

Marine biodiversity of an Eastern Tropical Pacific oceanic island, Isla del Coco, Costa Rica

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Received 05-I-2012. Corrected 01-VIII-2012. Accepted 24-IX-2012.

Abstract: Isla del Coco (also known as Cocos Island) is an oceanic island in the Eastern Tropical Pacific; it is part of the largest national park of Costa Rica and a UNESCO World Heritage Site. The island has been visited since the 16th Century due to its abundance of freshwater and wood. Marine biodiversity studies of the island started in the late 19th Century, with an intense period of research in the 1930's, and again from the mid 1990's to the present. The information is scattered and, in some cases, in old publications that are difficult to access. Here I have compiled published records of the marine organisms of the island. At least 1688 species are recorded, with the gastropods (383 species), bony fishes (354 spp.) and crustaceans (at least 263 spp.) being the most species-rich groups; 45 species are endemic to Isla del Coco National Park (2.7% of the total). The number of species per kilometer of coastline and by square kilometer of seabed shallower than 200m deep are the highest recorded in the Eastern Tropical Pacific. Although the marine biodiversity of Isla del Coco is relatively well known, there are regions that need more exploration, for example, the south side, the pelagic environments, and deeper waters. Also, several groups of organisms, such as the flatworms, nematodes, nemerteans, and gelatinous zooplankton, have been observed around the Island but have been poorly studied or not at all. **Citation:** Cortés, J. 2012. Marine biodiversity of an Eastern Tropical Pacific oceanic island, Isla del Coco, Costa Rica. *Rev. Biol. Trop.* 60 (Suppl. 3): 131-185. Epub 2012 Dec 01.

Key words: Marine biodiversity, Costa Rica, Isla del Coco, Cocos Island, Eastern Pacific, endemic species.

Isla del Coco (Cocos Island) is an oceanic island in the Eastern Tropical Pacific Ocean, about 500km from mainland Costa Rica (Cortés 2008), and biogeographically it is part of the Ocean Island Province (*sensu* Robertson & Cramer 2009). It is a highly diverse area with the highest number of endemic species in Costa Rica (Cortés & Wehrmann 2009, Cortés 2013a). It was declared a National Park in 1978, a UNESCO World Heritage Site in 1997, and a Ramsar site in 1998. It is important for Costa Rica, due to of its biological and historical richness and also because the Territorial Sea surrounding the island makes the marine area of Costa Rica more than 10 times its terrestrial area (Cortés & Wehrmann 2009, Cortés 2013b).

Marine biodiversity studies at Isla del Coco started in the late 19th Century with the

expedition of the US Fisheries Commission Steamer *Albatross* (see a history of marine research at what is now Parque Nacional Isla del Coco (Isla del Coco National Park) in Cortés 2008). Since then, many studies have been done but there is still more to be discovered. Hertlein (1963) compiled what was known about marine species of the Island. In this paper I update the list of marine organisms of Isla del Coco National Park, compare it with the species from the mainland, and identify areas for future research.

MATERIALS AND METHODS

Published records of marine species of Parque Nacional Isla del Coco (PNIC) were searched and species lists compiled. An

important source was the book “Marine Biodiversity of Costa Rica, Central America” edited by Wehrtmann and Cortés (2009). Here I included overlooked and newly published records. The number of species from PNIC is compared to the numbers from the rest of the Pacific of Costa Rica. Including the mainland, the Coco Volcanic Cordillera, the pelagic areas, and the Costa Rica Thermal Dome.

The perimeter of Isla del Coco is 28.8km, and it is surrounded by a platform that drops off at around 180-200m. The perimeter at 100m is 54.4km and at 200m is 71.4km. The area less than 50m deep around the island is 91.5km², less than 100m is 133km², and less than 200m deep is 318km² (O.G. Lizano, pers. comm. 2011). The Linear Biodiversity Index (LBI) and the Area Biodiversity Index (ABI) were

calculated as in Wehrtmann *et al.* (2009). To calculate the LBI, the number of species was divided by the perimeter of the island. The ABI was calculated by dividing the number of species by the area down to the 200m isobaths; the depth within which almost all the species had been recorded.

MARINE BIODIVERSITY OF ISLA DEL COCO NATIONAL PARK

At least 1688 species of marine organisms (Appendix 1) have been reported from Isla del Coco National Park (PNIC). The most species-rich groups are the gastropods (383 species), bony fishes (354 spp.) and crustaceans (at least 263 spp.) (Table 1). Close to 4,700 species of marine organisms have been reported for Costa

TABLE 1
Number of marine species reported from Isla del Coco National Park (Complete list of species in Appendix 1), from Pacific Costa Rica, species found only at PNIC, and the percentage those species exclusively of PNIC represent within each taxa

TAXA	Species from PNIC	Species from Pacific Costa Rica	Species found only at PNIC	% species only at PNIC	References
Virus	2+	n.k.	n.k.	n.k.	185
Bacteria and Archaea	1+	Several	n.k.	n.k.	82, 153
Cyanobacteria	1	28	1	3.6	13, 181, 185
Dinoflagelados	7	102	6	5.9	180, 181
Chlorophyta	12	44	6	13.6	13, 14, 74, 75, 76
Ochrophyta	6	26	0	0	13, 14, 74, 76
Rhodophyta	13	146	1	0.7	13, 14, 74, 76
Foraminifera	20	95	19	20.0	49, 54, 55, 56, 57, 98, 111
Porifera	8	62	8	12.9	50, 68, 141, 186
Cnidaria	83	223	51	22.9	
Anthozoa	48	87	28	32.2	2, 20, 21, 22, 23, 23a, 36, 44, 45, 46, 48, 72, 112
Scyphozoa	7	10	4	40.0	15, 16, 149
Hydrozoa	28	127	19	15.0	17, 37, 44, 80, 81, 98, 109, 130, 147, 148, 149
Mollusca	490	1260	235	18.6	
Polyplacophora	8	24	5	20.8	60, 78, 156
Gastropoda	383	826	195	23.6	38, 59, 60, 69, 70, 98, 100, 101, 107, 108, 114, 125, 130, 137, 150, 152, 172
Bivalvia	78	390	28	7.2	69, 70, 89, 98, 118, 182
Cephalopoda	21	20	7	35.0	98, 99, 102, 144, 145, 146
Sipuncula	11	19	4	21.0	58, 65, 174
Echiura	1	1	0	0	64, 65
Annelida	120	413	101	24.5	8, 63, 64, 67, 92, 93, 94, 98, 103, 106, 170, 171

TABLE 1 (Continued)
 Number of marine species reported from Isla del Coco National Park (Complete list of species in Appendix 1),
 from Pacific Costa Rica, species found only at PNIC, and the percentage those species exclusively
 of PNIC represent within each taxa

TAXA	Species from PNIC	Species from Pacific Costa Rica	Species found only at PNIC	% species only at PNIC	References
Crustacea	263+	888+	81	9.1	
Stomatopoda	6	29	2	6.9	176, 177, 179
Euphausiacea	Several spp.	20+	n.k.	n.k.	39, 130
Decapoda	139	458	49	10.6	1, 53, 73, 85, 88, 90, 91, 124, 136, 169, 177, 178, 179, 183, 184
Isopoda	3	37	2	5.4	18, 25, 26
Mysida	Several spp.	5+	n.k.	n.k.	130, 139
Tanaidacea	1	6	1	16.7	96
Amphipoda	25	117	11	9.4	11, 79, 86, 87, 130, 157, 164
Cirripedia	14	40	4	10.0	173, 188
Copepoda	70	172	9	5.3	130, 131, 165, 166, 167
Branchiopoda	1	1	1	100	130
Ostracoda	2	2	2	100	130
Pycnogonida	2	10	2	20.0	9
Insecta	1	9	0	0	162
Chaetognatha	8	27	6	22.2	41, 130, 168
Bryozoa	31	61	22	36.1	51, 98, 133, 134, 135
Brachiopoda	6	8	6	75.0	59, 60, 71, 98
Phoronida	1	1	1	100	66
Echinodermata	123	183	78	42.6	
Crinoidea	2	2	2	100	5, 7
Asteroidea	30	36	24	66.7	5, 7, 117, 119, 159
Ophiuroidea	30	54	17	31.5	5, 6, 7, 159
Echinoidea	31	44	16	36.4	5, 6, 7, 42, 43, 113, 159
Holothuroidea	30	47	19	40.4	5, 6, 7, 110, 159
Chordata	478	1083	119	11.0	
Appendicularia	9	10	7	70.0	10, 40, 41, 130
Thaliacea	3	4	3	75.0	130
Leptocardii	1	2	1	50.0	158, 175
Elasmobranchii	35	84	16	19.0	3, 34, 35, 47, 52, 115, 116, 122, 142, 143, 163
Actinopterygii	354	858	84	9.8	3, 4, 19, 27, 28, 29, 30, 31, 32, 33, 34, 35, 47, 62, 77, 83, 84, 95, 97, 104, 105, 121, 122, 123, 126, 127, 132, 138, 140, 142, 143, 151, 155, 163
Reptilia	5	5	0	0	84, 154, 161
Aves	55	92	16	17.4	12, 128, 187
Mammalia	16	28	6	21.4	120, 129
TOTAL	1688	4690	747	15.9%	

Pacific Costa Rica = mainland coast (MC), Coco Volcanic Cordillera (CVC) (also known as Cocos Ridge), Costa Rica Thermal Dome (CRTD), and Isla del Coco National Park (PNIC). + = more species than the number indicated are known, but have not been described. n.k. = not known.

Rica (Table 1); of these species, 747 or ~16% have been only reported from PNIC but not from other areas of Costa Rica. The percentages by taxonomic group ranged from 0 to 100%. All brown algae, echinurans, marine insects, and reptiles from PNIC are also found in the rest of Costa Rica. While all reported branchiopods, ostracods, phoronids, and crinoids, represented by one or two species, known from Costa Rica are reported from PNIC. Some groups have a disproportionate percentage of known species at PNIC, scyphozoans (40%), echinoderms as a phylum (42.6%), and its classes, asteroids (66.7%) echinoids (36.4%) and holothurians (40.4%), brachiopods (75.0%), and within the chordates, cephalochordates (50%) appendicularians (70%) and thaliacians (75%).

Species of several groups have been reported from other areas of Costa Rica than PNIC (Table 2). Some of these taxa we know are absent from PNIC, for example the seagrasses and mangroves, and some of the species associated to this ecosystems. Other groups have been observed, photographed or collected but there are no published accounts of them. Within these groups we have nematodes, nemerteans, ascideans, and parasites of fishes and turtles. Free-living flat worms have been observed along the mainland coast of Costa Rica as well as at PNIC, but there are no publications. Of other taxa we do not know if they are present

or not, for example, marine fungi, cumaceans and kinorhynchans (Table 2). Plus there must be other marine groups that have been reported from the Eastern Tropical Pacific, for example, loriciferans (Heiner & Neuhaus 2007) that might be present at PNIC.

Forty five species or 2.7% of the species known from PNIC are endemic (Tables 3, 4), and this represents 47.4% of all endemic marine species of Costa Rica (95 spp.). The number of endemic species is relatively low, but that is common in marine environments. The list of endemic marine species is presented in Table 3, as well as the reference to the publication where the species was described. Between 1893 and 1971, 16 species were described, while 29 were described from 1981 to 2011. Most endemic species are fishes (33.3% of all endemics from PNIC) and most were described in the last 30 years (11 of the 15 species). Crustacea is the next group with most endemism, 28.9%, followed by the mollusks, 15.5%, all very well studied groups (Table 4). Within a particular group, the brachiopods have the highest percentage of endemism, 16.7% followed by the sponges and polyplacophorans with 12.5% (Table 4).

Biodiversity indices used to compare species diversity at Isla del Coco with that at the Costa Rican coast revealed significantly higher values at PNIC than at the coast. For example,

TABLE 2

Taxa reported from Pacific mainland Costa Rica, or Coco Volcanic Cordillera, but not from Isla del Coco National Park.

Taxonomic group	Number of species reported	Isla del Coco
Marine fungi (Ulken <i>et al.</i> 1990, Cortés 2009d)	5 genera	n.k.
Seagrasses (Cortés & Salas 2009)	2	Absent
Mangroves (Silva-Benavides 2009)	8	Absent
Nematods (De la Cruz & Vargas 1986, Vargas 1988a, b)	Several species	Present
Nemerteans (Dexter 1974)	Several species	Present
Cumaceans (Petrescu <i>et al.</i> 2009)	13	n.k.
Kinorhynchans (Neuhaus 2004, Neuhaus & Blasche 2006, Cortés 2009d)	2	n.k.
Ascidians (Van Name 1945, Tokioka 1971, 1972, Cortés 2009d, Nova-Bustos <i>et al.</i> 2010)	14	Present
Fish parasites (Cortés 2009e)	46	Present
Turtle parasites (Santoro & Mattiucci 2009)	34	Present

n.k. = not known; Present = have been observed or collected but there are no publications.

TABLE 3
Endemic marine species of Isla del Coco National Park, Costa Rica

Phylum Porifera

Class Hexactinellida, Order Hexactinosida, Family Tretodictyidae

- 1) *Tretodictyum cocosensis* Reiswig, 2010

Phylum Cnidaria

Class Anthozoa, Order Alcyonacea, Family Gorgoniidae

- 2) *Leptogorgia tricolorata* Breedy & Cortés, 2011
3) *Pacificogorgia curta* Breedy & Guzman, 2003

Class Anthozoa, Order Scleractinia, Family Caryophylliidae

- 4) *Anomocora carinata* Cairns, 1991a

Class Hydrozoa, Order Filifora, Family Stylasteridae

- 5) *Pliobothrus fistulosus* Cairns, 1991b
6) *Stylaster cocosensis* Cairns, 1991b

Phylum Mollusca

Class Polyplacophora, Order Chitonida, Family Ischnochitonidae

- 7) *Ischnochiton victoriae* Ferreira, 1987

Class Gastropoda, Order Neogastropoda, Family Cystiscidae

- 8) *Gibberula achenea* Roth & Coan, 1971

Class Gastropoda, Subclass Vetigastropoda, Family Haliotidae

- 9) *Haliotis dalli roberti* McLean, 1970

Class Gastropoda, Subclass Patellogastropoda, Family Lottidae

- 10) *Lottia rothi* (Lindberg & McLean, 1981)

Class Gastropoda, Order Neogastropoda, Family Muricidae

- 11) *Favartia shaskyi* D'Attilio & Myers, 1988

Class Gastropoda, Order Neogastropoda, Family Olividae

- 12) *Oliva spicata deynzeræ* Petuch & Sargent, 1986

Class Bivalvia, Order Ostreoida, Family Pectinidae

- 13) *Leopecten cocosensis* Waller, 2007

Phylum Arthropoda

Subphylum Crustacea, Class Malacostraca, Order Decapoda, Family Diogenidae

- 14) *Allodardanus rugosus* Haig & Provenzano, 1965
15) *Cancellus tanneri* Faxon, 1893
16) *Paguristes fecundus* Faxon, 1893

Subphylum Crustacea, Class Malacostraca, Order Decapoda, Family Gecarcinidae

- 17) *Johngarthi cocoensis* Perger, Vargas & Wall, 2011

Subphylum Crustacea, Class Malacostraca, Order Decapoda, Family Paguridae

- 18) *Enallopaguropsis janetae* McLaughlin, 1982

Subphylum Crustacea, Class Malacostraca, Order Decapoda, Family Palaemonidae

- 19) *Macrobrachium cocoensis* Abele & Kim, 1984

Subphylum Crustacea, Class Malacostraca, Order Decapoda, Family Pinnotheridae

- 20) *Parapinnixa cortesi* Thoma, Heard & Vargas, 2005

Subphylum Crustacea, Class Malacostraca, Order Decapoda, Family Porcellanidae

- 21) *Petrolisthes cocoensis* Haig, 1960

Subphylum Crustacea, Class Malacostraca, Order Decapoda, Family Upogebiidae

- 22) *Pomatogebia cocosia* (Williams, 1986)

Subphylum Crustacea, Class Malacostraca, Order Amphipoda, Family Isaeidae

- 23) *Gammaropsis dubia* (Shoemaker, 1942)

Subphylum Crustacea, Class Malacostraca, Order Amphipoda, Family Talitridae

- 24) *Talorchestia fritzi* Stebbing, 1903

Subphylum Crustacea, Class Maxillopoda, Order Monstrilloida, Family Monstrillidae

- 25) *Cymbasoma cocoense* Suárez-Morales & Morales-Ramírez, 2009
26) *Monstrillopsis chathamensis* Suárez-Morales & Morales-Ramírez, 2009

Phylum Brachiopoda

Class Rhynchonellata, Order Rhynchonellida, Family Frieleidae

- 27) *Hispanirhynchia? craneana* (Dall, 1895)

TABLE 3 (Continued)
 Endemic marine species of Isla del Coco National Park, Costa Rica

Phylum Echinodermata

- Class Asteroidea, Order Paxillosida, Family Astropectinidae
 28) *Astropecten benthophilus* Ludwig, 1905
 29) *Persephonaster armiger* Ludwig, 1905
 Class Echinoidea, Order Clypeasteroidea, Family Mellitidae
 30) *Encope cocosi* Clark, 1948

Phylum Chordata

- Subphylum Vertebrata, Class Actinopterygii, Order Gobiesociformes, Familia Gobiesocidae
 31) *Gobiesox woodsi* (Schultz, 1944)
 32) *Tomicodon vermiculatus* Briggs, 1955
 Subphylum Vertebrata, Class Actinopterygii, Order Lophiiformes, Family Ogocephalidae
 33) *Ogocephalus porrectus* Garman, 1899
 Subphylum Vertebrata, Class Actinopterygii, Order Ophidiiformes, Family Bythitidae
 34) *Ogilbia cocoensis* Møller, Schwarzhans & Nielsen, 2005
 Subphylum Vertebrata, Class Actinopterygii, Order Scorpaeniformes, Family Peristediidae
 35) *Peristedion nesium* Bussing, 2010
 Subphylum Vertebrata, Class Actinopterygii, Order Perciformes, Familia Chaenopsidae
 36) *Acanthemblemaria atrata* Hastings & Robertson, 1999
 Subphylum Vertebrata, Class Actinopterygii, Order Perciformes, Family Dactyloscopidae
 37) *Gillellus chathamensis* Dawson, 1977
 Subphylum Vertebrata, Class Actinopterygii, Order Perciformes, Family Gobiidae
 38) *Chriolepis atrimelum* Bussing, 1997
 39) *Chriolepis dialepta* Bussing, 1990
 40) *Lythrypnus alphigena* Bussing, 1990
 41) *Lythrypnus cobalus* Bussing, 1990
 42) *Lythrypnus lavenbergi* Bussing, 1990
 43) *Sicydium cocoensis* (Heller & Snodgrass, 1903)
 Subphylum Vertebrata, Class Actinopterygii, Order Perciformes, Family Labridae
 44) *Halichoeres salmofasciatus* Allen & Robertson, 2002
 Subphylum Vertebrata, Class Actinopterygii, Order Perciformes, Family Tripterygiidae
 45) *Axoclinus cocoensis* Bussing, 1991

the Linear Biodiversity Index for Isla del Coco is 58.6, which is significantly higher than the highest value (3.8) found by Wehrtmann *et al.* (2009) for the Costa Rican Pacific coast. The same happens when comparing the Area Biodiversity Index of continental shelves. The value for the 200m isobaths of PNIC is 5.3, compared to the highest value of 0.3 reported by Wehrtmann *et al.* (2009). The LBI and ABI values for the Costa Rican coastline and continental platform, respectively, were the highest when compared to other countries in the region (Wehrtmann *et al.* 2009). By all measures Isla del Coco is a very rich area in the eastern tropical Pacific.

STATUS OF THE ENDEMIC SPECIES

Forty five species are endemic to PNIC (Table 2). While some are abundant, such as the calcified hydrozoan *Stylaster cocosensis*, described in 1991 by Stephen D. Cairns, others have not been seen since they were described, for example, the sand dollar, *Encope cocosi*. This species had not been found alive since it was described by H.L. Clark in 1948. However, in January 2007 a specimen recently dead was dredged from deep water. In 1986 using the research submersible *Johnson-Sea-Link* (Harbor Branch Oceanographic Institution, Fort Pierce, Florida, USA) diving to

TABLE 4
 Number of endemic marine species at Isla del Coco National Park, percentage of the total of the endemics of the island represented by a particular taxa, and percentage of endemics within its taxonomic group

TAXA	Number of endemic species	% of the total of endemics	% of endemics within the group
Porifera	1	2.2	12.5
Cnidaria	5	11.1	6.1
Anthozoa	3	6.7	6.4
Hydrozoa	2	4.4	7.1
Mollusca	7	15.5	1.3
Polyplacophora	1	2.2	12.5
Gastropoda	5	11.1	1.3
Bivalvia	1	2.2	1.3
Crustacea	13	28.9	4.9
Decapoda	9	20.0	6.5
Amphipoda	2	4.4	8.0
Copepoda	2	4.4	2.9
Brachiopoda	1	2.2	16.7
Echinodermata	3	6.7	2.4
Asteroidea	2	4.4	6.7
Echinoidea	1	2.2	3.2
Chordata	15	33.3	3.1
Actinopterygii	15	33.3	4.2
TOTAL	45		2.7

several hundred meters, collected specimens that resulted in new species and some were endemic (Cairns 1991a, b). We do not know the status of some of those endemics because no submersible with the depth capacity of the *Johnson-Sea-Link* has been back to the island. There is now another submersible operating more regularly at the island, the *DeepSee* (Undersea Hunter Group, Puntarenas, Costa Rica), with a depth capability of 450m (Cortés & Blum 2008). We have been able to observed several of the deepwater endemics collected in 1986, some are relatively abundant. Eleven endemic species have been described in the last decade so it's possible that eventually they will be found in other areas. Some species of fishes which were initially classified as endemic to one of the oceanic islands of the eastern Tropical Pacific are now reported from one or more of the other oceanic islands. For example, *Stegastes arcifrons* which have been found in the three oceanic islands, Galápagos, Malpelo and

Isla del Coco or *Serranus tico* and *Halichoeres discolor*; found in Isla del Coco and Malpelo. Starr *et al.* (2012) indicated in their study of deepwater fishes of Isla del Coco National Park and Las Gemelas Seamount that probably deep areas in the eastern tropical Pacific will have similar species, but more studies and collections are needed.

DISCUSSION

Isla del Coco National Park has a rich marine biodiversity with some groups having been studied for many years and numerous scientists. For example, fishes and mollusks, especially gastropods, are relatively well known while other groups such as cyanobacteria, gelatinous zooplankton, nematodes and flatworms have been poorly studied or never at all even though we know they are on the island. As a result of recent expeditions (2006-2012) many new records of species have been

reported (Dean *et al.* 2010a, 2012, Sibaja-Cordero *et al.* 2012), including a phylum, Phoronida (Dean *et al.* 2010b), and new species are being discovered, even of conspicuous groups such as octocorals (Breedy & Cortés 2011, Breedy *et al.* 2012). Reports of new records and descriptions of new species are being prepared at the present time.

Hertlein (1963) did a compilation of published marine species of Isla del Coco, and included a biogeographic analysis of the flora and fauna of the island, plus an annotated bibliography. He reported 334 species (Table 5), with the gastropods (62 species) as the most species-rich group, followed by bony fishes (59) and crustaceans (56). The number of species and of different taxonomic groups has increased significantly but the same pattern of the most species-rich groups is maintained. Wehrtmann *et al.* (2009) reported 1,142 marine species for Isla del Coco National Park, with the most species-rich groups, in the same order, being the same as above. Here, 546 more species were added to the list of marine species of Isla del Coco National Park, and more will be added in the near future as other groups, depths and areas of the island are being studied.

Hickman (2009), in his study of the marine invertebrate biota of the Galápagos Islands,

found that while some groups of species are depauperated others displayed high diversity when compared to mainland Ecuador. Similar patterns were observed at Isla del Coco National Park. These patterns can be attributed to several possible factors likely acting in concert, both for source populations from elsewhere as well as established populations at PNIC: variation in the dispersal potential to and from PNIC, the probability of recruitment at PNIC, and the potential for survival and continued recruitment based on local environmental conditions. Species with long-lived larvae will have a chance of dispersing more than others if they find the type of environmental conditions necessary to survive and reproduce. For example, the absence of seagrasses and the low number of species of bivalves may be due to the lack of soft sediments where they can live.

AREAS FOR FUTURE RESEARCH

The least studied area of PNIC is the south side due to the normally rough sea conditions on that side (Lizano 2008). From a few observations, several species and environments in the south are different from the north in species density and composition, probably due to the currents that flow there (Cortés & Blum 2008).

TABLE 5
Marine species reported by Hertlein (1963) for Isla del Coco; fishes from Fowler (1938 in Hertlein 1963)

TAXA	Number of species	TAXA	Number of species
Foraminifera	17	Cirripedia	3
Cnidaria	24	Copepoda	2
Anthozoa	19	Brachiopoda	1
Hydrozoa	5	Bryozoa	20
Mollusca	90	Echinodermata	45
Polyplacophora	4	Asteroidea	6
Gastropoda	62	Ophiuroidea	15
Bivalvia	12	Echinoidea	13
Cephalopoda	12	Holothuroidea	11
Annelida	9	Chordata	72
Crustacea	56	Chondrichthyes	13
Decapoda	50	Actinopterygii	59
Amphipoda	1		
TOTAL 334 species			

More sampling should be done on that side in the future in the shallow and deepwaters of the south for better understanding the biodiversity of PNIC, and the effect of currents on that biodiversity.

There are several groups of organisms which have been observed and in some cases collected but for which there are no publications. Examples include cyanobacteria, sponges, flatworms, and nematodes (Table 2). For a few groups, especially the best known, there are some publications on their biogeographic relationships. Several species of stomatopods (Manning 1972), most reef building corals (Cortés 1986, 2011, Glynn & Ault 2000), some mollusks (Montoya & Kaiser 1988), sea urchins (Lessios *et al.* 1998), and about one third of the shore-fishes (Robertson *et al.* 2004) are related western Pacific species. More molecular work is needed to discover cryptic species (e.g. Knowlton 2000, Boulay *et al.* in prep.), and the genetic connectivity (e.g. Lessios & Robertson 2006) of PNIC populations with other areas.

Polidoro *et al.* (2012) indicated the importance of species-specific information regarding population trends and extinction risks for developing conservation strategies. To do this we must first know what is there, which this paper intends to fulfill. Then we need to know what is the status of the populations, how they are changing over time, and what is affecting them. Unfortunately for most groups this information is unknown.

ACKNOWLEDGEMENTS

I thank the following scientists for their help with their group of specialty and/or review of the manuscript: Fabián Acuña, Juan José Alvarado, Peter Auster, Gilbert Barrantes, Odalisca Breedy, Richard Brusca, William Bussing, Allan Carillo, Allen Collins, Harlan Dean, Ana Dittel, Cindy Fernández, Cristian Pacheco, Christian Emig, José Leal, Laurence Madin, Ross Robertson, Eva Salas, Astrid

Sánchez, Jeffrey Sibaja-Cordero, Rick Starr, Robert van Syos, Benjamin Victor and Rita Vargas. Omar Lizano for providing the data on perimeter and areas of the marine sections of Isla del Coco National Park (PNIC). Research at PNIC has been funded by the Vicerrectoría de Investigación and CIMAR of the Universidad de Costa Rica, Conservation International (CI), Fonds Français pour l'Environnement Mondial (FFEM) and the Consejo Nacional de Rectores de las Universidades Públicas de Costa Rica (CONARE). The preparation of this publication was advanced significantly during my stay as Visiting Professor at Newcastle University, Newcastle, United Kingdom. Support has been received from Área de Conservación Marina Isla del Coco (ACMIC) and the Undersea Hunter Group.

