



List of coastal fishes of Islas Marías archipelago, Mexico, with comments on taxonomic composition, biogeography, and abundance

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Abstract

The first comprehensive list of 318 coastal fish species recorded from the Islas Marías Archipelago, Mexico, was compiled from recent fieldwork, archival museum collections, and literature references. The jacks (Carangidae, 18 species) and the labrisomid blennies (Labrisomidae, 16) were the most speciose families. Most recorded species occur throughout the tropical eastern Pacific (160 species), while a significant proportion have wider ranges in the eastern Pacific (39), eastern Pacific and Indo-Pacific (39), eastern Pacific and Atlantic (3), or are circumtropical (39) in distribution. Three species occur in the Northeast Pacific, twenty-five are endemic to the Pacific coasts of Mexico, five are endemic to the Gulf of California, and three are endemic to Islas Marías. *Cephalopholis panamensis* (Epinephelidae), *Epinephelus labriformis* (Epinephelidae), *Mulloidichthys dentatus* (Mullidae), *Stegastes flavilatus* (Pomacentridae), *Acanthurus xanthopterus* (Acanthuridae), *Pseudobalistes naufragium* (Tetraodontidae), and *Sufflamen verres* (Tetraodontidae) were the dominant conspicuous species observed during underwater surveys in 2010. The absence or low abundance of commercially valuable shark, ray, and grouper species throughout the archipelago is discussed.

Key words: Islas Marías, Mexico, tropical eastern Pacific, coastal fishes, Gulf of California

Introduction

The Islas Marías (also known as Islas Tres Marías) are an archipelago of four volcanic islands (María Madre, María Magdalena, María Cleofas, San Juanito) located 90–120 km offshore of Nayarit, Mexico. The islands are home to a variety of coastal habitats, including rocky and coral reefs, rhodolith beds, rocky pinnacles, and soft-bottom embayments. The Islas Marías were declared a national biosphere reserve in 2003 and then became part of the Natural World Heritage Serial Site (UNESCO) Islands and Protected Areas of the Gulf of California in 2007 (CONANP-SEMARNAT 2010). Isla María Madre is the only one of the four islands that is currently inhabited, as a federal penal colony was established there in 1905 (CONANP-SEMARNAT 2010). Consequently, much of the archipelago has restricted access and likely serves as a *de facto* marine reserve.

The islands are significant biogeographically as they represent one of only a few offshore archipelagos in the tropical eastern Pacific (TEP) and they lie near the intersection of the Cortez and more southerly TEP biogeographic provinces (Panamic or Mexican depending upon definition; Walker 1960; Hastings 2000; Hastings *et al.* 2010; Robertson & Cramer 2009). They are considered a part of the Gulf of California (Brusca *et al.* 2005; Hastings *et al.* 2010), because they lie within a geological/geophysical definition of the Gulf (i.e., north of a line drawn from Cabo San Lucas, Baja California Sur, to Cabo Corrientes, Jalisco).

Knowledge of the ichthyofauna of these islands is scarce and is based on a single published account of collections made in 1957 (Ricker 1959) and two recent overviews of the fishes of the region (Pérez-Jiménez *et al.* 2005; CONANP-SEMARNAT 2010). Here, we present the first comprehensive list of coastal fishes from the Islas Marías

based on underwater visual surveys and collections during an expedition in 2010, supplemented by previous collections or studies at the islands. This list provides a baseline inventory of coastal fishes that can be used in the management and monitoring of the biosphere reserve. In addition, we comment on patterns of taxonomic composition, geographic distributions, and abundance of selected species.

Material and methods

We conducted underwater visual surveys and collections of coastal fishes at 31 sites at Islas Marías (Fig. 1) from November 13–21, 2010. Dives were made on SCUBA at rocky reefs, rhodolith beds, and sandy bottom habitats of 1–30 m depth. Pairs of divers swam along the substrate and recorded the identity of conspicuous fishes. Cryptobenthic and other fishes were collected with the ichthyocide rotenone and the anaesthetic quinaldine, and specimens were deposited in the Marine Vertebrate Collection, Scripps Institution of Oceanography (SIO), University of California, San Diego.

We compiled a list of coastal fishes known from the islands (Table 1) from our 2010 collections and visual data, three publications on fishes from the area (Ricker 1959; Pérez-Jiménez *et al.* 2005; CONANP-SEMARNAT 2010), and archival collection records from the following museums: California Academy of Sciences (CAS), Natural History Museum of Los Angeles County (LACM), Smithsonian Institution National Museum of Natural History (USNM), SIO, and University of British Columbia (UBC). Notably, all species recorded by Ricker (1959) are listed in Table 1 as “UBC”. We included only species recorded at depths shallower than 200 m and within 20 km of the islands’ coastlines. Records from publications and museum collections included only those that were identified to species level and excluded questionable records that we could not confirm (e.g., species not otherwise known to occur in the Pacific Ocean).

TABLE 1. Taxonomic list of coastal fish species from Islas Marías, Mexico. Record designations: **C** = collections 2010; **CAS** = California Academy of Sciences; **CON** = CONANP-SEMARNAT 2010; **LACM** = Natural History Museum of Los Angeles County; **P** = Pérez-Jiménez *et al.* 2005; **SIO** = Scripps Institution of Oceanography; **UBC** = University of British Columbia, including Ricker (1959); **USNM** = Smithsonian Institution National Museum of Natural History; **V** = visual observation 2010. Distribution: **CT** = Circumtropical; **EP** = Eastern Pacific; **EP + ATL** = Eastern Pacific & Atlantic oceans; **EP + IP** = Eastern Pacific & Indo-Pacific; **GOC** = Gulf of California; **IM** = Islas Marías; **M** = Mexico; **NEP** = Northeast Pacific; **TEP** = Tropical Eastern Pacific. Occurrence (conspicuous fishes only): **D** = dominant; **VC** = very common; **C** = common; **U** = uncommon; **R** = rare.

Family	Species	Record Designation	Distribution	Occurrence
Ginglymostomatidae	<i>Ginglymostoma cirratum</i> (Bonnaterre, 1788)	CON, LACM, P, UBC, V	EP + ATL	U
Rhincodontidae	<i>Rhincodon typus</i> Smith, 1828	CON	CT	-
Triakidae	<i>Mustelus lunulatus</i> Jordan & Gilbert, 1882	CON, P	TEP	-
Carcharhinidae	<i>Carcharhinus albimarginatus</i> (Rüppell, 1837)	SIO	EP + IP	-
	<i>Carcharhinus falciformis</i> (Müller & Henle, 1839)	SIO	CT	-
	<i>Carcharhinus leucas</i> (Müller & Henle, 1839)	P, V	CT	R
	<i>Carcharhinus limbatus</i> (Müller & Henle, 1839)	P	CT	-
	<i>Carcharhinus obscurus</i> (Lesueur, 1818)	P	CT	-
	<i>Galeocerdo cuvier</i> (Péron & Lesueur, 1822)	CAS, CON, P	CT	-
	<i>Triaenodon obesus</i> (Rüppell, 1837)	P, V	EP + IP	R
Sphyrnidae	<i>Sphyrna lewini</i> (Griffith & Smith, 1834)	CON, P, V	CT	R
	<i>Sphyrna zygaena</i> (Linnaeus, 1758)	P	CT	-
Torpedinidae	<i>Narcine entemedor</i> Jordan & Starks, 1895	CON, V	TEP	U
Rhinobatidae	<i>Rhinobatos productus</i> Ayres, 1854	V	NEP	R
	<i>Zapteryx exasperata</i> (Jordan & Gilbert, 1880)	V	NEP	R

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TABLE 1. (continued)

