Checklist of the Shore Fishes of the Mentawai Islands, Nias Island and the Padang Region of West Sumatra

A. Kunzmann, J.E. Randall and I. Suprihanto

Abstract

This paper presents a checklist of reef fishes of West Sumatra and adjacent provinces. The list includes 362 species of 143 genera and 46 families and contains seven new records and nine probable new species for Indonesia. It also uses information from sources only available in Bahasa Indonesia. The relative paucity of the fish fauna in West Sumatra seems to be related to the habitat destruction caused by illegal fishing with explosives or poisons such as cyanide.

Introduction

Indonesia, an archipelago nation with more than 17 000 islands and 81 000 km of coastline, extends from longitude 95°E to 141°E and latitude 5°N to 10°S (Fig. 1). The marine fauna and flora, like the terrestrial, is incredibly rich. For example, there are more than 70 genera of hard corals (Veron 1986) and 2 700 shore fishes (defined as those to depths of 200 m) (Randall, in press). The list of shore fishes is far from complete, as can be surmised from Randall and Kunzmann (in press, b) who found seven new records and nine probable new species of fishes in West Sumatra during five days of diving in April 1997.

The marine fauna of the southwestern coast of Sumatra represents a mixture of eastern Indian Ocean species and Pacific species. One might, therefore, expect it to have a richer fauna than the rest of Indonesia. This is not the case. The number of genera and species of corals is significantly lower in West Sumatra as compared to the eastern Indonesian provinces (Hoeksema and Kunzmann, in press). The same is true for shore fishes.

This checklist is designed to provide the list of species that have been noted on the reefs of western Sumatra by divers or snorkelers as well as the common fishes that appear in local markets. Our list includes 362 species of 143 genera and 46 families. Only a few small fish collections were made by us as divers. Large collections with ichthyocide would greatly increase the number of species, particularly cryptic species like eels (Anguilliformes) and cardinalfishes (Apogonidae), camouflaged species like scorpionfishes (Scorpaenidae), frogfishes (Antennariidae) and flatfishes (Pleuronectiformes), and small species such as gobies (Gobiidae), blennies (Blenniidae), and dragonets (Callionymidae). For example, our list has no frogfishes or dragonets, only two eels (both morays—Muraenidae), ten gobies (the largest marine family in the world, with an estimated 2 000 species) and five blennies.

The checklist covers three different subregions of West Sumatra (Fig. 2)—Padang Shelf, Mentawai Shelf and Nias Shelf, all part of the Greater Sunda region. Siberut Island, part of the Mentawai complex, separated from the main island of Sumatra about 500 000 years ago, with a deep trench between them. Nias separated from Sumatra much later (Whitten et al. 1984).

Materials and Methods

Most of the fishes in the checklist (Table 1) have been observed directly by SCUBA divers. A small collection of fishes was made. Most of the fishes from these collections and from market specimens are now in the fish collection of the Fisheries Research Laboratory of Bung Hatta University (BHU) in Padang (Jonker and Johan, in press). The Laboratory is a joint venture between BHU and the Center for Tropical Marine Ecology, Bremen, Germany (ZMT). In addition to observations and the limited collection, photographs of fishes and video records of their behavior were made.

Fishes from the Mentawai Islands were collected mainly during two cruises of the research cutter *KM Raperi* of Bung Hatta University in December 1996 and April 1997 in Sarabua Bay (Fig. 2). The Nias fish

