

2013 UPDATES TO THE CHECKLIST OF FISHES OF THE CNMI

THE COMMONWEALTH OF THE NORTHERN MARIANA ISLANDS
DEPARTMENT OF LANDS AND NATURAL RESOURCES
DIVISION OF FISH AND WILDLIFE



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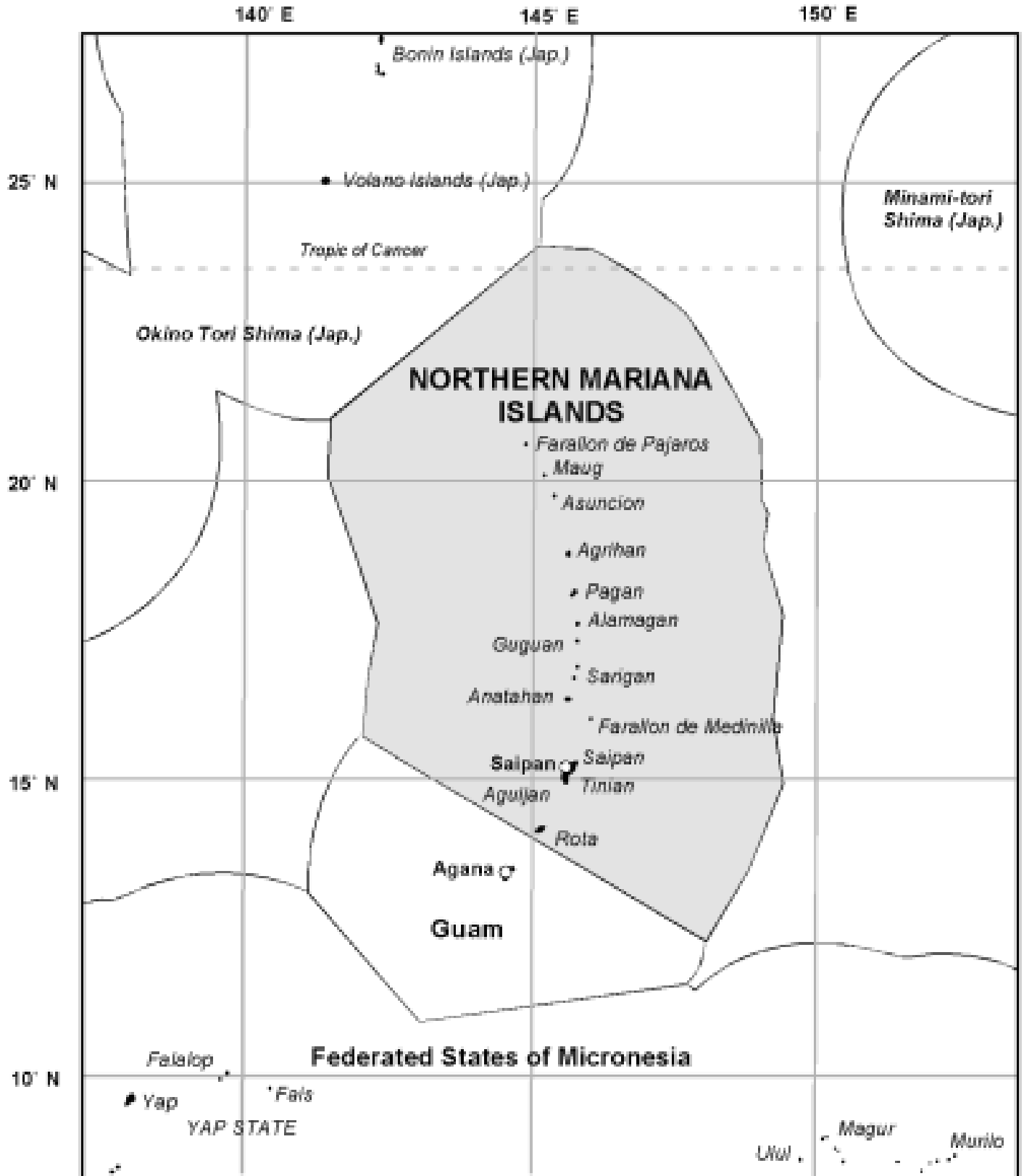


Figure 1. Map of the Commonwealth of the Northern Mariana Islands. (Source: fisherymanagement.wikia.com)

ACKNOWLEDGEMENTS

The compilation of a checklist of fishes is a continual process that regularly involves the cooperation and expertise of various groups of people. This is especially true in the CNMI, with its diverse and extensive geography. This checklist should therefore be viewed as a historical point in time.

With this understanding we wish to acknowledge the efforts of the many past and present Division of Fish and Wildlife staff whose efforts have contributed significantly to this report. In addition, we wish to acknowledge the many fishermen, vendors and scientists who have allowed DFW staff access to their catches and data over the years. We would also like to thank Michael Trianni of NOAA-PIFSC, John Gourley and Anthony R. Flores of Micronesian Environmental Services for their assistance in identifying and collecting samples. It is with their support and cooperation which has enabled this project to improve and expand over the past years.

SUMMARY

The Checklist of Fishes of the Commonwealth of the Northern Mariana Islands is an ongoing project funded by the Dingell-Johnson Sportfish Restoration Act, which is a grant program administered by the U.S. Fish and Wildlife Service. The checklist includes numerous species of pelagic, epipelagic, bottom, reef, and aquatic fish found within the Mariana Archipelago. The project began in 1982 with the last revision occurring in 2011. This most recent update incorporates new records from data collection activities conducted since 2011 by the Commonwealth of the Northern Mariana Islands Division of Fish and Wildlife, as well as from historical reef fish surveys conducted over the past 25 years. In addition to these changes, the checklist has been expanded to include offshore banks and reefs for which occurrence data are available. A list of aquatic species generated from a 2007 invasive species survey conducted in Saipan has been included into the checklist. Updates have also been entered for the Northern Islands with data collected from the Northern Island Bottomfish Survey (NIBS); 2005, 2007 and 2009 NOAA CRED MARAMP, and 2010 USFWS Pagan survey. Updates from the southern populated island were obtained through 2003 Kate A. Moots/Hemstra samples, and DFW observations. The updates from 2011-2013 were generated through samples obtained in the fish markets of Saipan. These samples were collected by the CNMI Division of Fish and Wildlife's Fisheries Research Section, in collaboration with Micronesian Environmental Services (MES) and the Saipan Roadside Fish Vendors. The checklist systematics was derived from taxonomic classification following Myers (1991). Changes will be implemented in the following year to address new taxonomic classifications.

Placement of the checklist into a contemporary format and storage system will help to ensure that the data are readily accessible, and that future revisions will occur in a timely manner. In conjunction with the checklist, a reference collection of preserved fish specimens was initiated without continuing success due to the lack of an adequate storage facility and permanent office location for the Division of Fish and Wildlife. This aspect of the project remains on hold pending the recruitment of additional professional staff.

INTRODUCTION

The portion of the Mariana Archipelago which comprises the Commonwealth of the Northern Mariana Islands (CNMI) consists of a chain of islands and banks on a north-south axis, beginning with the island of Rota to the south and extending north to Uracas (Figure 1). Of the fourteen islands in the CNMI, only three are populated. The island of Saipan consists of approximately 90 percent of the total population, while Tinian and Rota consists of nearly 5 percent each. The other islands are generally uninhabited with the exception of Agrighan, Pagan and Alamagan which have been sparsely populated in the past ten years. Records of fish species have been collected throughout the island chain by various research activities.

The Checklist of Fishes of the CNMI began in 1982 as a project funded by Federal Aid through the Dingell-Johnson (DJ) Sportfish Restoration Act, a grant program administered by the U.S. Fish and Wildlife Service. This program has allowed the Division to standardize the collection and recording process for fishes of the CNMI. The continued maintenance and improvement of the checklist will provide for accurate listings for the Mariana Islands.