Family	Species	Record Designation	Distribution	Occurrence
Dasyatidae	<i>Dasyatis dipterura</i> (Jordan & Gilbert, 1880)	V	EP	R
	<i>Dasyatis longa</i> (Garman, 1880)	CON, V	TEP	R
Myliobatidae	<i>Aetobatus narinari</i> (Euphrasen, 1790)	CON	CT	-
	<i>Manta birostris</i> (Walbaum, 1792)	CON	CT	-
	<i>Mobula japonica</i> (Müller & Henle, 1841)	V	CT	R
	<i>Mobula munkiana</i> Notarbartolo di Sciara, 1987	CON	TEP	-
	<i>Rhinoptera steindachneri</i> Evermann & Jenkins, 1892	V	TEP	R
Elopidae	<i>Elops affinis</i> Regan, 1909	SIO, UBC	EP	-
Muraenidae	<i>Anarchias galapagensis</i> (Seale, 1940)	C, LACM, SIO	TEP	-
	<i>Echidna nebulosa</i> (Ahl, 1789)	CON, UBC, V	EP + IP	R
	<i>Echidna nocturna</i> (Cope, 1872)	UBC, SIO	TEP	-
	<i>Enchelycore octaviana</i> (Myers & Wade, 1941)	SIO	TEP	-
	<i>Gymnomuraena zebra</i> (Shaw, 1797)	CON, SIO, UBC	EP + IP	-
	<i>Gymnothorax castaneus</i> (Jordan & Gilbert, 1883)	CON, SIO	TEP	-
	<i>Gymnothorax dovii</i> (Günther, 1870)	UBC, V	TEP	R
	<i>Gymnothorax equatorialis</i> (Hildebrand, 1946)	SIO	TEP	-
	<i>Gymnothorax panamensis</i> (Steindachner, 1876)	C, CAS, SIO, UBC	TEP	-
	<i>Muraena lentiginosa</i> Jenyns, 1842	CON, LACM, SIO, UBC, V	TEP	R
	<i>Uropterygius macrocephalus</i> (Bleeker, 1865)	C, LACM, SIO	EP + IP	-
	<i>Uropterygius versutus</i> Bussing, 1991	SIO	TEP	-
Ophichthidae	<i>Ichthyapus selachops</i> (Jordan & Gilbert, 1882)	SIO	TEP	-
	<i>Myrichthys aspetocheiros</i> McCosker & Rosenblatt, 1993	SIO	TEP	-
	<i>Myrichthys tigrinus</i> Girard, 1859	SIO, UBC	TEP	-
	<i>Ophichthus apachus</i> McCosker & Rosenblatt, 1998	SIO	TEP	-
	<i>Ophichthus zophochir</i> Jordan & Gilbert, 1882	SIO	EP	-
	<i>Quassiremus nothochir</i> (Gilbert, 1890)	SIO	TEP	-
Congridae	<i>Ariosoma gilberti</i> (Ogilby, 1898)	SIO	TEP	-
	<i>Heteroconger digueti</i> (Pellegrin, 1923)	C, SIO, V	MEX	C
	<i>Heteroconger pellegrini</i> Castle, 1999	C, V	TEP	C
	<i>Paraconger californiensis</i> Kanazawa, 1961	SIO	TEP	-
	<i>Rhynchoconger nitens</i> (Jordan & Bollman, 1890)	SIO	TEP	-
Engraulidae	<i>Anchoa argentivittata</i> (Regan 1904)	LACM, UBC	TEP	-
	<i>Anchoa scofieldi</i> (Jordan & Culver, 1895)	LACM, SIO	TEP	-
Clupeidae	<i>Harengula thrissina</i> (Jordan & Gilbert, 1882)	CON, LACM, SIO, UBC	EP	-
Chanidae	<i>Chanos chanos</i> (Forsskäl, 1775)	V	EP + IP	U
Synodontidae	<i>Synodus evermanni</i> Jordan & Bollman, 1890	SIO	TEP	-
	<i>Synodus lacertinus</i> Gilbert, 1890	C, CON, LACM, SIO, UBC, V	EP	R
	<i>Synodus scituliceps</i> Jordan & Gilbert, 1882	UBC	TEP	-
Carapidae	<i>Carapus dubius</i> (Putnam, 1874)	C	EP + IP	-

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TABLE 1. (continued)

Family	Species	Record Designation	Distribution	Occurrence
Ophidiidae	<i>Lepophidium prorates</i> (Jordan & Bollman, 1890)	SIO	TEP	-
Bythitidae	<i>Ogilbia</i> species	C, UBC	-	-
Batrachoididae	<i>Porichthys analis</i> Hubbs & Schultz, 1939	SIO	MEX	-
	<i>Porichthys ephippiatus</i> Walker & Rosenblatt, 1988	SIO	TEP	-
Lophiidae	<i>Lophiodes caulinaris</i> (Garman, 1899)	SIO	EP	-
Antennariidae	<i>Antennarius sanguineus</i> Gill, 1863	C, SIO, UBC	TEP	-
	<i>Antennatus strigatus</i> (Gill, 1863)	SIO	TEP	-
Ogcocephalidae	<i>Zalieutes elator</i> (Jordan & Gilbert, 1882)	USNM	EP	-
Mugilidae	<i>Chaenomugil proboscideus</i> (Günther, 1861)	CAS, LACM, SIO, UBC	TEP	-
	<i>Mugil curema</i> Valenciennes, 1836	UBC	EP + ATL	-
Atherinopsidae	<i>Atherinella eriarcha</i> Jordan & Gilbert, 1882	LACM, SIO, UBC	TEP	-
	<i>Melanorhinus cyanellus</i> (Meek & Hildebrand, 1923)	SIO	TEP	-
Exocoetidae	<i>Cheilopogon papilio</i> (Clark, 1936)	LACM, SIO	TEP	-
	<i>Cypselurus callopterus</i> (Günther, 1866)	SIO	TEP	-
	<i>Fodiator rostratus</i> (Günther, 1866)	LACM, SIO, UBC	EP	-
	<i>Prognichthys tringa</i> Breder, 1928	SIO	TEP	-
Hemiramphidae	<i>Euleptorhamphus viridis</i> (van Hasselt, 1823)	SIO, UBC	EP + IP	-
	<i>Hemiramphus saltator</i> Gilbert & Starks, 1904	LACM, SIO	TEP	-
	<i>Hyporhamphus naos</i> Banford & Collette, 2001	SIO	EP	-
	<i>Oxyporhamphus micropterus</i> (Valenciennes, 1847)	LACM, UBC	CT	-
Belonidae	<i>Ablennes hians</i> (Valenciennes, 1846)	LACM, SIO	CT	-
	<i>Platybelone argalus</i> (Lesueur, 1821)	LACM, SIO	CT	-
	<i>Strongylura exilis</i> (Girard, 1854)	LACM, UBC	EP	-
	<i>Tylosurus crocodilus</i> (Péron & Lesueur, 1821)	CON, SIO, V	CT	U
	<i>Tylosurus pacificus</i> (Steindachner, 1876)	UBC	TEP	-
Holocentridae	<i>Myripristis berndti</i> Jordan & Evermann, 1903	SIO	EP + IP	-
	<i>Myripristis leiognathus</i> Valenciennes, 1846	C, UBC, V	TEP	C
	<i>Sargocentron suborbitalis</i> (Gill, 1863)	CON, LACM, SIO, UBC, USNM, V	TEP	C
Syngnathidae	<i>Cosmocampus arctus</i> (Jenkins & Evermann, 1889)	SIO	EP	-
	<i>Doryrhamphus excisus</i> Kaup, 1856	C, UBC	EP + IP	-
	<i>Hippocampus ingens</i> Girard, 1858	C, CON, LACM	EP	-
Fistulariidae	<i>Fistularia commersonii</i> Rüppell, 1838	CAS, CON, SIO, V	EP + IP	U
	<i>Fistularia corneta</i> Gilbert & Starks, 1904	LACM	EP	-
Scorpaenidae	<i>Scorpaena histrio</i> Jenyns, 1840	C, SIO, V	EP	U
	<i>Scorpaena mystes</i> Jordan & Starks, 1895	CON, SIO, V	EP	U
	<i>Scorpaena russula</i> Jordan & Bollman, 1890	SIO	TEP	-
	<i>Scorpaenodes xyris</i> (Jordan & Gilbert, 1882)	C, CAS, SIO, V	EP	R
Triglidae	<i>Bellator loxias</i> (Jordan, 1897)	SIO	TEP	-
	<i>Bellator xenisma</i> (Jordan & Bollman, 1890)	SIO	TEP	-
	<i>Prionotus stephanophrys</i> Lockington, 1881	SIO	TEP	-

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TABLE 1. (continued)

