidae	<i>Trachinotus carolinus</i>	LC	no
Perciformes	Carangidae	<i>Trachinotus cayennensis</i>	LC	no
Perciformes	Carangidae	<i>Trachinotus falcatus</i>	LC	no
Perciformes	Carangidae	<i>Trachinotus goodei</i>	LC	no

Order	Family	Species Name	Global	Endemic?
Perciformes	Carangidae	<i>Trachurus lathami</i>	LC	no
Perciformes	Carangidae	<i>Uraspis secunda</i>	LC	no
Perciformes	Centrolophidae	<i>Hyperoglyphe bythites</i>	LC	yes
Perciformes	Centropomidae	<i>Centropomus ensiferus</i>	LC	no
Perciformes	Centropomidae	<i>Centropomus mexicanus</i>	LC	no
Perciformes	Centropomidae	<i>Centropomus parallelus</i>	LC	no
Perciformes	Centropomidae	<i>Centropomus pectinatus</i>	LC	no
Perciformes	Centropomidae	<i>Centropomus poeyi</i>	DD	yes
Perciformes	Centropomidae	<i>Centropomus undecimalis</i>	LC	no
Perciformes	Chaenopsidae	<i>Acanthemblemaria aspera</i>	LC	yes
Perciformes	Chaenopsidae	<i>Acanthemblemaria betinensis</i>	LC	yes
Perciformes	Chaenopsidae	<i>Acanthemblemaria chaplini</i>	LC	yes
Perciformes	Chaenopsidae	<i>Acanthemblemaria greenfieldi</i>	LC	yes
Perciformes	Chaenopsidae	<i>Acanthemblemaria harpeza</i>	DD	yes
Perciformes	Chaenopsidae	<i>Acanthemblemaria johnsoni</i>	LC	yes
Perciformes	Chaenopsidae	<i>Acanthemblemaria maria</i>	LC	yes
Perciformes	Chaenopsidae	<i>Acanthemblemaria medusa</i>	LC	yes
Perciformes	Chaenopsidae	<i>Acanthemblemaria paula</i>	DD	yes
Perciformes	Chaenopsidae	<i>Acanthemblemaria rivasi</i>	LC	yes
Perciformes	Chaenopsidae	<i>Acanthemblemaria spinosa</i>	LC	yes
Perciformes	Chaenopsidae	<i>Chaenopsis limbaughi</i>	LC	yes
Perciformes	Chaenopsidae	<i>Chaenopsis megalops</i>	DD	yes
Perciformes	Chaenopsidae	<i>Chaenopsis ocellata</i>	LC	yes
Perciformes	Chaenopsidae	<i>Chaenopsis resh</i>	LC	yes
Perciformes	Chaenopsidae	<i>Chaenopsis roseola</i>	LC	yes
Perciformes	Chaenopsidae	<i>Chaenopsis stephensi</i>	DD	yes
Perciformes	Chaenopsidae	<i>Coralliozetus cardonae</i>	LC	yes
Perciformes	Chaenopsidae	<i>Ekemblemaria nigra</i>	LC	yes
Perciformes	Chaenopsidae	<i>Emblemaria atlantica</i>	LC	yes
Perciformes	Chaenopsidae	<i>Emblemaria biocellata</i>	LC	yes
Perciformes	Chaenopsidae	<i>Emblemaria caldwelli</i>	LC	yes
Perciformes	Chaenopsidae	<i>Emblemaria caycedoi</i>	LC	yes

Order	Family	Species Name	Global	Endemic?
Perciformes	Chaenopsidae	<i>Emblemaria culmenis</i>	DD	yes
Perciformes	Chaenopsidae	<i>Emblemaria diphyodontis</i>	LC	yes
Perciformes	Chaenopsidae	<i>Emblemaria hyltoni</i>	DD	yes
Perciformes	Chaenopsidae	<i>Emblemaria pandionis</i>	LC	yes
Perciformes	Chaenopsidae	<i>Emblemaria piratula</i>	LC	yes
Perciformes	Chaenopsidae	<i>Emblemaria vitta</i>	LC	yes
Perciformes	Chaenopsidae	<i>Emblemariopsis arawak</i>	DD	yes
Perciformes	Chaenopsidae	<i>Emblemariopsis bahamensis</i>	LC	yes
Perciformes	Chaenopsidae	<i>Emblemariopsis bottomei</i>	LC	yes
Perciformes	Chaenopsidae	<i>Emblemariopsis carib</i>	LC	yes
Perciformes	Chaenopsidae	<i>Emblemariopsis dianae</i>	DD	yes
Perciformes	Chaenopsidae	<i>Emblemariopsis diaphana</i>	LC	yes
Perciformes	Chaenopsidae	<i>Emblemariopsis leptocirris</i>	LC	yes
Perciformes	Chaenopsidae	<i>Emblemariopsis occidentalis</i>	LC	yes
Perciformes	Chaenopsidae	<i>Emblemariopsis pricei</i>	VU	yes
Perciformes	Chaenopsidae	<i>Emblemariopsis ramirezi</i>	LC	yes
Perciformes	Chaenopsidae	<i>Emblemariopsis randalli</i>	DD	yes
Perciformes	Chaenopsidae	<i>Emblemariopsis ruetzleri</i>	LC	yes
Perciformes	Chaenopsidae	<i>Emblemariopsis signifer</i>	LC	no
Perciformes	Chaenopsidae	<i>Emblemariopsis tayrona</i>	LC	yes
Perciformes	Chaenopsidae	<i>Hemiemblemaria simulus</i>	LC	yes
Perciformes	Chaenopsidae	<i>Lucayablennius zingaro</i>	LC	yes
Perciformes	Chaenopsidae	<i>Protemblemaria punctata</i>	LC	yes
Perciformes	Chaenopsidae	<i>Stathmonotus gymnodermis</i>	LC	yes
Perciformes	Chaenopsidae	<i>Stathmonotus hemphillii</i>	LC	yes
Perciformes	Chaenopsidae	<i>Stathmonotus stahli</i>	LC	yes
Perciformes	Chaenopsidae	<i>Stathmonotus tekla</i>	LC	yes
Perciformes	Chaetodontidae	<i>Chaetodon capistratus</i>	LC	yes
Perciformes	Chaetodontidae	<i>Chaetodon ocellatus</i>	LC	no
Perciformes	Chaetodontidae	<i>Chaetodon sedentarius</i>	LC	no
Perciformes	Chaetodontidae	<i>Chaetodon striatus</i>	LC	no
Perciformes	Chaetodontidae	<i>Prognathodes aculeatus</i>	LC	yes

Order	Family	Species Name	Global	Endemic?
Perciformes	Chaetodontidae	<i>Prognathodes aya</i>	LC	yes
Perciformes	Chaetodontidae	<i>Prognathodes guyanensis</i>	LC	no
Perciformes	Cirrhitidae	<i>Amblycirrhitus pinos</i>	LC	no
Perciformes	Coryphaenidae	<i>Coryphaena equiselis</i>	LC	no
Perciformes	Coryphaenidae	<i>Coryphaena hippurus</i>	LC	no
Perciformes	Dactyloscopidae	<i>Dactylagnus peratikos</i>	DD	yes
Perciformes	Dactyloscopidae	<i>Dactyloscopus boehlkei</i>	LC	yes
Perciformes	Dactyloscopidae	<i>Dactyloscopus comptus</i>	LC	yes
Perciformes	Dactyloscopidae	<i>Dactyloscopus crossotus</i>	LC	no
Perciformes	Dactyloscopidae	<i>Dactyloscopus foraminosus</i>	LC	no
Perciformes	Dactyloscopidae	<i>Dactyloscopus moorei</i>	LC	yes
Perciformes	Dactyloscopidae	<i>Dactyloscopus poeyi</i>	LC	yes
Perciformes	Dactyloscopidae	<i>Dactyloscopus tridigitatus</i>	LC	no
Perciformes	Dactyloscopidae	<i>Gillellus greyae</i>	LC	no
Perciformes	Dactyloscopidae	<i>Gillellus healae</i>	LC	yes
Perciformes	Dactyloscopidae	<i>Gillellus inescatus</i>	DD	yes
Perciformes	Dactyloscopidae	<i>Gillellus jacksoni</i>	LC	yes
Perciformes	Dactyloscopidae	<i>Gillellus uranidea</i>	LC	yes
Perciformes	Dactyloscopidae	<i>Leurochilus acon</i>	LC	yes
Perciformes	Dactyloscopidae	<i>Myxodagnus belone</i>	DD	yes
Perciformes	Dactyloscopidae	<i>Platygillellus rubrocinctus</i>	LC	yes
Perciformes	Dactyloscopidae	<i>Platygillellus smithi</i>	DD	yes
Perciformes	Echeneidae	<i>Echeneis naucrates</i>	LC	no
Perciformes	Echeneidae	<i>Echeneis neucratoides</i>	DD	no
Perciformes	Echeneidae	<i>Phtheirichthys lineatus</i>	LC	no
Perciformes	Echeneidae	<i>Remora albescens</i>	LC	no
Perciformes	Echeneidae	<i>Remora australis</i>	LC	no
Perciformes	Echeneidae	<i>Remora brachyptera</i>	LC	no
Perciformes	Echeneidae	<i>Remora osteochir</i>	LC	no
Perciformes	Echeneidae	<i>Remora remora</i>	LC	no
Perciformes	Eleotridae	<i>Dormitator maculatus</i>	LC	no
Perciformes	Eleotridae	<i>Eleotris amblyopsis</i>	LC	no