The checklist includes pelagic, epipelagic, bottom, and reef fish, reflecting the various fisheries of the CNMI. The last revision of the checklist occurred in 2011. The checklist is composed of species verifications from the islands of the CNMI by Division of Fish and Wildlife personnel and other reliable sources. These data came primarily from fisheries monitoring programs, but also included contract surveys, personal observations, and fishing derbies. The checklist has been expanded to include offshore banks and reefs.

Also included under this DJ program is a reference collection of CNMI fishes, which has yet to be organized due to the absence of a permanent storage facility.

METHODS

The families, genus, and species which comprise the framework of the checklist were derived from an electronic copy of the taxonomic list from Myers (1991). This list was supplied to the CNMI DFW by the Guam Division of Aquatic and Wildlife Resources. The list was subsequently reformatted and converted to Microsoft Excel version No. 7. Records prior to 1989 were entered from the 1988 hard copy of the checklist. The Excel version was then converted to a Microsoft Access database form and DFW data collection records from 1996-1998 were subsequently integrated. This most recent data were obtained through monitoring programs of the following fisheries; Northern Islands reef fish, Northern Islands deep water bottom fish, Saipan and Tinian reef fish, shallow water bottom fish, and from various DFW Fisheries research surveys conducted over the past 25 years. Additional records were also obtained through verifiable sightings from fishermen and other knowledgeable individuals.

Species identifications were determined using the following references; Randall (2005), Chapman et al. (2008), Allen et al. (2003), Myers (1999), Myers (1991), Randall and Heemstra (1991), Randall et al. (1990), Allen (1987), Anderson (1987), Carpenter (1987), Randall (1987), Smith and Heemstra (1986), Allen and Talbot (1985), Bruce and Randall (1985), Masuda et al. (1985), Sainsbury et al. (1985), and Kato et al. (1967). In cases where positive specific identification required greater expertise, specimens were sent to Guam for identification by Mr.

Robert Myers, formerly of the Guam Division of Aquatic and Wildlife Resources. Most records represent sight records obtained through market sampling and survey data collection activities. For most of these records no specimens exist. For some con-genera, records exist where the group was previously unrecorded and identification to the specific level was not possible.

RESULTS

The checklist includes 133 families, and up to 1,641 species, listed phylogenetically. An ‘x’ indicates the documentation of that particular species at the island, bank or reef indicated. Documentation generally follows the latitudinal extent of commercial fishing activity and research cruises. Ranges for numerous species have been expanded, with many species’ names updated to accepted taxonomic classifications. The updates for 2013 were made possible through collaborative effort between DFW, private organizations and individuals. The following species have been added to the checklist:

<u>Species</u>	<u>Island</u>	<u>Source</u>
1. <i>Carangoides plagiotaenia</i>	Saipan	Market sample
2. <i>Erythrocles scintillans</i>	Saipan	DFW lifehistory sample
3. <i>Gerres oyena</i>	Saipan	Market sample
4. <i>Gnathanodon speciosus</i>	Saipan	Market sample
5. <i>Lethrinus erythracanthus</i>	Saipan	Market sample
6. <i>Naso thynnoides</i>	Saipan	Fisherman sample
7. <i>Oplegnathus punctatus</i>	Sarigan	Market sample
8. <i>Ostichthys archiepiscopus</i>	Saipan	DFW lifehistory sample
9. <i>Plectorhinchus albobittatus</i>	Saipan	Market sample
10. <i>Polydactylus sexfilis</i>	Sarigan	Market sample
11. <i>Saloptia powelli</i>	Saipan	DFW lifehistory sample
12. <i>Scarus spinus</i>	Saipan	Market sample
13. <i>Sphyræna novaehollandiae</i>	Saipan	Market sample
14. <i>Valamugil engeli</i>	Saipan	Market sample
15. <i>Valamugil seheli</i>	Tinian	Market sample

RECCOMENDATIONS

The Checklist of fishes for the CNMI project is an important component for the Divisions monitoring programs. The checklist and the reference collection are essential for the fish identification training of DFW staff and other scientists. The checklist should be maintained in its present electronic form and improved upon as new data base software become available. New data collections should be combined with the checklist and any new additions made on a regular basis. Communication with other fisheries experts are needed for verification of fish being identified. The reference collection is expected to be revived once an adequate training is obtained in fish curating and records keeping. This collection will initially require significant effort to restart, with constant attention necessary over the long term for satisfactory completion.

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2011 CHECKLIST OF FISHES OF THE COMMONWEALTH OF THE NORTHERN MARIANA ISLANDS

TAXON	Rota	Aguijan	Tinian	Esmeralda Bank	Coke Reef	300 Reef	Saipan	Marpi Reef	Malakis Reef	Opakapaka Reef	Peligro Reef	F D Medinilla	White Tuna Reef	Anatahan	Sonome Reef	Anarigan Bank	Sarigan	Zealandia Bank	Guguan	Alamagan	Pagan	Agrihan	Asuncion	Maug	Uracas	Pathfinder	Arakane
ELASMOBRANCHII																											
Hexanchiformes																											
Hexanchidae																											
<i>Hexanchus griseus</i>						X																					
Orectolobiformes																											
Rhincodontidae																											
<i>Rhincodon typus</i>																										X	
Ginglymostomatidae																											
<i>Nebrius ferrugineus</i>							X				X						X	X	X	X	X	X	X	X	X	X	X
Lamniformes																											
Lamnidae																											
<i>Isurus oxyrinchus</i>																											
Alopiidae																											
<i>Alopias pelagicus</i>							X																				
Carchariniformes																											
Carcharhinidae																											
<i>Carcharhinus albimarginatus</i>																										X	
<i>Carcharhinus amblyrhynchos</i>	X	X	X				X				X			X			X	X	X	X	X	X	X	X	X	X	X
<i>Carcharhinus falciformis</i>																								X			
<i>Carcharhinus galapagensis</i>							X																	X			
<i>Carcharhinus longimanus</i>																								X			
<i>Carcharhinus melanopterus</i>	X	X	X				X				X			X			X		X	X	X	X	X	X			
<i>Galeocerdo cuvier</i>																								X			
<i>Prionace glauca</i>						X																					
<i>Triaenodon obesus</i>	X	X	X				X				X			X			X	X	X	X	X	X	X	X	X	X	X
Sphyrnidae																											
<i>Sphyrna lewini</i>																											
Rajiformes																											
Rhinobatidae																											

<i>Neoniphon</i> sp. (unidentified)	X					X						X					X						
<i>Ostichthys archiepiscopus</i>						X																	
<i>Ostichthys brachygnathus</i>																							
<i>Ostichthys kaianus</i>																							
<i>Ostichthys sandix</i>																							
<i>Plectrypops lima</i>			X																			X	
<i>Sargocentron caudimaculatum</i>	X	X	X			X			X		X			X	X	X	X	X			X		
<i>Sargocentron diadema</i>			X			X							X		X	X					X		X
<i>Sargocentron ensiferum</i>																							
<i>Sargocentron microstomum</i>			X			X											X						
<i>Sargocentron praslin</i>						X																	
<i>Sargocentron punctatissimum</i>						X	X																
<i>Sargocentron spiniferum</i>	X	X	X			X			X		X		X	X	X	X	X	X	X	X	X	X	X
<i>Sargocentron tiere</i>	X	X	X			X					X		X		X	X	X	X	X	X	X		
<i>Sargocentron tiereoides</i>			X																				
Gasterosteiformes																							
Pegasidae																							
<i>Eurypegasus draconis</i>																							
Syngnathiformes																							
Aulostomidae																							
<i>Aulostomus chinensis</i>	X		X			X			X		X									X			
Fistulariidae																							
<i>Fistularia commersonii</i>	X					X			X						X	X	X			X		X	X
Solenostomidae																							
<i>Solenostomus cyanopterus</i>																							
<i>Solenostomus</i> sp. (undescribed)			X																				
Syngnathidae																							
<i>Choeroichthys brachysoma</i>																							
<i>Choeroichthys sculptus</i>						X																	
<i>Corythoichthys flavofasciatus</i>						X																	
<i>Corythoichthys intestinalis</i>			X			X																	
<i>Syngnathidae</i>						X																	
<i>Corythoichthys</i> sp.						X																	
<i>Corythoichthys nigripectus</i>																							
<i>Cosmocampus darrosanus</i>																							
<i>Doryrhamphus dactyliophorus</i>																							
<i>Doryrhamphus negrosensis</i>						X																	
<i>Doryrhamphus excisus</i>						X																	
<i>Halicampus brocki</i>						X																	
<i>Halicampus mataafae</i>																							