Family	Species	Record Designation	Distribution	Occurrence
Centropomidae	<i>Centropomus unionensis</i> Bocourt, 1868	UBC	TEP	-
Serranidae	<i>Diplectrum labarum</i> Rosenblatt & Johnson, 1974	SIO	TEP	-
	<i>Serranus psittacinus</i> Valenciennes, 1846	C, CON, V	TEP	C
Epinephelidae	<i>Alphestes immaculatus</i> Breder, 1936	C, CAS, CON, SIO, V	TEP	VC
	<i>Alphestes multiguttatus</i> (Günther, 1867)	SIO, UBC	TEP	-
	<i>Cephalopholis colonus</i> (Valenciennes, 1846)	C, CON, SIO, V	TEP	VC
	<i>Cephalopholis panamensis</i> (Steindachner, 1877)	C, CON, SIO, UBC, V	TEP	D
	<i>Dermatolepis dermatolepis</i> (Boulenger, 1895)	SIO, V	EP	R
	<i>Epinephelus labriformis</i> (Jenyns, 1840)	CON, LACM, SIO, UBC, V	EP	D
	<i>Hyporthodus niphobles</i> (Gilbert & Starks, 1897)	SIO	EP	-
	<i>Mycteroperca rosacea</i> (Streets, 1877)	SIO, UBC, USNM, V	GOC	U
	<i>Pseudogramma thaumasium</i> (Gilbert, 1900)	C, SIO	TEP	-
	<i>Rypticus bicolor</i> Valenciennes, 1846	C, CAS, CON, SIO, UBC, V	TEP	U
	<i>Rypticus nigripinnis</i> Gill, 1861	V	TEP	R
Opistognathidae	<i>Opistognathus punctatus</i> Peters, 1869	SIO	TEP	-
	<i>Opistognathus rosenblatti</i> Allen & Robertson, 1991	C, V	GOC	U
	<i>Opistognathus scops</i> (Jenkins & Evermann, 1889)	V	TEP	R
Priacanthidae	<i>Heteropriacanthus cruentatus</i> (Lacepède, 1801)	CON, V	CT	R
Apogonidae	<i>Apogon atricaudus</i> Jordan & McGregor, 1898	UBC	MEX	-
	<i>Apogon dovii</i> Günther, 1861	V	TEP	R
	<i>Apogon pacificus</i> (Herre, 1935)	CON, UBC, V	EP	U
	<i>Apogon retrosella</i> (Gill, 1862)	C, CAS, CON, LACM, SIO, UBC, V	TEP	R
Nematistiidae	<i>Nematistius pectoralis</i> Gill, 1862	SIO, UBC	EP	-
Coryphaenidae	<i>Coryphaena equiselis</i> Linnaeus, 1758	SIO, UBC	CT	-
	<i>Coryphaena hippurus</i> Linnaeus, 1758	LACM, SIO, UBC	CT	-
Echeneidae	<i>Remora australis</i> (Bennett, 1840)	LACM, UBC	CT	-
	<i>Remora osteochir</i> (Cuvier, 1829)	UBC	CT	-
	<i>Remora remora</i> (Linnaeus, 1758)	LACM, UBC	CT	-
Carangidae	<i>Alectis ciliaris</i> (Bloch, 1787)	UBC	CT	-
	<i>Carangoides orthogrammus</i> (Jordan & Gilbert, 1882)	SIO, V	EP + IP	U
	<i>Caranx caballus</i> Günther, 1868	CON, SIO, UBC, V	EP	U
	<i>Caranx caninus</i> Günther, 1867	C, CAS, CON, UBC, V	EP	U
	<i>Caranx lugubris</i> Poey, 1860	UBC, V	CT	U
	<i>Caranx melampygus</i> Cuvier, 1833	C, CON, UBC, USNM, V	EP + IP	U
	<i>Caranx sexfasciatus</i> Quoy & Gaimard, 1825	CON, SIO, UBC, USNM, V	EP + IP	C
	<i>Chloroscombrus orqueta</i> Jordan & Gilbert, 1883	LACM, UBC	EP	-
	<i>Decapterus macarellus</i> (Cuvier, 1833)	V	CT	R
	<i>Decapterus muroadsi</i> (Temminck & Schlegel, 1844)	V	EP + IP	U
	<i>Elagatis bipinnulata</i> (Quoy & Gaimard, 1825)	V	CT	U

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TABLE 1. (continued)

Family	Species	Record Designation	Distribution	Occurrence
	<i>Gnathanodon speciosus</i> (Forsskål, 1775)	V	EP + IP	U
	<i>Selar crumenophthalmus</i> (Bloch, 1793)	SIO, UBC	CT	-
	<i>Selene brevoortii</i> (Gill, 1866)	UBC	EP	-
	<i>Selene peruviana</i> (Guichenot, 1866)	LACM	EP	-
	<i>Seriola rivoliana</i> Valenciennes, 1833	CON, UBC, USNM, V	CT	C
	<i>Trachinotus kennedyi</i> Steindachner, 1876	UBC	TEP	-
	<i>Trachinotus rhodopus</i> Gill, 1863	CON, UBC, V	EP	C
Lutjanidae	<i>Hoplopagrus guentherii</i> Gill, 1862	CON, SIO, UBC, USNM, V	TEP	VC
	<i>Lutjanus aratus</i> (Günther, 1864)	UBC	TEP	-
	<i>Lutjanus argentiventris</i> (Peters, 1869)	CON, SIO, UBC, USNM, V	TEP	VC
	<i>Lutjanus guttatus</i> (Steindachner, 1869)	CON, SIO, V	EP	VC
	<i>Lutjanus inermis</i> (Peters, 1869)	C, SIO, UBC, V	TEP	C
	<i>Lutjanus jordani</i> (Gilbert, 1898)	USNM	TEP	-
	<i>Lutjanus novemfasciatus</i> Gill, 1862	CAS, CON, SIO, UBC, V	TEP	C
	<i>Lutjanus peru</i> (Nichols & Murphy, 1922)	V	EP	R
	<i>Lutjanus viridis</i> (Valenciennes, 1846)	CON, SIO, UBC, V	TEP	VC
Lobotidae	<i>Lobotes pacificus</i> Gilbert, 1898	SIO	EP	-
Gerreidae	<i>Eucinostomus currani</i> Zahuranec, 1980	SIO, UBC	TEP	-
	<i>Gerres cinereus</i> (Walbaum, 1792)	UBC	EP + ATL	-
Haemulidae	<i>Anisotremus caesius</i> (Jordan & Gilbert, 1882)	V	TEP	R
	<i>Anisotremus interruptus</i> (Gill, 1862)	UBC, V	TEP	U
	<i>Anisotremus taeniatus</i> Gill, 1861	V	TEP	R
	<i>Haemulon flaviguttatum</i> Gill, 1862	C, CON, V	EP	C
	<i>Haemulon maculicauda</i> (Gill, 1862)	C, CON, UBC, V	TEP	VC
	<i>Haemulon scudderii</i> Gill, 1862	CON, UBC, V	TEP	R
	<i>Haemulon sexfasciatum</i> Gill, 1862	CON, SIO, UBC, USNM, V	TEP	VC
	<i>Haemulon steindachneri</i> (Jordan & Gilbert, 1882)	CON, V	TEP	C
	<i>Haemulopsis leuciscus</i> (Günther, 1864)	SIO, UBC	TEP	-
	<i>Microlepidotus brevipinnis</i> (Steindachner, 1869)	V	TEP	R
	<i>Xenichthys xanti</i> Gill, 1863	SIO, USNM	TEP	-
Sparidae	<i>Calamus brachysomus</i> (Lockington, 1880)	V	TEP	U
Polynemidae	<i>Polydactylus approximans</i> (Lay & Bennett, 1839)	LACM, SIO, UBC	TEP	-
	<i>Polydactylus opercularis</i> (Gill, 1863)	LACM, SIO, UBC	TEP	-
Sciaenidae	<i>Corvula macrops</i> (Steindachner, 1876)	UBC	TEP	-
	<i>Odontoscion xanthops</i> Gilbert, 1898	C, SIO, V	TEP	C
	<i>Ophioscion</i> species	UBC	TEP	-
	<i>Pareques fuscovittatus</i> (Kendall & Radcliffe, 1912)	C, CON, SIO, V	MEX	U
	<i>Pareques</i> species A	SIO, V	TEP	R
	<i>Umbrina dorsalis</i> Gill, 1862	SIO, UBC	TEP	-
	<i>Umbrina xanti</i> Gill, 1862	SIO	TEP	-
Mullidae	<i>Mulloidichthys dentatus</i> (Gill, 1862)	CON, SIO, UBC, V	TEP	D