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Perciformes	Eleotridae	<i>Eleotris perniger</i>	LC	no
Perciformes	Eleotridae	<i>Eleotris pisonis</i>	LC	no
Perciformes	Eleotridae	<i>Erotelis smaragdus</i>	LC	no
Perciformes	Eleotridae	<i>Gobiomorus dormitor</i>	LC	no
Perciformes	Eleotridae	<i>Guavina guavina</i>	LC	no
Perciformes	Eleotridae	<i>Leptophilypnus fluviatilis</i>	LC	yes
Perciformes	Emmelichthyidae	<i>Emmelichthys ruber</i>	LC	no
Perciformes	Emmelichthyidae	<i>Erythrocles monodi</i>	LC	no
Perciformes	Ephippidae	<i>Chaetodipterus faber</i>	LC	no
Perciformes	Epinephelidae	<i>Alphestes afer</i>	LC	no
Perciformes	Epinephelidae	<i>Cephalopholis cruentata</i>	LC	yes
Perciformes	Epinephelidae	<i>Cephalopholis fulva</i>	LC	no
Perciformes	Epinephelidae	<i>Dermatolepis inermis</i>	NT	no
Perciformes	Epinephelidae	<i>Epinephelus adscensionis</i>	LC	no
Perciformes	Epinephelidae	<i>Epinephelus drummondhayi</i>	CR	yes
Perciformes	Epinephelidae	<i>Epinephelus guttatus</i>	LC	yes
Perciformes	Epinephelidae	<i>Epinephelus itajara</i>	CR	no
Perciformes	Epinephelidae	<i>Epinephelus morio</i>	NT	no
Perciformes	Epinephelidae	<i>Epinephelus striatus</i>	EN	yes
Perciformes	Epinephelidae	<i>Gonioplectrus hispanus</i>	LC	no
Perciformes	Epinephelidae	<i>Hyporthodus flavolimbatus</i>	VU	no
Perciformes	Epinephelidae	<i>Hyporthodus mystacinus</i>	LC	no
Perciformes	Epinephelidae	<i>Hyporthodus nigritus</i>	CR	no
Perciformes	Epinephelidae	<i>Hyporthodus niveatus</i>	VU	no
Perciformes	Epinephelidae	<i>Mycteroperca acutirostris</i>	LC	no
Perciformes	Epinephelidae	<i>Mycteroperca bonaci</i>	NT	no
Perciformes	Epinephelidae	<i>Mycteroperca cidi</i>	DD	yes
Perciformes	Epinephelidae	<i>Mycteroperca interstitialis</i>	VU	no
Perciformes	Epinephelidae	<i>Mycteroperca microlepis</i>	LC	no
Perciformes	Epinephelidae	<i>Mycteroperca phenax</i>	LC	yes
Perciformes	Epinephelidae	<i>Mycteroperca tigris</i>	LC	no
Perciformes	Epinephelidae	<i>Mycteroperca venenosa</i>	NT	no

Order	Family	Species Name	Global	Endemic?
Perciformes	Epinephelidae	<i>Paranthias furcifer</i>	LC	no
Perciformes	Gempylidae	<i>Gempylus serpens</i>	LC	no
Perciformes	Gerreidae	<i>Diapterus auratus</i>	LC	no
Perciformes	Gerreidae	<i>Diapterus rhombeus</i>	LC	no
Perciformes	Gerreidae	<i>Eucinostomus argenteus</i>	LC	no
Perciformes	Gerreidae	<i>Eucinostomus gula</i>	LC	no
Perciformes	Gerreidae	<i>Eucinostomus harengulus</i>	LC	no
Perciformes	Gerreidae	<i>Eucinostomus havana</i>	LC	yes
Perciformes	Gerreidae	<i>Eucinostomus jonesii</i>	LC	no
Perciformes	Gerreidae	<i>Eucinostomus lefroyi</i>	LC	no
Perciformes	Gerreidae	<i>Eucinostomus melanopterus</i>	LC	no
Perciformes	Gerreidae	<i>Eugerres awlæ</i>	LC	yes
Perciformes	Gerreidae	<i>Eugerres brasilianus</i>	LC	no
Perciformes	Gerreidae	<i>Eugerres plumieri</i>	LC	yes
Perciformes	Gerreidae	<i>Gerres cinereus</i>	LC	no
Perciformes	Gobiidae	<i>Akko dionaea</i>	DD	no
Perciformes	Gobiidae	<i>Antilligobius nikkiae</i>	LC	yes
Perciformes	Gobiidae	<i>Awaous flavus</i>	LC	no
Perciformes	Gobiidae	<i>Barbulifer antennatus</i>	LC	yes
Perciformes	Gobiidae	<i>Barbulifer ceuthoecus</i>	LC	no
Perciformes	Gobiidae	<i>Bathygobius antilliensis</i>	LC	yes
Perciformes	Gobiidae	<i>Bathygobius curacao</i>	LC	yes
Perciformes	Gobiidae	<i>Bathygobius geminatus</i>	DD	yes
Perciformes	Gobiidae	<i>Bathygobius lacertus</i>	LC	yes
Perciformes	Gobiidae	<i>Bathygobius mystacium</i>	LC	no
Perciformes	Gobiidae	<i>Bathygobius soporator</i>	LC	no
Perciformes	Gobiidae	<i>Bollmannia boqueronensis</i>	LC	yes
Perciformes	Gobiidae	<i>Bollmannia communis</i>	LC	yes
Perciformes	Gobiidae	<i>Bollmannia eigenmanni</i>	LC	yes
Perciformes	Gobiidae	<i>Bollmannia litura</i>	LC	yes
Perciformes	Gobiidae	<i>Chriolepis benthonis*</i>	DD	yes
Perciformes	Gobiidae	<i>Chriolepis bilix*</i>	LC	yes

Order	Family	Species Name	Global	Endemic?
Perciformes	Gobiidae	<i>Chriolepis fisheri</i>	LC	no
Perciformes	Gobiidae	<i>Chriolepis vespa*</i>	LC	yes
Perciformes	Gobiidae	<i>Coryphopterus alloides</i>	VU	yes
Perciformes	Gobiidae	<i>Coryphopterus dicrus</i>	LC	no
Perciformes	Gobiidae	<i>Coryphopterus eidolon</i>	VU	yes
Perciformes	Gobiidae	<i>Coryphopterus glaucofraenum</i>	LC	no
Perciformes	Gobiidae	<i>Coryphopterus hyalinus</i>	VU	yes
Perciformes	Gobiidae	<i>Coryphopterus kuna</i>	DD	yes
Perciformes	Gobiidae	<i>Coryphopterus lipernes</i>	VU	yes
Perciformes	Gobiidae	<i>Coryphopterus personatus</i>	VU	yes
Perciformes	Gobiidae	<i>Coryphopterus punctipectophorus</i>	LC	yes
Perciformes	Gobiidae	<i>Coryphopterus thrix</i>	VU	yes
Perciformes	Gobiidae	<i>Coryphopterus tortugae</i>	VU	yes
Perciformes	Gobiidae	<i>Coryphopterus venezuelae</i>	VU	yes
Perciformes	Gobiidae	<i>Ctenogobius boleosoma</i>	LC	no
Perciformes	Gobiidae	<i>Ctenogobius claytonii</i>	VU	yes
Perciformes	Gobiidae	<i>Ctenogobius fasciatus</i>	LC	yes
Perciformes	Gobiidae	<i>Ctenogobius phenacus</i>	LC	yes
Perciformes	Gobiidae	<i>Ctenogobius pseudofasciatus</i>	LC	yes
Perciformes	Gobiidae	<i>Ctenogobius saepepallens</i>	LC	yes
Perciformes	Gobiidae	<i>Ctenogobius shufeldti</i>	LC	yes
Perciformes	Gobiidae	<i>Ctenogobius smaragdus</i>	LC	no
Perciformes	Gobiidae	<i>Ctenogobius stigmaticus</i>	LC	no
Perciformes	Gobiidae	<i>Ctenogobius stigmaturus</i>	LC	yes
Perciformes	Gobiidae	<i>Ctenogobius thoropsis</i>	LC	no
Perciformes	Gobiidae	<i>Elacatinus atronasus</i>	EN	yes
Perciformes	Gobiidae	<i>Elacatinus cayman</i>	VU	yes
Perciformes	Gobiidae	<i>Elacatinus centralis</i>	EN	yes
Perciformes	Gobiidae	<i>Elacatinus chancei</i>	LC	yes
Perciformes	Gobiidae	<i>Elacatinus colini</i>	LC	yes
Perciformes	Gobiidae	<i>Elacatinus evelynae</i>	LC	yes
Perciformes	Gobiidae	<i>Elacatinus genie</i>	LC	yes

Order	Family	Species Name	Global	Endemic?
Perciformes	Gobiidae	<i>Elacatinus horsti</i>	LC	yes
Perciformes	Gobiidae	<i>Elacatinus illecebrosus</i>	LC	yes
Perciformes	Gobiidae	<i>Elacatinus jarocho</i>	EN	yes
Perciformes	Gobiidae	<i>Elacatinus lobeli</i>	NT	yes
Perciformes	Gobiidae	<i>Elacatinus lori</i>	LC	yes
Perciformes	Gobiidae	<i>Elacatinus louisae</i>	LC	yes
Perciformes	Gobiidae	<i>Elacatinus oceanops</i>	LC	yes
Perciformes	Gobiidae	<i>Elacatinus panamensis*</i>	DD	yes
Perciformes	Gobiidae	<i>Elacatinus prochilos</i>	VU	yes
Perciformes	Gobiidae	<i>Elacatinus randalli</i>	LC	yes
Perciformes	Gobiidae	<i>Elacatinus rubrigenis*</i>	DD	yes
Perciformes	Gobiidae	<i>Elacatinus serranilla</i>	LC	yes
Perciformes	Gobiidae	<i>Elacatinus tenox</i>	LC	yes
Perciformes	Gobiidae	<i>Elacatinus xanthiprora</i>	LC	yes
Perciformes	Gobiidae	<i>Evermannichthys bicolor</i>	DD	yes
Perciformes	Gobiidae	<i>Evermannichthys convictor</i>	DD	yes
Perciformes	Gobiidae	<i>Evermannichthys metzelaari</i>	LC	yes
Perciformes	Gobiidae	<i>Evermannichthys silus</i>	DD	yes
Perciformes	Gobiidae	<i>Evermannichthys spongicola</i>	LC	yes
Perciformes	Gobiidae	<i>Evorthodus lyricus</i>	LC	no
Perciformes	Gobiidae	<i>Ginsburgellus novemlineatus</i>	LC	yes
Perciformes	Gobiidae	<i>Gnatholepis thompsoni</i>	LC	no
Perciformes	Gobiidae	<i>Gobiodes broussonnetii</i>	LC	no
Perciformes	Gobiidae	<i>Gobiodes grahamae</i>	DD	no
Perciformes	Gobiidae	<i>Gobionellus oceanicus</i>	LC	no
Perciformes	Gobiidae	<i>Gobiosoma bosc</i>	LC	no
Perciformes	Gobiidae	<i>Gobiosoma ginsburgi</i>	LC	no
Perciformes	Gobiidae	<i>Gobiosoma grosvenori</i>	LC	yes
Perciformes	Gobiidae	<i>Gobiosoma hildebrandi</i>	VU	yes
Perciformes	Gobiidae	<i>Gobiosoma longipala</i>	LC	yes
Perciformes	Gobiidae	<i>Gobiosoma robustum</i>	LC	yes
Perciformes	Gobiidae	<i>Gobiosoma spes</i>	LC	yes

