

Coastal fish assemblages of the Socotra Archipelago

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Abstract: Nearshore fish surveys were conducted with the objectives to compile a fish species inventory, assess species richness, diversity, abundance, distribution and composition of fish assemblages, to identify indicator species for monitoring, assess conservation needs and contribute to the zoning and management plan. Species inventories were compiled by visual underwater recording, photography and sampling. Quantitative surveys were conducted by line transect censuses. A total of 491 species in 77 families were recorded during the surveys, increasing the number of species known from the archipelago to about 620, representing 104 families. Gamma diversity is highest at Socotra Island and Sabuniya, where 422 species have been recorded, followed by 279 species at Abd al-Kuri and Kal Farun and 236 species at Samha and Darsa. About 36 % of the fish species have a wide distributional range throughout the archipelago; another c. 45 % are confined to a single island group and the remaining c. 19 % are shared by two island groups. Alpha diversity and abundances were highest at Abd al-Kuri and Kal Farun, closely followed by Samha and Darsa, and lowest at Socotra Island. Species richness decreases from west to east, and fish assemblages at northern coasts are usually more diverse than those occurring to the south. The outer islands, although limited in inshore coastal area, host a large proportion of the archipelago's fish biodiversity. The ten most frequently recorded species account for 71 % of the individuals. The most common species is *Chromis flavaxilla*, followed by *Pomacentrus caeruleus*. Fish species composition differs in various parts of the archipelago. Abd al-Kuri receives the highest influx of recruits from East Africa. Biodiversity 'hotspots' at this island are of particular interest. Fish population sizes at these sites are rather small and these assemblages are particularly vulnerable to disturbance. Although nearshore fish populations throughout the archipelago are presently in healthy condition, it is expected that degradation of their sparsely connected habitats will make it difficult for certain species to maintain their populations successfully. In order to guarantee long-term sustainability and conservation, a set of Biological Reserves, embedded in Special Nature Reserves, is proposed.

INTRODUCTION

The taxonomy and ecology of shallow-water fishes of the Socotra Archipelago are poorly known. STEINDACHNER (1902, 1903) published the first more extensive studies of fishes from Socotra, based on material collected by Prof. Simony and other participants of the Austrian Expedition to Socotra and South Arabia in 1898-1899. He listed 57 species of marine and brackish water fishes originating mainly from the outlet of a pool in the lower reaches of Tamarida streamlet close to Hawlaf, the anchorage at Hawlaf, Khawr Qariyah and Qalansiya. He described *Gerres sokotranus* and *Hirundichthys socotranus* as new to science. No publications were found dealing with fish specimens collected by the British expeditions of I.B. Balfour (BALFOUR 1880, 1882) in 1879 and 1880 and of W.O. Grant and H.O. Forbes (FORBES 1899 a, 1899 b, 1903, 1904) in 1899 to Socotra and Abd al-Kuri. Since both expeditions focussed on the terrestrial flora and fauna, fishes have probably not been studied. Fish samples of both expeditions are deposited at the Natural History Museum in London.

The German expedition of E. Riebeck and G. Schweinfurth in 1881 also focussed on terrestrial biology (SCHWEINFURTH 1891, 1892). It yielded a small collection of fishes which, however, were not published. TASCHEBERG (1883) mentioned eight species of common marine fishes without listing their names. The Oxford University Expedition of 1956 collected a small number of fishes while the British R.A.F./Army Expeditions of 1964 and 1964/1965 and the combined R.A.F./Army/Civilian Expedition of 1967 did not contribute to the knowledge of the archipelago's fish fauna (DOE 1992, WRANIK 1999). Between 1964 and the late 1980s, several Russian and German expeditions conducted oceanographic, biodiversity and fisheries surveys in the western Indian Ocean including the waters around Socotra (HARIRI & SHOTAH 1999). In 1964 the German research vessel Meteor collected fish specimens south-west of Socotra and in 1988/1989 the Russian research vessel Vityaz made extensive collections around the archipelago,

which have probably been deposited in the Shirshov Institute of Oceanography in Moscow (M. Apel and V. Spiridonov, pers. comm.). Several species were described as new to science based on these collections. Two of them were named after Socotra: *Gymnothorax sokotrensis* Kotthaus, 1968, and *Ariosoma socotranum* Karmovskaya, 1991.

The first detailed study, and also the only one to date, of the fish fauna of Socotra was conducted by the marine team of MacAlister Elliott & Partners (MEP) during a fact-finding mission for the preparation of the GEF Socotra Project (MEP 1996). KEMP (1998) published an account of 215 fish species from the archipelago and provided a zoogeographical analysis based on distribution data of four families, which were studied in more detail.

The Socotra Archipelago is situated in the vicinity of four major biogeographic units of the circum-Arabian seas: the Eritrean, South Arabian and Persian sections of the Arabian subprovince (sensu KLAUSEWITZ 1989) and the Western Indian Ocean subprovince (KLAUSEWITZ 1972, 1978, 1989; BRIGGS 1974; ORMOND & EDWARDS 1987; SHEPPARD et al. 1992; KEMP 1998). It is also close to the boundaries between

- The Arabian and the Western Indian Ocean subprovinces
- The South Arabian and the Eritrean sections
- The South Arabian and the Persian sections of the Arabian subprovince

All of these boundaries are considered partial barriers. They represent transition zones where areas of related but distinct faunal communities overlap, contributing to a biogeographically complex picture. The complexity is caused by heterogeneous patterns of genetic differentiation at population, subspecies and species levels. These relate to isolation and speciation processes following Miocene and Pliocene tectonic events and eustatic sea-level fluctuations during the Pleistocene. Until today it is uncertain as to whether the fish fauna of the archipelago should be considered part of the Arabian subprovince, whether it has stronger biogeographic affinities to East Africa, or whether it forms a transition zone between the two subprovinces (FRICKE 1988, KLAUSEWITZ 1989, KEMP 1998). Furthermore, Socotra lies in the vicinity of other areas with poorly known fish faunas, such as Somalia and the Gulf of Aden coast of Yemen. It is located near the Arabian Sea coast of Oman, which has been considered a centre of speciation within the Arabian subprovince by RANDALL & HOOVER (1995) and RANDALL (1996).

The present report describes studies on species richness, faunal composition and basic zoogeographic affinities of the fish assemblages of Socotra. For the first time, quantitative studies of nearshore fish populations were conducted. The present report provides baseline data on fish diversity. It contributes to the identification of core areas of high biodiversity and resource use potential. Key species for future monitoring have been selected and recommendations for zoning and management are made.

Objectives of the reporting period

Objectives of the surveys reported here are:

- To compile a fish species inventory for the area
- To assess fish species richness, diversity, abundance and distribution
- To assess the composition of nearshore fish assemblages
- To identify areas of high fish species diversity
- To identify potential indicator species for future monitoring
- To assess conservation needs of selected areas and species
- To contribute to the zoning and management plan of marine areas of the archipelago

MATERIALS AND METHODS

During the survey period of 26 February to 24 April 1999, subtidal habitats around all islands (Socotra, Abd al-Kuri, Samha, Darsa and the rock stacks Kal Farun and Sabuniya) were assessed applying three methods:

1. Compilation of fish species inventories by visual underwater recording, photography and sampling
2. Compilation of inventories of species caught in artisanal fisheries by visiting fish landing sites and markets
3. Quantitative surveys of fish assemblages by line transect censuses

The compilation of the species inventory included a review of published records and verification of the present taxonomic status of species reported in the literature. Part of the specimens collected by E. Riebeck and G. Schweinfurth in 1881 (TASCHENBERG 1883) were re-discovered and studied by the authors. Specimens of 11 species that had been described as new to science based on material collected near Socotra (KOTTHAUS 1967, 1968, 1970 a, 1970 b, 1973, 1974, 1976, 1979; KARMOVSKAYA 1991) were checked. Qualitative recordings of fish species occurring in nearshore waters were conducted by SCUBA diving or snorkelling, underwater sampling and photography. Sites were usually visited until no additional species were found for at least 10 minutes. Sites were considered sampled to the level of a detailed species inventory, if the overall sampling effort by one or several methods approximated the sampling intensity employed at a transect survey site. Although not standardised by statistical means, the resulting accounts are considered suitable to compare the species richness of different sites. A reference collection of 207 species was made. It consists of 2069 specimens, 216 of which remained in the voucher collection of the PIU. The other specimens were shipped to the SRI for positive identification. Half of the collection will later on be returned to Yemen.

Additional records were obtained mainly by one of the authors (MK), who visited the fish landing site at Hadibo on a regular basis, and a number of other fish landing sites during the survey activities. Freshly dead specimens were photographed whenever possible.

The fish census transect method generally followed ENGLISH *et al.* (1997). Twenty-four fish transect surveys were conducted alongside with line intercept transects (LIT) of the benthic community survey, in order to allow for a later comparison of community structures, using linear regression or multivariate ordination methods. Fish assemblages were assessed by visual censuses along 50 m belt transects, using SCUBA gear. Sites were selected during rapid assessments of the general habitat surveys. Each fish transect site consisted of three replicates of 50 m ropes or tape measures laid out straight and parallel to the coastline, following the depth contour. In alteration to the method of ENGLISH *et al.* (1997), the three replicates were arranged in one row and no second replicate set at a different depth was made. These modifications were found to be necessary because initial trials had shown that the areas of homogeneous habitat were rarely large enough to accommodate either three fish transect belts in parallel, or five LIT. In many areas around Socotra, depth elevation is so indistinct that other sites at different depths would hardly be found within reasonable distance from the first set of replicates. Fishes were counted by species (where possible) 2.5 m to each side of the transect line and 5 m above the line.

Fish species composition differed greatly between sites. For this reason blank underwater writing pads were used to make notes. Usually, all counts were made by one of the authors (UZ). However, at the first eight transects, MK counted species of the families Serranidae, Lutjanidae, Mullidae, Chaetodontidae, Pomacanthidae, Acanthuridae and Balistidae, while UZ covered the remaining families. Following reconnaissance assessments, the families listed were pre-selected because they were abundant, represented by many species and suitable for monitoring. Counts and records were entered into Microsoft Excel spreadsheets for further analysis.

All site locations were recorded with a hand-held GPS unit (WGS 84) and numbered consecutively (ST-###). Data presented here were compiled at 82 main sites and many secondary sites where only few fishes were recorded, sampled, or obtained from fishermen. Ten of the

82 main sites were large sampling sites (S); another 57 were detailed subtidal fish inventory sites (FIS). Out of these 57, 24 were transect sites (T) and eight were large sampling sites combined with visual recording (RS). The sites are distributed over the archipelago as follows:

Socotra:	40 FIS including	14 T	and	5 RS
Abd al-Kuri and Kal Farun:	9 FIS including	6 T	and	1 RS
Samha:	4 FIS including	2 T	and	2 RS
Darsa:	3 FIS including	2 T		
Sabuniya:	1 FIS			
Total:		57 FIS		
			24 T	8 RS

The eulittoral zone, khawrs and lagoons were sampled only occasionally by hand and net, because of time and logistical constraints. Regarding the comparison of richness, distribution and abundance by island, a bias due to differing sampling effort in relation to the length of coastline of each island is acknowledged.

The taxonomic classification used herein follows ESCHMEYER et al. (1999). The following literature was mainly used to identify samples or to confirm visual observations in the field: ALLEN (1991), ALLEN & STEENE (1994), DEBELIUS (1998), FishBase 99 (1999), MYERS (1991), RANDALL (1983, 1996) and SMITH & HEEMSTRA (1996). The identification of parts of the collections and analysis of photographic records, however, is still pending. A preliminary analysis of quantitative data is presented in this report. Detailed statistical analyses of fish assemblage compositions and a comparison with the quantitative benthic community data will be included in a later report. Recommendations for zoning and management are mainly based on the results of faunal studies and some basic population data.

RESULTS

Gamma diversity – preliminary species account of the Socotra Archipelago

Gamma diversity is defined as the number of species in a region. It is the analogue of alpha diversity (see here below) but is calculated over a larger spatial scale, which, in the present case, comprises the entire Socotra Archipelago. A total of 619 species representing 104 families is tentatively reported here, including 29 species of Chondrichthyes belonging to 11 families (see Annex 1 for details). The species account is based on species recorded during our surveys in 1999, on published records, above all KEMP (1998) and STEINDACHNER (1902, 1903), and additional records by the Senckenberg-Hariri Fisheries team and the resident marine team. A total of 491 species representing 77 families was recorded during the present survey, increasing the number of fish species known from Socotran waters by about 200 %.

Species and family richness, distribution and site (alpha) diversity

Alpha diversity is defined as the diversity at a site within a region. Stations in close proximity to each other are grouped by island, resulting in three major groupings: (1) Socotra Island and Sabuniya, (2) Samha and Darsa and (3) Abd al-Kuri and Kal Farun. This grouping has not yet been confirmed by statistical tests. Differences in the average species richness per site for each of these groupings are evident. Whereas Socotra Island, due to its size, has a larger total number of species recorded, the maximum and mean species counts at individual stations at the outer islands were much higher. A total of 422 fish species (384 at FIS) has been recorded thus far from Socotra Island and Sabuniya, 236 (212 at FIS) from Samha and Darsa and 279 (275 at FIS) from Abd al-Kuri and Kal Farun. At the 49 FIS, a total of 444 species were found, with a mean of c. 66 species per site and a range of 14-125. Species richness by island group is listed in Table 1. Table 3 shows the species richness of the five richest sites.

Table 1: Species richness recorded per island group as assessed by the 1999 surveys.

	Entire archipelago	Socotra Island and Sabuniya	Samha and Darsa	Abd al-Kuri and Kal Farun
Number of species, all sites combined	491	422	236	279
Number of FIS	57	40	7	9
Number of species at FIS	444	384	212	275
Mean species number per FIS	61	49	87	88
Maximum species number at one FIS	125	89	110	115
Minimum species number at one FIS	14	14	56	62
Standard deviation	28.0	20.0	21.3	18.3
Number of families recorded	77	71	48	45

In addition to the 491 species recorded during this survey, distribution data of another 59 species have been published in the literature. Hence the total number of species with site records is 550 (472 for Socotra and Sabuniya, 238 for Samha and Darsa and 286 for Abd al-Kuri and Kal Farun). No species was recorded at all stations. The most frequently encountered fish was *Pomacentrus caeruleus*, which was observed at 51 sites, including 23 of 24 transect sites. A total of 146 species were found at only a single station each. Of the 77 families recorded in total, 71 were found at Socotra and Sabuniya, 48 at Samha and Darsa and 45 at Abd al-Kuri and Kal Farun.

Frequencies recorded among the different island groups are presented in Table 2. Only 36 % of the fish species have a wide distribution throughout the archipelago. Another 44.8 % are confined to a single island group. Of these, 166 (= 75.5 %) are restricted to Socotra and Sabuniya, 23 (= 10.5 %) to Samha and Darsa and 31 (= 14 %) to Abd al-Kuri and Kal Farun. About 19 % are known from two island groups.

Table 2: Distribution frequency of fish species among the island groups.

	Restricted to one island group	Shared by two island groups	Occurring at all three island groups
Number of species	220	93	177
Percentage of total records	44.8	18.9	36.0

Table 3: Five richest 'areas' in total number of species for each island group.

Entire archipelago		Socotra (excluding Sabuniya)		Samha and Darsa		Abd al-Kuri and Kal Farun	
Station numbers	Species	Station numbers	Species	Station numbers	Species	Station numbers	Species
ST-150 and ST-173	135	ST-149/T-14	89	ST-336/T-21 and ST-334	115	ST-150 and ST-173	135
ST-367	125	ST-063/T-5	86	ST-337/T-22	109	ST-207/T-18 and ST-208	115
ST-207/T-18 and ST-208	115	ST-064/T-6	81	ST-366/T-24	100	ST-189 and ST-190	106
ST-336/T-21	110	ST-068/T-8	80	ST-345/T-23	97	ST-188	98
ST-337/T-22	109	ST-147 and ST-148	75	ST-338	81	ST-251/T-20	93
Mean of all 5 areas	118.8	Mean of all 5 areas	82.2	Mean of all 5 areas	100.4	Mean of all 5 areas	109.4

While Table 1 and Fig. 1 refer to records at single detailed inventory sites (FIS), Table 3 presents the five richest 'areas', some of which have been sampled repeatedly by different methods, indicating an increasing species richness per site from east to west.

The numbers of species recorded per FIS varied between 14 (ST-021, Rhiy di-Diblih, south coast of Socotra) and 125 (ST-367, Sabuniya). General records and transect data reveal considerable differences among individual islands and between north and south coast habitats. Records obtained during the detailed fish inventories by island group are as follows:

Socotra Island

The minimum number of species per site was 14 (ST-021, west of Rhiy di-Diblih, Nojid, south coast of Socotra), the maximum 89 (ST-149/T-14, Dihamd to Ghubba) and the mean about 49. High species richness was found at ST-063/T-5 and ST-064/T-6 (86 and 81 species, respectively; off Qadub fishing village, in front of the airport), ST-068/T-8 (80 species; Hawlaf, off the jetty), ST-147 and ST-148 (75 species; di-Timri, west of Rhiy di-Adhoh), ST-097/T-11 (74 species; Roosh, 1 km east of Siqirah), ST-104 (73 species; Dubihil) and at ST-067/T-7 (70 species; Rhiy di-Hamri). When including ST-367 (Sabuniya), the mean richness increases to about 51 species per site and the maximum to 125 species.

The waters surrounding Socotra Island host reasonably rich fish assemblages. The average and maximum richness per site is lower than at the outer islands. Variations in species richness among sites reflect the heterogeneous habitat distribution and the often limited area extent of homogeneous habitat (see TURNER et al. 1999, APEL this report, DEVANTIER this report). The Ras Adhoh to di-Timri area is exceptional for being one of the few sites with a steep slope. A number of fish species are more common here than at other sites studied. Records of species confined to 'deeper' (> 20 m) inshore habitats (e.g. *Bodianus macrognathos*, *Pseudanthias marcia*, *Pseudanthias cooperi*) are rather scattered in their distribution, obviously due to the scarcity of these sites in nearshore areas.

The habitats along the southern and south-western coast, e.g. ST-037/T-3 (44; Steroh, Nojid) and ST-041/T-4 (39 species; west of Bidhola, Nojid) generally reveal a fish species richness about 50 % lower than at habitats on the northern coast. Fish records at most southern sites ranged from 20 to 40 species per site, with ST-129/T-12 (64 species; Ras Qatanhin Bay) revealing the highest richness. There are unique mixed benthic communities at these sites with about equal portions of hard corals, soft corals and macroalgae (see DEVANTIER this report, REINICKE et al. this report).

Samha and Darsa

At Samha, between 56 (ST-267, Samha north-western tip) and 115 species per site (ST-336/T-21 (110 species), ST-334, tip of north-eastern coast) were recorded, with a mean of 77.6 species. High numbers were also recorded at ST-337/T-22 (109 species, north-west coast).

At Darsa, the number of species per site ranged between 81 (ST-338, north-western tip) and 100 (ST-366/T-24, north coast). ST-345/T-23 (north-eastern coast) yielded 97 species. The mean count was about 92 species. As an island group both have a mean count of 87.1 species.

Fish assemblages at Samha and Darsa are richer in the number of species per study site than those at Socotra, but not quite as rich as those of Abd al-Kuri and Kal Farun. However, no detailed surveys were conducted at the southern coasts, which are exposed to wind and wave action. Rapid assessments revealed that the southern coasts are poor in suitable habitats for demersal and reef fishes. At the few suitable habitats where reef fishes were found, they were still larger in number than at the south coast of Socotra Island.

Abd al-Kuri and Kal Farun

Species richness at Abd al-Kuri and Kal Farun varied between 31 (ST-190, Khaisat an-Naum, western tip) and 115 species per site (ST-207 and ST-208, Kal Farun), with a mean of about

88 species. Within the entire archipelago, the highest richness in a single area with a homogeneous habitat was found near to Ras Anjara, with a total of 135 species recorded during repeated sampling (ST-150/T-15, ST-173 and ST-262). High species richness was also encountered at ST-189 and ST-190 (106 species; Khaisat an-Naum), ST-188 (98 species; 'Trident Bay'), ST-251/T-20 (93 species; last big bay on the north-east coast off fishery camp Bur al-Agooz) and at ST-211 (73 species; east of Badh Issa, north coast of Abd al-Kuri). Other sites along the north coast still yielded an average of 70 species (ST-210, ST-238, around Badh Issa).

Compared to Socotra Island, Abd al-Kuri has substantially higher average species richness per study site. South coast habitats of Abd al-Kuri mainly represent indigenous rock with spur-and-groove, steep cliffs, or large sand plains with almost no trace of reef accretion and little three-dimensional habitat development. Their fish communities are generally poorer in number of species and individuals than those at the north coast. Nonetheless, certain biodiversity 'hotspots' with remarkably rich fish communities do exist. Contrary to conditions found at Socotra Island, species richness at some of these habitats is even higher than at the richest sites on the north coast. The extent of these habitats and hence fish population sizes are rather limited. They represent solitary patches in upwelling-protected 'pockets' with considerable distances in-between. Community compositions suggest that there is limited faunal exchange, at least of the more strictly reef-associated species, between these patches. This view is supported by the fact that several prominent species (e.g. *Cirrhilabrus exquisitus*, *Pseudanthias evansi*), which are not easily overlooked, were only observed at one station. Average species richness at north coast habitats is higher than at Socotra. Kal Farun is very rich in reef-associated and particularly in inshore epipelagic species, forming an entity of fish diversity in itself.

Family richness and distribution

A total of 104 fish families has so far been recorded from the archipelago. During the surveys, 77 families were recorded. The 24 families which are most common in terms of number of species present are given in Table 4. Wrasses (Labridae) are the largest family, representing 10.7 % of all species. The ten most common families account for 298 species, representing 48.1 % of all species. Labridae, Pomacentridae, Chaetodontidae and Acanthuridae are particularly diverse. On the other hand, Gobiidae, Blenniidae, Apogonidae and Muraenidae are represented by fewer species than expected. Their numbers may have been underestimated due to their nocturnal and/or cryptic behaviour. A total of 43 families is represented by a single species each and 37 families by only 2-6 species each (see Table 5).

Table 4: List of the most common families in terms of species number. These families are represented by more than 1 % of the total number of species.

Rank	Total species account			Species account of this survey		
	Family	Species number	Percent of total species number	Family	Species number	Percent of total species number
1	Labridae	66	10.66 %	Labridae	63	12.83 %
2	Pomacentridae	41	6.62 %	Pomacentridae	39	7.94 %
3	Serranidae	32	5.17 %	Acanthuridae	27	5.50 %
4	Gobiidae	28	4.52 %	Serranidae	27	5.50 %
5	Acanthuridae	27	4.36 %	Gobiidae	26	5.30 %
6	Chaetodontidae	23	3.72 %	Chaetodontidae	22	4.48 %
7	Carangidae	21	3.39 %	Apogonidae	20	4.07 %
8	Apogonidae	21	3.39 %	Lutjanidae	19	3.87 %
9	Lutjanidae	20	3.23 %	Scaridae	17	3.46 %
10	Blenniidae	19	3.07 %	Blenniidae	15	3.05 %

Rank	Total species account			Species account of this survey		
	Family	Species number	Percent of total species number	Family	Species number	Percent of total species number
11	Muraenidae	17	2.75 %	Muraenidae	14	2.85 %
12	Scaridae	17	2.75 %	Haemulidae	13	2.65 %
13	Haemulidae	14	2.26 %	Carangidae	12	2.44 %
14	Carcharhinidae	13	2.10 %	Lethrinidae	12	2.44 %
15	Lethrinidae	12	1.94 %	Mullidae	11	2.24 %
16	Scorpaenidae	12	1.94 %	Pseudochromidae	11	2.24 %
17	Mullidae	11	1.78 %	Scorpaenidae	10	2.04 %
18	Pseudochromidae	11	1.78 %	Balistidae	8	1.63 %
19	Tetraodontidae	11	1.78 %	Tetraodontidae	8	1.63 %
20	Balistidae	10	1.62 %	Caesionidae	7	1.43 %
21	Caesionidae	7	1.13 %	Holocentridae	6	1.22 %
22	Holocentridae	7	1.13 %	Pomacanthidae	6	1.22 %
23	Pomacanthidae	7	1.13 %			
24	Scombridae	7	1.13 %			
	Total for all 24 families	454	73.34 %	Total for all 22 families	393	80.04 %
	Species in remaining 80 families	165	26.66 %	Species in remaining 55 families	98	19.96 %

Table 5: Categories of species richness within families.