<i>Cephalopholis sonnerati</i>	X		X			X										X	X						
<i>Cephalopholis spiloparaea</i>	X																X						
<i>Cephalopholis urodeta</i>	X	X	X			X		X	X			X	X	X	X	X	X	X	X	X	X	X	X
<i>Cephalopholis</i> sp. (unidentified)					X	X											X						
<i>Cromileptes altivelis</i>																							
<i>Epinephelus corallicola</i>						X																	
<i>Epinephelus fasciatus</i>	X	X	X			X		X	X			X	X	X	X	X	X	X	X	X	X	X	X
<i>Epinephelus fuscoguttatus</i>																		X					
<i>Epinephelus hexagonatus</i>	X	X	X			X		X	X			X	X		X	X	X	X	X	X	X	X	X
<i>Epinephelus howlandi</i>			X			X											X						
<i>Epinephelus lanceolatus</i>																							
<i>Epinephelus macrospilos</i>	X					X		X			X					X						X	
<i>Epinephelus maculatus</i>						X										X				X			
<i>Epinephelus merra</i>	X	X	X			X	X		X			X				X	X			X	X		
<i>Epinephelus melanostigma</i>																			X				
<i>Epinephelus morrhua</i>						X						X											
<i>Epinephelus octofasciatus</i>																							
<i>Epinephelus polyphkadion</i>	X		X			X		X					X		X	X			X				
<i>Epinephelus socialis</i>			X			X						X				X							
<i>Epinephelus tauvina</i>	X		X			X		X	X			X		X	X	X	X			X			
<i>Epinephelus</i> sp. (unidentified)	X		X					X				X					X						
<i>Gracila albomarginata</i>			X					X				X	X	X	X	X	X	X	X				
<i>Grammistes sexlineatus</i>			X			X										X	X						
<i>Grammistops ocellatus</i>																							
<i>Holanthias borbonius</i>																							
<i>Holanthias katayamai</i>																							
<i>Liopropoma lunulatum</i>																							
<i>Liopropoma maculatum</i>																							
<i>Liopropoma pallidum</i>			X														X						
<i>Liopropoma tonstrinum</i>																							
<i>Plectranthias fourmanoiri</i>																							
<i>Plectranthias kamii</i>					X																		
<i>Plectranthias nanus</i>																							
<i>Plectranthias rubrifasciatus</i>																							
<i>Plectropomus laevis</i>	X					X		X													X		
<i>Plectropomus leopardus</i>	X					X											X						
<i>Pogonoperca punctata</i>						X		X				X				X	X			X		X	X
<i>Pseudanthias bicolor</i>																X				X			
<i>Pseudanthias cooperi</i>						X							X	X	X	X			X	X	X		
<i>Pseudanthias pascalus</i>	X		X			X		X				X	X	X	X	X	X	X	X	X	X		X
<i>Pseudanthias pleurotaenia</i>			X																				
<i>Pseudanthias ventralis</i>																							

<i>Apogon doryssa</i>																						
<i>Apogon endekataenia</i>																						X
<i>Apogon evermanni</i>																						
<i>Apogon exostigma</i>			X			X																
<i>Apogon fraenatus</i>						X								X								X
<i>Apogon guamensis</i>						X																X
<i>Apogon kallopterus</i>			X			X																X
<i>Apogon lateralis</i>																						
<i>Apogon leptacanthus</i>																						
<i>Apogon luteus</i>			X			X				X							X					X
<i>Apogon nigrofasciatus</i>			X			X																X
<i>Apogon novemfasciatus</i>	X					X									X							
<i>Apogon savayensis</i>			X			X																
<i>Apogon semilineatus</i>																						
<i>Apogon taeniophorus</i>						X																
<i>Apogon taeniopterus</i>			X																			
<i>Apogon trimaculatus</i>			X			X				X								X				
<i>Apogon sp. (unidentified)</i>	X	X	X			X				X					X	X						X
<i>Apogonichthys ocellatus</i>						X																
<i>Apogonichthys perdx</i>																						
<i>Archamia biguttata</i>																						
<i>Archamia fucata</i>																						
<i>Cercamia eremeia</i>						X																
<i>Cheilodipterus artus</i>			X																			
<i>Cheilodipterus macrodon</i>	X		X			X																
<i>Cheilodipterus quinquelineatus</i>						X								X	X	X	X	X				
<i>Foa brachygramma</i>																						
<i>Foa fo</i>																						
<i>Fowleria aurita</i>																						
<i>Fowleria marmorata</i>																						
<i>Fowleria punctulata</i>						X																
<i>Fowleria variegata</i>																						
<i>Fowleria vaiulae</i>																						
<i>Gymnapogon philippinus</i>			X																			
<i>Gymnapogon urospilotus</i>																						
<i>Pseudamia gelatinosa</i>																						
<i>Pseudamiops gracilicauda</i>																						
<i>Siphamia fistulosa</i>																						
<i>Siphamia versicolor</i>																						
<i>Siphamia sp.</i>																						
<i>Sphaeramia orbicularis</i>																						
Malacanthidae																						

<i>Hoplostiltilus starcki</i>																							
<i>Malacanthus brevirostris</i>		X				X											X						
<i>Malacanthus latovittatus</i>	X	X	X			X								X	X				X	X	X	X	
Rachycentridae																							
<i>Rachycentron canadum</i>																							
Echeneidae																							
<i>Echeneis naucrates</i>																							
<i>Phtheichthys lineatus</i>																							
<i>Remora osteochir</i>																							
<i>Remora remora</i>												X								X			
Carangidae																							
<i>Alectis ciliaris</i>																							
<i>Alectis indicus</i>						X																	
<i>Alepes djedaba</i>																							
<i>Atule mate</i>																							
<i>Carangoides caeruleopinnatus</i>																							
<i>Carangoides chrysophrys</i>																							
<i>Carangoides ferdau</i>			X																	X			
<i>Carangoides gymnostethus</i>																							
<i>Carangoides hedlandensis</i>																							
<i>Carangoides malabaricus</i>																							
<i>Carangoides oblongus</i>																							
<i>Carangoides orthogrammus</i>	X		X			X	X						X	X			X	X	X	X	X	X	X
<i>Carangoides plagiotaenia</i>						X														X			
<i>Carangoides talamparoides</i>																							
<i>Caranx ignobilis</i>	X					X						X		X	X	X	X	X	X	X	X		
<i>Caranx lugubris</i>	X					X						X	X	X	X	X	X	X	X	X	X	X	X
<i>Caranx melampygus</i>	X	X	X			X						X	X	X	X	X	X	X	X	X	X	X	X
<i>Caranx papuensis</i>																				X			
<i>Caranx sexfasciatus</i>	X		X			X						X	X	X	X	X	X	X	X	X	X	X	X
<i>Caranx sp. (unidentified)</i>	X																						
<i>Caranx tille</i>																							
<i>Decapterus macarellus</i>	X	X				X													X				
<i>Decapterus macrosoma</i>						X																	
<i>Decapterus maruadsi</i>																							
<i>Decapterus tabl</i>									X														
<i>Decapterus sp. (unidentified)</i>																				X	X		
<i>Elagatis bipinnulata</i>			X			X						X	X	X	X	X	X			X	X	X	X
<i>Gnathanodon speciosus</i>						X													X				
<i>Naucrates ductor</i>																							
<i>Scomberoides lysan</i>	X	X	X			X							X	X	X	X	X				X		X
<i>Scomberoides tol</i>																				X			