RESUMEN

La Isla del Coco es una isla oceánica en el Pacífico Tropical Oriental; es parte del Parque Nacional más grande de Costa Rica y es un sitio de Patrimonio Mundial. La isla ha sido visitada desde el Siglo XVI por su abundancia de agua dulce y árboles. Estudios de biodiversidad marina de la isla empezaron a finales del Siglo XIX, con un intenso período de investigación en la década de 1930, y de nuevo desde mediados de la década de 1990 al presente. La información sobre organismos marinos se encuentra dispersa y en algunos casos en publicaciones antiguas. En el presente trabajo se recopilan todos los registros publicados de organismos marinos de la isla. Al menos 1688 especies han sido registradas, con los gasterópodos (383 especies), peces óseos (354 spp.) y crustáceos (al menos 263 spp.) como los grupos con más especies; de esas, 45 son especies endémicas del Parque Nacional Isla del Coco (2.7% del total). El número de especies por kilómetro de costa y por kilómetro cuadrado de lecho marino de menos de 200m de profundidad son los más altos de cualquier sitio estudiado. Aunque se conoce relativamente bien la biodiversidad marina de la Isla del Coco, hay regiones, por ejemplo, el lado sur, los ambientes pelágicos, y las zonas más profundas que requieren de más exploración. También, varios grupos de organismos han sido observados en la isla pero muy poco estudiados o no del todo, por ejemplo los gusanos planos, nemátodos y el plancton gelatinosos.

Palabras clave: Biodiversidad marina, Costa Rica, Isla del Coco, Pacífico Oriental, especies endémicas

REFERENCES

NOTE: Number references as used in the Tables.

1. Abele, L.G. & W. Kim. 1984. Notes on the freshwater shrimps of Isla del Coco with description of *Macrobrachium cocoense*, new species. Proc. Biol. Soc. Washington 97: 951-960.
2. Acuña, F.H., J. Cortés & A. Garese. 2012. Occurrence of the sea anemone *Telmatactis panamensis* (Verrill, 1869. (Cnidaria: Anthozoa: Actiniaria. at Cocos Island National Park, Costa Rica. Rev. Biol. Trop. 60 (Suppl. 3): 201-205.
3. Allen, G.R. & D.R. Robertson. 1994. Fishes of the Tropical Eastern Pacific. Univ. Hawaii Press, Honolulu, Hawai'i. 332 p.
4. Allen, G.R. & D.R. Robertson. 2002. *Halichoeres salmofasciatus*, a new species of wrasse (Labridae) from Isla del Coco, tropical eastern Pacific. Aqua 5: 65-72.
5. Alvarado, J.J. 2010. Isla del Coco (Costa Rica) Echinoderms: State of knowledge, p. 103-113. In: L.G. Harris, S.A. Böttger, C.W. Walker & M.P. Lesser (eds.). Echinoderms: Durham. Proc. 12th Int. Echinoderm Conf. CRC Press, Taylor & Francis Group, Balkema, Leiden, Netherlands.
6. Alvarado, J.J. & A. Chiriboga. 2008. Distribución y composición de los equinodermos de las aguas someras en la Isla del Coco, Costa Rica (Pacífico Oriental). Rev. Biol. Trop. 56 (Suppl. 2): 99-111.
7. Alvarado, J.J. & J. Cortés. 2009. Echinoderms. Text: 421-433, Species list, CD: 392-408. In: I.S. Wehrtmann & J. Cortés (Eds.). Marine Biodiversity of Costa Rica, Central America. Springer, Berlin.
8. Bakus, G.J. 1975. Marine zonation and ecology of Cocos Island, off Central America. Atoll Res. Bull. 179: 1-11.
9. Bamber, R.N. 2009. Sea-spiders. Text: 307-311, Species list, CD: 237-238. In: I.S. Wehrtmann & J. Cortés (Eds.). Marine Biodiversity of Costa Rica, Central America. Springer, Berlin.
10. Barham, E.G. 1979. Giant larvacean houses: observations from deep submersibles. Science 205: 1129-1131.
11. Barnard, J.L. 1991. Amphipoda of the Galápagos Islands. Pp. 193-206. In: M.J. James (ed.), Galápagos Marine Invertebrates: Taxonomy, Biogeography, and Evolution in Darwin's Islands. Plenum Press, New York and London.
12. Barrantes, G. & J. Chaves-Campos. 2009. Birds in coastal and marine environments. Text 469-478, Species list, CD: 479-484. In: I.S. Wehrtmann & J. Cortés (Eds.). Marine Biodiversity of Costa Rica, Central America. Springer, Berlin.
13. Bernecker, A. 2009. Marine benthic algae. Text 109-117, Species list, CD: 17-70. In: I.S. Wehrtmann & J. Cortés (Eds.). Marine Biodiversity of Costa Rica, Central America. Springer, Berlin.
14. Bernecker, A. & I.S. Wehrtmann. 2009. New records of benthic marine algae and Cyanobacteria for Costa Rica, and a comparison with other Central American countries. Helgol. Mar. Res. 63: 219-229.
15. Bigelow, H.B. 1909. Reports of the scientific results of the Expedition to the Eastern Tropical Pacific, in charge of Alexander Agassiz, by the U. S. Fish Commission Steamer "Albatross," from October, 1904, to March, 1905, Lieut. Commander L. M. Garrett, U.S.N., commanding. XVI. The Medusae. Mem. Mus. Comp. Zool., Harvard Coll. XXXVII: 1-243.
16. Bigelow, H.B. 1928. Scyphomedusae from the Arcturus Oceanographic Expedition. Zoologica 8: 495-524.
17. Bigelow, H.B. 1931. Siphonophorae from the Arcturus Oceanographic Expedition. Zoologica 8: 525-592.
18. Bowman, T.E. 1977. Isopod crustaceans (except Anthuridae) collected on the Presidential Cruise of 1938. Proc. Biol. Soc. Washington 89: 653-666.
19. Bradbury, M.G. 1980. A revision of the fish genus *Ogcocephalus* with descriptions of new species from the western Atlantic Ocean (Ogcocephalidae: Lophiiformes). Proc. California Acad. Sci. 42: 229-285.
20. Breedy, O. 2009. Octocorals. Text: 161-167, Species list, CD: 108-111. In: I.S. Wehrtmann & J. Cortés (Eds.). Marine Biodiversity of Costa Rica, Central America. Springer, Berlin.
21. Breedy, O. & J. Cortés. 2008. Octocorals (Coelenterata: Anthozoa: Octocorallia) of Isla del Coco, Costa Rica. Rev. Biol. Trop. 56 (Suppl. 2): 71-77.
22. Breedy, O. & J. Cortés. 2011. Morphology and taxonomy of a new species of *Leptogorgia* (Cnidaria: Octocorallia: Gorgoniidae) in Cocos Island National Park, Pacific Costa Rica. Proc. Biol. Soc. Washington 124: 62-69.
23. Breedy, O. & H.M. Guzman. 2003. Octocorals from Costa Rica: The genus *Pacifigorgia* (Coelenterata: Octocorallia: Gorgoniidae). Zootaxa 281: 1-60.
- 23a. Breedy, O., L.P. Van Ofwegen & S. Vargas. 2012. A new family of soft corals (Anthozoa, Octocorallia, Alcyonacea) from the aphotic tropical eastern Pacific waters revealed by integrative taxonomy. Syst. Biod. 10: 351-359.
24. Briggs, J.C. 1955. A monograph of the clingfishes (Order Xenopterygii). Stanford Ichthyol. Bull. 6: 1-224.
25. Brusca, R.C. & E.W. Iverson. 1985. A guide to the marine isopod crustacea of Pacific Costa Rica. Rev. Biol. Trop. 33 (Suppl. 1): 1-77.

26. Brusca, R.C. & I.S. Wehrtmann. 2009. Isopods. Text: 257-264, Species list, CD: 206-211. *In*: I.S. Wehrtmann & J. Cortés (Eds.). Marine Biodiversity of Costa Rica, Central America. Springer, Berlin.
27. Bussing, W.A. 1983. A new tropical eastern Pacific labrid fish, *Halichoeres discolor* endemic to Isla del Coco. *Rev. Biol. Trop.* 31: 19-23.
28. Bussing, W.A. 1985. Los peces de la Familia Labridae de la costa Pacífica de Costa Rica. *Rev. Biol. Trop.* 33: 81-98.
29. Bussing, W.A. 1990. New species of gobiid fishes of the genera *Lythrypnus*, *Elacatinus* and *Chriolepis*. *Rev. Biol. Trop.* 38: 99-118.
30. Bussing, W.A. 1991. A new genus and two new species of tripterygiid fishes from Costa Rica. *Rev. Biol. Trop.* 39: 77-85.
31. Bussing, W.A. 1991. A new species of eastern Pacific moray eel (Pisces: Muraenidae). *Rev. Biol. Trop.* 39: 97-102.
32. Bussing, W.A. 1997. *Chriolepis atrimelum* (Gobiidae) a new species of gobiid fish from Isla del Coco, Costa Rica. *Rev. Biol. Trop.* 45: 1547-1552.
33. Bussing, W.A. 2010. A new fish, *Peristedion nesium* (Scorpaeniformes: Peristediidae) from Isla del Coco, Costa Rica. *Rev. Biol. Trop.* 58: 1149-1156.
34. Bussing, W.A. & M.I. López. 2005. Peces de la Isla del Coco y peces arrecifales de la costa Pacífica de América Central Meridional / Fishes of Cocos Island and Reef Fishes of the Pacific Coast of Lower Central America. *Rev. Biol. Trop.* 53 (Suppl. 2): 192 p.
35. Bussing, W.A. & M.I. López. 2009. Text: 453-458, Species list, CD: 412-473. *In*: I.S. Wehrtmann and J. Cortés (Eds.). Marine Biodiversity of Costa Rica, Central America. Springer, Berlin.
36. Cairns, S.D. 1991a. A revision of the ahermatypic Scleractinia of the Galápagos and Cocos Islands. *Smithsonian Contr. Zool.* 504. 32 p.
37. Cairns, S.D. 1991b. New records of Stylasteridae (Hydrozoa: Hydroida) from the Galápagos and Cocos Islands. *Proc. Biol. Soc. Washington* 104: 209-228.
38. Camacho-García, Y.E. 2009. Benthic opisthobranchs. Text: 371-386, Species list, CD: 330-347. *In*: I.S. Wehrtmann & J. Cortés (Eds.). Marine Biodiversity of Costa Rica, Central America. Springer, Berlin.
39. Castellanos, I., E. Suárez-Morales & A. Morales-Ramírez. 2009a. Euphausiids. Text: 199-207, Species list, CD: 164-166. *In*: I.S. Wehrtmann & J. Cortés (Eds.). Marine Biodiversity of Costa Rica, Central America. Springer, Berlin.
40. Castellanos, I.A., A. Morales-Ramírez & E. Suárez-Morales. 2009b. Appendicularians (Urochordata). Text: 445-452, Species list, CD: 411. *In*: I.S. Wehrtmann & J. Cortés (Eds.). Marine Biodiversity of Costa Rica, Central America. Springer, Berlin.
41. Castellanos-Osorio, I., R.M. Hernández-Flores, Á. Morales-Ramírez & M. Corrales-Ugalde. 2012. Appendicularians (Urochordata) y quetognatos (Chaetognatha) del Parque Nacional Isla del Coco, Costa Rica. *Rev. Biol. Trop.* 60 (Suppl. 3): 243-255.
42. Clark, H.L. 1940. Eastern Pacific Expeditions of the New York Zoological Society. XXI Notes on Echinoderms from west coast of Central America. *Zoologica* 25: 331-352.
43. Clark, H.L. 1948. A report on the Echini of the warmer eastern Pacific, based on the collections of the Veleiro III. *Allan Hancock Pac. Exp.* 8: 225-352.
- Cortés, J. 1986. Biogeografía de corales hermatípicos: el istmo centroamericano. *Anales Inst. Cienc. Mar Limnol.*, UNAM 13: 297-304.
44. Cortés, J. 1996/1997. Biodiversidad marina de Costa Rica: Filo Cnidaria. *Rev. Biol. Trop.* 44(3)/45(1): 323-334.
- Cortés, J. 2008. Historia de la investigación marina de la Isla del Coco, Costa Rica. *Rev. Biol. Trop.* 56 (Suppl. 2): 1-18.
45. Cortés, J. 2009b. Zoanths, actiniarians, and corallimorphs. Text: 157-159, Species list, CD: 105-107. *In*: I.S. Wehrtmann & J. Cortés (Eds.). Marine Biodiversity of Costa Rica, Central America. Springer, Berlin.
46. Cortés, J. 2009c. Stony corals. Text: 169-173, Species list, CD: 112-118. *In*: I.S. Wehrtmann & J. Cortés (Eds.). Marine Biodiversity of Costa Rica, Central America. Springer, Berlin.
- Cortés, J. 2009d. Other taxonomic groups (Fungi, kinorhynch, invertebrate chordates). Text: 497-500, Species list, CD: 491-492. *In*: I.S. Wehrtmann & J. Cortés (Eds.). Marine Biodiversity of Costa Rica, Central America. Springer, Berlin.
- Cortés, J. 2009e. Marine fish parasites. Text: 501-505, Species list, CD: 493-496. *In*: I.S. Wehrtmann & J. Cortés (Eds.). Marine Biodiversity of Costa Rica, Central America. Springer, Berlin.
- Cortés, J. 2011. Eastern Tropical Pacific coral reefs, Pp. 351-358. *In*: D. Hopley (Ed.). *The Encyclopedia of Modern Coral Reefs: Structure, Form and Process*. Springer, Berlin.
- Cortés, J. 2013a. Cocos Island marine ecosystems. *In* M. Kappelle (Ed.). *Costa Rican Ecosystems*. The University of Chicago Press, Chicago and London. In press.
- Cortés, J. 2013b. The Pacific coastal and marine ecosystems. *In* M. Kappelle (Ed.). *Costa Rican Ecosystems*. The University of Chicago Press, Chicago and London. In press.

47. Cortés, J. & S. Blum. 2008. Life down to 450 m at Isla del Coco, Costa Rica. *Rev. Biol. Trop.* 56 (Suppl. 2): 189-206.
48. Cortés, J. & H.M. Guzmán. 1998. Organismos de los arrecifes coralinos de Costa Rica: Descripción, distribución geográfica e historia natural de los corales zooxantelados (Anthozoa: Scleractinia) del Pacífico. *Rev. Biol. Trop.* 46: 55-92.
- Cortés, J. & E. Salas. 2009. Seagrasses. Text: 119-122, Species list, CD: 71-72. *In*: I.S. Wehrtmann & J. Cortés (Eds.). *Marine Biodiversity of Costa Rica, Central America*. Springer, Berlin.
- Cortés, J. & I.S. Wehrtmann. 2009. Diversity of marine habitats of the Caribbean and Pacific of Costa Rica. Capítulo I, Pp. 1-45. *In*: I.S. Wehrtmann & J. Cortés (Eds.). *Marine Biodiversity of Costa Rica, Central America*. Springer, Berlin.
49. Cortés, J., C. Mora-Baumgartner & V. Nielsen. 2009a. Foraminiferans. Text: 131-135, Species list, CD: 79-82. *In*: I.S. Wehrtmann & J. Cortés (Eds.). *Marine Biodiversity of Costa Rica, Central America*. Springer, Berlin.
50. Cortés, J., N. Van der Hal & R.W.M. Van Soest. 2009b. Sponges. Text: 137-142, Species list, CD: 83-93. *In*: I.S. Wehrtmann & J. Cortés (Eds.). *Marine Biodiversity of Costa Rica, Central America*. Springer, Berlin.
51. Cortés, J., V. Nielsen & A. Herrera-Cubilla. 2009c. Bryozoans. Text: 413-416, Species list, CD: 385-388. *In*: I.S. Wehrtmann & J. Cortés (Eds.). *Marine Biodiversity of Costa Rica, Central America*. Springer, Berlin.
52. Cortés, J., A. Sánchez-Jiménez, A. Rodríguez-Arrieta, G. Quirós-Barrantes, P.C. González & S. Blum. 2012. Elasmobranchs observed in deep waters (45-330m) at Isla del Coco National Park, Costa Rica (Eastern Tropical Pacific). *Rev. Biol. Trop.* 60 (Suppl. 3): 257-273.
53. Crane, J. 1975. Fiddler Crabs of the World. Ocyropodidae: Genus *Uca*. Princeton Univ. Press, Princeton, New Jersey. 738 p.
54. Crouch, R.W. & C.W. Poag. 1987. Benthic Foraminifera of the Panamanian Province: distribution and origins. *J. Foram. Res.* 17: 153-176.
55. Cushman, J.A. & I. McCulloch. 1939. A report on some arenaceous Foraminifera. *Allan Hancock Pac. Exped.* 6: 1-113.
56. Cushman, J.A. & I. McCulloch. 1942. Some Virgulininae in the Collections of the Allan Hancock Foundation. *Allan Hancock Pac. Exped.* 6: 179-230.
57. Cushman, J.A. & I. McCulloch. 1950. Some Lagenidae in the collections of the Allan Hancock Foundation. *Allan Hancock Pac. Exped.* 6: 295-364.
58. Cutler, N., E. Cutler & J.A. Vargas. 1992. Peanut worms (Phylum Sipuncula) from Costa Rica. *Rev. Biol. Trop.* 40: 153-158.
59. Dall, W.H. 1895. Scientific results of explorations by the U.S. Fish Commission Steamer Albatross. No. XXXIV. Report on Mollusca and Brachiopoda dredged in deep water, chiefly near the Hawaiian Islands, with illustrations of hitherto unfigured species from northwest America. *Proc. U.S. Natl. Mus.* 17(1032): 675-733.
60. Dall, W.H. 1908. Reports on the dredging operations off the west coasts of Central America to the Galapagos, to the west coast of Mexico, and in the Gulf of California, in charge of Alexander Agassiz, carried on by the U.S. Fish Commission steamer "Albatross", during 1891, Lieut. Commander Z.L. Tanner, U.S.N., commanding. XXXVII, and Reports on the scientific results of the expedition to the eastern tropical Pacific, in charge of Alexander Agassiz, by the U.S. Fish Commission steamer "Albatross," from October, 1904, to March, 1905, Lieut. Commander L.M. Garrett, U.S.N., commanding. XIV. The Mollusca and Brachiopoda. *Bull. Mus. Comp. Zool., Harvard Coll.* XLIII: 205-487.
61. D'Attilio, A. & B.W. Myers. 1988. A new species of *Favartia* from the eastern Pacific (Gastropoda: Muricidae). *Nautilus* 102: 106-109.
62. Dawson, C.E. 1977. Studies of the eastern Pacific sand stargazers (Pisces: Dactyloscopidae). 4. *Gillillus*, *Sindoscopus* new genus, and *Heteristius* with description of new species. *Proc. California Acad. Sci.* 41: 125-160.
- De la Cruz, E.M. & J.A. Vargas. 1986. Estudio preliminar de la meiofauna de la playa fangosa de Punta Morales, Golfo de Nicoya, Costa Rica. *Brenesia* 25-26: 89-87.
63. Dean, H.K. 2004. Marine biodiversity of Costa Rica: Class Polychaeta (Annelida). *Rev. Biol. Trop.* 52 (Suppl. 2): 131-181.
64. Dean, H.K. 2009. Polychaetes and echiurans. Text: 181-191, Species list, CD: 122-159. *In*: I.S. Wehrtmann & J. Cortés (Eds.). *Marine Biodiversity of Costa Rica, Central America*. Springer, Berlin.
65. Dean, H.K., J.A. Sibaja-Cordero, J. Cortés, R. Vargas & G.Y. Kawachi. 2010a. Sipunculids and Echiurans of Isla del Coco (Cocos Island), Costa Rica. *Zootaxa* 2557: 60-68.
66. Dean, H.K., J.A. Sibaja-Cordero & J. Cortés. 2010b. Occurrence of the phoronid *Phoronopsis albomaculata* in Cocos Island, Costa Rica. *Pac. Sci.* 64: 459-462.
67. Dean, H.K., J.A. Sibaja-Cordero & J. Cortés. 2012. Polychaetes (Annelida: Polychaeta) of Parque Nacional Isla del Coco, Pacific Costa Rica. *Pac. Sci.* 63: 347-386.

- Dexter, D.M. 1974. Sandy-beach fauna of the Pacific and Atlantic coasts of Costa Rica and Colombia. *Rev. Biol. Trop.* 22: 51-66.
68. Díaz-Agras, G. 2008. Revision of the genus *Pozziella* (Porifera: Poecilosclerida) with description of three new species from the eastern Pacific. *Zootaxa* 1866: 69-94.
69. Emerson, W.K. 1994. A zoogeographic summary of the marine mollusks of Clipperton Island (Tropical Eastern Pacific Ocean). *Festivus* 26: 62-71.
70. Emerson, W.K. 1995. A zoogeographic summary of the marine mollusks of the Revillagigedo Islands (Tropical Eastern Pacific Ocean). *Festivus* 27: 3-18.
71. Emig, C.C. 2009. Brachipods. Text: 417-420, Species list, CD: 389-391. *In*: I.S. Wehrtmann & J. Cortés (Eds.). *Marine Biodiversity of Costa Rica, Central America*. Springer, Berlin.
72. Excoffon, A.C., F.H. Acuña & J. Cortés. 2009. The sea anemone *Nemanthus californicus* (Cnidaria, Actiniaria, Nemanthidae) from Costa Rica: re-description and first record outside the type locality. *Mar. Biodiv. Rec.* 2: 1-5.
73. Faxon, W. 1893. Reports on the dredging operations off the west coasts of Central America to the Galapagos, to the west coast of Mexico, and in the Gulf of California, in charge of Alexander Agassiz, carried on by the U.S. Fish Commission steamer "Albatross", during 1891, Lieut. Commander Z.L. Tanner, U.S.N., commanding. VI. Preliminary descriptions of new species of Crustacea. *Bull. Mus. Comp. Zoöl., Harvard Coll.* XXIV: 149-220.
74. Fernández, C. 2008. Flora marina del Parque Nacional Isla del Coco, Costa Rica, Pacifico Tropical Oriental. *Rev. Biol. Trop.* 56 (Suppl. 2): 57-69.
75. Fernández, C. & J.J. Alvarado. 2008. Chlorophyta de la costa Pacífica de Costa Rica. *Rev. Biol. Trop.* 56 (Suppl. 4): 149-162.
76. Fernández-García, C., R. Riosmena-Rodríguez, B. Wysor, O.L. Tejada & J. Cortés. 2011. Checklist of the Pacific marine macroalgae of Central America. *Bot. Mar.* 54: 53-73.
77. Fernández-Leiva, S. 1996. Taxonomía del ictioplácton en la Isla del Coco, Costa Rica. Thesis, Univ. Costa Rica, San Pedro, Costa Rica. 175 p.
78. Ferreira, A.J. 1987. The chiton fauna of Cocos Island, Costa Rica (Mollusca: Polyplacophora) with the description of two new species. *Bull. Sci. California Acad. Sci.* 86: 41-53.
79. Foster, J.M., S.E. Lecroy, R.W. Heard & R. Vargas. 2009. Gammaridean Amphipods. Text 265-274, Species list, CD: 212-216. *In*: I.S. Wehrtmann & J. Cortés (Eds.). *Marine Biodiversity of Costa Rica, Central America*. Springer, Berlin.
80. Fraser, C.M. 1938. Hydroids of the 1932, 1933, 1935, and 1938 Allan Hancock Pacific Expeditions. *Allan Hancock Pac. Exped.* 4: 129-153.
81. Fraser, C.M. 1948. Hydroids of the Allan Hancock Pacific Expeditions since March, 1938. *Allan Hancock Pac. Exped.* 4: 179-335.
82. Gallardo, V.A. & C. Espinoza. 2007. New communities of large filamentous sulfur bacteria in the eastern South Pacific. *Int. Microbiol.* 10: 97-102.
83. Garman, S. 1899. Reports on an exploration off the west coasts of Mexico, Central and South America, and off the Galapagos Islands, in charge of Alexander Agassiz, by the U.S. Fish Commission Steamer "Albatross", during 1891, Lieut. Commander Z.L. Tanner U.S.N., commanding. XXVI. The Fishes. *Mem. Mus. Comp. Zoöl., Harvard Coll.* XXIV: 1-432.
84. Garrison, G. 2005. Peces de la Isla del Coco/Isla del Coco Fishes, 2nd ed. Edit. INBio, Heredia, Costa Rica. 429 p.
85. Garth, J.S. 1991. Taxonomy, distribution, and ecology of Galápagos Brachyura. Pp. 123-145. *In*: M.J. James (Ed.). *Galápagos Marine Invertebrates: Taxonomy, Biogeography, and Evolution in Darwin's Islands*. Plenum Press, New York, London.
86. Gasca, R. 2009. Hyperiid amphipods. Text: 275-282. Species list, CD: 217-218. *In*: I.S. Wehrtmann & J. Cortés (Eds.). *Marine Biodiversity of Costa Rica, Central America*. Springer, Berlin.
87. Gasca, R. & Á. Morales-Ramírez. 2012. Anfipodos hiperideos (Crustacea: Peracarida) del Parque Nacional Isla del Coco, Costa Rica, Pacifico Tropical Oriental. *Rev. Biol. Trop.* 60 (Suppl. 3): 223-233.
- Glynn, P.W. & J. Ault. 2000. A biogeographic analysis and review of the far eastern Pacific coral reef region. *Coral Reefs* 19: 1-23.
88. Gore, R.H. 1982. Porcellanid crabs from the coasts of Mexico and Central America (Crustacea: Decapoda: Anomura). *Smithsonian Contr. Zool.* 363: 1-34.
89. Grau, G. 1959. Pectinidae of the eastern Pacific. *Allan Hancock Pac. Exped.* 23: 1-308.
90. Haig, J. 1960. The Porcellanidae (Crustacea: Anomura) of the eastern Pacific. *Allan Hancock Pac. Exped.* 24: 1-440.
91. Haig, J. & A.J. Provenzano. 1965. A new genus and two new species of diogenid hermit crabs (Decapoda, Anomura). *Crustaceana* 9: 199-207.
92. Hartman, O. 1939a. Polychaetous Annelids. Part I. Aphroditidae to Pisionidae. *Allan Hancock Pac. Exped.* 7: 1-155.
93. Hartman, O. 1939b. The Polychaetous Annelids collected on the Presidential Cruise of 1938. *Smithsonian Miscel. Coll.* 98(13): 1-22.