Family richness category	Species richness per family		Number of families in this category
	given as number of species	given as percentage of species	
1	> 41	> 10 %	1
2	> 31	> 5 %	2
3	30-13	> 2 %	11
4	12-7	> 1 %	10
5	6-2	> 0.31 %	37
6	1	= 0.16 %	43

Table 6: Distribution frequency of fish families among the island groups.

	Restricted to one island group	Shared by two island groups	Occurring at all three island groups
Number of families	29	9	39
Percentage of total records	37.7	11.7	50.6

Distribution frequencies of families recorded among the different island groups are presented in Table 6. Only about 51 % of the families have a wide distribution throughout the archipelago. Another 38 % are confined to a single island group. Of these, 23 (= 79.35 %) are restricted to Socotra and Sabuniya, five (= 17.2 %) to Samha and Darsa and one (= 3.4 %) to Abd al-Kuri and Kal Farun. About 12 % are known from two island groups.

Fish census transects

A total of 299 species in 41 families was recorded during the transect counts. This represents about 50 % of the total species known from the archipelago and about 61 % of the records of this survey. The number of species recorded in transect counts for the three island groups are: 220 for Socotra, 174 for Samha and Darsa and 196 for Abd al-Kuri and Kal Farun. However, only some 59 % of the families recorded overall were actually represented in transect counts, because the overall species account includes families not occurring in shallow inshore habitats. Table 7 shows total fish counts, percentage share of total abundance by island group and mean abundance by transect. For fish counts by transect and abundance at individual sites refer to Table 8. Abundance data by species are found in Annex 2.

Table 7: Comparison of abundance and recording frequencies of 24 transects at the three island groups.

	Entire archipelago	Socotra Island	Samha and Darsa	Abd al-Kuri and Kal Farun
Number of transects	24	14	4	6
Total fish counts	84190	28127	22312	33751
Mean abundance per transect replicate	1169.31	669.69	1859.33	1875.06
Percentage of total abundance	100 %	33.41 %	26.50 %	40.09 %
Total record events in transects	1638	796	386	456
Mean record events per transect	68.25	56.86	96.50	76.00
Number of species recorded	299	220	174	196

Mean fish counts per transect follow the same trend as species richness values, increasing from east to west. Although the species richness and mean abundance were comparatively low on Socotra, there is a general trend for increasing species richness and abundance from north to south for the entire archipelago. Values of the percentage share of individuals counted for Abd al-Kuri and Kal Farun exceeded those for Socotra (where counts were taken along eight more transects). Together with the species richness data this strongly suggests that the outer islands, although limited in inshore coastal area, do represent a large proportion of the archipelago's biodiversity and resource potential.

The six sites with the highest species richness and mean abundance are located on two of the island groups: Samha and Darsa and Abd al-Kuri and Kal Farun (Table 9). This again shows that the overall diversity of fish communities is markedly higher at the outer islands than at Socotra. While the three sites with the highest species richness are located at Samha and Darsa, the three sites of highest mean abundance per transect are at Abd al-Kuri. At one site on Abd al-Kuri (ST-251/T-20), the mean abundance amounted to more than 3000 individuals. Several transects at both outer island groups exceeded a mean of 2000 individuals per 250 m² transect belt, but none at Socotra did, suggesting that the productivity of the marine environment is increasing westwards.

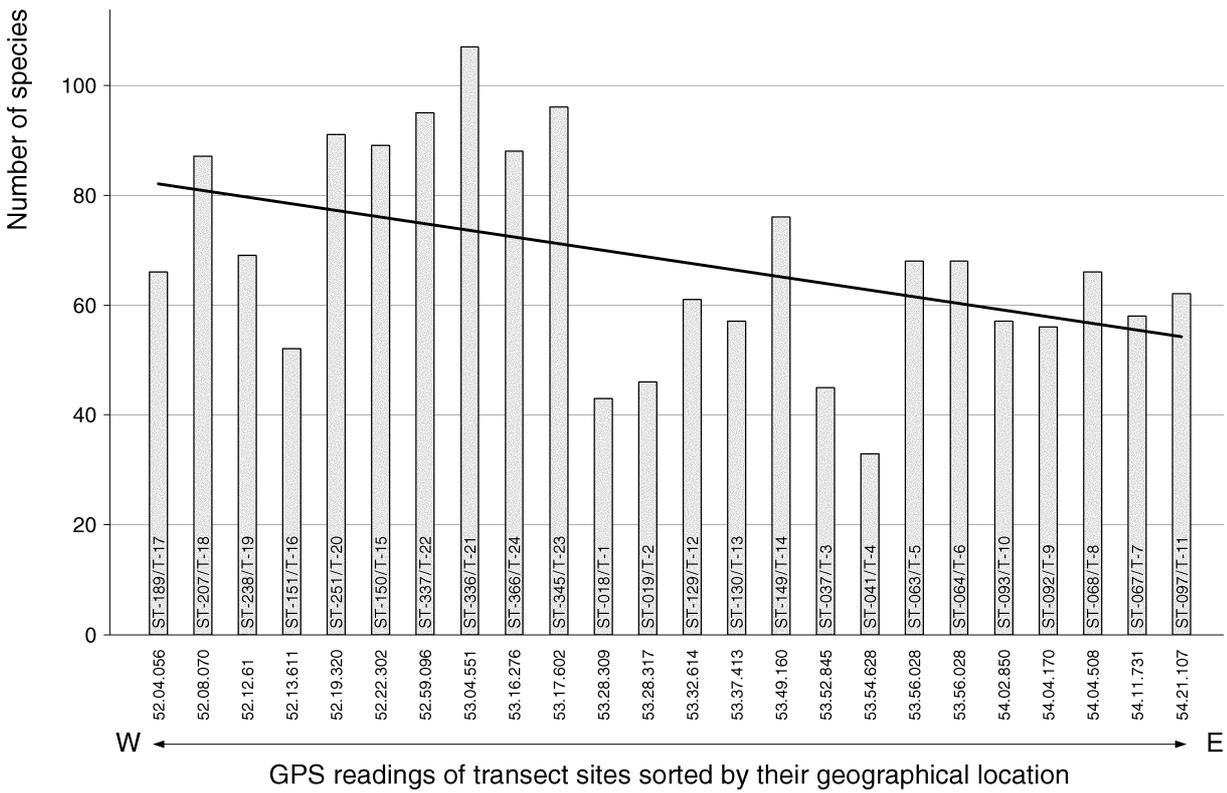


Fig. 1: Variation in numbers of species counted (species richness) along transects, shown according to location of transects from west to east.

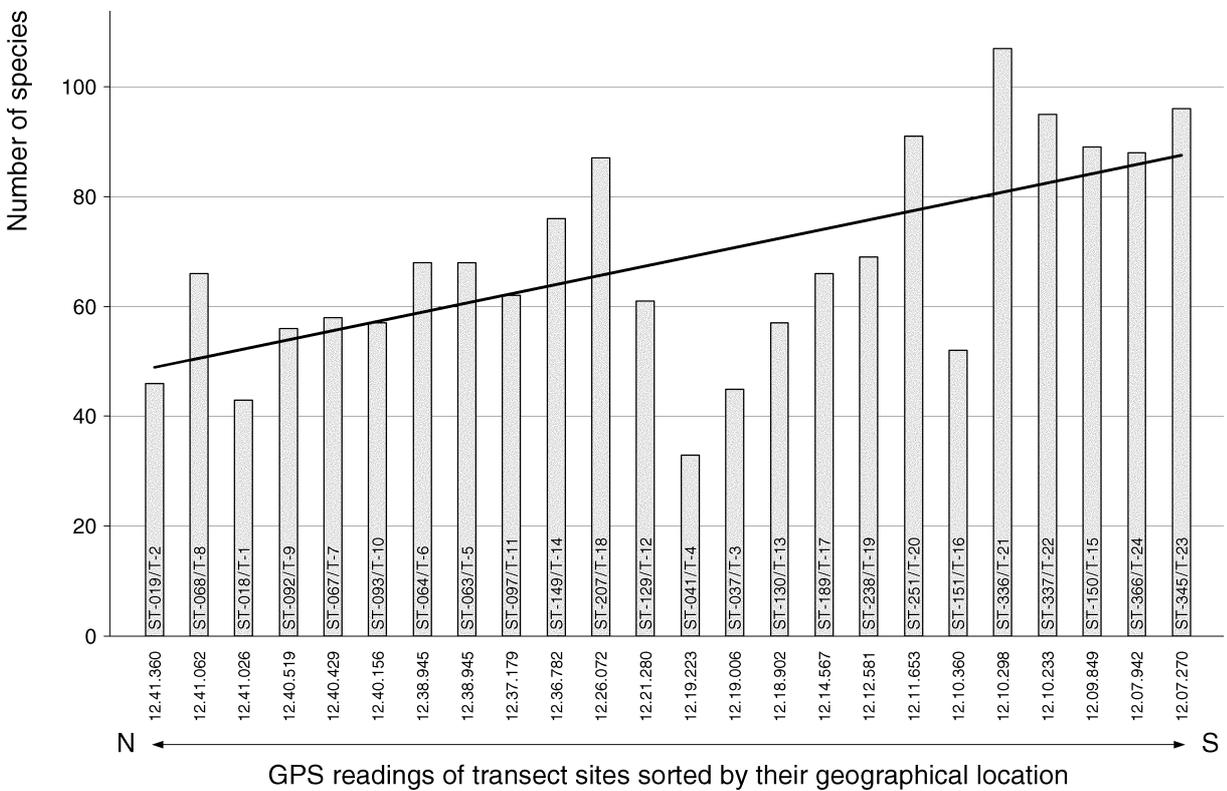


Fig. 2: Variation in numbers of species counted (species richness) along transects, shown according to location of transects from north to south.

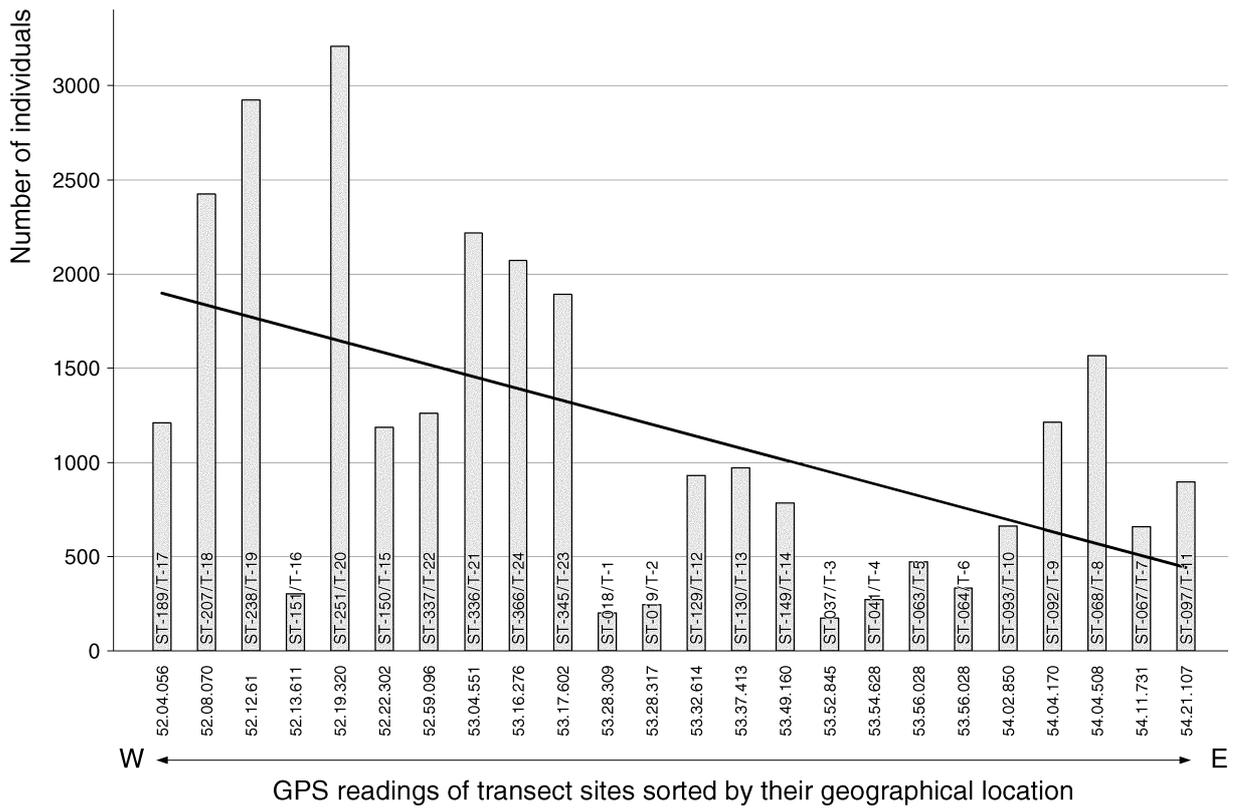


Fig. 3: Variation in numbers of individuals counted (species abundance) along transects, shown according to location of transects from west to east.

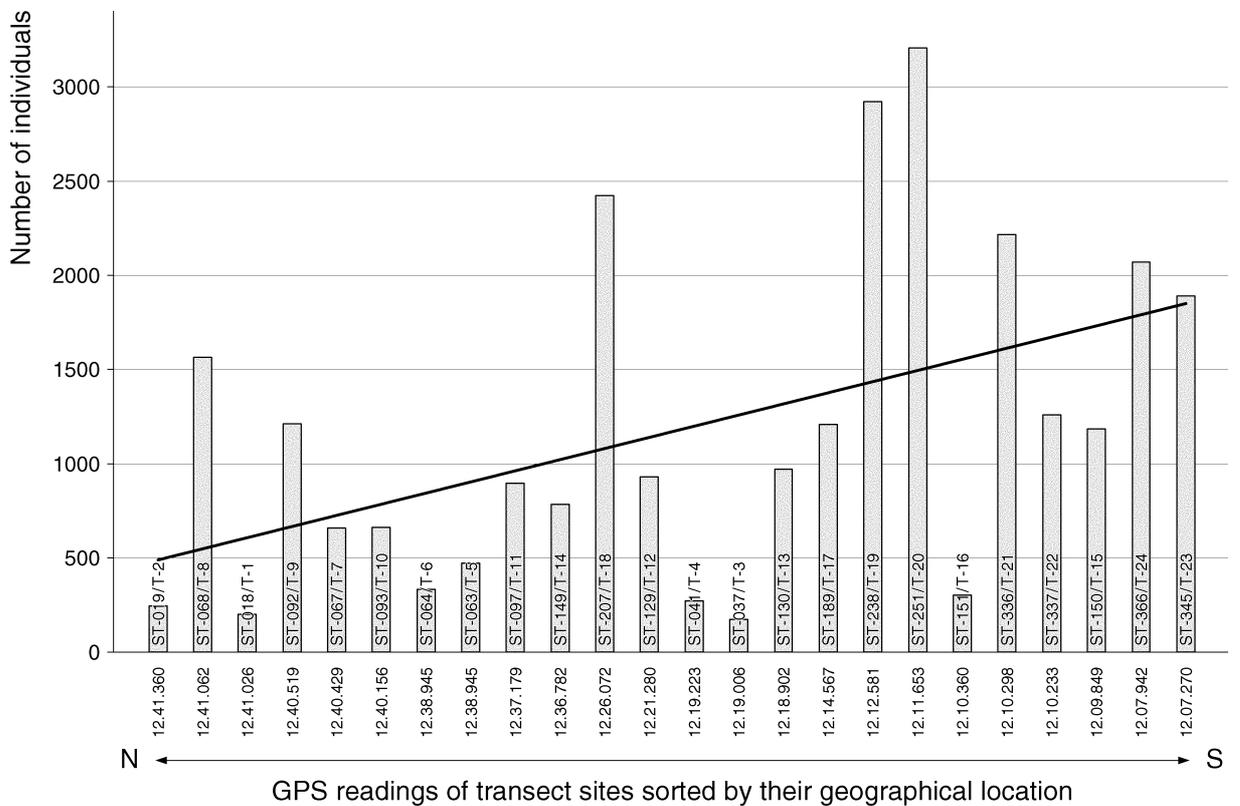


Fig. 4: Variation in numbers of individuals counted (species abundance) along transects, shown according to location of transects from north to south.

Table 8: Species richness and mean abundance by transect site.

Transect station	Species number	Counts per transect, three replicates			Mean abundance	Standard deviation	Mean value deviation	GIS readings	
								Latitude N	Longitude E
Socotra									
ST-018/T-1	43	195	115	296	202.00	74.06	62.67	12.41.026	53.28.309
ST-019/T-2	46	278	282	177	245.67	48.58	45.78	12.41.360	53.28.317
ST-037/T-3	45	243	143	131	172.33	50.21	47.11	12.19.006	53.52.845
ST-041/T-4	33	176	256	379	270.33	83.49	72.44	12.19.223	53.54.628
ST-063/T-5	68	406	440	574	473.33	72.52	67.11	12.38.945	53.56.028
ST-064/T-6	68	350	415	235	333.33	74.42	65.56	12.38.945	53.56.028
ST-067/T-7	58	649	955	373	659.00	237.71	197.33	12.40.429	54.11.731
ST-068/T-8	66	2168	734	1789	1563.67	606.72	553.11	12.41.062	54.04.508
ST-092/T-9	56	1129	1253	1258	1212.00	59.67	56.22	12.40.519	54.04.170
ST-093/T-10	57	552	739	692	661.00	79.43	72.67	12.40.156	54.02.850
ST-097/T-11	62	1244	562	881	895.67	278.62	232.22	12.37.179	54.21.107
ST-129/T-12	61	1050	955	788	930.00	108.30	95.33	12.21.280	53.32.614
ST-130/T-13	57	861	865	1185	970.33	151.80	143.11	12.18.902	53.37.413
Samha and Darsa									
ST-336/T-21	107	1894	2572	2184	2216.67	277.75	236.89	12.10.298	53.04.551
ST-337/T-22	95	1298	1052	1430	1260.00	156.64	138.67	12.10.233	52.59.096
ST-345/T-23	96	2130	2364	1178	1890.67	512.91	475.11	12.07.270	53.17.602
ST-366/T-24	88	1963	1840	2407	2070.00	243.53	224.67	12.07.942	53.16.276
Abd al-Kuri and Kal Farun									
ST-149/T-14	76	1035	583	736	784.67	187.71	166.89	12.36.782	53.49.160
ST-150/T-15	89	930	1340	1285	1185.00	181.70	170.00	12.09.849	52.22.302
ST-151/T-16	52	313	329	267	303.00	26.28	24.00	12.10.360	52.13.611
ST-189/T-17	66	1622	1116	888	1208.67	306.73	275.56	12.14.567	52.04.056
ST-207/T-18	87	2029	2676	2564	2423.00	282.33	262.67	12.26.072	52.08.070
ST-238/T-19	69	1271	1160	6334	2921.67	2413.31	2274.89	12.12.581	52.12.61
ST-251/T-20	91	2502	4011	3114	3209.00	619.70	534.67	12.11.653	52.19.320

Table 9: Fourteen selected transects, sorted by values of fish species richness (right columns) and mean species abundance (left columns).

Rank	Left side (Species richness)			Right side (Mean abundance)		
	Transect station	Corresponding island group	Species richness	Transect station	Corresponding island group	Mean abundance
1	ST-336/T-21	Samha and Darsa	107	ST-251/T-20	Abd al-Kuri and Kal Farun	3206.67
2	ST-345/T-23	Samha and Darsa	96	ST-238/T-19	Abd al-Kuri and Kal Farun	2920.00
3	ST-337/T-22	Samha and Darsa	95	ST-207/T-18	Abd al-Kuri and Kal Farun	2423.00
4	ST-251/T-20	Abd al-Kuri and Kal Farun	91	ST-336/T-21	Samha and Darsa	2216.67
5	ST-150/T-15	Abd al-Kuri and Kal Farun	89	ST-366/T-24	Samha and Darsa	2070.00
6	ST-366/T-24	Samha and Darsa	88	ST-345/T-23	Samha and Darsa	1890.67
7	ST-207/T-18	Abd al-Kuri and Kal Farun	87	ST-068/T-8	Abd al-Kuri and Kal Farun	1563.00
8	ST-149/T-14	Socotra	76	ST-337/T-22	Samha and Darsa	1260.00
9	ST-238/T-19	Abd al-Kuri and Kal Farun	69	ST-092/T-9	Abd al-Kuri and Kal Farun	1213.33
10	ST-063/T-5	Socotra	68	ST-189/T-17	Abd al-Kuri and Kal Farun	1208.33
11	ST-064/T-6	Socotra	68	ST-150/T-15	Abd al-Kuri and Kal Farun	1184.00
12	ST-068/T-8	Socotra	66	ST-130/T-13	Socotra	970.33
13	ST-189/T-17	Abd al-Kuri and Kal Farun	66	ST-129/T-12	Socotra	931.00
14	ST-097/T-11	Socotra	62	ST-097/T-11	Socotra	895.67

Faunal composition

Predominant species

There is a marked difference between the relative frequencies of occurrence, i.e. the number of sites where a species was encountered, and the abundance of a species. While the record event frequencies (Table 10, Fig. 2) are rather similar for a large number of species, a few species dominate the relative abundance (Table 11, Fig. 3). The ten most frequently encountered species account for around 14 % of the total site records and the 30 most frequent ones for 30 %. Among the ten most frequently encountered species, only one, *Parupeneus macronema*, is of potential economic value, although it is not very much targeted in Socotran waters (HARIRI & YUSIF 1999). Among the 30 most frequently observed species, only three additional ones are of some importance as food fishes: *Lutjanus bohar*, *Scarus ferrugineus* and, to a lesser extent, *Scolopsis ghanam*.

Table 10: List of the 30 most frequently recorded species, sorted by number of sites they were recorded at.