<i>Selar boops</i>																										
<i>Selar crumenophthalmus</i>						X																				
<i>Selaroides leptolepis</i>																										
<i>Seriola dumerili</i>						X												X	X							
<i>Seriola rivoliana</i>																		X								
<i>Seriolina nigrofasciata</i>																										
<i>Trachinotus baillonii</i>						X			X		X							X				X				
<i>Trachinotus blochii</i>						X			X																	
<i>Uraspis helvola</i>																										
<i>Uraspis uraspis</i>																										
Coryphaenidae																										
<i>Coryphaena equiselis</i>																										
<i>Coryphaena hippurus</i>	X	X	X			X			X		X			X			X	X	X							
Leiognathidae																										
<i>Gazza achlamys</i>																										
<i>Leiognathus equulus</i>																										
<i>Leiognathus fasciatus</i>																										
<i>Leiognathus stercorarius</i>																										
Bramidae																										
<i>Taractichthys steindachneri</i>									X		X	X		X	X	X	X									
Emmelichthyidae																										
<i>Emmelichthys karnellai</i>																										
<i>Erythrocles scintillans</i>							X																			
Lutjanidae																										
<i>Aphareus furca</i>	X	X	X			X			X		X			X			X	X	X	X	X	X	X	X		
<i>Aphareus rutilans</i>	X		X			X			X		X			X												
<i>Aprion virescens</i>	X		X			X			X		X			X		X		X	X	X	X	X	X	X	X	X
<i>Etelis carbunculus</i>	X		X						X		X			X												
<i>Etelis coruscans</i>						X			X		X			X												
<i>Etelis radiosus</i>													X	X												
<i>Lutjanus argentimaculatus</i>							X																			
<i>Lutjanus bohar</i>	X	X	X			X			X		X			X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Lutjanus ehrenbergii</i>			X			X																				
<i>Lutjanus fulviflamma</i>			X			X																				
<i>Lutjanus fulvus</i>	X	X	X			X			X		X			X		X	X	X	X	X	X	X	X	X		
<i>Lutjanus gibbus</i>	X		X			X			X		X			X		X	X	X	X	X	X	X	X	X	X	X
<i>Lutjanus kasmira</i>	X	X	X			X			X		X			X		X	X	X	X	X	X	X	X	X	X	X
<i>Lutjanus lunulatus</i>																										
<i>Lutjanus lutjanus</i>																										
<i>Lutjanus malabaricus</i>																										
<i>Lutjanus monostigma</i>	X		X			X			X		X						X	X	X			X				
<i>Lutjanus rivulatus</i>						X																				

<i>Lutjanus russellii</i>						X																	
<i>Macolor macularis</i>	X	X	X			X				X	X			X	X	X	X	X	X	X	X		X
<i>Macolor niger</i>	X	X	X			X				X	X			X	X	X	X	X	X	X	X		X
<i>Paracaesio kusakarii</i>																							
<i>Paracaesio sordida</i>										X													
<i>Paracaesio xanthura</i>	X				X	X																X	
<i>Pristipomoides argyrogrammicus</i>						X																	
<i>Pristipomoides auricilla</i>	X					X			X	X				X									
<i>Pristipomoides filamentosus</i>	X					X				X	X			X									
<i>Pristipomoides flavipinnis</i>						X				X	X			X									
<i>Pristipomoides multidentis</i>						X																	
<i>Pristipomoides sieboldii</i>																						X	
<i>Pristipomoides zonatus</i>	X					X				X	X			X									
<i>Randallichthys filamentosus</i>									X														
Caesionidae																							
<i>Caesio caerulea</i>	X	X	X			X				X	X						X						
<i>Caesio cuning</i>			X			X								X									
<i>Caesio lunaris</i>	X									X	X												
<i>Caesio teres</i>						X				X	X			X	X	X	X	X	X	X	X		
<i>Pterocaesio marri</i>	X	X	X			X				X	X				X								
<i>Pterocaesio tile</i>	X	X	X			X				X	X			X	X	X	X	X	X	X	X		
Lobotidae																							
<i>Lobotes surinamensis</i>																							
Gerreidae																							
<i>Gerres acinaces</i>						X																	
<i>Gerres longirostris</i>						X																	
<i>Gerres oblongus</i>						X																	
<i>Gerres oyena</i>						X																	
Haemulidae																							
<i>Plectorhinchus albobittatus</i>						X																	
<i>Plectorhinchus gibbosus</i>																	X						
<i>Plectorhinchus lineatus</i>																							
<i>Plectorhinchus picus</i>	X	X	X			X				X	X			X		X	X	X	X	X		X	
<i>Plectorhinchus schotaf</i>																						X	
<i>Plectorhinchus sp. cf. schotaf</i>																							
<i>Plectorhinchus vittatus</i>						X																	
Lethrinidae																							
<i>Gnathodentex aureolineatus</i>	X	X	X			X				X	X			X		X	X	X	X	X	X	X	X
<i>Gymnocranius euanus</i>	X									X	X			X									
<i>Gymnocranius grandoculis</i>																							
<i>Gymnocranius griseus</i>																							
<i>Gymnocranius microdon</i>						X				X	X												

<i>Kyphosus bigibbus</i>	X		X			X			X	X				X	X	X	X	X	X				
<i>Kyphosus cinerascens</i>	X	X	X			X			X	X			X	X	X	X	X	X	X	X			
<i>Kyphosus vaigiensis</i>	X	X	X			X			X	X			X	X	X	X	X	X	X	X			
<i>Kyphosis</i> sp. (unidentified)	X	X				X							X	X		X							
<i>Sectator ocyurus</i>														X									
Drepanidae																							
<i>Drepane punctata</i>																							
Monodactylidae																							
<i>Monodactylus argenteus</i>																							
Chaetodontidae																							
<i>Chaetodon auriga</i>	X	X	X			X			X	X			X	X	X	X	X	X	X	X	X	X	X
<i>Chaetodon baronessa</i>	X																						
<i>Chaetodon bennetti</i>	X		X			X			X	X				X		X	X		X				
<i>Chaetodon citrinellus</i>	X	X	X			X			X	X				X		X	X		X	X	X	X	X
<i>Chaetodon ephippium</i>	X	X	X			X			X	X			X	X	X	X	X	X	X	X			X
<i>Chaetodon flavocoronatus</i>																				X	X		
<i>Chaetodon kleinii</i>	X		X			X			X				X			X	X		X		X	X	
<i>Chaetodon lineolatus</i>	X					X													X				
<i>Chaetodon lunula</i>	X	X	X			X			X	X			X		X	X	X	X	X	X	X	X	
<i>Chaetodon lunulatus</i>	X		X			X			X	X			X			X	X		X				
<i>Chaetodon melannotus</i>						X										X			X				
<i>Chaetodon mertensii</i>	X	X				X			X				X			X	X	X		X	X		
<i>Chaetodon modestus</i>																							
<i>Chaetodon ornatissimus</i>	X	X	X			X			X	X			X		X	X	X	X	X	X	X	X	
<i>Chaetodon punctatofasciatus</i>	X	X	X			X			X	X			X	X	X	X	X	X	X	X	X	X	X
<i>Chaetodon quadrimaculatus</i>	X	X	X			X			X	X			X	X	X	X	X	X	X	X	X	X	X
<i>Chaetodon reticulatus</i>	X	X	X			X			X	X			X	X	X	X	X	X	X	X	X	X	X
<i>Chaetodon semeion</i>	X																						
<i>Chaetodon speculum</i>									X														
<i>Chaetodon trifascialis</i>	X	X	X			X										X	X	X	X	X			
<i>Chaetodon ulietensis</i>	X	X	X			X			X	X			X	X	X		X						
<i>Chaetodon unimaculatus</i>	X					X			X						X	X	X		X				X
<i>Chaetodon vagabundus</i>	X		X			X							X		X	X	X		X				
<i>Forcipiger flavissimus</i>	X	X	X			X			X	X			X		X	X	X	X	X	X	X	X	X
<i>Forcipiger longirostris</i>	X	X	X			X			X				X		X	X	X	X	X	X	X		X
<i>Forcipiger</i> sp. (unidentified)		X							X					X		X							
<i>Hemitaurichthys polylepis</i>	X		X			X			X				X			X		X	X	X			X
<i>Hemitaurichthys thompsoni</i>	X					X			X				X			X		X	X	X			
<i>Heniochus acuminatus</i>	X					X			X														
<i>Heniochus chrysostomus</i>	X	X	X			X			X	X			X	X	X	X	X	X	X	X	X		X
<i>Heniochus diphreutes</i>																							
<i>Heniochus monoceros</i>	X		X			X							X	X	X	X						X	X

