



Fishes of the State of Kuwait

Common commercial
species caught in
coastal territorial waters

Amani S.Y. Al-Zaidan



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IUCN is pleased to acknowledge the support of its Framework Partners who provide core funding: Ministry of Foreign Affairs of Denmark; Ministry for Foreign Affairs of Finland; Government of France and the French Development Agency (AFD); the Ministry of Environment, Republic of Korea; the Norwegian Agency for Development Cooperation (Norad); the Swedish International Development Cooperation Agency (Sida); the Swiss Agency for Development and Cooperation (SDC) and the United States Department of State.

This publication was developed through the project "Monitoring and documentation of Biodiversity in Kuwait", executed by IUCN Regional Office for West Asia in partnership with Environment Public Authority of Kuwait (EPA of Kuwait), and funded by the State of Kuwait.

Published by: IUCN, Gland, Switzerland and Environmental Public Authority, Kuwait, State of Kuwait

Produced by: IUCN Regional Office for West Asia (ROWA)

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Recommended citation: Al-Zaidan, Amani S.Y (2022). *Fishes of the State of Kuwait: Common commercial species caught in coastal territorial waters*. Gland, Switzerland: IUCN and Kuwait, State of Kuwait: Environment Public Authority.

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Acknowledgments

The completion of this project within the allocated period would not have been possible without the support received from many individuals and organisations. Sincere thanks is extended to all concerned.

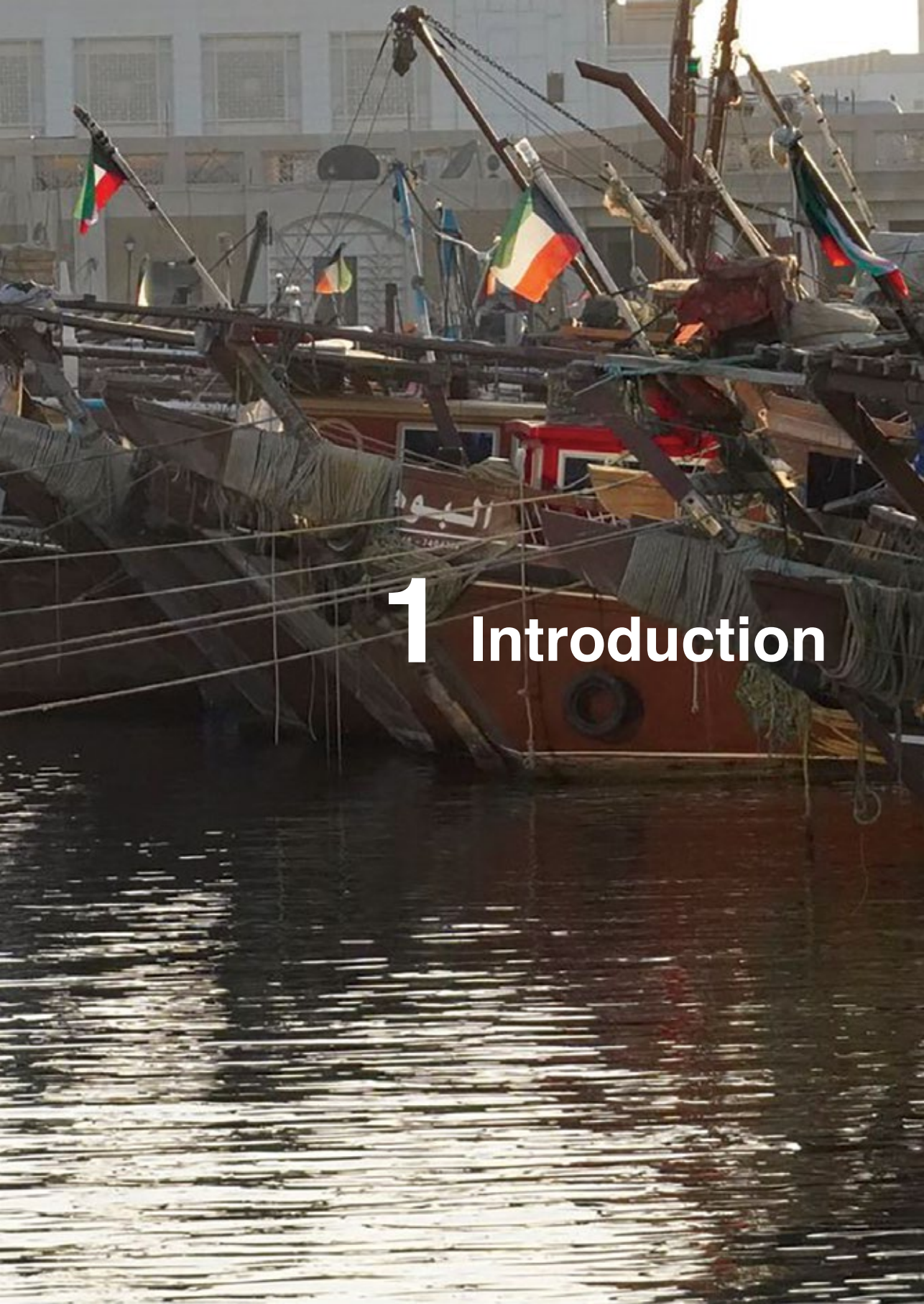
Our deepest appreciation goes out to Environment Public Authority of Kuwait (EPA) represented by the Director General Sheikh Abdullah Al-Ahmad Al-Humoud Al-Sabah, and the Deputy Director General of Technical Affairs Dr. Abdullah Salem Al-Zaidan for their continued and gratifying support. We thank the Head of the Biodiversity Conservation Department Mrs. Lina Al-Awadhi, and the Head of Wildlife Monitoring Ms. Shereefa Al-Salem for initiating such documentation which aims towards the conservation of biodiversity in the State of Kuwait.

Sincere gratitude is extended to IUCN ROWA represented by its Regional Director Dr. Hany El Shaer for granting us this consultation opportunity; the project's support staff mainly the Protected Areas, World Heritage and Biodiversity Programme Manager Eng. Natalia Boulad and the Programme Assistant Eng. Hanna Haddad for their guidance, constant supervision and patience. We appreciate the effort put through by the project's assessment leader Dr. Zuhair Amr for his thorough reviewing of the document and valued feedback supporting the project's vision.

Special appreciation and gratitude is extended to the project team and staff of the Marine Organisms Monitoring Section at the Biodiversity Conservation Department (EPA), represented by Mrs. Asma Al-Sarawi Head of Marine Monitoring and her dedicated staff: Aisha Al-Marhoun, Wafeyah Al-Oqab, Hamad Al-Qadaifi, Jumana Al-Khamees, Skena Bo-Olayan, Shrouq Al-Marzooq, Haya Al-Handi, Ghader Al-Hindi, Shouq Al-Hay and Hala Halawa. The project team was optimistic and enthusiastically providing constant support. Our deepest gratitude goes out to Ms. Aisha Al-Marhoun who worked diligently in guiding her fellow team members and providing constructive comments and insight that immensely enhanced the content of this document. Also, thanks to Mrs. Panayiota Kutulas for her effort in copy-editing and proofreading the document.

We thank the National Council for Culture, Arts and Literature (NCCAL) in Kuwait for facilitating access to the displayed boats at the Maritime Museum which aided in the production of line illustrations. Special thanks goes out to the talented illustrator Ms. Marie-Noelle Al-Yaqout for production of the line illustrations at such short notice. We would like to express gratitude towards our families and friends for their continued encouragement and support.