Rank	Species	Total sites	Total transects	Percentage of total occurrences	Percentage of transect occurrences
1	<i>Pomacentrus caeruleus</i>	51	23	1.38 %	1.40 %
2	<i>Chaetodon vagabundus pictus</i>	50	24	1.35 %	1.47 %
3	<i>Parupeneus macronema</i>	49	23	1.33 %	1.40 %
4	<i>Thalassoma lunare</i>	48	22	1.30 %	1.34 %
5	<i>Sufflamen fraenatus</i>	47	23	1.27 %	1.40 %
6	<i>Chromis weberi</i>	47	20	1.27 %	1.22 %
7	<i>Zebrasoma xanthurum</i>	45	20	1.22 %	1.22 %
8	<i>Pomacentrus leptus</i>	44	22	1.19 %	1.34 %
9	<i>Labroides dimidiatus</i>	43	24	1.16 %	1.47 %
10	<i>Zanclus cornutus</i>	40	17	1.08 %	1.04 %
11	<i>Pomacanthus imperator</i>	37	17	1.00 %	1.04 %
12	<i>Melichthys indicus</i>	37	17	1.00 %	1.04 %
13	<i>Lutjanus bohar</i>	36	17	0.97 %	1.04 %
14	<i>Chaetodon melapterus</i>	35	18	0.95 %	1.10 %
15	<i>Dascyllus marginatus</i>	35	15	0.95 %	0.92 %
16	<i>Epinephelus fasciatus</i>	34	14	0.92 %	0.85 %
17	<i>Macropharyngodon bipartitus</i>	33	15	0.89 %	0.92 %
18	<i>Sufflamen chrysopteris</i>	32	18	0.87 %	1.10 %
19	<i>Plagiotremus rhinorhynchus</i>	32	17	0.87 %	1.04 %
20	<i>Halichoeres marginatus</i>	31	19	0.84 %	1.16 %
21	<i>Heniochus acuminatus</i>	30	13	0.81 %	0.79 %
22	<i>Scolopsis ghanam</i>	30	15	0.81 %	0.92 %
23	<i>Centropyge multispinnis</i>	30	15	0.81 %	0.92 %
24	<i>Chromis flavaxilla</i>	30	15	0.81 %	0.92 %
25	<i>Halichoeres hortulanus</i>	29	16	0.79 %	0.98 %
26	<i>Pseudocheilinus hexataenia</i>	29	13	0.79 %	0.79 %
27	<i>Apothemichthys xanthotis</i>	29	12	0.79 %	0.73 %
28	<i>Ctenochaetus striatus</i>	27	16	0.73 %	0.98 %
29	<i>Apogon cyanosoma</i>	27	11	0.73 %	0.67 %
30	<i>Scarus ferrugineus</i>	27	17	0.73 %	1.04 %
Frequencies of 30 most common species		1094	528	29.62 %	32.23 %
Frequencies of remaining species		2600	1110	70.40 %	67.77 %
Total frequencies, all species		3634	1636		

The 30 most frequently encountered species represent about 86 % of the total number of individuals counted at transects, the ten most frequent ones represent 71 %. The most common species is *Chromis flavaxilla*, followed by *Pomacentrus caeruleus*, which ranked first in site frequency.

Five of the six most abundant species are damselfishes (Pomacentridae). In addition, two very abundant cardinalfishes (Apogonidae) constitute a large proportion of the total counts. Their number may have been underestimated because of their small size and cryptic behaviour. Hence, seven of the ten most dominant species are strongly reef-associated. Only three of those ten species have a certain potential as food resource: *Lutjanus kasmira*, *Caesio lunaris* and *Caesio xanthonota*. None of them is particularly targeted in Socotran artisanal fisheries (HARIRI & YUSIF 1999). Of the 30 most abundant species only *Lethrinus borbonicus* is regularly marketed.

Table 11: List of the 30 most dominant species at the 14 transect sites (each transect site with three replicates of 50 m), sorted by their abundance.

Rank	Species	Entire archipelago			Socotra	Samha and Darsa	Abd al-Kuri and Kal Farun
		Total abundance	Mean abundance	Relative abundance	Relative abundance	Relative abundance	Relative abundance
1	<i>Chromis flavaxilla</i>	13349	185.40	15.86 %	11.01 %	28.22 %	11.72 %
2	<i>Pomacentrus caeruleus</i>	10671	148.21	12.67 %	19.13 %	20.15 %	2.35 %
3	<i>Dascyllus marginatus</i>	9605	133.40	11.41 %	4.06 %	18.93 %	12.56 %
4	<i>Chromis weberi</i>	9161	127.24	10.88 %	6.62 %	6.26 %	17.49 %
5	<i>Lutjanus kasmira</i>	3653	50.74	4.34 %	9.75 %	0.92 %	2.09 %
6	<i>Pomacentrus leptus</i>	3614	50.19	4.29 %	4.17 %	3.36 %	5.01 %
7	<i>Rhabdamia</i> sp.	3200	44.44	3.80 %	—	—	9.48 %
8	<i>Siphamia versicolor</i>	2424	33.67	2.88 %	4.84 %	0.43 %	2.87 %
9	<i>Caesio lunaris</i>	2391	33.21	2.84 %	0.31 %	1.31 %	5.96 %
10	<i>Caesio xanthonota</i>	1811	25.15	2.15 %	4.32 %	0.66 %	1.33 %
11	<i>Archamia fucata</i>	1451	20.15	1.72 %	1.21 %	0.15 %	3.19 %
12	<i>Parapriacanthus ransonneti</i>	1440	20.00	1.71 %	1.21 %	—	3.26 %
13	<i>Zebrasoma xanthurum</i>	1263	17.54	1.50 %	2.06 %	1.29 %	1.18 %
14	<i>Pterocaesio chrysozona</i>	715	9.93	0.85 %	0.14 %	—	2.00 %
15	<i>Thalassoma lunare</i>	705	9.79	0.84 %	1.02 %	0.72 %	0.77 %
16	<i>Odonus niger</i>	632	8.78	0.75 %	0.82 %	0.94 %	0.57 %
17	<i>Sufflamen fraenatus</i>	595	8.26	0.71 %	1.73 %	0.10 %	0.25 %
18	<i>Pomacentrus trichourus</i>	579	8.04	0.69 %	1.62 %	0.07 %	0.32 %
19	<i>Pseudanthias squamipinnis</i>	578	8.03	0.69 %	0.23 %	0.10 %	1.45 %
20	<i>Chaetodon melapterus</i>	460	6.39	0.55 %	0.76 %	0.43 %	0.44 %
21	<i>Myripristis murdjan</i>	447	6.21	0.53 %	0.02 %	0.16 %	1.21 %
22	<i>Ctenochaetus striatus</i>	443	6.15	0.53 %	1.08 %	0.17 %	0.30 %
23	<i>Chaetodon vagabundus pictus</i>	422	5.86	0.50 %	0.70 %	0.30 %	0.47 %
24	<i>Apogon cyanosoma</i>	415	5.76	0.49 %	0.40 %	1.26 %	0.06 %
25	<i>Macropharyngodon bipartitus</i>	385	5.35	0.46 %	0.47 %	0.77 %	0.25 %
26	<i>Apogon fleurieu</i>	347	4.82	0.41 %	1.08 %	—	0.13 %
27	<i>Mulloidichthys vanicolensis</i>	345	4.79	0.41 %	1.19 %	0.03 %	0.01 %
28	<i>Labroides dimidiatus</i>	337	4.68	0.40 %	0.65 %	0.31 %	0.25 %
29	<i>Lethrinus borbonicus</i>	328	4.56	0.39 %	0.48 %	0.09 %	0.52 %
30	<i>Parupeneus macronema</i>	313	4.35	0.37 %	0.84 %	0.22 %	0.08 %
Thirty most abundant species		72079		85.61 %	81.91 %	87.32 %	87.56 %
Remaining species		12111		14.38 %	18.08 %	12.67 %	12.43 %
Total species		84190		100 %	100 %	100 %	100 %

Predominant families

Table 12 shows that within the 41 families recorded in transects about 95 % of all individuals counted belong to ten families.

Table 12: List of the ten predominant families sorted by the numbers of their relative abundance.

Rank	Family	Entire archipelago	Socotra	Samha and Darsa	Abd al-Kuri and Kal Farun
1	Pomacentridae	57.98 %	50.41 %	77.34 %	51.48 %
2	Apogonidae	9.91 %	7.94 %	2.43 %	16.49 %
3	Caesionidae	6.11 %	4.88 %	2.26 %	9.69 %
4	Lutjanidae	5.34 %	11.10 %	1.51 %	3.07 %
5	Labridae	4.34 %	4.59 %	6.01 %	3.02 %
6	Acanthuridae	3.16 %	4.83 %	2.24 %	2.38 %
7	Pempheridae	1.86 %	1.21 %	0.13 %	3.56 %
8	Balistidae	1.79 %	2.96 %	1.34 %	1.11 %
9	Chaetodontidae	1.61 %	2.03 %	1.47 %	1.34 %
10	Mullidae	1.53 %	3.51 %	0.51 %	0.56 %
Total for ten predominant families		93.62 %	93.46 %	95.24 %	92.68 %
Remaining 31 families		6.38 %	6.54 %	4.76 %	7.32 %

Ecological classification of the most dominant and most frequent species

The 30 most frequently recorded and the 30 most abundant species (Tables 10 and 11) dominate the inshore habitats of Socotra. They were classified according to literature data on their habitat and behaviour and on their food preferences. When combining and merging the ecological data, a set of 45 ecologically most important species is revealed, since 15 out of the 60 are present in both groups. A table presenting the species along with the classification can be found in Annex 4.

Table 13: Ecological classification of the dominant species. * For the purpose of this analysis, species with composite carnivorous diets have been accounted in equal proportions to the main prey categories, and not by the actual percentage reported in literature.

Ecological preferences of ...	The 30 most abundant species		The 30 most frequent species		Both groups combined	
	Total	Relative	Total	Relative	Total	Relative
Habitat and behavioural categories						
Diurnal reef dwellers	16	53.33 %	20	66.67 %	25	55.56 %
Cryptic reef dwellers	3	10.00 %	4	13.33 %	6	13.33 %
Nocturnal reef dwellers	3	10.00 %	—	—	3	6.67 %
Demersal species	5	16.67 %	6	20.00 %	8	17.78 %
Inshore epipelagic species	3	10.00 %	—	—	3	6.67 %
Pelagic species	—	—	—	—	—	—
Trophic categories						
Omnivores	5	16.67 %	7	23.33 %	8	17.78 %
Herbivores and detritivores	2	6.67 %	4	13.33 %	4	8.89 %
Carnivores, total	23	76.67 %	19	63.33 %	33	73.33 %
Carnivores preferring ... *						
– Nekton	1.33	5.78 %	2.5	13.16 %	2.83	8.58 %
– Zooplankton	11.33	49.26 %	4.0	21.05 %	12.83	38.88 %
– Zoobenthos	6.33	27.52 %	8.5	44.74 %	12.33	37.36 %
– Coral polyps	1.00	4.35 %	1.0	5.26 %	1.00	3.03 %
– Other / unknown	3.00	13.04 %	3.0	15.79 %	4.00	12.12 %

Key species for fish monitoring, conservation and management

At the beginning of the surveys, seven families (Serranidae, Lutjanidae, Mullidae, Chaetodontidae, Pomacanthidae, Acanthuridae and Balistidae) containing species of potential suitability for future monitoring were pre-selected. They were considered because of their wide range of distribution, potential use in fisheries, abundance and/or their potential as indicator for changes in community structure. These species were surveyed in detail.

Based on the pre-selection and the results of the surveys, 54 species in 12 families are proposed as possible key species for monitoring. They are listed in the table here below, which is suggested to form the basis for a final selection of species to be monitored.

Serranidae

Epinephelus fasciatus (Forsskål, 1775)
Cephalopholis miniata (Forsskål, 1775)
Cephalopholis argus Bloch & Schneider, 1801
Pseudanthias squamipinnis (Peters, 1855)
Epinephelus flavocaeruleus (Lacepède, 1802)
Variola louti (Forsskål, 1775)
Aethaloperca rogae (Forsskål, 1775)
Plectropomus punctatus Quoy & Gaimard, 1824
Epinephelus stoliczkae (Day, 1875)
Cephalopholis sonnerati (Valenciennes, 1828)

Lutjanidae

Lutjanus bohar (Forsskål, 1775)
Lutjanus gibbus (Forsskål, 1775)
Lutjanus kasmira / (*bengalensis*) (Forsskål, 1775)
Lutjanus ehrenbergii (Peters, 1869)
Lutjanus monostigma (Cuvier, 1828)
Lutjanus argentimaculatus (Forsskål, 1775)
Lutjanus fulviflammus (Forsskål, 1775)
Lutjanus rivulatus (Cuvier, 1828)

Lethrinidae

Lethrinus mahsena (Forsskål, 1775)
Lethrinus borbonicus Valenciennes, 1830
Monotaxis grandoculis (Forsskål, 1775)
Lethrinus nebulosus (Forsskål, 1775)

Haemulidae

Plectorhinchus gaterinus (Forsskål, 1775)
Plectorhinchus playfairi (Cuvier, 1830)
Plectorhinchus flavomaculatus (Cuvier, 1830)
Plectorhinchus schotaf (Forsskål, 1775)

Acanthuridae

Zebrasoma xanthurum (Blyth, 1852)
Ctenochaetus striatus (Quoy & Gaimard, 1825)

Naso lituratus (Forster, 1801)

Acanthurus dussumieri Valenciennes, 1835

Balistidae

Sufflamen fraenatus (Latreille, 1804)
Melichthys indicus Randall & Klausewitz, 1973
Sufflamen chrysopterus (Bloch & Schneider, 1801)
Odonus niger (Rüppell, 1836)

Mullidae

Parupeneus macronema (Lacepède, 1801)
Parupeneus bifasciatus (Lacepède, 1801)
Parupeneus barberinus (Lacepède, 1801)

Caesionidae

Caesio lunaris Cuvier, 1830
Caesio xanthonota Bleeker, 1853

Carangidae

Caranx melampygus Cuvier, 1833
Caranx cf. *ignobilis* (Forsskål, 1775)

Chaetodontidae

Chaetodon vagabundus pictus Forsskål, 1775
Chaetodon melapterus Guichenot, 1862
Heniochus acuminatus (Linnaeus, 1758)
Chaetodon trifascialis Quoy & Gaimard, 1825
Chaetodon lunula (Lacepède, 1802)
Chaetodon kleinii Bloch, 1790
Chaetodon gardineri Norman, 1939
Chaetodon leucopleura Playfair, 1867
Chaetodon auriga Forsskål, 1775

Pomacentridae

Pomacentrus caeruleus Quoy & Gaimard, 1825
Chromis weberi Fowler & Bean, 1928

Labridae

Thalassoma lunare (Linnaeus, 1758)
Labroides dimidiatus (Valenciennes, 1839)

Biogeographic remarks

The fish fauna of Socotra is unique in its composition (KEMP 1998). It consists mainly of wide-spread Indian Ocean and Indo-Pacific species. No systematic approach to analyse their zoogeographic relationships by statistical means has so far been made, hence considerations

presented here should be considered as preliminary. The species account shows that fish assemblages of the archipelago are of an Indo-Pacific origin, with zoogeographic affinities to the Red Sea, southern Arabia, East Africa, other parts of the Western Indian Ocean and the wider Indo-Pacific. Many of the species are 'Arabian' endemics (sensu KLAUSEWITZ 1989). With the present study, the known distributional range of numerous species, which had previously only been recorded in more southern parts of the Indian Ocean, is extended northwards. Examples include *Pseudanthias cooperi*, *P. evansi*, *Acanthurus leucocheilos*, *A. leucosternon*, *A. lineatus*, *A. nigricans*, *A. thompsoni*, *Ctenochaetus strigosus*, *Zebrasoma scopas*, *Chaetodon bennetti*, *C. unimaculatus*, *Sargocentron seychellense*, *Amphiprion akallopisos*, *Abudefduf notatus*, *Plectroglyphidodon johnstonianus*, *Halichoeres iridis*, *Oxycheilinus bimaculatus* and *Thalassoma lutescens*. Other species recorded here had so far only been known from Oman (*Pseudanthias marcia*, *Amphiprion omanensis*), the Red Sea (*Istiblennius unicolor*, *Chromis trialpha*, *Pseudochromis springeri*, *P. dixurus*) or the Chagos Archipelago (*Amphiprion chagosensis*). The overall influence of the Arabian Region appears to be dominant at least at Socotra Island. Fish assemblages at the outer islands, in particular at Abd al-Kuri, show a stronger East African influence. Although the distribution of many species is not yet sufficiently known, there seem to be marked differences between the three island groups. Of the species recorded, 166 were only found at Socotra, 23 were confined to Samha and Darsa and 31 to Abd al-Kuri and Kal Farun.

DISCUSSION

Judging from records available so far, the fish species richness of the Socotra archipelago is moderately high. A considerable number of the species is only known from visual records, some of which have to be considered tentative until they have been confirmed by samples and/or photographs. The number of species documented by specimens deposited in scientific collections is not yet satisfactory. Dwarf, cryptic and nocturnal species, particularly members of the families Apogonidae, Gobiidae, Blenniidae, Tripterygiidae and Muraenidae are clearly underrepresented. Intertidal habitats, coastal lagoons, estuaries and khawrs have not yet been adequately investigated. They are expected to host important fish assemblages with representatives of families such as Gobiidae, Blenniidae, Gerreidae, Mugilidae, Hemiramphidae, Leiognathidae and Siganidae. Mid-water reef species, epipelagic and benthopelagic species such as Carangidae, Scombridae and various families of flatfishes, have not received adequate attention either, mainly because of logistical constraints during the surveys. In order to document the fish biodiversity of the archipelago adequately, there is a need for more systematic sampling at randomly selected sites which should include commercially exploited or exploitable species.

As was to be expected with regard to the size of the area, the highest number of species has been recorded at Socotra and Sabuniya, followed by Abd al-Kuri and Kal Farun and finally Samha and Darsa. The highest alpha diversity has been found at the outer islands. However, these findings should be interpreted with some caution, because of the non-random selection of survey sites. Species richness apparently decreases from west to east, and fish assemblages at northern coasts are usually more diverse than those to the south. A number of species were only observed at the few 'deeper' sites visited. Their distribution throughout the archipelago remains insufficiently documented.

It is evident that Abd al-Kuri receives a higher influx of pelagic eggs and larvae from East Africa through the Somali current, enriching fish communities. Subtidal habitats surrounding this island vary considerably from site to site and so do fish assemblages. Besides areas of rather low fish species richness there are biodiversity 'hotspots', isolated pockets with considerable distances in-between. These sites, which are located mainly along the south coast, obviously act like traps for recruitment by providing shelter and suitable habitats. These sites are very restricted in range, and fish population sizes are rather small. Species composition suggests that there is limited faunal exchange between these patches, at least of strictly reef-associated species. These communities are particularly vulnerable to disturbance. At the limited number of sites sampled,

alpha diversity at Samha and Darsa even exceeded that of Abd al-Kuri, while at Socotra is generally lower. However, fish assemblages on the west and south-west coast apparently show greater affinities to the outer islands than those occurring along the eastern coast.

The results of the qualitative fish inventories are supported by the standardised transect counts, where the mean frequency (species recorded per site) is lowest at Socotra. It was highest at Samha and Darsa, followed by Abd al-Kuri and Kal Farun.

CONCLUSIONS

Selection of target areas for conservation and management

Even though marine biota of Socotra are currently subjected to only low levels of human exploitation and impact, ecosystems are vulnerable and so are their fish populations. This is particularly true for reef-associated species. Coral communities are not continuous along the coastline and do only form a fragile network of suitable habitats for fish. It is expected that degradation of sparsely connected habitats will make it difficult for certain species to maintain their populations successfully. Demersal and inshore pelagic species, which are targeted by the artisanal fisheries, are less vulnerable. The high productivity of Socotran waters may provide some buffer capacity against human disturbances. However, as these fish groups subsist largely on inshore communities, a probable degradation of inshore biotopes will most likely affect all kinds of fish communities around the archipelago.

Specific sites for consideration as Biological Reserves (BR) are listed in Table 1. Most of these sites were of small extent (< 5 ha) and thus particularly susceptible to disturbance. It is proposed to consider nesting these sites in Special Nature Reserves (SNR). Selection criteria for BRs are discussed here below. Combination of two sites indicates their location in close proximity. Replenishment value is based on estimation and must be considered tentative.

Table 14: Potential monitoring sites and selection criteria.

Site number	Area name	Diversity, rare or endemic species	Representativeness, uniqueness	Maintenance, replenishment	Potential monitoring
ST-018, ST-019	Qalansiya Lagoon		●	●	●
ST-039	Qatanhin		●		
ST-063, ST-064	Qadub	●			●
ST-067, ST-068	Rhiy di-Hamri to Hawlaf	●	●		●
ST-097, ST-106	Roosh to Siqirah	●	●	●	●
ST-098	Ghales		●	●	
ST-109, ST-110, ST-147	Ras Adhoh to di-Timri	●	●	●	
ST-149	Dihamd	●	●		
ST-150, ST-173, ST-262	Anjara Bay	●	●	●	●
ST-188	'Trident Bay'	●	●	●	●
ST-189, ST-190	Khaisat an-Naum	●			
ST-207, ST-208	Kal Farun	●	●	●	●
ST-251	Off Bir al-Agooz	●			
ST-336	Samha NE	●			
ST-337	Samha NW	●	●		●
ST-338, ST-345, ST-366	Darsa N	●	●	●	●
ST-367	Sabuniya	●	●	●	

In conclusion, the following areas are proposed as a core set of Potential Monitoring Sites:

- ST-097, ST-106 (Roosh to Siqirah area)
- ST-098 (Ghales Protected Area)
- ST-067, ST-068 (Rhiy di-Hamri to Hawlaf area)
- ST-063, ST-064 (Qadub area)
- ST-039 (Qatanhin area)
- ST-018, ST-019 (Qalansiya Lagoon)
- ST-150, ST-173, ST-262 (Anjara Bay)
- ST-188 ('Trident Bay')
- ST-207, ST-208 (Kal Farun, entire islands)
- ST-338, ST-345, ST-366 (entire north coast of Darsa).

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REFERENCES

- ALLEN, G.R. 1991. *Damselfishes of the world*. 271 pp. Melle, Germany; Mergus Publishers.
- ALLEN, G.R. & STEENE, R. 1994. *Riff-Führer. Tier und Pflanzen im Indopazifik*. Wiesbaden; Hemmen.
- BALFOUR, I.B. 1880. *Report of the Socotra Committee of the British Association for the Advancement of Science of the proceedings of the Expedition to the Island of Socotra*. Report of the Fiftieth meeting of the British Association for the Advancement of Science; held at Swansea in August and September 1880 50: 212-216. London; John Murray.
- BALFOUR, I.B. 1882. *On the Island of Socotra*. Report of the Fifty-first meeting of the British Association for the Advancement of Science; held at York in August and September 1881 51: 482-494. London; John Murray.
- BRIGGS, J.C. 1974. *Marine zoogeography*. 475 pp. New York; McGraw-Hill.
- DEBELIUS, H. 1998. *Red Sea Reef Guide*. Frankfurt a. M.; Ikan.
- DOE, B. 1992. *Socotra Island of Tranquility*. 237 pp. London; Immel Publishing.
- ENGLISH, S., WILKINSON, C. & BAKER, V. (eds) 1997. *Survey manual for tropical marine resources*. Townsville; Australian Institute for Marine Science.
- FishBase 1999. FishBase 99: a global information system on fishes. CD-ROM, ICLARM, Manila.
- FORBES, H.O. 1899 a. The English Expedition to Sokotra. *The Geographical Journal* 13 (6): 633-637.
- FORBES, H.O. 1899 b. The Expedition to Sokotra. *Bulletin of the Liverpool Museums* 2 (1): 1-2.
- FORBES, H.O. 1903. Chordata. Vertebrata. Batrachia. Pisces. Batrachians and fishes. In: *Natural history of Sokotra and Abd-el-Kuri*. Forbes, H.O. (ed.): 107-108. Bulletin of the Liverpool Museums (Special Bulletin): 105-108.