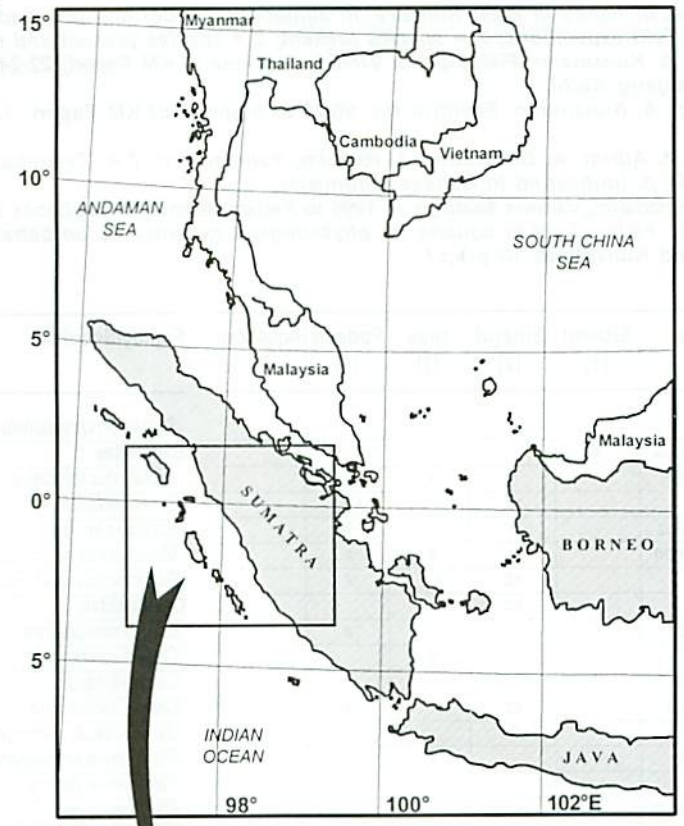

Fig.1. Indonesia: Mentawai Islands, Nias Island and the Padang region in box.

Fig. 2. Detail of West Sumatra where observations and collections were made.