Order	Family	Species Name	Global	Endemic?
Perciformes	Gobiidae	<i>Gobiosoma spilotum</i>	EN	yes
Perciformes	Gobiidae	<i>Gobiosoma yucatanum</i>	LC	yes
Perciformes	Gobiidae	<i>Gobulus myersi</i>	LC	no
Perciformes	Gobiidae	<i>Lophogobius cyprinoides</i>	LC	no
Perciformes	Gobiidae	<i>Lythrypnus crocodilus</i>	LC	yes
Perciformes	Gobiidae	<i>Lythrypnus elasson</i>	LC	yes
Perciformes	Gobiidae	<i>Lythrypnus heterochroma</i>	LC	yes
Perciformes	Gobiidae	<i>Lythrypnus minimus</i>	LC	yes
Perciformes	Gobiidae	<i>Lythrypnus mowbrayi</i>	LC	yes
Perciformes	Gobiidae	<i>Lythrypnus nesiotes</i>	LC	yes
Perciformes	Gobiidae	<i>Lythrypnus okapia</i>	LC	yes
Perciformes	Gobiidae	<i>Lythrypnus phorellus</i>	LC	yes
Perciformes	Gobiidae	<i>Lythrypnus spilus</i>	LC	yes
Perciformes	Gobiidae	<i>Microgobius carri</i>	LC	yes
Perciformes	Gobiidae	<i>Microgobius gulosus</i>	LC	no
Perciformes	Gobiidae	<i>Microgobius meeki</i>	LC	no
Perciformes	Gobiidae	<i>Microgobius microlepis</i>	LC	yes
Perciformes	Gobiidae	<i>Microgobius signatus</i>	LC	yes
Perciformes	Gobiidae	<i>Microgobius thalassinus</i>	LC	no
Perciformes	Gobiidae	<i>Nes longus</i>	LC	yes
Perciformes	Gobiidae	<i>Oxyurichthys stigmalophius</i>	LC	yes
Perciformes	Gobiidae	<i>Palatogobius paradoxus</i>	LC	yes
Perciformes	Gobiidae	<i>Pariah scotius</i>	LC	yes
Perciformes	Gobiidae	<i>Parrella macropteryx</i>	LC	no
Perciformes	Gobiidae	<i>Priolepis dawsoni</i>	LC	no
Perciformes	Gobiidae	<i>Priolepis hipoliti</i>	LC	no
Perciformes	Gobiidae	<i>Priolepis robinsi</i>	LC	yes
Perciformes	Gobiidae	<i>Psilotris alepis</i>	LC	yes
Perciformes	Gobiidae	<i>Psilotris amblyrhynchus*</i>	DD	yes
Perciformes	Gobiidae	<i>Psilotris batrachodes*</i>	LC	yes
Perciformes	Gobiidae	<i>Psilotris boehlkei</i>	VU	yes
Perciformes	Gobiidae	<i>Psilotris celsus*</i>	LC	no

Order	Family	Species Name	Global	Endemic?
Perciformes	Gobiidae	<i>Psilotris kaufmani</i>	LC	yes
Perciformes	Gobiidae	<i>Pycnomma roosevelti</i> *	LC	yes
Perciformes	Gobiidae	<i>Risor ruber</i>	LC	no
Perciformes	Gobiidae	<i>Robinsichthys arrowsmithensis</i>	DD	yes
Perciformes	Gobiidae	<i>Sicydium punctatum</i>	LC	no
Perciformes	Gobiidae	<i>Tigrigobius dilepis</i>	LC	yes
Perciformes	Gobiidae	<i>Tigrigobius gemmatus</i>	LC	yes
Perciformes	Gobiidae	<i>Tigrigobius harveyi</i>	EN	yes
Perciformes	Gobiidae	<i>Tigrigobius macrodon</i>	LC	yes
Perciformes	Gobiidae	<i>Tigrigobius multifasciatus</i>	LC	yes
Perciformes	Gobiidae	<i>Tigrigobius pallens</i>	LC	yes
Perciformes	Gobiidae	<i>Tigrigobius redimiculus</i>	VU	yes
Perciformes	Gobiidae	<i>Tigrigobius saucrus</i>	LC	yes
Perciformes	Gobiidae	<i>Tigrigobius zebrellus</i>	LC	yes
Perciformes	Gobiidae	<i>Varicus imswe</i> *	DD	yes
Perciformes	Gobiidae	<i>Varicus marilynae</i>	DD	yes
Perciformes	Gobiidae	<i>Vomerogobius flavus</i>	DD	yes
Perciformes	Grammatidae	<i>Gramma dejongi</i>	DD	yes
Perciformes	Grammatidae	<i>Gramma linki</i>	LC	yes
Perciformes	Grammatidae	<i>Gramma loreto</i>	LC	yes
Perciformes	Grammatidae	<i>Gramma melacara</i>	LC	yes
Perciformes	Grammatidae	<i>Lipogramma anabantoides</i>	LC	yes
Perciformes	Grammatidae	<i>Lipogramma evides</i>	LC	yes
Perciformes	Grammatidae	<i>Lipogramma flavescens</i>	DD	yes
Perciformes	Grammatidae	<i>Lipogramma klayi</i>	LC	yes
Perciformes	Grammatidae	<i>Lipogramma regia</i>	LC	yes
Perciformes	Grammatidae	<i>Lipogramma robinsi</i>	DD	yes
Perciformes	Grammatidae	<i>Lipogramma rosea</i>	LC	yes
Perciformes	Grammatidae	<i>Lipogramma trilineata</i>	LC	yes
Perciformes	Haemulidae	<i>Anisotremus moricandi</i>	LC	no
Perciformes	Haemulidae	<i>Anisotremus surinamensis</i>	DD	no
Perciformes	Haemulidae	<i>Anisotremus virginicus</i>	LC	no

Order	Family	Species Name	Global	Endemic?
Perciformes	Haemulidae	<i>Conodon nobilis</i>	LC	no
Perciformes	Haemulidae	<i>Emmelichthys atlanticus</i>	LC	yes
Perciformes	Haemulidae	<i>Genyatremus cavifrons</i>	DD	no
Perciformes	Haemulidae	<i>Haemulon album</i>	DD	yes
Perciformes	Haemulidae	<i>Haemulon aurolineatum</i>	LC	no
Perciformes	Haemulidae	<i>Haemulon bonariense</i>	LC	yes
Perciformes	Haemulidae	<i>Haemulon boschmae</i>	LC	yes
Perciformes	Haemulidae	<i>Haemulon carbonarium</i>	LC	yes
Perciformes	Haemulidae	<i>Haemulon chrysargyreum</i>	LC	yes
Perciformes	Haemulidae	<i>Haemulon flavolineatum</i>	LC	yes
Perciformes	Haemulidae	<i>Haemulon macrostomum</i>	LC	yes
Perciformes	Haemulidae	<i>Haemulon melanurum</i>	LC	no
Perciformes	Haemulidae	<i>Haemulon parra</i>	LC	no
Perciformes	Haemulidae	<i>Haemulon plumieri</i>	LC	no
Perciformes	Haemulidae	<i>Haemulon sciurus</i>	LC	yes
Perciformes	Haemulidae	<i>Haemulon steindachneri</i>	LC	no
Perciformes	Haemulidae	<i>Haemulon striatum</i>	LC	no
Perciformes	Haemulidae	<i>Haemulon vittatum</i>	LC	yes
Perciformes	Haemulidae	<i>Haemulopsis corvinaeformis</i>	LC	no
Perciformes	Haemulidae	<i>Orthopristis chrysoptera</i>	LC	no
Perciformes	Haemulidae	<i>Orthopristis ruber</i>	LC	no
Perciformes	Haemulidae	<i>Pomadasys crocro</i>	DD	no
Perciformes	Istiophoridae	<i>Istiophorus platypterus</i>	LC	no
Perciformes	Istiophoridae	<i>Kajikia albida</i>	VU	no
Perciformes	Istiophoridae	<i>Makaira nigricans</i>	VU	no
Perciformes	Istiophoridae	<i>Tetrapturus georgii</i>	DD	no
Perciformes	Istiophoridae	<i>Tetrapturus pfluegeri</i>	LC	no
Perciformes	Kyphosidae	<i>Kyphosus bigibbus</i>	LC	no
Perciformes	Kyphosidae	<i>Kyphosus cinerascens</i>	LC	no
Perciformes	Kyphosidae	<i>Kyphosus sectatrix</i>	LC	no
Perciformes	Kyphosidae	<i>Kyphosus vaigiensis</i>	LC	no
Perciformes	Labridae	<i>Bodianus pulchellus</i>	LC	no