- FORBES, H.O. 1904. *The results of the expedition to Sokotra and Abd-el-Kuri by Mr. W.O. Grant and Dr. H.O. Forbes*. Report of the Seventy-third Meeting of the British Association for the Advancement of Science held at Southport in September 1903 73: 720-721. London; John Murray.
- FRICKE, R. 1988. *Systematik und historische Zoogeographie der Callionymidae (Teleostei) des Indischen Ozeans*. 2 vols. 612 pp. Ph.D. thesis.
- HARIRI, K.I. & SHOTAH, J. 1999. Review of fisheries legislation in Yemen. In: *Marine Habitat, Biodiversity and Fisheries Surveys and Management, Report of Phase I*. Krupp, F. & Hariri, K.I. (eds): 141-160. Senckenberg Research Institute, Frankfurt, Germany.
- HARIRI, K.I. & YUSIF, M.D. 1999. Fishing communities and status of the fisheries sector in the Socotra Archipelago. In: *Marine Habitat, Biodiversity and Fisheries Surveys and Management, Report of Phase I*. Krupp, F. & Hariri, K.I. (eds): 161-179. Senckenberg Research Institute, Frankfurt, Germany.
- KARMOVSKAYA, E.S. 1991. The new species of conger eels (Congridae) from the western Indian Ocean. *Voprosy Ikhtiol.* (6) 31 (6): 891-897. [In Russian. English translation in Journal of Ichthyology]
- KEMP, J.M. 1998. Zoogeography of coral reef fishes of the Socotra Archipelago. *Journal of Biogeography* 25: 919-933.
- KLAUSEWITZ, W. 1972. The Zoogeographical and Paleographical problem of the the Indian Ocean and the Red Sea according to the Ichthyofauna of the Littoral. *Journal of the Marine Biological Association of India* 14: 697-706.
- KLAUSEWITZ, W. 1978. Zoogeography of the littoral fishes of the Indian Ocean, based on the distribution of the Chaetodontidae and Pomacanthidae. *Senckenbergiana biologica* 59 (1/2): 25-39.
- KLAUSEWITZ, W. 1989. Evolutionary history and zoogeography of the Red Sea ichthyofauna. *Fauna of Saudi Arabia* 10: 310-337.
- KOTTHAUS, A. 1967. Fische des Indischen Ozeans. *Meteor Forschungsergebnisse, Reihe D Biologie (METEORB)* 1: 1-84.
- KOTTHAUS, A. 1968. Fische des Indischen Ozeans. A. Systematischer Teil. III. Ostariophysi und Apodes. *Meteor Forschungsergebnisse, Reihe D Biologie (METEORB)* 3: 14-56.
- KOTTHAUS, A. 1970 a. Fische des Indischen Ozeans. Ergebnisse der ichthyologischen Untersuchungen während der Expedition des Forschungsschiffes 'Meteor' in den Indischen Ozean, Oktober 1964 bis Mai 1965. A. Systematischer Teil, VI Anacanthine (2), Berycomorphi, Zeomorphi. *Meteor Forschungsergebnisse, Reihe D Biologie (METEORB)* 5: 53-70.
- KOTTHAUS, A. 1970 b. Fische des Indischen Ozeans. Ergebnisse der ichthyologischen Untersuchungen während der Expedition des Forschungsschiffes 'Meteor' in den Indischen Ozean, Oktober 1964 bis Mai 1965. A. Systematischer Teil, VII Percomorphi (1). *Meteor Forschungsergebnisse, Reihe D Biologie (METEORB)* 6: 43-55.
- KOTTHAUS, A. 1973. Fische des Indischen Ozeans. Ergebnisse der ichthyologischen Untersuchungen während der Expedition des Forschungsschiffes 'Meteor' in der Indischen Ozean, Oktober 1964 bis Mai 1965. A. Systematischer Teil, X Percomorphi (3). *Meteor Forschungsergebnisse, Reihe D Biologie (METEORB)* 16: 17-32.
- KOTTHAUS, A. 1974. Fische des Indischen Ozeans. Ergebnisse der ichthyologischen Untersuchungen während der Expedition des Forschungsschiffes 'Meteor' in den Indischen Ozean, Oktober 1964 bis 1965. A. Systematischer Teil, XI Percomorphi (4). *Meteor Forschungsergebnisse, Reihe D Biologie (METEORB)* 17: 33-54.
- KOTTHAUS, A. 1976. Fische des Indischen Ozeans. Ergebnisse der ichthyologischen Untersuchungen während der Expedition des Forschungsschiffes "Meteor" in den indischen Ozean, Oktober 1964 bis Mai 1965. A. Systematischer Teil, XVII Percomorphi (7). *Meteor Forschungsergebnisse, Reihe D Biologie (METEORB)* 23: 45-61.
- KOTTHAUS, A. 1979. Fische des Indischen Ozeans. Ergebnisse der ichthyologischen Untersuchungen während der Expedition des Forschungsschiffes 'Meteor' in den Indischen Ozean, Oktober 1964 bis Mai 1965. A. Systematischer Teil, XXI Diverse Ordnungen. *Meteor Forschungsergebnisse, Reihe D Biologie (METEORB)* 28: 6-54.
- MEP (MacAlister Elliot & Partners) 1996. *Biodiversity conservation and sustainable development programme Socotra Archipelago, Republic of Yemen*. MacAlister Elliot & Partners Mission report (marine team): 61.
- MYERS, R.F. 1991. *Micronesian reef fishes*. 298 pp. Second edition. Barrigada, Guam; Coral Graphics.
- ORMOND, R.F.G. & EDWARDS, A.J. 1987. Red Sea Fishes. In: *Red Sea*. Edwards, A.J. & Head, S.M. (eds): 251-287. Oxford; Pergamon Press.
- RANDALL, J.E. 1983. *Red Sea reef fishes*. London; Immel Publishing.
- RANDALL, J.E. 1996. *Coastal Fishes of Oman*. 439 pp. Australia; Crawford House.
- RANDALL, J.E. & HOOVER, J.P. 1995. *Scarus zhufar*, a new species of parrotfish from southern Oman, with comments on endemism of the area. *Copeia* 1995: 683-688.
- SCHWEINFURTH, G. 1891. Erinnerungen von einer Fahrt nach Sokotra. *Westermanns Monatshefte* 69: 603-626.
- SCHWEINFURTH, G. 1892. Erinnerungen von einer Fahrt nach Sokotra. *Westermanns Monatshefte* 70: 29-53.

- SHEPPARD, C.R.C., PRICE, A. & ROBERTS, C. 1992. *Marine ecology of the Arabian region*. 359 pp. London; Academic Press.
- SMITH, M.M. & HEEMSTRA, P.C. (eds.) 1986. *Smiths' sea fishes*. Berlin; Springer-Verlag.
- STEINDACHNER, F. 1902. Wissenschaftliche Ergebnisse der südarabischen Expedition in den Jahren 1898 bis 1899. Fische von Südarabien und Socotra. *Anzeiger der Akademie der Wissenschaften Wien* 39 (24): 316-318. [Species date to this abstract, main work published in 1903]
- STEINDACHNER, F. 1903. Fische aus Südarabien und Sokotra. *Denkschriften der Akademie der Wissenschaften Wien* 71: 123-168. [Dated as Nov. 1902, published in 1903. Species date to abstract. Separate pages 1-46.]
- TASCHENBERG, O. 1883. Beiträge zur Fauna der Insel Sokotra, vorzüglich nach dem von Herrn Dr. Emil Riebeck aus Halle a.S. gesammelten Materiale zusammengestellt. *Zeitschrift für Naturwissenschaften* 56: 157-185.
- TURNER, J.R., KLAUS, R., SIMÕES, N. & JONES, D.A. 1999. Littoral and sublittoral ground-truthing survey of the Socotra Archipelago. In: *Marine Habitat, Biodiversity and Fisheries Surveys and Management, Report of Phase I*. Krupp, F. & Hariri, K.I. (eds): 33-139. Senckenberg Research Institute, Frankfurt, Germany.
- WRANIK, W. (ed.) 1999. *Sokotra Mensch und Natur*. Jemen-Studien 14. Knopp, H. (ed.). 258 pp. Wiesbaden; Dr. L. Reichelt Verlag.

ANNEX 1

Preliminary species account and archipelagic distribution record

For each species recorded in this study, the following data are given: presence (+) or absence over the entire archipelago, and at the three island groups, whether or not the species had previously been recorded in literature (split up into records by KEMP 1998 and others), total number of record events, and within these, the number of record events at 24 transect sites, as well as mean abundance per 50 m transect replicate (1.25 km³).

The species account is based on all available record sources. For the purpose of this report it is arranged by family in alphabetical rather than in systematic order, in order to ease access for readers which are not specialists in Ichthyology.

	Entire archipelago	Socotra and Sabuniya	Samha and Darsa	Abd al-Kuri and Kal Farun	KEMP 1998 records	Other records	Record events total	Records in transects	Mean abundance
Total number of species: 619	491	422	236	279	215	179	3693	1638	1169.31
Acanthuridae: 27 species	27	25	14	22	19	2	262	124	36.94
<i>Acanthurus dussumieri</i> Valenciennes, 1835	+	+	+	+	+		23	9	0.92
<i>Acanthurus gahhm</i> (Forsskål, 1775)	+	+		+	+		14	6	0.57
<i>Acanthurus</i> cf. <i>leucocheilos</i> Herre, 1927	+	+	+	+			14	8	1.44
<i>Acanthurus leucosternon</i> Bennett, 1833	+	+	+	+	+		5	2	0.10
<i>Acanthurus lineatus</i> (Linnaeus, 1758)	+	+			+		2		
<i>Acanthurus mata</i> Cuvier, 1829	+	+		+	+		5	2	2.53
<i>Acanthurus</i> cf. <i>nigricans</i> (Linnaeus, 1758)	+	+		+			4	4	0.08
<i>Acanthurus</i> cf. <i>nigricauda</i> Duncker & Mohr, 1929	+	+					4	3	0.24
<i>Acanthurus nigrofuscus</i> (Forsskål, 1775)	+	+	+		+		7	5	0.86
<i>Acanthurus sohal</i> (Forsskål, 1775)	+	+		+	+		7	2	0.03
<i>Acanthurus tennentii</i> Günther, 1861	+	+	+	+	+		18	10	2.92
<i>Acanthurus</i> cf. <i>thompsoni</i> (Fowler, 1923)	+	+	+	+		+	5	3	0.18
<i>Acanthurus triostegus</i> (Linnaeus, 1758)	+			+	+		1		
<i>Ctenochaetus striatus</i> (Quoy & Gaimard, 1825)	+	+	+	+	+		27	16	6.15
<i>Ctenochaetus strigosus</i> (Bennett, 1828)	+	+	+	+			6	2	0.11
<i>Naso</i> cf. <i>annulatus</i> (Quoy & Gaimard, 1825)	+	+		+	+		3	1	0.01
<i>Naso brachycentron</i> (Valenciennes, 1835)	+	+		+	+		2	2	0.07
<i>Naso brevirostris</i> (Valenciennes, 1835)	+	+	+	+	+		9	2	0.21
<i>Naso fageni</i> Morrow, 1954	+	+			+		2	1	1.53
<i>Naso hexacanthus</i> (Bleeker, 1855)	+		+	+	+	+	3	1	0.01
<i>Naso lituratus</i> (Forster, 1801)	+	+	+	+	+		23	9	0.72
<i>Naso</i> cf. <i>thynnoides</i> (Valenciennes, 1835)	+	+		+			2	1	0.14
<i>Naso tuberosus</i> (Lacepède, 1801)	+	+		+			2	1	0.03
<i>Naso unicornis</i> (Forsskål, 1775)	+	+	+	+	+		14	7	0.35
<i>Zebrasoma</i> cf. <i>scopas</i> (Cuvier, 1829)	+	+					1	1	0.06
<i>Zebrasoma veliferum</i> (Bloch, 1795)	+	+	+	+	+		14	6	0.15
<i>Zebrasoma xanthurum</i> (Blyth, 1852)	+	+	+	+	+		45	20	17.54
Albulidae: 1 species	1	1	—	—	—	1	1		
<i>Albula glossodonta</i> (Forsskål, 1775)	+	+				+	1		
Ambassidae: 2 species	1	1	—	—	—	1	1		
<i>Ambassis gymnocephalus</i> (Lacepède, 1802)						+			
<i>Ambassis</i> sp.	+	+					1		
Antennariidae: 1 species	1	1	—	—	1	—	1		
<i>Antennarius</i> sp.	+	+			+		1		
Apogonidae: 20 species	20	18	9	12	6	—	152	61	115.83
<i>Apogon aureus</i> (Lacepède, 1802)	+	+	+	+	+		21	9	4.22
<i>Apogon coccineus</i> Rüppell, 1838	+	+	+				27	11	5.76
<i>Apogon</i> cf. <i>cookii</i> Macleay, 1881	+			+			1		

	Entire archipelago	Socotra and Sabuniya	Samha and Darsa	Abd al-Kuri and Kal Farun	KEMP 1998 records	Other records	Record events total	Records in transects	Mean abundance
<i>Apogon fleurieu</i> (Lacepède, 1802)	+	+		+			5		
<i>Apogon fraenatus</i> Valenciennes, 1832	+	+		+			1		
<i>Apogon</i> cf. <i>kallopterus</i> Bleeker, 1856	+			+			2		
<i>Apogon natalensis</i> Gilchrist & Thompson, 1908	+	+					1	1	0.01
<i>Apogon semiornatus</i> Peters, 1876	+	+	+	+			10		
<i>Apogon</i> cf. <i>taeniatus</i> Cuvier & Valenciennes, 1828	+	+					2		
<i>Apogon</i> cf. <i>timorensis</i> Bleeker, 1854	+	+					1		
<i>Apogon</i> sp.	+	+	+				3		
<i>Apogon</i> sp. 10 [<i>properuptus</i> -complex, sensu Kuitert & Kozalla; often as <i>cyanosoma</i> Bleeker, 1853]	+	+	+	+	+	+	7	5	4.82
<i>Archamia fucata</i> (Cantor, 1849)	+	+	+	+	+		11	5	20.15
<i>Cheilodipterus arabicus</i> (Gmelin, 1789)	+	+	+	+			11	8	0.93
<i>Cheilodipterus</i> cf. <i>artus</i> Smith, 1961	+	+					2	1	0.07
<i>Cheilodipterus macrodon</i> (Lacepède, 1802)	+	+	+	+	+		14	7	0.94
<i>Cheilodipterus quinquelineatus</i> Cuvier, 1828	+	+		+	+		7	4	0.81
<i>Rhabdamia</i> cf. <i>cypselura</i> Weber, 1909	+	+					1		
<i>Rhabdamia</i> sp.	+	+			+		2	1	44.44
<i>Siphamia versicolor</i> (Smith & Radcliffe, 1911)	+	+	+	+			23	9	33.67
Ariidae: 1 species	—	—	—	—	—	1			
<i>Arius</i> sp.						+			
Balistidae: 10 species	8	6	6	7	10	2	166	80	20.90
<i>Balistapus undulatus</i> (Park, 1797)	+	+	+	+	+		21	10	0.33
<i>Balistoides conspicillum</i> (Bloch & Schneider, 1801)	+			+	+		1	1	0.03
<i>Balistoides viridescens</i> (Bloch & Schneider, 1801)	+		+	+	+		2		
<i>Melichthys indicus</i> Randall & Klauswitz, 1973	+	+	+	+	+		36	17	2.31
<i>Odonus niger</i> (Rüppell, 1836)	+	+	+	+	+	+	25	11	8.78
<i>Pseudobalistes flavimarginatus</i> (Rüppell, 1829)					+				
<i>Pseudobalistes fuscus</i> (Bloch & Schneider, 1801)					+				
<i>Rhinecanthus assasi</i> (Forsskål, 1775)	+	+			+		2		
<i>Sufflamen chrysopterus</i> (Bloch & Schneider, 1801)	+	+	+	+	+		32	18	1.19
<i>Sufflamen fraenatus</i> (Latreille, 1804)	+	+	+	+	+	+	47	23	8.26
Belonidae: 1 species	—	—	—	—	—	1			
<i>Tylosurus choram</i> (Rüppell, 1837)						+			
Blenniidae: 17 species	15	14	7	10	2	2	112	52	5.53
<i>Aspinodontus dussumieri</i> (Valenciennes, 1836)	+			+			1	1	0.01
<i>Aspinodontus taeniatus</i> Quoy & Gaimard, 1834	+	+		+			2	1	0.03
<i>Atrosalarias fuscus</i> (Rüppell, 1838)	+	+					1		
<i>Cirripectes castaneus</i> (Valenciennes, 1836)	+	+		+			4	1	0.50
<i>Ecsenius frontalis</i> (Valenciennes, 1836)	+	+					1	1	0.44
<i>Ecsenius nalolo</i> Smith, 1959	+	+	+	+			13	6	0.46
<i>Ecsenius pulcher</i> (Murray, 1887)	+	+	+	+	+		19	9	1.32
<i>Ecsenius</i> sp.	+	+	+	+			7	2	1.08
<i>Istiblennius dussumieri</i> (Valenciennes, 1836)						+			
<i>Istiblennius unicolor</i> (Rüppell, 1838)						+			
<i>Meiacanthus nigrolineatus</i> Smith-Vaniz, 1969	+	+					1	1	0.01
<i>Meiacanthus</i> sp. [brownish]	+	+	+	+			4	2	0.04
<i>Plagiotremus rhinorhynchus</i> (Bleeker, 1852)	+	+	+	+	+		32	17	1.00
<i>Plagiotremus tapeinosoma</i> (Bleeker, 1857)	+	+	+	+			15	6	0.33
<i>Plagiotremus townsendi</i> (Regan, 1905)	+	+	+	+			8	5	0.29
gen. sp., indet.	+	+					3		
gen. sp., indet. [cf. <i>Alticus kirkii</i> (Günther, 1868)]	+	+					1		
Bothidae: 3 species	2	2	—	—	—	1	2		
<i>Arnoglossus</i> sp.	+	+					1		
<i>Bothus pantherinus</i> (Rüppell, 1830)						+			
gen. sp., indet.	+	+					1		
Bythitidae: 1 species	1	1	—	—	—	—	1		
<i>Dinematichthys</i> sp.	+	+					1		
Caesionidae: 7 species	7	4	3	6	2	1	49	31	71.50

	Entire archipelago	Socotra and Sabuniya	Samha and Darsa	Abd al-Kuri and Kal Farun	KEMP 1998 records	Other records	Record events total	Records in transects	Mean abundance
<i>Caesio lunaris</i> Cuvier, 1830	+	+	+	+	+	+	14	10	33.21
<i>Caesio varilineata</i> Carpenter, 1987	+	+	+	+			9	5	2.79
<i>Caesio xanthonota</i> Bleeker, 1853	+	+	+	+	+		11	8	25.15
<i>Caesio</i> sp.	+			+			2	1	0.42
<i>Pterocaesio chrysozona</i> (Cuvier, 1830)	+	+		+			11	7	9.93
<i>Pterocaesio marri</i> Schultz, 1953	+	+					1		
<i>Pterocaesio pisang</i> (Bleeker, 1853)	+			+			1		
Callanthiidae: 1 species	—	—	—	—	—	1			
<i>Parabarossia lanceolata</i> Kotthaus, 1976						+			
Callionymidae: 3 species	2	1	—	1	—	1	2		
<i>Callionymus filamentosus</i> Valenciennes, 1837	+	+					1		
<i>Synchiropus monacanthus</i> Smith, 1935						+			
<i>Synchiropus</i> sp.	+			+			1		
Carangidae: 21 species	12	9	6	3	6	15	32	14	1.71
<i>Alepes djedaba</i> (Forsskål, 1775) [= as <i>Caranx microbrachium</i> (Forsskål, 1775) in literature]						+			
<i>Carangoides bajad</i> (Forsskål, 1775)	+	+				+	1		
<i>Carangoides chrysophrys</i> (Cuvier, 1833)						+			
<i>Carangoides</i> cf. <i>ferdau</i> (Forsskål, 1775)	+	+					1	1	0.26
<i>Carangoides gymnotethus</i> (Cuvier, 1833)	+	+					1		
<i>Caranx heberi</i> (Bennett, 1830)	+	+				+	3	3	0.61
<i>Caranx</i> cf. <i>ignobilis</i> (Forsskål, 1775)	+	+	+	+	+	+	4	1	0.03
<i>Caranx latus</i> Agassiz, 1831						+			
<i>Caranx lugubris</i> Poey, 1860					+				
<i>Caranx melampyrgus</i> Cuvier, 1833	+	+	+	+	+	+	11	8	0.51
<i>Caranx sexfasciatus</i> Quoy & Gaimard, 1825	+	+			+	+	2		
<i>Decapterus russelli</i> (Rüppell, 1830)						+			
<i>Elegatis bipinnulatus</i> (Quoy & Gaimard, 1825)	+		+			+	1		
<i>Gnathanodon speciosus</i> (Forsskål, 1775)	+	+	+				3	1	0.29
<i>Scomberoides commersonianus</i> Lacepède, 1801					+				
<i>Scomberoides lysan</i> (Forsskål, 1775)	+	+		+		+	3		
<i>Scomberoides tol</i> (Cuvier, 1832)						+			
<i>Seriola dumerili</i> (Risso, 1810)	+		+				1		
<i>Trachinotus africanus</i> Smith, 1967						+			
<i>Trachinotus baillonii</i> (Lacepède, 1801)	+		+			+	1		
<i>Trachinotus blochii</i> (Lacepède, 1801)					+	+			
Carapidae: 2 species	2	2	—	—	—	—	2		
<i>Encheliophis gracilis</i> (Bleeker, 1856)	+	+					1		
<i>Onuxodon margetitiferæ</i> (Rendahl, 1921)	+	+					1		
Carcharhinidae: 13 species	2	2	1	1	3	12	4	1	0.01
<i>Carcharhinus albimarginatus</i> (Rüppell, 1837)						+			
<i>Carcharhinus amblyrhinchos</i> (Bleeker, 1856)						+			
<i>Carcharhinus brevipinna</i> (Müller & Henle, 1839)						+			
<i>Carcharhinus limbatus</i> (Müller & Henle, 1839)						+			
<i>Carcharhinus longimanus</i> (Poey, 1861)					+	+			
<i>Carcharhinus macloti</i> Müller & Henle, 1839						+			
<i>Carcharhinus melanopterus</i> (Quoy & Gaimard, 1824)						+			
<i>Carcharhinus plumbeus</i> (Nardo, 1827)	+	+				+	1		
<i>Carcharhinus sealei</i> (Pietschmann, 1913)						+			
<i>Carcharhinus sorrah</i> (Müller & Henle, 1839)						+			
<i>Galeocerdo cuvier</i> (Péron & Lesueur, 1822)					+	+			
<i>Loxodon macrorhinus</i> Müller & Henle, 1839						+			
<i>Triaenodon obesus</i> (Rüppell, 1837)	+	+	+	+	+		3	1	0.01
Chaetodontidae: 23 species	22	19	11	14	13	1	219	102	18.81
<i>Chaetodon auriga</i> Forsskål, 1775	+	+	+	+	+		8	5	0.13
<i>Chaetodon bennetti</i> Cuvier, 1831	+	+					1		
<i>Chaetodon collare</i> Bloch, 1787	+	+	+	+	+		6	1	0.03
<i>Chaetodon gardineri</i> Norman, 1939	+	+		+	+		10	4	0.32