<i>Heniochus singularis</i>										X																		
<i>Heniochus varius</i>	X		X																									
<i>Heniochus sp. (unidentified)</i>											X				X										X			
Pomacanthidae																												
<i>Apolemichthys trimaculatus</i>	X	X				X							X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Centropyge bicolor</i>																												
<i>Centropyge bispinosus</i>																										X		
<i>Centropyge colini</i>																												
<i>Centropyge flavissimus</i>	X	X	X			X				X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Centropyge heraldi</i>	X	X	X			X				X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Centropyge loriculus</i>																												
<i>Centropyge multicolor</i>																												
<i>Centropyge multifasciata</i>															X		X											
<i>Centropyge nigriocellus</i>			X																									
<i>Centropyge shepardi</i>	X	X	X			X				X			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Centropyge vrolikii</i>	X																											
<i>Genicanthus bellus</i>																												
<i>Genicanthus melanospilos</i>	X																											
<i>Genicanthus watanabei</i>																											X	X
<i>Paracentropyge multifasciatus</i>																											X	
<i>Pomacanthus imperator</i>	X	X	X			X				X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Pygoplites diacanthus</i>	X	X	X			X				X			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Oplegnathidae																												
<i>Oplegnathus punctatus</i>		X	X										X			X	X		X		X				X			
Cirrhitidae																												
<i>Amblycirrhitus bimacula</i>			X										X				X					X				X		
<i>Cirrhitichthys falco</i>	X	X	X			X				X			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Cirrhitichthys oxycephalus</i>																		X	X									
<i>Cirrhitops fasciatus</i>																		X										
<i>Cirrhitops hubbardi</i>						X																						
<i>Cirrhitus pinnulatus</i>		X	X			X				X								X										
<i>Neocirrhitus armatus</i>	X	X	X			X				X			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Oxycirrhitus typus</i>						X																						
<i>Paracirrhitus arcatus</i>	X	X	X			X				X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Paracirrhitus forsteri</i>	X	X	X			X				X			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Paracirrhitus hemistictus</i>	X	X	X			X				X	X		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X
Mugiloidei																												
Mugilidae																												
<i>Crenimugil crenilabis</i>						X				X																	X	
<i>Liza tade</i>																												
<i>Liza vaigiensis</i>						X											X											

<i>Mugil cephalus</i>																		X									
<i>Neomyxus leuciscus</i>						X																					
<i>Oedalechilus labiosus</i>										X																	
<i>Valamugil buchanaani</i>																											
<i>Valamugil engeli</i>						X						X															
<i>Valamugil seheli</i>																											
Labroidei																											
Pomacentridae																											
<i>Abudefduf septemfasciatus</i>			X			X			X									X	X	X	X	X					
<i>Abudefduf sexfasciatus</i>	X					X			X	X								X	X	X	X						
<i>Abudefduf sordidus</i>	X	X				X			X	X								X		X	X	X					
<i>Abudefduf vaigiensis</i>	X	X	X			X			X	X					X	X		X				X	X				
<i>Amblyglyphidodon aureus</i>						X																					
<i>Amblyglyphidodon curacao</i>	X		X							X								X							X		
<i>Amphiprion chrysopterus</i>	X	X	X			X			X									X	X	X	X						
<i>Amphiprion clarkii</i>			X			X				X								X				X					
<i>Amphiprion frenatus</i>		X	X																								
<i>Amphiprion melanopus</i>	X		X			X																					
<i>Amphiprion perideraion</i>						X												X				X					
<i>Chromis acares</i>	X	X	X			X			X			X	X	X	X	X	X	X	X	X	X						
<i>Chromis agilis</i>	X	X	X			X			X			X	X	X	X	X	X	X	X	X	X			X	X	X	X
<i>Chromis alpha</i>						X																					
<i>Chromis amboinensis</i>	X																										
<i>Chromis analis</i>																											
<i>Chromis atripectoralis</i>						X			X																		
<i>Chromis elerae</i>									X																		
<i>Chromis lepidolepis</i>																											
<i>Chromis margaritifer</i>	X	X	X			X			X			X		X	X	X	X	X	X	X	X						
<i>Chromis ternatensis</i>						X																					
<i>Chromis vanderbilti</i>	X		X			X						X		X	X	X	X	X	X	X	X			X	X	X	X
<i>Chromis viridis</i>	X		X			X																X					
<i>Chromis xanthura</i>	X	X	X			X			X			X	X		X	X	X	X	X	X	X					X	X
<i>Chrysiptera biocellata</i>			X			X												X									
<i>Chrysiptera brownriggii</i>	X	X	X			X			X	X		X		X	X	X		X							X		
<i>Chrysiptera caeruleolineata</i>	X					X			X																		
<i>Chrysiptera cyanea</i>																											
<i>Chrysiptera glauca</i>	X		X			X																					
<i>Chrysiptera oxycephala</i>						X																					
<i>Chrysiptera traceyi</i>	X		X			X			X						X	X											
<i>Chrysiptera tricincta</i>																											
<i>Dascyllus aruanus</i>	X		X			X						X												X			