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TABLE 1. (continued)

Family	Species	Record Designation	Distribution	Occurrence
	<i>Pseudupeneus grandisquamis</i> (Gill, 1863)	LACM	TEP	-
Kyphosidae	<i>Kyphosus analogus</i> (Gill, 1862)	CON, UBC, USNM, V	EP	U
	<i>Kyphosus elegans</i> (Peters, 1869)	CON, SIO, UBC, V	TEP	C
	<i>Sectator ocyurus</i> (Jordan & Gilbert, 1882)	V	EP + IP	U
Chaetodontidae	<i>Chaetodon humeralis</i> Günther, 1860	C, CON, SIO, UBC, V	EP	VC
	<i>Forcipiger flavissimus</i> Jordan & McGregor, 1898	V	EP + IP	U
	<i>Johnrandallia nigrirostris</i> (Gill, 1862)	CON, SIO, V	TEP	VC
Pomacanthidae	<i>Holacanthus passer</i> Valenciennes, 1846	C, CON, SIO, V	TEP	VC
	<i>Pomacanthus zonipectus</i> (Gill, 1862)	V	TEP	U
Cirrhitidae	<i>Cirrhitichthys oxycephalus</i> (Bleeker, 1855)	C, CAS, CON, SIO, V	TEP	VC
	<i>Cirrhitus rivulatus</i> Valenciennes, 1846	CON, SIO, UBC, V	TEP	C
	<i>Oxycirrhites typus</i> Bleeker, 1857	C, V	EP + IP	R
Pomacentridae	<i>Abudefduf declivifrons</i> (Gill, 1862)	LACM, SIO, UBC	TEP	-
	<i>Abudefduf troschelii</i> (Gill, 1862)	CON, LACM, UBC, SIO, V	TEP	VC
	<i>Chromis alta</i> Greenfield & Woods, 1980	V	EP	R
	<i>Chromis atrilobata</i> Gill, 1862	CAS, CON, SIO, UBC, V	TEP	VC
	<i>Chromis limbaughi</i> Greenfield & Woods, 1980	V	GOC	R
	<i>Microspathodon dorsalis</i> (Gill, 1862)	CON, LACM, SIO, UBC, V	TEP	VC
	<i>Stegastes acapulcoensis</i> (Fowler, 1944)	CON, LACM, SIO, V	TEP	
	<i>Stegastes flavilatus</i> (Gill, 1862)	C, CON, LACM, UBC, V	TEP	D
	<i>Stegastes rectifraenum</i> (Gill, 1862)	CAS, SIO, UBC, V	GOC	U
Labridae	<i>Bodianus diplotaenia</i> (Gill, 1862)	C, CON, SIO, UBC, V	TEP	VC
	<i>Halichoeres adustus</i> (Gilbert, 1890)	CON	TEP	-
	<i>Halichoeres chierchiae</i> di Caporiacco, 1947	C, CON, SIO, V	TEP	VC
	<i>Halichoeres dispilus</i> (Günther, 1864)	C, CON, SIO, V	TEP	VC
	<i>Halichoeres insularis</i> Allen & Robertson, 1992	V	MEX	R
	<i>Halichoeres melanotis</i> (Gilbert, 1890)	V	TEP	U
	<i>Halichoeres nicholsi</i> (Jordan & Gilbert, 1882)	C, CON, SIO, UBC, V	TEP	VC
	<i>Halichoeres notospilus</i> (Günther, 1864)	C, CON, SIO, UBC, V	TEP	C
	<i>Iniistius pavo</i> (Valenciennes 1840)	V	EP + IP	U
	<i>Novaculichthys taeniourus</i> (Lacepède, 1801)	CON, V	EP + IP	C
	<i>Stethojulis bandanensis</i> (Bleeker, 1851)	CON, V	EP + IP	U
	<i>Thalassoma grammaticum</i> Gilbert, 1890	CON, UBC, SIO, V	EP + IP	U
	<i>Thalassoma lucasanum</i> (Gill, 1862)	C, CAS, CON, SIO, UBC, USNM, V	TEP	VC
	Scaridae	<i>Nicholsina denticulata</i> (Evermann & Radcliffe, 1917)	CON, SIO, UBC, V	EP
<i>Scarus compressus</i> (Osburn & Nichols, 1916)		V	TEP	C
<i>Scarus ghobban</i> Forsskål, 1775		CON, V	EP + IP	VC
<i>Scarus perrico</i> Jordan & Gilbert, 1882		CON, V	TEP	C
<i>Scarus rubroviolaceus</i> Bleeker, 1847		C, CON, SIO, V	EP + IP	VC
Tripterygiidae	<i>Axoclinus storeyae</i> (Brock, 1940)	C, SIO, UBC, V	MEX	-

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TABLE 1. (continued)

Family	Species	Record Designation	Distribution	Occurrence
	<i>Enneanectes carminalis</i> (Jordan & Gilbert 1882)	SIO	TEP	-
	<i>Enneanectes</i> species A	C, SIO, V	MEX	-
	<i>Enneanectes</i> species C	C, SIO, UBC	MEX	-
Dactyloscopi- dae	<i>Dactylagnus mundus</i> Gill, 1863	UBC	TEP	-
	<i>Dactyloscopus byersi</i> Dawson, 1969	SIO	TEP	-
	<i>Dactyloscopus fallax</i> Dawson, 1975	SIO, UBC	TEP	-
	<i>Dactyloscopus lunaticus</i> Gilbert, 1890	SIO	TEP	-
	<i>Dactyloscopus metoecus</i> Dawson, 1975	SIO	MEX	-
	<i>Dactyloscopus minutus</i> Dawson, 1975	SIO	TEP	-
	<i>Gillellus searcheri</i> Dawson, 1977	SIO	TEP	-
	<i>Heteristius cinctus</i> (Osburn & Nichols, 1916)	SIO	TEP	-
Blenniidae	<i>Entomacrodus chiostictus</i> (Jordan & Gilbert, 1882)	C, SIO, UBC	TEP	-
	<i>Hypsoblennius brevipinnis</i> (Günther, 1861)	C, SIO, UBC, V	TEP	-
	<i>Ophioblennius steindachneri</i> Jordan & Evermann, 1898	C, CON, LACM, SIO, UBC, USNM, V	TEP	C
	<i>Plagiotremus azaleus</i> (Jordan & Bollman, 1890)	C, CON, SIO, UBC, V	TEP	C
Labrisomidae	<i>Labrisomus multiporosus</i> Hubbs, 1953	SIO, UBC	TEP	-
	<i>Labrisomus striatus</i> Hubbs, 1953	LACM, SIO, UBC	MEX	-
	<i>Labrisomus xanti</i> Gill, 1860	SIO, V	MEX	-
	<i>Malacoctenus ebisui</i> Springer, 1959	C, CON, SIO, V	TEP	-
	<i>Malacoctenus mexicanus</i> Springer, 1959	C, SIO	MEX	-
	<i>Malacoctenus polyporosus</i> Springer 1959	C, SIO, UBC	MEX	-
	<i>Malacoctenus tetranemus</i> (Cope, 1877)	C, UBC	TEP	-
	<i>Malacoctenus zonifer</i> (Jordan & Gilbert, 1882)	LACM, SIO, UBC, V	TEP	-
	<i>Paraclinus beebei</i> Hubbs, 1952	SIO, UBC	TEP	-
	<i>Paraclinus ditrichus</i> Rosenblatt & Parr, 1969	SIO	IM	-
	<i>Paraclinus mexicanus</i> (Gilbert, 1904)	SIO, UBC, USNM	TEP	-
	<i>Paraclinus stephensi</i> Rosenblatt & Parr, 1969	SIO	MEX	-
	<i>Paraclinus tanygnathus</i> Rosenblatt & Parr, 1969	SIO, USNM	MEX	-
	<i>Starksia grammilaga</i> Rosenblatt & Taylor, 1971	SIO	MEX	-
	<i>Starksia lepidogaster</i> Rosenblatt & Taylor, 1971	C, SIO	IM	-
	<i>Starksia spinipenis</i> (Al-Uthman, 1960)	C, SIO	MEX	-
Chaenopsidae	<i>Acanthemblemaria balanorum</i> Brock, 1940	C, SIO, V	TEP	-
	<i>Acanthemblemaria macrospilus</i> Brock, 1940	C, SIO, UBC, V	MEX	-
	<i>Chaenopsis alepidota</i> (Gilbert, 1890)	C, CAS, V	NEP	-
	<i>Coralliozetus angelicus</i> (Böhlke & Mead, 1957)	C, SIO, V	MEX	-
	<i>Coralliozetus boehlkei</i> Stephens, 1963	C, SIO	TEP	-
	<i>Ekemblemaria myersi</i> Stephens, 1963	SIO, C, CAS	TEP	-
	<i>Emblemaria piratica</i> Ginsburg, 1942	C	TEP	-
	<i>Protemblemaria bicirrus</i> (Hildebrand, 1946)	C	TEP	-
	<i>Stathmonotus lugubris</i> Böhlke, 1953	SIO	MEX	-