94. Hartman, O. 1940. Polychaetous Annelids. Part II. Chrysopetalidae to Goniadidae. Allan Hancock Pac. Exped. 7: 173-287
95. Hastings, P.A. & D.R. Robertson 1999. *Acanthemblemaria atrata* and *Acanthemblemaria mangognatha*, new species of eastern Pacific barnacle blennies (Chaenopsidae) from Isla del Coco, Costa Rica, and Islas Revillagigedo, Mexico, and their relationships with other barnacle blennies. Rev. Francaise Aquariol. Herpetol. 25: 107-118.
96. Heard, R.W., O. Breedy & R. Vargas. 2009. Tanaidaceans. Text: 245-256, Species list, CD: 204-205. In: I.S. Wehrtmann & J. Cortés (Eds.). Marine Biodiversity of Costa Rica, Central America. Springer, Berlin.
97. Heller, E. & R.E. Snodgrass. 1903. Papers from the Hopkins-Stanford Galapagos Expedition 1898-1899. XV. New fishes. Proc. Washington Acad. Sci. 5: 189-229.
98. Hertlein, L.G. 1963. Contribution to the biogeography of Cocos Island, including a bibliography. Proc. California Acad. Sci. 4th Ser. 32: 219-289.
- Heiner, I. & B. Neuhaus. 2007. Loricifera from the deep sea at the Galápagos Spreading Center, with a description of *Spinoloricus turbatio* gen. et sp. nov. (Nanaloricidae). Helgol. Mar. Res. 61: 167-182.
- Hickman, C.P., Jr. 2009. Evolutionary responses of marine invertebrates to insular isolation in Galapagos. Galápagos Res. 66: 32-42.
99. Hochberg, F.G. & Y.E. Camacho-García. 2009. Squids and octopuses. Text: 399-407, Species list, CD: 379-382. In: I.S. Wehrtmann & J. Cortés (Eds.). Marine Biodiversity of Costa Rica, Central America. Springer, Berlin.
100. Hollmann, M. 1996. *Polinices (Mammilla) simiae* on Isla del Coco, Costa Rica: another Indo-Pacific invader into the Panamic Province. Festivus 28: 24-29.
101. Howard, A.D. 1952. Pteropods collected by the Allan Hancock Foundation. Minutes of the Conchological Club of Southern California, No. 121, pp. 12-14.
102. Hoyle, W.E. 1904. Reports on the dredging operations off the west coast of Central America to the Galapagos, to the west coast of Mexico, and in the Gulf of California, in charge of Alexander Agassiz, carried on by the U. S. Fish Commission steamer "Albatross," during 1891, Lieut. Commander Z. L. Tanner, U.S.N., Commanding, XXIX. Reports on the Scientific results of the expedition to the tropical Pacific, in charge of Alexander Agassiz, on the U. S. Fish Commission steamer "Albatross," from August, 1899, to March, 1900, Commander Jefferson T. Moser, U. S. N., commanding, V. Cephalopoda. Bull. Mus. Comp. Zoöl., Harvard Coll. XLIII: 1-71.
103. Hutchings, P., A. Reid, & R. Wilson. 1991. *Perinereis* (Polychaeta, Nereidiidae) from Australia, with redescrptions of six additional species. Rec. Australian Mus. 43: 241-274.
104. Iwamoto, T. & Y.I. Sazonov. 1988. A review of the southeastern Pacific *Coryphaenoides* (sensu lato) (Pisces, Gadiformes, Macrouridae). Proc. California Acad. Sci. 45: 35-82.
105. Iwamoto, T. & J.E. McCosker. 2001. Notes on Galápagos grenadiers (Pisces, Gadiformes, Macrouridae), with the description of a new species of *Coryphaenoides*. Rev. Biol. Trop. 49 (Suppl. 1): 21-27.
106. Jiménez-Cueto, S., E. Suárez-Morales & Á. Morales-Ramírez. 2012. Algunos poliquetos holoplanctónicos (Annelida: Polychaeta) del Parque Nacional de Isla del Coco, Costa Rica. Rev. Biol. Trop. 60 (Suppl. 3): 207-222.
107. Kabat, A.R. 2000. Results of the Rumphius Biohistorical Expedition to Ambon (1990). Part 10. Mollusca, Gastropoda, Naticidae. Zool. Med. Leiden 73: 345-380.
108. Kaiser, K.L. 2001. Comments on four Muricoidean (Mollusca) species formerly endemic to Isla del Coco found at Isla de Malpelo. Festivus 33: 3-7.
109. Kelmo, F. & R. Vargas. 2002. Anthoathecatae and Leptothecatae hydroids from Costa Rica (Cnidaria: Hydrozoa). Rev. Biol. Trop. 50: 599-627.
- Knowlton, N. 2000. Molecular genetic analyses of species boundaries in the sea. Hydrobiologia 420: 73-90.
110. Laguarda-Figueras A. & F.A. Solís-Marín. 2009. *Holothuria (Cystipus) casoae* a new species of sea cucumber (Echinodermata: Holothuroidea) from the central-eastern Pacific Ocean. Scient. Mar. 73: 573-578.
111. Lalicker, C.G. & I. McCulloch. 1940. Some Textulariidae of the Pacific Ocean. Allan Hancock Pac. Exped. 6: 115-143.
112. Lattig, P. & S.D. Cairns. 2000. A new species of *Tethocyathus* (Cnidaria: Anthozoa: Scleractinia: Caryophylliidae), a trans-isthmian azooxanthellate species. Proc. Biol. Soc. Washington 113: 590-595.
- Lessios, H.A. & D.R. Robertson. 2006. Crossing the impassable: genetic connections in 20 reef fishes across the Eastern Pacific Barrier. Proc. R. Soc. Lond B 273: 2201-2208.
113. Lessios, H.A., B.D. Kessing & D.R. Robertson. 1998. Massive gene flow across the world's most potent marine biogeographic barrier. Proc. R. Soc. Lond. B 265: 583-588.
114. Lindberg, D.R. & J.H. McLean. 1981. Tropical Eastern Pacific limpets of the Family Acmaeidae (Mollusca, Archaeogastropoda): Generic criteria and description of six new species from the mainland and the Galápagos Islands. Proc. California Acad. Sci. 42: 323-339.

- Lizano, O.G. 2008. Dinámica de aguas alrededor de la Isla del Coco, Costa Rica. *Rev. Biol. Trop.* 56 (Supl. 2): 31-48.
115. Long, D.J., J.E. McCosker, S. Blum & A. Klapfer. 2011. Tropical Eastern Pacific Records of the Prickly Shark, *Echinorhinus cookei* (Chondrichthyes: Echinorhinidae). *Pac. Sci.* 65: 433-440.
116. López-Garro, A., I. Zanella, G. Golfín-Duarte & M. Pérez-Montero. 2012. First record of the blacktip reef shark *Carcharhinus melanopterus* (Quoy & Gaimard, 1824) (Carcharhiniformes: Carcharhinidae) from the Eastern Tropical Pacific. *Rev. Biol. Trop.* 60 (Suppl. 3): 275-278.
117. Ludwig, H.L. 1905. Reports on an exploration off the West Coast of Mexico, Central and South America, and off the Galapagos islands, in charge of Alexander Agassiz, by the U. S. Fish Commission steamer "Albatros", during 1891. XXXV. Reports on the Scientific results of the expedition to the Tropical Pacific in Charge of A. Agassiz on the Fish Commission Steamer "Albatros", from August, 1899, to March, 1900. VII. Asteroidea. *Mem. Mus. Comp. Zoöl., Harvard Coll.* XXXII: 1-292.
118. Magaña-Cubillo, J.A. & J. Espinosa. 2009. Bivalves. Text: 387-398, Species list, CD: 348-378. *In*: I.S. Wehrtmann & J. Cortés (Eds.). *Marine Biodiversity of Costa Rica*, Central America. Springer, Berlin.
119. Maluf, L.Y. 1991. Echinoderm fauna of the Galápagos Islands. Pp. 345-367. *In*: M. J. James (Ed.). *Galápagos Marine Invertebrates: Taxonomy, Biogeography, and Evolution in Darwin's Islands*. Plenum Press, New York and London.
- Manning, R.B. 1972. Three new stomatopod crustaceans of the Family Lysiosquillidae from the eastern Pacific Region. *Proc. Biol. Soc. Washington* 85: 271-278.
120. May-Collado, L. 2009. Marine mammals. Text: 479-495, Species list, CD: 485-490. *In*: I.S. Wehrtmann & J. Cortés (Eds.). *Marine Biodiversity of Costa Rica*, Central America. Springer, Berlin.
121. McCosker, J.E. 1988. A revision of the snake-eel genus *Callechelys* (Anguilliformes: Ophichthidae) with the description of two new Indo-Pacific species and a new callechelyin genus. *Proc. California Acad. Sci.* 50: 185-215.
122. McCosker, J.E. & R.H. Rosenblatt. 2010. The fishes of the Galápagos archipelago: an update. *Proc. California Acad. Sci., Ser. 4*, 61 (Suppl. II): 167-195.
123. McCosker, J.E., J.S. Stephens & R.H. Rosenblatt. 2003. *Cottoclinus canops*, a new genus and species of blenny (Perciformes: Labrisomidae) from the Galápagos Islands. *Proc. California Acad. Sci.* 54: 155-160.
124. McLaughlin, P.A. 1982. Revision of *Pylopagurus* and *Tomopagurus* (Crustacea: Decapoda: Paguridae), with the descriptions of new genera and species: Part III. *Agaricochirus* McLaughlin, and *Enallopaguroopsis* McLaughlin. *Bull. Mar. Sci.* 32: 823-856.
125. McLean, J.H. 1969. New species of tropical eastern Pacific Gastropoda. *Malac. Rev.* 2: 115-130.
126. Meisler, M.R. & R.J. Lavenberg. 1998. A new species (Serranidae: *Serranus*) from Isla del Coco, Pp. 115. *In*: G.R. Allen & D.R. Robertson (Eds.). *Peces del Pacífico Oriental Tropical*. Crawford House Press, Bathurst, Australia.
127. Møller, P.R., W. Schwarzhans & J.G. Nielsen. 2005. Review of the American Dinematchiyni (Teleostei: Bythitidae). Part II. *Ogilbia*. *Aqua* 10: 133-207.
128. Montoya, M. 2008a. Aves marinas de la Isla del Coco, Costa Rica, y su conservación. *Rev. Biol. Trop.* 56 (Suppl. 2): 133-149.
129. Montoya, M. 2008b. La presencia de otáridos (Carnivora: Otariidae) en la isla del Coco, Costa Rica. *Rev. Biol. Trop.* 56 (Suppl. 2): 151-158.
- Montoya, M. & K.L. Kaiser. 1988. Biogeographical notes on the genus *Terebra* (Gastropoda) at Isla del Coco, Costa Rica. *Rev. Biol. Trop.* 36: 569-574.
130. Morales-Ramírez, A. 2008. Caracterización cualitativa del zooplancton del Área de Conservación Marina Isla del Coco (ACMIC), Océano Pacífico de Costa Rica. *Rev. Biol. Trop.* 56 (Suppl. 2): 159-169.
131. Morales-Ramírez, A. & E. Suárez-Morales. 2009. Copepods. Text: 291-305, Species list, CD: 224-236. *In*: I.S. Wehrtmann & J. Cortés (Eds.). *Marine Biodiversity of Costa Rica*, Central America. Springer, Berlin.
132. Motomura, H. 2004. New species of scorpionfish, *Scorpaena cocosensis* (Scorpaeniformes: Scorpaenidae) from the Cocos Islands, Costa Rica, eastern Pacific Ocean. *Copeia* 2004: 818-824.
- Neuhaus, B. 2004. Description of *Campyloderes* cf. *vanhoeffeni* (Kinorhyncha, Cyclorhagida) from the Central American East Pacific Deep with a review of the genus. *Meiofauna Mar.* 13: 3-20.
- Neuhaus, B. & T. Blasche. 2006. *Fissuroderes*, a new genus of Kinorhyncha (Cyclorhagida) from the deep sea and continental shelf of New Zealand and from the continental shelf of Costa Rica. *Zool. Anz.* 245: 19-52.
- Nova-Bustos, N., A.C. Hernández-Zanuy & R. Viquez-Portuguez. 2010. Distribución y abundancia de las ascidias de los fondos rocosos de la Bahía de Cuajiniquíl, Costa Rica. *Bol. Invest. Mar. Cost.* 39: 57-66.
133. Osburn, R.C. 1950. Bryozoa of the Pacific Coast of America. Part 1, Cheilostomata-Anasca. *Allan Hancock Pac. Exped.* 14: 1-269.

134. Osburn, R.C. 1952. Bryozoa of the Pacific Coast of America. Part 2, Cheilostomata-Ascophora. Allan Hancock Pac. Exped. 14: 271-611.
135. Osburn, R.C. 1953. Bryozoa of the Pacific Coast of America. Part 3, Cyclostomata, Ctenostomata, Entoprocta, and Addenda. Allan Hancock Pac. Exped. 14: 613-725.
136. Perger, R., R. Vargas & A. Wall. 2011. *Johngarthia cocoensis*, a new species of Gecarcinidae MacLeay, 1838 (Crustacea, Decapoda, Brachyura) from Cocos Island, Costa Rica. *Zootaxa* 2911: 57-68.
- Petrescu, I., R.W. Heard, R. Vargas & O. Breedy. 2009. Cumaceans. Text: 237-244, Species list, CD: 201-203. In: I.S. Wehrtmann & J. Cortés (Eds.). *Marine Biodiversity of Costa Rica, Central America*. Springer, Berlin.
137. Petuch, E.J. & D.M. Sargent. 1986. Atlas of the Living Olive Shells of the World. Coastal Education and Research Foundation, Jacksonville. 253 p.
- Polidoro, B.A., T. Brooks, K.E. Carpenter, G.J. Edgar, S. Henderson, J. Sanciangco & D.R. Robertson. 2012. Patterns of extinction risk and threat for marine vertebrates and habitat-forming species in the Tropical Eastern Pacific. *Mar. Ecol. Prog. Ser.* 448: 93-104.
138. Poss, S.G., J.E. McCosker & C.C. Baldwin. 2010. A new species of *Scorpaenodes* (Pisces: Scorpaenidae) from the Galápagos and Cocos islands with discussions of the limits of *Scorpaenodes* and *Thysanichthys*. *Proc. California Acad. Sci.* 61: 235-267.
139. Price, W.W., R.W. Heard & R. Vargas. 2009. Shallow water mysids. Text: 229-236, Species list, CD: 199-200. In: I.S. Wehrtmann & J. Cortés (Eds.). *Marine Biodiversity of Costa Rica, Central America*. Springer, Berlin.
140. Randall, J.E. & J.E. McCosker. 1975. The eels of Easter Island with a description of a new moray. *Contrib. Sci., Nat. Hist. Mus. Los Angeles County* 264: 1-32.
141. Reiswig, H.M. 2010. A new species of *Tretodictyum* (Porifera: Hexactinellida: Tretodictyidae) from off Cocos Island, tropical eastern Pacific Ocean. *Proc. Biol. Soc. Washington* 123: 242-250.
142. Robertson, D.R. & G.R. Allen. 2008. Shorefishes of the Tropical Eastern Pacific online information system. Version 1.0. Smithsonian Tropical Research Institute, Balboa, Panamá. www.neotropicalfishes.org/sftep, www.stri.org/sftep
- Robertson, D.R. & K.L. Cramer. 2009. Shore fishes and biogeographic subdivisions of the Tropical Eastern Pacific. *Mar. Ecol. Prog. Ser.* 380: 1-17.
143. Robertson, D.R., J.S. Grove & J.E. McCosker. 2004. Tropical transpacific shore fishes. *Pac. Sci.* 58: 507-565.
144. Robson, G.C. 1929. A monograph of the Recent Cephalopoda based on the collections in the British Museum (Natural History). Part 1. Octopodinae. Printed by order of the Trustees of the British Museum, July 27: 1-236.
145. Robson, G.C. 1932. A monograph of the Recent Cephalopoda based on the collections in the British Museum (Natural History). Part 2. Octopoda. Printed by order of the Trustees of the British Museum, January 23: 1-359.
146. Robson, G.C. 1948. The Cephalopoda Decapoda of the Arcturus Oceanographic Expedition, 1925. *Zoologica* 33: 115-132.
147. Rodríguez-Saénz, K. 2005. Distribución espacial y temporal de la biomasa, composición y abundancia del zooplancton, con énfasis en hidromedusas de Bahía Culebra durante La Niña 1999-2000. M.Sc. Tesis, Univ. Costa Rica, San Pedro, Costa Rica. 156 p.
148. Rodríguez-Sáenz, K. & R. Gasca. 2009. Siphonophores. Text: 151-156, Species list, CD: 101-104. In: I.S. Wehrtmann & J. Cortés (Eds.). *Marine Biodiversity of Costa Rica, Central America*. Springer, Berlin.
149. Rodríguez-Sáenz, K. & L. Segura-Puertas. 2009. Hydrozoa, Scyphozoa and Cubozoa (Medusozoa). Text: 143-149, Species list, CD: 143-149. In: I.S. Wehrtmann & J. Cortés (Eds.). *Marine Biodiversity of Costa Rica, Central America*. Springer, Berlin.
150. Rodríguez-Sevilla, L., R. Vargas & J. Cortés. 2009. Benthic, shelled gastropods. Text: 333-355, Species list, CD: 243-325. In: I.S. Wehrtmann & J. Cortés (Eds.). *Marine Biodiversity of Costa Rica, Central America*. Springer, Berlin.
151. Rosenblatt, R.H. & J.E. McCosker. 1988. A new species of *Acanthemblemaria* from Malpelo Island, with a key to the Pacific members of the genus (Pisces: Chaenopsidae). *Proc. California Acad. Sci.* 45: 103-110.
152. Roth, B. & E.V. Coan. 1971. Marginellidae (Mollusca: Neogastropoda) from the Galápagos Islands and Cocos Island. *Proc. California Acad. Sci.* 4th Ser. 37: 575-584.
153. Rusch, D.B. + 39 more authors. 2007. The *Sorcerer II* Global Ocean Sampling Expedition: northwest Atlantic through eastern tropical Pacific. *PLoS Biol.* 5(3): e77. doi:101371/journal.pbio.0050077
- Santoro, M. & S. Mattiucci. 2009. Sea turtle parasites. Text: 507-519, Species list, CD: 497-500. In: I.S. Wehrtmann & J. Cortés (Eds.). *Marine Biodiversity of Costa Rica, Central America*. Springer, Berlin.
154. Sasa, M., G.A. Chaves & L.D. Patrick. 2009. Marine reptiles and amphibians. Text: 459-468, Species list, CD: 474-478. In: I.S. Wehrtmann & J. Cortés (Eds.). *Marine Biodiversity of Costa Rica, Central America*. Springer, Berlin.
155. Schultz, L.P. 1944. A revision of the American clingfishes, Familia Gobiesocidae, with descriptions

- of new genera and forms. Proc. U.S. Nat. Mus. 96: 47-77.
156. Schwabe, E. & I.S. Wehrtmann. 2009. Chitons. Text: 323-331, Species list, CD: 240-242. *In*: I.S. Wehrtmann & J. Cortés (Eds.). Marine Biodiversity of Costa Rica, Central America. Springer, Berlin.
 157. Shoemaker, C.R. 1942. Amphipod crustaceans collected on the Presidential Cruise of 1938. Smithsonian Misc. Coll. 101: 1-52.
 158. Sibaja-Cordero, J.A., J. Troncoso & J. Cortés. 2012. The lancelet *Asymmetron lucayanum* complex in Cocos Island National Park, Pacific Costa Rica. Pac. Sci. 66: 521-526.
 - Silva-Benavides, A.M. 2009. Mangroves. Text: 123-130, Species list, CD: 73-78. *In*: I.S. Wehrtmann & J. Cortés (Eds.). Marine Biodiversity of Costa Rica, Central America. Springer, Berlin.
 159. Solis-Marín, F.A., J.J. Alvarado +70 more authors. 2013. Appendix, p. 543-654. *In* J.J. Alvarado & F.A. Solis-Marín (ed.). Echinoderm Research and Diversity in Latin America. Springer, Berlin, Heidelberg.
 160. Solano-Barquero, A. 2011. Macrofauna asociada a rodolitos en el Parque Nacional Isla del Coco, Costa Rica. Thesis, Escuela de Biología, Univ. Costa Rica, San Pedro, Costa Rica. 50 p.
 161. Solórzano, A. 2004. Serpientes de Costa Rica: distribución, taxonomía e historia natural. Edit. INBio, Santo Domingo de Heredia, Costa Rica. 791 p.
 162. Springer, M. 2009. Marine insects. Text: 313-322, Species list, CD: 239. *In*: I.S. Wehrtmann & J. Cortés (Eds.). Marine Biodiversity of Costa Rica, Central America. Springer, Berlin.
 163. Starr, R.M., K. Green & E. Sala. 2012. Deep-water fish assemblages at Coco Island National Park and Las Gemelas Seamounts, Costa Rica. Rev. Biol. Trop. 60 (Suppl. 3): 347-362.
 164. Stebbing, T.R.R. 1903. Amphipoda from Costa Rica. Proc. U.S. Nat. Mus. 26: 925-931.
 165. Suárez-Morales, E. & R. Gasca. 2012. A new *Lepeophtheirus* (Copepoda: Siphonostomatoida: Caligidae) from Isla del Coco, Costa Rica, Eastern Tropical Pacific. Rev. Biol. Trop. 60 (Suppl. 3): 235-242.
 166. Suárez-Morales, E. & A. Morales-Ramírez. 2001. Nuevo registro de *Acartia* (*Planktacartia*) *negligens* (Copepoda, Calanoida) en el Pacífico Tropical Oriental. Rev. Biol. Trop. 49: 1286.
 167. Suárez-Morales, E. & A. Morales-Ramírez. 2009. New species of *Monstrilloidea* (Crustacea: Copepoda) from the Eastern Tropical Pacific. J. Nat. Hist. 43: 1257-1271.
 168. Suárez-Morales, E., R.M. Hernández-Flores & A. Morales-Ramírez. 2009. Chaetognaths or arrow worms. Text: 435-443, List of species: CD 409-410. *In*: I.S. Wehrtmann and J. Cortés (Eds.). Marine Biodiversity of Costa Rica, Central America. Springer, Berlin.
 169. Thoma, B.P., R.W. Heard, R. Vargas. 2005. A new species of *Parapinnixa* (Decapoda: Brachyura: Pinnotheridae) from Isla del Coco, Costa Rica. Proc. Biol. Soc. Washington 118: 543-550.
 - Tokioka, T. 1971. A new species of *Rhopalaea* from the Pacific coast of Costa Rica (Tunicata, Ascidiacea). Publ. Seto Mar. Biol. Lab. XIX (2/3): 119-122.
 - Tokioka, T. 1972. On a small collection of ascidians from the Pacific coast of Costa Rica. Publ. Seto Mar. Biol. Lab. XIX(6): 383-408.
 170. Tovar-Hernández, M.A. & H. Dean. 2010. Four new species of fan worms (Polychaeta: Sabellidae) from worldwide localities. Scient. Mar. 74: 815-826.
 171. Treadwell, A.L. 1928. Polychaetous annelids from the Arcturus Oceanographic Expedition. Zoologica 8: 449-485.
 - Ulken, A., R. Viquez, C. Valiente & M. Campos. 1990. Marine fungi (Chytridiomycetes and Thraustochytriales) from a mangrove area at Punta Morales, Golfo de Nicoya, Costa Rica. Rev. Biol. Trop. 38: 243-250.
 172. Valdés, Á. & Y.E. Camacho-García. 2004. "Cephalaspidean" Heterobranchs (Gastropoda) from the Pacific Coast of Costa Rica. Proc. California Acad. Sci. 55: 459-497.
 - Van Name, W.G. 1945. The North and South American Ascidiaceans. Bull. American Mus. Nat. Hist. 84: 1-476.
 173. Van Syoc, R. 2009. Barnacles. Text: 283-289, Species list, CD: 219-223. *In*: I.S. Wehrtmann & J. Cortés (Eds.). Marine Biodiversity of Costa Rica, Central America. Springer, Berlin.
 - Vargas, J.A. 1988a. Community structure of macrobenthos and the results of macropredator exclusion on a tropical mud flat. Rev. Biol. Trop. 36: 287-308.
 - Vargas, J.A. 1988b. A survey of the meiofauna of an eastern tropical Pacific intertidal mud flat. Rev. Biol. Trop. 36: 541-544.
 174. Vargas, J.A. & H.K. Dean. 2009. Sipunculans. Text: 175-180, Species list, CD: 119-121. *In*: I.S. Wehrtmann & J. Cortés (Eds.). Marine Biodiversity of Costa Rica, Central America. Springer, Berlin.
 175. Vargas, J.A. & H.K. Dean. 2010. On *Branchiostoma californiense* (Cephalochordata) from the Gulf of Nicoya estuary, Costa Rica. Rev. Biol. Trop. 58: 1143-1148.
 176. Vargas, R. 2009. Stomatopods. Text: 193-197, Species list, CD: 160-163. *In*: I.S. Wehrtmann & J. Cortés (Eds.). Marine Biodiversity of Costa Rica, Central America. Springer, Berlin.

177. Vargas-Castillo, R. & I.S. Wehrtmann. 2008. Stomatopods and decapods from Isla del Coco, Pacific Costa Rica. *Rev. Biol. Trop.* 56 (Suppl. 2): 79-97.
178. Vargas, R. & I.S. Wehrtmann. 2009. Decapod crustaceans. Text: 209-228, Species list, CD: 167-198. *In*: I.S. Wehrtmann & J. Cortés (Eds.). *Marine Biodiversity of Costa Rica, Central America*. Springer, Berlin.
179. Vargas, R., S. Jesse & M. Castro. 1996. Checklist of crustaceans (Decapoda and Stomatopoda), collected during the Victor Hensen Costa Rica expedition (1993/1994). *Rev. Biol. Trop.* 44 (Suppl. 3): 97-102.
180. Vargas-Montero, M., Á. Morales-Ramírez & J. Cortés. 2012. Primer informe del género *Gambierdiscus* (Dinophyceae) en el Parque Nacional Isla del Coco, Pacífico Tropical Oriental. *Rev. Biol. Trop.* 60 (Suppl. 3): 187-199.
181. Víquez, R. & P.E. Hargraves. 2009. Phytoplankton. Text: 97-108, Species list, CD: 1-16. *In*: I.S. Wehrtmann & J. Cortés (Eds.). *Marine Biodiversity of Costa Rica, Central America*. Springer, Berlin.
182. Waller, T.R. 2007. The evolutionary and biogeographic origins of the endemic Pectinidae (Mollusca: Bivalvia) of the Galapagos Islands. *J. Paleontol.* 81: 929-950.
- Wehrtmann, I.S. & J. Cortés (Editors). 2009. *Marine Biodiversity of Costa Rica, Central America*. Monographiae Biologicae, Volumen 86. Springer + Business Media B.V., Berlin. Text: 538 p., List of species in Compact Disk: 500 p.
- Wehrtmann, I.S., J. Cortés & S. Echeverría-Sáenz. 2009. Marine biodiversity of Costa Rica: perspectives and conclusions, Chapter V, 521-533. *In*: I.S. Wehrtmann and J. Cortés (Eds.). *Marine Biodiversity of Costa Rica, Central America*. Springer, Berlin.
183. Wicksten, M.K. & R. Vargas. 2001. A new species of *Thor* Kingsley, 1878 (Crustacea: Decapoda: Caridea: Hippolytidae) from the tropical eastern Pacific. *Proc. Biol. Soc. Washington* 114: 139-144.
184. Williams, A.B. 1986. Mud shrimps, *Upogebia*, from the eastern Pacific (Thalassinoidea: Upogebiidae). *San Diego Soc. Nat. Hist. Mem.* 14: 1-60.
185. Williamson, S.J., D.B. Rusch, S. Yooseph, A.L. Halpern, K.B. Heidelberg, J.I. Glass, C. Andrews-Pfankoch, D. Fadrosch, C.S. Miller, G. Sutton, M. Frazier, J.C. Venter. 2008. The Sorcerer II Global Ocean Sampling Expedition: Metagenomic characterization of viruses within aquatic microbial samples. *PLoS ONE* 3(1): e1456. doi:10.1371/journal.pone.0001456.
186. Wilson, H.V. 1904. Reports on an exploration off the west coasts of Mexico, Central and South America, and off the Galapagos Islands, in charge of Alexander Agassiz, by the US Fish Commission Steamer Albatross, during 1891, Lieut. Commander Z.L. Tanner U.S.N., commanding. XXX. The sponges. *Mem. Mus. Comp. Zoöl., Harvard Coll.* XXX: 1-164.
187. Young, B.E., K. Easley, R. Garrigues, B. Mactavish, P. Murgatroyd & J.R. Zook. 2010. Swallow-tailed gull *Creagrurus furcatus* in Costa Rica. *Cotinga* 32: 24-26.
188. Zullo, V.A. 1991. Zoogeography of shallow-water cirriped fauna of the Galápagos Islands and adjacent regions in the Tropical Eastern Pacific. Pp. 173-192. *In*: M.J. James (Ed.). *Galápagos Marine Invertebrates: Taxonomy, Biogeography, and Evolution in Darwin's Islands*. Plenum Press, New York and London.