<i>Dascyllus reticulatus</i>	X	X	X				X				X	X			X	X	X	X	X	X	X	X	X	X
<i>Dascyllus trimaculatus</i>	X		X				X				X	X			X	X		X	X					X
<i>Dischistodus perspicillatus</i>																								
<i>Lepidozygus tapeinosoma</i>							X					X	X			X	X		X	X				
<i>Neopomacentrus violascens</i>																								
<i>Plectroglyphidodon dickii</i>	X	X	X				X			X	X			X	X	X	X	X	X	X				X
<i>Plectroglyphidodon imparipennis</i>	X	X	X				X			X	X			X	X		X	X		X	X	X	X	X
<i>Plectroglyphidodon johnstonianus</i>	X	X	X				X			X	X	X		X	X	X	X	X	X	X	X	X	X	X
<i>Plectroglyphidodon lacrymatus</i>	X	X	X				X			X				X	X	X	X	X						
<i>Plectroglyphidodon leucozonus</i>	X	X	X				X			X								X			X			
<i>Plectroglyphidodon phoenixensis</i>	X	X	X				X			X				X		X								X
<i>Pomacentrus amboinensis</i>	X																							
<i>Pomacentrus brachialis</i>										X														X
<i>Pomacentrus coelestis</i>																								
<i>Pomacentrus vaiulae</i>							X																	
<i>Pomacentrus pavo</i>			X				X			X							X			X				
<i>Pomacentrus vaiuli</i>	X	X	X				X	X		X	X			X	X	X	X	X	X	X				X
<i>Pomacentrus</i> sp. (unidentified)	X		X				X			X	X						X							
<i>Pomachromis guamensis</i>	X	X	X				X			X			X	X		X	X	X	X	X	X	X	X	X
<i>Stegastes albifasciatus</i>	X		X				X										X							
<i>Stegastes fasciolatus</i>	X	X	X				X			X	X			X		X	X	X	X	X	X	X	X	X
<i>Stegastes lividus</i>			X				X																	
<i>Stegastes nigricans</i>			X				X																	X
Labridae																								
<i>Anampses caeruleopunctatus</i>	X	X	X				X			X	X			X	X	X	X	X	X	X	X			
<i>Anampses meleagrides</i>	X	X	X				X			X				X	X	X	X	X		X				
<i>Anampses twistii</i>	X		X				X							X	X	X	X	X	X	X				
<i>Bodianus anthioides</i>							X			X				X		X			X					
<i>Bodianus axillaris</i>	X	X	X				X				X			X	X	X	X	X	X	X	X			
<i>Bodianus bilunulatus</i>																	X							
<i>Bodianus mesothorax</i>																		X						
<i>Bodianus loxozonus</i>																								
<i>Bodianus tanyokidus</i>																								
<i>Cheilinus chlorurus</i>	X		X				X																	
<i>Cheilinus fasciatus</i>	X		X				X			X							X							
<i>Cheilinus oxycephalus</i>							X																	
<i>Cheilinus trilobatus</i>	X		X				X	X		X				X	X	X					X			
<i>Cheilinus undulatus</i>	X		X				X			X	X			X	X	X	X	X	X	X				X
<i>Cheilio inermis</i>							X			X														
<i>Choerodon azurio</i>																								X
<i>Cirrhilabrus katherinae</i>	X	X	X				X							X	X	X						X	X	X
<i>Cirrhilabrus</i> sp. (unidentified)							X			X														

<i>Coris aygula</i>	X	X	X				X					X			X	X	X	X	X	X	X		
<i>Coris dorsomacula</i>							X										X						
<i>Coris gaimard</i>	X	X	X				X		X			X			X	X	X	X	X	X	X		X
<i>Coris batuensis</i>	X						X																
<i>Cymolutes praetextatus</i>							X																
<i>Epibulus insidiator</i>	X	X	X				X			X							X				X		
<i>Gomphosus varius</i>	X	X	X				X		X			X			X	X	X	X	X	X	X		
<i>Halichoeres biocellatus</i>	X	X	X				X								X	X	X				X		
<i>Halichoeres hartzfeldii</i>							X										X						
<i>Halichoeres hortulanus</i>	X	X	X				X		X			X			X	X	X	X	X	X	X	X	X
<i>Halichoeres margaritaceus</i>	X	X	X				X		X			X			X	X	X	X		X	X		X
<i>Halichoeres marginatus</i>	X		X				X		X			X					X		X	X	X		
<i>Halichoeres melanurus</i>									X											X			
<i>Halichoeres melasmapomus</i>																							
<i>Halichoeres ornatissimus</i>	X	X	X				X					X	X	X	X	X	X	X	X	X	X	X	X
<i>Halichoeres papilionaceus</i>			X																				
<i>Halichoeres scapularis</i>							X																
<i>Halichoeres trimaculatus</i>	X		X				X	X		X	X						X	X		X			
<i>Halichoeres</i> sp.	X																						
<i>Hemigymmus fasciatus</i>	X	X	X				X		X	X		X			X	X	X	X	X	X	X		X
<i>Hemigymmus melapterus</i>	X		X				X		X	X				X		X			X				
<i>Hologymnosus annulatus</i>							X										X			X			
<i>Hologymnosus doliatus</i>	X	X	X				X			X					X	X	X	X	X	X	X		
<i>Labrichthys unilineatus</i>							X		X						X								
<i>Labroides bicolor</i>	X	X	X				X		X	X		X	X		X	X	X	X	X	X	X		
<i>Labroides dimidiatus</i>	X	X	X				X		X	X		X	X	X	X	X	X	X	X	X	X	X	X
<i>Labroides pectoralis</i>	X		X				X		X			X			X	X	X	X	X	X			
<i>Labropsis micronesica</i>	X																						
<i>Labropsis xanthonota</i>	X		X				X					X			X	X			X		X		
<i>Labropsis</i> sp. (unidentified)	X																						
<i>Macropharyngodon meleagris</i>	X	X	X				X		X	X		X	X	X	X	X	X	X	X	X	X		
<i>Novaculichthys macrolepidotus</i>							X																
<i>Novaculichthys taeniurus</i>	X		X				X										X			X	X		
<i>Oxycheilinus arenatus</i>							X																
<i>Oxycheilinus bimaculatus</i>																							
<i>Oxycheilinus digrammus</i>			X														X						
<i>Oxycheilinus orientalis</i>		X					X			X			X	X		X							
<i>Oxycheilinus unifasciatus</i>	X	X	X				X		X	X		X	X	X	X	X	X	X	X	X	X	X	X
<i>Polylepion russelli</i>																							
<i>Pseudocheilinus evanidus</i>	X		X				X		X								X			X			
<i>Pseudocheilinus hexataenia</i>	X	X	X				X					X		X	X	X	X	X	X	X	X		
<i>Pseudocheilinus octotaenia</i>		X					X					X	X	X	X	X	X	X	X	X	X		

<i>Pseudocheilinus tetrataenia</i>	X	X	X				X								X	X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Pseudocheilinus</i> sp. A (undescribed)																												
<i>Pseudocoris yamashiroi</i>																			X									
<i>Pseudodax moluccanus</i>			X				X								X				X	X		X	X					
<i>Pseudojuloides atavai</i>	X						X			X					X		X	X	X	X	X	X	X	X	X	X	X	X
<i>Pseudojuloides cerasinus</i>							X												X									
<i>Pterogogus cryptus</i>			X																									
<i>Pterogogus enneacanthus</i>							X																					
<i>Stethojulis bandanensis</i>	X		X				X			X		X			X		X	X	X	X	X	X	X			X		
<i>Stethojulis interrupta</i>																												
<i>Stethojulis strigiventer</i>	X		X				X			X									X				X					
<i>Stethojulis trilineata</i>	X																											
<i>Thalassoma amblycephalum</i>	X	X	X				X			X					X	X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Thalassoma hardwickii</i>	X		X				X	X																				
<i>Thalassoma janseni</i>																												
<i>Thalassoma lunare</i>	X	X								X					X				X	X	X	X			X	X		
<i>Thalassoma lutescens</i>	X	X	X				X			X		X			X	X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Thalassoma purpureum</i>	X	X	X				X			X									X		X	X	X					
<i>Thalassoma</i> sp.							X																					
<i>Thalassoma quinquevittatum</i>	X	X	X				X	X		X		X			X	X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Thalassoma trilobatum</i>	X	X	X				X			X		X									X							
<i>Wetmorella albofasciata</i>																												
<i>Wetmorella nigropinnata</i>			X				X												X									
<i>Xyrichtys aneitensis</i>															X													
<i>Xyrichtys celebicus</i>			X																X			X						
<i>Xyrichtys geisha</i>			X				X												X									
<i>Xyrichtys halsteadii</i>																			X									
<i>Xyrichtys melanopus</i>																												
<i>Xyrichtys pavo</i>							X				X								X			X						
<i>Xyrichtys</i> sp. (unidentified)			X							X																		
<i>Iniistius pentadactylus</i>																			X									
Scaridae																												
<i>Bolbometopon muricatum</i>	X																									X		
<i>Calotomus carolinus</i>	X	X	X				X			X		X						X	X					X				
<i>Calotomus spinidens</i>			X				X																		X			
<i>Cetoscarus bicolor</i>	X	X	X				X			X		X					X		X	X		X	X					
<i>Chlorurus atrilunula</i>																			X	X		X						
<i>Chlorurus bleekeri</i>	X																											
<i>Chlorurus capistratooides</i>																			X	X		X						
<i>Chlorurus frontalis</i>	X		X				X			X					X			X	X		X	X						
<i>Chlorurus microrhinos</i>	X	X	X				X			X		X			X			X	X	X	X	X	X	X	X			
<i>Chlorurus sordidus</i>	X	X	X				X			X		X						X	X	X	X							