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TABLE 1. (continued)

Family	Species	Record Designation	Distribution	Occurrence
Gobiesocidae	<i>Arcos erythroptus</i> (Jordan & Gilbert, 1882)	C, SIO, USNM, V	MEX	-
	<i>Gobiesox adustus</i> Jordan & Gilbert, 1882	C, SIO, UBC	TEP	-
	<i>Gobiesox marijeanae</i> Briggs, 1960	CAS, UBC, USNM	IM	-
	<i>Gobiesox papillifer</i> Gilbert, 1890	UBC	TEP	-
	<i>Tomicodon eos</i> (Jordan & Gilbert, 1882)	SIO	MEX	-
	<i>Tomicodon myersi</i> Briggs, 1955	C, SIO	TEP	-
	<i>Tomicodon petersii</i> (Garman, 1875)	UBC	TEP	-
	<i>Tomicodon zebra</i> (Jordan & Gilbert, 1882)	SIO	MEX	-
Gobiidae	<i>Barbulifer mexicanus</i> Hoese & Larson, 1985	SIO	MEX	-
	<i>Bathygobius ramosus</i> Ginsburg, 1947	SIO, UBC, USNM	TEP	-
	<i>Coryphopterus urospilus</i> Ginsburg, 1938	C, CON, SIO, V	TEP	-
	<i>Elacatinus digueti</i> (Pellegrin, 1901)	C, SIO	MEX	-
	<i>Elacatinus limbaughi</i> Hoese & Reader, 2001	C, SIO	GOC	-
	<i>Elacatinus puncticulatus</i> (Ginsburg, 1938)	C, SIO, V	TEP	-
	<i>Gymneleotris seminuda</i> (Günther, 1864)	SIO	TEP	-
	<i>Ilypnus</i> species	C	-	-
	<i>Lythrypnus pulchellus</i> Ginsburg, 1938	C, SIO	TEP	-
	<i>Microgobius brevispinis</i> Ginsburg, 1939	SIO	TEP	-
Microdesmidae	<i>Clarkichthys bilineatus</i> (Clark, 1936)	SIO	TEP	-
Ephippidae	<i>Chaetodipterus zonatus</i> (Girard, 1858)	V	EP	R
Zanclidae	<i>Zanclus cornutus</i> (Linnaeus, 1758)	CON, V	EP + IP	VC
Acanthuridae	<i>Acanthurus achilles</i> Shaw, 1803	V	EP + IP	R
	<i>Acanthurus nigricans</i> (Linnaeus, 1758)	C, CON, V	EP + IP	C
	<i>Acanthurus triostegus</i> (Linnaeus, 1758)	C, CON, CAS, UBC, V	EP + IP	U
	<i>Acanthurus xanthopterus</i> Valenciennes, 1835	C, CON, SIO, UBC, V	EP + IP	D
	<i>Prionurus laticlavus</i> (Valenciennes, 1846)	CON, V	TEP	U
	<i>Prionurus punctatus</i> Gill, 1862	CON, SIO, UBC, V	TEP	VC
Sphyraenidae	<i>Sphyraena qenie</i> Klunzinger, 1870	V	EP + IP	R
Trichiuridae	<i>Trichiurus nitens</i> Garman, 1899	SIO	EP	-
Scombridae	<i>Acanthocybium solandri</i> (Cuvier, 1832)	CON, LACM, V	CT	R
	<i>Euthynnus lineatus</i> Kishinouye, 1920	SIO, UBC	EP + IP	-
	<i>Katsuwonus pelamis</i> (Linnaeus, 1758)	USNM	CT	-
	<i>Sarda orientalis</i> (Temminck & Schlegel, 1844)	UBC, V	EP + IP	U
	<i>Scomber japonicus</i> Houttuyn, 1782	UBC	EP + IP	-
	<i>Scomberomorus sierra</i> Jordan & Starks, 1895	CON	EP	-
	<i>Thunnus albacares</i> (Bonnaterre, 1788)	CON, V	CT	R
Istiophoridae	<i>Istiophorus platypterus</i> (Shaw, 1792)	UBC	CT	-
Paralichthyidae	<i>Cyclosetta panamensis</i> (Steindachner, 1876)	SIO	TEP	-
	<i>Syacium latifrons</i> (Jordan & Gilbert, 1882)	SIO	TEP	-
Bothidae	<i>Bothus leopardinus</i> (Günther, 1862)	LACM, UBC	TEP	-
	<i>Monolene asaedai</i> Clark, 1936	SIO	TEP	-

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TABLE 1. (continued)

Family	Species	Record Designation	Distribution	Occurrence
Cynoglossidae	<i>Symphurus atramentatus</i> Jordan & Bollman, 1890	SIO	TEP	-
	<i>Symphurus callopterus</i> Munroe & Mahadeva, 1989	SIO	TEP	-
	<i>Symphurus leei</i> Jordan & Bollman, 1890	SIO	TEP	-
	<i>Symphurus melasmatotheca</i> Munroe & Nizinski, 1990	SIO	TEP	-
	<i>Symphurus williamsi</i> Jordan & Culver, 1895	SIO	TEP	-
Balistidae	<i>Balistes polylepis</i> Steindachner, 1876	CON, SIO, UBC, V	EP + IP	C
	<i>Canthidermis maculata</i> (Bloch, 1786)	LACM	CT	-
	<i>Melichthys niger</i> (Bloch, 1786)	C, V	CT	R
	<i>Pseudobalistes naufragium</i> (Jordan & Starks, 1895)	CON, UBC, V	TEP	D
	<i>Sufflamen verres</i> (Gilbert & Starks, 1904)	C, CON, SIO, UBC, USNM, V	TEP	D
Monacanthidae	<i>Aluterus monoceros</i> (Linnaeus, 1758)	LACM	CT	-
	<i>Aluterus scriptus</i> (Osbeck, 1765)	CON	CT	-
	<i>Cantherhines dumerilii</i> (Hollard, 1854)	CON	EP + IP	-
Ostraciidae	<i>Ostracion meleagris</i> Shaw, 1796	CON, V	EP + IP	U
Tetraodontidae	<i>Arothron hispidus</i> (Linnaeus, 1758)	CON, UBC, V	EP + IP	U
	<i>Arothron meleagris</i> (Lacèpede, 1798)	CON, SIO, UBC, V	EP + IP	VC
	<i>Canthigaster punctatissima</i> (Günther, 1870)	C, CAS, CON, SIO, UBC, V	TEP	VC
	<i>Sphoeroides annulatus</i> (Jenyns, 1842)	LACM	EP	-
	<i>Sphoeroides sechurae</i> Hildebrand, 1946	UBC	TEP	-
Diodontidae	<i>Chilomycterus reticulatus</i> (Linnaeus, 1758)	V	CT	U
	<i>Diodon holocanthus</i> Linnaeus, 1758	CON, SIO, V	CT	R
	<i>Diodon hystrix</i> Linnaeus, 1758	CON, SIO, V	CT	U
Molidae	<i>Ranzania laevis</i> (Pennant, 1776)	SIO	CT	-

The nomenclature of several historical records was modified to reflect current taxonomy following Eschmeyer & Fricke (2011). Family designations and sequencing of families in Table 1 follows Nelson (2006) as modified by more recent systematic literature (Craig & Hastings 2007; Smith & Craig 2007; Hastings & Springer 2009). Broad-scale species' distributions (Table 1) are based on Robertson and Allen (2008) and others (e.g., Rocha *et al.* 2008) and are categorized as follows: CT = circumtropical; EP = eastern Pacific (tropical and temperate waters of the eastern Pacific, both north and south of the equator); EP + ATL = eastern Pacific & Atlantic Oceans; EP + IP = eastern Pacific and Indo-Pacific regions; GOC = Gulf of California; IM = Islas Marías; M = Mexico; NEP = North-east Pacific (eastern Pacific from California, USA to Mexico); TEP = tropical eastern Pacific (eastern Pacific from Baja California to Peru).