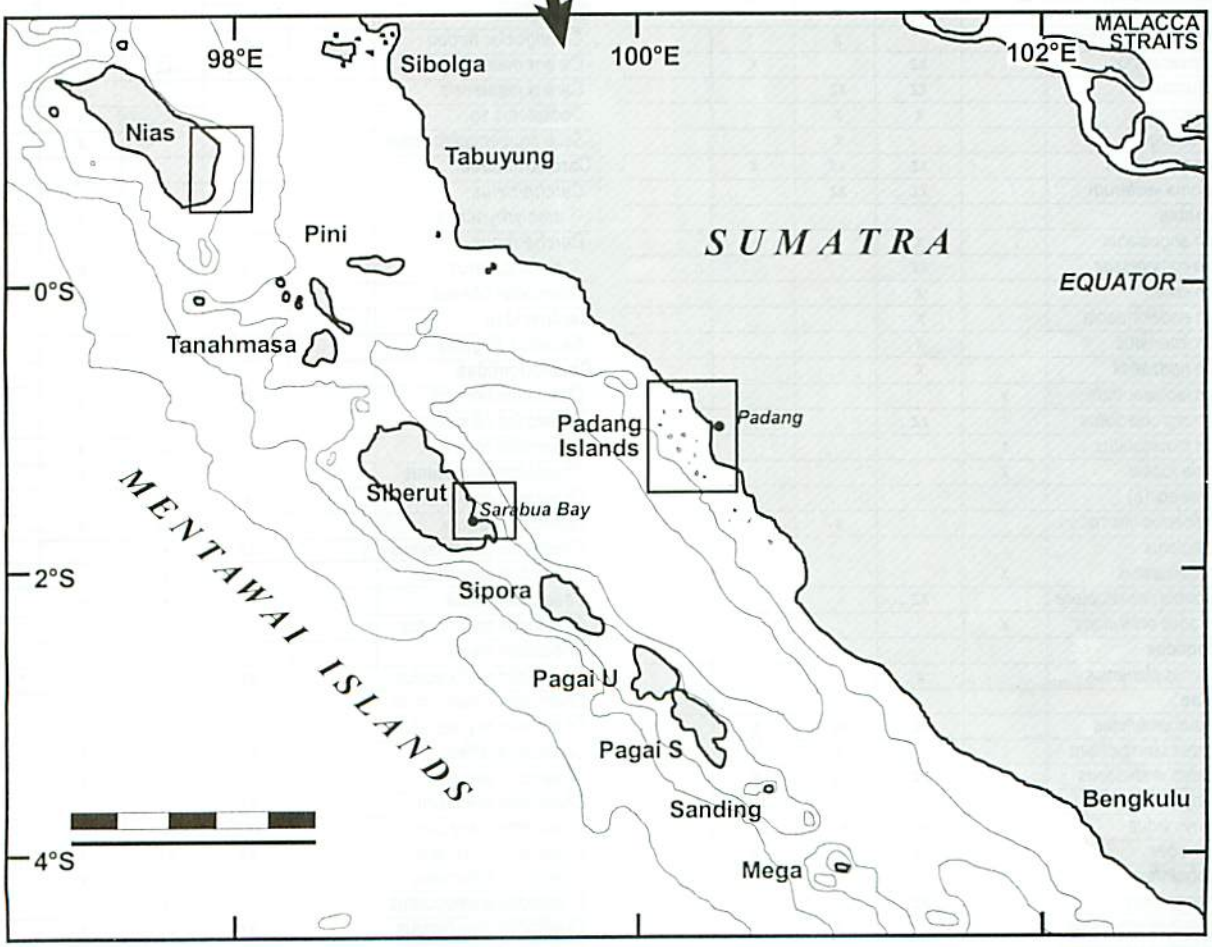

Table 1. Checklist of fishes in West Sumatra, in alphabetical order and grouped according to families. Locations (1) to (5) refer to different field expeditions; X = species present; Z = species present and confirmed by (1).
(1). J.E. Randall, A. Kunzmann, Fieldtrip No. 97/10 in logbook of KM Faperi, *22-24.4.97, Mentawai Islands, Siberut East: Teluk Sarabua and Panjang Saibi.*
(2). I. Suprihanto, A. Kunzmann, Fieldtrip No. 96/29 in logbook of KM Faperi, *13-17.12.97, Mentawai Islands, Siberut East: Teluk Sarabua.*
(3). Suharsono, M. Adrim, A. Budiyanto, A. Ibrahim, Yahmantoro, Z.A. Telambanua. 1995. Wisata Bahari Pulau Nias, LIPI-LP3O, Jakarta, 44 p. (published in Bahasa Indonesia).
(4). Yunaldi, A. Kunzmann, various fieldtrips in 1996 to Padang Islands (in logbooks of KM Faperi, KM Selar *and* KM Nautilus*).*
(5). A. Kunzmann. Fishes kept in aquaria for physiological experiments on behaviour, respiration and blood characteristics (Zimmermann and Kunzmann, in prep.)