APPENDIX 1
Marine species reported from Isla del Coco National Park, Pacific Costa Rica

	Species	Ref. ¹
Virus	1. Viral talC sequences	185
	2. P-SSM4-like phages	185
Bacteria and Archaea	1. Possibly several species	153
Phylum CYANOBACTERIA, Class CYANOPHYCEAE		
Order SYNECHOCOCCALES, Family Synechococaceae	1. <i>Prochlorococcus</i> sp.	185
Phylum MYZOOA, Infraphylum DINOFLAGELLATA, Class PERIDINEA, Order Gonyaulacida, Family GoniDOMATAceae		
	1. <i>Gambierdiscus</i> sp.	180
	2. <i>Amphidinium carterae</i> Hulburt, 1957	180
Family Ostreopsidaceae	3. <i>Coolia tropicalis</i> Faust, 1995	180
	4. <i>Coolia</i> cf. <i>areolata</i>	180
	5. <i>Ostreopsis siamensis</i> Schmidt, 1901	180
Order Prorocentrida, Family Prorocentraceae	6. <i>Prorocentrum compressum</i> (Bailey, 1850) Abé ex Dodge, 1975	180
	7. <i>Prorocentrum concavum</i> Fukuyo, 1981	180
Phylum CHLOROPHYTA, Class BRYOPSIDOPHYCEAE,		
Order BRYOPSIDALES, Family Bryopsidaceae	1. <i>Bryopsis pennata</i> J.V. Lamouroux, 1809	74, 76
	2. <i>Derbesia marina</i> (Lyngbye) Solier, 1846	74, 76
Family Codiaceae	3. <i>Codium picturatum</i> F.F. Pedroche & P.C. Silva, 1996	74, 76
Family Caulerpaceae	4. <i>Caulerpa peltata</i> J.V. Lamouroux, 1809	74
	5. <i>Caulerpa racemosa</i> (Forsskål) J. Agardh, 1873	74
	6. <i>Caulerpa serrulata</i> (Forsskål) J. Agardh, 1837	74, 76
Family Udoteaceae	7. <i>Boodleopsis verticillata</i> E.Y. Dawson 1960	14
Order DASYCLADALES, Family Dasycladaceae	8. <i>Acetabularia parvula</i> Solms-Laubach, 1895	74
Class ULVOPHYCEAE, Order CLADOPHORALES,		
Family Cladophoraceae	9. <i>Cladophora panamensis</i> W.R. Taylor, 1945	74, 76
	10. <i>Cladophora</i> sp.	74
Order ULVALES, Family Ulvaceae	11. <i>Ulva flexuosa</i> Wulfen, 1803	14
	12. <i>Ulva intestinales</i> Linnaeus, 1753	74, 76
Phylum OCHROPHYTA, Class PHAEOPHYCEAE		
Order DICTYOTALES, Family Dictyotaceae	1. <i>Dictyopteris delicatula</i> J.V. Lamouroux, 1809	74
	2. <i>Dictyota stolonifera</i> Dawson, 1962	74, 76
	3. <i>Dictyota</i> sp.	74
	4. <i>Lobophora variegata</i> (Lamouroux) Womersley ex Oliveira, 1977	74, 76
	5. <i>Padina crispata</i> Thivy, 1945	74, 76
Order SCYTOSIPHONALES, Family Scytosiphonaceae	6. <i>Rosenvingea intricata</i> (J. Agardh) Borgesen, 1914	74, 76
Phylum RHODOPHYTA, Class FLORIDEOPHYCEAE		
Order CORALLINALES, Family Corallinaceae	1. <i>Amphiroa</i> spp.	74
	2. <i>Amphiroa minutissima</i> Taylor, 1945	74, 76
	3. <i>Corallina</i> sp.	74

	Species	Ref. ¹
	4. <i>Dermatholithon saxicolum</i> (Lemoine) Setchell & Mason, 1943	74
	5. <i>Jania</i> spp.	74
Family Hapalidaceae	6. <i>Lithothamnion</i> sp.	74
Order GELIDIALES, Family Gelidiaceae	7. <i>Gelidium</i> sp.	74
Order HILDENBRANDIALES, Family Hildenbrandiaceae	8. <i>Hildenbrandia</i> sp.	74
Order NEMALIALES, Family Galaxauraceae	9. <i>Galaxaura filamentosa</i> R. Chou, 1945	74, 76
Order GIGARTINALES, Family Peyssonneliaceae	10. <i>Peyssonnelia rubra</i> J.G. Agardh, 1851	74, 76
Order CERAMIALES, Family Ceramiaceae	11. <i>Ceramium</i> spp.	74
Family Rhodomelaceae	12. <i>Polysiphonia mollis</i>	74, 76
Order GRACILARIALES, Family Gracilariaceae	13. <i>Gracilaria</i> sp.	74
Phylum FORAMINIFERA, Class POLYTHALAMEA,		
Order BULIMIDA, Family Boliviniidae	1. <i>Bolivina tongi</i> var. <i>filicostata</i> (Cushman & McCulloch, 1942)	49, 56
Family Buliminididae	2. <i>Bulimina laevigata</i> Brady, 1881 as <i>Bolivina laevigata</i>	49, 56
Order LAGENIDA, Family Nodosariidae	3. <i>Dentalina</i> cf. <i>jugosa</i>	57, 98
	4. <i>Laevidentalina filiformis</i> (d'Orbigny, 1826) as <i>Dentalina filiformis</i>	98
Order LITUOLIDA, Family Ammodiscidae	5. <i>Ammodiscus pacificus</i> Cushman & Valentine, 1930	98
Family Discamminidae	6. <i>Ammoscalaria compressa</i> (Cushman & McCulloch, 1939) as <i>Ammofrondicularia compressa</i>	49, 55
Family Haplophragmoididae	7. <i>Haplophragmoides hancocki</i> Cushman & McCulloch, 1939	57, 98
Family Hormosinidae	8. <i>Reophax agglutinatus</i> Cushman, 1913	98
	9. <i>Reophax excentricus</i> Cushman, 1910	98
Family Nouriididae	10. <i>Nouria polymorphinoides</i> Heron-Allen & Earland, 1914	98
Family Verneulinidae	11. <i>Verneulinula advena</i> (Cushman, 1922) as <i>Eggerelloides advenus</i>	49, 55
Order Textulariida, Family Textulariidae	12. <i>Textularia articulata</i> d'Orbigny, 1846	98
	13. <i>Textularia conica</i> d'Orbigny, 1839	98
	14. <i>Textularia corrugata</i> Herron-Allen & Earland, 1915	98
	15. <i>Textularia panamensis</i> Cushman, 1918	98
	16. <i>Textularia schencki</i> Cushman & Valentine, 1930	98, 111
Order Trochamminidae, Family Trochamminidae	17. <i>Deuterammina rotaliformis</i> Heron-Allen & Earland, 1911 as <i>Trochammina rotaliformis</i>	49, 55
	18. <i>Polystomammina nitida</i> (Brady, 1881) as <i>Trochammina nitida</i>	49, 55
	19. <i>Trochammina charlottensis</i> Cushman, 1925	49, 55
Family Vaginulinidae	20. <i>Vaginulina exilis</i> Cushman & McCulloch, 1950	49, 57
Phylum PORIFERA, Class HEXACTINELLIDA		
Order AMPHIDISCOSIDA, Family Hyalonematidae	1. <i>Hyalonema (Coscinonema) pateriferum</i> Wilson, 1904	50, 186
Order HEXACTINOSIDA, Family Aphrocallistidae	2. <i>Aphrocallistes vastus</i> Schulze, 1886	50, 186
Family Euretidae	3. <i>Eurete erectum</i> Schulze, 1899	50, 186
	4. <i>Eurete</i> sp.	50, 186
Family Tretodictyidae	*5. <i>Tretodictyum cocosensis</i> Reiswig, 2010	141
Order LYSSACINOSIDA, Family Rossellidae	6. <i>Acanthascus (Staurocalyptus)</i> sp.	50, 186
Class DEMOSPONGIAE, Order SPIROPHORIDA		
Family Pachastrellidae	7. <i>Thenea fenestrata</i> (Schmidt, 1880)	50, 186

	Species	Ref. ¹
Order HALICHONDRIIDA, Family Axinellidae	8. <i>Phakellia lamelligera</i> Wilson, 1904	50, 186
Phylum CNIDARIA, Class ANTHOZOA		
Order PENNATULACEA, Family Pennatulidae	1. <i>Ptilosarcus undulatus</i> Verrill, 1865	20, 21
Family Virgulariidae	2. <i>Stylatula cf. elongate</i>	21
	3. <i>Stylatula</i> sp.	21
Order ALCYONACEA, Family Aquaumbriidae	4. <i>Aquaumbra klapperi</i> Breedy, Van Ofwegen & Vargas, 2012	23a
Family Clavulariidae	5. <i>Rhodelinda</i> sp.	21
Family Gorgoniidae	6. <i>Leptogorgia alba</i> (Duchassaing & Michelotti, 1864)	20, 21
	*7. <i>Leptogorgia tricolorata</i> Breedy & Cortés, 2011	22
	*8. <i>Pacifigorgia curta</i> Breedy & Guzmán, 2003	21, 23
Family Isididae	9. <i>Isidella</i> sp.	21
Family Nephthiedae	10. <i>Anthomastus</i> sp.	21
Family Plexauridae	11. <i>Psammogorgia variabilis</i> Studer, 1894	21
	12. <i>Paramuricea</i> sp.	21
Family Primonoidae	13. <i>Narella</i> sp.	21
Order ACTINARIA, Family Isophelliidae	14. <i>Telmatactis cricoides</i> (Duchassaing, 1850)	45
	15. <i>Telmatactis panamensis</i> (Verrill, 1869)	2
Order SCLERACTINIA, Family Agariciidae	16. <i>Gardineroseris planulata</i> (Dana, 1846)	46
	17. <i>Leptoseris papyracea</i> (Dana, 1846)	46
	18. <i>Leptoseris scabra</i> Vaughan, 1907	46
	19. <i>Pavona chiriquensis</i> Glynn <i>et al.</i>, 2001	46
	20. <i>Pavona clavus</i> (Dana, 1846)	46
	21. <i>Pavona gigantea</i> Verrill, 1869	46
	22. <i>Pavona maldivensis</i> (Gardiner, 1905)	46
	23. <i>Pavona varians</i> Verrill, 1864	46
	24. <i>Pavona xarifae</i> Scheer & Pillai, 1974	46
Family Caryophylliidae	*25. <i>Anomocora carinata</i> Cairns, 1991	36, 46
	26. <i>Caryophyllia diomedea</i> Marenzeller, 1904	36, 46
	27. <i>Caryophyllia perculata</i> Cairns, 1991	36, 46
	28. <i>Coenocyathus bowersi</i> Vaughan, 1906	36, 46
	29. <i>Desmophyllum dianthus</i> (Esper, 1794)	36, 46
	30. <i>Polycyathus hondaensis</i> (Durham & Barnard, 1952)	36, 46
	31. <i>Tethocyathus prahli</i> Lattig & Cairns 2000	46, 112
Family Dendrophylliidae	32. <i>Dendrophyllia oldroydii</i> Oldroyd, 1924	36, 46
	33. <i>Endopachys grayi</i> Milne Edwards & Haime, 1848	36, 46
	34. <i>Rhizopsammia verrilli</i> Van der Horst, 1922	36, 46
	35. <i>Tubastrea coccinea</i> Lesson, 1829	36, 46
Family Faviidae	36. <i>Cladocora pacifica</i> Cairns, 1991	36, 46
Family Flabellidae	37. <i>Javania cailleti</i> (Duchassaing & Michelotti, 1864)	36, 46
Family Fungiidae	38. <i>Fungia (Cycloseris) curvata</i> Hoeksema, 1989	36, 46
	39. <i>Fungia (Cycloseris) distorta</i> Michelin, 1842	36, 46
Family Pocilloporidae	40. <i>Pocillopora damicornis</i> (Linnaeus, 1758)	46
	41. <i>Pocillopora elegans</i> Dana, 1846	46
	42. <i>Pocillopora eydouxi</i> Milne Edwards & Haime, 1860	46
	43. <i>Pocillopora meandrina</i> Dana, 1846	46
Family Poritidae	44. <i>Porites lobata</i> Dana, 1846	46
Family Rhizangiidae	45. <i>Astrangia dentata</i> Verrill, 1866	36, 46
	46. <i>Culicia stellata</i> Dana, 1846	36, 46

	Species	Ref. ¹
Family Siderastreidae	47. <i>Psammocora stellata</i> (Verrill, 1866)	46
	48. <i>Psammocora superficialis</i> Gardiner, 1898	46
Class SCYPHOZOA, Order CORONATAE		
Family Atollidae	49. <i>Atolla</i> sp.	15, 16
	50. <i>Atolla wyvillei</i> Haeckel, 1880	15, 16
	51. <i>Periphylla hyacinthina</i> (Péron & Lesueur, 1810)	15, 16
	52. <i>Periphylla</i> sp.	15, 16
Family Atorellidae	53. <i>Atorella arcturi</i> Bigelow, 1928	16
Family Linuchidae	54. <i>Linuche unguiculata</i> (Swartz, 1788)	16
Order SEMAEOSTOMEAE, Family Pelagiidae	55. <i>Pelagia noctiluca</i> (Forskål, 1775)	16
Class HYDROZOA		
Order ANTHOATHECATA, Family Polyorchidae	56. <i>Polyorchis penicillatus</i> (Eschscholtz, 1829)	149
Family Stylasteridae	57. <i>Errina macrogastra</i> Marenzeller, 1904	37, 46
	*58. <i>Pliobothrus fistulosus</i> Cairns, 1991	37, 46
	*59. <i>Stylaster cocosensis</i> Cairns, 1991	37, 46
	60. <i>Stylaster galapagensis</i> Cairns, 1986	37, 46
	61. <i>Stylaster marenzelleri</i> Cairns, 1986	37, 46
Order LEPTOTHECATA, Family Campanulariidae	62. <i>Clytia gracilis</i> (Sars, 1850) as <i>C. cylindrica</i> and as <i>Gonothyrea gracilis</i>	44, 80, 109
	63. <i>Obelia dichotoma</i> (Linnaeus, 1758) as <i>O. commissuralis</i>	44, 80, 98
Family Haleciidae	64. <i>Halecium washingtoni</i> Nutting, 1901	80, 81, 98
Family Sertulariidae	65. <i>Thuiaria crisioides</i> Lamouoroux, 1824	81, 98
Order TRACHYMEDUSAE, Family Rhopalonematidae	66. <i>Rhopalonema velatum</i> Gegenbaur, 1857	130
Other Hydromedusae	67-68. Two unidentified species in two families	130
Subclass SIPHONOPHORAE, Order CALYCOPHORAE		
Family Abylidae	69. <i>Abylopsis</i> sp.	17, 130
	70. <i>Abylopsis tetragona</i> (Otto, 1823)	17, 130
Family Dyphidae	71. <i>Dyphes dispar</i> (Chamisso & Eysenhardt, 1821)	17, 130
	72. <i>Dyphes</i> sp.	17, 130
	73. <i>Eudoxoides mitra</i> (Huxley, 1859)	17, 130
	74. <i>Muggiaea atlantica</i> Cunningham, 1892	17, 130
Family Hippopodiidae	75. <i>Vogtia serrata</i> (Moser, 1925)	17
Family Prayidae	76. <i>Nectadamas diomedae</i> (Bigelow, 1911)	17
	77. <i>Nectopyramis natans</i> (Bigelow, 1911)	17
	78. <i>Praya dubia</i> (Quoy & Gaimard, 1827)	17
Order PHYSONECTAE, Family Agalmatidae	79. <i>Agalma okenis</i> Eschscholtz, 1825	17, 147
	80. <i>Halistemma</i> sp.	17, 147
Family Athorybiidae	81. <i>Athorybia rosacea</i> (Forskål, 1775)	17
Family Forskaliidae	82. <i>Forskalia</i> sp.	17
Family Physophoridae	83. <i>Physophora hydrostatica</i> Forskål, 1775	17
Phylum MOLLUSCA, Class POLYPLACOPHORA		
Order CHITONIDA, Family Acanthochitonidae	1. <i>Acanthochitona angelica</i> Dall, 1919	156, 160
	2. <i>Acanthochitona hirudiniformis</i> (Sowerby, 1832)	156
Family Chitonidae	3. <i>Chiton goodallii</i> Broderip & Sowerby, 1832	60, 156
	4. <i>Chiton stokesii</i> Broderip, 1832	60, 78, 156

	Species	Ref. ¹
Family Ischnochitonidae	*5. <i>Ischnochiton victoriae</i> Ferreira, 1987	78, 156
	6. <i>Lepidozona rothi</i> Ferreira, 1983	78, 156
	7. <i>Stenoplax boogii</i> (Haddon, 1886)	78, 156
Family Mopaliidae	8. <i>Placiphorella blainvillei</i> (Broderip, 1832)	78, 156
Class GASTROPODA, Family Aeolidiidae	9. <i>Aeolidiella indica</i> Bergh, 1888	38
Family Aglajidae	10. <i>Navanax aenigmaticus</i> (Bergh, 1894)	172
Family Architectonicidae	11. <i>Architectonica nobilis</i> Röding, 1798	150
	12. <i>Discotectonica placentalis</i> (Hinds, 1844)	150
	13. <i>Heliacus mazatlanicus</i> Pilsbry & Lowe, 1932	150
	14. <i>Pseudotorinia architae</i> (O.G. Costa, 1841)	150
	15. <i>Psilaxis radiata</i> (Röding, 1798)	150
Family Amathinidae	16. <i>Phasianema saxicola</i> (C.B. Adams, 1852)	150
Family Areneidae	17. <i>Arene ferruginosa</i> McLean, 1970	150
	18. <i>Arene guttata</i> McLean, 1970	150
Family Atlantidae	19. <i>Atlanta</i> sp.	130
Family Barleeiidae	20. <i>Barleeia</i> cf. <i>bifasciata</i>	150
	21. <i>Barleeia orcutti</i> Bartsch, 1920	150
	22. <i>Barleeia paupercula</i> (C.B. Adams, 1852)	150
	23. <i>Barleeia polychroma</i> (de Folin, 1870)	150
	24. <i>Amphithalamus inclusus</i> Carpenter, 1864	150
Family Buccinidae	25. <i>Bailya anomala</i> (Hinds, 1844)	150
	26. <i>Caducifer cinis</i> (Reeve, 1846)	150
	27. <i>Cantharus gemmatus</i> (Reeve, 1846)	150
	28. <i>Cantharus rehderi</i> Berry, 1962	150
	29. <i>Cantharus sanguinolentus</i> (Duclos, 1833)	150
	30. <i>Clivipollia fragaria</i> (Wood, 1828)	150
	31. <i>Colubraria lucasensis</i> Strong & Hertlein, 1937	150
	32. <i>Colubraria ochsneri</i> Hertlein & Allison, 1968	150
	33. <i>Engina jugosa</i> (C.B. Adams, 1852)	150
	34. <i>Phos articulatus</i> Hinds, 1844	150
	35. <i>Phos cocosensis</i> Dall, 1896	98
	36. <i>Phos crassus</i> Hinds, 1843	150
Family Bullidae	37. <i>Bulla punctulata</i> A. Adams in Sowerby, 1850	70
Family Bursidae	38. <i>Bursa calcipicta</i> Dall, 1908	150
	39. <i>Bursa corrugata</i> (Perry, 1811)	150
	40. <i>Bursa granularis</i> (Röding, 1798)	150
	41. <i>Marsupina nana</i> (Broderip & Sowerby, 1829)	150
Family Caecidae	42. <i>Caecum clathratum</i> Carpenter, 1857	150
	43. <i>Caecum</i> cf. <i>corrugulatum</i>	150
	44. <i>Caecum laqueatum</i> C.B. Adams, 1852	150
	45. <i>Caecum lohri</i> (Strong & Hertlein, 1939)	150
	46. <i>Caecum paradoxum</i> de Folin, 1867	150
	47. <i>Caecum parvum</i> C.B. Adams, 1852	150
	48. <i>Elephantulum heptagonum</i> (Carpenter, 1857)	150
	49. <i>Elephantulum liratoctinctum</i> (Carpenter, 1857)	150
	50. <i>Fartulum glabriforme</i> (Carpenter, 1857)	150
Family Calyptraeidae	51. <i>Cheilea cepacea</i> (Broderip, 1834)	150
	52. <i>Cheilea corrugata</i> (Broderip, 1834)	150
	53. <i>Crucibulum scutellatum</i> (Wood, 1928)	150

	Species	Ref. ¹
Family Cancellariidae	54. <i>Cancellaria pulchra</i> Sowerby, 1832	150
	55. <i>Sveltia centrata</i> (Dall, 1896)	150
	56. <i>Trigonostoma breve</i> (Sowerby, 1832)	150
Family Carinariidae	57. <i>Cardiapoda placenta</i> (Lesson, 1830)	130
Family Cassidae	58. <i>Casmaria vibexmexicana</i> (Stearns, 1894)	150
	59. <i>Cypraecassis coarctata</i> (Sowerby, 1825)	150
	60. <i>Cypraecassis tenuis</i> (Wood, 1928)	150
	61. <i>Semicassis centiquadrata</i> (Valenciennes, 1832)	150
Family Cavoliniidae	62. <i>Diacavolinia longirostris</i> (Blainville, 1821) as <i>Cavolina logirostris</i>	98, 101
	63. <i>Clio</i> sp.	130
	64. <i>Creseis virgula</i> Rang, 1828 as <i>Creseus virgula</i>	98, 101
	65. <i>Cuvierina</i> sp.	130
	66. <i>Diacria quadridentata</i> (Lesueur, 1821)	98, 101
Family Cerithiidae	67. <i>Cerithium adustum</i> Kiener, 1841	60, 150
	68. <i>Cerithium maculosum</i> Kiener, 1841	60, 150
	69. <i>Cerithium uncinatum</i> (Gmelin, 1791)	60, 150
	70. <i>Rhinoclavis gemmata</i> (Hinds, 1844)	60, 150
Family Cerithiopsidae	71. <i>Cerithiopsis adamsi</i> Bartsch, 1911	150, 160
	72. <i>Seila assimilata</i> (C.B. Adams, 1852)	150
	73. <i>Seila kanoni</i> (de Folin, 1867)	150
	74. <i>Seila pulmoensis</i> DuShane & Draper, 1975	150
Family Chromodorididae	75. <i>Chromodoris sphoni</i> Ev. Marcus, 1971	38
	76. <i>Glossodoris baumanni</i> (Bertsch, 1970)	38
Family Columbelloidea	77. <i>Aesopus chrysalloides</i> (Carpenter, 1864)	150
	78. <i>Aesopus sanctus</i> Dall, 1919	150
	79. <i>Columbella labiosa</i> Sowerby, 1822	150
	80. <i>Columbella sonsonatensis</i> (Mörch, 1860)	150
	81. <i>Cotonopsis deroyae</i> (Emerson & D'Attilio, 1969)	150
	82. <i>Microcithara uncinata</i> (Sowerby, 1832)	150
	83. <i>Mitrella ocellata</i> (Gmelin, 1791)	150
	84. <i>Steironepion melanosticta</i> (Pilsbry & Lowe, 1932)	150
	85. <i>Zafraona incerta</i> (Stearns, 1892)	150
Family Conidae	86. <i>Conus brunneus</i> Wood, 1828	150
	87. <i>Conus chaldaeus</i> (Röding, 1798)	150
	88. <i>Conus dalli</i> Stearns, 1873	150
	89. <i>Conus diadema</i> Sowerby, 1834	150
	90. <i>Conus ebraeus</i> Linnaeus, 1758	150
	91. <i>Conus emarginatus</i> Reeve, 1844	150
	92. <i>Conus gladiator</i> Broderip, 1833	150
	93. <i>Conus gradatus</i> Wood, 1828	150
	94. <i>Conus lucidus</i> Wood, 1828	150
	95. <i>Conus mahogani</i> Reeve, 1843	150
	96. <i>Conus nux</i> Broderip, 1833	150
	97. <i>Conus purpurascens</i> Sowerby, 1833	150
	98. <i>Conus recurvus</i> Broderip, 1833	150
	99. <i>Conus tessulatus</i> Born, 1778	150
	100. <i>Conus tiaratus</i> Sowerby, 1833	150

	Species	Ref. ¹	
Family Coralliophilidae	101. <i>Babelomurex hindsii</i> (Carpenter, 1857)	150	
	102. <i>Babelomurex santacruzensis</i> (Emerson & D'Attilio, 1970)	150	
	103. <i>Coralliophila macleani</i> Shasky, 1970	150	
	104. <i>Coralliophila neritoidea</i> (Lamarck, 1816)	150	
	105. <i>Coralliophila parva</i> (E.A. Smith, 1877)	150	
	106. <i>Coralliophila rocasucia</i> Myers & D'Attilio, 1990	150	
	107. <i>Coralliophila violacea</i> (Kiener, 1836)	69	
	108. <i>Quoyula madreporarum</i> (Sowerby, 1834)	150	
	109. <i>Reliquiaecava robillardi</i> (Liénard, 1870)	150	
	110. <i>Rhizochilus antipathum</i> Steenstrup, 1850	150	
Family Costellariidae	111. <i>Thala jeancateae</i> Sphon, 1969	150	
Family Cylichnidae	112. <i>Cylichna atahualpa</i> (Dall, 1908)	172	
Family Cypraeidae	113. <i>Blasicrura alisonae</i> Burgess, 1983	150	
	114. <i>Blasicrura rashleighana</i> (Melvill, 1888)	150	
	115. <i>Blasicrura teres</i> Gmelin, 1791	150	
	116. <i>Erosaria albuginosa</i> Gray, 1825	150	
	117. <i>Erosaria caputserpentis</i> Linnaeus, 1758	150	
	118. <i>Luria isabellamexicana</i> Stearns, 1893	150	
	119. <i>Macrocyprea cervinetta</i> (Kiener, 1843)	150	
	120. <i>Mauritia depressa</i> (Gray, 1824)	150	
	121. <i>Monetaria moneta</i> Linnaeus, 1758	150	
	122. <i>Talparia talpa</i> Linnaeus, 1758	150	
	123. <i>Zonaria robertsi</i> (Hidalgo, 1906)	150	
	Family Cystiscidae	*124. <i>Gibberula achenea</i> Roth & Coan, 1971	150, 152
		125. <i>Gibberula minor</i> (C.B. Adams, 1852)	150
126. <i>Gibberula polita</i> (Carpenter, 1857)		150	
127. <i>Gibberula subtrigona</i> (Carpenter, 1864)		150	
128. <i>Persicula pulchella</i> (Kiener, 1834)		150	
Family Dendrodorididae	129. <i>Dendrodoris fumata</i> (Rüpell & Leuckart, 1831)	38	
Family Desmopteridae	130. <i>Desmopterus papilio</i> Chun, 1889	124	
Family Elachisinidae	131. <i>Elachisina johnstoni</i> (Baker, Hanna & Strong, 1930)	150	
Family Ellobiidae	132. <i>Ellobium stagnalis</i> (d'Orbigny, 1835)	60, 150	
	133. <i>Melampus carolianus</i> (Lesson, 1842)	60, 150	
	134. <i>Melampus tabogensis</i> C.B. Adams, 1852	60, 150	
	135. <i>Melampus trilineatus</i> (C.B. Adams, 1852)	98	
	136. <i>Pedipes angulatus</i> C.B. Adams, 1852	60, 150	
	137. <i>Tralia panamensis</i> (C.B. Adams, 1852)	60, 150	
	138. <i>Amaea deroyae</i> DuShane, 1970	150	
Family Epitoniidae	139. <i>Epitonium acapulcanum</i> Dall, 1917	150, 160	
	140. <i>Epitonium aciculinum</i> (Hinds, 1844)	150	
	141. <i>Epitonium billeanum</i> (DuShane & Bratcher, 1965)	150	
	142. <i>Epitonium hancocki</i> DuShane, 1970	150	
	143. <i>Epitonium indistinctum</i> (Sowerby, 1844)	150	
	144. <i>Epitonium replicata</i> (Sowerby, 1844)	150	
	145. <i>Opalia crystallina</i> (Carpenter, 1864)	150	
	146. <i>Opalia infrequens</i> (C.B. Adams, 1852)	150	
	147. <i>Opalia paulula</i> DuShane, 1974	150	
	148. <i>Opalia sanjuanensis</i> (Lowe, 1932)	150	