1 Introduction

1 Introduction

Kuwait's fishing history

Kuwait is a maritime nation, with fishing being an essential part of its traditional heritage. During the pre-oil era (prior to the 1950's) many locals practiced sustainable fishing since it was the main source of income and fish was the most affordable source of protein for commoners. Then, artisanal fishing was conducted either by individuals fishing onshore using hooked hand-lines (*Hadag*: local term for line fishing) (Figure 1) and small handmade cast nets (*Saliyah*) (Figure 2) or using locally-made wooden sail boats (*Al-Warjiyah* & *Al-Shoue*) to catch fish from nearby territorial waters, mainly from the vicinity of Failaka Island, southern and northern coastal waters, using hand-lines/nets and/or dome traps (Figure 3 & 4). Stake traps (*Hadhrah*) fixed along the coastline and accessed during low-tide were also a common method of fishing (Figure 5) (Al-Hijji, 2010). The harvest was sold directly in the fish market's auction which starts directly after dawn prayer. During seasons of high catch fishermen would salt dry (salting method) the excess fish either to sell to neighbouring villages/countries or to store and consume during seasons of low fish yield. The oil surge during the late 1930's led to socioeconomic development within the State which occurred during what is referred to as the golden era (1940's –1980's); this in turn led many locals to abandon the fishing trade and alternatively seek government jobs for higher and more secure income (Jamal, 2003). As boats became motorised and modern fishing gear was introduced, fishing became commercialised. The fishing fleet included industrial shrimp fishing fleet, artisanal dhow fleet (traditional wooden boats) and the small speedboat fleet (fibreglass and steel boats).

According to historical records, the first fish market "*Souk Al-Samak*" existed in 1866. It was an open market located along "*Al-Seef*", the beach opposite to the location of Kuwait Central Bank today. In 1892, the Al-Seef fish market was shifted to Al-Qiblah area where several covered souks holding various merchandise

occurred, this market later became part of the traditional old souk known as Al-Mubarakiya which exists to-date as part of the renovated Mubarakiya Souk (Jamal, 2004). The second oldest fish market existed in the early 1900's (pre-oil era) coinciding with the establishment of Al-Fahaheel Village; one of the largest and most populated villages situated along the southern coast of Kuwait. In association with the village existed Fahaheel fish market, an open market adjacent to "*Niga'at Al-Fahaheel*": a docking-yard "*niga'a*" نقعة for fishing boats and pearl-diving fleet. It retained its location throughout the golden era and was developed into a covered market with organised and licensed stalls. In 2005 it became part of the currently existing waterfront shopping mall called Al-kout yet still holds its location within the vicinity of Al-Fahaheel docking yard. In 1998, a new fish market was established in Sharq area, near to Niga'at Al-Shamlan, and is part of the Souq Sharq Shopping Mall.

Fisheries management in Kuwait

The use of motorised vessels by artisanal anglers and the establishment of the first industrial fisheries company in the early 1970's raised the concern of the government regarding sustainability of local fisheries resources. Accordingly, in 1980, a decree was released to conserve fisheries resources (decree no. 46 of 1980). In 1983, the Public Authority of Agriculture Affairs and Fish Resources (PAAF) was established under Amiri Decree No. 94 of 1983, and one of its main objectives involved managing local fisheries resources through (a) protecting and controlling fishing activities, particularly for species subjected to high demand and (b) maintaining fish catches at sustainable levels to avoid recruitment collapse. In subsequent years, various decrees regarding fisheries, in addition to 46 of 1980, were also released and made effective (Table 1) (PAAF, 2015). In 2014, Environment Public Authority (EPA) in Kuwait released an all-inclusive Environmental Protection Law (No. 42 of 2014) that aimed towards protecting and maintaining the natural balance of the environment and its resources including fisheries.

The official recording of local fishery landing was initiated during the mid 1970's. Throughout the period from 1975 to 1977, the fishery bulleting list included 15 categories of fishery: 14 assessed species and a category referred to as "*others*" which includes various by-catch of unassessed fishery species (KCSB, 2020). The list was later updated in 1987 to include 24 categories: 23 assessed species and the category "*others*". Consumer preference has significantly change over the past 3 decades due to inflated prices of prime fish species and variation in the palitability of the population in relation to the change in the ethnicity of expatriates in the country (Al-Zaidan et al., 2013). Fish species which were not categorised as commercially important 50 years

ago and were listed under category '*others*' in the official records, are now sought after by consumers due to affordability of prices compared to the prime fish species. To-date the fishery bulletin list remains unrevised (Annex 1), and includes the same fishery species recorded and preferred by consumers in 1987. Amid climatic and socioeconomical challenges exists the need to fine-tune the present legislations and management strategies to overcome the decline of local landing (Figure 6 and 7), including the category "*others*" which consists of by-catch and less sought fish species which play a vital role in ecosystem health and contribute to the biodiversity of fish in Kuwaiti waters.

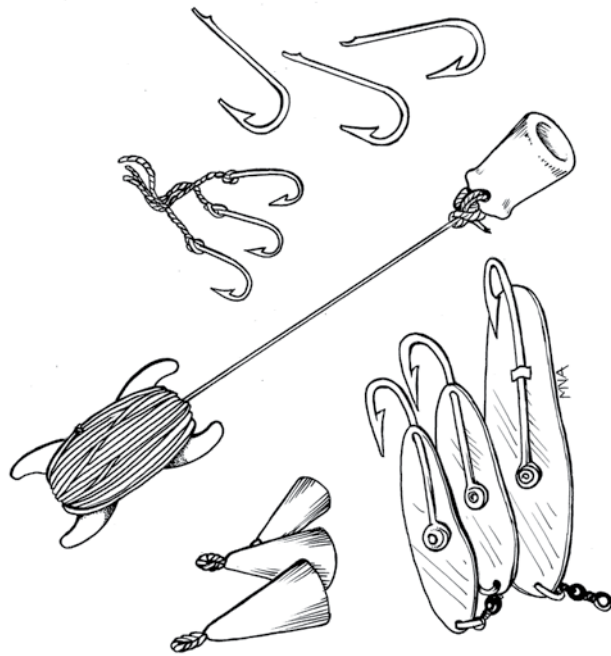


Figure 1. Hadag gear: hooks and lines used for hand-line fishing (© Amani Al-Zaidan).

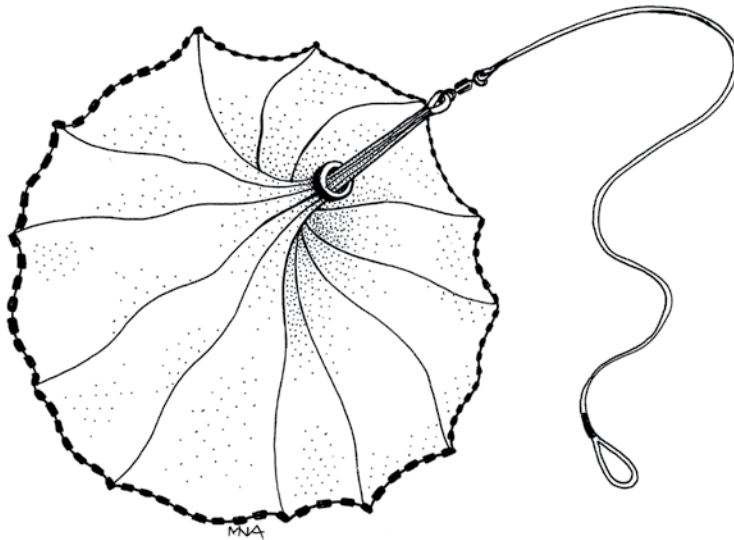


Figure 2. Al-Saliyah: a small cast net used from the beach or small fishing boats to catch fish (© Amani Al-Zaidan).