We classified conspicuous fish species observed during the 2010 expedition into the following categories based on frequency of occurrence (Table 1): D = dominant (observed on > 90% of dives); VC = very common (60–90% of dives); C = common (30–59% of dives); U = uncommon (10–29% of dives); and R = rare (< 10% of dives). Small, cryptobenthic fishes (< 5 cm in length) that are behaviorally cryptic and difficult to observe by visual surveys, due to their close association with the substratum, were excluded from this analysis.

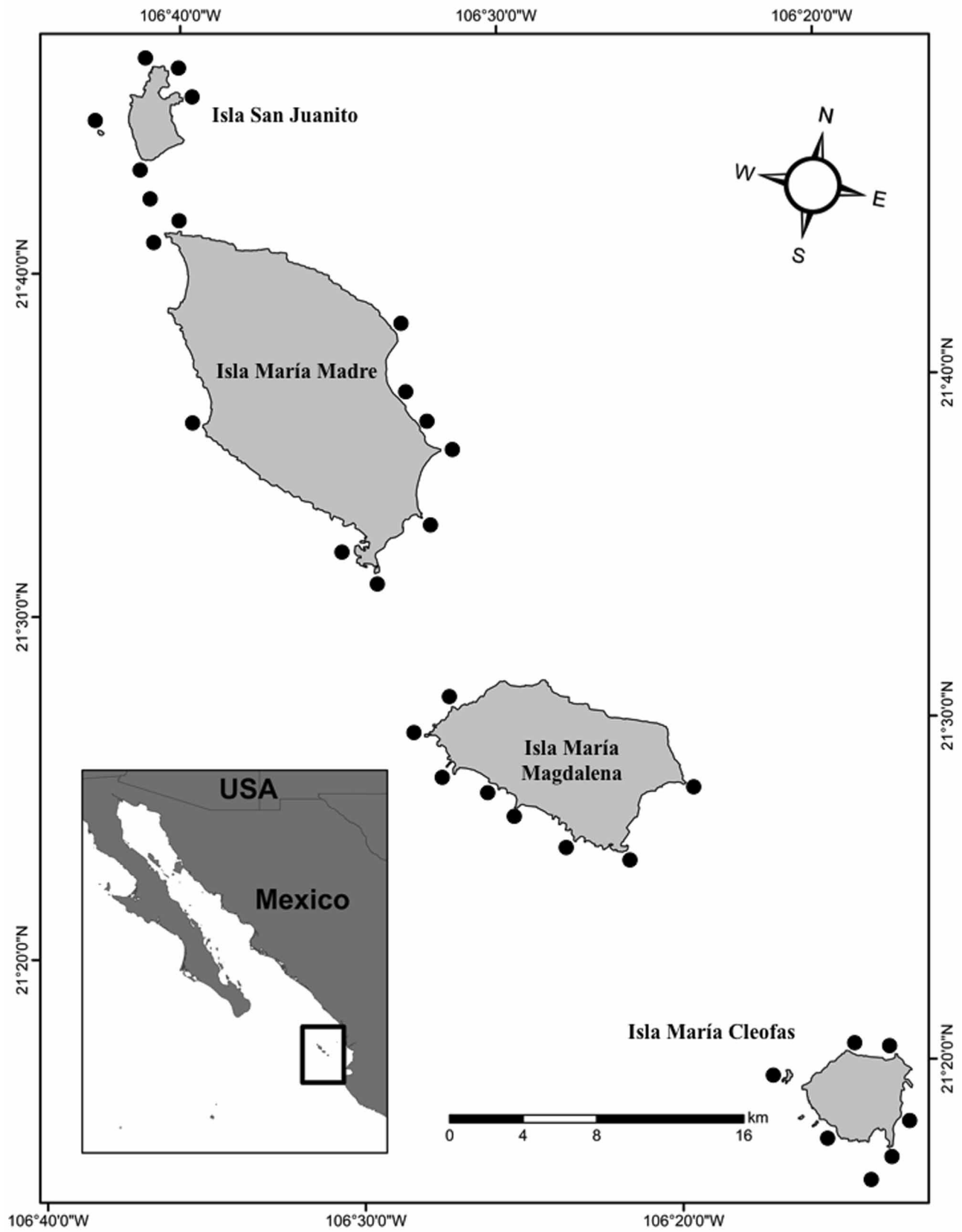


FIGURE 1. Map of Islas Marías archipelago showing locations of 31 survey sites from 2010.

Results and discussion

Ichthyofauna of Islas Marías

This study recorded 318 coastal fish species representing 205 genera in 83 families from the Islas Marías archipelago. Our 2010 expedition recorded 173 species (147 observed, 77 collected), while museum collections and published reports provided records for an additional 145 species. The Carangidae (jacks, 18 species) and Labrisomidae (labrisomid blennies, 16) were the most speciose families and were followed by the Labridae (wrasses, 13), Muraenidae (moray eels, 12), Epinephelidae (groupers and seabasses, 11), Haemulidae (grunts, 11) and Gobiidae (gobies, 10). Seventeen families were represented by 5 to 9 species, 34 families were represented by 2 to 4 species, and 25 families were represented by only one species.

The coastal fish fauna of Islas Marías is dominated by fishes with tropical affinities and relatively wide geographic distributions, including 160 species found throughout the TEP (Fig. 2), 39 circumtropical species, and 39 species found in both the eastern Pacific and the Indo-Pacific. Several species have distributions that include both tropical and temperate waters. These include 39 species found in both temperate and tropical areas of the eastern Pacific and three found in the Northeast Pacific from the Gulf of California, Mexico, to California, USA. Three species (*Ginglymostoma cirratum* [Fig. 3], *Mugil curema*, and *Gerres cinereus*) are reported to occur in both the eastern Pacific and the Atlantic. Twenty-five species are endemic to Pacific waters of Mexico (both north and south of Islas Marías), five species are endemic to the Gulf of California but have not been recorded south of Islas Marías, and three species are endemic to Islas Marías. These include *Gobiesox marijeanae* (see Briggs 1960), *Starksia lepidogaster* (see Rosenblatt & Taylor 1971) and *Paraclinus ditrichus* (see Rosenblatt & Parr 1969). Six species are identified only to the level of genus.

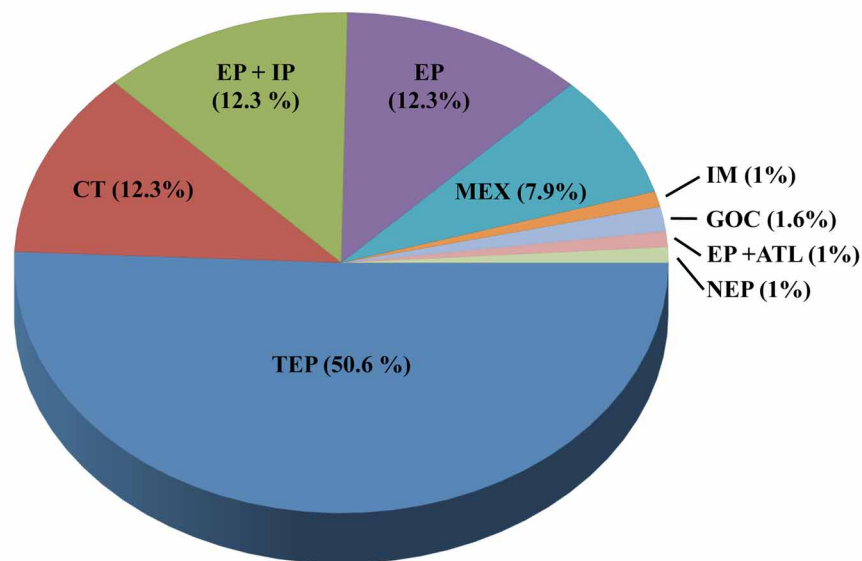


FIGURE 2. Proportions of geographic distribution types of 316 of 318 species observed or collected at Islas Marías archipelago. Two species are excluded due to a lack of information on their distribution. **CT** = circumtropical; **EP** = eastern Pacific; **EP + ATL** = eastern Pacific and Atlantic oceans; **EP + IP** = eastern Pacific and Indo-Pacific regions; **GOC** = Gulf of California; **IM** = Islas Marías; **MEX** = Mexico; **NEP** = Northeast Pacific; **TEP** = tropical eastern Pacific.