	Species	Ref. ¹	
Family Eulimidae	149. <i>Eulima elegantissima</i> de Folin, 1887	150	
	150. <i>Melanella ogasawarana</i> (Pilsbry, 1905)	150	
	151. <i>Melanella townsendi</i> Bartsch, 1917	150	
	152. <i>Niso aeglees</i> Bush, 1885	150	
	153. <i>Niso interrupta</i> (Sowerby, 1834)	150	
	154. <i>Sabinella shaskyi</i> Warén, 1992	150	
	155. <i>Scalenostoma subulata</i> (Broderip, 1832)	150	
	156. <i>Subniso rangii</i> (de Folin, 1867)	150	
	Family Fasciolariidae	157. <i>Leucozonia cerata</i> (Wood, 1828)	60, 150
		158. <i>Leucozonia tuberculata</i> (Broderip, 1833)	60, 150
159. <i>Fusinus allyni</i> McLean, 1970		60, 150	
160. <i>Fusinus dupetitthouarsi</i> (Kiener, 1840)		60, 150	
161. <i>Fusinus turris</i> (Valenciennes, 1832)		60, 150	
162. <i>Pleuroploca princeps</i> (Sowerby, 1825)		60, 150	
Family Fissurellidae	163. <i>Diodora inaequalis</i> (Sowerby, 1835)	150	
	164. <i>Diodora punctifissa</i> McLean, 1970	150	
	165. <i>Diodora saturnalis</i> (Carpenter, 1864)	150	
	166. <i>Fissurella deroyae</i> McLean, 1970	150	
	167. <i>Fissurella microtrema</i> Sowerby, 1835	150	
	168. <i>Fissurella virescens</i> Sowerby, 1835	150	
	169. <i>Lucapinella milleri</i> Berry, 1959	150	
Family Haliotidae	*170. <i>Haliotis dalli roberti</i> McLean, 1970	125, 150	
Family Harpidae	171. <i>Harpa crenata</i> Swainson, 1822	150	
	172. <i>Morum veleroae</i> Emerson, 1968	150	
Family Hipponicidae	173. <i>Hipponix antiquatus panamensis</i> C.B. Adams, 1852	150	
	174. <i>Hipponix grayanus</i> Menke, 1853	150	
	175. <i>Pilosabia pilosa</i> (Deshayes, 1832)	150	
Family Juliidae	176. <i>Julia thecaphora</i> (Carpenter, 1857)	38	
Family Limacinidae	177. <i>Limacina inflata</i> (d'Orbigny, 1836)	98, 101	
	178. <i>Limacina trochiformis</i> (d'Orbigny, 1836)	130	
Family Litiopidae	179. <i>Alaba supralirata</i> Carpenter, 1857	150	
Family Littorinidae	180. <i>Echinolittorina aspera</i> (Philippi, 1846) as <i>Littorina aspera</i>	98	
	181. <i>Echinolittorina modesta</i> (Philippi, 1846) as <i>Nodilittorina modesta</i>	98	
	182. <i>Littoraria coccinea</i> (Gmelin, 1791)	60, 150	
	183. <i>Littoraria pintado pullata</i> (Carpenter, 1864)	60, 150	
	184. <i>Littoraria undulata</i> (Gray, 1839)	60, 150	
	185. <i>Littorina keanae</i> Rosewater, 1978	60, 150	
	186. <i>Nodilittorina atrata</i> (C.B. Adams, 1852)	60, 150	
	187. <i>Nodilittorina conspersa</i> (Philippi, 1847)	60, 150	
	188. <i>Nodilittorina dubiosa</i> (C.B. Adams, 1852)	60, 150	
	189. <i>Lottia mesoleuca</i> (Menke, 1851)	150	
	*190. <i>Lottia rothi</i> (Lindberg & McLean, 1981)	114, 150	
	191. <i>Lottia strigatella</i> (Carpenter, 1864)	150	
	192. <i>Patelloida semirubida</i> (Dall, 1914)	150	
193. <i>Tectura ubiquita</i> (Lindberg & McLean, 1981)	150		
Family Marginellidae	194. <i>Volvarina taeniolata taeniolata</i> Mörch, 1860	150, 160	

	Species	Ref. ¹	
Family Mitridae	195. <i>Mitra crenata</i> Broderip, 1836	60, 150, 160	
	196. <i>Mitra effusa</i> Broderip, 1836	60, 150	
	197. <i>Mitra ferruginea</i> Lamarck, 1811	60, 150	
	198. <i>Mitra fultoni</i> E.A. Smith, 1892	60, 150	
	199. <i>Mitra inca</i> d'Orbigny, 1841	60, 150	
	200. <i>Mitra lens</i> Wood, 1828	60, 150	
	201. <i>Mitra mitra</i> (Linnaeus, 1758)	60, 150	
	202. <i>Mitra papalis</i> (Linnaeus, 1758)	60, 150	
	203. <i>Mitra rupicola</i> Reeve, 1844	60, 150	
	204. <i>Mitra sphoni</i> Shasky & Campbell, 1964	60, 150	
	205. <i>Mitra swainsonii swainsonii</i> Broderip, 1836	60, 150	
	206. <i>Mitra tristis</i> Broderip, 1836	60, 150	
	207. <i>Subcancilla attenuata</i> (Broderip, 1836)	60, 150	
	208. <i>Subcancilla erythrogramma</i> (Tomlin, 1931)	60, 150	
	209. <i>Subcancilla sulcata</i> (Swainson in Sowerby, 1825)	60, 150	
	Family Muricidae	210. <i>Acanthais brevidentata</i> (Wood, 1828)	60, 150
		211. <i>Acanthotrophon sentus</i> Berry, 1969	60, 150
		212. <i>Aspella hastula</i> (Reeve, 1844)	60, 150
		213. <i>Aspella pollux</i> Radwin & D'Attilio, 1976	60, 150
		214. <i>Aspella pyramidalis</i> (Broderip, 1833)	60, 150
215. <i>Bizetiella micaela</i> Radwin & D'Attilio, 1972		60, 150	
216. <i>Chicoreus eversoni</i> D'Attilio, Myers & Shasky, 1987		60, 150	
217. <i>Drupa ricinus</i> (Linnaeus, 1758)		69	
218. <i>Favartia cocosensis</i> Myers & D'Attilio, 1990		60, 150	
219. <i>Favartia diomedaea</i> (Dall, 1908)		60, 150	
220. <i>Favartia humilis</i> (Broderip, 1833)		60, 150	
221. <i>Favartia incisa</i> (Broderip, 1833)		60, 150	
222. <i>Favartia laurae</i> (Vokes, 1970)		60, 150	
223. <i>Favartia mildredae</i> (Poorman, 1980)		60, 150	
224. <i>Favartia purdyae</i> Vokes & D'Attilio, 1980		60, 150	
225. <i>Favartia radwini</i> (Emerson & D'Attilio, 1970)		60, 150	
*226. <i>Favartia shaskyi</i> D'Attilio & Myers, 1988		61, 150	
227. <i>Hexaplex princeps</i> (Broderip, 1833)		60, 150	
228. <i>Mancinella speciosa</i> (Valenciennes, 1832)		60, 150	
229. <i>Mancinella triangularis</i> (Blainville, 1832)		60, 150	
230. <i>Morula uva</i> (Röding, 1798)		60, 150, 160	
231. <i>Murexiella humilis</i> (Broderip, 1833)		60, 150	
232. <i>Muricopsis westonensis</i> Myers & D'Attilio, 1990	60, 150		
233. <i>Muricopsis zeteki</i> Hertlein & Strong, 1951	60, 150		
234. <i>Neorapana muricata</i> (Broderip, 1832)	60, 150		
235. <i>Pascuala rufonotata</i> (Carpenter, 1864)	60, 150, 160		
236. <i>Phyllocoma scalariformis</i> (Broderip, 1833)	60, 150		
237. <i>Plicopurpura columellaris</i> (Lamarck, 1822)	60, 150		
238. <i>Plicopurpura patula pansa</i> (Gould, 1853)	60, 150		
239. <i>Pterotyphis lowei lowei</i> (Pilsbry, 1931)	60, 150		
240. <i>Stramonita biserialis</i> (Blainville, 1832)	60, 150		
241. <i>Trachypollia lugubris</i> (C.B. Adams, 1852)	60, 150		
242. <i>Tribulus planospira</i> (Lamarck, 1822)	60, 150		

	Species	Ref. ¹
	243. <i>Vasula melones</i> (Duclos, 1832)	60, 150
	244. <i>Vitularia salebrosa</i> (King & Broderip, 1832)	60, 150
Family Nassariidae	245. <i>Nassarius nassiformis</i> Leson, 1842	150
	246. <i>Nassarius nodicinctus</i> (A. Adams, 1852)	150
Family Naticidae	247. <i>Eunaticina insculpta</i> (Carpenter, 1865)	150
	248. <i>Natica elenae</i> Récluz, 1844	150
	249. <i>Natica grayi</i> Philippi, 1852	150
	250. <i>Natica idiopoma</i> Pilsbry & Lowe, 1932	150
	251. <i>Polinices helicoides</i> (Gray, 1825)	150
	252. <i>Polinices otis</i> (Broderip & Sowerby, 1829)	150
	253. <i>Polinices pardoanus</i> Dall, 1908	150
	254. <i>Mammilla simiae</i> (Deshayes, 1838) as <i>Polinices siiae</i>	100, 107, 150
Family Neritidae	255. <i>Nerita funiculata</i> Menke, 1851	60, 150
	256. <i>Nerita scabricosta</i> Lamarck, 1822	60, 150
	257. <i>Neritina latissima</i> Broderip, 1833	60, 150
Family Olividae	258. <i>Oliva foxi</i> Stingley, 1984	150
	259. <i>Oliva spicata</i> (Röding, 1798)	150
	*260. <i>Oliva spicata deynzeriae</i> Petuch & Sargent, 1986	137, 150
	261. <i>Olivella cocosensis</i> Olsson, 1956	150
Family Ovulidae	262. <i>Jenneria pustulata</i> (Lightfoot, 1786)	150
	263. <i>Neosimnia aequalis</i> (Sowerby, 1832)	150
	264. <i>Neosimnia avena</i> (Sowerby, 1832)	150
	265. <i>Pseudocypraea adamsonii</i> (Sowerby, 1832)	150
	266. <i>Simmialena rufa</i> (Sowerby, 1832)	150
	267. <i>Turbovula lenoreae</i> (Cardin & Walls, 1980)	150
Family Pelyciidae	268. <i>Pelycidion kelseyi</i> (Bartsch, 1911)	150
Family Personidae	269. <i>Distorsio constricta constricta</i> (Broderip, 1833)	150
	270. <i>Distorsio decussata</i> (Valenciennes, 1832)	150
	271. <i>Distorsio jenniernestae</i> Emerson & Piech, 1992	150
Family Phenacolepadidae	272. <i>Plesiothyreus osculans</i> (C.B. Adams, 1852)	150
Family Phylliroidae	273. <i>Phylliroë bucephala</i> Péron & Lesueur, 1810	130
Family Planaxidae	274. <i>Fossarus angulatus</i> Carpenter, 1857	150
	275. <i>Fossarus tuberosus</i> Carpenter, 1857	150
	276. <i>Planaxis planaxis</i> (a)	98
	277. <i>Planaxis planicostatus</i> Sowerby, 1825	150
Family Pleurobranchidae	278. <i>Berthellina ilisima</i> Marcus & Marcus, 1967	38
	279. <i>Pleurobranchus areolatus</i> (Mörch, 1863)	38
Family Pneumodermatidae	280. <i>Pnemodeopsis</i> sp.	130
Family Polyceridae	281. <i>Tambja adbere</i> Farmer, 1978	38
Family Potamididae	282. <i>Modulus cerodes</i> (A. Adams, 1851)	150
Family Pterotracheidae	283. <i>Pterotrachea coronata</i> Forsskål, 1775	130
Family Pyramidellidae	284. <i>Herviera gliriella</i> (Melvill & Standen, 1896)	150
	285. <i>Menestho aequisculpta</i> (Carpenter, 1864)	150
	286. <i>Menestho grijalvae</i> (Baker, Hanna & Strong, 1928)	150
	287. <i>Miralda armata</i> (Carpenter, 1857)	150
	288. <i>Miralda terebellum</i> (C.B. Adams, 1852)	150
	289. <i>Triptychus incantatus</i> (Hertlein & Strong, 1939)	150
	290. <i>Turbonilla paucilirata</i> (Carpenter, 1857)	150

	Species	Ref. ¹	
Family Ranellidae	291. <i>Charonia tritonis</i> Linnaeus, 1758	150	
	292. <i>Cymatium amictum</i> (Reeve, 1844)	150	
	293. <i>Cymatium aquatile</i> (Reeve, 1844)	150	
	294. <i>Cymatium</i> cf. <i>keenae</i>	150	
	295. <i>Cymatium macrodon</i> (Valenciennes, 1832)	150	
	296. <i>Cymatium muricinum</i> (Röding, 1798)	150	
	297. <i>Cymatium nicobaricum</i> (Röding, 1798)	150	
	298. <i>Cymatium succincta</i> (Linnaeus, 1771)	150	
	299. <i>Cymatium vestitum</i> (Hinds 1844)	150	
	Family Retusidae	300. <i>Volvulella catharia</i> Dall, 1919	38
Family Rissoellidae	301. <i>Rissoella tumens</i> (Carpenter, 1857)	150, 160	
Family Rissoidae	302. <i>Alvania inconspicua</i> C.B. Adams, 1852	150, 160	
	303. <i>Folinia ericana</i> (Hertlein & Strong, 1951)	150	
	304. <i>Rissoina burragei</i> Bartsch, 1915	150	
	305. <i>Rissoina effusa</i> Mörch, 1860	150	
	306. <i>Rissoina stricta</i> Menke, 1850	150	
	307. <i>Sinezona rimuloides</i> (Carpenter, 1865)	150	
	Family Scissurellidae	308. <i>Siphonaria gigas</i> Sowerby, 1825	60, 150
Family Siphonariidae	309. <i>Williamia</i> cf. <i>peltoides</i>	60, 150, 160	
	Family Skeneidae	310. <i>Parviturbo stearnsii</i> (Dall, 1918)	150
Family Strombidae	311. <i>Lodderena ornata</i> (Olsson & McGinty, 1958)	150	
	312. <i>Strombus granulatus</i> Swainson, 1822	150	
Family Terebridae	313. <i>Terebra armillata</i> Hinds, 1844	150	
	314. <i>Terebra berryi</i> Campbell, 1961	150	
	315. <i>Terebra corintoensis</i> Pilsbry & Lowe, 1932	150	
	316. <i>Terebra crenulata</i> (Linnaeus, 1758)	150	
	317. <i>Terebra elata</i> Hinds, 1844	150, 160	
	318. <i>Terebra glauca</i> Hinds, 1844	150	
	319. <i>Terebra guayaquilensis</i> (E.A. Smith, 1880)	150	
	320. <i>Terebra hancocki</i> Bratcher & Burch, 1970	150	
	321. <i>Terebra maculata</i> (Linnaeus, 1758)	150	
	322. <i>Terebra ornata</i> Gray, 1834	150	
	323. <i>Terebra robusta</i> Hinds, 1844	150	
	324. <i>Terebra strigata</i> Sowerby, 1825	150	
	325. <i>Terebra variegata</i> Gray, 1834	150	
	Family Tergipedidae	326. <i>Phestilla lugubris</i> (Bergh, 1870)	38
	Family Tonnidae	327. <i>Malea ringens</i> (Swainson, 1822)	150
	Family Triphoridae	328. <i>Metaxia brunnicephala</i> (Kay, 1979)	150
329. <i>Metaxia convexa</i> (Carpenter, 1857)		150	
330. <i>Triphora alternata</i> C.B. Adams, 1852		150	
331. <i>Triphora chamberlini</i> Baker, 1926		150	
332. <i>Triphora dalli</i> Bartsch, 1907		150	
333. <i>Triphora oweni</i> Baker, 1926		150	
334. <i>Triphora stephensi</i> Baker & Spicer, 1935		150	
335. <i>Triphora triticea</i> Pease, 1861		150	
336. <i>Viriola samoana</i> Cernohorsky, 1977		150	
Family Triviidae		337. <i>Hesperato oligostata</i> (Dall, 1902)	150
	338. <i>Trivia atomaria</i> Dall, 1902	150	

	Species	Ref. ¹
	339. <i>Trivia pacifica</i> (Sowerby, 1832, ex Gray, MS)	150
	340. <i>Trivia panamensis</i> Dall, 1902	150
Family Trochidae	341. <i>Calliotropis equatorialis</i> (Dall, 1896)	150
	342. <i>Mirachelus galapagensis</i> McLean, 1970	150
	343. <i>Solariella diomedea</i> Dall, 1919	150
Family Truncatellidae	344. <i>Truncatella bairdiana</i> C.B. Adams, 1852	150
Family Turbinellidae	345. <i>Surculina blanda</i> (Dall, 1908)	150
Family Turbinidae	346. <i>Tegula cooksoni</i> (E.A. Smith, 1877)	150
	347. <i>Tegula fasciata</i> (Born, 1778)	150
	348. <i>Tegula gallina</i> (Forbes, 1850)	98
	349. <i>Tegula maculostriata</i> (C.B. Adams, 1845)	98
	350. <i>Tricolia diantha</i> (McLean, 1970) as <i>Eulithidium diantha</i>	150, 160
	351. <i>Tricolia variabilis</i> (Pease, 1861)	150
	352. <i>Turbo saxosus</i> Wood, 1828	150, 160
	353. <i>Turbo squamiger</i> Reeve, 1843	150
Family Turridae	354. <i>Agathotoma alcippe</i> (Dall, 1918)	150
	355. <i>Bellaspira melea</i> Dall, 1919	150
	356. <i>Buchema granulosa</i> (Sowerby, 1834)	150
	357. <i>Clathurella rigida</i> (Hinds, 1843)	150
	358. <i>Crassispira abdera</i> (Dall, 1919)	150
	359. <i>Crassispira cerithoidea</i> (Carpenter, 1857)	150
	360. <i>Crassispira erigone</i> Dall, 1919	150
	361. <i>Crassispira turricula</i> (Sowerby, 1834)	150
	362. <i>Daphnella allemani</i> (Bartsch, 1931)	150
	363. <i>Daphnella mazatlanica</i> Pilsbry & Lowe, 1932	150
	364. <i>Daphnella retusa</i> McLean & Poorman, 1971	150
	365. <i>Glyphostoma neglecta</i> (Hinds, 1843)	150
	366. <i>Glyphostoma scobina</i> McLean & Poorman, 1971	150
	367. <i>Hindsiclava resina</i> (Dall, 1908)	150
	368. <i>Iredalea ella</i> (Pilsbry & Lowe, 1932)	150
	369. <i>Iredalea perfecta</i> (Pilsbry & Lowe, 1932)	150
	370. <i>Ithythyra penelope</i> (Dall, 1919)	150
	371. <i>Kurtziella plumbea</i> (Hinds, 1843)	150
	372. <i>Microdaphne trichodes</i> (Dall, 1919)	150
	373. <i>Microdrillia zeuxippe</i> (Dall, 1919)	150
	374. <i>Mitromorpha filosa</i> (Carpenter, 1865)	150
	375. <i>Nannodiella nana</i> (Dall, 1919)	150
	376. <i>Tenaturris merita</i> (Hinds, 1843)	150
	377. <i>Xanthodaphne agonia</i> (Dall, 1890)	150
	378. <i>Xanthodaphne encella</i> (Dall, 1908)	150
Family Turritellidae	379. <i>Turritella clarionensis</i> (Hertlein & Strong, 1951)	150
	380. <i>Vermicularia cf. frisbeyae</i>	150
	381. <i>Vermicularia pellucida eburnea</i> (Reeve, 1842)	150
Family Vanikoridae	382. <i>Vanikoro acuta</i> Récluz, 1844	150
	383. <i>Vanikoro aperta</i> (Carpenter, 1864)	150
Family Vermetidae	384. <i>Eualetes tulipa</i> (Chenu, 1843, ex Rousseau, MS)	150
	385. <i>Petalococonchus complicatus</i> Dall, 1908	150
	386. <i>Petalococonchus macrophragma</i> (Carpenter, 1856)	150
	387. <i>Vermetus</i> sp.	98

	Species	Ref. ¹
Family Vitrinellidae	388. <i>Cyclostremiscus trigonatus</i> (Carpenter, 1857)	150
	389. <i>Parviturbooides monilifer</i> (Carpenter, 1857)	150
	390. <i>Solariorbis allomphalus</i> Pilsbry & Olsson, 1952	150
	391. <i>Solariorbis regularis</i> (C.B. Adams, 1852)	150
Class BIVALVIA, Order ANOMALODESMATA		
Family Poromyidae	392. <i>Cetomya scapha</i> (Dall, 1902) as <i>Cetoconcha scapha</i>	98
Order ARCOIDA, Family Arcidae	393. <i>Acar gradata</i> (Broderip & Sowerby, 1829)	118
	394. <i>Anadara (Esmerarca) reinharti</i> (Lowe, 1935)	118
	395. <i>Anadara (Grandiarca) grandis</i> (Broderip & Sowerby, 1829)	118
	396. <i>Arca (Arca) mutabilis</i> (Sowerby, 1833)	118
	397. <i>Arca (Arca) pacifica</i> (Sowerby, 1833)	118
	398. <i>Barbatia (Cucullaearca) reeveana</i> (d'Orbigny, 1846)	118
	399. <i>Larkinia multicosata</i> (Sowerby, 1833)	70
Family Glycymerididae	400. <i>Axinactis inaequalis</i> (Sowerby, 1833)	70
	401. <i>Glycymeris (Glycymeris) gigantea</i> (Reeve, 1843)	118
	402. <i>Glycymeris (Glycymeris) lintea</i> Olsson, 1961	118
	403. <i>Glycymeris (Tucetona) strigilata</i> (Sowerby, 1833)	118
Family Noetiidae	404. <i>Arcopsis solida</i> (Sowerby, 1833)	118
Order MYTILOIDA, Family Mytilidae	405. <i>Crenella decussata</i> (Montagu, 1808)	118
	406. <i>Crenella divaricata</i> (Orbigny in Sagra, 1853)	98
	407. <i>Lithophaga (Diberus) plumula</i> (Hanley, 1843)	118
	408. <i>Lithophaga (Labis) attenuata</i> (Deshayes, 1836)	98
	409. <i>Lithophaga (Myoforceps) aristata</i> (Dillwyn, 1817)	118
	410. <i>Lithophaga (Stumpiella) calyculata</i> (Carpenter, 1857)	118
	411. <i>Septifer zeteki</i> Hertlein & Strong, 1946	118
Order PTERIOIDA, Family Isognomonidae	412. <i>Isognomon bicolor</i> (Adams, 1845) as <i>I. chmnitzianum</i>	98
	413. <i>Isognomon (Melina) janus</i> Carpenter, 1857	118,160
	414. <i>Isognomon (Melina) recognitus</i> (Mabille, 1895)	118,160
	415. <i>Isognomon quadrangularis</i> (a)	98
Family Malleidae	416. <i>Malleus (Malvufundus) regulus</i> (Forsskål, 1775)	118
Family Pinnidae	417. <i>Atrina (Servatrina) tuberculosa</i> (Sowerby, 1835)	118
	418. <i>Steptopinna saccata</i> (Linnaeus, 1758)	118
Family Pteriidae	419. <i>Pincatada mazatlanica</i> (Hanley, 1856)	69
	420. <i>Pteria sterna</i> (Gould, 1851)	118
Order LIMOIDA, Family Limidae	421. <i>Lima tetrica</i> Gould, 1851	118
	422. <i>Limaria pacifica</i> (d'Orbigny, 1846)	118
Order OSTREOIDA, Family Anomiidae	423. <i>Anomia (Anomia) peruviana</i> d'Orbigny, 1846	118
Family Gryphaeidae	424. <i>Hyotissa solida</i> (Sowerby, 1871)	118
Family Ostreidae	425. <i>Crassostrea palmula</i> (Carpenter, 1857)	118
	426. <i>Crassostrea prismatica</i> (Gray, 1825)	118
	427. <i>Dendostrea folium</i> (Linnaeus, 1758)	118
Family Pectinidae	428. <i>Argopecten circularis</i> (Sowerby, 1835)	70
	429. <i>Euvola galapagensis</i> (Grau, 1959)	118
	430. <i>Euvola hancocki</i> (Grau, 1959)	89
	431. <i>Envola perulus</i> (Olsson, 1961)	118
	432. <i>Euvola vogdesi</i> (Arnold, 1906)	118
	*433. <i>Leopecten cocosensis</i> Waller, 2007	182

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	434. <i>Leopecten sericeus</i> (Hinds, 1845)	118
	435. <i>Nodipecten subnodosus</i> (Sowerby, 1853)	118
Family Propeamussiidae	436. <i>Cyclopecten cocosensis</i> (Dall, 1908)	118
	437. <i>Cyclopecten exquisitus</i> Grau, 1959	118
Family Spondylidae	438. <i>Spondylus calcifer</i> Carpenter, 1857	118
	439. <i>Spondylus limbatus</i> Sowerby, 1847	118
	440. <i>Spondylus linguaefelis</i> Sowerby, 1847	118
	441. <i>Spondylus violacescens</i> Lamarck, 1819 as <i>S. tenebrosus</i>	69
Order VENEROIDA, Family Cardiidae	442. <i>Papyridea aspersa</i> (Sowerby, 1833)	118
	443. <i>Americardia planicostata</i> (Sowerby, 1833)	118
Family Carditidae	444. <i>Cardites laticostata</i> (Sowerby, 1833)	118
	445. <i>Strophocardia megastropa</i> (Gray, 1825)	118
Family Chamidae	446. <i>Chama squamuligera</i> Pilsbry & Lowe, 1932	118
	447. <i>Pseudochama clarionensis</i> Willett, 1938	118
Family Condylorcardiidae	448. <i>Condylorcardia hippopus</i> (Mörch, 1861)	118
Family Lasaeidae	449. <i>Amerycina colpoica</i> (Dall, 1913)	118
	450. <i>Solecardia eburnea</i> Conrad, 1849	118
Family Lucinidae	451. <i>Codakia distinguenda</i> (Tryon, 1872)	118
	452. <i>Ctena clarionensis</i> Hertlein & Strong, 1946	118
	453. <i>Divalinga eburnea</i> (Reeve, 1850)	118
	454. <i>Divalinga perparvula</i> (Dall, 1901)	118
Family Neoleptonidae	455. <i>Neolepton (Neolepton) subtrigonum</i> (Carpenter, 1857)	118
Family Semelidae	456. <i>Semele (Amphidesma) formosa</i> (Sowerby, 1833)	118
	457. <i>Semele (Amphidesma) purpurascens</i> (Gmelin, 1791)	118
	458. <i>Semele (Elegantula) rupium</i> (Sowerby, 1833)	118
	459. <i>Semele jamesi</i> Coan, 1988	118
Family Tellinidae	460. <i>Tellina (Elliptotellina) pacifica</i> Dall, 1900	118
	461. <i>Tellina (Laciolina) ochracea</i> Carpenter, 1864	118
	462. <i>Tellina (Moerella) coani</i> Keen, 1971	118
	463. <i>Tellina (Tellinella) cumingii</i> Hanley, 1844	118
Family Ungulinidae	464. <i>Diplodonta subquadrata</i> Carpenter, 1856 as <i>D. (Diplodonta) subquadrata</i>	70
Family Veneridae	465. <i>Globivenus isocardia</i> (Verrill, 1870)	118
	466. <i>Pitar (Hyphantosoma) hertleini</i> Olsson, 1961	118
Order MYOIDA, Family Corbulidae	467. <i>Corbula (Caryocorbula) nasuta</i> Sowerby, 1833	118
Family Thraciidae	468. <i>Bushia galapagana</i> (Dall, 1915)	118
Order SEPTIBRANCHIDA, Family Verticordiidae	469. <i>Haliris aequacostata</i> (Howard, 1950)	118
Class CEPHALOPODA, Order OCTOPODA,		
Family Octopodidae	470. <i>Muusoctopus januarii</i> (Hoyle, 1885) as <i>Polypus januarii</i>	102
	471. <i>Octopus pusillus</i> Gould, 1852 as <i>Polypus pusellus</i>	102
Undefined generic placement	472. " <i>Octopus</i> " <i>alecto</i> Berry, 1953	99
Order OEGOPSIDA, Family Argonautidae	473. <i>Argonauta argo</i> Linnaeus, 1758	102
	474. <i>Argonauta cornutus</i> Conrad, 1854	99
	475. <i>Argonauta nouryi</i> Lorois, 1852	99
	476. <i>Argonauta pacifica</i> Dall, 1871	99
Family Cranchiidae	477. <i>Galiteuthis pacifica</i> (Robson, 1948) as <i>Taonidium pacificum</i>	98
	478. <i>Helicocranchia beebei</i> Robson, 1948	98
	479. <i>Liocranchia reinhardti</i> (Steenstrup, 1856)	98