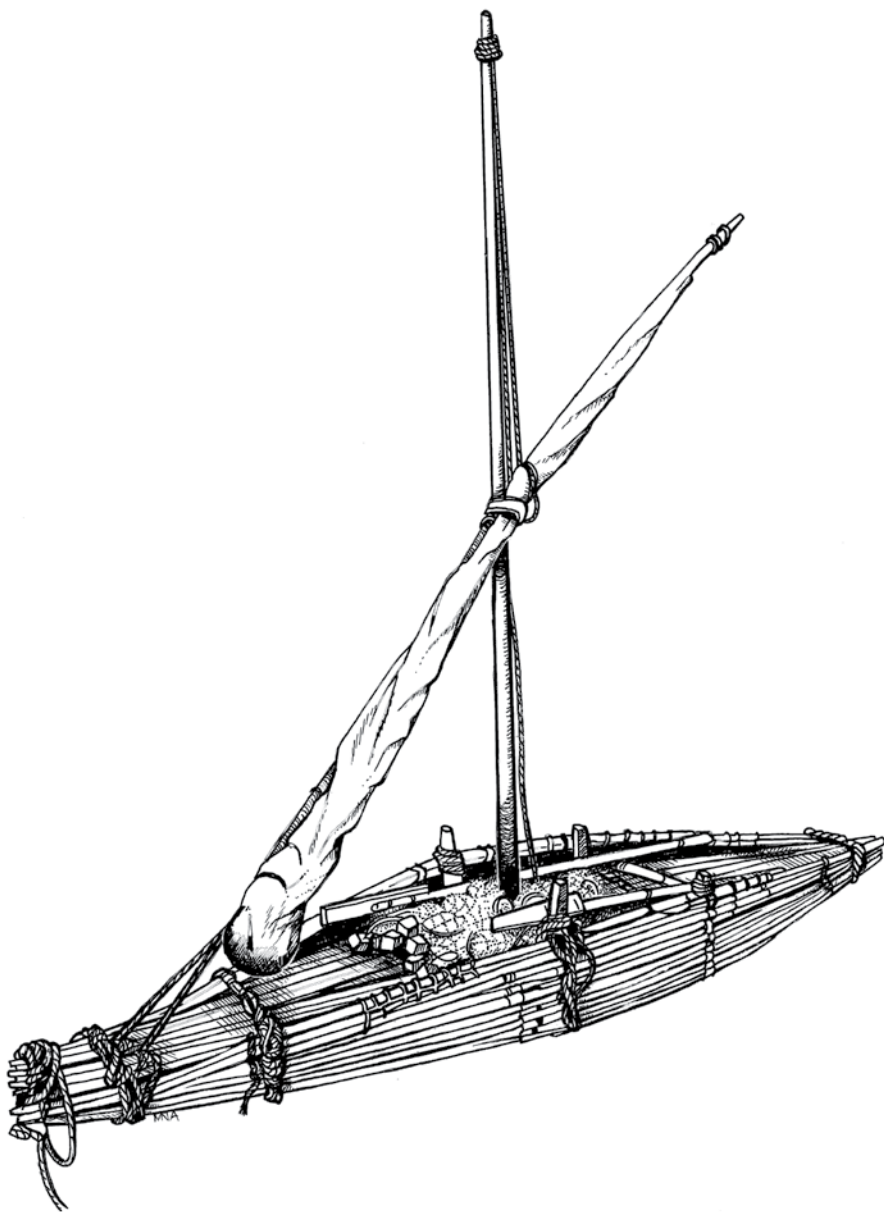


Figure 3. Al-Warjiyah (Pronounced: Al-Warjchiyah), a simple small one-man boat approximately 3-4 m long with a sail and paddles, made of palm tree fronds, used for fishing at close proximity to the shore mainly using hand-lines and/or Al-Saliyah (© Amani Al-Zaidan).

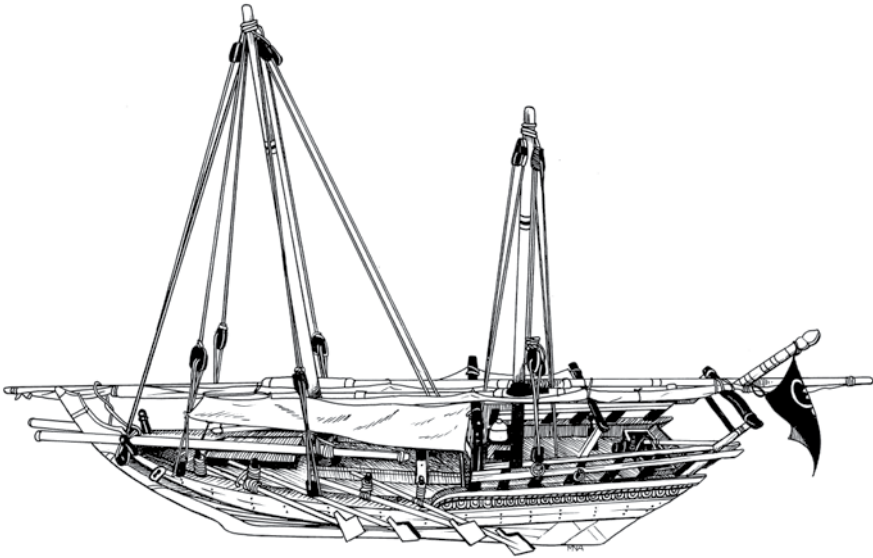


Figure 4. Al-Shouei, a medium sized wooden boat (5-12 m long), carries 4-5 persons, powered by sail or by oars used for offshore fishing. Gear used include a variety of medium-sized nets and domed-wire fish traps (Gargoor) (© Amani Al-Zaidan).

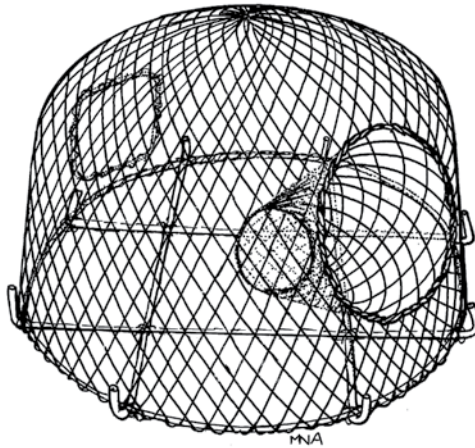


Figure 5. Al-Hadhrach: a stake fish trap made out of palm tree fronds and reeds held together by coir rope (coconut fibre) (© Amani Al-Zaidan).

Table 1. Important decrees and laws associated with regulation of fisheries resources in Kuwait (PAAF, 2015).

Year	Decree No. (law)	Title
1980	46	Conservation of Fisheries Resources (various articles)
	17	Licenses for Kuwaiti fishing vessels
	20	Licenses for intertidal stake nets (Hadhrahs)
1981	22	Prohibition of use of specific fishing gear in Kuwaiti territorial waters
1983	2	Suspension of the issuing of new licences to fishing vessels
	9	Prohibition of capture of specified fish size
	8	Prohibition of fishing with certain fish traps
	11	Fishing within 3 miles from the coasts of Kuwait
	13	Ban of fishing in certain areas of the territorial waters of Kuwait
1984	5	Restriction of fishing using high capacity motorized fleets and modern fishing gear in territorial waters
1985	19	Regulations regarding practicing fishing in Kuwait
	26	Suspension of the issuing of new licences to fishing vessels
	23	Conditions for retirement and replacement of inserviceable fishing vessels
1992	33	Minimum measurement of mesh size to be used in fishing vessels
2001	40	Ban of use of longline fishing in territorial waters
2004	8	Continued ban of use of specific fishing gear in Kuwaiti territorial waters
	1016	Continued ban of fishing in certain areas of the territorial waters of Kuwait
2005	420	Prohibit issues of new licences for intertidal stake nets (Hadhrahs)
2015	35	Ban of capture of shrimp from territorial waters (closing season)
	671	Ban of capture of Silver Pomfret from territorial waters (closing season)

Year	Decree No. (law)	Title
	738	Ban of capture of Klunzingeri Mullet from territorial waters
2017	787	Ban of capture of Klunzingeri Mullet from territorial waters (closing season)
	788	Amendment Ban of capture of Silver Pomfret from territorial waters (closing season)
	1557	Ban of capture of Narrow-barred Spanish Mackerel from territorial waters (closing season)
2018	1202	Ban of capture of shrimp from territorial waters (closing season)

*Amendments exist for some legislations.