Family/Species	Siberut (1)	Siberut (2)	Nias (3)	Padang (4)	Aquarium (5)
Acanthuridae					
Acanthurus auranticavus	x				
Acanthurus dussumieri			x		
Acanthurus fowleri		xz			
Acanthurus leucocheilus		x		x	
Acanthurus leucosternon			x	x	
Acanthurus lineatus		xz	xz	x	
Acanthurus mata		xz			
Acanthurus maculiceps				x	
Acanthurus nigricans			x		
Acanthurus nigricauda	x				
Acanthurus nigrofuscus		xz		x	
Acanthurus nubilus (?)		x			
Acanthurus triostegus			x		
Acanthurus tristis			xz		
Acanthurus xanthopterus	x				
Ctenochaetus binotatus	x				
Ctenochaetus striatus		xz	x		
Ctenochaetus strigosus			x		
Naso hexacanthus		xz		x	
Naso lituratus		xz	xz		
Naso unicornis		x	x		
Naso vlamingii			x		
Zebrasoma scopas		xz	xz	x	
Zebrasoma veliferum		xz	xz		
Apogonidae					
Apogon angustatus		x			
Apogon compressus		xz			
Apogon cookii		x			
Apogon endekataenia		x			
Apogon fraenatus		x			
Apogon hartzfeldii		x			
Apogon leptacanthus	x				
Apogon nigrofasciatus		xz			
Apogon trimaculatus	x				
Archamia fucata	x				
Archamia sp. (a)				x	
Cheilodipterus macrodon			x		
Cheilodipterus quinquelineatus	x				
Sphaeramia nematoptera		xz			
Sphaeramia orbicularis	x				
Aulostomidae					
Aulostomus chinensis		x			
Balistidae					
Balistapus undulatus		xz	xz	x	
Balistoides conspicillum			x	x	
Balistoides viridescens		xz	xz	x	
Melichthys indicus			xz		
Melichthys vidua		xz	xz		
Odonus niger		xz		x	
Pseudobalistes flavimarginatus		xz			
Rhinecanthus aculeatus			x		
Rhinecanthus verrucosus			x		
Sufflamen bursa				x	
Sufflamen chrysopterus	x			x	
Blenniidae					
Aspidontus taeniatus	x				
Ecsenius bicolor	x				
Ecsenius sp. (b)	x				
Meiacanthus atrodorsalis		xz			
Plagiotremus laudandus	x				
Caesionidae					
Caesio caerulaurea			xz		
Caesio cuning		xz	xz	x	
Caesio lunaris		xz	xz		
Caesio xanthonota	x				
Gymnocaesio gymnoptera				x	
Pterocaesio chrysozona		xz			
Pterocaesio pisang		xz			
Pterocaesio tile		xz			
Pterocaesio trilineata		xz		x	
Carangidae					
Carangoides ferdau		x		x	
Caranx melampygus			xz		
Caranx papuensis	x				
Decapterus sp.				x	
Selar crumenophthalmus				x	
Carcharhinidae					
Carcharhinus amblyrhynchos				x	
Carcharhinus melanopterus		x		x	
Triaenodon obesus				x	
Centriscidae					
Aeoliscus strigatus		xz			
Chaetodontidae					
Chaetodon bennetti		xz	xz	x	
Chaetodon citrinellus			x		
Chaetodon collare			xz	x	
Chaetodon decussatus				x	
Chaetodon ephippium		x			
Chaetodon falcula			xz	x	
Chaetodon guttatissimus		xz	x		
Chaetodon lineolatus			x		
Chaetodon lunula			x	x	
Chaetodon melannotus			x		
Chaetodon meyeri			x		
Chaetodon ocellicaudus		xz			
Chaetodon ornatissimus			x		
Chaetodon oxycephalus		xz		x	
Chaetodon rafflesi		xz	xz	x	
Chaetodon semeion				x	
Chaetodon speculum		xz	xz		
Chaetodon triangulum			x	x	
Chaetodon trifascialis		xz	xz	x	
Chaetodon trifasciatus		xz	xz	x	
Chaetodon unimaculatus			x		
Chaetodon vagabundus		xz	xz	x	
Forcipiger flavissimus		xz	xz		
Hemitaurichthys polylepis			x		

Family/Species	Siberut (1)	Siberut (2)	Nias (3)	Padang (4)	Aquarium (5)
Hemitaurichthys zoster			x		
Heniochus acuminatus		x	x	x	
Heniochus monoceros		x		x	
Heniochus pleurotaenia			xz	x	
Heniochus singularius		x			
Heniochus varius			x		
Cirrhitidae					
Cirrhitichthys aprinus	x				
Cirrhitichthys falco		x z			
Cirrhitichthys oxycephalus	x				
Paracirrhites forsteri		x z	x		
Dasyatidae					
Taeniura lymma		x			
Diodontidae					
Diodon hystrix				x	
Ephippidae					
Platax boersii	x				
Platax orbicularis	x				
Platax pinnatus		xz			
Ginglymostomatidae					
Nebrius ferrugineus				x	
Gobiidae					
Amblyeleotris downingi		xz			
Amblygobius hectori	x				
Amblygobius nocturnus	x				
Amblygobius phalaena	x				
Asterropteryx semipunctatus	x				
Gnatholepis cauerensis	x				
Gobiodon okinawae	x				
Istigobius decoratus	x				
Trimma striata	x				
Valenciennea puellaris	x				
Haemulidae					
Plectorhinchus chaetodonoides		xz			
Plectorhinchus lineatus		xz		x	
Holocentridae					
Myripristis adusta	x				
Myripristis hexagona	x				
Myripristis murdjan		x		x	
Myripristis violacea	x	xz			
Neoniphon argenteus	x				
Neoniphon sammara	x				
Sargocentron caudimaculatum			xz		
Sargocentron cornutum	x				
Sarcocentron diadema			x		
Sargocentron rubrum		xz			
Sargocentron tiereoides	x				
Kyphosidae					
Kyphosus cinerascens	x				
Kyphosus vaigiensis			x		
Labridae					
Anampses melanurus		x			
Anampses meleagrides		x			
Anampses twistii		x			
Bodianus mesothorax		xz	xz	x	
Cheilinus bimaculatus		x			
Cheilinus chlorourus		x	xz		
Cheilinus fasciatus		xz	xz		
Cheilinus oxycephalus	x				
Cheilinus trilobatus		xz		x	
Cheilinus undulatus	x				
Choerodon anchorago		xz			
Cirrhilabrus cyanopleura				x	
Cirrhilabrus exquisitus	x				
Cirrhilabrus sp. (c)	x				