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<i>Chaetodon guttatissimus</i> Bennett, 1833	+	+	+	+			3	1	0.10
<i>Chaetodon jayakari</i> Norman, 1939						+			
<i>Chaetodon kleinii</i> Bloch, 1790	+	+	+	+	+		12	3	0.21
<i>Chaetodon leucopleura</i> Playfair, 1867	+	+	+	+	+		9	6	0.28
<i>Chaetodon lineolatus</i> Cuvier, 1831	+	+			+		1		
<i>Chaetodon lunula</i> (Lacepède, 1802)	+	+	+	+	+		15	7	0.49
<i>Chaetodon melanotus</i> Bloch & Schneider, 1801	+	+		+	+		3	3	0.06
<i>Chaetodon melapterus</i> Guichenot, 1862	+	+	+	+	+		35	18	6.39
<i>Chaetodon</i> cf. <i>mesoleucos</i> Forsskål, 1775	+	+					1	1	0.07
<i>Chaetodon vagabundus pictus</i> Forsskål, 1775	+	+	+	+	+		50	24	5.86
<i>Chaetodon trifascialis</i> Quoy & Gaimard, 1825	+	+	+	+	+		25	13	3.14
<i>Chaetodon trifasciatus</i> Park, 1797	+		+				1	1	0.01
<i>Chaetodon unimaculatus</i> Bloch, 1787	+			+			1		
<i>Chaetodon</i> cf. <i>zanzibariensis</i> Playfair, 1866	+			+			1	1	0.03
<i>Forcipiger flavissimus</i> Jordan & McGregor, 1898	+	+					3	1	0.01
<i>Forcipiger longirostris</i> (Broussonet, 1782)	+	+					1		
<i>Forcipiger</i> sp.	+	+			+		1		
<i>Heniochus acuminatus</i> (Linnaeus, 1758)	+	+	+	+	+		30	13	1.69
<i>Heniochus</i> cf. <i>diphreutes</i> Jordan, 1903	+	+					2		
Chanidae: 1 species	1	1	1	—	1	1	3		
<i>Chanos chanos</i> (Forsskål, 1775)	+	+	+		+	+	3		
Chirocentridae: 1 species	1	1	—	—	—	—	1		
<i>Chirocentrus dorab</i> (Forsskål, 1775)	+	+					1		
Chlorophthalmidae: 1 species	—	—	—	—	—	1			
<i>Chlorophthalmus maculatus</i> Kotthaus, 1967						+			
Cirrhitidae: 4 species	3	2	3	3	3	1	32	10	0.40
<i>Cirrhitichthys calliurus</i> Regan, 1905	+	+	+	+	+		16	3	0.14
<i>Cirrhitichthys oxycephalus</i> (Bleeker, 1855)	+	+	+	+	+		12	4	0.14
<i>Cirrhitus pinnulatus</i> (Forster in Bloch & Schneider, 1801)						+			
<i>Paracirrhites forsteri</i> (Schneider, 1801)	+		+	+	+		4	3	0.13
Clupeidae: 5 species	2	2	—	—	—	3	2		
<i>Anodontostoma</i> cf. <i>chacunda</i> (Hamilton, 1822)	+	+					1		
<i>Nematolosa nasus</i> (Bloch, 1795)						+			
<i>Herklotsichthys quadrimaculatus</i> (Rüppell, 1837)						+			
<i>Herklotsichthys</i> cf. <i>lossei</i> Wongratana, 1983	+	+					1		
<i>Sardinella longiceps</i> Valenciennes, 1847						+			
Congridae: 2 species	—	—	—	—	—	2			
<i>Acromycter</i> [cf.?] <i>macroporis</i> (Kotthaus, 1968)						+			
<i>Ariosoma sokotranum</i> Karmovskaya, 1991						+			
Coryphaenidae: 1 species	—	—	—	—	—	1			
<i>Coryphaena hippurus</i> (Linnaeus, 1758)						+			
Cyprinodontidae: 1 species							1		
<i>Aphanius dispar dispar</i> (Rüppell, 1829)	+	+				+	1		
Dasyatidae: 5 species	4	2	1	2	2	3	12	3	0.04
<i>Gymnura poecilura</i> (Shaw, 1804)						+			
<i>Himantura uarnak</i> (Forsskål, 1775)	+		+			+	1		
<i>Pastinachus sephen</i> (Forsskål, 1775)	+			+		+	1		
<i>Taeniura meyeni</i> Müller & Henle, 1841	+	+		+	+		7	2	0.03
gen. sp.	+	+			+		3	1	0.01
Diodontidae: 4 species	3	3	—	1	2	1	19	5	0.31
<i>Cyclichthys orbicularis</i> (Bloch, 1785)	+	+					2		
<i>Cyclichthys spilostylus</i> (Leis & Randall, 1982)					+				
<i>Diodon holacanthus</i> Linnaeus, 1758	+	+		+		+	15	5	0.31
<i>Diodon liturosus</i> Shaw, 1804	+	+			+		2		
Draconettidae: 1 species	—	—	—	—	—	1			
<i>Centrodraco oregonus lineatus</i> Fricke, 1992						+			
Drepanidae: 1 species	—	—	—	—	—	1			

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<i>Drepane longimanus</i> (Bloch & Schneider, 1801)						+			
Echeneidae: 1 species	1	1	—	—	—	1	1		
<i>Echeneis naucrates</i> Linnaeus, 1758	+	+				+	1		
Eleotridae: 1 species	—	—	—	—	—	1			
<i>Eleotris fusca</i> (Schneider & Forster, 1801)						+			
Elopidae: 1 species	1	—	1	—	—	1	1	1	0.03
<i>Elops machnata</i> (Forsskål, 1775)	+		+			+	1	1	0.03
Engraulididae: 1 species	—	—	—	—	—	1			
<i>Thryssa setirostris</i> (Broussonet, 1782)						+			
Ephippidae: 2 species	2	1	—	1	1	—	3	2	0.08
<i>Platax orbicularis</i> (Forsskål, 1775)	+			+	+		1	1	0.06
<i>Platax teira</i> (Forsskål, 1775)	+	+					2	1	0.03
Exocoetidae: 2 species	—	—	—	—	—	2			
<i>Cheilopogon spilopterus</i> (Valenciennes, 1847)						+			
<i>Hirundichthys socotranus</i> (Steindachner, 1902)						+			
Fistulariidae: 1 species	1	1	1	1	1	—	8	3	0.13
<i>Fistularia commersoni</i> Rüppell, 1838	+	+	+	+	+		8	3	0.13
Gerreidae: 4 species	3	3	—	—	—	3	4		
<i>Gerres acinaces</i> Bleeker, 1854	+	+				+	1		
<i>Gerres filamentosus</i> Cuvier, 1829.	+	+				+	2		
<i>Gerres socotranus</i> Steindachner, 1902						+			
<i>Gerres</i> sp.	+	+					1		
Gobiidae: 28 species	26	16	13	17	3	1	77	14	0.96
<i>Amblyeleotris</i> cf. <i>steinitzi</i> (Klausewitz, 1974)	+	+	+				2		
<i>Amblyeleotris sungami</i> (Klausewitz, 1969)	+	+	+	+			3	2	0.07
<i>Amblyeleotris wheeleri</i> (Polunin & Lubbock, 1977)	+	+	+	+	+		7	5	0.51
<i>Amblyeleotris</i> sp.	+	+					2		
<i>Bathygobius</i> sp.	+	+					1		
<i>Callogobius amikami</i> Goren, Miroz & Baranes, 1991	+			+			1		
<i>Coryoptherus</i> spp.	+		+	+			3	1	0.06
<i>Cryptocentroides arabicus</i> (Gmelin, 1789)						+			
<i>Cryptocentrus fasciatus</i> (Playfair, 1867)	+		+	+			2		
<i>Cryptocentrus lutheri</i> Klausewitz, 1960	+	+	+				2	1	0.10
<i>Cryptocentrus</i> sp.	+	+					6	1	0.06
<i>Eviota guttata</i> Lachner & Karnella, 1978	+	+	+				2	1	0.03
<i>Eviota seebrei</i> Jordan & Seale, 1906	+	+	+	+			4	1	0.04
<i>Eviota</i> sp.	+	+		+			2		
<i>Gnatholepis</i> cf. <i>anjerensis</i> (Bleeker, 1851)	+	+		+			4		
<i>Gnatholepis</i> cf. <i>cauerensis</i> (Bleeker, 1853)	+			+			1		
<i>Gnatholepis</i> sp.	+	+	+	+			6		
<i>Gobiodon axillaris</i> De Vis, 1884					+				
<i>Gobiodon citrinus</i> (Rüppell, 1838)	+		+				1	1	0.03
<i>Gobiodon rivulatus</i> (Rüppell, 1830)	+	+		+			3		
<i>Heteroleotris zonata</i> (Fowler, 1934)	+	+					1		
<i>Istigobius decoratus</i> (Herre, 1927)	+	+	+	+	+		7	1	0.07
<i>Istigobius ornatus</i> (Rüppell, 1830)	+	+		+			3		
<i>Priolepis</i> sp.	+			+			1		
<i>Trimma</i> spp.	+		+				2		
<i>Valenciennea helsdingenii</i> (Bleeker, 1858)	+			+			1		
<i>Valenciennea puellaris</i> (Tomiyama, 1956)	+			+			2		
gen. sp., indet.	+	+	+	+			8		
Gobiesocidae: 1 species	1	—	—	1	—	—	1		
<i>Lepadichthys</i> cf. <i>coccinotaenia</i> Regan, 1921	+			+			1		
Grammistidae: 1 species	1	1	1	1	—	—	5		
<i>Pogonoperca punctata</i> (Valenciennes, 1830)	+	+	+	+			5		
Haemulidae: 14 species	13	13	3	5	5	8	62	28	1.86
<i>Diagramma pictum</i> (Thunberg, 1792)	+	+			+		2		
<i>Plectorhinchus flavomaculatus</i> (Cuvier, 1830)	+	+		+		+	7	3	0.10

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<i>Plectorhinchus gaterinus</i> (Forsskål, 1775)	+	+	+	+	+	+	25	14	1.38
<i>Plectorhinchus gibbosus</i> (Lacepède, 1802)	+	+					2	1	0.01
<i>Plectorhinchus pictus</i> (Tortonese, 1936)	+	+	+	+	+	+	5	4	0.08
<i>Plectorhinchus picus</i> (Cuvier, 1830)	+	+					1		
<i>Plectorhinchus playfairi</i> (Cuvier, 1830)	+	+		+	+	+	9		
<i>Plectorhinchus schotaf</i> (Forsskål, 1775)	+	+	+	+	+	+	6	3	0.10
<i>Plectorhinchus sordidus</i> (Klunzinger, 1870)	+	+				+	4	2	0.10
<i>Plectorhinchus</i> sp. [juv.]	+	+					1	1	0.10
<i>Pomadasys argenteus</i> (Forsskål, 1775)	+	+				+	1		
<i>Pomadasys kaakan</i> (Cuvier, 1830)	+	+					1		
<i>Pomadasys punctulatus</i> (Rüppell, 1838)						+			
<i>Pomadasys taeniatus</i> McKay & Randall, 1995	+	+					1		
Hemiramphidae: 2 species	1	1	—	—	—	1	1		
<i>Hemiramphus</i> spp.						+			
<i>Hyporhamphus sindensis</i> (Regan, 1905)	+	+					1		
Hemiscylliidae: 1 species	1	—	1	—	—	1	1		
<i>Chiloscyllium arabicum</i> Gubanov, 1980 [<i>C. punctatum</i> ?]	+		+			+	1		
Holocentridae: 7 species	6	6	4	4	3	—	65	27	10.78
<i>Myripristis murdjan</i> (Forsskål, 1775)	+	+	+	+	+		25	9	6.21
<i>Neoniphon sammara</i> (Forsskål, 1775)	+	+					2		
<i>Sargocentron caudimaculata</i> (Rüppell, 1838)	+	+	+	+	+		12	6	2.21
<i>Sargocentron diadema</i> (Lacepède, 1802)	+	+	+				9	2	1.57
<i>Sargocentron seychellense</i> (Smith & Smith, 1963)	+	+	+	+			13	7	0.46
<i>Sargocentron spiniferum</i> (Forsskål, 1775)					+				
<i>Sargocentron</i> sp.	+	+		+			4	3	0.33
Kuhliidae: 2 species	1	—	1	—	1	1	1		
<i>Kublia mugil</i> (Forster, 1801)	+		+		+		1		
<i>Kublia taeniura</i> (Cuvier & Valenciennes, 1829)						+			
Kyphosidae: 3 species	3	3	—	1	2	—	4		
<i>Kyphosus bigibbus</i> Lacepède, 1801	+	+					1		
<i>Kyphosus cinerascens</i> (Forsskål, 1775)	+	+			+		1		
<i>Kyphosus vaigiensis</i> (Quoy & Gaimard, 1825)	+	+		+	+		2		
Labridae: 66 species	63	56	41	52	23	1	694	346	50.69
<i>Anampses lineatus</i> Randall, 1972	+	+	+	+			24	13	0.78
<i>Anampses caeruleopunctatus</i> Rüppell, 1829	+	+	+	+			6	4	0.15
<i>Anampses meleagris</i> Valenciennes, 1840	+	+	+	+	+		16	11	0.44
<i>Anampses twistii</i> Bleeker, 1856	+	+	+	+			4	3	0.10
<i>Bodianus axillaris</i> (Bennett, 1832)	+	+	+	+			9	5	0.11
<i>Bodianus bilunulatus</i> (Lacepède, 1801)	+	+		+			2	1	0.01
<i>Bodianus diana</i> (Lacepède, 1801)	+	+	+	+			7	5	0.22
<i>Bodianus macrognathos</i> (Morris, 1974)	+	+	+	+	+		12	4	0.14
cf. <i>Gomphosus varius</i> Lacepède, 1801	+	+					1	1	0.03
<i>Cheilinus fasciatus</i> (Bloch, 1791)	+	+		+	+		4	2	0.13
<i>Cheilinus lunulatus</i> (Forsskål, 1775)	+	+	+	+	+		20	9	0.29
<i>Chelinus oxycephalus</i> Bleeker, 1853	+	+	+	+			5	2	0.18
<i>Cheilinus trilobatus</i> Lacepède, 1801					+				
<i>Cheilinus undulatus</i> Rüppell, 1835	+		+				1		
<i>Cheilinus</i> sp.	+			+			1		
<i>Cheilo inermis</i> (Forsskål, 1775)	+	+	+	+	+		6	3	0.24
<i>Cirrhilabrus exquisitus</i> Smith, 1957	+	+	+	+			9	3	0.39
<i>Cirrhilabrus</i> cf. <i>rubriventralis</i> Springer & Randall, 1974	+	+	+	+			4	1	0.03
<i>Cirrhilabrus</i> sp. 1	+	+					2		
<i>Cirrhilabrus</i> sp. 2	+		+				1	1	0.04
<i>Coris aygula</i> Lacepède, 1801	+	+	+	+	+		11	6	0.18
<i>Coris caudimaculata</i> (Quoy & Gaimard, 1834)	+	+	+	+	+		23	10	2.47
<i>Coris gaimard cuvieri</i> (Bennett, 1831)	+	+	+	+	+		16	7	0.29
<i>Coris frerei</i> Günther, 1867	+	+	+	+	+		26	14	0.75
<i>Epibulus insidiator</i> (Pallas, 1770)					+				

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<i>Gomphosus caeruleus</i> Lacepède, 1801	+	+	+	+	+		23	13	0.94
<i>Halichoeres</i> cf. <i>zeylonicus</i> (Bennett, 1833) / <i>Halichoeres</i> cf. <i>peliciieri</i> Randall & Smith, 1982	+	+		+			5	2	0.32
<i>Halichoeres cosmetus</i> Randall & Smith, 1982	+	+	+	+			9	5	0.40
<i>Halichoeres dussumieri</i> (Valenciennes, 1839)	+	+	+	+	+		6	4	0.85
<i>Halichoeres hortulanus</i> (Lacepède, 1801)	+	+	+	+	+		29	16	1.67
<i>Halichoeres iridis</i> Randall & Smith, 1982	+	+	+	+	+		10	4	0.89
<i>Halichoeres marginatus</i> Rüppell, 1835	+	+	+	+	+		31	19	1.46
<i>Halichoeres nebulosus</i> (Valenciennes, 1839)	+	+	+	+			24	14	1.94
<i>Halichoeres scapularis</i> (Bennett, 1832)	+	+	+	+			6	3	0.21
<i>Halichoeres</i> cf. <i>stigmaticus</i> Randall & Smith, 1982	+	+					1	1	0.17
<i>Hemigymnus fasciatus</i> (Bloch, 1792)	+	+	+	+	+		14	5	0.21
<i>Hemigymnus melapterus</i> (Bloch, 1791)	+	+			+		5		
<i>Hologymnosus annulatus</i> (Lacepède, 1801)	+		+	+			5	2	0.06
<i>Hologymnosus diolatus</i> (Lacepède, 1801)	+	+	+	+	+		17	10	0.54
<i>Labroides bicolor</i> (Fowler & Bean, 1928)	+	+	+	+	+		9	4	0.13
<i>Labroides dimidiatus</i> (Valenciennes, 1839)	+	+	+	+	+		43	24	4.68
<i>Larabicus quadrilinaetus</i> (Rüppell, 1835)	+	+					18	7	0.79
<i>Leptojulius</i> cf. <i>cyanopleura</i> (Bleeker, 1853)	+	+					7	4	0.64
<i>Macropharyngodon bipartitus</i> Smith, 1957	+	+	+	+			33	15	5.35
<i>Oxycheilinus bimaculatus</i> (Valenciennes, 1840)	+	+					1		
<i>Oxycheilinus</i> sp. [mottled purple]	+	+		+			4	1	0.03
<i>Paracheilinus octotaenia</i> Fourmanoir, 1955	+	+	+	+			2	1	0.32
<i>Pseudocheilinus evanidus</i> (Jordan & Evermann, 1903)	+	+		+			2		
<i>Pseudocheilinus hexataenia</i> (Bleeker, 1857)	+	+	+	+			29	13	2.39
<i>Pseudodax moluccanus</i> (Valenciennes, 1840)	+	+		+			2	1	0.04
<i>Pteragogus flagellifer</i> (Valenciennes, 1839)	+	+	+	+			10	6	0.28
<i>Pteragogus scriptus</i> Randall, 1981	+			+			1	1	0.06
<i>Stethojulis albovittata</i> (Bonnaterre, 1788)	+	+	+	+			19	10	2.24
<i>Stethojulis interrupta</i> (Bleeker, 1851)	+	+	+	+			17	9	3.07
<i>Stethojulis</i> cf. <i>strigiventer</i> (Bennett, 1832)	+	+		+			2	2	1.22
<i>Stethojulis</i> sp.	+	+		+			3		
<i>Thalassoma</i> cf. <i>amblycephalum</i> (Bleeker, 1856)	+	+		+			6	5	0.42
<i>Thalassoma</i> cf. <i>hardwicke</i> (Bennett, 1830)	+	+		+			2	2	0.08
<i>Thalassoma</i> cf. <i>hebraicum</i> (Lacepède, 1801)	+	+	+	+			9	7	0.39
<i>Thalassoma</i> cf. <i>loxum</i> Randall & Mee, 1994	+	+	+	+			6		
<i>Thalassoma lunare</i> (Linnaeus, 1758)	+	+	+	+	+		48	22	9.79
<i>Thalassoma lutescens</i> (Lay & Bennett, 1839)	+	+	+	+	+		22	8	2.15
<i>Thalassoma purpureum</i> (Forsskål, 1775)						+			
<i>Thalassoma</i> cf. <i>rueppellii</i> (Klunzinger, 1871)	+	+					2	1	0.01
gen. sp. 1 [4 horizontal bands, yellow, black, white yellow]	+	+					1		
gen. sp. 2 [black, with a clear white frontal]	+			+			1		
Lamnidae: 1 species	—	—	—	—	—	1			
<i>Isurus oxyrinchus</i> Rafinesque, 1810						+			
Leiognathidae: 1 species	1	1	—	—	—	—	2		
<i>Leiognathus equulus</i> (Forsskål, 1775)	+	+					2		
Lethrinidae: 12 species	12	11	7	6	5	5	78	43	9.78
<i>Gymnocranius grandoculis</i> (Valenciennes, 1830)	+	+					1		
<i>Lethrinus borbonicus</i> Valenciennes, 1830	+	+	+	+		+	13	10	4.56
<i>Lethrinus harak</i> (Forsskål, 1775)	+	+					2	1	0.01
<i>Lethrinus lentjan</i> (Lacepède, 1802)	+	+				+	1		
<i>Lethrinus mahsena</i> (Forsskål, 1775)	+	+	+	+	+	+	14	8	2.32
<i>Lethrinus microdon</i> Valenciennes, 1830	+	+	+	+		+	10	3	0.11
<i>Lethrinus nebulosus</i> (Forsskål, 1775)	+	+	+	+	+	+	13	9	2.38
<i>Lethrinus obsoletus</i> (Forsskål, 1775)	+		+	+			4	1	0.11
<i>Lethrinus</i> cf. <i>olivaceus</i> Valenciennes, 1830	+	+	+		+		2	1	0.01
<i>Lethrinus variegatus</i> Valenciennes, 1830	+	+			+		2	1	0.04

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<i>Lethrinus</i> sp.	+	+					3		
<i>Monotaxis grandoculis</i> (Forsskål, 1775)	+	+	+	+	+		13	9	0.24
Lutjanidae: 21 species	19	17	10	10	10	14	148	72	62.44
<i>Aprion virescens</i> Valenciennes, 1830	+	+	+	+		+	5	1	0.01
<i>Lutjanus argentimaculatus</i> (Forsskål, 1775)	+	+	+	+	+	+	9	4	0.22
<i>Lutjanus bengalensis</i> (Bloch, 1790)	+		+			+	1	1	0.46
<i>Lutjanus bohar</i> (Forsskål, 1775)	+	+	+	+	+	+	37	17	3.26
<i>Lutjanus coeruleolineatus</i> (Rüppell, 1838)	+	+	+	+	+	+	7	2	0.89
<i>Lutjanus ehrenbergii</i> (Peters, 1869)	+	+		+	+	+	11	8	1.00
<i>Lutjanus fulviflammus</i> (Forsskål, 1775)	+	+	+			+	9	6	0.49
<i>Lutjanus fulvus</i> (Forster, 1801)	+	+			+		7	2	0.07
<i>Lutjanus gibbus</i> (Forsskål, 1775)	+	+	+	+	+	+	18	9	3.71
<i>Lutjanus kasmira</i> (Forsskål, 1775)	+	+	+	+	+	+	18	9	50.74
<i>Lutjanus lunulatus</i> (Park, 1797)	+	+					2	1	0.83
<i>Lutjanus</i> cf. <i>lutjanus</i> Bloch, 1790	+	+					1		
<i>Lutjanus monostigma</i> (Cuvier, 1828)	+	+	+	+	+		11	5	0.61
<i>Lutjanus rivulatus</i> (Cuvier, 1828)	+	+	+	+	+	+	7	3	0.07
<i>Lutjanus sebae</i> (Cuvier, 1816)	+	+				+	1		
<i>Lutjanus quinquelineatus</i> (Bloch, 1790)	+	+					2	2	0.03
<i>Lutjanus vitta</i> (Quoy & Gaimard, 1824)						+			
<i>Lutjanus</i> sp. [juv., 2 bars]	+	+					1		
<i>Macolor niger</i> (Forsskål, 1775)	+	+			+			1	0.01
<i>Mesoprion griseus</i> (Cuvier & Valenciennes, 1828)						+	1		
<i>Pristipomoides</i> cf. <i>filamentosus</i> (Valenciennes, 1830)	+			+		+	1	1	0.04
Malacanthidae: 1 species	1	1	—	—	—	—	3	1	0.01
<i>Malacanthus latovittatus</i> (Lacepède, 1802)	+	+					3	1	0.01
Megalopidae: 1 species	—	—	—	—	—	1			
<i>Megalops cyprinoides</i> (Broussonet, 1782)						+			
Microdesmidae: 4 species	3	3	2	—	1	—	10	7	0.68
<i>Gunnelichthys monostigma</i> Smith, 1958					+				
<i>Ptereleotris evides</i> (Jordan & Hubbs, 1925)	+	+	+				4	3	0.07
<i>Ptereleotris monopectera</i> Randall & Hoesé, 1985	+	+					2	1	0.15
<i>Ptereleotris</i> sp.	+	+	+				4	3	0.46
Mobulidae: 3 species	3	—	3	—	2	—	3		
<i>Manta birostris</i> (Walbaum, 1792)	+		+		+		1		
<i>Mobula thurstoni</i> (Lloyd, 1908)	+		+				1		
<i>Mobula</i> sp.	+		+		+		1		
Monacanthidae: 4 species	2	1	2	2	2	1	10	3	0.13
<i>Aluterus scriptus</i> (Osbeck, 1765)	+		+	+	+		2		
<i>Cantherines pardalis</i> (Rüppell, 1837)	+	+	+	+			8	3	0.13
<i>Cantherines</i> sp.					+				
<i>Thamnaconus striatus</i> (Kotthaus, 1979)						+			
Monodactylidae: 1 species	1	1	—	—	1	1	4		
<i>Monodactylus argenteus</i> (Linnaeus, 1758)	+	+			+	+	4		
Mugilidae: 6 species	2	1	1	—	—	5	3		
<i>Crenimugil crenilabis</i> (Forsskål, 1775)	+		+			+	1		
<i>Liza macrolepis</i> (Smith, 1846)						+			
<i>Liza tade</i> (Forsskål, 1775)						+			
<i>Mugil cephalus</i> Linnaeus, 1758						+			
<i>Valamugil sebeli</i> (Forsskål, 1775)						+			
gen. sp., indet.	+	+					2		
Mullidae: 11 species	11	11	7	7	8	2	178	91	17.88
<i>Mulloidichthys flavolineatus</i> (Lacepède, 1801)	+	+		+			4	2	3.17
<i>Mulloidichthys vanicolensis</i> (Valenciennes, 1831)	+	+	+	+	+		12	6	4.79
<i>Parupeneus barberinus</i> (Lacepède, 1801)	+	+	+	+	+		24	11	0.40
<i>Parupeneus bifasciatus</i> (Lacepède, 1801)	+	+	+	+	+		25	12	1.44
<i>Parupeneus cyclostomus</i> (Lacepède, 1801)	+	+	+	+	+		18	13	0.82
<i>Parupeneus forsskali</i> (Fourmanoir & Guézé, 1976)	+	+	+		+		15	10	1.22