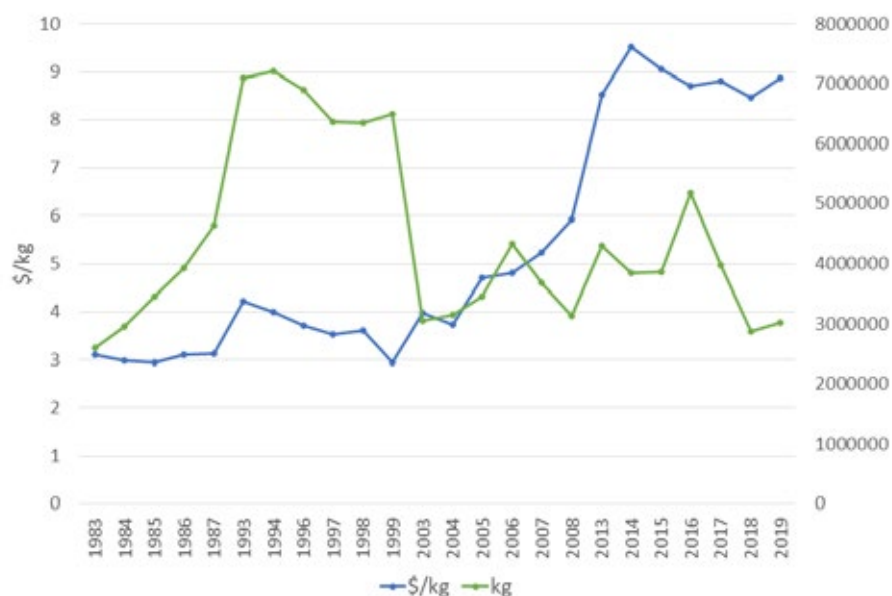


Figure 6. Total local fisheries landed over 4 decades (Source: Data from KCSB <https://www.csb.gov.kw>).

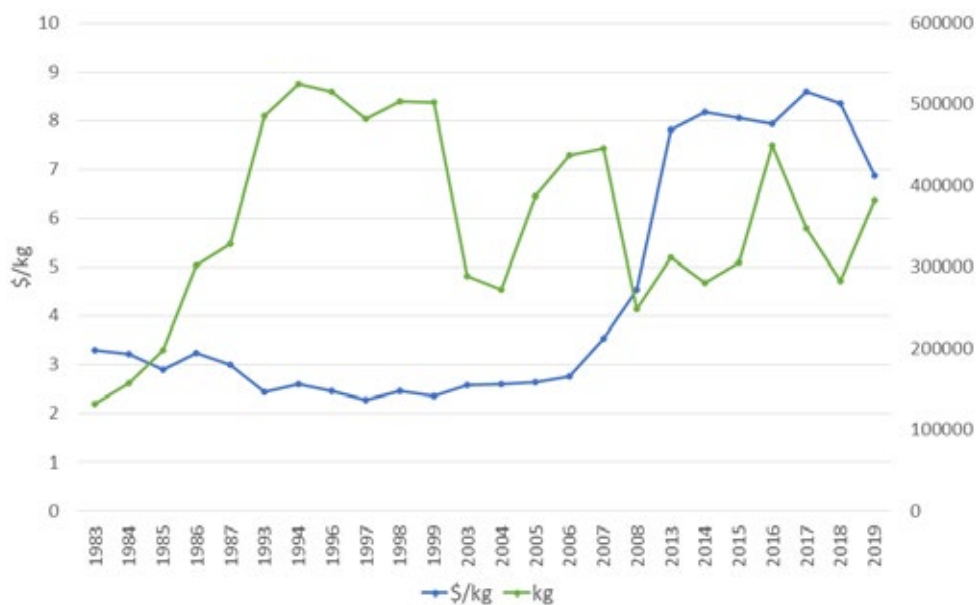


Figure 7. Landed category 'others' over 4 decade (Source: Data from KCSB <https://www.csb.gov.kw>).

Fish diversity

Fish are integral to marine ecosystem function and biodiversity. Fish diversity is a relative indicator of ecosystem health and is measured by the number of fish species inhabiting a spatial region. To date, 14,800-16,764 fish species have been identified, with new marine fish species being described at a rate of about 100-150 per year (COML, 2003). In 2010, Eschmeyer and others presented a study on the diversity of marine fish to be discovered and documented. They estimated that at least 5,000 new species would be discovered by 2050, equivalent to an approximate 30% increase in diversity of marine fish at that time. Globally, the diversity and abundance in fish assemblages are experiencing decline due to climate change and anthropogenic activities (habitat modification/alteration, environmental pollution, overexploitation, etc.) (Worm et al., 2006). Overexploitation of fish, referred to as overfishing, has long been recognised as the leading cause of reduced fish diversity due to increased consumer demand. Fish consumption has increased from 9 kg in 1961 to 20.5 kg in 2018 thus contributing approximately 17% of all animal protein to the human diet (FAO, 2020). Such demand has led marine capture fisheries production, of which 85% are represented by finfish (FAO, 2016), to add increased pressure on fish stocks thus subsequently threatening the subsistence of their diversity (Hiddink et al., 2008). Removal of target fish species and by-catch of non-target species during fish harvesting operations effects species diversity. The artificial selection of favoured fish species with specific genetic traits (gene pool) imposed by fisheries may also contribute to changes in species diversity within assemblages thus effecting adaptation, reproductive activity and growth rate; while changes in fish biomass may alter trophic pathways, consequently both contribute towards altering ecosystem diversity and productivity (Greer & Harvey, 2004; Manel, 2020).

Fish biodiversity is also significant for the future sustainability of marine natural resources (Thrush et al. 2016; Friedman et al. 2018; Cinner et al. 2020). Throughout the world, coastal habitats are known to act as nursery areas for various fish species harbouring juveniles of both fish and shrimp. Nevertheless these shallow habitats are under threat due to anthropogenic activities associated with rapid coastal urbanization and economic development. Biodiversity supports different species of fish including those of economic value. The exploitation of coastal fish, compromising both well-studied (*assessed / recorded commercial species*) and less-studied fish which lack sufficient information on their condition (*unassessed/ unrecorded species*), has direct and/or indirect impact on marine ecosystems affecting the structure and functioning of ecosystems in general (Cleland, 2011; Costello et al., 2012). Globally as well as regionally, unassessed fish which are mainly fishery by-catch, al-

though contribute to the formation of biodiversity and ensure the prosperity of marine ecosystems, have been found to be in worse condition than assessed fish (FAO, 2011; Grandcourt, 2012).

The Success of biodiversity assessment and conservation is mainly associated with the correct identification of species. The mis-identification of fish species is known to hinder population assessment, especially in relation to over-fished species. Recent approaches to species identification not only involves the traditional morphological description (phenetic classification) but also involves using molecular biology to identify the genetic traits of the species through molecular biology criteria (phyletic) as a supportive identification method coupled with the traditional identification system (Fischer, 2013). In the past decades, taxonomic identification of fish has dramatically shifted. It has taken an advanced approach as molecular biology has introduced taxonomic hypotheses based on evolutionary species criteria and genealogical similarities; thus updating the traditional phenetic classification (on the basis of overall morphological differences) used by ichthyologists for over 50 years (Nelson et al., 2016; Betancur-R et al., 2017, Rabosky et al., 2018; Van der Laan et al., 2021). Such new knowledge has contributed to the continuous increase in species diversity as fish are reassigned to various taxa groups. This shift towards phyletic classification (phylogeny) has also contributed to increasing the state of flux in fish classification, as is the case with other biota, especially at the lower levels of the hierarchy. The phylogeny of fish is dichotomic and is somewhat complex where some ranks remain undefined (*Incertae sedis*) due to phyletic un-clarity.

Here we aim to give a phenetic taxonomic overview of the common fish species currently landed at the most visited fish market ‘Sharq Fish Market’, including both assessed and unassessed fish under the category “others” which includes an aggregate of by-catch fishery. The number of taxonomic ranks have been limited to keep hierarchy practicable yet list of authoritative sources with expansive taxonomic ranks have been listed in the reference section.

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2 External features of fishes



2 External features of fishes

Generally fish belonging to different families are easy to identify phenetically since each family has external traits that set it apart from others. Through observing and comparing such distinguishable characteristics fish can be classified into significant groups for identification. Normally, the distinguishable morphological characteristics first visible to the examiner are the external characters of the fish. The most distinctive features that will initially catch ones attention are the descriptive characters which include yet not restricted to colour markings, stripes, spots and body form. However, such features are not key traits used for scientific identification since they might vary with age, sex, habitat and season. In some cases, on a species or subspecies level, similar morphological traits exist between specimens thus require an in-depth examination to discern the few differentiating characteristics, hence both measureable and countable traits are investigated as an complementary approach to identification (Froese & Pauly, 2021a).