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Family Enoploteuthidae	480. <i>Pterygioteuthis giardi hoylei</i> (Pfeffer, 1912) as <i>Pyroteuthis giardi</i>	98
Family Octopoteuthidae	481. <i>Octopoteuthis neilseni</i> Robson, 1948	98
Family Ommastrephidae	482. <i>Abrialopsis hoylei</i> (Pfeffer, 1884)	98
	483. <i>Dosidicus gigas</i> (Orbigny, 1835)	99
	484. <i>Ommastrephes bartrami</i> (LeSueur, 1821)	99
	485. <i>Sthenoteuthis oualaniensis</i> (Lesson, 1830)	99
Family Onychoteuthidae	486. <i>Onychoteuthis banksi</i> (Leach, 1817)	99
	487. <i>Onykia</i> sp.	98
Family Thysanoteuthidae	488. <i>Thysanoteuthis rhombus</i> Troschel, 1857	99
Order TEUTHIDA, Family Loliginidae	489. <i>Lolliguncula (Loliolopsis) diomedea</i> (Hoyle, 1904)	99
Order VAMPYROMORPHA, Family Vampyroteuthidae	490. <i>Vampyroteuthis infernalis</i> Chun, 1903 as <i>Melanoteuthis beebii</i>	98
Phylum SIPUNCULA, Class PHASCOLOSOMATIDEA		
Order ASPIDOSIPHONIFORMES,		
Family Aspidosiphonidae	1. <i>Aspidosiphon elegans</i> Chimisso & Eysenhardt, 1821	65
	2. <i>Aspidosiphon gracilis schnehageni</i> (W. Fischer, 1913)	65
	3. <i>Aspidosiphon misakiensis</i> Ikeda, 1904	65
	4. <i>Aspidosiphon (Paraspidosiphon) laevis</i> de Quatrefages 1865	65
	5. <i>Aspidosiphon (Paraspidosiphon) fischeri</i> ten Broeke, 1925	65
Class PHASCOLOSOMATIDEA, Order PHASCOLOSOMATIFORMES, Family Phascolosomatidae		
	6. <i>Antillesoma antillarum</i> (Grube & Oersted 1858)	65
	7. <i>Phascolosoma agassizii</i> Keferstein, 1866	65
	8. <i>Phascolosoma nigrescens</i> (Keferstein, 1865)	65
	9. <i>Phascolosoma scolops</i> Selenka and de Man, 1883	65
	10. <i>Phascolosoma</i> sp.	65
Class SIPUNCULIDEA, Order SIPUNCULIFORMES, Family Sipunculidae		
	11. <i>Sipunculus norvegicus</i> Danielsen 1869	65
Phylum ECHIURIDA, CLASS ECHIUROIDEA		
Order ECHIURIDA, Family Echiuridae		
Phylum ANNELIDA, Class POLYCHAETA,		
Subclass ACICULATA, Order AMPHINOMIDA,		
Suborder Aphroditiformia, Family Amphinomidae		
	1. <i>Chloeia entypa</i> Chamberlin, 1919	63, 67
	2. <i>Chloeia</i> cf. <i>pinnata</i> Moore, 1911	67
	3. <i>Chloeia viridis</i> Schmarda, 1861	63, 67
	4. <i>Eurythoe complanata</i> (Pallas, 1776)	63, 67
	5. <i>Linopherus canariensis</i> Langerhans, 1881	67
	6. <i>Notopygos crinita</i> Grube, 1855	63
	7. <i>Notopygos ornata</i> Grube, 1856	67, 160
	8. <i>Pareurythoe paupera</i> (Grube, 1856)	67
	9. <i>Pareurythoe spirocirrata</i> (Essenberg, 1917)	67
Family Chrysopetalidae	10. <i>Chrysopetalum occidentale</i> Johnson, 1897	67
Family Pisionidae	11. <i>Pisione</i> cf. <i>galapagoensis</i> Westheide, 1974	67
Subclass ACICULATA, Order EUNICIDA,		
Family Dorvilleidae	12. <i>Dorvillea (Dorvillea) cerasina</i> (Ehlers, 1901)	67, 160
Family Eunicidae	13. <i>Eunice aphroditois</i> (Pallas, 1788)	67
	14. <i>Eunice biannulata</i> Moore, 1904	67

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	15. <i>Eunice mutilata</i> Webster, 1884	67
	16. <i>Lysidice</i> sp.	67
	17. <i>Nematonereis unicornis</i> (Grube, 1840)	67, 160
	18. <i>Palola</i> cf. <i>siciliensis</i> (Grube, 1840)	67
Family Lumbrineridae	19. <i>Lumbrineris annulata</i> Hartmann-Schröder, 1960	67
	20. <i>Scoletoma tetraura</i> (Schmarda, 1861)	67
Family Oenonidae	21. <i>Arabella</i> (<i>Arabella</i>) <i>protomutans</i> Orensanz, 1990	67
	22. <i>Drilonereis longa</i> Webster, 1879	67
	23. <i>Oenone fulgida</i> (Savigny in Lamarck, 1818)	67
Family Onuphidae	24. <i>Mooreonuphis elsiae</i> de León-González, 1994	67
Subclass ACICULATA , Order PHYLLODOCIDA, Suborder Aphroditiformis, Family Acoetidae	25. <i>Polyodontes panamensis</i> Chamberlin, 1919	67
Family Polynoidae	26. <i>Harmothoe imbricata</i> (Linnaeus, 1767)	67
	27. <i>Harmothoe</i> sp.	67, 160
	28. <i>Iphione ovata</i> Kinberg, 1855	64, 67, 160
	29. <i>Lepidasthenia gigas</i> (Johnson, 1897)	67
	30. <i>Lepidasthenia ornata</i> Treadwell, 1937	67
	31. <i>Lepidasthenia picta</i> Treadwell, 1928	67
	32. <i>Lepidonotus furcillatus</i> (Ehlers, 1901)	98
	33. <i>Subadyte</i> cf. <i>mexicana</i> Fauchald, 1972	67
Family Sigalionidae	34. <i>Psammolyce spinosa</i> Hartman, 1939	63
	35. <i>Sigalion lewisii</i> Berkely & Berkely, 1939	63, 67
	36. <i>Sigalion spinosus</i> (Hartman, 1939) as <i>Eusigalion spinosus</i>	92
	37. <i>Sihenelais fusca</i> Johnson, 1897	98
Subclass ACICULATA, Order Phyllodocida, Suborder Nereidiformia, Family Hesioniidae	38. <i>Hesione</i> cf. <i>intertexta</i> Grube, 1878	67, 160
	39. <i>Microphthalmus indefatigatus</i> Westheide, 1974	67
	40. <i>Podarkeopsis brevipalpa</i> Hartmann-Schröder, 1959	67
	41. <i>Psamathe ancuda</i> (Wesenberg-Lund, 1962)	67
Family Nereididae	42. <i>Ceratonereis singularis</i> Treadwell, 1929	67, 160
	43. <i>Laeonereis brunnea</i> Hartmann-Schröder, 1959	67
	44. <i>Neanthes acuminata</i> Ehlers, 1868	67
	45. <i>Neanthes</i> cf. <i>roosevelti</i> Hartman, 1939	67
	46. <i>Neanthes succinea</i> (Frey & Leuckart, 1847)	67
	47. <i>Nereis eugeniae</i> (Kinberg, 1866)	67
	48. <i>Nereis oligohalina</i> (Rioja, 1946)	67
	49. <i>Nereis panamensis</i> Fauchald, 1977	67
	50. <i>Perinereis helleri</i> (Grube, 1878)	63, 103
Family Pilargidae	51. <i>Synelmis gorgonensis</i> (Monro, 1933)	67
Family Syllidae	52. <i>Branchiosyllis exilis</i> (Gravier, 1900)	67
	53. <i>Branchiosyllis</i> sp. Grube, 1857	67
	54. <i>Eusyllis lamelligera</i> Marion & Bobretzky, 1875	67
	55. <i>Exogone</i> (<i>Exogone</i>) <i>breviantennata</i> Hartmann-Schröder, 1959	67, 160
	56. <i>Myrianida multidenticulata</i> (Westheide, 1974)	67
	57. <i>Odontosyllis fulgurans dolerus</i> Westheide, 1974	67, 160
	58. <i>Opisthodontia mitchelli</i> Kudenov & Harris, 1995	67
	59. <i>Opisthodontia</i> sp.	67

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	60. <i>Opisthosyllis brunnea</i> Langerhans, 1879	67
	61. <i>Paraehlersia articulata</i> (Kudenov & Harris 1995)	67, 160
	62. <i>Syllis bella</i> Chamberlin, 1919	67
	63. <i>Syllis beneliahuae</i> (Campoy & Alquezar, 1982)	67
	64. <i>Syllis garciai</i> (Campoy, 1982)	67
	65. <i>Syllis gracilis</i> Grube, 1840	67
	66. <i>Syllis</i> cf. <i>hyalina</i> Grube, 1863	67
	67. <i>Syllis magna</i> (Westheide, 1974)	67
	68. <i>Syllis valida</i> (Grube, 1857)	67, 160
	69. <i>Syllis variegata</i> (Grube, 1860) as <i>S. variagata</i>	67
	70. <i>Trypanosyllis taeniaeformis</i> (Haswell, 1886)	67, 160
	71. <i>Westheidesyllis heterocirrata</i> (Hartmann-Schröder, 1959)	67, 160
Subclass ACICULATA , Order Phyllodocida,		
Family Alciopidae	72. <i>Alciopina parasitica</i> Claparède & Panceri, 1867	106
Family Glyceridae	73. <i>Glycera brevicirris</i> Grube, 1870	67
	74. <i>Hemipodia pustatula</i> (Friedrich, 1956)	67, 160
Family Lopadorrhynchidae	75. <i>Pelagobia longicirrata</i> Gravier, 1911	106
Family Phyllodocidae	76. <i>Nereiphylla castanea</i> (Marzeneller, 1879)	67, 160
	77. <i>Phyllodoce madeirensis</i> Langerhans, 1880	67, 160
	78. <i>Phyllodoce medipapillata</i> Moore, 1909	67
	79. <i>Sige</i> cf. <i>bifoliata</i> (Moore, 1909)	67, 160
Family Polynoidea	80. <i>Drieschia pellucida</i> Moore, 1903	106
Family Tomopteridae	81. <i>Tomopteris nationalis</i> Apstein, 1900	106
	82. <i>Tomopteris nisseni</i> Rosa, 1908	63
Family Typhloscolecidae	83. <i>Travisopsis dubia</i> Stop-Bowitz, 1948	106
	84. <i>Typhloscolex muelleri</i> Busch, 1851	106
Subclass CANALIPALPATA , Order Sabellida,		
Family Sabellariidae	85. <i>Gesaia</i> sp.	67
Family Sabellidae	86. <i>Bispira melanostigma</i> Schmarda, 1861	67
	87. <i>Branchiomma costaricensis</i> Tovar-Hernández & Dean, 2010	67, 160, 170
	88. <i>Megalomma pacifica</i> Johansson, 1927	67
Family Serpulidae	89. <i>Vermiliopsis multiannulata</i> (Moore, 1923)	67, 160
Subclass CANALIPALPATA , Order SPIONIDA,		
Family Chaetopteridae	90. <i>Chaetopterus aduncus</i> Nishi, Hickman & Bailey-Brock, 2009	67
	91. <i>Chaetopterus</i> cf. <i>galapagensis</i> Nishi, Hickman & Bailey-Brock, 2009	67
	92. <i>Chaetopterus</i> sp.	8
	93. <i>Mesochaetopterus alipes</i> Monro, 1933	67
	94. <i>Mesochaetopterus ecuadorica</i> (Nishi, 2009)	67
	95. <i>Spiochaetopterus costarum</i> (Claparède, 1870)	67
Family Magelonidae	96. <i>Magelona californica</i> Hartman, 1944	67, 160
Family Spionidae	97. <i>Aonides</i> cf. <i>glandulosa</i> Blake, 1996	67
	98. <i>Aonides paucibranchiata</i> Southern, 1914	67
	99. <i>Laonice cirrata</i> (Sars, 1851)	67
	100. <i>Microspio microcera</i> (Dorsey, 1977)	67
	101. <i>Prionospio</i> (<i>Prionospio</i>) sp.	67
	102. <i>Rhynchospio glutaea</i> (Ehlers, 1897)	67

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	103. <i>Scolecopsis (Scolecopsis) squamata</i> (Müller, 1806)	67
	104. <i>Spiophanes berkeleyorum</i> Pettibone, 1962	67
Subclass CANALIPALPATA , Order Terebellida, Suborder Cirratuliformia, Family Acrociiridae	105. <i>Acrocirrus heterochaetus</i> Annenkova, 1934	67
Family Cirratulidae	106. <i>Dodecaceria</i> sp.	67
Family Flabelligeridae	107. <i>Pherusa inflata</i> (Treadwell, 1914)	67
	108. <i>Pherusa papillata</i> (Johnson, 1901)	67
Subclass CANALIPALPATA , Order Terebellida, Suborder Terebellomorpha, Family Ampharetidae	109. Unidentified species	67
Family Terebellidae	110. <i>Lanice conchilega</i> (Pallas, 1766)	67
	111. <i>Polycirrus mexicanus</i> Rioja, 1947	67
	112. <i>Polycirrus</i> sp.	67
Family Trichobranchidae	113. <i>Trichobranchus hancocki</i> (Hartman, 1955)	67
Subclass SCOLECIDA (no assigned Order), Family Capitellidae	114. <i>Notodasus kristiani</i> García-Garaz, Hernández-Valdez & de León-González, 2009	67
	115. <i>Notomastus lineatus</i> Claparède, 1870	67, 160
Family Opheliidae	116. <i>Armandia brevis</i> (Moore, 1906)	67
Family Orbiniidae	117. <i>Naineris chilensis</i> (Hartmann-Schröder, 1965)	67
	118. <i>Naineris setosa</i> (Verrill, 1900)	67
Family Paraonidae	119. <i>Aricidea (Aricidea) rosea</i> Reish, 1968 as <i>A. (Acesta) rosea</i>	67
Polychaeta incertae sedis, Family Protodrilidae	120. <i>Protodrilus infundibuliformis</i> Schmidt & Westheide, 1977	67
Phylum ARTHROPODA, Subphylum CRUSTACEA Class MALACOSTRACA , Order STOMATOPODA		
Family Coronidae	1. <i>Coronida schmitti</i> Manning, 1976	176
	2. <i>Neocoronida cocosiana</i> (Manning, 1972)	176
Family Gonodactylidae	3. <i>Neogonodactylus zacae</i> (Manning, 1972)	160, 176
Family Pseudosquillidae	4. <i>Pseudosquillisma adiaσταta</i> Manning, 1964	176
Family Squillidae	5. <i>Crenatosquilla oculinova</i> (Glassell, 1942)	176
Family Tetrasquillidae	6. <i>Tetrasquilla mccullochae</i> (Schmitt, 1940)	177
Order EUPHAUSIACEA, Family Euphausiidae	7. Several unidentified species	130
Order DECAPODA, Family Aethridae	8. <i>Aethra scutata</i> Smith, 1869	177
Family Albuneidae	9. <i>Albunea lucacia</i> (de Saussure, 1853)	177
Family Alpheidae	10. <i>Alpheus bellimanus</i> Lockington, 1877	177, 178
	11. <i>Alpheus canalis</i> Kim & Abele, 1988	177, 178
	12. <i>Alpheus galapagensis</i> Sivertsen, 1933	177, 178
	13. <i>Alpheus grahami</i> Abele, 1975	177, 178
	14. <i>Alpheus hebes</i> Kim & Abele, 1988	177, 178
	15. <i>Alpheus longiquus</i> Kim & Abele, 1988	177, 178
	16. <i>Alpheus lottini</i> Guérin-Méneville, 1829	177, 178
	17. <i>Alpheus pacificus</i> Dana, 1852	177, 178
	18. <i>Alpheus saxidomus</i> Holthuis, 1980	177, 178
	19. <i>Alpheus villus</i> Kim & Abele, 1988	177, 178
	20. <i>Automate dolichognatha</i> Dellan, 1888	177, 178
	21. <i>Synalpheus</i> sp.	177, 178
Family Atyidae	22. <i>Archaeatya chacei</i> Villalobos, 1959	177
Family Benthesicymidae	23. <i>Benthesicymus tanneri</i> Faxon, 1893	177

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Family Calappidae	24. <i>Calappa convexa</i> Saussure, 1853	177, 178
	25. <i>Calappa saussurei</i> Rathbun, 1898	177, 178
	26. <i>Cryptosoma bairdii</i> Rathbun, 1898	177, 178
	27. <i>Osachila kaiserae</i> Zimmerman & Martin, 1999	177, 178
Family Coenobitidae	28. <i>Coenobita compressus</i> Milne Edwards, 1837	177
Family Crangonidae	29. <i>Pontophilus gracilis occidentales</i> Faxon, 1893	177
Family Daldorfiidae	30. <i>Daldorfia garthi</i> Glassell, 1940	177
Family Diogenidae	*31. <i>Allodardanus rugosus</i> Haig & Provenzano, 1965	177, 178
	32. <i>Calcinus explorator</i> Boone, 1930	177, 178
	*33. <i>Cancellus tanneri</i> Faxon, 1893	177, 178
	34. <i>Dardanus sinistripes</i> (Stimpson, 1859)	177, 178
	*35. <i>Paguristes fecundus</i> Faxon, 1893	177, 178
Family Dorippidae	36. <i>Ethusa lata</i> Rathbun, 1893	177, 178
	37. <i>Ethusina smithiana</i> Faxon, 1893	177, 178
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Family Gecarcinidae	40. <i>Cardisoma crassum</i> Smith, 1870	85
	*41. <i>Johngarthia cocoensis</i> Perger, Vargas & Wall, 2011	136
Family Grapsidae	42. <i>Armases angustum</i> (Smith, 1870)	177, 178
	43. <i>Geograpsus lividus</i> (Milne Edwards, 1837)	177, 178
	44. <i>Grapsus grapsus</i> (Linnaeus, 1758)	177, 178
	45. <i>Pachygrapsus transversus</i> (Gibbes, 1850)	177, 178
	46. <i>Plagusia immaculata</i> Lamarck, 1818	177, 178
	47. <i>Hippa pacifica</i> (Dana, 1852)	178
Family Hippidae	48. <i>Lyasmata galapagensis</i> Schmitt, 1924	177, 178
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	50. <i>Thor cocoensis</i> Wicksten & Vargas, 2001	177, 178
	51. <i>Ebalia clarionensis</i> Rathbun, 1935	178
Family Leucosiidae	52. <i>Neolithodes diomedea</i> (Benedict, 1894)	177, 178
Family Lithodidae	53. <i>Ericerodes longipes</i> Faxon, 1893 as <i>P. longipes</i>	177, 178
Family Majidae	54. <i>Euprognatha bifida</i> Rathbun, 1893	177, 178
	55. <i>Euprognatha granulata</i> Faxon, 1893	177, 178
	56. <i>Herbstia tumida</i> (Stimpson, 1871)	160, 177, 178
	57. <i>Lissa tuberosa</i> Rathbun, 1898	177, 178
	58. <i>Microphrys branchialis</i> Rathbun, 1892	177, 178
	59. <i>Mithrax denticulatus</i> Bell, 1835	177, 178
	60. <i>Mithrax spinipes</i> (Bell, 1835)	177, 178
	61. <i>Ericerodes hemphilli</i> (Lockington, 1877) as <i>Podochela hemphilli</i>	177, 178
	62. <i>Sphenocarcinus agassizi</i> Rathbun, 1893	177, 178
	63. <i>Stenocionops ovata</i> (Bell, 1835)	177, 178
	64. <i>Stenorhynchus debilis</i> (Smith, 1871)	177, 178
65. <i>Teleophrys cristulipes</i> Stimpson, 1860	160, 177, 178	
Family Munididae	66. <i>Munida perlata</i> Benedict, 1902	177, 178
	67. <i>Munida refulgens</i> Faxon, 1893	177, 178

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	69. <i>Munidopsis ciliata</i> Wood-Mason, 1891	177,178
	70. <i>Munidopsis diomedea</i> (Faxon, 1893)	177,178
	71. <i>Munidopsis nitida</i> (A. Milne Edwards, 1880)	177,178
	72. <i>Munidopsis vicina</i> Faxon, 1893	177,178
Family Nematocarcinidae	73. <i>Nematocarcinus agassizzi</i> Faxon 1893	177
	74. <i>Nematocarcinus ensifer</i> (Smith, 1882)	177
Family Ocypodidae	75. <i>Ocypode gaudichaudii</i> Milne Edwards & Lucas, 1843	177, 178
	76. <i>Uca brevifrons</i> (Stimpson, 1860)	177, 178
	77. <i>Uca panamensis</i> (Stimpson, 1859)	177, 178
	78. <i>Uca zaca</i> Crane, 1941	53
Family Oplophoridae	79. <i>Meningodora mollis</i> Smith, 1882	178
Family Paguridae	80. <i>Catapagurus diomedea</i> Faxon, 1893	177, 178
	*81. <i>Enallopaguropsis janetae</i> McLaughlin, 1982	177, 178
	82. <i>Iridopagurus occidentalis</i> Faxon, 1893	177, 178
	83. <i>Manucomplanus longimanus</i> (Faxon, 1893)	177, 178
	84. <i>Pagurus virgulatus</i> Haig & Harvey, 1991	177, 178
	85. <i>Phimochirus californiensis</i> (Benedict, 1892)	177, 178
	86. <i>Rhodochirus hirtimanus</i> (Faxon, 1893)	177, 178
	87. <i>Brachycarpus biunguiculatus</i> (Lucas, 1849)	177, 178
	88. <i>Harpiliopsis depressa</i> (Stimpson, 1860)	177, 178
	89. <i>Macrobrachium americanum</i> Bate, 1868	177, 178
	*90. <i>Macrobrachium cocoensis</i> Abele & Kim, 1984	1, 177
	91. <i>Macrobrachium hancocki</i> Holthuis, 1952	177, 178
	92. <i>Palaemon ritteri</i> Holmes, 1895	177, 178
	93. <i>Palicus fragilis</i> Rathbun, 1893	177
	Family Palinuridae	94. <i>Panulirus gracilis</i> Streets, 1871
95. <i>Panulirus penicillatus</i> Olivier, 1791		177, 178
Family Pandalidae	96. <i>Heterocarpus hostilis</i> Faxon 1893	178
Family Parapaguridae	97. <i>Probebebe mirabilis</i> Boone, 1926	178
Family Parthenopidae	98. <i>Celatopesia hassleri</i> (Rathbun, 1925)	177, 178
	99. <i>Parthenope exilipes</i> (Rathbun, 1893)	177, 178
	100. <i>Solenolambrus arcuatus</i> Stimpson, 1871	177, 178
	101. <i>Thyrolambrus verrucibrachium</i> Zimmerman & Martin, 1999	177, 178
	102. <i>Thyrolambrus glasselli</i> Garth, 1958	177, 178
Family Penaeidae	103. <i>Pelagopenaeus balboae</i> (Faxon, 1893)	177, 178
	104. <i>Hymenopenaeus doris</i> (Faxon, 1893)	177, 178
	105. <i>Hymenopenaeus nereus</i> (Faxon, 1893)	177, 178
Family Pinnotheridae	*106. <i>Parapinnixa cortesi</i> Thoma, Heard & Vargas, 2005	169, 177
	107. <i>Tetrias scabripes</i> Rathbun, 1918	177
Family Polychelidae	108. <i>Stereomastis nana</i> (Smith, 1884)	178
Family Porcellanidae	109. <i>Pachycheles biocellatus</i> (Lockington, 1878)	177, 178
	110. <i>Pachycheles velerae</i> Haig, 1960	177, 178
	*111. <i>Petrolisthes cocoensis</i> Haig, 1960	88, 177, 178
	112. <i>Petrolisthes edwardsii</i> (de Saussure, 1853)	177, 178
	113. <i>Petrolisthes glasselli</i> Haig, 1957	177, 178
	114. <i>Petrolisthes haigae</i> Chace, 1962	177, 178
	115. <i>Petrolisthes ortmanni</i> Nobili, 1901	177, 178

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	116. <i>Petrolisthes tonsorius</i> Haig, 1960	177, 178
	117. <i>Porcellana cancrisocialis</i> Glassell, 1936	177, 178
	118. <i>Porcellana paguriconviva</i> Glassell, 1936	177, 178
Family Portunidae	119. <i>Arenaeus mexicanus</i> (Gerstaecker, 1856)	177, 178
	120. <i>Callinectes arcuatus</i> Ordway, 1863	177, 178
	121. <i>Euphyllax dovii</i> Stimpson, 1860	177, 178
	122. <i>Portunus brevimanus</i> (Faxon, 1895)	177, 178
	123. <i>Portunus xantussi affinis</i> (Faxon, 1893)	177, 178
Family Processidae	124. <i>Processa peruviana</i> Wicksten, 1983	178
Family Raninidae	125. <i>Ranilia fornicata</i> Faxon, 1893	178
Family Sicyoniidae	126. <i>Sicyonia affinis</i> Faxon, 1893	177, 178
	127. <i>Sicyonia disedwardsi</i> (Burkenroad, 1934)	177, 178
Family Solenoceridae	128. <i>Hymenopenaeus doris</i> (Faxon, 1893)	177
	129. <i>Hymenopenaeus nereus</i> (Faxon, 1893)	177
Family Upogebiidae	*130. <i>Pomatogebia cocosia</i> (Williams, 1986)	178, 184
Family Xanthidae	131. <i>Cycloxanthops vittatus</i> (Stimpson, 1860)	177, 178
	132. <i>Domencia hispida</i> Eydoux & Souleyet, 1842	177, 178
	133. <i>Eriphia squamata</i> Stimpson, 1859	177, 178
	134. <i>Liomera cinctimana</i> (White, 1847)	177, 178
	135. <i>Lophoxanthus lamellipes</i> (Stimpson, 1860)	177, 178
	136. <i>Microcassiope xantusii</i> (Stimpson, 1871)	177, 178
	137. <i>Nanocassiope polita</i> (Rathbun, 1893)	177, 178
	138. <i>Ozius perlatus</i> Stimpson, 1860	177, 178
	139. <i>Paractaea sulcata</i> (Stimpson, 1860)	160, 177, 178
	140. <i>Pilumnus gonzalensis</i> Rathbun, 1893	177, 178
	141. <i>Platyactaea dovii</i> (Stimpson, 1871)	177, 178
	142. <i>Quadrella nitida</i> Smith, 1869	177, 178
	143. <i>Trapezia digitalis</i> Latreille, 1828	177, 178
	144. <i>Trapezia ferruginea</i> Latreille, 1828	177, 178
	145. <i>Xanthodius sternberghii</i> Stimpson, 1859	177, 178
	146. <i>Xanthodius stimpsoni</i> (Milne Edwards, 1879)	177, 178
Order ISOPODA, Family Argidae	147. <i>Aega plebia</i> Hansen, 1897	26
Family Cirolanidae	148. <i>Eurydice caudata</i> Richardson, 1899	25, 26
Family Cymothoidae	149. <i>Nerocila excisa</i> (Richardson, 1901)	26
Order MYSIDA, Family Mysidae	150. Several unidentified species	130
Order TANAIACEA, Family Leptocheiliidae	151. ?<i>Anatanais</i>	96
Order AMPHIPODA, Family Aoridae	152. <i>Lembos schire</i> Barnard, 1979	11
Family Brachyscelidae	153. <i>Brachyscelus crusculum</i> Bate, 1861	87
Family Isaeidae	*154. <i>Gammaropsis dubia</i> (Shoemaker, 1942)	79
Family Lestrigonidae	155. <i>Hyperietta vosseleri</i> (Stebbing, 1904)	87
	156. <i>Hyperioides sibaginis</i> (Stebbing, 1888)	87
	157. <i>Lestrigonus bengalensis</i> Giles, 1887	87
	158. <i>Lestrigonus latissimus</i> (Bovallius, 1889)	87
	159. <i>Lestrigonus macrophthalmus</i> (Vosseler, 1901)	87
	160. <i>Lestrigonus schizogeneios</i> (Stebbing, 1888)	87
	161. <i>Lestrigonus shoemakeri</i> Bowman, 1973	87
	162. <i>Phronimopsis spinifera</i> Claus, 1879	87
Family Lycaeidae	163. <i>Simorhynchotus antennarius</i> (Claus, 1871)	87