Order	Family	Species Name	Global	Endemic?
Perciformes	Labridae	<i>Bodianus rufus</i>	LC	no
Perciformes	Labridae	<i>Clepticus parrae</i>	LC	yes
Perciformes	Labridae	<i>Cryptotomus roseus</i>	LC	no
Perciformes	Labridae	<i>Decodon puellaris</i>	LC	no
Perciformes	Labridae	<i>Doratonotus megalepis</i>	LC	no
Perciformes	Labridae	<i>Halichoeres bathyphilus</i>	LC	yes
Perciformes	Labridae	<i>Halichoeres bivittatus</i>	LC	no
Perciformes	Labridae	<i>Halichoeres burekiae</i>	EN	yes
Perciformes	Labridae	<i>Halichoeres caudalis</i>	LC	yes
Perciformes	Labridae	<i>Halichoeres cyanocephalus</i>	LC	yes
Perciformes	Labridae	<i>Halichoeres garnoti</i>	LC	yes
Perciformes	Labridae	<i>Halichoeres maculipinna</i>	LC	yes
Perciformes	Labridae	<i>Halichoeres pictus</i>	LC	yes
Perciformes	Labridae	<i>Halichoeres poeyi</i>	LC	no
Perciformes	Labridae	<i>Halichoeres radiatus</i>	LC	yes
Perciformes	Labridae	<i>Halichoeres socialis</i>	EN	yes
Perciformes	Labridae	<i>Lachnolaimus maximus</i>	VU	yes
Perciformes	Labridae	<i>Nicholsina usta</i>	LC	no
Perciformes	Labridae	<i>Scarus coelestinus</i>	DD	yes
Perciformes	Labridae	<i>Scarus coeruleus</i>	LC	yes
Perciformes	Labridae	<i>Scarus guacamaia</i>	NT	yes
Perciformes	Labridae	<i>Scarus iseri</i>	LC	yes
Perciformes	Labridae	<i>Scarus taeniopterus</i>	LC	yes
Perciformes	Labridae	<i>Scarus vetula</i>	LC	yes
Perciformes	Labridae	<i>Sparisoma atomarium</i>	LC	yes
Perciformes	Labridae	<i>Sparisoma aurofrenatum</i>	LC	yes
Perciformes	Labridae	<i>Sparisoma chrysopterum</i>	LC	yes
Perciformes	Labridae	<i>Sparisoma frondosum</i>	DD	no
Perciformes	Labridae	<i>Sparisoma griseorubrum</i>	DD	yes
Perciformes	Labridae	<i>Sparisoma radians</i>	LC	no
Perciformes	Labridae	<i>Sparisoma rubripinne</i>	LC	yes
Perciformes	Labridae	<i>Sparisoma viride</i>	LC	yes

Order	Family	Species Name	Global	Endemic?
Perciformes	Labridae	<i>Thalassoma bifasciatum</i>	LC	yes
Perciformes	Labridae	<i>Xyrichtys martinicensis</i>	LC	no
Perciformes	Labridae	<i>Xyrichtys novacula</i>	LC	no
Perciformes	Labridae	<i>Xyrichtys splendens</i>	LC	no
Perciformes	Labrisomidae	<i>Brockius albigenys</i>	LC	yes
Perciformes	Labrisomidae	<i>Brockius nigricinctus</i>	LC	yes
Perciformes	Labrisomidae	<i>Gobioclinus bucciferus</i>	LC	yes
Perciformes	Labrisomidae	<i>Gobioclinus filamentosus</i>	LC	yes
Perciformes	Labrisomidae	<i>Gobioclinus gobio</i>	LC	yes
Perciformes	Labrisomidae	<i>Gobioclinus guppyi</i>	LC	yes
Perciformes	Labrisomidae	<i>Gobioclinus haitiensis</i>	LC	yes
Perciformes	Labrisomidae	<i>Gobioclinus kalisherae</i>	LC	yes
Perciformes	Labrisomidae	<i>Haptoclinus apectolophus</i>	DD	yes
Perciformes	Labrisomidae	<i>Haptoclinus dropi</i>	DD	yes
Perciformes	Labrisomidae	<i>Labrisomus nuchipinnis</i>	LC	yes
Perciformes	Labrisomidae	<i>Malacoctenus aurolineatus</i>	LC	yes
Perciformes	Labrisomidae	<i>Malacoctenus boehlkei</i>	LC	yes
Perciformes	Labrisomidae	<i>Malacoctenus delalandii</i>	LC	no
Perciformes	Labrisomidae	<i>Malacoctenus erdmani</i>	LC	yes
Perciformes	Labrisomidae	<i>Malacoctenus gilli</i>	LC	yes
Perciformes	Labrisomidae	<i>Malacoctenus macropus</i>	LC	yes
Perciformes	Labrisomidae	<i>Malacoctenus triangulatus</i>	LC	yes
Perciformes	Labrisomidae	<i>Malacoctenus versicolor</i>	LC	yes
Perciformes	Labrisomidae	<i>Nemaclinus atelestos</i>	LC	yes
Perciformes	Labrisomidae	<i>Paraclinus barbatus</i>	LC	yes
Perciformes	Labrisomidae	<i>Paraclinus cingulatus</i>	LC	yes
Perciformes	Labrisomidae	<i>Paraclinus fasciatus</i>	LC	yes
Perciformes	Labrisomidae	<i>Paraclinus grandicomis</i>	LC	yes
Perciformes	Labrisomidae	<i>Paraclinus infrons</i>	LC	yes
Perciformes	Labrisomidae	<i>Paraclinus marmoratus</i>	LC	yes
Perciformes	Labrisomidae	<i>Paraclinus naeorhegmis</i>	LC	yes
Perciformes	Labrisomidae	<i>Paraclinus nigripinnis</i>	LC	yes

Order	Family	Species Name	Global	Endemic?
Perciformes	Labrisomidae	<i>Starksia atlantica</i>	LC	yes
Perciformes	Labrisomidae	<i>Starksia culebrae</i>	LC	yes
Perciformes	Labrisomidae	<i>Starksia elongata</i>	LC	yes
Perciformes	Labrisomidae	<i>Starksia fasciata</i>	LC	yes
Perciformes	Labrisomidae	<i>Starksia greenfieldi</i>	LC	yes
Perciformes	Labrisomidae	<i>Starksia guttata</i>	LC	yes
Perciformes	Labrisomidae	<i>Starksia hassi</i>	LC	yes
Perciformes	Labrisomidae	<i>Starksia langi</i>	LC	yes
Perciformes	Labrisomidae	<i>Starksia lepicoelia</i>	LC	yes
Perciformes	Labrisomidae	<i>Starksia leucovitta</i>	DD	yes
Perciformes	Labrisomidae	<i>Starksia melasma</i>	LC	yes
Perciformes	Labrisomidae	<i>Starksia nanodes</i>	LC	yes
Perciformes	Labrisomidae	<i>Starksia occidentalis</i>	LC	yes
Perciformes	Labrisomidae	<i>Starksia ocellata</i>	LC	yes
Perciformes	Labrisomidae	<i>Starksia rava</i>	LC	yes
Perciformes	Labrisomidae	<i>Starksia robertsoni</i>	LC	yes
Perciformes	Labrisomidae	<i>Starksia sangreyae</i>	LC	yes
Perciformes	Labrisomidae	<i>Starksia sella</i>	DD	yes
Perciformes	Labrisomidae	<i>Starksia sluiteri</i>	LC	yes
Perciformes	Labrisomidae	<i>Starksia smithvanizi</i>	LC	yes
Perciformes	Labrisomidae	<i>Starksia springeri</i>	DD	yes
Perciformes	Labrisomidae	<i>Starksia starcki</i>	LC	yes
Perciformes	Labrisomidae	<i>Starksia variabilis</i>	DD	yes
Perciformes	Labrisomidae	<i>Starksia weigti</i>	LC	yes
Perciformes	Labrisomidae	<i>Starksia williamsi</i>	LC	yes
Perciformes	Labrisomidae	<i>Starksia y-lineata</i>	DD	yes
Perciformes	Lobotidae	<i>Lobotes surinamensis</i>	LC	no
Perciformes	Lutjanidae	<i>Apsilus dentatus</i>	LC	yes
Perciformes	Lutjanidae	<i>Etelis oculatus</i>	DD	no
Perciformes	Lutjanidae	<i>Lutjanus analis</i>	NT	no
Perciformes	Lutjanidae	<i>Lutjanus apodus</i>	LC	yes
Perciformes	Lutjanidae	<i>Lutjanus buccanella</i>	DD	no

Order	Family	Species Name	Global	Endemic?
Perciformes	Lutjanidae	<i>Lutjanus campechanus</i>	VU	yes
Perciformes	Lutjanidae	<i>Lutjanus cyanopterus</i>	VU	no
Perciformes	Lutjanidae	<i>Lutjanus griseus</i>	LC	no
Perciformes	Lutjanidae	<i>Lutjanus jocu</i>	DD	no
Perciformes	Lutjanidae	<i>Lutjanus mahogoni</i>	LC	yes
Perciformes	Lutjanidae	<i>Lutjanus synagris</i>	NT	no
Perciformes	Lutjanidae	<i>Lutjanus vivanus</i>	LC	no
Perciformes	Lutjanidae	<i>Ocyurus chrysurus</i>	DD	no
Perciformes	Lutjanidae	<i>Pristipomoides aquilonaris</i>	LC	no
Perciformes	Lutjanidae	<i>Pristipomoides freemani</i>	LC	no
Perciformes	Lutjanidae	<i>Pristipomoides macrophthalmus</i>	LC	yes
Perciformes	Lutjanidae	<i>Rhomboplites aurorubens</i>	VU	no
Perciformes	Luvaridae	<i>Luvarus imperialis</i>	LC	no
Perciformes	Malacanthidae	<i>Caulolatilus chrysops</i>	LC	no
Perciformes	Malacanthidae	<i>Caulolatilus cyanops</i>	LC	yes
Perciformes	Malacanthidae	<i>Caulolatilus guppyi</i>	LC	yes
Perciformes	Malacanthidae	<i>Caulolatilus intermedius</i>	LC	yes
Perciformes	Malacanthidae	<i>Caulolatilus microps</i>	DD	yes
Perciformes	Malacanthidae	<i>Caulolatilus williamsi</i>	DD	yes
Perciformes	Malacanthidae	<i>Lopholatilus chamaeleonticeps</i>	EN	no
Perciformes	Malacanthidae	<i>Malacanthus plumieri</i>	LC	no
Perciformes	Microdesmidae	<i>Cerdale floridana</i>	LC	yes
Perciformes	Microdesmidae	<i>Microdesmus bahianus</i>	LC	no
Perciformes	Microdesmidae	<i>Microdesmus carri</i>	LC	yes
Perciformes	Microdesmidae	<i>Microdesmus lanceolatus</i>	LC	yes
Perciformes	Microdesmidae	<i>Microdesmus longipinnis</i>	LC	yes
Perciformes	Microdesmidae	<i>Microdesmus luscus</i>	DD	yes
Perciformes	Microdesmidae	<i>Ptereleotris calliura</i>	LC	yes
Perciformes	Microdesmidae	<i>Ptereleotris helenae</i>	LC	yes
Perciformes	Microdesmidae	<i>Ptereleotris randalli</i>	LC	no
Perciformes	Moronidae	<i>Morone saxatilis</i>	LC	no
Perciformes	Mullidae	<i>Mulloidichthys martinicus</i>	LC	no