Observations in 2010

We recorded frequency of occurrence for 133 species of conspicuous fishes (Table 1). Of these, seven species were categorized as dominant: *Cephalopholis panamensis*, *Epinephelus labriformis* (Fig. 3), *Mulloidichthys dentatus* (Fig. 3), *Stegastes flavilatus*, *Acanthurus xanthopterus*, *Pseudobalistes naufragium* (Fig. 3), and *Sufflamen verres*. Twenty-six species were categorized as very common, 24 as common, and 38 species each were categorized as either uncommon or rare.

Specimens of two known, but undescribed, species of the tripterygiid genus *Enneanectes* were collected at several rocky reef sites throughout the archipelago, and a single specimen of a possible new species of the gobiid genus *Ilypnus* was collected over sandy bottom at a depth of approximately 15m (Table 1; Fig. 4). We also col-

lected one specimen of the Islas Marías endemic labrisomid, *Starksia lepidogaster*, previously known only from a single collection of 11 specimens, and several specimens of the recently described congrid, *Heteroconger pellegrini* (Fig. 4).

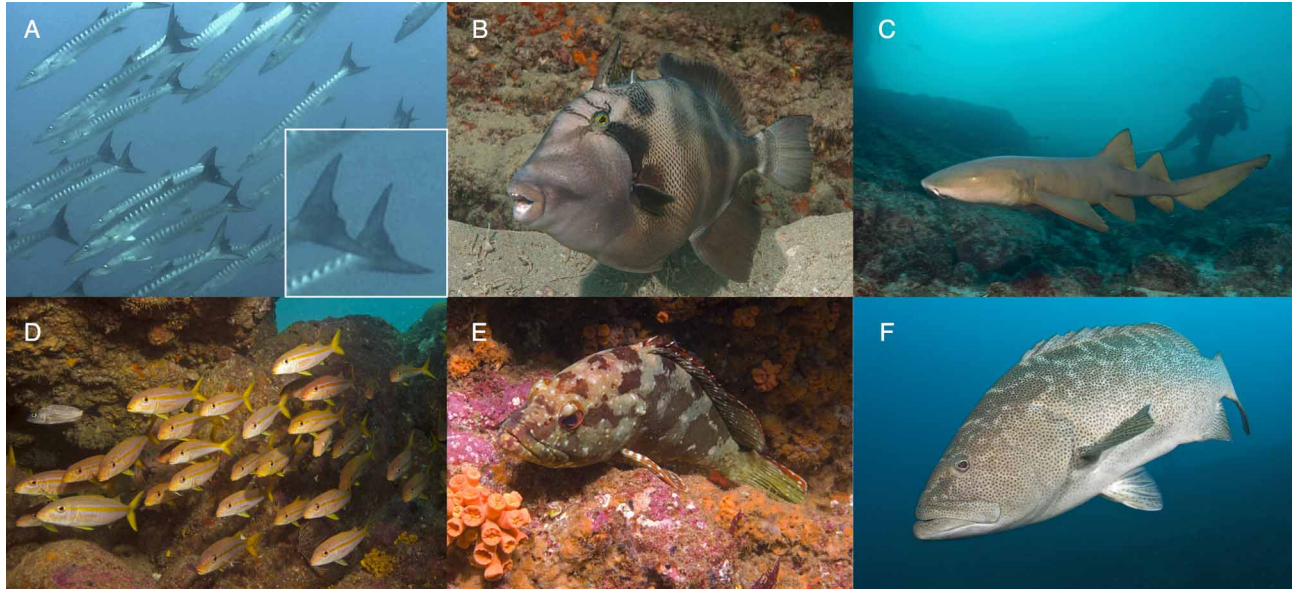


FIGURE 3. Conspicuous fishes observed at Islas Marías archipelago. (a) *Sphyraena genie*, with inset showing caudal fin with pair of lobes at center of rear margin; (b) *Pseudobalistes naufragium*; (c) *Ginglymostoma cirratum*; (d) *Mulloidichthys dentatus* (e) *Epinephelus labriformis*; (f) *Mycteroperca rosacea*. Photos by Octavio Aburto (not to scale).

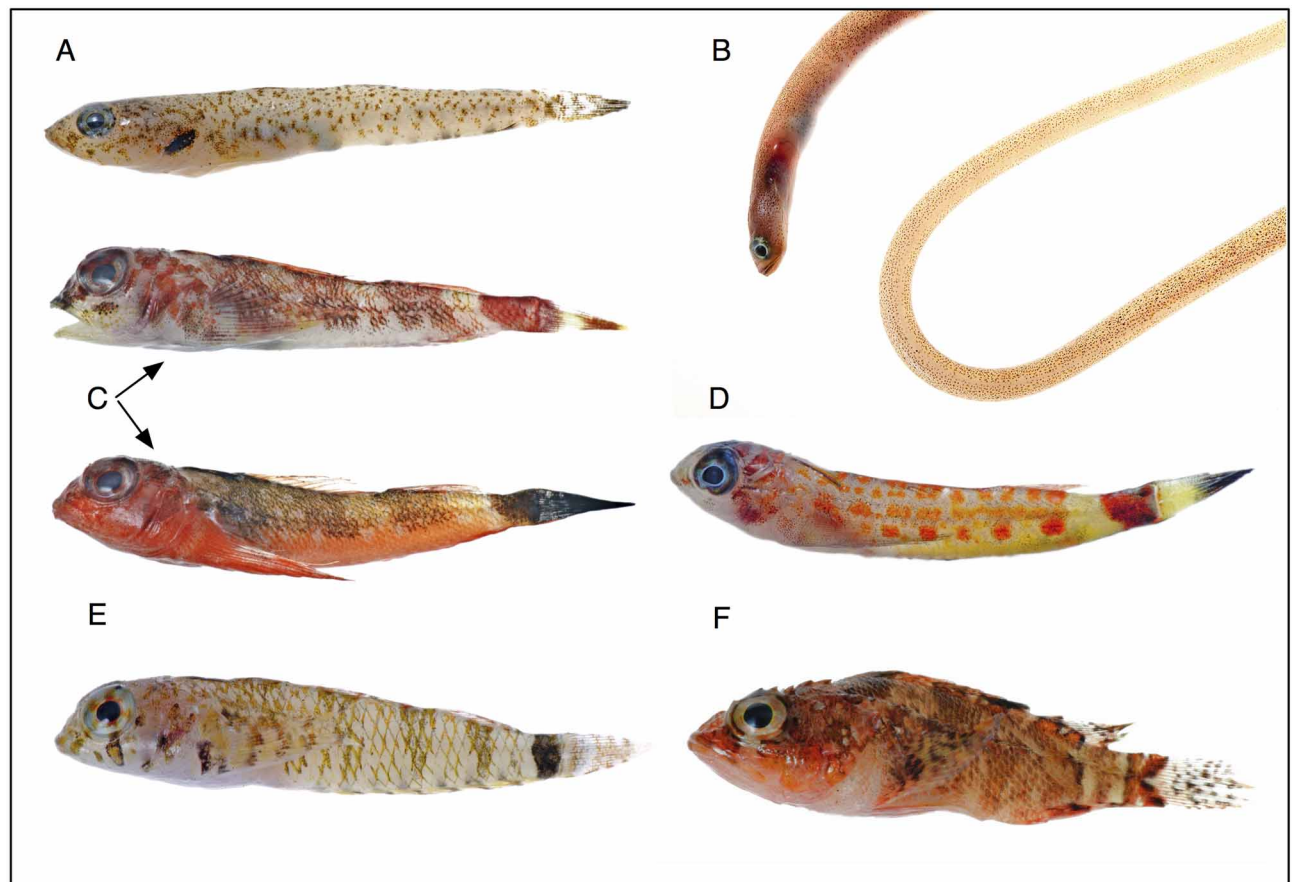


FIGURE 4. Cryptobenthic fishes collected at Islas Marías Archipelago. (a) *Ilypnus* species; (b) *Heteroconger pellegrini*; (c) *Axoclinus storeyae* pair, female (top) and male (bottom); (d) *Enneanectes* species C (e) *Enneanectes* species A; (f) *Scorpaenodes xyris*. Photos courtesy of Jaime Rojo (not to scale).