	Species	Ref. ¹
Family Lycaeopsidae	164. <i>Lycaeopsis themistoides</i> Claus, 1879	87
	165. <i>Lycaeopsis zamboangae</i> (Stebbing, 1888)	87
Family Oxycephalidae	166. <i>Oxycephalus clausi</i> Bovallius, 1887	87
Family Paraphronimidae	167. <i>Paraphronima gracilis</i> Claus, 1879	87
Family Parascelidae	168. <i>Parascelus edwardsi</i> Claus, 1879	87
Family Phronimidae	169. <i>Phronima bowmani</i> Shih, 1991	87
Family Phrosinidae	170. <i>Phrosina semilunata</i> Risso, 1822	87
	171. <i>Primno brevidens</i> Bowman, 1978	87
Family Platyscelidae	172. <i>Amphithyrus sculpturatus</i> Claus, 1879	87
	173. <i>Tetrathyrus forcipatus</i> Claus, 1879	87
Family Pronoidae	174. <i>Eupronoe armata</i> Claus, 1879	87
Family Talitridae	*175. <i>Talorchestia fritzi</i> Stebbing, 1903	79
Family Vibiliidae	176. <i>Vibilia chuni</i> Behning & Woltereck, 1912	87
Class CIRRIPIEDIA , Order LEPADOMORPHA		
Family Lepadidae	177. <i>Conchoderma virgata</i> (Spengler, 1790)	173
	178. <i>Lepas anatifera</i> Linnaeus, 1758	173
	179. <i>Lepas anserifera</i> Linnaeus, 1767	173
Order BALANOMORPHA, Family Balanidae	180. <i>Arossia panamensis</i> (Rogers, 1948)	173
	181. <i>Megabalanus galapaganus</i> Pilsbry, 1916	173
	182. <i>Megabalanus peninsularis</i> (Pilsbry, 1916)	173
Family Chthamalidae	183. <i>Chthamalus</i> cf. <i>anisopoma</i>	173
Family Coronulidae	184. <i>Chelonibia testudinaria</i> (Linnaeus, 1757)	173
	185. <i>Coronula diadema</i> Darwin, 1854	173
	186. <i>Coronula reginae</i> Darwin, 1854	173
	187. <i>Stomatolepas elegans</i> (Costa, 1838)	173
	188. <i>Xenobalanus globicipitis</i> Steenstrup, 1851	173
Family Tetracitidae	189. <i>Tetracitla milleporosa</i> Pilsbry, 1916	173
	190. <i>Tetracitla stalactifera</i> (Lamarck, 1818)	173
Order CALANOIDA, Family Calanidae	191-196. Six species	130
Family Calocalanidae	197. One species	130
Family Centropagidae	198-201. Four species	130
Family Clausocalanidae	202. <i>Clausocalanus furcatus</i> (Brady, 1883)	130
Family Eucalanidae	203. <i>Rhincalanus nasutus</i> Giesbrecht, 1888	130
	204. <i>Subeucalanus subtenuis</i> (Giesbrecht, 1888)	130
	205, 206. Plus two more species	130
Family Euchaetidae	207. <i>Euchaeta rimana</i> Bradford, 1974	130
Family Mecynoceridae	208. One species	130
Family Metridinidae	209. One species	130
Family Paracalanidae	210. <i>Acrocalanus gracilis</i> Giesbrecht, 1888	130
	211. <i>Paracalanus aculeatus</i> Giesbrecht, 1888	130
	212, 213. Plus two more species	130
Family Phaennidae	214. One species	130
Family Pontellidae	215. <i>Labidocera detruncata</i> (Dana, 1849)	130
	216-218. Plus three more species	130
Family Scolecithricidae	219. <i>Scolecithrix danae</i> Lubbock, 1856	130
Class MAXILLOPODA , Subclass COPEPODA,		
Order Monstrilloida, Family Monstrillidae	*220. <i>Cymbasoma cocoense</i> Suárez-Morales & Morales-Ramírez, 2009	167
	*221. <i>Monstrillopsis chathamensis</i> Suárez-Morales & Morales-Ramírez, 2009	167

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Order Poecilostomatoida, Family Corycaeidae	222-231. Ten species	130
Family Oncaeidae	232. <i>Oncaea mediterranea</i> (Claus, 1883)	130
Family Sapphirinidae	233-242. Ten species	130
Order Siphonostomatoida, Family Caligidae	243. <i>Lepeophtheirus</i> sp. (see note (b) below)	165
Other copepods	244-260. Seventeen more species in 5 families	130
Class BRANCHIOPODA, Order CLADOCERA		
Family Podonidae	261. <i>Evadne</i> sp.	130
Class OSTRACODA, Order MYODOCOPIDA		
Family Cypridinidae	262. <i>Cypridina americana</i> (Muller, 1880)	130
Family Halocyprididae	263. <i>Euchoncoecia</i> sp.	130
Subphylum CHELICERATA, Class PYCNOGONIDA		
Order PANTOPODA, Family Ammotheidae	264. <i>Ammothella symbius</i> Child, 1979	9
	265. <i>Tanystylum isthmiacum</i> Stock, 1955	9
Subphylum HEXAPODA, Class INSECTA		
Order HEMIPTERA, Family Gerridae	266. <i>Halobates sobrinus</i> White, 1883	162
Phylum CHAETOGNATHA, Class SAGITTOIDEA,		
Order APHARAGMOPHORA, Family Krohnittidae	1. <i>Krohnitta pacifica</i> (Aida, 1897)	41
Family Pterosagittidae	2. <i>Pterosagitta draco</i> (Krohn, 1853)	41
Family Sagittidae	3. <i>Aidosagitta neglecta</i> (Aida, 1897)	41
	4. <i>Ferosagitta robusta</i> (Doncaster, 1902)	41
	5. <i>Flaccisagitta enflata</i> (Grassi, 1881)	41, 130
	6. <i>Serratosagitta pacifica</i> (Tokioaka, 1940)	41, 130
	7. <i>Zonosagitta bedoti</i> (Beraneck, 1895)	41
	8. <i>Zonosagitta pulchra</i> (Doncaster, 1902)	41
Phylum BRYOZOA, Class STENOLAEMATA		
Order CYCLOSTOMATA, Family Oncousoeciidae	1. <i>Proboscina major</i> (Johnston, 1847)	135
Class GYMNO LAEMATA, Order CHEILOSTOMATA		
Family Adeonidae	2. <i>Reptadeonella violacea</i> (Johnston, 1847) as <i>Adeona violacea</i>	51, 134
Family Bryocryptellidae	3. <i>Porella patens</i> Osburn, 1952	51, 134
Family Buffonellodidae	4. <i>Aimulosia uvulifera</i> (Osburn, 1914)	51, 134, 160
Family Bugulidae	5. <i>Bugula minima</i> (Waters, 1909)	51, 133
Family Calloporidae	6. <i>Aplousina filum</i> (Jullien & Calvet, 1903)	51, 133
	7. <i>Retevirgula areolata</i> (Canu & Bassler, 1923)	98
	8. <i>Copidozoum tenuirostre</i> (Hincks, 1880)	98
	9. <i>Parellisina curvirostris</i> (Hincks, 1862)	98
Family Candidae	10. <i>Scrupocellaria bertholetii tenuirostris</i> Osburn, 1950	133
Family Cellariidae	11. <i>Cellaria veleronis</i> Osburn, 1950	98
Family Celleporidae	12. <i>Lagenipora marginata</i> (Canu & Bassler, 1930)	51, 134
Family Chaperiidae	13. <i>Chaperiopsis condylata</i> (Canu & Bassler, 1930) as <i>Chaperiella condylata</i>	98
Family Cleidochasmatidae	14. <i>Cleidochasma contracta</i> (Waters, 1899)	98
Family Crepidacanthidae	15. <i>Crepidacantha poissoni</i> (Audouin, 1826)	98
	16. <i>Crepidacantha setigera</i> (Smitt, 1873)	51, 134
Family Cribrilinidae	17. <i>Colletosia radiata</i> Moll, 1803)	98
Family Cupuladriidae	18. <i>Discoporella umbellata</i> (Defrance, 1823)	98, 160
Family Exechonellidae	19. <i>Tripurula manica</i> (Canu & Bassler, 1930) as <i>Enantiosula manica</i>	51, 134

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Family Hippothoidae	20. <i>Trypostega venusta</i> (Norman, 1864)	51, 134
Family Lacernidae	21. <i>Arthropoma cecili</i> (Audouin, 1826)	51, 134
	22. <i>Rogicka biserialis</i> (Hincks, 1885) as <i>Dakaria biserialis</i>	134
Family Lepraliellidae	23. <i>Celleporaria brunnea</i> (Hincks, 1884) as <i>Holoporella brunnea</i>	98
Family Mamilloporidae	24. <i>Mamillopora cupula</i> Smitt, 1873	51, 134
Family Microporellidae	25. <i>Microporella ciliata</i> (Pallas, 1766)	98
	26. <i>Microporella marsupiata</i> (Busk, 1860)	98
Family Microporidae	27. <i>Micropora coriacea inarmata</i> Soule, 1959	98
Family Phidoloporidae	28. <i>Reteporellina denticulata</i> var. <i>gracilis</i> (Busk, 1884)	51, 134
Family Schizoporellidae	29. <i>Hippodiplosia insculpta</i> (Hincks), 1882	134
Family Tubuliporidae	30. <i>Tubulipora flexuosa</i> (Pourtales, 1867)	98
Family Watersiporidae	31. <i>Watersipora biserialis</i> (Hincks, 1885)	49
Phylum BRACHIOPODA,		
Class RHYNCHONELLATA		
Order RHYNCHONELLIDA, Family Basiliolidae	1. <i>Neorhynchia strebeli</i> (Dall, 1908)	71
Family Frieleidae	*2. <i>Abysirrhynchia craneana</i> (Dall, 1895) as <i>Hispanirrhynchia? craneana</i>	59, 98
Order TEREBRATULIDA, Family Terebratulidae	3. <i>Gryphus clarkeana</i> (Dall, 1920) as <i>Liothyrella clarkeana</i>	71
	4. <i>Liothyrella moseleyi</i> (Davidson, 1878)	71
Family Zeileriidae	5. <i>Macandrevia americana</i> Dall, 1895 as <i>M. craniella</i>	71
	6. <i>Macandrevia diamantina</i> (Dall, 1895)	71
Phylum PHORONIDA	1. <i>Phoronopsis albomaculata</i> Gilchrist, 1907	66
Phylum ECHINODERMATA, Class CRINOIDEA		
Order COMATULIDA, Family Antedonidae	1. <i>Fariometra parvula</i> (Hartlaub, 1895)	7
Family Thalassometridae	2. <i>Thalassometra agassizii</i> (Hartlaub, 1895)	7
Class ASTEROIDEA, Order PAXILLOSIDA		
Family Astropectinidae	*3. <i>Astropecten benthophilus</i> Ludwig, 1905	7
	4. <i>Astropecten sulcatus</i> Ludwig, 1905	7
	5. <i>Leptychaster inermis</i> (Ludwig, 1905)	7
	*6. <i>Persephonaster armiger</i> Ludwig, 1905	7
Family Luidiidae	7. <i>Luidia armata</i> Ludwig, 1905	7
Family Porcellanasteridae	8. <i>Eremicaster pacificus</i> (Ludwig, 1905)	7
	9. <i>Porcellanaster ceruleus</i> Wyville-Thomson, 1877	7
Order NOTOMYOTIDA, Family Benthopectinidae	10. <i>Benthopecten spinuliger</i> (Ludwig, 1905) as <i>Parachaster spinuliger</i>	7, 159
	11. <i>Pectinaster agassizii</i> Ludwig, 1905	7
Order VALVATIDA, Family Acanthasteridae	12. <i>Acanthaster planci</i> (Linnaeus, 1758) also as <i>A. ellisii</i>	5, 6, 7, 159
Family Asterodiscidae	13. <i>Paulia horrida</i> Gray, 1840 as <i>Pauliella aenigma</i>	7, 119
Family Asteropseidae	14. <i>Asteropsis carinifera</i> (Lamarck, 1816)	6, 159
Family Goniasteridae	15. <i>Mediaster elegans</i> Ludwig, 1905	7
	16. <i>Nymphaster diomedea</i> Ludwig, 1905	7
	17. <i>Pillsburiaster ernesti</i> (Ludwig, 1905)	7
Family Mithrodiidae	18. <i>Mithrodia bradleyi</i> Verrill, 1867	5, 6
Family Ophiasteridae	19. <i>Linckia columbiae</i> Gray, 1840	5, 6, 7
	20. <i>Narcissia gracilis</i> A.H. Clark, 1916	5, 7
	21. <i>Phataria unifascialis</i> (Gray, 1840) as <i>Phataria</i> sp.	5, 7, 159
	22. <i>Tamaria obstipa</i> Ziesenhenné, 1942	5, 7, 159

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Family Oreasteridae	23. <i>Nidorellia armata</i> (Gray, 1840)	5, 6, 7
	24. <i>Pentaceraster cumingi</i> (Gray, 1840) as <i>Oreaster occidentales</i>	5, 6, 7, 42, 159
Order SPINULOSIDA, Family Pterasteridae	25. <i>Hymenaster quadrispinosus</i> Fisher, 1905 as <i>H. purpureus</i>	7, 159
	26. <i>Pteraster cf. diaphanous</i> (Ludwig, 1905)	7, 159
Order FORCIPULATIDA, Family Asteriidae	27. <i>Coronaster marchenus</i> Ziesenhenné, 1942	5, 7
	28. <i>Hydrasterias improvisus</i> (Ludwig, 1905) as <i>H. improvisa</i> and as <i>Pedicellaster improvisus</i>	7, 159
	29. <i>Sclerasterias alexandri</i> (Ludwig, 1905)	5, 7
	30. <i>Sclerasterias heteropaes</i> Fisher, 1924	7
	31. <i>Tarsaster cocosanus</i> (Ludwig, 1905)	7
Order BRISINGIDA, Family Brisingidae	32. <i>Astrolirus panamensis</i> (Ludwig, 1905)	7
Class OPHIUROIDEA , Order PHRYNOPHIURIDA		
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Order OPHIURIDA, Family Amphiuridae	34. <i>Amphiodia tabogae</i> Nielsen, 1932	5, 7
	35. <i>Amphiodia violacea</i> (Lütken, 1856)	5, 7, 159
	36. <i>Amphiura arcystata</i> H.L. Clark, 1911	5, 7
	37. <i>Ophiophragmus marginatus</i> (Lütken, 1859)	5, 7
	38. <i>Ophiophragmus paucispinus</i> Nielsen, 1932	5, 7
	39. <i>Triplodia abdita</i> A.M. Clark, 1970 as <i>Triodia abdita</i>	5, 7
Family Hemieuryliidae	40. <i>Sigsbeia lineata</i> Lütken & Mortensen, 1899	5, 7
Family Ophiactidae	41. <i>Ophiactis savignyi</i> (Müller & Troschel, 1842)	5, 7, 160
	42. <i>Ophiactis simplex</i> (Le Conte, 1851)	5, 7
Family Ophiocanthidae	43. <i>Ophiocantha phragma</i> Ziesenhenné, 1940	5, 7
	44. <i>Ophiotoma paucispina</i> (Lütken & Mortensen, 1899)	7
Family Ophiocomidae	45. <i>Ophiocomma aethiops</i> Lütken, 1859	5, 6, 7
	46. <i>Ophiocomma alexandri</i> Lyman, 1860	5, 6, 7
	47. <i>Ophiocomella sexradia</i> (Duncan, 1887)	5, 7
Family Ophiodermatidae	48. <i>Diopederma danianum</i> (Verrill, 1867)	5, 7
	49. <i>Ophiocrytus granulatus</i> Nielsen, 1932	5, 7
	50. <i>Ophioderma panamense</i> Lütken, 1859	5, 7
	51. <i>Ophioderma variegatum</i> Lütken, 1856	5, 7
Family Ophionereidae	52. <i>Ophionereis albomaculata</i> E.A. Smith, 1877 as <i>O. nuda</i>	5, 7, 159
	53. <i>Ophionereis annulata</i> (Le Conte, 1851)	5, 7
	54. <i>Ophionereis eurybrachioplax</i> H.L. Clark, 1911	5, 7
Family Ophiotrichidae	55. <i>Ophiothrix spiculata</i> Le Conte, 1851	7
Family Ophiuridae	56. <i>Amphiophiura abcisa</i> (Lütken & Mortensen, 1899)	5, 7
	57. <i>Ophiocten hastatum</i> Lyman, 1878	5, 7, 159
	58. <i>Ophiomusium glabrum</i> Lütken & Mortensen, 1899 as <i>Ophiophalma glabrum</i>	5, 7
	59. <i>Ophiomusium lymani</i> Thomson, 1873	5, 7
	60. <i>Ophiozonella alba</i> (Lütken & Mortensen, 1899)	5, 7
	61. <i>Ophiura nana</i> (Lütken & Mortensen, 1899)	5, 7
	62. <i>Ophiura (Ophiuroglypha) irrorata</i> (Lyman, 1878)	5, 7
Class ECHINOIDEA , Order CIDAROIDA		
Family Cidaridae	63. <i>Centrocidaris doederleini</i> (A. Agassiz, 1898)	5, 7
	64. <i>Eucidaris thouarsii</i> (Valenciennes, 1846)	5, 7
	65. <i>Eucidaris thouarsii galapagensis</i> Döderlein, 1887 as <i>E. galapagensis</i>	5, 7, 159

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	66. <i>Hesperocidaris dubia</i> (H.L. Clark, 1907) as <i>Stylocidaris dubia</i>	5, 7, 159
	67. <i>Hesperocidaris panamensis</i> (A. Agassiz, 1898)	5, 7
Order ECHINOTHURIOIDA, Family Echinothuriidae	68. <i>Tromikosoma hispidum</i> (A. Agassiz, 1898)	5, 7
Order DIADEMATOIDA, Family Aspidodiadematidae	69. <i>Plesiodiadema horridum</i> (A. Agassiz, 1898)	5, 7
Family Diadematidae	70. <i>Astropyga pulvinata</i> (Lamarck, 1816)	159
	71. <i>Centrostephanus coronatus</i> (Verrill, 1867)	5, 7
	72. <i>Diadema mexicanum</i> A. Agassiz, 1863	5, 6, 7, 160
	73. <i>Echinothrix calamaris</i> (Pallas, 1774)	5, 6, 7
	74. <i>Echinothrix diadema</i> (Linnaeus, 1758)	5, 6, 7, 113
Order SALENIOIDA, Family Saleniidae	75. <i>Salenocidaris miliaris</i> (A. Agassiz, 1898)	5, 7
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	77. <i>Toxopneustes roseus</i> (A. Agassiz, 1863)	5, 6, 7
	78. <i>Tripneustes depressus</i> A. Agassiz, 1863	5, 6, 7
Order ECHINOIDA, Family Echinometridae	79. <i>Echinometra oblonga</i> (Blainville, 1825)	5, 6, 7
	80. <i>Echinometra vanbrunti</i> A. Agassiz, 1863	5, 6, 7
Order CLYPEASTEROIDA, Family Clypeasteridae	81. <i>Clypeaster europacificus</i> H.L. Clark, 1914	5, 7, 159
	82. <i>Clypeaster ochrus</i> H.L. Clark, 1914	5, 7, 159
	83. <i>Clypeaster rotundus</i> (A. Agassiz, 1863)	5, 7
	84. <i>Clypeaster speciosus</i> Verrill, 1870	5, 7
Family Mellitidae	*85. <i>Encope cocosi</i> H.L. Clark, 1948	5, 7
	86. <i>Encope micropora</i> L. Agassiz, 1841	5, 7
Order SPATANGOIDA, Family Aeropsidae	87. <i>Aeropsis fulva</i> (A. Agassiz, 1898)	5, 7
Family Asterostomatidae	88. <i>Argopatus aculeata</i> (Agassiz, 1898)	5, 7
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	90. <i>Meoma ventricosa grandis</i> Gray, 1851	5, 7, 159
	91. <i>Rhabdобрissus pacificus</i> H.L. Clark, 1940 as <i>Plagiobrissus pacificus</i>	5, 7, 159
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	93. <i>Lovenia cordiformis</i> A. Agassiz, 1872	5, 7
Class HOLOTHUROIDEA,		
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	95. <i>Psolus diomedea</i> Ludwig, 1894	5, 7
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	99. <i>Holothuria (Cystipus) inhabilis</i> Selenka, 1867	5, 7
	100. <i>Holothuria (Halodeima) atra</i> (Jaeger, 1833)	5, 6, 7
	101. <i>Holothuria (Halodeima) kefersteini</i> (Selenka, 1867)	5, 6, 7
	102. <i>Holothuria (Lessonothuria) pardalis</i> Selenka, 1867	5, 7
	103. <i>Holothuria (Mertensiothuria) fuscocinerea</i> (Jaeger, 1833)	5, 7
	104. <i>Holothuria (Mertensiothuri) hilla</i> Lesson, 1830	5, 6, 7, 159
	105. <i>Holothuria (Mertensiothuria) leucospilota</i> (Brandt, 1835)	5, 7
	106. <i>Holothuria (Platyperona) difficilis</i> Semper, 1868	5, 7, 159
	107. <i>Holothuria (Selenkothuria) theeli</i> (Deichmann, 1938)	5, 7
	108. <i>Holothuria (Semperothuria) imitans</i> Ludwig, 1875	5, 7

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	109. <i>Holothuria (Theelothuria) paraprinceps</i> Deichmann, 1937	5, 7
	110. <i>Holothuria (Thymiosycia) arenicola</i> Semper, 1868	5, 7
	111. <i>Holothuria (Thymiosycia) impatiens</i> (Forskål, 1775)	5, 7
	112. <i>Labidodemas americanum</i> Deichmann, 1938	5, 7
Family Stichopodidae	113. <i>Isostichopus fuscus</i> (Ludwig, 1875)	5, 6, 7
	114. <i>Stichopus horrens</i> Selenka, 1867	5, 6, 7
Family Synallactidae	115. <i>Mesothuria (Mesothuria) multiples</i> Ludwig, 1894 as <i>M. multiples</i>	5, 7, 159
	116. <i>Pseudostichopus macdonaldi</i> (Ludwig, 1894)	5, 7
	117. <i>Pseudostichopus mollis</i> Théel, 1886	5, 7
Order APODIDA, Family Chiridotidae	118. <i>Chiridota pacifica</i> Heding, 1928	5, 7
Order ELASIPODIDA, Family Deimatidae	119. <i>Deima validum pacificum</i> Ludwig, 1894	5, 7
Family Elpidiidae	120. <i>Peniagone vitrea</i> Théel, 1882	5, 7
Family Pelagothuridae	121. <i>Pelagothuria natatrix</i> Ludwig, 1894	5, 7
Family Psychropotidae	122. <i>Benthodytes sanguinolenta</i> Théel, 1882	5, 7
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	2. <i>Oikopleura dioica</i> Fol, 1872	41
	3. <i>Oikopleura fusiformis</i> Fol, 1872	41, 130
	4. <i>Oikopleura gracilis</i> (Lohmann, 1896)	41
	5. <i>Oikopleura longicauda</i> (Vogt, 1854)	41
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	7. <i>Stegosoma magnum</i> (Langerhans, 1880)	41
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	17. <i>Carcharhinus limbatus</i> (Muller & Henle, 1839)	34, 35
	18. <i>Carcharhinus longimanus</i> (Poey, 1861)	143
	19. <i>Carcharhinus melanopterus</i> (Quoy & Gaimard, 1824)	116
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	26. <i>Sphyrna mokarran</i> (Rüppell, 1837)	34, 35
	27. <i>Sphyrna tiburo</i> (Linnaeus, 1758)	142
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	35. <i>Pteroplatytrigon violacea (Bonaparte, 1832)</i>	142
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	38. <i>Mobula japonica</i> (Müller & Henle, 1841)	142
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	45. <i>Raja equatorialis</i> Jordan & Bollman, 1890	142
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	50. <i>Bathycongrus varidens</i> (Garman, 1899)	163
	51. <i>Heteroconger klausewitzi (Eibl-Eibesfeldt & Köster, 1983)</i>	34, 35, 122
	52. <i>Ophisoma</i> sp.	122
	53. <i>Paraconger californiensis</i> Kanazawa, 1961	34, 35
Family Muraenidae	54. <i>Anarchias galapagensis</i> (Seale, 1940)	34, 35
	55. <i>Echidna nebulosa</i> (Ahl, 1789)	3, 34, 35
	56. <i>Echidna nocturna</i> (Cope, 1872)	34, 35
	57. <i>Enchelycore octaviana</i> (Myers & Wade, 1941)	34, 35
	58. <i>Gymnomuraena zebra</i> (Shaw, 1797)	34, 35
	59. <i>Gymnothorax angusticeps (Hildebrand & Barton, 1949)</i>	122
	60. <i>Gymnothorax buroensis</i> (Bleeker, 1857)	34, 35
	61. <i>Gymnothorax castaneus</i> (Jordan & Gilbert, 1883)	34, 35
	62. <i>Gymnothorax dovii</i> (Günther, 1870)	34, 35
	63. <i>Gymnothorax eurostus (Abbott, 1860)</i>	140
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	66. <i>Gymnothorax meleagris (Shaw & Nodder, 1795)</i>	34, 35
	67. <i>Gymnothorax panamensis</i> (Steindachner, 1876)	34, 35
	68. <i>Gymnothorax pictus (Ahl, 1789)</i>	84
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	71. <i>Muraena lentiginosa</i> Jenyns, 1842	34, 35
	72. <i>Scuticaria tigrina</i> (Lesson, 1828)	34, 35
	73. <i>Sideria picta</i> (Ahl, 1789)	34, 35
	74. <i>Uropterygius macrocephalus</i> (Bleeker, 1865)	31, 34, 35
	75. <i>Uropterygius versutus</i> Bussing, 1991	34, 35
Family Myrocongridae	76. <i>Myroconger nigrodentatus</i> Castle & Béarez, 1995	122, 163
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	78. <i>Callechelys eristigma</i> McCosker & Rosenblatt, 1972	34, 35, 121
	79. <i>Gordiichthys combibus</i> McCosker & Lavenberg, 2001	34, 35
	80. <i>Herpetoichthys fossatus</i> (Myers & Wade, 1941)	34, 35
	81. <i>Ichthyapus selachops</i> (Jordan & Gilbert, 1882)	34, 35
	82. <i>Myrichthys tigrinus</i> Girard, 1859	34, 35, 163
	83. <i>Myrichthys aspetocheiros</i> McCosker & Rosenblatt, 1993	34, 35
	84. <i>Ophichthus rugifer</i> Jordan & Bollman, 1890	34, 35, 122
	85. <i>Ophichthus triserialis</i> (Kaup, 1856)	142
	86. <i>Paraetharchus opercularis</i> (Myers & Wade, 1941)	122
	87. <i>Paraetharchus pacificus</i> (Osburn & Nichols, 1916)	34, 35
	88. <i>Quassiremus evionthas</i> (Jordan & Bollman, 1889)	34, 35, 122
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Order ATELEPODIFORMES, Family Ateleopodidae	90. <i>Guentherus altivela</i> Osório, 1917	47, 163
Order AULOPIFORMES, Family Aulopidae	91. <i>Aulopus bajacali</i> Parin & Kotlyar, 1984	35
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Order ELOPIFORMES, Family Elopidae	95. <i>Elops affinis</i> Regan, 1909	142
Order GONORYNCHIFORMES, Family Chanidae	96. <i>Chanos chanos</i> (Forsskål, 1775)	34, 35
Order GOBIESOCIFORMES, Family Gobiesocidae	97. <i>Arcos poecilophthalmos</i> (Jenyns, 1842)	122
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	99. <i>Gobiesox adustus</i> Jordan & Gilbert, 1882	142
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	101. <i>Tomicodon chilensis</i> Brisout de Barneville, 1846	122
	102. <i>Tomicodon petersii</i> (Garman, 1875)	142
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	105. <i>Antennarius coccineus</i> (Lesson, 1831)	34, 35
	106. <i>Antennarius commerson</i> (Latreille, 1804) as <i>A. commersoni</i>	34, 35
	107. <i>Antennarius sanguineus</i> Gill, 1863	35
	108. <i>Antennatus strigatus</i> (Gill, 1863)	142
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	110. <i>Lophiodes spilurus</i> (Garman, 1899)	47, 142, 163
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	119. <i>Encheliophis vermicularis</i> Müller, 1842	34, 35, 143
	120. <i>Echiodon exsilium</i> Rosenblatt, 1961	34, 35
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	122. <i>Otophidium indefatigabile</i> Jordan & Bollman, 1890 as <i>O. indefatigabile</i>	34, 35
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	124. <i>Ablennes hians</i> (Valenciennes, 1846)	142
	125. <i>Platybelone argalus pterura</i> (Osburn & Nichols, 1916)	34, 35
	126. <i>Strongylura exilis</i> (Girard, 1854)	34, 35
	127. <i>Tylosurus acus melanotus</i> (Bleeker, 1850)	142
	128. <i>Tylosurus acus pacificus</i> (Steindachner, 1876)	34, 35
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	130. <i>Cheilopogon furcatus</i> (Mitchill, 1815)	143
	131. <i>Cheilopogon spilonopterus</i> (Bleeker, 1865)	143
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	133. <i>Exocoetus monocirrhus</i> Richardson, 1846	34, 35
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	135. <i>Hirundichthys marginatus</i> (Nichols & Breder, 1928)	142
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	138. <i>Oxyorhamphus micropterus</i> (Cuvier & Valenciennes, 1847)	84
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	140. <i>Prognichthys tringa</i> Breder, 1928	34, 35
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142. <i>Hemiramphus saltator</i> Gilbert & Starks, 1904		142
143. <i>Hyporhamphus rosae</i> (Jordan & Gilbert, 1880)		142
Order ATHERINIFORMES, Family Atherinopsidae	144. <i>Atherinella eriarcha</i> (Jordan & Gilbert, 1881)	34, 35
	145. <i>Melanorhinus cyanellus</i> (Meek & Hildebrand, 1923)	34, 35
Order BERYCIFORMES, Family Holocentridae	146. <i>Myripristis berndti</i> Jordan & Evermann, 1903	34, 35
	147. <i>Myripristis leiognathus</i> Valenciennes, 1846	34, 35
	148. <i>Plectrypops lima</i> (Valenciennes, 1831)	34, 35
Order GASTEROSTEIFORMES, Family Aulostomidae	149. <i>Sargocentron suborbitalis</i> (Gill, 1863)	34, 35
	150. <i>Aulostomus chinensis</i> (Linnaeus, 1766)	35
Family Fistulariidae	151. <i>Fistularia commersonii</i> Rüppell, 1838	35
Family Syngnathidae	152. <i>Bryx veleronis</i> Herald, 1940	34, 35
	153. <i>Cosmocampus arctus</i> (Jenkins & Evermann, 1889)	142
	154. <i>Doryrhamphus excisus</i> Kaup, 1856	34, 35
	155. <i>Hippocampus ingens</i> Girard, 1858	34, 35
Order SCORPAENIFORMES, Family Peristediidae	156. <i>Peristedion crustosum</i> Garman, 1899	34, 35
	*157. <i>Peristedion nesium</i> Bussing, 2010	33
Family Scorpaenidae	158. <i>Pontinus clemensi</i> Fitch, 1955	34, 35
	159. <i>Pontinus sierra</i> Gilbert, 1890	34, 35
	160. <i>Pontinus strigatus</i> Heller & Snodgrass, 1903	34, 35, 122
	161. <i>Pontinus furcirhinus</i> Garman, 1899	142
	162. <i>Scorpaena afuerae</i> Hildebrand, 1946	34, 35
	163. <i>Scorpaena cocosensis</i> Motomura, 2004	122, 132
	164. <i>Scorpaena histrio</i> Jenyns, 1840	34, 35