Order	Family	Species Name	Global	Endemic?
Perciformes	Mullidae	<i>Mullus auratus</i>	LC	no
Perciformes	Mullidae	<i>Pseudupeneus maculatus</i>	LC	no
Perciformes	Mullidae	<i>Upeneus parvus</i>	LC	no
Perciformes	Nomeidae	<i>Cubiceps gracilis</i>	LC	no
Perciformes	Nomeidae	<i>Nomeus gronovii</i>	LC	no
Perciformes	Nomeidae	<i>Psenes cyanophrys</i>	LC	no
Perciformes	Nomeidae	<i>Psenes pellucidus</i>	LC	no
Perciformes	Opistognathidae	<i>Lonchopisthus bigmani</i>	LC	yes
Perciformes	Opistognathidae	<i>Lonchopisthus lemur</i>	LC	no
Perciformes	Opistognathidae	<i>Lonchopisthus micrognathus</i>	LC	yes
Perciformes	Opistognathidae	<i>Opistognathus aurifrons</i>	LC	yes
Perciformes	Opistognathidae	<i>Opistognathus gilberti</i>	LC	yes
Perciformes	Opistognathidae	<i>Opistognathus leprocarus</i>	LC	yes
Perciformes	Opistognathidae	<i>Opistognathus lonchurus</i>	LC	no
Perciformes	Opistognathidae	<i>Opistognathus macrognathus</i>	LC	yes
Perciformes	Opistognathidae	<i>Opistognathus maxillosus</i>	LC	yes
Perciformes	Opistognathidae	<i>Opistognathus megalepis</i>	LC	yes
Perciformes	Opistognathidae	<i>Opistognathus melachasme</i>	LC	yes
Perciformes	Opistognathidae	<i>Opistognathus nothus</i>	LC	yes
Perciformes	Opistognathidae	<i>Opistognathus robinsi</i>	LC	yes
Perciformes	Opistognathidae	<i>Opistognathus signatus</i>	LC	yes
Perciformes	Opistognathidae	<i>Opistognathus whitehursti</i>	LC	no
Perciformes	Pempheridae	<i>Pempheris poeyi</i>	LC	no
Perciformes	Pempheridae	<i>Pempheris schomburgkii</i>	LC	no
Perciformes	Percophidae	<i>Bembrops anatirostris</i>	LC	yes
Perciformes	Percophidae	<i>Bembrops gobiooides</i>	LC	no
Perciformes	Percophidae	<i>Bembrops macromma</i>	LC	yes
Perciformes	Polynemidae	<i>Polydactylus octonemus</i>	LC	yes
Perciformes	Polynemidae	<i>Polydactylus oligodon</i>	LC	no
Perciformes	Polynemidae	<i>Polydactylus virginicus</i>	LC	no
Perciformes	Pomacanthidae	<i>Centropyge argi</i>	LC	yes
Perciformes	Pomacanthidae	<i>Centropyge aurantonotus</i>	LC	no

Order	Family	Species Name	Global	Endemic?
Perciformes	Pomacanthidae	<i>Holacanthus bermudensis</i>	LC	yes
Perciformes	Pomacanthidae	<i>Holacanthus ciliaris</i>	LC	no
Perciformes	Pomacanthidae	<i>Holacanthus tricolor</i>	LC	no
Perciformes	Pomacanthidae	<i>Pomacanthus arcuatus</i>	LC	no
Perciformes	Pomacanthidae	<i>Pomacanthus paru</i>	LC	no
Perciformes	Pomacentridae	<i>Abudefduf saxatilis</i>	LC	no
Perciformes	Pomacentridae	<i>Abudefduf taurus</i>	LC	no
Perciformes	Pomacentridae	<i>Chromis bermudae</i>	LC	yes
Perciformes	Pomacentridae	<i>Chromis cyanea</i>	LC	yes
Perciformes	Pomacentridae	<i>Chromis enchrysura</i>	LC	no
Perciformes	Pomacentridae	<i>Chromis insolata</i>	LC	yes
Perciformes	Pomacentridae	<i>Chromis multilineata</i>	LC	no
Perciformes	Pomacentridae	<i>Chromis scotti</i>	LC	no
Perciformes	Pomacentridae	<i>Microspathodon chrysurus</i>	LC	no
Perciformes	Pomacentridae	<i>Stegastes adustus</i>	LC	yes
Perciformes	Pomacentridae	<i>Stegastes diencaeus</i>	LC	yes
Perciformes	Pomacentridae	<i>Stegastes leucostictus</i>	LC	yes
Perciformes	Pomacentridae	<i>Stegastes otophorus</i>	DD	yes
Perciformes	Pomacentridae	<i>Stegastes partitus</i>	LC	yes
Perciformes	Pomacentridae	<i>Stegastes planifrons</i>	LC	yes
Perciformes	Pomacentridae	<i>Stegastes xanthurus</i>	LC	yes
Perciformes	Pomatomidae	<i>Pomatomus saltatrix</i>	VU	no
Perciformes	Priacanthidae	<i>Heteropriacanthus cruentatus</i>	LC	no
Perciformes	Priacanthidae	<i>Priacanthus arenatus</i>	LC	no
Perciformes	Priacanthidae	<i>Pristigenys alta</i>	LC	yes
Perciformes	Rachycentridae	<i>Rachycentron canadum</i>	LC	no
Perciformes	Sciaenidae	<i>Bairdiella chrysoura</i>	LC	no
Perciformes	Sciaenidae	<i>Bairdiella ronchus</i>	LC	no
Perciformes	Sciaenidae	<i>Corvula batabana</i>	LC	yes
Perciformes	Sciaenidae	<i>Corvula sanctaeluciae</i>	LC	yes
Perciformes	Sciaenidae	<i>Ctenosciaena gracilicirrhus</i>	LC	no
Perciformes	Sciaenidae	<i>Cynoscion acoupa</i>	LC	no

Order	Family	Species Name	Global	Endemic?
Perciformes	Sciaenidae	<i>Cynoscion arenarius</i>	LC	yes
Perciformes	Sciaenidae	<i>Cynoscion jamaicensis</i>	LC	no
Perciformes	Sciaenidae	<i>Cynoscion leiarchus</i>	LC	no
Perciformes	Sciaenidae	<i>Cynoscion microlepidotus</i>	LC	no
Perciformes	Sciaenidae	<i>Cynoscion nebulosus</i>	LC	no
Perciformes	Sciaenidae	<i>Cynoscion nothus</i>	LC	no
Perciformes	Sciaenidae	<i>Cynoscion similis</i>	LC	yes
Perciformes	Sciaenidae	<i>Cynoscion steindachneri</i>	LC	no
Perciformes	Sciaenidae	<i>Cynoscion virescens</i>	LC	no
Perciformes	Sciaenidae	<i>Equetus lanceolatus</i>	LC	no
Perciformes	Sciaenidae	<i>Equetus punctatus</i>	LC	yes
Perciformes	Sciaenidae	<i>Isopisthus parvipinnis</i>	LC	no
Perciformes	Sciaenidae	<i>Larimus breviceps</i>	LC	no
Perciformes	Sciaenidae	<i>Larimus fasciatus</i>	LC	no
Perciformes	Sciaenidae	<i>Leiostomus xanthurus</i>	LC	no
Perciformes	Sciaenidae	<i>Lonchurus elegans</i>	DD	yes
Perciformes	Sciaenidae	<i>Lonchurus lanceolatus</i>	LC	no
Perciformes	Sciaenidae	<i>Macrodon ancylodon</i>	LC	no
Perciformes	Sciaenidae	<i>Menticirrhus americanus</i>	LC	no
Perciformes	Sciaenidae	<i>Menticirrhus littoralis</i>	LC	no
Perciformes	Sciaenidae	<i>Menticirrhus saxatilis</i>	LC	no
Perciformes	Sciaenidae	<i>Micropogonias furnieri</i>	LC	no
Perciformes	Sciaenidae	<i>Micropogonias undulatus</i>	LC	no
Perciformes	Sciaenidae	<i>Nebris microps</i>	LC	no
Perciformes	Sciaenidae	<i>Odontoscion dentex</i>	LC	no
Perciformes	Sciaenidae	<i>Ophioscion panamensis</i>	DD	yes
Perciformes	Sciaenidae	<i>Ophioscion punctatissimus</i>	LC	no
Perciformes	Sciaenidae	<i>Paralonchurus brasiliensis</i>	LC	no
Perciformes	Sciaenidae	<i>Pareques acuminatus</i>	LC	no
Perciformes	Sciaenidae	<i>Pareques iwamotoi</i>	LC	yes
Perciformes	Sciaenidae	<i>Pareques umbrosus</i>	LC	yes
Perciformes	Sciaenidae	<i>Pogonias cromis</i>	LC	no

Order	Family	Species Name	Global	Endemic?
Perciformes	Sciaenidae	<i>Protosciona bathytatos</i>	LC	yes
Perciformes	Sciaenidae	<i>Protosciona trewavasae</i>	LC	yes
Perciformes	Sciaenidae	<i>Sciaenops ocellatus</i>	LC	no
Perciformes	Sciaenidae	<i>Stellifer chaoi</i>	LC	yes
Perciformes	Sciaenidae	<i>Stellifer colonensis</i>	LC	yes
Perciformes	Sciaenidae	<i>Stellifer griseus</i>	LC	no
Perciformes	Sciaenidae	<i>Stellifer lanceolatus</i>	LC	yes
Perciformes	Sciaenidae	<i>Stellifer microps</i>	LC	no
Perciformes	Sciaenidae	<i>Stellifer naso</i>	LC	no
Perciformes	Sciaenidae	<i>Stellifer rastrifer</i>	LC	no
Perciformes	Sciaenidae	<i>Stellifer stellifer</i>	DD	no
Perciformes	Sciaenidae	<i>Stellifer venezuelae</i>	LC	yes
Perciformes	Sciaenidae	<i>Umbrina broussonnetii</i>	LC	yes
Perciformes	Sciaenidae	<i>Umbrina coroides</i>	LC	no
Perciformes	Sciaenidae	<i>Umbrina milliae</i>	LC	yes
Perciformes	Scombridae	<i>Acanthocybium solandri</i>	LC	no
Perciformes	Scombridae	<i>Auxis rochei</i>	LC	no
Perciformes	Scombridae	<i>Auxis thazard</i>	LC	no
Perciformes	Scombridae	<i>Euthynnus alletteratus</i>	LC	no
Perciformes	Scombridae	<i>Katsuwonus pelamis</i>	LC	no
Perciformes	Scombridae	<i>Sarda sarda</i>	LC	no
Perciformes	Scombridae	<i>Scomber colias</i>	LC	no
Perciformes	Scombridae	<i>Scomberomorus brasiliensis</i>	LC	no
Perciformes	Scombridae	<i>Scomberomorus cavalla</i>	LC	no
Perciformes	Scombridae	<i>Scomberomorus maculatus</i>	LC	no
Perciformes	Scombridae	<i>Scomberomorus regalis</i>	LC	no
Perciformes	Scombridae	<i>Thunnus alalunga</i>	NT	no
Perciformes	Scombridae	<i>Thunnus albacares</i>	NT	no
Perciformes	Scombridae	<i>Thunnus atlanticus</i>	LC	no
Perciformes	Scombridae	<i>Thunnus obesus</i>	VU	no
Perciformes	Scombridae	<i>Thunnus thynnus</i>	EN	no
Perciformes	Serranidae	<i>Anthias nicholsi</i>	LC	no