Accordingly, the key characteristics to examine when identifying fish specimens based on descriptive characters include body form, fins, mouth placement, presence of specific structures and patterns/coloration (Fischer & Bianchi, 1984; Carpenter et al., 1997). Body shape/form is a key characteristic used for identification of fish allowing specimen to be easily classified, it also determines the fish habitat (Table 2). Fins are a major morphological trait used in fish identification. Occasionally, fins will be a mix of both spines and rays. Major components of fins include (Figure 8) (a) spines: hard, pin-like projections (not segmented/branched), closer to the head and (b) rays: soft, flexible, segmented and brush-like (branched) tips, closer to the tail. Fins are situated in various locations along the body of the fish, each with a specific shape and function (Table 3) and are used by fish to maintain position, mobility, stability and maneuver. The caudal fin, also known as the tail fin, is located at the posterior end of the fish and is used for propulsion and steering. They come in various forms which normally correspond to the speed of the fish (Figure 9). The number of spines/rays are one of many morphological characteristics used for species identification. The placement of fish mouth is also a character used for identification since it reveals information regarding trophic ecology of the fish. There are three main types of fish mouths (Figure 10): (a) terminal: mouth opens forward. This type occurs in most fishes, (b) supra-terminal

(superior): mouth opens upwards, and (c) sub-terminal (inferior): mouth opens downward and fish snout is protruding. Some additional characters might also exist and be used for identification such as the presence/absence of certain structures including but not restricted to barbels, adipose fin, stripes, spots, colouration, hump etc.

Morphometrics is where measurements of specific characteristics are expressed proportionally in relation to some other measurement in order to allow measurements of fish of different sizes to be compared (Froese & Pauly, 2021b). Data on the morphometric traits of species are normally analyzed relative to the standard length. The morphometric characters to be taken into account for assessing allometric relationships, although not dealt with here, are referred to in figure 11.

Table 2. Diversity of fish in relation to body type.

Term	Description
Fusiform	Streamlined, oval, torpedo-shaped
Compressiform	Laterally compressed
Depressiform	Dorso-ventrally flattened
Anguilliform	Elongated, snake-shaped
Filliform	Skinny, tube-shape
Taeniform	Ribbon-shaped
Sagittiform	Arrow-shaped
Globiform	Round-shaped

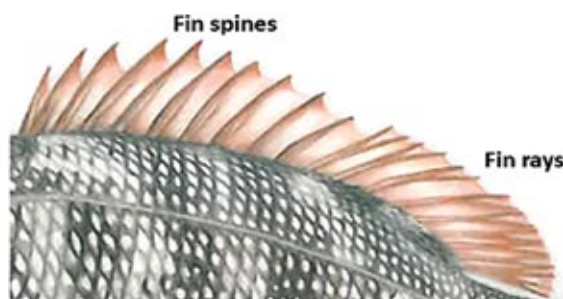
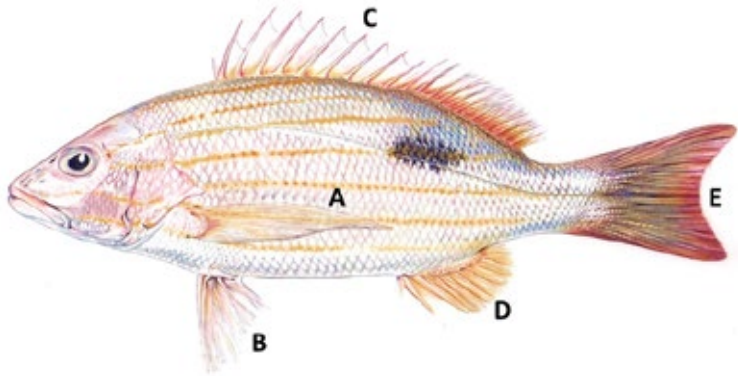


Figure 8. Fins and rays of a dorsal fin (© Amani Al-Zaidan).

Table 3. Diversity of fish fins: types, location and function (© Amani Al-Zaidan).

		
	Name	Location (function)
Paired	Pectoral (A)	Behind the operculum (steering)
	Pelvic (B)	Ventral below pectoral (steering; brakes)
Unpaired	Dorsal (C) • Pointed (prominent first spine) • Trigger (spine-triangular) • Single • Split • Trailing • Pointed	Top fin. Usually 1 sometimes 2 or 3. (stabilise and balance)
	Anal (D)	Ventral behind the anus. (balance and stabilise)
	Caudal (E) • Protocercal (undifferentiated) • Heterocercal (unequal lobes: upper lobe more extended) • Homocercal (equal lobes) • Hemihomocercal (intermediate between Hetero and homo) • Hypocercal (unequal lobes: lower lobe more extended)	Tail fin. (propel; turn) Types: o Lunate or Crescentic o Forked o Emarginated o Truncate o Rounded o Pointed
	Adipose	Tiny fleshy fin between dorsal and caudal fin. Found only in few fish.

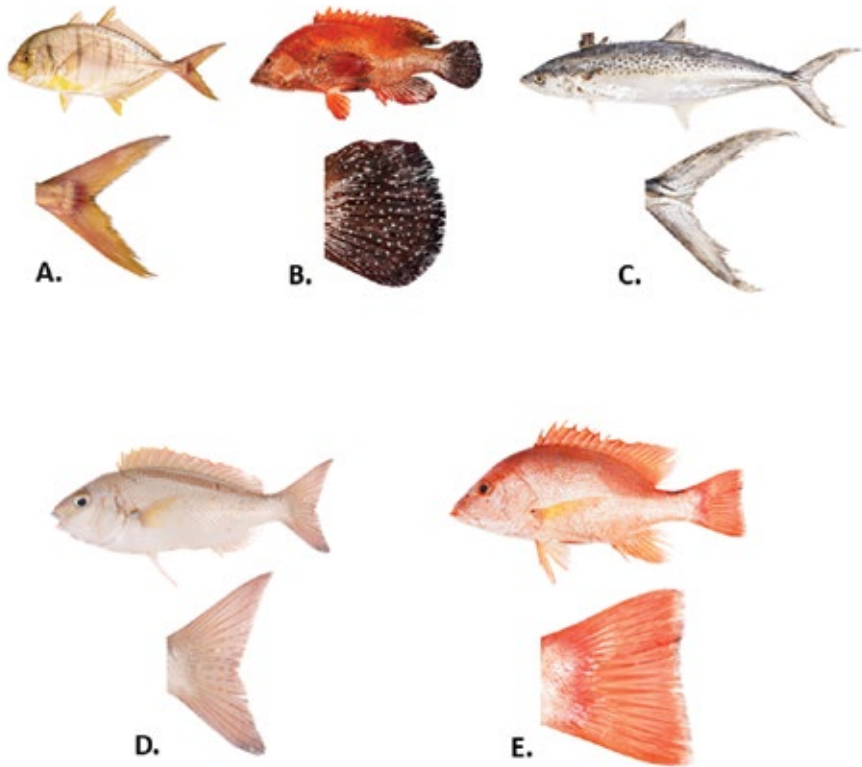


Figure 9. Common caudal fin types in fish: A. forked, B. rounded, C. lunate, D. emarginate, E. truncate. (© EPA of Kuwait)

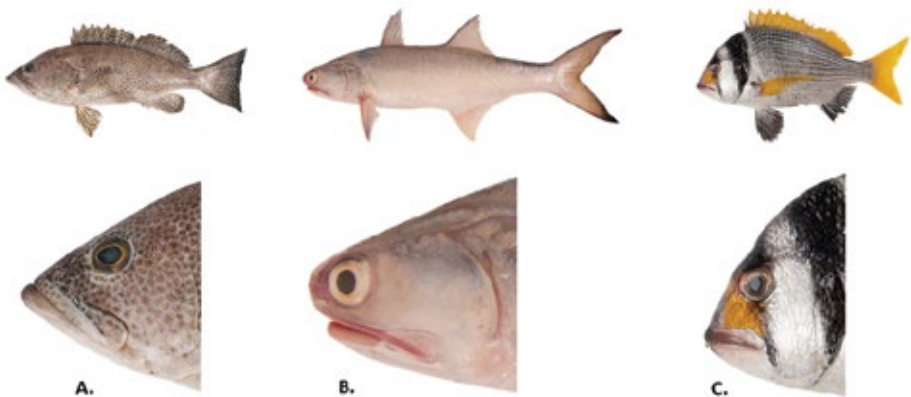


Figure 10. Common mouth placements in fish: A. superior, B. sub-terminal, C. terminal. (© EPA of Kuwait)