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<i>Parupeneus indicus</i> (Shaw, 1803)	+	+			+		7	3	0.15
<i>Parupeneus macronema</i> (Lacepède, 1801)	+	+	+	+	+	+	49	23	4.35
<i>Parupeneus pleurostigma</i> (Bennett, 1831)	+	+	+				7	1	0.10
<i>Parupeneus rubescens</i> (Lacepède, 1801)	+	+		+	+	+	13	7	1.29
<i>Upeneus tragula</i> Richardson, 1846	+	+					4	3	0.14
Muraenidae: 19 species	14	11	6	7	6	5	41	8	0.19
<i>Echidna nebulosa</i> (Ahl, 1789)					+				
<i>Echidna</i> sp. [juv.]	+	+					1		
<i>Enchelycore pardalis</i> (Temminck & Schlegel, 1846)	+	+	+	+			5		
<i>Gymnothorax</i> cf. <i>chilospilus</i> Bleeker, 1865	+			+	+		1		
<i>Gymnothorax favagineus</i> Bloch & Schneider, 1801	+	+	+	+	+	+	9	3	0.07
<i>Gymnothorax</i> cf. <i>flavimarginatus</i> (Rüppell, 1830)	+		+				1	1	0.03
<i>Gymnothorax javanicus</i> (Bleeker, 1859)					+				
<i>Gymnothorax meleagris</i> (Shaw, 1795)	+			+		+	1		
<i>Gymnothorax nudivomer</i> (Günther, 1867)	+	+			+		1		
<i>Gymnothorax</i> cf. <i>pseudothyrsoides</i> (Bleeker, 1852)	+	+					1		
<i>Gymnothorax richardsonii</i> (Bleeker, 1852)						+			
<i>Gymnothorax sokotrensis</i> Kotthaus, 1968						+			
<i>Gymnothorax tessellata</i> (Richardson, 1845) ?						+			
<i>Gymnothorax zonipectes</i> Seale, 1906	+	+					1		
<i>Gymnothorax</i> sp.	+	+	+	+			3		
<i>Siderea flavocula</i> Böhlke & Randall, 1996	+	+	+	+			4		
<i>Siderea grisea</i> (Lacepède, 1803)	+	+	+	+	+		11	4	0.10
<i>Siderea</i> cf. <i>picta</i> (Ahl, 1789)	+	+					1		
gen. sp., indet.	+	+					1		
Myctophidae: 1 species	—	—	—	—	—	1			
<i>Stomias affinis</i> Günther, 1887						+			
Myliobatidae: 3 species	1	1	—	—	1	3	1		
<i>Aetobatis narinari</i> (Euphrasen, 1790)	+	+			+	+	1		
<i>Aetomylaeus niehofii</i> (Bloch & Schneider, 1801)						+			
<i>Rhinoptera jayakari</i> Boulenger, 1895						+			
Nemipteridae: 5 species	3	3	1	1	—	3	35	18	1.96
<i>Nemipterus japonicus</i> (Bloch, 1791)						+			
<i>Scolopsis ghanam</i> (Forsskål, 1775)	+	+	+	+			30	15	1.79
<i>Scolopsis taeniatus</i> (Cuvier, 1830)	+	+				+	3	1	0.06
<i>Scolopsis vosmeri</i> (Bloch, 1792)						+			
<i>Scolopsis</i> sp. [golden]	+	+					2	2	0.11
Ophichthidae: 2 species	2	1	1	—	—	—	2		
gen. sp., indet. [juv.]	+	+					1		
<i>Myrichthys maculosus</i> Cuvier, 1816	+		+				1		
Ophidiidae: 3 species	—	—	—	—	—	3			
<i>Neobythites meteori</i> Nielsen, 1995						+			
<i>Neobythites somaliensis</i> Nielsen, 1995						+			
<i>Neobythites trifilis</i> Kotthaus, 1979						+			
Ostraciidae: 2 species	1	1	1	1	2	—	11	3	0.06
<i>Ostracion cubicus</i> Linnaeus, 1758	+	+	+	+	+		11	3	0.06
<i>Ostracion cyanurus</i> Rüppell, 1828					+				
Paralichthyidae: 1 species	1	1	—	—	—	—	1		
<i>Pseudorbombus</i> sp.	+	+					1		
Pempheridae: 4 species	3	3	1	3	2	—	14	5	21.78
<i>Parapriacanthus ransonneti</i> Steindachner, 1870	+	+		+			5	2	20.00
<i>Pempheris oualensis</i> Cuvier, 1831					+				
<i>Pempheris vanicolensis</i> Cuvier, 1831	+	+		+			3	1	0.22
<i>Pempheris</i> sp.	+	+	+	+	+		6	2	1.56
Pinguipedidae: 2 species	2	2	2	1	—	—	21	11	0.36
<i>Parapercis hexophthalma</i> (Cuvier, 1829)	+	+	+	+			17	9	0.32
<i>Parapercis punctulata</i> (Cuvier, 1829)	+	+	+				4	2	0.04
Platycephalidae: 1 species	1	1	—	1	—	—	4		

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gen. sp., indet.	+	+		+			4		
Plesiopidae: 2 species	2	2	1	1	—	—	4		
<i>Plesiops caeruleolineatus</i> Rüppell, 1835	+	+					1		
<i>Plesiops</i> sp.	+	+	+	+			3		
Pleuronectidae: 2 species	1	—	1	—	—	1	1		
<i>Marleyella bicolorata</i> (von Bonde, 1922)						+			
gen. sp., indet.	+		+				1		
Polimixiidae: 1 species	—	—	—	—	—	1			
<i>Polimixia fusca</i> Kotthaus, 1970						+			
Pomacanthidae: 7 species	6	6	5	4	7	2	119	52	4.83
<i>Apolemichthys xanthotis</i> (Fraser-Brunner, 1951)	+	+	+	+	+		29	12	1.21
<i>Centropyge acanthops</i> (Norman, 1922)	+	+	+		+		2		
<i>Centropyge multispinnis</i> (Playfair, 1867)	+	+	+	+	+		30	15	2.54
<i>Pomacanthus asfur</i> (Forsskål, 1775)					+				
<i>Pomacanthus imperator</i> (Bloch, 1787)	+	+	+	+	+		37	17	0.81
<i>Pomacanthus maculosus</i> (Forsskål, 1775)	+	+			+	+	6	1	0.01
<i>Pomacanthus semicirculatus</i> (Cuvier, 1831)	+	+	+	+	+	+	15	7	0.26
Pomacentridae: 41 species	39	33	17	21	17	—	403	184	677.94
<i>Abudefduf notatus</i> (Day, 1870)	+	+	+	+			4		
<i>Abudefduf septemfasciatus</i> (Cuvier, 1830)	+	+			+		1		
<i>Abudefduf sexfasciatus</i> (Lacepède, 1801)					+				
<i>Abudefduf sordidus</i> (Forsskål, 1775)	+			+	+		2		
<i>Abudefduf vaigiensis</i> (Quoy & Gaimard, 1825)	+	+		+	+		21	8	3.69
<i>Amphiprion akallopisos</i> Bleeker, 1853					+				
<i>Amphiprion bicinctus</i> Rüppell, 1830	+	+		+			3	1	0.03
<i>Amphiprion</i> cf. <i>chagosensis</i> Allen, 1972	+			+			1	1	0.03
<i>Amphiprion omanensis</i> Allen, 1972	+	+					1	1	0.01
<i>Amphiprion</i> sp.	+		+		+		1		
<i>Chromis</i> cf. <i>acares</i> Randall & Swerdloff, 1973	+			+			1		
<i>Chromis</i> cf. <i> analis</i> (Cuvier, 1830)	+	+					1		
<i>Chromis dimidiata</i> (Klunzinger, 1871)	+	+	+	+	+		18	8	2.44
<i>Chromis flavaxilla</i> Randall, 1994	+	+	+	+	+		30	15	185.40
<i>Chromis pembrae</i> Smith, 1960	+	+					2	1	0.42
<i>Chromis ternatensis</i> (Bleeker, 1856)	+	+					2		
<i>Chromis trialpha</i> Allen & Randall, 1980	+	+					1		
<i>Chromis weberi</i> Fowler & Bean, 1928	+	+	+	+	+		47	20	127.24
<i>Chromis</i> sp.	+	+					2		
<i>Chrysiptera annulata</i> (Peters, 1855)	+	+			+		7	4	1.54
<i>Chrysiptera leucopoma</i> (Valenciennes, 1830)	+			+			1		
<i>Chrysiptera</i> cf. <i>sheila</i> Randall, 1994	+	+	+	+			17	11	2.94
<i>Chrysiptera</i> cf. <i>springeri</i> (Allen & Lubbock, 1976)?	+	+					2	1	0.03
<i>Chrysiptera unimaculata</i> (Cuvier, 1830)	+	+	+	+			15	11	4.10
<i>Dascyllus carneus</i> Fischer, 1885	+		+	+	+		4	1	0.06
<i>Dascyllus marginatus</i> (Rüppell, 1829)	+	+	+	+	+		35	15	133.40
<i>Dascyllus trimaculatus</i> (Rüppell, 1829)	+	+	+	+	+		24	8	2.17
<i>Neoglyphidodon melas</i> (Cuvier, 1830)	+	+			+		2	1	0.04
<i>Neopomacentrus cyanomos</i> (Bleeker, 1856)	+	+					5	3	0.40
<i>Neopomacentrus</i> cf. <i>miryae</i> Dor & Allen, 1977	+	+	+	+			8	3	3.67
<i>Neopomacentrus sindensis</i> (Day, 1873)	+	+					2		
<i>Neopomacentrus xanthurus</i> Allen & Randall, 1980	+	+					3	2	3.01
<i>Plectroglyphidodon johnstonianus</i> Fowler & Ball, 1924	+	+	+	+			5	4	0.25
<i>Plectroglyphidodon leucozona</i> cf. <i>cingulum</i> (Klunzinger, 1871)	+	+					3	1	0.10
<i>Plectroglyphidodon lacrymatus</i> (Quoy & Gaimard, 1825)	+	+	+	+			5	3	0.14
<i>Pomacentrus</i> cf. <i>aquilus</i> Allen & Randall, 1980	+	+	+				7	3	0.39
<i>Pomacentrus caeruleus</i> Quoy & Gaimard, 1825	+	+	+	+	+		51	23	148.21
<i>Pomacentrus</i> cf. <i>coelestis</i> Jordan & Starks, 1901	+	+					2		
<i>Pomacentrus leptus</i> Allen & Randall, 1980	+	+	+	+	+		44	22	50.19

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<i>Pomacentrus</i> cf. <i>philippinus</i> Evermann & Seale, 1907	+	+					1		
<i>Pomacentrus trichourus</i> Günther, 1867	+	+	+	+	+		22	13	8.04
Pomatomidae: 1 species	1	1	—	—	—	1	1		
<i>Pomatomus saltator</i> (Linnaeus, 1766)	+	+				+	1		
Priacanthidae: 4 species	3	3	—	—	2	1	6	3	0.35
<i>Priacanthus arenatus</i> Cuvier & Valenciennes, 1829						+			
<i>Priacanthus blochii</i> Bleeker, 1853	+	+			+		2		
<i>Priacanthus hamrur</i> (Forsskål, 1775)	+	+			+		3	3	0.35
<i>Priacanthus</i> cf. <i>tayenus</i> Richardson, 1846	+	+					1		
Pseudochromidae: 11 species	11	9	7	7	1	—	80	30	4.38
cf. <i>Chlidichthys inornatus</i> Lubbock, 1976	+	+					1		
<i>Haliophis</i> sp.	+		+	+			2		
<i>Pseudochromis</i> cf. <i>dixurus</i> Lubbock, 1975 ?	+	+					3	1	0.06
<i>Pseudochromis leucorhynchus</i> Lubbock, 1977	+	+	+	+			8	4	0.06
<i>Pseudochromis</i> cf. <i>linda</i> Randall & Stanaland, 1989	+	+	+	+			12	5	0.54
<i>Pseudochromis nigrovittatus</i> Boulenger, 1897	+	+	+	+	+		18	8	1.46
<i>Pseudochromis omanensis</i> Gill & Mee, 1993	+	+					1		
<i>Pseudochromis</i> cf. <i>punctatus</i> Kotthaus, 1970 [non Richardson, 1846 / <i>P. pesi</i> Lubbock, 1975 group]	+		+				2	2	0.08
<i>Pseudochromis sankeyi</i> Lubbock, 1975	+	+		+			6		
<i>Pseudochromis springeri</i> Lubbock, 1975	+	+	+	+			24	8	2.00
<i>Pseudochromis</i> sp. [dark - <i>P. melas</i> , Lubbock, 1977]	+	+	+	+			3	2	0.18
Rachycentridae: 1 species	—	—	—	—	—	1			
<i>Rachycentron canadum</i> (Linnaeus, 1766)						+			
Rhincodontidae: 1 species	—	—	—	—	1	—			
<i>Rhincodon typus</i> Smith, 1828					+				
Rhinobatidae: 2 species	—	—	—	—	1	1			
<i>Rhynchobatus djiddensis</i> (Forsskål, 1775)					+				
<i>Rhinobatos</i> spp.						+			
Rhinochimaeridae: 1 species	—	—	—	—	—	1			
<i>Neobarriotta pumila</i> Didier & Stehmann, 1996						+			
Scaridae: 17 species	17	15	8	9	4	4	100	51	10.10
<i>Calotomus carolinus</i> (Valenciennes, 1840)	+	+					1		
<i>Chlorurus</i> cf. <i>gibbus</i> (Rüppell, 1829)	+	+					2		
<i>Chlorurus sordidus</i> (Forsskål, 1775)	+	+	+	+	+	+	7	5	1.15
<i>Chlorurus strongylocephalus</i> (Bleeker, 1854)	+	+	+	+	+	+	6	4	0.15
<i>Scarus arabicus</i> (Steindachner, 1902)	+	+					1		
<i>Scarus ferrugineus</i> Forsskål, 1775	+	+	+	+	+		27	17	1.57
<i>Scarus frenatus</i> Lacepède, 1802	+	+					1		
<i>Scarus fuscopurpureus</i> (Klunzinger, 1871)	+	+				+	3		
<i>Scarus ghobban</i> Forsskål, 1775	+	+	+				8	1	0.11
<i>Scarus niger</i> Forsskål, 1775	+	+	+	+			16	7	0.54
<i>Scarus psittacus</i> Forsskål, 1775	+			+			3	1	2.99
<i>Scarus rubroviolaceus</i> Bleeker, 1847	+	+	+	+	+	+	13	6	0.60
<i>Scarus</i> cf. <i>schlegeli</i> (Bleeker, 1861)	+	+					1		
<i>Scarus</i> cf. <i>tricolor</i> Bleeker, 1847	+			+			1	1	0.01
<i>Scarus</i> sp. 1 [brown, white, black]	+	+					2	1	0.51
gen. sp. 1, indet. [juv., vertically white and dark stripes]	+	+	+	+			3	3	0.57
gen. sp. 2, indet. [juv., horiz. white and dark stripes]	+	+	+	+			5	5	1.89
Scombridae: 7 species	1	1	1	1	—	7	9	3	0.07
<i>Acanthocybium solandri</i> (Cuvier, 1831)						+			
<i>Euthynnus affinis</i> (Cantor, 1849)						+			
<i>Katsuwonus pelamis</i> (Linnaeus, 1758)						+			
<i>Scomber japonicus</i> Houttuyn, 1782						+			
<i>Scomberomorus commerson</i> (Lacepède, 1800)	+	+	+	+		+	9	3	0.07
<i>Thunnus albacares</i> (Bonnaterre, 1788)						+			
<i>Thunnus obesus</i> (Lowe, 1839)						+			
Scorpaenidae: 12 species	10	8	4	5	3	2	23	2	0.04

	Entire archipelago	Socotra and Sabuniya	Samha and Darsa	Abd al-Kuri and Kal Farun	KEMP 1998 records	Other records	Record events total	Records in transects	Mean abundance
<i>Pterois antennata</i> (Bloch, 1787)	+		+	+	+	+	4	1	0.03
<i>Pterois miles</i> (Bennett, 1828)	+	+		+	+		2		
<i>Pterois mombasae</i> (Smith, 1957)	+	+					4		
<i>Pterois radiata</i> Cuvier, 1829						+			
<i>Pterois</i> sp.	+	+		+			3	1	0.01
<i>Scorpaenodes</i> sp.	+	+	+				2		
<i>Scorpaenopsis</i> cf. <i>barbatus</i> (Rüppell, 1838)	+	+					1		
<i>Scorpaenopsis diabolus</i> (Cuvier, 1829)					+				
<i>Scorpaenopsis</i> sp. 1	+		+				1		
<i>Scorpaenopsis</i> sp. 2	+	+	+	+			3		
<i>Sebastipistes</i> sp.	+	+		+			2		
<i>Snyderina guentheri</i> (Boulenger, 1889)	+	+					1		
Serranidae: 32 species	27	26	8	15	14	12	206	81	13.39
<i>Aethaloperca rogae</i> (Forsskål, 1775)	+	+	+	+	+		15	5	0.10
<i>Cephalopholis argus</i> Bloch & Schneider, 1801	+	+	+	+	+	+	22	12	1.08
<i>Cephalopholis aurantia</i> (Valenciennes, 1828)						+			
<i>Cephalopholis hemistiktos</i> (Rüppell, 1830)	+	+		+		+	4	1	0.03
<i>Cephalopholis miniata</i> (Forsskål, 1775)	+	+	+	+	+		24	12	1.10
<i>Cephalopholis sexmaculata</i> (Rüppell, 1830)	+	+			+		1	1	0.01
<i>Cephalopholis sonnerati</i> (Valenciennes, 1828)	+	+		+	+	+	8	1	0.11
<i>Chelidoperca occipitalis</i> Kotthaus, 1973						+			
<i>Dermatolepis striolatus</i> Playfair, 1867	+	+	+	+	+	+	5	2	0.50
<i>Epinephelus chlorostigma</i> (Valenciennes, 1828)	+	+					2	1	0.14
<i>Epinephelus</i> cf. <i>coioides</i> (Hamilton, 1822)	+	+					1		
<i>Epinephelus epistictus</i> (Temminck & Schlegel, 1842)	+	+					1		
<i>Epinephelus indistinctus</i> Randall & Heemstra, 1991	+	+					1		
<i>Epinephelus fasciatus</i> (Forsskål, 1775)	+	+	+	+	+	+	34	14	0.92
<i>Epinephelus flavocaeruleus</i> (Lacepède, 1802)	+	+		+	+		18	8	0.26
<i>Epinephelus fuscoguttatus</i> (Lacepède, 1802)					+				
<i>Epinephelus gabriellae</i> Randall & Heemstra, 1991	+	+					1	1	0.03
<i>Epinephelus lanceolatus</i> (Bloch, 1790)	+	+					1		
<i>Epinephelus multinotatus</i> (Peters, 1876)	+	+			+	+	2		
<i>Epinephelus stoliczkae</i> (Day, 1875)	+	+		+	+	+	10	2	0.03
<i>Epinephelus summana</i> (Forsskål, 1775)	+	+					1		
<i>Epinephelus tukula</i> Morgans, 1959	+	+		+	+		3	1	0.01
<i>Epinephelus undulosus</i> (Quoy & Gaimard, 1824)	+	+					1		
<i>Plectropomus areolatus</i> (Rüppell, 1830)						+			
<i>Plectropomus punctatus</i> Quoy & Gaimard, 1824	+	+	+	+			11	5	0.22
<i>Plectranthias intermedius</i> (Kotthaus, 1973)						+			
<i>Pseudanthias cooperi</i> (Regan, 1902)	+	+					1		
<i>Pseudanthias evansi</i> (Smith, 1954)	+			+			1		
<i>Pseudanthias marcia</i> Randall & Hoover, 1993	+	+		+			2	1	0.47
<i>Pseudanthias squamipinnis</i> (Peters, 1855)	+	+	+	+	+		18	7	8.03
<i>Pseudanthias</i> sp.	+	+					1		
<i>Variola louti</i> (Forsskål, 1775)	+	+	+	+	+	+	17	7	0.35
Siganidae: 3 species	3	3	2	2	2	—	19	11	3.06
<i>Siganus argenteus</i> (Quoy & Gaimard, 1825)	+	+	+	+	+		7	5	0.68
<i>Siganus</i> cf. <i>luridus</i> (Rüppell, 1829)	+	+	+	+			9	5	2.18
<i>Siganus</i> sp.	+	+			+		3	1	0.19
Soleidae: 2 species	1	1	—	—	—	1	1	—	—
<i>Pardachirus marmoratus</i> (Lacepède, 1802)	+	+					1		
<i>Synaptura marginata</i> Boulenger, 1900						+			
Sparidae: 6 species	2	2	—	—	2	5	9	3	0.07
<i>Acanthopagrus</i> cf. <i>berda</i> (Forsskål, 1775)	+	+				+	1		
<i>Acanthopagrus bifasciatus</i> (Forsskål, 1775)	+	+			+	+	8	3	0.07
<i>Argyrops</i> cf. <i>spinifer</i> (Forsskål, 1775)						+			
<i>Crenidens indicus</i> Day, 1873						+			
<i>Diplodus sargus</i> ssp.					+				