Order	Family	Species Name	Global	Endemic?
Perciformes	Serranidae	<i>Anthias woodsi</i>	LC	yes
Perciformes	Serranidae	<i>Baldwinella aureorubens</i>	LC	no
Perciformes	Serranidae	<i>Baldwinella vivanus</i>	LC	no
Perciformes	Serranidae	<i>Bullisichthys caribbaeus</i>	LC	yes
Perciformes	Serranidae	<i>Centropristes fuscula</i>	LC	no
Perciformes	Serranidae	<i>Centropristes oxyurus</i>	LC	yes
Perciformes	Serranidae	<i>Centropristes philadelphica</i>	LC	yes
Perciformes	Serranidae	<i>Centropristes striata</i>	LC	no
Perciformes	Serranidae	<i>Choranthias tenuis</i>	LC	yes
Perciformes	Serranidae	<i>Diplectrum bivittatum</i>	LC	no
Perciformes	Serranidae	<i>Diplectrum formosum</i>	LC	no
Perciformes	Serranidae	<i>Diplectrum radiale</i>	LC	no
Perciformes	Serranidae	<i>Hemanthias leptus</i>	LC	yes
Perciformes	Serranidae	<i>Hoploplectrus aberrans</i>	LC	yes
Perciformes	Serranidae	<i>Hoploplectrus atlabua</i>	DD	yes
Perciformes	Serranidae	<i>Hoploplectrus castroaguirrei</i>	EN	yes
Perciformes	Serranidae	<i>Hoploplectrus chlorurus</i>	LC	yes
Perciformes	Serranidae	<i>Hoploplectrus ecosur</i>	DD	yes
Perciformes	Serranidae	<i>Hoploplectrus floridae</i>	LC	yes
Perciformes	Serranidae	<i>Hoploplectrus gemma</i>	LC	yes
Perciformes	Serranidae	<i>Hoploplectrus gummigutta</i>	LC	yes
Perciformes	Serranidae	<i>Hoploplectrus guttavarius</i>	LC	yes
Perciformes	Serranidae	<i>Hoploplectrus indigo</i>	LC	yes
Perciformes	Serranidae	<i>Hoploplectrus maculiferus</i>	DD	yes
Perciformes	Serranidae	<i>Hoploplectrus maya</i>	VU	yes
Perciformes	Serranidae	<i>Hoploplectrus nigricans</i>	LC	yes
Perciformes	Serranidae	<i>Hoploplectrus providencianus</i>	LC	yes
Perciformes	Serranidae	<i>Hoploplectrus puella</i>	LC	yes
Perciformes	Serranidae	<i>Hoploplectrus randallorum</i>	LC	yes
Perciformes	Serranidae	<i>Hoploplectrus unicolor</i>	LC	yes
Perciformes	Serranidae	<i>Liopropoma aberrans</i>	LC	yes
Perciformes	Serranidae	<i>Liopropoma carmabi</i>	LC	yes

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Perciformes	Serranidae	<i>Liopropoma eukrines</i>	LC	yes
Perciformes	Serranidae	<i>Liopropoma mowbrayi</i>	LC	yes
Perciformes	Serranidae	<i>Liopropoma olneyi</i>	DD	yes
Perciformes	Serranidae	<i>Liopropoma rubre</i>	LC	yes
Perciformes	Serranidae	<i>Liopropoma santi</i>	DD	yes
Perciformes	Serranidae	<i>Paralabrax dewegeri</i>	LC	no
Perciformes	Serranidae	<i>Parasphyraenops atrimanus</i>	LC	yes
Perciformes	Serranidae	<i>Parasphyraenops incisus</i>	LC	yes
Perciformes	Serranidae	<i>Plectranthias garrupellus</i>	LC	yes
Perciformes	Serranidae	<i>Pronotogrammus martinicensis</i>	LC	no
Perciformes	Serranidae	<i>Pseudogramma gregoryi</i>	LC	no
Perciformes	Serranidae	<i>Rypticus bistrispinus</i>	LC	no
Perciformes	Serranidae	<i>Rypticus bornoi</i>	LC	yes
Perciformes	Serranidae	<i>Rypticus carpenteri</i>	LC	yes
Perciformes	Serranidae	<i>Rypticus maculatus</i>	LC	yes
Perciformes	Serranidae	<i>Rypticus randalli</i>	LC	no
Perciformes	Serranidae	<i>Rypticus saponaceus</i>	LC	no
Perciformes	Serranidae	<i>Rypticus subbifrenatus</i>	LC	no
Perciformes	Serranidae	<i>Schultzea beta</i>	LC	yes
Perciformes	Serranidae	<i>Serraniculus pumilio</i>	LC	yes
Perciformes	Serranidae	<i>Serranus annularis</i>	LC	yes
Perciformes	Serranidae	<i>Serranus atrobranchus</i>	LC	no
Perciformes	Serranidae	<i>Serranus baldwini</i>	LC	no
Perciformes	Serranidae	<i>Serranus chionaraia</i>	LC	no
Perciformes	Serranidae	<i>Serranus flaviventris</i>	LC	no
Perciformes	Serranidae	<i>Serranus luciopercaurus</i>	LC	yes
Perciformes	Serranidae	<i>Serranus maytagi</i>	LC	yes
Perciformes	Serranidae	<i>Serranus notospilus</i>	LC	yes
Perciformes	Serranidae	<i>Serranus phoebe</i>	LC	no
Perciformes	Serranidae	<i>Serranus subligarius</i>	LC	yes
Perciformes	Serranidae	<i>Serranus tabacarius</i>	LC	no
Perciformes	Serranidae	<i>Serranus tigrinus</i>	LC	yes

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Perciformes	Serranidae	<i>Serranus tortugarum</i>	LC	yes
Perciformes	Sparidae	<i>Archosargus probatocephalus</i>	LC	no
Perciformes	Sparidae	<i>Archosargus rhomboidalis</i>	LC	no
Perciformes	Sparidae	<i>Calamus arctifrons</i>	LC	yes
Perciformes	Sparidae	<i>Calamus bajonado</i>	LC	no
Perciformes	Sparidae	<i>Calamus calamus</i>	LC	no
Perciformes	Sparidae	<i>Calamus campechanus</i>	DD	yes
Perciformes	Sparidae	<i>Calamus cervigoni</i>	LC	yes
Perciformes	Sparidae	<i>Calamus leucosteus</i>	LC	yes
Perciformes	Sparidae	<i>Calamus nodosus</i>	LC	yes
Perciformes	Sparidae	<i>Calamus penna</i>	LC	no
Perciformes	Sparidae	<i>Calamus pennatula</i>	LC	no
Perciformes	Sparidae	<i>Calamus proridens</i>	LC	yes
Perciformes	Sparidae	<i>Diplodus argenteus</i> ssp. <i>caudimacula</i>	LC	yes
Perciformes	Sparidae	<i>Diplodus bermudensis</i>	LC	yes
Perciformes	Sparidae	<i>Diplodus holbrookii</i>	LC	no
Perciformes	Sparidae	<i>Lagodon rhomboides</i>	LC	no
Perciformes	Sparidae	<i>Pagrus pagrus</i>	LC	no
Perciformes	Sparidae	<i>Stenotomus caprinus</i>	LC	yes
Perciformes	Sparidae	<i>Stenotomus chrysops</i>	NT	no
Perciformes	Sphyraenidae	<i>Sphyraena barracuda</i>	LC	no
Perciformes	Sphyraenidae	<i>Sphyraena borealis</i>	LC	no
Perciformes	Sphyraenidae	<i>Sphyraena guachancho</i>	LC	no
Perciformes	Stromateidae	<i>Peprilus burti</i>	LC	yes
Perciformes	Stromateidae	<i>Peprilus paru</i>	LC	no
Perciformes	Symphsanodontidae	<i>Symphsanodon octoactinus</i>	LC	yes
Perciformes	Trichiuridae	<i>Evoxymetopon taeniatus</i>	LC	yes
Perciformes	Trichiuridae	<i>Trichiurus lepturus</i>	LC	no
Perciformes	Tripterygiidae	<i>Enneanectes altivelis</i>	LC	no
Perciformes	Tripterygiidae	<i>Enneanectes atrorus</i>	LC	yes
Perciformes	Tripterygiidae	<i>Enneanectes boehlkei</i>	LC	yes
Perciformes	Tripterygiidae	<i>Enneanectes deloachorum</i>	LC	yes