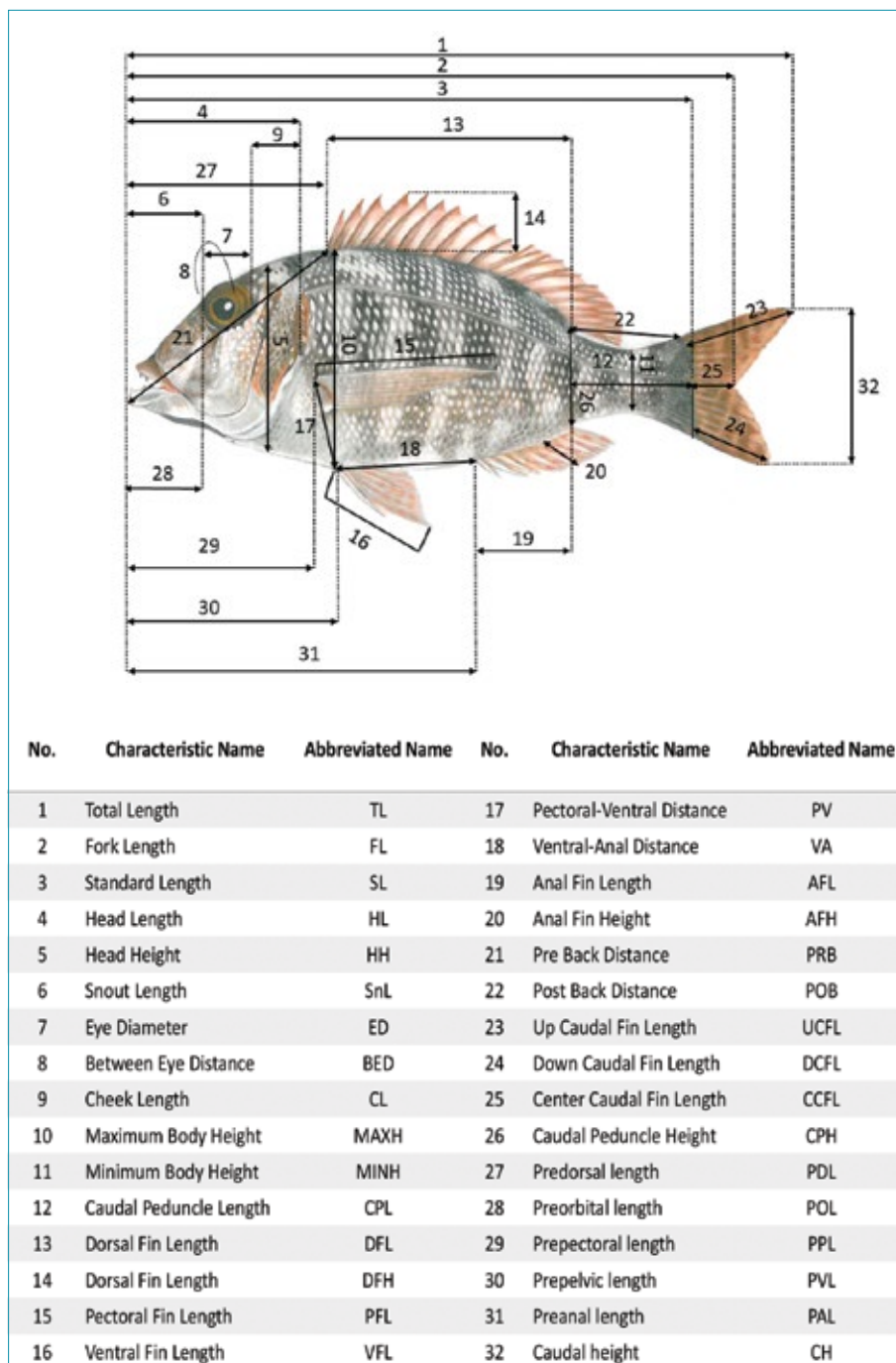


Figure 11. Morphometric measurements in fish (© Amani Al-Zaidan).

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3 Key to
common
families

3 Key to common families

More than 96% of all living fishes belong to the infraclass Teloesti (Müller, 1845); the largest infraclass in the superclass Actinopterygii (ray-finned fishes) (Figure 12). Results of the search in the IUCN redlist database, for fish species occurring in global marine regions, yielded a total of 11,642 species of which 10,385 belong to the superclass Actinopterygii (IUCN, 2021). Teleosts consists of approximately 40 orders, more than 400 families, and 26,000 extant species; of which nearly 60% inhabit marine environments (Boschung & Gardiner, 2021).

The official list of commercially important fishery in Kuwait includes 22 species of teleosts belonging to 16 families (Annex 1). Here we present the families to which the common commercial fish of Kuwait, encountered at the fish market fall under (8 orders and 25 families) including some of those enlisted in the official records. Here we will be using phenetic traits (external features) to identify the major commercial fish of Kuwait using the guides by Fischer & Bianchi (1984) and Carpenter et al. (1997). The family names used in this section are based on the authoritative reference for taxonomic fish names, *Eschmeyer's Catalog of Fishes* (Fricke et al., 2021). While using Eschmeyer's Catalog of Fishes Online Database (Van der Laan et al., 2021; Van der Laan & Fricke, 2021), the Fish Tree of Life (Rabosky et al., 2018) and the Phylogenetic Classification of Bony Fishes (Betancur-R et al., 2017) to verify fish classification, the term *Incertae sedis* (Latin for "of uncertain placement") was encountered. Apparently the use of phylogenetic classification has lead some broader taxonomic relationships, such as orders and families, to remain undefined due to phyletic un-clarity. Hence, in order to overcome any confusion, families of fish documented from Kuwait fish market are placed under orders following the phenetic classification. The listed classification is subject to change as the information regarding orders and families are continuously updated.



27

Orders and families of common commercial fish of Kuwait

Order Perciformes

- **Family Haemulidae** Gill 1885 (grunts)
- **Family Lethrinidae** Bonaparte 1831 (emperor snappers)
- **Family Lutjanidae** Gill 1861 (snappers)
- **Family Nemipteridae** Regan 1913 (threadfin breams and spiny cheeks)
- **Family Platycephalidae** Swainson 1839 (flatheads)
- **Family Polynemidae** Rafinesque 1815 (threadfins, barbudos, capitaines)
- **Family Sciaenidae** Cuvier 1829 (croakers and drums)
- **Family Serranidae** Swainson 1839 (sea basses and groupers)
- **Family Sillaginidae** Richardson 1846 (sillagos)
- **Family Sparidae** Rafinesque 1818 (porgies and seabreams)

Order Carangiformes

- **Family Carangidae** Rafinesque 1815 (jacks, amberjacks, pompanos)
- **Family Cynoglossidae** Jordan 1888 (tonguefishes)
- **Family Rachycentridae** Gill 1896 (cobias)
- **Family Soleidae** Bonaparte 1833 (soles)
- **Family Sphyraenidae** Rafinesque 1815 (barracudas)

Order Scombriformes

- **Family Scombridae** Rafinesque 1815 (mackerels, tunas and bonitos)
- **Family Stromateidae** Rafinesque 1810 (butterfishes)
- **Family Trichiuridae** Rafinesque 1810 (cutlassfishes)

Order Clupeiformes

- **Family Chirocentridae** Bleeker 1849 (wolf herrings)
- **Family Clupeidae** Cuvier 1816 (herrings, shads, sardines and allies)

Order Acanthuriformes

- **Family Scatophagidae** Gill 1883 (scats)
- **Family Siganidae** Richardson 1837 (rabbitfishes)

Order Mugiliformes

- **Family Mugilidae** Jarocki 1822 (mulletts)