Family/Species	Siberut (1)	Siberut (2)	Nias (3)	Padang (4)	Aquarium (5)
Coris batuensis	x				
Coris gaimard	x				
Epibulus insidiator		x			
Gomphosus caeruleus		x	xz		
Halichoeres argus				x	
Halichoeres chrysus				x	
Halichoeres hartzfeldii	x				
Halichoeres hortulanus		xz	xz	x	
Halichoeres leucurus		x		x	
Halichoeres marginatus			xz	x	
Halichoeres melanurus		x		x	
Halichoeres nebulosus	x				
Halichoeres nigrescens		x			
Halichoeres purpurescens		x			
Halichoeres scapularis		x	x		
Halichoeres trimaculatus		x			
Halichoeres vrolikii		x		x	
Hemigymnus fasciatus		xz	xz	x	
Hemigymnus melapterus			xz	x	
Labroides bicolor			xz		
Labroides dimidiatus		xz	xz	x	
Labrichthys unilineatus			xz		
Macropharyngodon ornatus	x				
Oxycheilinus celebicus			xz		
Oxycheilinus digrammus	x				
Pseudodax moluccanus	x				
Pteragogus cryptus	x				
Stethojulis bandanensis				x	
Stethojulis trilineata				x	
Thalassoma amblycephalum	x				
Thalassoma hardwicke		xz	xz	x	
Thalassoma janseni			xz		
Thalassoma lunare		xz	xz	x	
Thalassoma quinquevittatum	x				
Lethrinidae					
Gnatodentex aurolineatus			x		
Lethrinus erythropterus	x				
Lethrinus harak		xz			
Lethrinus obsoletus			x		
Monotaxis grandoculis		xz	xz		
Lutjanidae					
Lutjanus biguttatus		xz		x	
Lutjanus bohar		x	x		
Lutjanus decussatus				x	
Lutjanus fulviflamma/fulviflammus			x	x	
Lutjanus fulvus	x		xz		
Lutjanus gibbus			xz		
Lutjanus kasmira		x	x		
Lutjanus lunulatus			x		
Lutjanus monostigma	x		x		
Lutjanus quinquelineatus		x			
Lutjanus rivulatus			x		
Lutjanus vitta		x	x		
Macolor macularis			xz		
Macolor niger		xz	xz	x	
Microdesmidae					
Nemateleotris decora	x				
Nemateleotris magnifica	x				
Monacanthidae					
Aluterus scriptus			x		
Cantherhines pardalis	x				
Monodactylidae					
Monodactylus argenteus	x				
Mullidae					
Mulloidichthys flavolineatus			x		