	Entire archipelago	Socotra and Sabuniya	Samha and Darsa	Abd al-Kuri and Kal Farun	KEMP 1998 records	Other records	Record events total	Records in transects	Mean abundance
<i>Pagellus affinis</i> Boulenger, 1888						+			
Sphyraenidae: 4 species	2	2	—	—	1	2	2		
<i>Sphyraena barracuda</i> (Walbaum, 1792)	+	+			+		1		
<i>Sphyraena jello</i> Cuvier, 1829						+			
<i>Sphyraena putnamiae</i> Jordan & Seale, 1905	+	+					1		
<i>Sphyriaena genie</i> Klunzinger, 1870						+			
Sphyrnidae: 2 species	—	—	—	—	2	1			
<i>Sphyrna lewini</i> (Griffith & Smith, 1834)					+	+			
<i>Sphyrna</i> sp. 2					+				
Stegastomatidae: 1 species	—	—	—	—	1	—			
<i>Stegastoma fasciatum</i> ['varium'] (Hermann, 1783)					+				
Symphysanodontidae: 1 species	—	—	—	—	—	1			
<i>Symphysanodon anderseni</i> Kotthaus, 1974						+			
Syngnathidae: 4 species	4	4	3	2	—	—	12		
<i>Coeroichthys brachysoma</i> (Bleeker, 1855)	+	+	+	+			4		
<i>Doryramphus excisus</i> ssp.	+	+	+	+			4		
<i>Doryramphus multiannulatus</i> (Regan, 1903)	+	+					2		
gen. sp., indet.	+	+	+				2		
Synodontidae: 5 species	4	4	2	1	—	1	15	5	0.10
<i>Saurida gracilis</i> (Quoy & Gaimard, 1824)	+	+	+	+			6	2	0.03
<i>Saurida</i> sp. [juv.]	+	+					1		
<i>Synodus</i> sp.	+	+					2		
<i>Synodus variegatus</i> (Lacepède, 1803)	+	+	+				6	3	0.07
<i>Trachinocephalus myops</i> (Forster, 1801)						+			
Terapontidae: 2 species	1	1	—	—	1	2	1		
<i>Terapon jarbua</i> (Forsskål, 1775)	+	+			+	+	1		
<i>Terapon puta</i> (Cuvier, 1829)						+			
Tetraodontidae: 11 species	8	8	2	4	6	2	58	30	1.31
<i>Arothron hispidus</i> (Linnaeus, 1758)					+				
<i>Arothron meleagris</i> (Bloch & Schneider, 1801)	+	+		+	+		8	6	0.24
<i>Arothron nigropunctatus</i> (Bloch & Schneider, 1801)	+	+			+		1		
<i>Arothron stellatus</i> (Bloch & Schneider, 1801)	+	+					2		
<i>Canthigaster coronata</i> (Vaillant & Sauvage, 1875)	+	+		+	+		3	3	0.26
<i>Canthigaster solandri</i> (Richardson, 1845)	+	+	+	+	+		24	12	0.40
<i>Canthigaster valentini</i> (Bleeker, 1853)	+	+	+	+	+		18	9	0.40
<i>Canthigaster</i> sp.	+	+					1		
<i>Lagocephalus lunaris</i> (Bloch & Schneider, 1801)						+			
<i>Lagocephalus scleratus</i> (Gmelin, 1789)						+			
<i>Torquigener</i> sp. [juv.]	+	+					1		
Triacanthodidae: 1 species	—	—	—	—	—	1			
<i>Mephisto fraserbrunneri</i> Tyler, 1966						+			
Triakidae: 1 species	—	—	—	—	—	1			
<i>Mustelus mosis</i> Klunzinger, 1871						+			
Trichiuridae: 1 species	—	—	—	—	—	1			
<i>Benthodesmus tuckeri</i> Parin & Becker, 1970						+			
Tripterygiidae: 2 species	2	1	2	2	—	—	8		
<i>Helcogramma</i> spp.	+	+	+	+			6		
<i>Enneapterygius</i> spp.	+		+	+			2		
Xiphiidae: 2 species	—	—	—	—	—	2			
<i>Istiophorus platypterus</i> (Shaw & Nodder, 1792)						+			
<i>Xiphias gladius</i> Linnaeus, 1758						+			
Zanclidae: 1 species [sometimes in Acanthuridae]	1	1	1	1	1	—	40	17	1.90
<i>Zanclus cornutus</i> (Linnaeus, 1758)	+	+	+	+	+		40	17	1.90

ANNEX 2

Number of species recorded at main survey sites

Socotra (and Sabuniya)			Samha and Darsa			Abd al-Kuri and Kal Farun		
Rank	Site	Species	Rank	Site	Species	Rank	Site	Species
1	ST-367	125	1	ST-336/T-21	110	1	ST-150, ST-173	135
2	ST-149/T-14	89	2	ST-337/T-22	109	2	ST-207/T-18, ST-208	115
3	ST-063/T-5 c	86	3	ST-366/T-24	100	3	ST-150/T-15	113
4	ST-064/T-6	81	4	ST-345/T-23	97	4	ST-188	98
5	ST-068/T-8	80	5	ST-338	81	5	ST-189/T-17	96
6	ST-147, ST-148	75	6	ST-308	57	6	ST-251/T-20	93
7	ST-097/T-11	74	7	ST-267	56	7	ST-211	73
8	ST-104	73	8	ST-334	32	8	ST-238/T-19	72
9	ST-067/T-7	70				9	ST-210	70
10	ST-129/T-12	64				10	ST-151/T-16	62
11	ST-145	63				11	ST-173	46
12	ST-015	60				12	ST-190	31
13	ST-130/T-13	60						
14	ST-014	58						
15	ST-093/T-10	58						
16	ST-016	57						
17	ST-092/T-9	57						
18	ST-098	57						
19	ST-010	53						
20	ST-110	52						
21	ST-007	49						
22	ST-008	49						
23	ST-019/T-2	46						
24	ST-095	46						
25	ST-037/T-3	44						
26	ST-018/T-1	43						
27	ST-017	42						
28	ST-011	41						
29	ST-012	39						
30	ST-041/T-4	39						
31	ST-106	36						
32	ST-122	34						
33	ST-069	32						
34	ST-029	31						
35	ST-002	29						
36	ST-024	26						
37	ST-005	21						
38	ST-001	17						
39	ST-062	15						
40	ST-020	14						
41	ST-021	14						

ANNEX 3

Fish census transects – Total and relative abundance ranking

Rank	Species	Entire archipelago		Socotra		Samha and Darsa		Abd al-Kuri and Kal Farun	
		Total	Relative	Total	Relative	Total	Relative	Total	Relative
1	<i>Chromis flavaxilla</i>	13349	15.8558 %	3096	11.0072 %	6297	28.2225 %	3956	11.7211 %
2	<i>Pomacentrus caeruleus</i>	10671	12.6749 %	5382	19.1346 %	4496	20.1506 %	793	2.3496 %
3	<i>Dascyllus marginatus</i>	9605	11.4087 %	1142	4.0602 %	4224	18.9315 %	4239	12.5596 %
4	<i>Chromis weberi</i>	9161	10.8813 %	1861	6.6164 %	1396	6.2567 %	5904	17.4928 %
5	<i>Lutjanus kasmira</i>	3653	4.3390 %	2743	9.7522 %	205	0.9188 %	705	2.0888 %
6	<i>Pomacentrus leptus</i>	3614	4.2927 %	1174	4.1739 %	749	3.3569 %	1691	5.0102 %
7	<i>Rhabdamia</i>	3200	3.8009 %	—	—	—	—	3200	9.4812 %
8	<i>Siphamia versicolor</i>	2424	2.8792 %	1360	4.8352 %	96	0.4303 %	968	2.8681 %
9	<i>Caesio lunaris</i>	2391	2.8400 %	88	0.3129 %	292	1.3087 %	2011	5.9583 %
10	<i>Caesio xanthonota</i>	1811	2.1511 %	1215	4.3197 %	147	0.6588 %	449	1.3303 %
11	<i>Archamia fucata</i>	1451	1.7235 %	340	1.2088 %	33	0.1479 %	1078	3.1940 %
12	<i>Parapriacanthus ransonneti</i>	1440	1.7104 %	340	1.2088 %	—	—	1100	3.2592 %
13	<i>Zebrasoma xanthurum</i>	1263	1.5002 %	579	2.0585 %	287	1.2863 %	397	1.1763 %
14	<i>Pterocaesio chrysozona</i>	715	0.8493 %	40	0.1422 %	—	—	675	1.9999 %
15	<i>Thalassoma lunare</i>	705	0.8374 %	286	1.0168 %	160	0.7171 %	259	0.7674 %
16	<i>Odonus niger</i>	632	0.7507 %	231	0.8213 %	210	0.9412 %	191	0.5659 %
17	<i>Sufflamen fraenatus</i>	595	0.7067 %	486	1.7279 %	23	0.1031 %	86	0.2548 %
18	<i>Pomacentrus trichourus</i>	579	0.6877 %	456	1.6212 %	16	0.0717 %	107	0.3170 %
19	<i>Pseudanthias squamipinnis</i>	578	0.6865 %	65	0.2311 %	23	0.1031 %	490	1.4518 %
20	<i>Chaetodon melapterus</i>	460	0.5464 %	215	0.7644 %	96	0.4303 %	149	0.4415 %
21	<i>Myripristis murdjan</i>	447	0.5309 %	5	0.0178 %	35	0.1569 %	407	1.2059 %
22	<i>Ctenochaetus striatus</i>	443	0.5262 %	305	1.0844 %	37	0.1658 %	101	0.2993 %
23	<i>Chaetodon vagabundus pictus</i>	422	0.5012 %	197	0.7004 %	66	0.2958 %	159	0.4711 %
24	<i>Apogon cyanosoma</i>	415	0.4929 %	113	0.4017 %	281	1.2594 %	21	0.0622 %
25	<i>Macropharyngodon bipartitus</i>	385	0.4573 %	131	0.4657 %	171	0.7664 %	83	0.2459 %
26	<i>Apogon fleurieu</i>	347	0.4122 %	303	1.0773 %	—	—	44	0.1304 %
27	<i>Mulloidichthys vanicolensis</i>	345	0.4098 %	334	1.1875 %	6	0.0269 %	5	0.0148 %
28	<i>Labroides dimidiatus</i>	337	0.4003 %	183	0.6506 %	70	0.3137 %	84	0.2489 %
29	<i>Lethrinus borbonicus</i>	328	0.3896 %	134	0.4764 %	19	0.0852 %	175	0.5185 %
30	<i>Parupeneus macronema</i>	313	0.3718 %	235	0.8355 %	50	0.2241 %	28	0.0830 %
31	<i>Apogon aureus</i>	304	0.3611 %	19	0.0676 %	55	0.2465 %	230	0.6815 %
32	<i>Chrysiptera unimaculata</i>	295	0.3504 %	261	0.9279 %	2	0.0090 %	32	0.0948 %
33	<i>Lutjanus gibbus</i>	267	0.3171 %	133	0.4729 %	4	0.0179 %	130	0.3852 %
34	<i>Abudefduf vaigiensis</i>	266	0.3160 %	48	0.1707 %	—	—	218	0.6459 %
35	<i>Neopomacentrus cf. miryae</i>	264	0.3136 %	23	0.0818 %	—	—	241	0.7141 %
36	<i>Lutjanus bohar</i>	235	0.2791 %	105	0.3733 %	49	0.2196 %	81	0.2400 %
37	<i>Mulloidichthys flavolineatus</i>	228	0.2708 %	220	0.7822 %	—	—	8	0.0237 %
38	<i>Chaetodon trifascialis</i>	226	0.2684 %	26	0.0924 %	125	0.5602 %	75	0.2222 %
39	<i>Stethojulis interrupta</i>	221	0.2625 %	137	0.4871 %	50	0.2241 %	34	0.1007 %
40	<i>Neopomacentrus xanthurus</i>	217	0.2578 %	217	0.7715 %	—	—	—	—
41	<i>Scarus psittacus</i>	215	0.2554 %	—	—	—	—	215	0.6370 %
42	<i>Chrysiptera cf. sheila</i>	212	0.2518 %	193	0.6862 %	2	0.0090 %	17	0.0504 %
43	<i>Acanthurus tennentii</i>	210	0.2494 %	109	0.3875 %	58	0.2599 %	43	0.1274 %
44	<i>Caesio varilineata</i>	201	0.2387 %	30	0.1067 %	65	0.2913 %	106	0.3141 %
45	<i>Centropyge multispinnis</i>	183	0.2174 %	55	0.1955 %	69	0.3093 %	59	0.1748 %
46	<i>Acanthurus mata</i>	182	0.2162 %	—	—	—	—	182	0.5392 %
47	<i>Coris caudimaculata</i>	178	0.2114 %	8	0.0284 %	113	0.5065 %	57	0.1689 %
48	<i>Chromis dimidiata</i>	176	0.2091 %	3	0.0107 %	34	0.1524 %	139	0.4118 %
49	<i>Pseudocheilinus hexataenia</i>	172	0.2043 %	10	0.0356 %	121	0.5423 %	41	0.1215 %
50	<i>Lethrinus nebulosus</i>	171	0.2031 %	131	0.4657 %	5	0.0224 %	35	0.1037 %
51	<i>Lethrinus mahsena</i>	167	0.1984 %	90	0.3200 %	1	0.0045 %	76	0.2252 %
52	<i>Melichthys indicus</i>	166	0.1972 %	49	0.1742 %	34	0.1524 %	83	0.2459 %
53	<i>Stethojulis albovittata</i>	161	0.1912 %	7	0.0249 %	121	0.5423 %	33	0.0978 %
54	<i>Sargocentron caudimaculata</i>	159	0.1889 %	7	0.0249 %	—	—	152	0.4504 %
55	<i>Siganus cf. luridus</i>	157	0.1865 %	149	0.5297 %	2	0.0090 %	6	0.0178 %

Rank	Species	Entire archipelago		Socotra		Samha and Darsa		Abd al-Kuri and Kal Farun	
		Total	Relative	Total	Relative	Total	Relative	Total	Relative
56	<i>Dascyllus trimaculatus</i>	156	0.1853 %	117	0.4160 %	19	0.0852 %	20	0.0593 %
57	<i>Thalassoma lutescens</i>	155	0.1841 %	24	0.0853 %	80	0.3586 %	51	0.1511 %
58	<i>Pseudochromis springeri</i>	144	0.1710 %	1	0.0036 %	111	0.4975 %	32	0.0948 %
59	<i>Halichoeres nebulosus</i>	140	0.1663 %	78	0.2773 %	57	0.2555 %	5	0.0148 %
60	<i>Zanclus cornutus</i>	137	0.1627 %	68	0.2418 %	16	0.0717 %	53	0.1570 %
61	Scaridae gen. sp. 2 [juv.]	136	0.1615 %	45	0.1600 %	21	0.0941 %	70	0.2074 %
62	<i>Scolopsis ghanam</i>	129	0.1532 %	50	0.1778 %	16	0.0717 %	63	0.1867 %
63	<i>Heniochus acuminatus</i>	122	0.1449 %	89	0.3164 %	6	0.0269 %	27	0.0800 %
64	<i>Halichoeres hortulanus</i>	120	0.1425 %	30	0.1067 %	38	0.1703 %	52	0.1541 %
65	<i>Sargocentron diadema</i>	113	0.1342 %	—	—	113	0.5065 %	—	—
66	<i>Scarus ferrugineus</i>	113	0.1342 %	55	0.1955 %	17	0.0762 %	41	0.1215 %
67	<i>Pempheris</i> sp.	112	0.1330 %	—	—	28	0.1255 %	84	0.2489 %
68	<i>Chrysiptera annulata</i>	111	0.1318 %	111	0.3946 %	—	—	—	—
69	<i>Naso fageni</i>	110	0.1307 %	110	0.3911 %	—	—	—	—
70	<i>Halichoeres marginatus</i>	105	0.1247 %	47	0.1671 %	18	0.0807 %	40	0.1185 %
71	<i>Pseudochromis nigrovittatus</i>	105	0.1247 %	101	0.3591 %	4	0.0179 %	—	—
72	<i>Acanthurus</i> cf. <i>leucocheilos</i>	104	0.1235 %	2	0.0071 %	61	0.2734 %	41	0.1215 %
73	<i>Parupeneus bifasciatus</i>	104	0.1235 %	8	0.0284 %	40	0.1793 %	56	0.1659 %
74	<i>Plectorhinchus gaterinus</i>	99	0.1176 %	56	0.1991 %	24	0.1076 %	19	0.0563 %
75	<i>Ecsenius pulcher</i>	95	0.1128 %	20	0.0711 %	65	0.2913 %	10	0.0296 %
76	<i>Parupeneus rubescens</i>	93	0.1105 %	53	0.1884 %	—	—	40	0.1185 %
77	<i>Stethojulis</i> cf. <i>strigiventer</i>	88	0.1045 %	42	0.1493 %	—	—	46	0.1363 %
78	<i>Parupeneus forsskali</i>	88	0.1045 %	84	0.2986 %	4	0.0179 %	—	—
79	<i>Apolemichthys xanthotis</i>	87	0.1033 %	68	0.2418 %	2	0.0090 %	17	0.0504 %
80	<i>Sufflamen chrysopterus</i>	86	0.1021 %	55	0.1955 %	26	0.1165 %	5	0.0148 %
81	<i>Chlorurus sordidus</i>	83	0.0986 %	5	0.0178 %	2	0.0090 %	76	0.2252 %
82	<i>Cephalopholis miniata</i>	79	0.0938 %	19	0.0676 %	17	0.0762 %	43	0.1274 %
83	<i>Ecsenius</i> sp.	78	0.0926 %	1	0.0036 %	77	0.3451 %	—	—
84	<i>Cephalopholis argus</i>	78	0.0926 %	35	0.1244 %	24	0.1076 %	19	0.0563 %
85	<i>Plagiotremus rhinorhynchos</i>	72	0.0855 %	36	0.1280 %	14	0.0627 %	22	0.0652 %
86	<i>Lutjanus ebnbergii</i>	72	0.0855 %	42	0.1493 %	—	—	30	0.0889 %
87	<i>Cheilodipterus macrodon</i>	68	0.0808 %	3	0.0107 %	61	0.2734 %	4	0.0119 %
88	<i>Gomphosus caeruleus</i>	68	0.0808 %	13	0.0462 %	29	0.1300 %	26	0.0770 %
89	<i>Cheilodipterus arabicus</i>	67	0.0796 %	31	0.1102 %	17	0.0762 %	19	0.0563 %
90	<i>Acanthurus dussumieri</i>	66	0.0784 %	40	0.1422 %	15	0.0672 %	11	0.0326 %
91	<i>Epinephelus fasciatus</i>	66	0.0784 %	11	0.0391 %	29	0.1300 %	26	0.0770 %
92	<i>Halichoeres iridis</i>	64	0.0760 %	—	—	56	0.2510 %	8	0.0237 %
93	<i>Lutjanus coeruleolineatus</i>	64	0.0760 %	—	—	—	—	64	0.1896 %
94	<i>Acanthurus nigrofuscus</i>	62	0.0736 %	49	0.1742 %	13	0.0583 %	—	—
95	<i>Halichoeres dussumieri</i>	61	0.0725 %	3	0.0107 %	53	0.2375 %	5	0.0148 %
96	<i>Lutjanus lunulatus</i>	60	0.0713 %	60	0.2133 %	—	—	—	—
97	<i>Parupeneus cyclostomus</i>	59	0.0701 %	14	0.0498 %	10	0.0448 %	35	0.1037 %
98	<i>Cheilodipterus quinquelineatus</i>	58	0.0689 %	58	0.2062 %	—	—	—	—
99	<i>Pomacanthus imperator</i>	58	0.0689 %	22	0.0782 %	23	0.1031 %	13	0.0385 %
100	<i>Larabicus quadrilineatus</i>	57	0.0677 %	57	0.2027 %	—	—	—	—
101	<i>Anampses lineatus</i>	56	0.0665 %	10	0.0356 %	28	0.1255 %	18	0.0533 %
102	<i>Coris frerei</i>	54	0.0641 %	16	0.0569 %	18	0.0807 %	20	0.0593 %
103	<i>Naso lituratus</i>	52	0.0618 %	37	0.1315 %	11	0.0493 %	4	0.0119 %
104	<i>Siganus argenteus</i>	49	0.0582 %	40	0.1422 %	4	0.0179 %	5	0.0148 %
105	<i>Leptojulius</i> cf. <i>cyanopleura</i>	46	0.0546 %	46	0.1635 %	—	—	—	—
106	<i>Caranx heberi</i>	44	0.0523 %	44	0.1564 %	—	—	—	—
107	<i>Lutjanus monostigma</i>	44	0.0523 %	5	0.0178 %	29	0.1300 %	10	0.0296 %
108	<i>Scarus rubroviolaceus</i>	43	0.0511 %	12	0.0427 %	17	0.0762 %	14	0.0415 %
109	<i>Acanthurus gabbm</i>	41	0.0487 %	39	0.1387 %	—	—	2	0.0059 %
110	Scaridae gen. sp. 1 [juv.]	41	0.0487 %	3	0.0107 %	24	0.1076 %	14	0.0415 %
111	<i>Hologymnosus diolatus</i>	39	0.0463 %	8	0.0284 %	25	0.1120 %	6	0.0178 %
112	<i>Pseudochromis</i> cf. <i>linda</i>	39	0.0463 %	—	—	25	0.1120 %	14	0.0415 %
113	<i>Scarus niger</i>	39	0.0463 %	16	0.0569 %	6	0.0269 %	17	0.0504 %
114	<i>Caranx melampygus</i>	37	0.0439 %	26	0.0924 %	7	0.0314 %	4	0.0119 %
115	<i>Amblyeleotris wheeleri</i>	37	0.0439 %	—	—	32	0.1434 %	5	0.0148 %