Order Pleuronectiformes

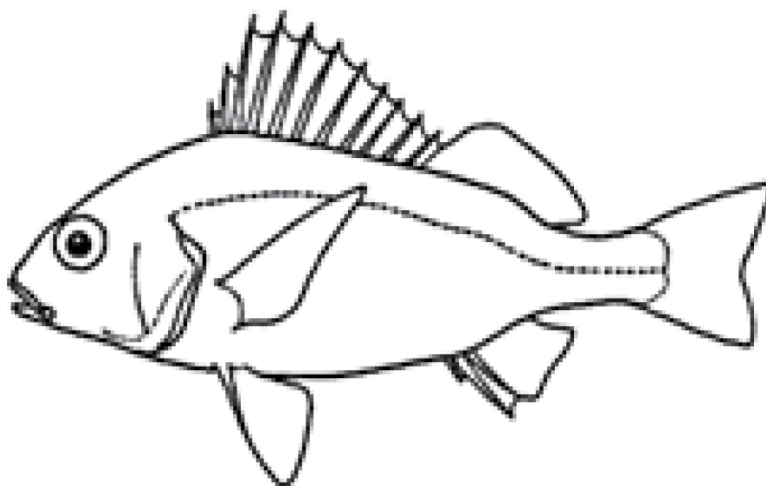
- **Family Paralichthyidae** Regan 1910 (Sand flounders)

Order Aulopiformes

- **Family Synodontidae** Gill 1861 (lizardfishes)

Morphological description of families

Haemulidae (Grunts, sweetlips, and rubberlips)



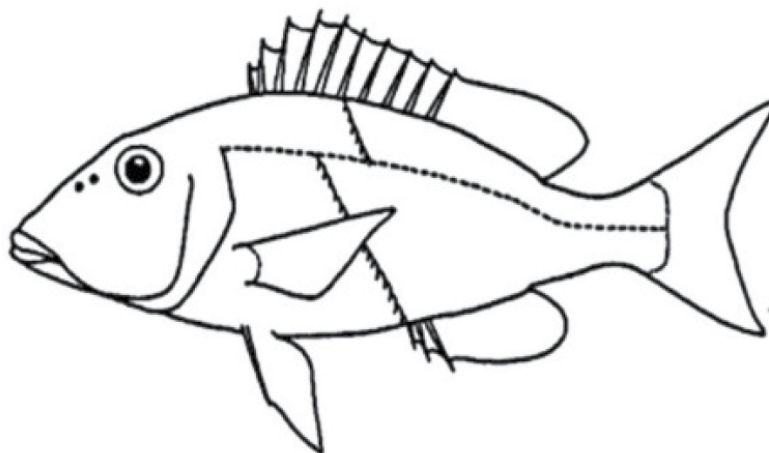
(Source: FAO Carpenter et al. 1997)

Body: oblong, compressed, perch-like fishes. Head: Profile strongly convex

Mouth: small or moderate, lips thick; enlarged chin pores usually present. Conical teeth, roof of mouth toothless.

Fins: dorsal fin continuous with 9 to 15 spines. Pectoral fins long, 1st ray sometimes forming a short filament. Pelvic fins below base of pectoral fins, with 1 spine and 5 soft rays. Anal fin with 3 spines, the second often very strong, and 7 to 9 soft rays. Caudal fin truncate or emarginate (rounded in juveniles).

Scales present between eye and mouth. Preopercle usually serrate.

Lethrinidae (Emperors and large-eye breams)

(Source: FAO Carpenter et al. 1997)

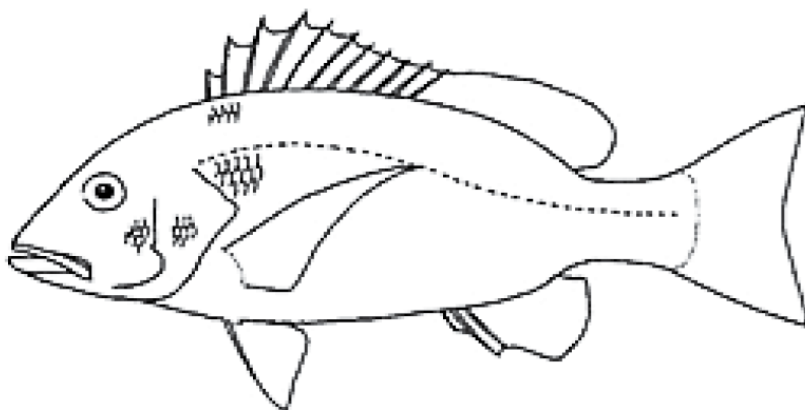
Head: relatively large.

Mouth: moderate, terminal; lips often thick and fleshy. Outer teeth canine-like or conical, molars often present, inner teeth villiform, roof of mouth toothless.

Fins: dorsal fin single continuous fin with 10 spines and 9 or 10 rays. Pectoral fins moderately long and pointed, with 13 to 15 branched rays. Pelvic fins thoracic, with 1 spine and 5 rays. Anal fin with 3 spines and 8 rays. Caudal fin emarginate to forked.

No scales between eye and mouth. Cheek and preopercle scaleless. Preopercle margin smooth.

Lutjanidae (Snappers and jobfishes)



(Source: FAO Carpenter et al. 1997)

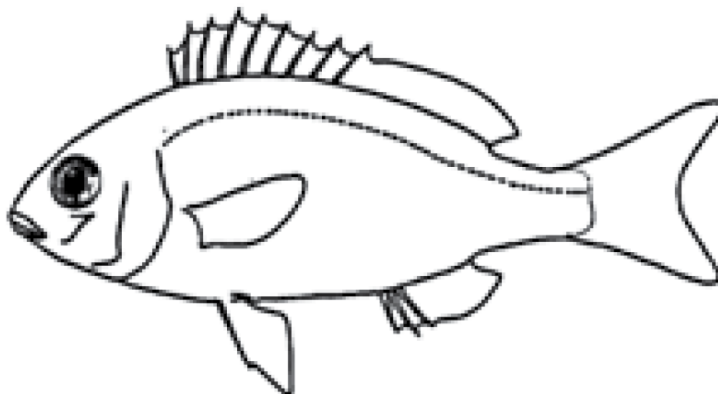
Body: moderately elongate to deep-bodied, fairly compressed.

Mouth: terminal, moderate to large extending somewhat when opened (protrusible). Most with canine teeth, small teeth on roof of mouth usually present.

Fins: dorsal fin continuous or with a shallow notch, 9 to 12 spines. Pelvic fins just behind pectoral base, 1 spine. Anal fin with 3 spines. Caudal fin truncate to deeply forked.

Lateral line: complete, straight, or gently curved.

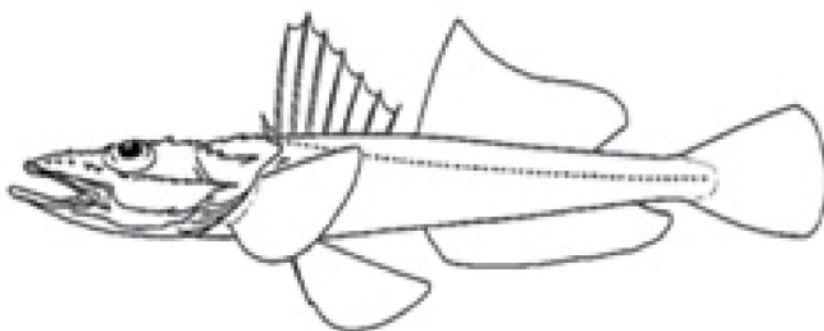
No scales between eye and mouth. Preopercle usually serrate.