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	165. <i>Scorpaena mystes</i> Jordan & Starks en Jordan, 1895	34, 35
	166. <i>Scorpaena russula</i> Jordan & Bollman, 1890	34, 35
	167. <i>Scorpaena</i> new species	34, 35
	168. <i>Scorpaenodes rubrivinctus</i> Poss, McCosker & Baldwin 2010	122, 138, 163
	169. <i>Scorpaenodes xyris</i> (Jordan & Gilbert, 1882)	34, 35
Family Triglidae	170. <i>Bellator loxias</i> (Jordan, 1897)	34, 35, 163
	171. <i>Bellator</i> new species	34, 35
	172. <i>Prionotus</i> new species	34, 35
Order PERCIFORMES, Family Acanthuridae	173. <i>Acanthurus nigricans</i> (Linnaeus, 1758)	34, 35
	174. <i>Acanthurus triostegus</i> Linnaeus, 1758	34, 35
	175. <i>Acanthurus xanthopterus</i> Valenciennes, 1835	34, 35
	176. <i>Ctenochaetus marginatus</i> (Valenciennes, 1835)	34, 35
	177. <i>Naso annulatus</i> (Quoy & Gaimard, 1825)	142
	178. <i>Naso hexacanthus</i> (Bleeker, 1855)	142
	179. <i>Prionurus laticlavus</i> (Valenciennes, 1846)	34, 35
Family Apogonidae	180. <i>Apogon atradorsatus</i> Heller & Snodgrass, 1903	34, 35, 122
	181. <i>Apogon dovii</i> Günther, 1861	34, 35
Family Blenniidae	182. <i>Entomacrodus chiostrictus</i> (Jordan & Gilbert, 1882)	34, 35
	183. <i>Hypsoblennius brevipinnis</i> (Günther, 1861)	34, 35
	184. <i>Ophioblennius steindachneri</i> Jordan & Evermann, 1898	34, 35
	185. <i>Plagiotremus azaleus</i> (Jordan & Bollman, 1890)	34, 35
Family Bramidae	186. <i>Brama dussumieri</i> Cuvier, 1831	142
Family Callionymidae	187. <i>Synchiropus atrilabiatus</i> (Garman, 1899)	35
Family Carangidae	188. <i>Alectis ciliaris</i> (Bloch, 1787)	34, 35
	189. <i>Carangoides orthogrammus</i> Jordan & Gilbert, 1882	34, 35
	190. <i>Caranx caballus</i> (Günther, 1868)	34, 35
	191. <i>Caranx caninus</i> Günther, 1867	34, 35
	192. <i>Caranx lugubris</i> Poey, 1860	34, 35
	193. <i>Caranx melampygus</i> Cuvier, 1833	34, 35
	194. <i>Caranx sexfasciatus</i> Quoy & Gaimard, 1825	34, 35
	195. <i>Decapterus macarellus</i> (Cuvier, 1833)	34, 35
	196. <i>Elagatis bipinnulata</i> (Quoy & Gaimard, 1825)	34, 35
	197. <i>Gnathanodon speciosus</i> (Forsskål, 1775)	34, 35
	198. <i>Naucrates ductor</i> (Linnaeus, 1758)	34, 35
	199. <i>Selar crumenophthalmus</i> (Bloch, 1793)	34, 35
	200. <i>Seriola lalandi</i> Valenciennes, 1833	34, 35
	201. <i>Seriola peruana</i> Steindachner, 1881	34, 35
	202. <i>Seriola rivoliana</i> Valenciennes, 1833	34, 35
	203. <i>Trachinotus rhodopus</i> Gill, 1863	142
	204. <i>Trachinotus stilbe</i> (Jordan & McGregor, 1898)	34, 35
	205. <i>Trachurus murphyi</i> Nichols, 1920	122
	206. <i>Uraspis helvola</i> (Forster, 1801)	34, 35
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Family Chaenopsidae	*208. <i>Acanthemblemaria atrata</i> Hastings & Robertson, 1999	34, 35, 95
	209. <i>Acanthemblemaria macrospilus</i> Brock, 1940	151
	210. <i>Chaenopsis</i> new species	34, 35
	211. <i>Coralliozetus boehlkei</i> Stephens, 1963	34, 35
	212. <i>Coralliozetus springeri</i> Stephens & Johnson, 1966	34, 35

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	213. <i>Ekemblemaria myersi</i> Stephens, 1963	142
	214. <i>Emblemaria nivipes</i> Jordan & Gilbert, 1883	34, 35, 160
	215. <i>Stathmonotus culebrai</i> Seale, 1940	142
Family Chaetodontidae	216. <i>Chaetodon humeralis</i> Günther, 1860	34, 35
	217. <i>Chaetodon lunula</i> (Lacepède, 1802)	34, 35
	218. <i>Forcipiger flavissimus</i> Jordan & McGregor, 1898	34, 35
	219. <i>Johnrandallia nigrirostris</i> (Gill, 1862)	34, 35
	220. <i>Prognathodes carlhubbsi</i> Nalbant, 1995	142
	221. <i>Prognathodes falcifer</i> (Hubbs & Rehnitzner, 1958)	34, 35
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	223. <i>Cirrhitus rivulatus</i> Valenciennes, 1846	34, 35
Family Coryphaenidae	224. <i>Coryphaenoides anguliceps</i> (Garman, 1899)	104
	225. <i>Coryphaenoides boops</i> (Garman, 1899)	104
	226. <i>Coryphaenoides bucephalus</i> (Garman, 1899)	104
	227. <i>Coryphaena equiselis</i> Linnaeus, 1758	34, 35
	228. <i>Coryphaena hippurus</i> Linnaeus, 1758	34, 35
Family Dactyloscopidae	229. <i>Dactyloscopus lacteus</i> (Myers & Wade, 1946)	142
	230. <i>Dactyloscopus pectoralis fallax</i> Gill, 1861	34, 35
	*231. <i>Gillellus chathamensis</i> Dawson, 1977	34, 35, 62
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	233. <i>Phtheirichthys lineatus</i> (Menzies, 1791)	142
	234. <i>Remorina albescens</i> (Temminck & Schlegel, 1850)	34, 35
	235. <i>Remora australis</i> (Bennett, 1840)	142
	236. <i>Remora brachyptera</i> (Lowe, 1839)	34, 35
	237. <i>Remora osteochir</i> (Cuvier, 1829)	34, 35
	238. <i>Remora remora</i> (Linnaeus, 1758)	34, 35, 163
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	240. <i>Gobiomorus maculatus</i> (Günther, 1859)	142
Family Gempylidae	241. <i>Gempylus serpens</i> Cuvier, 1829	142
	242. <i>Lepidocybium flavobrunneum</i> (Smith, 1843)	142
	243. <i>Nealotus tripes</i> Johnson, 1865	142
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Family Gobiidae	245. <i>Bathygobius ramosus</i> Ginsburg, 1947	34, 35
	*246. <i>Chriolepis atrimelum</i> Bussing, 1997	32, 34, 35
	*247. <i>Chriolepis dialepta</i> Bussing, 1990	29, 34
	248. <i>Coryphopterus urospilus</i> Ginsburg, 1938	34, 35
	249. <i>Elacatinus nesiotus</i> Bussing, 1990	29, 34
	250. <i>Gobulus crescentalis</i> (Gilbert, 1892)	142
	251. <i>Gobulus hancocki</i> Ginsburg, 1938	34, 35
	*252. <i>Lythrypnus alphigena</i> Bussing, 1990	29, 34
	*253. <i>Lythrypnus cobalus</i> Bussing, 1990	29, 34
	*254. <i>Lythrypnus lavenbergi</i> Bussing, 1990	29, 34
	255. <i>Lythrypnus rhizophora</i> (Heller & Snodgrass, 1903)	34, 35, 122
	*256. <i>Sicydium cocoensis</i> (Heller & Snodgrass, 1903)	34, 35
Family Haemulidae	257. <i>Anisotremus caesius</i> (Jordan & Gilbert, 1882)	34, 35
	258. <i>Anisotremus interruptus</i> (Gill, 1862)	34, 35
	259. <i>Anisotremus taeniatus</i> Gill, 1861	34, 35
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	263. <i>Kyphosus elegans</i> (Peters, 1869)	34, 35
	264. <i>Sectator ocyurus</i> (Jordan & Gilbert, 1882)	34, 35
Family Labridae	265. <i>Bodianus diplotaenia</i> (Gill, 1862)	34, 35
	266. <i>Decodon melasma</i> Gomon, 1974	28, 34, 35, 163
	267. <i>Halichoeres adustus</i> (Gilbert, 1890) as <i>Pseudojulis adustus</i>	28, 34, 35, 122
	268. <i>Halichoeres discolor</i> Bussing, 1983	27, 34, 35
	269. <i>Halichoeres dispilus</i> (Günther, 1864)	34, 35
	270. <i>Halichoeres nicholsi</i> (Jordan & Gilbert, 1882)	34, 35
	271. <i>Halichoeres notospilus</i> (Günther, 1864)	142
	272. <i>Halichoeres rainseri</i> Baldwin & McCosker, 2001	97
	*273. <i>Halichoeres salmofasciatus</i> Allen & Robertson, 2002	4
	274. <i>Iniistius pavo</i> (Valenciennes, 1840)	34, 35
	275. <i>Novaculichthys taeniourus</i> (Lacepède, 1801)	34, 35
	276. <i>Polylepion cruentum</i> Gomon, 1977	34, 35
	277. <i>Stethojulis bandanensis</i> (Bleeker, 1851)	34, 35
	278. <i>Thalassoma grammaticum</i> Gilbert, 1890	34, 35
	279. <i>Thalassoma lucasanum</i> (Gill, 1862)	34, 35
280. <i>Thalassoma purpureum</i> (Forsskål, 1775)	34	
281. <i>Xyrichtys victori</i> Wellington, 1992 as <i>Xyrichtys victori</i>	34, 35, 122	
Family Labrisomidae	282. <i>Dialommus fuscus</i> (Gilbert, 1891)	122, 123
	283. <i>Paraclinus mexicanus</i> (Gilbert, 1904)	34, 35
	284. <i>Starksia</i> new species	34, 35
Family Lutjanidae	285. <i>Aphareus furca</i> (Lacepède, 1801)	34, 35
	286. <i>Hoplogagrus guentherii</i> Gill, 1862 as <i>H. guntheri</i>	34, 35
	287. <i>Lutjanus aratus</i> (Günther, 1864)	34, 35
	288. <i>Lutjanus argentiventris</i> (Peters, 1869)	34, 35
	289. <i>Lutjanus colorado</i> Jordan & Gilbert, 1882	142
	290. <i>Lutjanus guttatus</i> (Steindachner, 1869)	142
	291. <i>Lutjanus inermis</i> (Peters, 1869)	34, 35
	292. <i>Lutjanus jordani</i> (Gilbert, 1898)	34, 35
	293. <i>Lutjanus novemfasciatus</i> Gill, 1862	34, 35
	294. <i>Lutjanus viridis</i> (Valenciennes, 1846)	34, 35
	295. <i>Luvarus imperialis</i> Rafinesque, 1810	142
Family Luvaridae	296. <i>Caulolatilus affinis</i> Gill, 1865	34, 35
	297. <i>Caulolatilus hubbsi</i> Dooley, 1978	34, 35
	298. <i>Caulolatilus princeps</i> (Jenyns, 1840)	142
	299. <i>Malacanthus brevisrostris</i> Guichenot, 1848	34, 35
	300. <i>Clarkichthys bilineatus</i> (Clark, 1936)	35
Family Microdesmidae	301. <i>Agonostomus monticola</i> (Brancroft, 1834)	34, 35
	302. <i>Chaenomugil proboscideus</i> (Günther, 1861) as <i>C. proboscideus</i>	34, 35
Family Mugilidae	303. <i>Mugil cephalus</i> Linnaeus, 1758	142
	304. <i>Mugil curema</i> Valenciennes, 1836	34, 35
	305. <i>Mulloidichthys dentatus</i> (Gill, 1862)	35
Family Mullidae	306. <i>Cubiceps pauciradiatus</i> Günther, 1872	142
Family Nomeidae	307. <i>Nomeus gronovii</i> (Gmelin, 1789)	142

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	308. <i>Psenes cyanophrys</i> Valenciennes, 1833	142
Family Opistognathidae	309. <i>Opistognathus panamaensis</i> Allen & Robertson, 1991	35
Family Polynemidae	310. <i>Polydactylus approximans</i> (Lay & Bennett, 1839)	35
Family Pomacanthidae	311. <i>Holacanthus passer</i> Valenciennes, 1846	34, 35
	312. <i>Pomacanthus zonipectus</i> (Gill, 1862)	34, 35
	313. <i>Abudefduf concolor</i> (Gill, 1862)	34, 35
	314. <i>Abudefduf troschelii</i> (Gill, 1862) as <i>A. troschelli</i>	34, 35
	315. <i>Chromis alta</i> Greenfield & Woods, 1980	34, 35
	316. <i>Chromis atrilobata</i> Gill, 1862	34, 35
	317. <i>Microspathodon bairdii</i> (Gill, 1862)	34, 35
	318. <i>Microspathodon dorsalis</i> (Gill, 1862)	34, 35
	319. <i>Stegastes acapulcoensis</i> (Fowler, 1944)	34, 35
	320. <i>Stegastes arcifrons</i> (Heller & Snodgrass, 1903)	34, 35
	321. <i>Stegastes beebei</i> (Nichols, 1924)	34, 35, 122
	322. <i>Stegastes flavilatus</i> (Gill, 1862)	34, 35
Family Priacanthidae	323. <i>Cookeolus japonicus</i> (Cuvier, 1829)	34, 35, 47
	324. <i>Heteropriacanthus cruentatus</i> (Lacepède, 1801)	34, 35
	325. <i>Pristigenys serrula</i> (Gilbert, 1891)	142
Family Scaridae	326. <i>Scarus rubroviolaceus</i> Bleeker, 1847	35
Family Sciaenidae	327. <i>Corvula macrops</i> (Steindachner, 1876)	142
	328. <i>Odontoscion eurymesops</i> (Heller & Snodgrass, 1903)	142
	329. <i>Umbrina galapagorum</i> Steindachner, 1878	142
	330. <i>Umbrina xanti</i> Gill, 1862	35
Family Scombridae	331. <i>Acanthocybium solandri</i> (Cuvier, 1832)	34, 35
	332. <i>Auxis rochei</i> (Risso, 1810)	34, 35
	333. <i>Auxis thazard</i> (Lacepède, 1800)	34, 35
	334. <i>Euthynnus lineatus</i> Kishinouye, 1920	34, 35
	335. <i>Katsuwonus pelamis</i> (Linnaeus, 1758)	34, 35
	336. <i>Sarda orientalis</i> (Temminck & Schlegel, 1844)	34, 35
	337. <i>Scomber japonicus</i> Houttuyn, 1782	142
	338. <i>Scomberomorus sierra</i> Jordan & Starks, 1895	34, 35
	339. <i>Thunnus albacares</i> (Bonnaterre, 1788)	34, 35
	340. <i>Thunnus obesus</i> (Lowe, 1839)	142
Family Serranidae	341. <i>Alphestes immaculatus</i> Breder, 1936	34, 35
	342. <i>Anthias noeli</i> Anderson & Baldwin, 2000	Retal12
	343. <i>Cephalopholis panamensis</i> (Steindachner, 1877)	34, 35
	344. <i>Cratinus agassizii</i> Steindachner, 1878	122
	345. <i>Dermatolepis dermatolepis</i> (Boulenger, 1895)	34, 35
	346. <i>Epinephelus cifuentesi</i> Lavenberg & Grove, 1993	34, 35, 47, 163
	347. <i>Epinephelus itajara</i> (Lichtenstein, 1822)	34, 35
	348. <i>Epinephelus labriformis</i> (Jenyns, 1840)	34, 35
	349. <i>Epinephelus niphobles</i> Gilbert & Starks, 1897	34, 35, 163
	350. <i>Liopropoma fasciatum</i> Bussing, 1980	142
	351. <i>Liopropoma longilepis</i> Garman, 1899	97
	352. <i>Mycteroperca olfax</i> (Jenyns, 1840)	34, 35, 122, 163
	353. <i>Paranthias colonus</i> (Valenciennes, 1846)	34, 35
	354. <i>Pronotogrammus eos</i> Gilbert, 1890	34, 35

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	355. <i>Pronotogrammus multifasciatus</i> Gill, 1863	34, 35, 47, 163
	356. <i>Pseudogramma thaumasium</i> (Gilbert, 1900)	34, 35
	357. <i>Serranus aequidens</i> Gilbert, 1890	34, 35
	358. <i>Serranus tico</i> Meisler & Lavenberg in Allen & Robertson, 1998	34, 35, 126
	359. <i>Rypticus bicolor</i> Valenciennes, 1846	34, 35
Family Sphyraenidae	360. <i>Sphyraena idiaestes</i> Heller & Snodgrass, 1903	35
Family Tripterygiidae	*361. <i>Axoclinus cocoensis</i> Bussing, 1991	30, 35
Family Xiphiidae	362. <i>Istiophorus platypterus</i> (Shaw in Shaw & Nodder, 1792)	34, 35
	363. <i>Makaira indica</i> (Cuvier, 1832)	34
	364. <i>Makaira mazara</i> (Jordan & Snyder, 1901)	34, 35
	365. <i>Tetrapturus angustirostris</i> Tanaka, 1915	34
	366. <i>Tetrapturus audax</i> (Philippi, 1887)	34, 35
	367. <i>Xiphius gladius</i> Linnaeus, 1758	34
Family Zanclidae	368. <i>Zanclus cornutus</i> (Linnaeus, 1758)	34
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	370. <i>Bothus mancus</i> (Broussonet, 1782)	34, 35
Family Cynoglossidae	371. <i>Symphurus atramentatus</i> Jordan & Bollman, 1890	142
	372. <i>Symphurus oligomerus</i> Mahadeva & Munroe, 1990	142
	373. <i>Symphurus varius</i> Garman, 1899	35
Family Paralichthyidae	374. <i>Citharichthys platophrys</i> Gilbert, 1891	142
	375. <i>Hippoglossina bollmani</i> Gilbert, 1890	34, 35
	376. <i>Syacium latifrons</i> (Jordan & Gilbert, 1882)	34, 35
	*377. <i>Syacium maculiferum</i> (Garmann, 1899)	34, 35, 142
Family Soleidae	378. <i>Aseraggodes herrei</i> Seale, 1940	35
Order TETRAODONTIFORMES, Family Balistidae	379. <i>Balistes polylepis</i> Steindachner, 1876	34, 35
	380. <i>Canthidermis maculata</i> (Bloch, 1786) as <i>C. maculatus</i>	34, 35
	381. <i>Melichthys niger</i> (Bloch, 1786)	34, 35
	382. <i>Melichthys vidua</i> (Richardson, 1845)	34, 35
	383. <i>Pseudobalistes naufragium</i> (Jordan & Starks, 1895)	34, 35
	384. <i>Sufflamen verres</i> (Gilbert & Starks, 1904)	34, 35
	385. <i>Xanthichthys caeruleolineatus</i> Randall, Matsuura & Zama, 1978	34, 35, 84
	386. <i>Xanthichthys mento</i> (Jordan & Gilbert, 1882)	34, 35
Family Diodontidae	387. <i>Chilomycterus reticulatus</i> (Linnaeus, 1758) as <i>C. reticulotus</i>	34, 35
	388. <i>Diodon eydouxii</i> Brisout de Barneville, 1846	142
	389. <i>Diodon holocanthus</i> Linnaeus, 1758	34, 35
	390. <i>Diodon hystrix</i> Linnaeus, 1758	34, 35
Family Molidae	391. <i>Mola mola</i> (Linnaeus, 1758)	143
	392. <i>Ranzania laevis</i> (Pennant, 1776)	143
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	394. <i>Aluterus scriptus</i> (Osbeck, 1765)	34, 35
	395. <i>Cantherhines dumerilii</i> (Hollard, 1854)	34, 35
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	398. <i>Arothron meleagris</i> (Lacepède, 1798)	34, 35
	399. <i>Canthigaster punctatissima</i> (Günther, 1870)	34, 35

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	400. <i>Lagocephalus lagocephalus</i> (Linnaeus, 1758)	142
	401. <i>Sphoeroides angusticeps</i> (Jenyns, 1842)	34, 35
	402. <i>Sphoeroides lobatus</i> (Steindachner, 1870)	34, 35
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	404. <i>Eretmochelys imbricata</i> (Linné, 1766)	84
	405. <i>Chelonia agassizi</i> Bocourt, 1868	84
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	410. <i>Oceanodroma leucorhoa</i> (Vieillot, 1818)	12, 128
	411. <i>Oceanodroma markhami</i> (Salvin, 1883)	12, 128
	412. <i>Oceanodroma melania</i> (Bonaparte, 1854)	12, 128
	413. <i>Oceanodroma tethys</i> (Bonaparte, 1852)	12, 128
	414. <i>Pelagodroma marina</i> (Latham, 1790)	12, 128
Family Procellariidae	415. <i>Pterodroma phaeopygia</i> (Salvin, 1876)	12, 128
	416. <i>Puffinus creatopus</i> Coues, 1864	12, 128
	417. <i>Puffinus lherminieri</i> Lesson, 1839	12, 128
	418. <i>Puffinus pacificus</i> (J.F. Gmelin, 1789)	12, 128
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	420. <i>Fregata minor</i> (J.F. Gmelin, 1789)	12, 128
Family Pelecanidae	421. <i>Pelecanus occidentales</i> Linnaeus, 1766	12
Family Phaethontidae	422. <i>Phaethon lepturus</i> Daudin, 1802	12
Family Sulidae	423. <i>Sula dactylatra</i> Lesson, 1831	12, 128
	424. <i>Sula leucogaster</i> (Boddaert, 1783)	12, 128
	425. <i>Sula nebouxii</i> Milne-Edwards, 1882	12, 128
	426. <i>Sula sula</i> (Linnaeus, 1766)	12, 128
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	428. <i>Charadrius wilsonia</i> Ord, 1814	12
	429. <i>Pluvialis dominica</i> (Statius Müller, 1776)	12
	430. <i>Pluvialis squatarola</i> (Linnaeus, 1758)	12
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	432. <i>Anous stolidus</i> (Linnaeus, 1758)	12, 128
	433. <i>Creagrus furcatus</i> (Neboux, 1846)	12, 128, 187
	434. <i>Gygis alba</i> (Sparrman, 1786)	12, 128
	435. <i>Larus argentatus</i> Pontoppidan, 1763	12, 128
	436. <i>Larus atricilla</i> Linnaeus, 1758	12, 128
	437. <i>Larus modestus</i> Tschudi, 1843	12, 128
	438. <i>Larus pipixcan</i> Wagler, 1831	12, 128
	439. <i>Onychoprion fuscatus</i> Linnaeus, 1766	12, 128
	440. <i>Thalasseus elegans</i> (Gambel, 1849)	12, 128
	441. <i>Thalasseus sandvicensis</i> Latham, 1787	12, 128
	442. <i>Xema sabini</i> (Sabine, 1819)	12, 128
Family Phalaropodidae	443. <i>Phalaropus fulicarius</i> (Linnaeus, 1758)	12
	444. ? <i>Steganopus tricolor</i> (Vieillot, 1819)	12
Family Scolopacidae	445. <i>Actitis macularia</i> (Linnaeus, 1766)	12
	446. <i>Arenaria interpres</i> (Linnaeus, 1758)	12

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	447. <i>Calidris alba</i> (Pallas, 1764)	12
	448. <i>Calidris bairdii</i> (Coues, 1861)	12
	449. <i>Calidris fuscicollis</i> (Vieillot, 1819)	12
	450. <i>Calidris himantopus</i> (Bonaparte, 1826)	12
	451. <i>Calidris mauri</i> (Cabanis, 1857)	12
	452. <i>Calidris melanotos</i> (Vieillot, 1819)	12
	453. <i>Calidris minutilla</i> (Vieillot, 1819)	12
	454. <i>Calidris pusilla</i> (Linnaeus, 1766)	12
	455. <i>Catoptrophorus semipalmatus</i> (J.F. Gmelin, 1789)	12
	456. <i>Heteroscelus incanus</i> (J.F. Gmelin, 1789)	12
	457. <i>Numenius phaeopus</i> (Linnaeus, 1758)	12
	458. <i>Tringa flavipes</i> (J.F. Gmelin, 1789)	12
	459. <i>Tringa melanoleuca</i> (J.F. Gmelin, 1789)	12
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	466. <i>Balaenoptera edeni</i> Anderson, 1878	120
	467. <i>Balaenoptera physalus</i>, Linnaeus, 1758	120
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	470. <i>Grampus griseus</i> Cuvier, 1812	120
	471. <i>Orcinus orca</i> Linnaeus, 1758	120
	472. <i>Stenella longirostris</i> Gray, 1828	120
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	474. <i>Tursiops truncatus</i> Montagu, 1821	120
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	478. <i>Ziphius cavirostris</i> Cuvier, 1823	120

(1) References are indicated by numbers according to the reference list

* = Endemic

Species/Genus in bold type = present at Isla del Coco but not on the Pacific coast of mainland Costa Rica

? = doubts about the identification

(a) Reported by Hertlein (1963) but not found in any database.

(b) Species described in: Suárez-Morales, E. & R. Gasca. 2012. A new *Lepeophtheirus* (Copepoda: Siphonostomatoida: Caligidae) from Isla del Coco, Costa Rica, Eastern Tropical Pacific. Rev. Biol. Trop. 60 (Suppl. 3): 235-242.