Rank	Species	Entire archipelago		Socotra		Samha and Darsa		Abd al-Kuri and Kal Farun	
		Total	Relative	Total	Relative	Total	Relative	Total	Relative
116	<i>Scarus</i> sp. 1	37	0.0439 %	37	0.1315 %	—	—	—	—
117	<i>Cirripectes castaneus</i>	36	0.0428 %	36	0.1280 %	—	—	—	—
118	<i>Dermatolepis striolatus</i>	36	0.0428 %	—	—	1	0.0045 %	35	0.1037 %
119	<i>Chaetodon lunula</i>	35	0.0416 %	9	0.0320 %	21	0.0941 %	5	0.0148 %
120	<i>Lutjanus fulvivlammus</i>	35	0.0416 %	19	0.0676 %	16	0.0717 %	—	—
121	<i>Pseudanthias marcia</i>	34	0.0404 %	—	—	—	—	34	0.1007 %
122	<i>Esenius nalolo</i>	33	0.0392 %	—	—	23	0.1031 %	10	0.0296 %
123	<i>Sargocentron seychellense</i>	33	0.0392 %	10	0.0356 %	8	0.0359 %	15	0.0444 %
124	<i>Lutjanus bengalensis</i>	33	0.0392 %	—	—	33	0.1479 %	—	—
125	<i>Ptereleotris</i> sp.	33	0.0392 %	32	0.1138 %	1	0.0045 %	—	—
126	<i>Esenius frontalis</i>	32	0.0380 %	32	0.1138 %	—	—	—	—
127	<i>Anampses meleagris</i>	32	0.0380 %	14	0.0498 %	8	0.0359 %	10	0.0296 %
128	<i>Caesio</i> sp.	30	0.0356 %	—	—	—	—	30	0.0889 %
129	<i>Thalassoma</i> cf. <i>amblycephalum</i>	30	0.0356 %	3	0.0107 %	—	—	27	0.0800 %
130	<i>Chromis pembae</i>	30	0.0356 %	30	0.1067 %	—	—	—	—
131	<i>Halichoeres cosmetus</i>	29	0.0344 %	—	—	17	0.0762 %	12	0.0356 %
132	<i>Parupeneus barberinus</i>	29	0.0344 %	10	0.0356 %	3	0.0134 %	16	0.0474 %
133	<i>Neopomacentrus cyanomos</i>	29	0.0344 %	29	0.1031 %	—	—	—	—
134	<i>Canthigaster solandri</i>	29	0.0344 %	22	0.0782 %	3	0.0134 %	4	0.0119 %
135	<i>Canthigaster valentini</i>	29	0.0344 %	7	0.0249 %	5	0.0224 %	17	0.0504 %
136	<i>Cirrhitilabrus exquisitus</i>	28	0.0333 %	—	—	28	0.1255 %	—	—
137	<i>Thalassoma</i> cf. <i>hebraicum</i>	28	0.0333 %	10	0.0356 %	3	0.0134 %	15	0.0444 %
138	<i>Pomacentrus</i> cf. <i>aquilus</i>	28	0.0333 %	24	0.0853 %	4	0.0179 %	—	—
139	<i>Naso unicornis</i>	25	0.0297 %	21	0.0747 %	4	0.0179 %	—	—
140	<i>Priacanthus hamrur</i>	25	0.0297 %	25	0.0889 %	—	—	—	—
141	<i>Variola louti</i>	25	0.0297 %	—	—	6	0.0269 %	19	0.0563 %
142	<i>Balistapus undulatus</i>	24	0.0285 %	11	0.0391 %	6	0.0269 %	7	0.0207 %
143	<i>Plagiotremus tapeinosoma</i>	24	0.0285 %	6	0.0213 %	16	0.0717 %	2	0.0059 %
144	<i>Sargocentron</i> sp.	24	0.0285 %	6	0.0213 %	—	—	18	0.0533 %
145	<i>Chaetodon gardineri</i>	23	0.0273 %	11	0.0391 %	—	—	12	0.0356 %
146	<i>Halichoeres</i> cf. <i>zeylonicus</i> / <i>pelicierei</i>	23	0.0273 %	23	0.0818 %	—	—	—	—
147	<i>Paracheilinus octotaenia</i>	23	0.0273 %	—	—	—	—	23	0.0681 %
148	<i>Parapercis hexophthalma</i>	23	0.0273 %	10	0.0356 %	1	0.0045 %	12	0.0356 %
149	<i>Diodon holacanthus</i>	22	0.0261 %	22	0.0782 %	—	—	—	—
150	<i>Plagiotremus townsendi</i>	21	0.0249 %	4	0.0142 %	17	0.0762 %	—	—
151	<i>Gnathanodon speciosus</i>	21	0.0249 %	—	—	21	0.0941 %	—	—
152	<i>Cheilinus lunulatus</i>	21	0.0249 %	3	0.0107 %	13	0.0583 %	5	0.0148 %
153	<i>Coris gaimard cuvieri</i>	21	0.0249 %	10	0.0356 %	3	0.0134 %	8	0.0237 %
154	<i>Chaetodon leucopleura</i>	20	0.0238 %	17	0.0604 %	—	—	3	0.0089 %
155	<i>Pteragogus flagellifer</i>	20	0.0238 %	13	0.0462 %	1	0.0045 %	6	0.0178 %
156	<i>Carangoides</i> cf. <i>ferdau</i>	19	0.0226 %	19	0.0676 %	—	—	—	—
157	<i>Pomacanthus semicirculatus</i>	19	0.0226 %	4	0.0142 %	6	0.0269 %	9	0.0267 %
158	<i>Epinephelus flavocaeruleus</i>	19	0.0226 %	11	0.0391 %	—	—	8	0.0237 %
159	<i>Canthigaster coronata</i>	19	0.0226 %	14	0.0498 %	—	—	5	0.0148 %
160	<i>Plectroglyphidodon johnstonianus</i>	18	0.0214 %	—	—	12	0.0538 %	6	0.0178 %
161	<i>Acanthurus</i> cf. <i>nigricauda</i>	17	0.0202 %	17	0.0604 %	—	—	—	—
162	<i>Cheilo inermis</i>	17	0.0202 %	7	0.0249 %	8	0.0359 %	2	0.0059 %
163	<i>Monotaxis grandoculis</i>	17	0.0202 %	14	0.0498 %	1	0.0045 %	2	0.0059 %
164	<i>Arothron meleagris</i>	17	0.0202 %	6	0.0213 %	—	—	11	0.0326 %
165	<i>Bodianus diana</i>	16	0.0190 %	9	0.0320 %	2	0.0090 %	5	0.0148 %
166	<i>Lutjanus argentimaculatus</i>	16	0.0190 %	7	0.0249 %	1	0.0045 %	8	0.0237 %
167	<i>Pempheris vanicolensis</i>	16	0.0190 %	—	—	—	—	16	0.0474 %
168	<i>Plectropomus punctatus</i>	16	0.0190 %	—	—	2	0.0090 %	14	0.0415 %
169	<i>Naso brevirostris</i>	15	0.0178 %	9	0.0320 %	6	0.0269 %	—	—
170	<i>Chaetodon kleinii</i>	15	0.0178 %	—	—	8	0.0359 %	7	0.0207 %
171	<i>Halichoeres scapularis</i>	15	0.0178 %	11	0.0391 %	4	0.0179 %	—	—
172	<i>Hemigymnus fasciatus</i>	15	0.0178 %	—	—	9	0.0403 %	6	0.0178 %
173	<i>Siganus</i> sp.	14	0.0166 %	14	0.0498 %	—	—	—	—
174	<i>Acanthurus</i> cf. <i>thompsoni</i>	13	0.0154 %	12	0.0427 %	1	0.0045 %	—	—

Rank	Species	Entire archipelago		Socotra		Samha and Darsa		Abd al-Kuri and Kal Farun	
		Total	Relative	Total	Relative	Total	Relative	Total	Relative
175	<i>Cheilinus oxycephalus</i>	13	0.0154 %	11	0.0391 %	—	—	2	0.0059 %
176	<i>Coris aygula</i>	13	0.0154 %	3	0.0107 %	8	0.0359 %	2	0.0059 %
177	<i>Pseudochromis</i> sp.	13	0.0154 %	—	—	9	0.0403 %	4	0.0119 %
178	<i>Halichoers</i> cf. <i>stigmaticus</i>	12	0.0143 %	12	0.0427 %	—	—	—	—
179	<i>Zebrasoma veliferum</i>	11	0.0131 %	5	0.0178 %	2	0.0090 %	4	0.0119 %
180	<i>Anampses caeruleopunctatus</i>	11	0.0131 %	2	0.0071 %	7	0.0314 %	2	0.0059 %
181	<i>Ptereleotris monoptera</i>	11	0.0131 %	11	0.0391 %	—	—	—	—
182	<i>Parupeneus indicus</i>	11	0.0131 %	11	0.0391 %	—	—	—	—
183	<i>Chlorurus stronglylocephalus</i>	11	0.0131 %	—	—	9	0.0403 %	2	0.0059 %
184	<i>Naso</i> cf. <i>thynnoides</i>	10	0.0119 %	10	0.0356 %	—	—	—	—
185	<i>Cirrhitichthys calliurus</i>	10	0.0119 %	1	0.0036 %	5	0.0224 %	4	0.0119 %
186	<i>Cirrhitichthys oxycephalus</i>	10	0.0119 %	2	0.0071 %	3	0.0134 %	5	0.0148 %
187	<i>Bodianus macrognathos</i>	10	0.0119 %	8	0.0284 %	—	—	2	0.0059 %
188	<i>Upeneus tragula</i>	10	0.0119 %	10	0.0356 %	—	—	—	—
189	<i>Plectroglyphidodon lacrymatus</i>	10	0.0119 %	—	—	2	0.0090 %	8	0.0237 %
190	<i>Epinephelus chlorostigma</i>	10	0.0119 %	10	0.0356 %	—	—	—	—
191	<i>Chaetodon auriga</i>	9	0.0107 %	—	—	6	0.0269 %	3	0.0089 %
192	<i>Paracirrhites forsteri</i>	9	0.0107 %	—	—	8	0.0359 %	1	0.0030 %
193	<i>Fistularia commersoni</i>	9	0.0107 %	4	0.0142 %	5	0.0224 %	—	—
194	<i>Cheilinus fasciatus</i>	9	0.0107 %	3	0.0107 %	—	—	6	0.0178 %
195	<i>Labroides bicolor</i>	9	0.0107 %	—	—	6	0.0269 %	3	0.0089 %
196	<i>Cantherines pardalis</i>	9	0.0107 %	3	0.0107 %	6	0.0269 %	—	—
197	<i>Ctenochaetus strigosus</i>	8	0.0095 %	—	—	2	0.0090 %	6	0.0178 %
198	<i>Bodianus axillaris</i>	8	0.0095 %	3	0.0107 %	2	0.0090 %	3	0.0089 %
199	<i>Lethrinus microdon</i>	8	0.0095 %	—	—	4	0.0179 %	4	0.0119 %
200	<i>Lethrinus obsoletus</i>	8	0.0095 %	—	—	—	—	8	0.0237 %
201	<i>Scolopsis</i> sp.	8	0.0095 %	8	0.0284 %	—	—	—	—
202	<i>Scarus ghobban</i>	8	0.0095 %	—	—	8	0.0359 %	—	—
203	<i>Cephalopholis sonnerati</i>	8	0.0095 %	8	0.0284 %	—	—	—	—
204	<i>Acanthurus leucosternon</i>	7	0.0083 %	—	—	2	0.0090 %	5	0.0148 %
205	<i>Chaetodon guttatissimus</i>	7	0.0083 %	—	—	—	—	7	0.0207 %
206	<i>Cryptocentrus lutheri</i>	7	0.0083 %	7	0.0249 %	—	—	—	—
207	<i>Plectorhinchus flavomaculatus</i>	7	0.0083 %	6	0.0213 %	—	—	1	0.0030 %
208	<i>Plectorhinchus schotaf</i>	7	0.0083 %	6	0.0213 %	1	0.0045 %	—	—
209	<i>Plectorhinchus sordidus</i>	7	0.0083 %	7	0.0249 %	—	—	—	—
210	<i>Plectorhinchus</i> sp. [juv.]	7	0.0083 %	7	0.0249 %	—	—	—	—
211	<i>Anampses twistii</i>	7	0.0083 %	—	—	5	0.0224 %	2	0.0059 %
212	<i>Parupeneus pleurostigma</i>	7	0.0083 %	7	0.0249 %	—	—	—	—
213	<i>Siderea grisea</i>	7	0.0083 %	3	0.0107 %	2	0.0090 %	2	0.0059 %
214	<i>Plectroglyphidodon leucozona</i> cf. <i>cingulum</i>	7	0.0083 %	7	0.0249 %	—	—	—	—
215	<i>Aethaloperca rogae</i>	7	0.0083 %	4	0.0142 %	1	0.0045 %	2	0.0059 %
216	<i>Acanthurus</i> cf. <i>nigricans</i>	6	0.0071 %	5	0.0178 %	—	—	1	0.0030 %
217	<i>Plectorhinchus pictus</i>	6	0.0071 %	1	0.0036 %	4	0.0179 %	1	0.0030 %
218	<i>Thalassoma</i> cf. <i>hardwicke</i>	6	0.0071 %	4	0.0142 %	—	—	2	0.0059 %
219	<i>Pseudochromis</i> cf. <i>punctatus</i>	6	0.0071 %	—	—	6	0.0269 %	—	—
220	<i>Naso brachycentron</i>	5	0.0059 %	3	0.0107 %	—	—	2	0.0059 %
221	<i>Cheilodipterus</i> cf. <i>artus</i>	5	0.0059 %	5	0.0178 %	—	—	—	—
222	<i>Chaetodon</i> cf. <i>mesoleucos</i>	5	0.0059 %	5	0.0178 %	—	—	—	—
223	<i>Amblyeleotris sungami</i>	5	0.0059 %	—	—	4	0.0179 %	1	0.0030 %
224	<i>Istigobius decoratus</i>	5	0.0059 %	—	—	5	0.0224 %	—	—
225	<i>Lutjanus fulvus</i>	5	0.0059 %	5	0.0178 %	—	—	—	—
226	<i>Lutjanus rivulatus</i>	5	0.0059 %	—	—	—	—	5	0.0148 %
227	<i>Ptereleotris evides</i>	5	0.0059 %	3	0.0107 %	2	0.0090 %	—	—
228	<i>Gymnothorax favagineus</i>	5	0.0059 %	—	—	3	0.0134 %	2	0.0059 %
229	<i>Scomberomorus commerson</i>	5	0.0059 %	2	0.0071 %	2	0.0090 %	1	0.0030 %
230	<i>Acanthopagrus bifasciatus</i>	5	0.0059 %	5	0.0178 %	—	—	—	—
231	<i>Synodus variegatus</i>	5	0.0059 %	5	0.0178 %	—	—	—	—
232	<i>Zebrasoma</i> cf. <i>scopas</i>	4	0.0048 %	4	0.0142 %	—	—	—	—
233	<i>Chaetodon melannotus</i>	4	0.0048 %	2	0.0071 %	—	—	2	0.0059 %

Rank	Species	Entire archipelago		Socotra		Samha and Darsa		Abd al-Kuri and Kal Farun	
		Total	Relative	Total	Relative	Total	Relative	Total	Relative
234	<i>Platax orbicularis</i>	4	0.0048 %	—	—	—	—	4	0.0119 %
235	<i>Coryopterus</i> sp.	4	0.0048 %	—	—	4	0.0179 %	—	—
236	<i>Cryptocentrus</i> sp.	4	0.0048 %	4	0.0142 %	—	—	—	—
237	<i>Hologymnosus annulatus</i>	4	0.0048 %	—	—	4	0.0179 %	—	—
238	<i>Pteragogus scriptus</i>	4	0.0048 %	—	—	—	—	4	0.0119 %
239	<i>Scolopsis taeniatus</i>	4	0.0048 %	4	0.0142 %	—	—	—	—
240	<i>Ostracion cubicus</i>	4	0.0048 %	—	—	1	0.0045 %	3	0.0089 %
241	<i>Dascyllus carneus</i>	4	0.0048 %	—	—	4	0.0179 %	—	—
242	<i>Pseudochromis</i> cf. <i>dixurus</i>	4	0.0048 %	4	0.0142 %	—	—	—	—
243	<i>Pseudochromis leucorhynchus</i>	4	0.0048 %	4	0.0142 %	—	—	—	—
244	<i>Meiacanthus</i> sp.	3	0.0036 %	2	0.0071 %	1	0.0045 %	—	—
245	<i>Eviota seebrei</i>	3	0.0036 %	—	—	—	—	3	0.0089 %
246	<i>Cirrhilabrus</i> sp. 2	3	0.0036 %	—	—	3	0.0134 %	—	—
247	<i>Pseudodax moluccanus</i>	3	0.0036 %	—	—	—	—	3	0.0089 %
248	<i>Lethrinus variegatus</i>	3	0.0036 %	3	0.0107 %	—	—	—	—
249	<i>Pristipomoides</i> cf. <i>filamentosus</i>	3	0.0036 %	—	—	—	—	3	0.0089 %
250	<i>Parapercis punctulata</i>	3	0.0036 %	—	—	3	0.0134 %	—	—
251	<i>Neoglyphidodon melas</i>	3	0.0036 %	3	0.0107 %	—	—	—	—
252	<i>Acanthurus sohal</i>	2	0.0024 %	2	0.0071 %	—	—	—	—
253	<i>Naso tuberosus</i>	2	0.0024 %	—	—	—	—	2	0.0059 %
254	<i>Balistoides conspicillum</i>	2	0.0024 %	—	—	—	—	2	0.0059 %
255	<i>Aspinodontus taeniatus taeniatus</i>	2	0.0024 %	—	—	—	—	2	0.0059 %
256	<i>Caranx</i> cf. <i>ignobilis</i>	2	0.0024 %	—	—	—	—	2	0.0059 %
257	<i>Chaetodon collare</i>	2	0.0024 %	—	—	—	—	2	0.0059 %
258	<i>Chaetodon</i> cf. <i>zanzibariensis</i>	2	0.0024 %	—	—	—	—	2	0.0059 %
259	<i>Taeniura meyeri</i>	2	0.0024 %	2	0.0071 %	—	—	—	—
260	<i>Elops machnata</i>	2	0.0024 %	—	—	2	0.0090 %	—	—
261	<i>Platax teira</i>	2	0.0024 %	2	0.0071 %	—	—	—	—
262	<i>Eviota guttata</i>	2	0.0024 %	—	—	2	0.0090 %	—	—
263	<i>Gobiodon citrinus</i>	2	0.0024 %	—	—	2	0.0090 %	—	—
264	cf. <i>Gomphosus varius</i>	2	0.0024 %	2	0.0071 %	—	—	—	—
265	<i>Cirrhilabrus</i> cf. <i>rubriventralis</i>	2	0.0024 %	—	—	2	0.0090 %	—	—
266	<i>Oxycheilinus</i> sp.	2	0.0024 %	2	0.0071 %	—	—	—	—
267	<i>Lutjanus quinquelineatus</i>	2	0.0024 %	2	0.0071 %	—	—	—	—
268	<i>Gymnothorax</i> cf. <i>flavimarginatus</i>	2	0.0024 %	—	—	2	0.0090 %	—	—
269	<i>Amphiprion bicinctus</i>	2	0.0024 %	—	—	—	—	2	0.0059 %
270	<i>Amphiprion</i> cf. <i>chagosensis</i>	2	0.0024 %	—	—	—	—	2	0.0059 %
271	<i>Chrysiptera</i> cf. <i>springeri</i>	2	0.0024 %	2	0.0071 %	—	—	—	—
272	<i>Pterois antennata</i>	2	0.0024 %	—	—	—	—	2	0.0059 %
273	<i>Cephalopholis hemistiktos</i>	2	0.0024 %	—	—	—	—	2	0.0059 %
274	<i>Epinephelus gabriellae</i>	2	0.0024 %	2	0.0071 %	—	—	—	—
275	<i>Epinephelus stoliczkae</i>	2	0.0024 %	2	0.0071 %	—	—	—	—
276	<i>Saurida gracilis</i>	2	0.0024 %	—	—	1	0.0045 %	1	0.0030 %
277	<i>Naso</i> cf. <i>annulatus</i>	1	0.0012 %	1	0.0036 %	—	—	—	—
278	<i>Naso hexacanthus</i>	1	0.0012 %	—	—	—	—	1	0.0030 %
279	<i>Apogon natalensis</i>	1	0.0012 %	1	0.0036 %	—	—	—	—
280	<i>Aspinodontus dussumieri</i>	1	0.0012 %	—	—	—	—	1	0.0030 %
281	<i>Meiacanthus nigrolineatus</i>	1	0.0012 %	1	0.0036 %	—	—	—	—
282	<i>Triaenodon obesus</i>	1	0.0012 %	—	—	—	—	1	0.0030 %
283	<i>Chaetodon trifasciatus</i>	1	0.0012 %	—	—	1	0.0045 %	—	—
284	<i>Forcipiger flavissimus</i>	1	0.0012 %	1	0.0036 %	—	—	—	—
285	gen. sp., indet.	1	0.0012 %	1	0.0036 %	—	—	—	—
286	<i>Plectorhynchus gibbosus</i>	1	0.0012 %	1	0.0036 %	—	—	—	—
287	<i>Bodianus bilunulatus bilunulatus</i>	1	0.0012 %	—	—	—	—	1	0.0030 %
288	<i>Thalassoma</i> cf. <i>rueppellii</i>	1	0.0012 %	1	0.0036 %	—	—	—	—
289	<i>Lethrinus harak</i>	1	0.0012 %	1	0.0036 %	—	—	—	—
290	<i>Lethrinus</i> cf. <i>olivaceus</i>	1	0.0012 %	—	—	1	0.0045 %	—	—
291	<i>Aprion virescens</i>	1	0.0012 %	—	—	1	0.0045 %	—	—
292	<i>Macolor niger</i>	1	0.0012 %	1	0.0036 %	—	—	—	—
293	<i>Malacanthus latovittatus</i>	1	0.0012 %	1	0.0036 %	—	—	—	—

Rank	Species	Entire archipelago		Socotra		Samha and Darsa		Abd al-Kuri and Kal Farun	
		Total	Relative	Total	Relative	Total	Relative	Total	Relative
294	<i>Pomacanthus maculosus</i>	1	0.0012 %	1	0.0036 %	—	—	—	—
295	<i>Amphiprion omanensis</i>	1	0.0012 %	1	0.0036 %	—	—	—	—
296	<i>Scarus</i> cf. <i>tricolor</i>	1	0.0012 %	—	—	—	—	1	0.0030 %
297	<i>Pterois</i> sp.	1	0.0012 %	—	—	—	—	1	0.0030 %
298	<i>Cephalopholis sexmaculata</i>	1	0.0012 %	1	0.0036 %	—	—	—	—
299	<i>Epinephelus tukula</i>	1	0.0012 %	—	—	—	—	1	0.0030 %
Total:		84190		28127		22312		33751	

ANNEX 4

Ecological classification of the 30 most frequently recorded and the 30 most abundant species

The species are ranked in order of abundance first and then in order of frequency.

- Diu = Diurnal reef dwellers
- Cryp = Cryptic reef dwellers
- Noct = Nocturnal reef dwellers
- Dem = Demersal species
- InEp = Inshore epipelagic species
- Pel = Pelagic species
- Omn = Omnivores
- H/D = Herbivores and detritivores
- Car = Carnivores, total
- C Ne = carnivorous on nekton
- C Zp = carnivorous on zooplankton
- C Zb = carnivorous on zoobenthos
- C Cp = carnivorous on Coral polyps
- C o/u = carnivorous on other/unknown

	Habitat and behavioural categories										Trophic categories										Abundance	Records	Remarks
	Diu	Cryp	Noct	Dem	InEp	Pel	Omn	H/D	Car	CNe	CZp	CZb	CCp	Co/u									
1	1							1			1				15.86	30	Shelters in branching corals						
2	1					1									12.67	51							
3	1					1									11.41	35	Usually associated with the corals <i>Sylophora pistillata</i> , <i>S. welshi</i> , species of <i>Acropora</i> and <i>Porites</i>						
4	1							1			1				10.88	47							
5	1							1	0.33	0.33	0.33				4.34		Occasionally takes benthic seaweed						
6	1					1									4.29	44							
7	1							1		0.5	0.5				3.80								
8		1												1	2.88		A rare species occurring in small groups exclusively among the spines of <i>Diadema setosum</i> in shallow sheltered waters						
9					1										2.84								
10					1										2.15								
11			1												1.72								
12			1												1.71								
13	1							1							1.50	45							
14					1										0.85								
15	1							1	0.5	0.5					0.84	48							
16	1							1		0.5	0.5				0.75								
17				1											0.71	47	Occasionally takes benthic seaweed						
18	1														0.69								
19	1					1									0.69		Research diet						
20	1							1					1		0.55	35							
21	1							1							0.53	27	Occasionally takes small invertebrates						
22				1											0.53								
23	1					1									0.50	50							
24			1												0.49	27							