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Perciformes	Tripterygiidae	<i>Enneanectes jordani</i>	LC	yes
Perciformes	Tripterygiidae	<i>Enneanectes matador</i>	LC	yes
Perciformes	Tripterygiidae	<i>Enneanectes pectoralis</i>	LC	yes
Perciformes	Tripterygiidae	<i>Enneanectes wilki</i>	DD	yes
Perciformes	Uranoscopidae	<i>Astroskopus guttatus</i>	LC	no
Perciformes	Uranoscopidae	<i>Astroskopus y-graecum</i>	LC	no
Perciformes	Uranoscopidae	<i>Kathetostoma alboguttata</i>	LC	yes
Perciformes	Uranoscopidae	<i>Xenocephalus egredius</i>	LC	yes
Perciformes	Xiphiidae	<i>Xiphias gladius</i>	LC	no
Pleuronectiformes	Achiridae	<i>Achirus achirus</i>	LC	no
Pleuronectiformes	Achiridae	<i>Achirus declivis</i>	LC	no
Pleuronectiformes	Achiridae	<i>Achirus lineatus</i>	LC	no
Pleuronectiformes	Achiridae	<i>Apionichthys dumerili</i>	LC	no
Pleuronectiformes	Achiridae	<i>Gymnachirus melas</i>	LC	no
Pleuronectiformes	Achiridae	<i>Gymnachirus nudus</i>	LC	no
Pleuronectiformes	Achiridae	<i>Gymnachirus texae</i>	LC	yes
Pleuronectiformes	Achiridae	<i>Trinectes inscriptus</i>	LC	yes
Pleuronectiformes	Achiridae	<i>Trinectes microphthalmus</i>	LC	no
Pleuronectiformes	Achiridae	<i>Trinectes paulistanus</i>	LC	no
Pleuronectiformes	Bothidae	<i>Bothus lunatus</i>	LC	no
Pleuronectiformes	Bothidae	<i>Bothus maculiferus</i>	LC	no
Pleuronectiformes	Bothidae	<i>Bothus ocellatus</i>	LC	no
Pleuronectiformes	Bothidae	<i>Bothus robinsi</i>	LC	no
Pleuronectiformes	Bothidae	<i>Engyophrys senta</i>	LC	no
Pleuronectiformes	Bothidae	<i>Monolene megalepis</i>	LC	yes
Pleuronectiformes	Bothidae	<i>Monolene sessilicauda</i>	LC	no
Pleuronectiformes	Bothidae	<i>Trichopsetta caribbaea</i>	LC	yes
Pleuronectiformes	Bothidae	<i>Trichopsetta melasma</i>	LC	yes
Pleuronectiformes	Bothidae	<i>Trichopsetta orbisulcus</i>	LC	yes
Pleuronectiformes	Bothidae	<i>Trichopsetta ventralis</i>	LC	yes
Pleuronectiformes	Cynoglossidae	<i>Syphurus arawak</i>	LC	yes
Pleuronectiformes	Cynoglossidae	<i>Syphurus caribbeanus</i>	LC	yes

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Pleuronectiformes	Cynoglossidae	<i>Syphurus civitatum</i>	LC	yes
Pleuronectiformes	Cynoglossidae	<i>Syphurus diomedeanus</i>	LC	no
Pleuronectiformes	Cynoglossidae	<i>Syphurus minor</i>	LC	yes
Pleuronectiformes	Cynoglossidae	<i>Syphurus oculellus</i>	LC	no
Pleuronectiformes	Cynoglossidae	<i>Syphurus ommaspilus</i>	LC	yes
Pleuronectiformes	Cynoglossidae	<i>Syphurus parvus</i>	LC	yes
Pleuronectiformes	Cynoglossidae	<i>Syphurus pelicanus</i>	LC	yes
Pleuronectiformes	Cynoglossidae	<i>Syphurus piger</i>	LC	yes
Pleuronectiformes	Cynoglossidae	<i>Syphurus plagiusa</i>	LC	no
Pleuronectiformes	Cynoglossidae	<i>Syphurus plagusia</i>	LC	no
Pleuronectiformes	Cynoglossidae	<i>Syphurus pusillus</i>	LC	no
Pleuronectiformes	Cynoglossidae	<i>Syphurus rhytisma</i>	LC	no
Pleuronectiformes	Cynoglossidae	<i>Syphurus tessellatus</i>	LC	no
Pleuronectiformes	Cynoglossidae	<i>Syphurus urospilus</i>	LC	yes
Pleuronectiformes	Paralichthyidae	<i>Acylopussetta cycloidea</i>	LC	yes
Pleuronectiformes	Paralichthyidae	<i>Acylopussetta dilecta</i>	LC	yes
Pleuronectiformes	Paralichthyidae	<i>Acylopussetta kumperae</i>	DD	no
Pleuronectiformes	Paralichthyidae	<i>Acylopussetta ommata</i>	LC	yes
Pleuronectiformes	Paralichthyidae	<i>Citharichthys abbotti</i>	LC	yes
Pleuronectiformes	Paralichthyidae	<i>Citharichthys amblybregmatus</i>	DD	yes
Pleuronectiformes	Paralichthyidae	<i>Citharichthys arctifrons</i>	LC	no
Pleuronectiformes	Paralichthyidae	<i>Citharichthys arenaceus</i>	LC	no
Pleuronectiformes	Paralichthyidae	<i>Citharichthys cornutus</i>	LC	no
Pleuronectiformes	Paralichthyidae	<i>Citharichthys dinoceros</i>	LC	no
Pleuronectiformes	Paralichthyidae	<i>Citharichthys gymnorhinus</i>	LC	yes
Pleuronectiformes	Paralichthyidae	<i>Citharichthys macrops</i>	LC	no
Pleuronectiformes	Paralichthyidae	<i>Citharichthys minutus</i>	LC	yes
Pleuronectiformes	Paralichthyidae	<i>Citharichthys spilopterus</i>	LC	no
Pleuronectiformes	Paralichthyidae	<i>Citharichthys valdezi</i>	LC	yes
Pleuronectiformes	Paralichthyidae	<i>Cyclopsetta chittendeni</i>	LC	no
Pleuronectiformes	Paralichthyidae	<i>Cyclopsetta fimbriata</i>	LC	no
Pleuronectiformes	Paralichthyidae	<i>Etropus crossopterus</i>	LC	no

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Pleuronectiformes	Paralichthyidae	<i>Etropus cycloquamus</i>	LC	yes
Pleuronectiformes	Paralichthyidae	<i>Etropus delsmani</i> ssp. <i>delsmani</i>	DD	yes
Pleuronectiformes	Paralichthyidae	<i>Etropus rimosus</i>	LC	yes
Pleuronectiformes	Paralichthyidae	<i>Gastropsetta frontalis</i>	LC	yes
Pleuronectiformes	Paralichthyidae	<i>Paralichthys alboguttatus</i>	LC	yes
Pleuronectiformes	Paralichthyidae	<i>Paralichthys dentatus</i>	LC	no
Pleuronectiformes	Paralichthyidae	<i>Paralichthys lethostigma</i>	NT	yes
Pleuronectiformes	Paralichthyidae	<i>Paralichthys oblongus</i>	LC	no
Pleuronectiformes	Paralichthyidae	<i>Paralichthys squamilentus</i>	LC	yes
Pleuronectiformes	Paralichthyidae	<i>Paralichthys tropicus</i>	DD	yes
Pleuronectiformes	Paralichthyidae	<i>Syacium gunteri</i>	LC	yes
Pleuronectiformes	Paralichthyidae	<i>Syacium micrurum</i>	LC	no
Pleuronectiformes	Paralichthyidae	<i>Syacium papillosum</i>	LC	no
Scorpaeniformes	Dactylopteridae	<i>Dactylopterus volitans</i>	LC	no
Scorpaeniformes	Peristediidae	<i>Peristedion gracile</i>	LC	yes
Scorpaeniformes	Peristediidae	<i>Peristedion miniatum</i>	LC	no
Scorpaeniformes	Scorpaenidae	<i>Neomerinthe beanorum</i>	LC	yes
Scorpaeniformes	Scorpaenidae	<i>Neomerinthe hemingwayi</i>	LC	no
Scorpaeniformes	Scorpaenidae	<i>Pontinus castor</i>	LC	yes
Scorpaeniformes	Scorpaenidae	<i>Pontinus helena</i>	DD	yes
Scorpaeniformes	Scorpaenidae	<i>Pontinus longispinis</i>	LC	no
Scorpaeniformes	Scorpaenidae	<i>Pontinus nematophthalmus</i>	LC	no
Scorpaeniformes	Scorpaenidae	<i>Pontinus rathbuni</i>	LC	no
Scorpaeniformes	Scorpaenidae	<i>Scorpaena agassizii</i>	LC	no
Scorpaeniformes	Scorpaenidae	<i>Scorpaena albifimbria</i>	LC	no
Scorpaeniformes	Scorpaenidae	<i>Scorpaena bergii</i>	LC	yes
Scorpaeniformes	Scorpaenidae	<i>Scorpaena brachyptera</i>	LC	yes
Scorpaeniformes	Scorpaenidae	<i>Scorpaena brasiliensis</i>	LC	no
Scorpaeniformes	Scorpaenidae	<i>Scorpaena calcarata</i>	LC	no
Scorpaeniformes	Scorpaenidae	<i>Scorpaena dispar</i>	LC	no
Scorpaeniformes	Scorpaenidae	<i>Scorpaena elachys</i>	LC	yes
Scorpaeniformes	Scorpaenidae	<i>Scorpaena grandicornis</i>	LC	no