The Leopard Grouper, *Mycteroperca rosacea*, a large species endemic to the Gulf of California, was observed at only 8 sites and was abundant (> 10 fish) at only two sites (Fig. 3). The rarity of this species at the archipelago supports the notion that it is largely endemic to the Gulf of California (Thomson *et al.* 2000) and has a southern range limit near Islas Marías (Bahía Banderas, Jalisco). Surprisingly, the Leather Bass, *Dermatolepis dermatolepis*, which is abundant at all oceanic islands in the TEP (Robertson & Allen 2008), was only observed at one site (2 individuals).

We observed two species during our expedition that are not reported in the current version of the book *Common and scientific names of fishes from the United States, Canada, and Mexico* (Nelson *et al.* 2004): the barracuda, *Sphyrna genie* (Sphyrnidae) and the wrasse, *Stethojulis bandanensis* (Labridae). *Sphyrna genie* was confirmed by photograph (Fig. 3), and the distinctively colored *S. bandanensis* was observed by multiple divers at seven sites on three of the islands (María Madre, María Magdalena, San Juanito). We have also observed *S. bandanensis* previously further north in the Gulf of California during surveys conducted at Isla Espíritu Santo, Baja California Sur. *Sphyrna genie* has been reported in the southeast Gulf of California, and *S. bandanensis* has been previously recorded in the TEP south of Mexican waters (Robertson & Allen 2008; Eschmeyer & Fricke 2011).

Despite the islands' designation as a biosphere reserve and limited access due to the presence of the federal penal colony, evidence of commercial fishing activities was present. Large shark species known to be common throughout the TEP were rarely observed during the 2010 expedition. Scalloped Hammerhead, *Sphyrna lewini*, was observed only twice at one site on Isla San Juanito. Bull Shark, *Carcharhinus leucas*, was observed once at one site near Isla María Madre, and Whitetip Reef Shark, *Triaenodon obesus*, was observed at one site each on Islas María Madre and San Juanito. Nurse Shark, *Ginglymostoma cirratum*, was observed at five sites on three islands (María Magdalena, María Cleofas, San Juanito) and was common at two sites on Isla San Juanito. The relative absence of large sharks may be due to the presence of a large shark fishery at the islands (Perez-Jimenez *et al.* 2005), evidence of which (e.g., discarded or abandoned fishing gear at many dive sites) we observed at most sites during the 2010 expedition. Urotrygonid rays were never observed, and large-bodied groupers (e.g., *Mycteroperca rosacea*) were uncommon. Both groups of fishes are common throughout the Gulf of California, indicating these observations are a result of range limits or fishing pressure.

Acknowledgements

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References

- Briggs, J.C. (1960) A new clingfish of the genus *Gobiesox* from the Tres Marias Islands. *Copeia*, 1960, 215–217.
- Brusca, R.C., Findley, L.T., Hastings, P.A., Hendrickx, M.E., Torre Cosio, J. & van der Heiden, A.M. (2005) Macrofaunal diversity in the Gulf of California. In: Cartron, J.-L.E., Ceballos, G. & Felger, R.S. (Eds.), *Biodiversity, ecosystems and conservation in northern Mexico*. Oxford University Press, New York, pp. 179–202.
- CONANP-SEMARNAT (2010) *Programa de Conservación y Manejo Reserva de la Biosfera Islas Marías, México*. Secretaría de Medio Ambiente y Recursos Naturales, México D.F., 217 pp.
- Craig, M.T., & Hastings, P.A. (2007) A molecular phylogeny of the groupers of the subfamily Epinephelinae (Serranidae) with a revised classification of the Epinephelini. *Ichthyological Research*, 54, 1–17.
- Eschmeyer, W.N., & Fricke, W.N. (2011) Catalog of Fishes electronic version. Available from <http://research.calacademy.org/>

- ichthyology/catalog/fishcatmain.asp (accessed 10 April 2011).
- Hastings, P.A. (2000) Biogeography of the tropical eastern Pacific: distribution and phylogeny of chaenopsid fishes. *Zoological Journal of the Linnean Society*, 128, 319–335.
- Hastings, P. A. (2009) Biogeography of Neotropical blennies. *In*: Patzner, R.A., Gonçalves, E.J., Hastings, P.A. & Kapoor, B.G. (Eds.), *The Biology of Blennies*. Science Publishers, Enfield, New Hampshire, pp. 95–118.
- Hastings, P.A., Findley, L.T. & van der Heiden, A.M. (2010) Fishes of the Gulf of California. *In*: Brusca, R. (Ed.), *The Gulf of California, biodiversity and conservation*. University of Arizona Press, Tucson, pp. 96–118.
- Hastings, P.A. & Springer, V.G. (2009) Recognizing diversity in blennioid fish nomenclature (Teleostei: Blennioidei). *Zootaxa*, 2120, 3–14.
- Nelson, J.S. (2006) *Fishes of the World* (4th edition). John Wiley & Sons, Hoboken, New Jersey, 624 p.
- Nelson, J.S., Crossman, E.J., Espinosa Pérez, H., Findley, L.T., Gilbert, C.R., Lea, R.N. & Williams, J.D. (2004) *Common and scientific names of fishes from the United States, Canada, and Mexico, Sixth Edition*. American Fisheries Society, Special Publication 29, Bethesda, Maryland, 386 pp.
- Pérez-Jiménez, J.C., Sosa-Nishizaki, O. & Furlong-Estrada, E. (2005) Artisanal shark fishery at “Tres Marías” Islands and Isabel Island in the central Mexican Pacific. *Journal of Northwest Atlantic Fisheries Science*, 35, 333–343.
- Ricker, K.E. (1959) Mexican shore and pelagic fishes collected from Acapulco to Cape San Lucas during the 1957 cruise of the “Marijean”. *Museum Contributions, Institute of Fisheries, University of British Columbia*, 3, 1–18.
- Robertson, D.R., & Cramer, K. (2009) Shore fishes and biogeographic subdivisions of the tropical eastern Pacific. *Marine Ecology Progress Series*, 380, 1–17.
- Robertson D.R., & Allen, G.R. (2008) *Shorefishes of the tropical eastern Pacific online information system*. Version 1.0 (2008). Smithsonian Tropical Research Institute, Balboa, Panama. www.neotropicalfishes.org/sfstep, www.stri.org/sfstep
- Rocha L.A., Lindeman K.C., Rocha, C.R. & Lessios, H.A. (2008) Historical biogeography and speciation in the reef fish genus *Haemulon* (Teleostei: Haemulidae). *Molecular Phylogenetics and Evolution*, 48, 918–928.
- Rosenblatt, R.H. & Taylor, L.R. Jr. (1971) The Pacific species of the clinid fish tribe *Starksini*. *Pacific Science*, 25, 436–463.
- Rosenblatt, R.H. & Parr, T.D. (1969) The Pacific species of the clinid fish genus *Paraclinus*. *Copeia*, 1969, 1–20.
- Smith, W.L. & Craig, M.T. (2007) Casting the percomorph net widely: the importance of broad taxonomic sampling in the search for the placement of serranid and percoid fishes. *Copeia*, 2007, 35–55.
- Thomson, D.A., Findley, L.T. & Kerstitch, A.N. (2000) *Reef fishes of the Sea of Cortez: the rocky-shore fishes of the Gulf of California, Second edition*. The University of Texas Press, Austin, 407 pp.
- Walker, B.W. (1960) The distribution and affinities of the marine fish fauna of the Gulf of California. *Systematic Zoology*, 9, 123–133.