Family/Species	Siberut (1)	Siberut (2)	Nias (3)	Padang (4)	Aquarium (5)
Parupeneus barberinus		xz	xz	x	
Parupeneus bifasciatus			x		
Parupeneus cyclostomus			xz	x	
Parupeneus indicus		xz	xz		
Parupeneus macronema		xz		x	
Upeneus tragula	x				
Muraenidae					
Gymnothorax javanicus		xz			
Gymnothorax pindae	x				
Myliobatidae					
Aetobatus narinari				x	
Nemipteridae					
Pentapodus caninus	x				
Scolopsis affinis	x				
Scolopsis bilineatus		xz		x	
Scolopsis ciliatus		xz		x	
Scolopsis lineatus		x			
Scolopsis margaritifer		xz			
Scolopsis trilineatus				x	
Ostraciidae					
Ostracion cubicus		x			
Ostracion solorensis	x				
Pempheridae					
Pempheris oualensis		x		x	
Pinguipedidae					
Parapercis hexophtalma		xz			
Platycephalidae					
Cymbacephalus beauforti				x	x
Plotosidae					
Plotosus lineatus		x			
Pomacanthidae					
Apolemichthys trimaculatus		xz	xz		
Centropyge bispinosus			x		
Centropyge eibli		xz	xz	x	
Chaetodontoplus mesoleucus		xz		x	
Genicanthus melanospilos	x				
Pomacanthus annularis		x	x		
Pomacanthus imperator		xz	x	x	
Pomacanthus semicirculatus		x	x		
Pomacanthus sexstriatus			x		
Pygoplites diacanthus		xz	x	x	
Pomacentridae					
Abudefduf bengalensis			x		
Abudefduf saxatilis			xz		
Abudefduf septemfasciatus			x		
Abudefduf sexfasciatus		xz			
Abudefduf vaigiensis				x	
Acanthochromis polyacanthus		xz		x	
Amblyglyphydodon aureus			xz	x	
Amblyglyphydodon curacao			x		
Amblyglyphydodon leucogaster		x		x	
Amphiprion clarkii		xz	xz	x	
Amphiprion ephippium	x			x	
Amphiprion ocellaris		xz	xz	x	
Amphiprion sandaracinos			x	x	
Cheiloprion labiatus		x		x	
Chromis alpha	x				
Chromis analis				x	
Chromis delta	x				
Chromis elerae		xz			
Chromis dimidiata		x			
Chromis lepidolepis			x		
Chromis margaritifer		x	x	x	
Chromis opercularis			xz		

Family/Species	Siberut (1)	Siberut (2)	Nias (3)	Padang (4)	Aquarium (5)
Chromis ternatensis		xz	xz	x	
Chromis viridis			x		
Chromis weberi			xz		
Chrysiptera hemicyanea			x		
Chrysiptera talboti		x	xz		
Dascyllus aruanus		xz	xz		
Dascyllus reticulatus		x	x		
Dascyllus trimaculatus		xz	xz	x	
Dischistodus perspicillatus	x				
Dischistodus prosopotaenia				x	
Hemiglyphidodon plagiometopon	x				
Neoglyphidodon melas			x		
Neopomacentrus azysron			xz		
Neopomacentrus cyanomos		x			
Plectroglyphydodon dickii			x	x	
Plectroglyphydodon lacrymatus		xz		x	
Pomacentrus alexanderae		x			
Pomacentrus amboinensis				x	
Pomacentrus alleni			x		
Pomacentrus bankanensis		xz	xz	x	
Pomacentrus chrysurus		x		x	
Pomacentrus lepidogenys			xz		
Pomacentrus melanochir				x	
Pomacentrus moluccensis		xz	xz	x	
Pomacentrus pavo		xz	xz		
Pomacentrus philippinus		xz	xz		
Pomacentrus reidi		xz			
Pomacentrus simsiang		x	xz		
Pomacentrus tripunctatus			x		
Scaridae					
Bolbometopon muricatum			x		
Cetoscarus bicolor		xz	xz		
Chlorurus bleekeri				x	
Chlorurus capistratoides	x				
Chlorurus sordidus	x				
Chlorurus strongylocephalus	x				
Chlorurus troschelii	x				
Scarus dimidiatus			xz		
Scarus ghobban		xz	xz	x	
Scarus niger		xz	xz	x	
Scarus prasiognathos		xz			
Scarus quoyi			xz		
Scarus rubroviolaceus	x				
Scarus sp. (d)			x		
Scarus tricolor	x				
Scarus viridifucatus	x				
Scarus xanthopleura		x		x	
Scombridae					
Katsuwonis pelamis				x	
Rastrelliger kanagurta				x	
Scomberomorus commersoni				x	
Scorpaenidae					
Pterois antennata		xz		x	x
Pterois miles		xz			x
Scorpaenopsis diabolus				x	x
Scorpaenopsis oxycephala		x		x	x
Parascorpaena aurita				x	x
Family Synanceiidae verrucosa		x		x	
Serranidae					
Aethaloperca rogaa	x	xz	xz		
Anyperodon leucogrammicus		xz	xz		