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Scorpaeniformes	Scorpaenidae	<i>Scorpaena inermis</i>	LC	yes
Scorpaeniformes	Scorpaenidae	<i>Scorpaena isthmensis</i>	LC	no
Scorpaeniformes	Scorpaenidae	<i>Scorpaena plumieri</i>	LC	no
Scorpaeniformes	Scorpaenidae	<i>Scorpaenodes caribbaeus</i>	LC	no
Scorpaeniformes	Scorpaenidae	<i>Scorpaenodes tredecimspinosus</i>	LC	yes
Scorpaeniformes	Triglidae	<i>Bellator brachybir</i>	LC	no
Scorpaeniformes	Triglidae	<i>Bellator egretta</i>	LC	no
Scorpaeniformes	Triglidae	<i>Bellator militaris</i>	LC	yes
Scorpaeniformes	Triglidae	<i>Bellator ribeiroi</i>	LC	no
Scorpaeniformes	Triglidae	<i>Prionotus alatus</i>	LC	yes
Scorpaeniformes	Triglidae	<i>Prionotus beanii</i>	LC	no
Scorpaeniformes	Triglidae	<i>Prionotus carolinus</i>	LC	no
Scorpaeniformes	Triglidae	<i>Prionotus evolans</i>	LC	no
Scorpaeniformes	Triglidae	<i>Prionotus longispinosus</i>	LC	yes
Scorpaeniformes	Triglidae	<i>Prionotus martis</i>	LC	yes
Scorpaeniformes	Triglidae	<i>Prionotus murielae</i>	DD	yes
Scorpaeniformes	Triglidae	<i>Prionotus ophryas</i>	LC	yes
Scorpaeniformes	Triglidae	<i>Prionotus paralatus</i>	LC	yes
Scorpaeniformes	Triglidae	<i>Prionotus punctatus</i>	LC	no
Scorpaeniformes	Triglidae	<i>Prionotus roseus</i>	LC	no
Scorpaeniformes	Triglidae	<i>Prionotus rubio</i>	LC	yes
Scorpaeniformes	Triglidae	<i>Prionotus scitulus</i>	LC	yes
Scorpaeniformes	Triglidae	<i>Prionotus stearnsi</i>	LC	no
Scorpaeniformes	Triglidae	<i>Prionotus tribulus</i>	LC	yes
Siluriformes	Ariidae	<i>Amphiarius phrygiatus</i>	LC	no
Siluriformes	Ariidae	<i>Ariopsis felis</i>	LC	yes
Siluriformes	Ariidae	<i>Bagre bagre</i>	LC	no
Siluriformes	Ariidae	<i>Bagre marinus</i>	LC	no
Siluriformes	Ariidae	<i>Cathorops arenatus</i>	LC	no
Siluriformes	Ariidae	<i>Cathorops belizensis</i>	DD	yes
Siluriformes	Ariidae	<i>Cathorops higuchii</i>	LC	yes
Siluriformes	Ariidae	<i>Cathorops wayuu</i>	DD	yes

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Siluriformes	Ariidae	<i>Notarius grandicassis</i>	LC	no
Siluriformes	Ariidae	<i>Notarius neogranatensis</i>	VU	yes
Siluriformes	Ariidae	<i>Notarius quadriscutis</i>	LC	no
Siluriformes	Ariidae	<i>Notarius rugispinis</i>	LC	no
Siluriformes	Ariidae	<i>Sciades couma</i>	LC	no
Siluriformes	Ariidae	<i>Sciades herzbergii</i>	LC	no
Siluriformes	Ariidae	<i>Sciades parkeri</i>	VU	no
Siluriformes	Ariidae	<i>Sciades passany</i>	DD	no
Syngnathiformes	Aulostomidae	<i>Aulostomus maculatus</i>	LC	no
Syngnathiformes	Centriscidae	<i>Macroramphosus scolopax</i>	LC	no
Syngnathiformes	Fistulariidae	<i>Fistularia petimba</i>	LC	no
Syngnathiformes	Fistulariidae	<i>Fistularia tabacaria</i>	LC	no
Syngnathiformes	Syngnathidae	<i>Acentronura dendritica</i>	LC	no
Syngnathiformes	Syngnathidae	<i>Anarchopterus criniger</i>	LC	no
Syngnathiformes	Syngnathidae	<i>Anarchopterus tectus</i>	LC	no
Syngnathiformes	Syngnathidae	<i>Bryx dunckeri</i>	LC	no
Syngnathiformes	Syngnathidae	<i>Bryx randalli</i>	LC	yes
Syngnathiformes	Syngnathidae	<i>Cosmocampus albirostris</i>	LC	no
Syngnathiformes	Syngnathidae	<i>Cosmocampus brachycephalus</i>	LC	yes
Syngnathiformes	Syngnathidae	<i>Cosmocampus elucens</i>	LC	yes
Syngnathiformes	Syngnathidae	<i>Cosmocampus hildebrandi</i>	LC	yes
Syngnathiformes	Syngnathidae	<i>Hippocampus erectus</i>	VU	no
Syngnathiformes	Syngnathidae	<i>Hippocampus reidi</i>	DD	no
Syngnathiformes	Syngnathidae	<i>Hippocampus zosterae</i>	DD	yes
Syngnathiformes	Syngnathidae	<i>Micrognathus crinitus</i>	LC	no
Syngnathiformes	Syngnathidae	<i>Microphis lineatus</i>	LC	no
Syngnathiformes	Syngnathidae	<i>Minyichthys inusitatus</i>	DD	yes
Syngnathiformes	Syngnathidae	<i>Penetopteryx nanus</i>	LC	yes
Syngnathiformes	Syngnathidae	<i>Syngnathus caribbaeus</i>	LC	yes
Syngnathiformes	Syngnathidae	<i>Syngnathus dawsoni</i>	DD	yes
Syngnathiformes	Syngnathidae	<i>Syngnathus floridae</i>	LC	yes
Syngnathiformes	Syngnathidae	<i>Syngnathus fuscus</i>	LC	no

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Syngnathiformes	Syngnathidae	<i>Syngnathus louisianae</i>	LC	yes
Syngnathiformes	Syngnathidae	<i>Syngnathus makaxi</i>	DD	yes
Syngnathiformes	Syngnathidae	<i>Syngnathus pelagicus</i>	LC	no
Syngnathiformes	Syngnathidae	<i>Syngnathus scovelli</i>	LC	yes
Syngnathiformes	Syngnathidae	<i>Syngnathus springeri</i>	LC	yes
Tetraodontiformes	Balistidae	<i>Balistes capriscus</i>	VU	no
Tetraodontiformes	Balistidae	<i>Balistes vetula</i>	NT	no
Tetraodontiformes	Balistidae	<i>Canthidermis maculata</i>	LC	no
Tetraodontiformes	Balistidae	<i>Canthidermis sufflamen</i>	LC	no
Tetraodontiformes	Balistidae	<i>Melichthys niger</i>	LC	no
Tetraodontiformes	Balistidae	<i>Xanthichthys ringens</i>	LC	no
Tetraodontiformes	Diodontidae	<i>Chilomycterus antennatus</i>	LC	yes
Tetraodontiformes	Diodontidae	<i>Chilomycterus antillarum</i>	LC	no
Tetraodontiformes	Diodontidae	<i>Chilomycterus reticulatus</i>	LC	no
Tetraodontiformes	Diodontidae	<i>Chilomycterus schoepfii</i>	LC	no
Tetraodontiformes	Diodontidae	<i>Chilomycterus spinosus ssp. spinosus</i>	LC	no
Tetraodontiformes	Diodontidae	<i>Diodon eydouxii</i>	LC	no
Tetraodontiformes	Diodontidae	<i>Diodon holocanthus</i>	LC	no
Tetraodontiformes	Diodontidae	<i>Diodon hystrix</i>	LC	no
Tetraodontiformes	Molidae	<i>Masturus lanceolatus</i>	LC	no
Tetraodontiformes	Molidae	<i>Mola mola</i>	VU	no
Tetraodontiformes	Molidae	<i>Ranzania laevis</i>	LC	no
Tetraodontiformes	Monacanthidae	<i>Aluterus heudelotii</i>	LC	no
Tetraodontiformes	Monacanthidae	<i>Aluterus monoceros</i>	LC	no
Tetraodontiformes	Monacanthidae	<i>Aluterus schoepfii</i>	LC	no
Tetraodontiformes	Monacanthidae	<i>Aluterus scriptus</i>	LC	no
Tetraodontiformes	Monacanthidae	<i>Cantherhines macrocerus</i>	LC	no
Tetraodontiformes	Monacanthidae	<i>Cantherhines pullus</i>	LC	no
Tetraodontiformes	Monacanthidae	<i>Monacanthus ciliatus</i>	LC	no
Tetraodontiformes	Monacanthidae	<i>Monacanthus tuckeri</i>	LC	yes
Tetraodontiformes	Monacanthidae	<i>Stephanolepis hispidus</i>	LC	no
Tetraodontiformes	Monacanthidae	<i>Stephanolepis setifer</i>	LC	no

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Tetraodontiformes	Ostraciidae	<i>Acanthostracion polygonius</i>	LC	no
Tetraodontiformes	Ostraciidae	<i>Acanthostracion quadricornis</i>	LC	no
Tetraodontiformes	Ostraciidae	<i>Lactophrys bicaudalis</i>	LC	no
Tetraodontiformes	Ostraciidae	<i>Lactophrys trigonus</i>	LC	no
Tetraodontiformes	Ostraciidae	<i>Lactophrys triqueter</i>	LC	no
Tetraodontiformes	Tetraodontidae	<i>Canthigaster figueiredoi</i>	LC	no
Tetraodontiformes	Tetraodontidae	<i>Canthigaster jamesstyleri</i>	LC	yes
Tetraodontiformes	Tetraodontidae	<i>Canthigaster rostrata</i>	LC	yes
Tetraodontiformes	Tetraodontidae	<i>Colomesus psittacus</i>	LC	no
Tetraodontiformes	Tetraodontidae	<i>Lagocephalus laevigatus</i>	LC	no
Tetraodontiformes	Tetraodontidae	<i>Lagocephalus lagocephalus</i>	LC	no
Tetraodontiformes	Tetraodontidae	<i>Sphoeroides dorsalis</i>	LC	yes
Tetraodontiformes	Tetraodontidae	<i>Sphoeroides georgemilleri</i>	DD	yes
Tetraodontiformes	Tetraodontidae	<i>Sphoeroides greeleyi</i>	LC	no
Tetraodontiformes	Tetraodontidae	<i>Sphoeroides maculatus</i>	LC	no
Tetraodontiformes	Tetraodontidae	<i>Sphoeroides nephelus</i>	LC	yes
Tetraodontiformes	Tetraodontidae	<i>Sphoeroides pachygaster</i>	LC	no
Tetraodontiformes	Tetraodontidae	<i>Sphoeroides parvus</i>	LC	yes
Tetraodontiformes	Tetraodontidae	<i>Sphoeroides spengleri</i>	LC	no
Tetraodontiformes	Tetraodontidae	<i>Sphoeroides testudineus</i>	LC	no
Tetraodontiformes	Tetraodontidae	<i>Sphoeroides tyleri</i>	LC	no
Tetraodontiformes	Tetraodontidae	<i>Sphoeroides yergeri</i>	LC	yes
Tetraodontiformes	Triacanthodidae	<i>Parahollandia lineata</i>	LC	yes
Zeiformes	Zeidae	<i>Zenopsis conchifer</i>	LC	no



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