<i>Hipposcarus longiceps</i>	X		X			X								X							
<i>Leptoscarus vaigiensis</i>																					
<i>Scarus altipinnis</i>	X		X			X			X					X				X			
<i>Scarus dimidiatus</i>			X			X															
<i>Scarus festivus</i>						X								X	X			X			
<i>Scarus forsteni</i>	X	X	X			X			X	X		X	X	X	X	X	X	X	X	X	X
<i>Scarus frenatus</i>	X					X			X					X	X	X	X				
<i>Scarus fuscocaudalis</i>																					
<i>Scarus ghobban</i>	X		X			X			X					X			X				
<i>Scarus globiceps</i>	X	X	X			X			X					X							
<i>Scarus niger</i>	X																				
<i>Scarus oviceps</i>	X	X	X			X			X					X	X	X	X	X	X	X	X
<i>Scarus ovifrons</i>	X																				
<i>Scarus psittacus</i>	X	X	X			X			X	X				X		X	X		X		
<i>Scarus rivulatus</i>	X																				
<i>Scarus rubroviolaceus</i>	X	X	X			X			X	X		X	X	X	X	X	X	X	X	X	X
<i>Scarus schlegeli</i>	X	X	X			X			X	X				X	X	X	X	X	X		X
<i>Scarus Spinus</i>			X			X															
<i>Scarus xanthopleura</i>																					
<i>Scarus sp. (unidentified)</i>			X			X			X	X				X	X	X	X	X	X		
Trachinoidei																					
Uranoscopidae																					
<i>Uranoscopus sulphureus</i>																					
Trichonotidae																					
<i>Trichonotus elegans</i>																					
Creediidae																					
<i>Chalixodytes tauensis</i>			X																		
Pinguipedidae																					
<i>Parapercis clathrata</i>	X		X			X			X				X	X			X	X	X		
<i>Parapercis millepunctata</i>	X		X			X			X				X	X	X	X	X	X			X
<i>Parapercis multiplicata</i>	X								X												
<i>Parapercis schauinslandi</i>																					
Blennoidei																					
Tripterygiidae																					
<i>Ceratobregma helenae</i>																					
<i>Enneapterygius hemimelas</i>																					
<i>Enneapterygius tutuilae</i>						X															
<i>Enneapterygius sp.</i>						X															
<i>Enneapterygius nanus</i>																					
<i>Helcogramma capidatum</i>						X															

<i>Plagiotremus rhinorhynchus</i>																					
<i>Plagiotremus tapeinosoma</i>		X	X					X					X	X	X		X	X	X		X
<i>Praealticus labrovittatus</i>								X													
<i>Praealticus poptae</i>								X													
<i>Rhabdoblennius ellipes</i>																					
<i>Rhabdoblennius snowi</i>								X													
<i>Salarias fasciatus</i>								X													
<i>Stanulus seychellensis</i>																					
<i>Xiphasia matsubarai</i>																					
Callionymoidei																					
Callionymidae																					
<i>Anaora tentaculata</i>																					
<i>Callionymus simplicicornis</i>																					
<i>Diplogrammus goramensis</i>			X					X													
<i>Synchiropus circularis</i>			X																		
<i>Synchiropus morrisoni</i>																					
<i>Synchiropus</i> sp. (undescribed)	X																				
Gobioidaei																					
Eleotridae																					
<i>Calumia godeffroyi</i>																					
<i>Eleotris fusca</i>								X													
<i>Eleotris acanthopoma</i>								X													
<i>Eleotris melanosoma</i>								X													
Gobiidae																					
<i>Amblyeleotris fasciata</i>			X					X							X	X					
<i>Amblyeleotris guttata</i>								X													
<i>Amblyeleotris periphthalmus</i>																					
<i>Amblyeleotris steinitzi</i>								X													
<i>Amblyeleotris wheeleri</i>																					
<i>Amblyeleotris</i> sp.															X						
<i>Amblygobius nocturnus</i>																					
<i>Amblygobius phalaena</i>			X					X													
<i>Asterropteryx semipunctatus</i>								X													
<i>Austrolethops wardi</i>																					
<i>Awaous guamensis</i>	X																				
<i>Bathygobius cocosensis</i>								X													
<i>Bathygobius cotticeps</i>																					
<i>Bathygobius cyclopterus</i>																					
<i>Bathygobius fuscus</i>								X													
<i>Bryaninops amplus</i>																					

<i>Trimma unisquamis</i>			X																										
<i>Trimmatom eviotops</i>						X														X									
<i>Valenciennea puellaris</i>	X		X			X																							
<i>Valenciennea sexguttata</i>						X																							
<i>Valenciennea strigata</i>	X	X	X			X		X					X		X	X	X	X	X	X	X	X	X	X	X	X			
<i>Valenciennea</i> sp. (unidentified)	X																												
<i>Vanderhorstia ambanoro</i>																													
<i>Vanderhorstia ornatissima</i>																													
<i>Vanderhorstia</i> sp. A (undescribed)																													
Kraemeriidae																													
<i>Kraemeria samoensis</i>																													
Microdesmidae																													
<i>Gunnellichthys curiosus</i>																				X									
<i>Gunnellichthys monostigma</i>	X					X													X										
<i>Gunnellichthys pleurotaenia</i>																													
<i>Gunnellichthys viridescens</i>																													
<i>Nemateleotris decora</i>																				X									
<i>Nemateleotris helfrichi</i>																													
<i>Nemateleotris magnifica</i>	X		X			X		X				X		X	X	X	X	X	X	X	X	X	X	X	X	X	X		
<i>Parioglossus philippinus</i>																													
<i>Ptereleotris evides</i>	X	X	X			X		X				X		X	X		X	X	X										
<i>Ptereleotris heteroptera</i>	X	X				X		X				X		X	X	X	X	X	X										
<i>Ptereleotris lineopinnis</i>																													
<i>Ptereleotris microlepis</i>	X	X				X											X		X	X									
<i>Ptereleotris zebra</i>	X		X			X		X				X		X	X	X		X	X	X	X	X	X	X	X	X	X		
<i>Ptereleotris</i> sp. cf. <i>hanae</i> (undescribed)																													
Xenisthmidae																													
<i>Xenisthmus polyzonatus</i>						X																							
Acanthuroidei																													
Ephippidae																													
<i>Platax orbicularis</i>						X																					X		
<i>Platax teira</i>	X		X			X																X	X				X		
Scatophagidae																													
<i>Scatophagus argus</i>																				X									
Siganidae																													
<i>Siganus argenteus</i>	X	X	X			X		X	X			X					X												
<i>Siganus corallinus</i>																													
<i>Siganus lineatus</i>						X																							
<i>Siganus punctatus</i>			X			X																							
<i>Siganus randalli</i>																													
<i>Siganus spinus</i>	X					X		X																					