Family/Species	Siberut (1)	Siberut (2)	Nias (3)	Padang (4)	Aquarium (5)
Belonoperca chabanaudi	x				
Cephalopholis argus		xz	xz	x	
Cephalopholis cyanostigma	x				
Cephalopholis leopardus		xz		x	
Cephalopholis microprion	x				
Cephalopholis miniata		xz			
Cephalopholis sp. (e)				x	
Cephalopholis urodeta			xz		
Diploprion bifasciatum			xz		
Epinephelus areolatus			xz	x	
Epinephelus fasciatus			x		
Epinephelus merra			x		
Epinephelus ongus	x				
Epinephelus polyphekadion	x				
Gracila albomarginata		x	x		
Nemanthias carberryi			x		
Plectropomus maculatus	x				
Pseudanthias squamipinnis	x				
Variola albimarginata	x				
Variola louti			xz		
Siganidae					
Siganus canaliculatus			x		
Siganus corallinus		xz	xz	x	
Siganus guttatus		xz	xz	x	
Siganus magnificus		xz	xz		
Siganus punctatus			xz		
Siganus virgatus		xz	x	x	
Siganus vulpinus		xz		x	
Sphyraenidae					
Sphyraena barracuda	x				
Sphyraena forsteri				x	
Sphyraena putnamae				x	
Synanceiidae					
Chorythoichthys ornatus	x				
Dunckerocampus dactyliophorus	x				
Syngnathoides biaculeatus		x			
Synodontidae					
Saurida gracilis	x				
Synodus variegatus	x	xz			
Tetraodontidae					
Arothron nigropunctatus		xz	x		
Canthigaster papua	x	xz			
Canthigaster valentini		xz			
Zanclidae					
Zanclus cornutus		xz	xz	x	

fauna was observed by Suharsono and colleagues from the Institute for Research and Development of Oceanography, Jakarta (LIPI-RDO) in 1995 and compiled into a checklist in Bahasa Indonesia (Suharsono et al. 1995). The fish fauna of the Padang region (Fig. 2) was observed on many research trips of the *KM Faperi* and *KM Nautilus* from 1995 to 1997. These included permanent line-intercept transects of the Coral Reef Assessment and Monitoring Project (CRAMP), as compiled for several bachelor's and master's theses (Elwind 1997; Molis 1997; Yunaldi 1997). The procedures of the fish transects are explained in detail in English et al. (1994).

Results and Discussion

The families, genera and species of fishes are presented in alphabetical order in Table 1. Species listed as sp. are believed to be undescribed. One of these, a wrasse of the genus *Cirrhilabrus*, has been described by Randall and Kunzmann (in press, a). Nine species of fishes represent new records for Indonesia. These are also reported in detail by Randall and Kunzmann (in press, b). Our list includes 362 species of 143 genera and 46 families.

One of the most striking features of many of the dive localities in West Sumatra is the high degree of habitat destruction. Illegal fishing, with explosives or poisons, such as cyanide, has resulted in vast areas of coral rubble where once there were stands of *Acropora* and other corals, and dead coral colonies partly overgrown with algae. There are very few fully intact coral reefs, even in areas that are designated as marine parks or marine protected areas (Kunzmann and Efendi 1994, 1996). This partly explains the relative paucity of fish fauna. An open coral rubble bottom provides shelter only for small fishes. Our new species of *Cirrhilabrus* is one such fish that is commonly found on the rubble substrata.

Recent observations indicate that large-scale habitat destruction is also partly due to outbreaks of the crown-of-thorns starfish (*Acanthaster plancii*) and to red tide events, such as the bloom of *Gonyaulax spinifera* in the Padang region in December 1997 (Efendi, pers. comm.). The newspapers reported that a large number of fishes, especially plankton-feeding species, were killed as a result of this plankton bloom. Molis (1997) has pointed out the profound effect on the composition of coral reef fishes as a result of habitat destruction.

Acknowledgments

We thank Bung Hatta University and the crew of *KM Faperi* for their support. Mr. Yunaldi and Mrs. Liesl Jonker were particularly helpful with the field and laboratory work. Part of this study was funded by the German Academic Exchange Service (DAAD) and by the Center for Tropical Marine Ecology Bremen (ZMT).

References

Elwind, F. 1997. Studi hubungan kondisi terumbu karang dengan keragaman ikan kepe-kepe (Chaetodontidae) dan ikan kerapu (Serranidae) di Pulau Sikuai sebagai tijauan dasar pemgembangan budidaya laut.

Universitas Bung Hatta, Padang, Skripsi-S1: 39 p. (Bachelor thesis. In Bahasa Indonesia).
English, S., C. Wilkinson and V. Baker. 1994. Survey manual for tropical marine resources. ASEAN-Australian Marine Science Project, AIMS, Townsville, Australia. 368 p.
Hoeksema, B.W. and A. Kunzmann. The scleractinian reef coral diversity of West Sumatra related to other Indian Ocean coral faunas. (In press.)
Jonker, L. and O. Johan. The importance of biological collections, with notes on the west Sumatran fish and coral collections project. Warta Penelitian Perikanan, Indonesia. (In press)
Kunzmann, A. and Y. Efendi. 1994. Apakah terumbuh karang di perairan sepanjang pantai barat Sumatera Barat sudah rusak? Jurnal Penelitian Perikanan Laut 91: 48-56.
Kunzmann, A. and Y. Efendi. 1996. Are the coral reefs of West Sumatra seriously damaged? IOC-WESTPAC, Proc. III Int. Sci. Symp., Bali, 22-26 November 1994. Unesco Workshop Rep. 116.
Molis, M. 1997. Untersuchung zur Anwendbarkeit der Indikator-Hypothese von Fischen der Familie Chaetodontidae an unterschiedlich stark gestörten Riffen vor der Küste Sumatras (Indonesien). Diplomarbeit, ZMT Universität Bremen, 94 S. Masters thesis. (In German).
Randall, J.E. Zoogeography of shore fishes of the Indo-Pacific region. Zool. Stud. (In press)
Randall, J.E. and A. Kunzmann. *Cirrhilabrus adornatus*, a new species of labrid fish from Sumatra. Rev. Fr. Aquariol. (In press, a).
Randall, J.E. and A. Kunzmann. Seven new records of fishes from Indonesia, with discussion of western Indian Ocean fishes in southwestern Indonesia. Raffles Bull. Zool. (In press, b).
Suharsono, M. Adrim, A. Budiyanto, A. Ibrahim, Yahmantoro and Z.A. Telambanua. 1995. Wisata Bahari Pulau Nias, LIPI-LP3O, Jakarta, 44 p. (In Bahasa Indonesia).
Veron, J.E.N. 1986. Corals of Australia and the Indo-Pacific. University of Hawaii Press, Honolulu. 644 p.
Whitten, A.J., S.J. Damanik, J. Anwar and N. Hisyam. 1984. The ecology of Sumatra, Gajah Mada University Press. 583 p.
Yunaldi. 1996. Keberadaan ikan kepe-kepe (Chaetodontidae) di perairan Kotamadya Padang dan perannanya sebagai penentuan konidisi terumbu karang. Universitas Bung Hatta, Padang, Skripsi-S1: 47 p. Bachelor's thesis. (In Bahasa Indonesia).
Zimmermann, C. and A. Kunzmann. On the activity level and respiration of sluggish marine fishes of West Sumatra in comparison to sluggish Antarctic fishes. (In prep.)

A. KUNZMANN *is from the Institute of Polar Ecology, Wischofstr, 1-3, g12, 24148, Kiel Germany;* J.E. RANDALL *is from the Bishop Museum, 1525 Bernice St., Honolulu, Hawaii 96817, USA, and* I. SUPRIHANTO *is from Simpul I, Jl. Sumatera Ulak Karang, Padang 25114, Indonesia.*