<i>Siganus vermiculatus</i>																								
Zanclidae																								
<i>Zanclus cornutus</i>	X	X	X			X			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Acanthuridae																								
<i>Acanthurus achilles</i>		X	X			X			X			X	X		X	X		X						
<i>Acanthurus blochii</i>	X	X	X			X		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Acanthurus dussumieri</i>			X			X		X		X		X	X	X	X	X	X	X					X	
<i>Acanthurus guttatus</i>	X	X	X			X		X	X		X		X	X	X	X	X	X	X	X				
<i>Acanthurus leucopareius</i>	X					X		X	X		X		X	X	X	X	X	X	X	X				
<i>Acanthurus lineatus</i>	X	X	X			X		X	X		X	X	X	X	X	X	X	X	X	X				
<i>Acanthurus maculiceps</i>																								
<i>Acanthurus mata</i>	X	X				X		X	X		X				X	X	X	X						
<i>Acanthurus nigricans</i>	X	X	X			X		X	X		X	X	X	X	X	X	X	X	X	X	X	X		X
<i>Acanthurus nigricauda</i>	X	X	X			X		X	X		X		X	X	X	X		X	X	X				
<i>Acanthurus nigrofuscus</i>	X	X	X			X		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Acanthurus nigroris</i>	X	X	X			X		X							X									
<i>Acanthurus nubilus</i>																								
<i>Acanthurus olivaceus</i>	X	X	X			X		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Acanthurus pyroferus</i>	X	X	X			X		X	X		X	X	X	X	X	X	X	X	X	X				X
<i>Acanthurus thompsoni</i>			X			X					X		X	X			X	X						X
<i>Acanthurus triostegus</i>	X	X	X			X		X	X					X			X							
<i>Acanthurus xanthopterus</i>	X	X	X			X		X	X		X	X	X	X	X	X	X	X	X	X	X			
<i>Ctenochaetus binotatus</i>	X	X	X			X																		
<i>Ctenochaetus cyanocheilus</i>		X	X																					
<i>Ctenochaetus hawaiiensis</i>	X	X	X								X	X	X	X	X	X	X	X	X	X	X			X
<i>Ctenochaetus striatus</i>	X	X	X			X		X	X		X	X	X	X	X	X	X	X	X	X	X			
<i>Ctenochaetus strigosus</i>	X		X					X					X		X	X	X	X	X	X				
<i>Naso annulatus</i>	X		X			X							X		X			X	X					
<i>Naso brachycentron</i>		X	X																					
<i>Naso brevirostris</i>	X		X			X		X	X		X		X	X	X	X	X	X	X	X	X	X		X
<i>Naso caesius</i>			X			X									X	X							X	X
<i>Naso hexacanthus</i>			X			X		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Naso lituratus</i>	X	X	X			X		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Naso lopezi</i>						X																		
<i>Naso thynnoides</i>						X																		
<i>Naso tonganus (tuberosus)</i>	X	X	X			X		X			X	X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Naso unicornis</i>	X	X	X			X		X	X		X		X	X	X	X	X	X	X	X	X			X
<i>Naso vlamingii</i>	X	X	X			X		X			X	X	X	X	X	X	X			X	X	X		X
<i>Paracanthurus hepatus</i>			X			X		X				X	X	X	X	X	X	X	X				X	
<i>Zebrasoma flavescens</i>	X	X	X			X		X	X		X	X	X	X	X	X	X	X	X	X				X
<i>Zebrasoma scopas</i>	X	X	X			X		X				X		X	X									
<i>Zebrasoma veliferum</i>	X	X	X			X		X	X			X	X	X	X	X	X		X					X

Sphyraenoidei																							
Sphyraenidae																							
<i>Sphyraena barracuda</i>	X	X				X			X	X			X	X	X	X	X	X	X				X
<i>Sphyraena flavicauda</i>						X																	
<i>Sphyraena forsteri</i>																							
<i>Sphyraena helleri</i>																							
<i>Sphyraena jello</i>	X																						
<i>Sphyraena obtusata</i>																							
<i>Sphyraena qenie</i>	X		X					X															
<i>Sphyraena</i> sp. (unidentified)		X															X			X	X		
Scombroidei																							
Gempylidae																							
<i>Diplospinus multistriatus</i>																							
<i>Gempylus serpens</i>																							
<i>Lepidocybium flavobrunneum</i>															X								
<i>Neopinnula orientalis</i>																							
<i>Nesiarchus nasutus</i>																							
<i>Promethichthys prometheus</i>						X																	
<i>Ruvettus pretiosus</i>										X	X												
<i>Thyrsitoides marleyi</i>									X	X					X								
Xiphiidae																							
<i>Xiphias gladius</i>																							
Istiophoridae																							
<i>Istiophorus platypterus</i>						X																	
<i>Makaira indica</i>																							
<i>Makaira mazara</i>	X	X	X			X			X					X									
<i>Tetrapturus angustirostris</i>																							
<i>Tetrapturus audax</i>																							
Scombridae																							
<i>Acanthocybium solanderi</i>	X	X	X			X			X			X	X			X				X			
<i>Auxis thazard</i>						X																	
<i>Euthynnus affinis</i>	X	X	X			X		X	X							X				X			
<i>Grammatoryncnus bilineatus</i>			X			X																	
<i>Gymnosarda unicolor</i>	X		X			X		X	X			X	X	X	X	X	X	X	X	X			X
<i>Katsuwonus pelamis</i>	X	X	X			X		X	X			X		X	X	X	X	X	X	X			
<i>Rastrelliger kanagurta</i>																							
<i>Scomberomorus commerson</i>																							
<i>Thunnus alalunga</i>																							
<i>Thunnus albacares</i>	X	X	X			X		X	X			X				X	X	X	X	X			
<i>Thunnus obesus</i>																X							

<i>Xanthichthys</i> sp. (unidentified)		X																X											
<i>Xenobalistes tumidipectoris</i>																											X		
Monacanthidae																													
<i>Aluterus monoceros</i>																													
<i>Aluterus scriptus</i>			X			X												X								X			
<i>Amanses scopas</i>	X	X	X			X												X											
<i>Cantherhines dumerilii</i>	X	X	X			X				X								X	X	X	X	X	X	X	X	X			
<i>Cantherhines fronticinctus</i>																													
<i>Cantherhines pardalis</i>	X	X	X			X			X									X											
<i>Oxymonacanthus longirostris</i>						X																							
<i>Paraluteres prionurus</i>	X		X			X																					X		
<i>Pervagor janthinosoma</i>			X			X																							
<i>Pervagor melanocephalus</i>						X																							
<i>Pervagor</i> sp.																											X	X	
<i>Pseudalutarias nasicornis</i>																													
Ostraciidae																													
<i>Lactoria cornuta</i>																													
<i>Lactoria diaphanum</i>																													
<i>Lactoria fornasini</i>						X																							
<i>Ostracion cubicus</i>	X					X			X				X	X															
<i>Ostracion meleagris</i>	X		X			X			X				X	X				X	X	X	X	X	X	X	X	X	X	X	
Triodontidae																													
<i>Triodon macropterus</i>	X					X						X																	
Tetraodontidae																													
<i>Arothron hispidus</i>						X	X			X																			X
<i>Arothron manillensis</i>						X																							
<i>Arothron mappa</i>																													
<i>Arothron meleagris</i>	X	X	X			X			X					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
<i>Arothron nigropunctatus</i>	X	X	X			X			X				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
<i>Arothron stellatus</i>			X																										
<i>Arothron</i> sp. (unidentified)						X			X	X																			
<i>Canthigaster amboinensis</i>	X	X				X																							
<i>Canthigaster bennetti</i>						X																					X		
<i>Canthigaster compressa</i>	X					X																							
<i>Canthigaster coronata</i>			X			X																					X		
<i>Canthigaster epilampra</i>																													
<i>Canthigaster janthinoptera</i>	X		X			X																					X		
<i>Canthigaster leoparda</i>																													
<i>Canthigaster solandri</i>	X		X			X			X	X			X														X		
<i>Canthigaster valentini</i>	X		X			X			X																		X		
<i>Canthigaster</i> sp. (unidentified)						X																					X		
<i>Lagocephalus lagocephalus</i>																													