Nemipteridae (Threadfin breams and monocle breams)

(Source: FAO Carpenter et al. 1997)

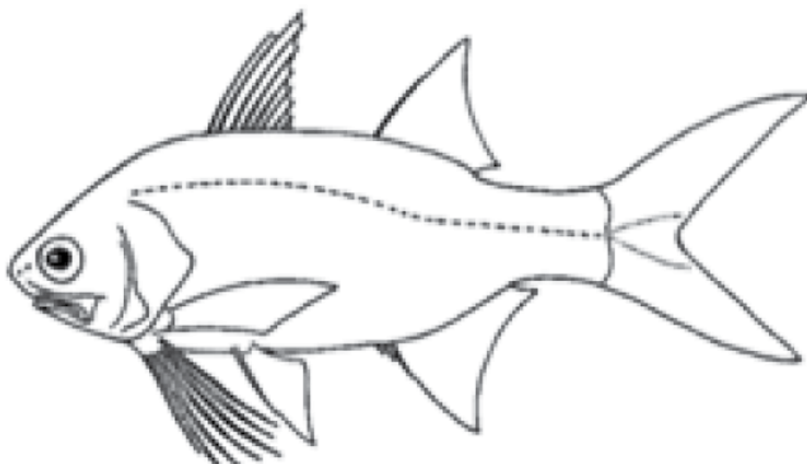
- Body:** slightly compressed.
- Mouth:** terminal. Teeth conical, enlarged canine present in some species, roof of mouth toothless.
- Fins:** dorsal fin single originating above pectoral fin bases; with 10 spines and 9 rays; its first spine sometimes prolonged into a filament. Pelvic fins with 1 spine and 5 soft rays, their origin below or just behind the pectoral fin bases; first ray sometimes elongate. Anal fin with 3 spines and usually 7 rays. Caudal fin forked or emarginate, upper lobe sometimes with a filament.
- Lateral line:** single and curved
- Suborbital spine** present in some species.

Platycephalidae (Flatheads)



(Source: FAO Carpenter et al. 1997)

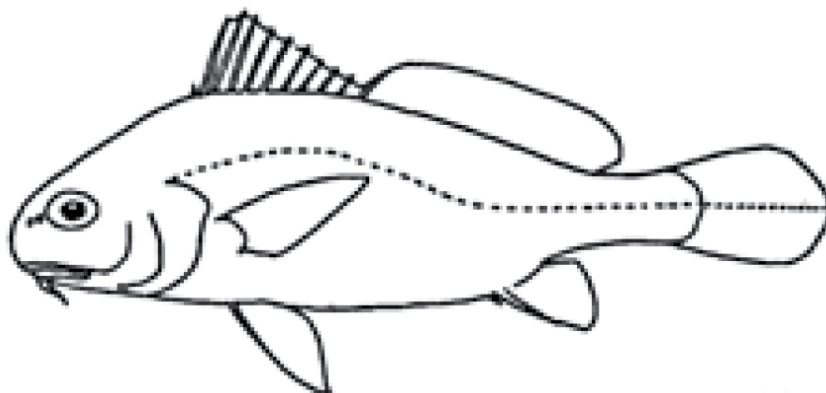
- Body:** elongate.
- Head:** depressed (moderately to strongly depressed), bony ridges of head usually bearing spines or serrations.
- Mouth:** large; lower jaw longer than upper.
- Fins:** two dorsal fins, well separated; spinous dorsal with 6 to 10 spines, the first spine short and scarcely connected to the second spine; second dorsal fin with 11 to 15 soft rays. Pelvic fins behind pectoral base.
- Lateral line:** complete.

Polynemidae (Threadfins)

(Source: FAO Carpenter et al. 1997)

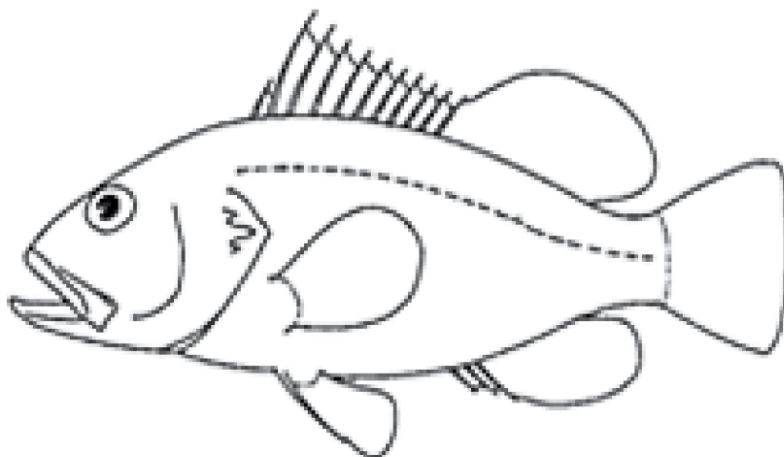
- Body:** oblong or more or less elongate and compressed body.
- Head:** scaly, with a conical snout, projecting beyond the large mouth. Eyes with adipose tissue.
- Mouth:** large, inferior.
- Fins:** two short dorsal fins, well separated from each other, 1st with 7 to 8 spines, 2nd with 1 spine. Pectoral fin composed of 2 parts, the upper normal, the lower with 3 or more free filamentous rays. Abdominal pelvic fins, lying a little behind bases of pectoral fins. Anal fin with 2 to 3 spines followed by branched rays. Caudal fin forked.

Sciaenidae (Croakers and drums)



(Source: FAO Carpenter et al. 1997)

- Body:** fairly elongate; moderately compressed.
- Mouth:** terminal, subterminal, inferior or lower jaw projecting; pores on chin present.
- Fins:** dorsal fin single and long dorsal fin, with a deep notch separating spinous from soft portion (rarely separate), 6 to 13 spines before notch, 1 spine after. Anal fin with 1 to 2 spines. Caudal fin emarginate to pointed, never deeply forked, usually pointed in juveniles.
- Barbels:** single barbel or a patch of small barbels on chin of some species.
- Lateral line:** extend to the tip of caudal fin. Opercular spines present.

Serranidae (Groupers and seabasses)

(Source: FAO Carpenter et al. 1997)

Body: robust or somewhat compressed, oblong-oval to rather elongate.

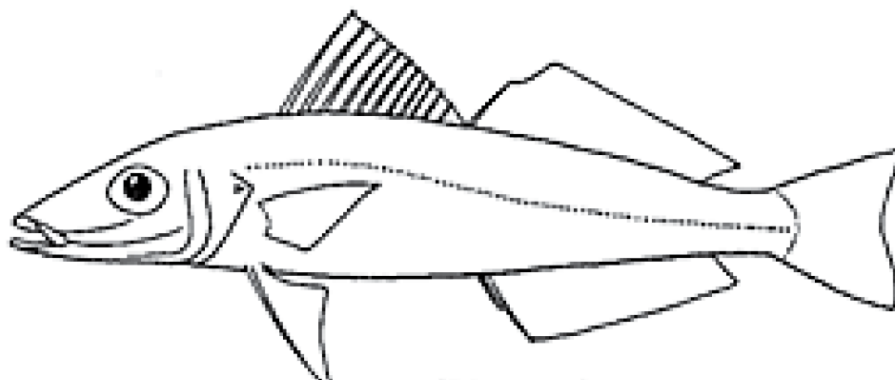
Mouth: large, maxilla exposed.

Fins: dorsal fin continuous, may be notched with 7 to 12 strong spines. Pectoral fins broadly rounded. Pelvic fins under or a little behind pectoral fin base; with 1 spine and 5 soft rays. Anal fin with 3 spines. Caudal fin rounded or truncate in most species, emarginate to lunate in a few (rarely forked).

Lateral line: complete and continuous.

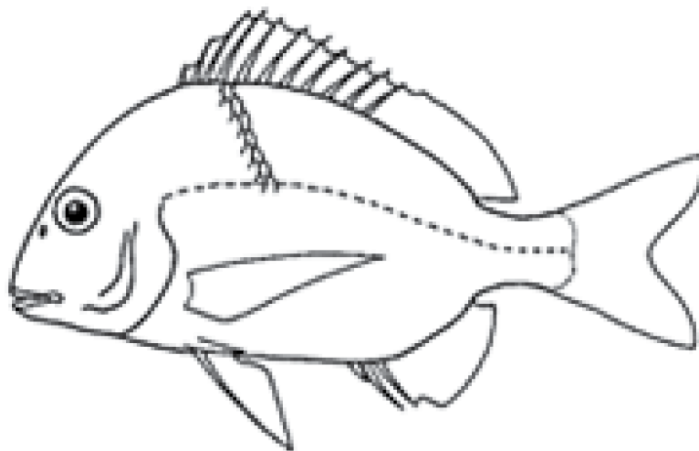
Opercula: edge of preopercle serrate; opercle with 2 or 3 flat points or spines.

Sillaginidae (Sillagos)



(Source: FAO Carpenter et al. 1997)

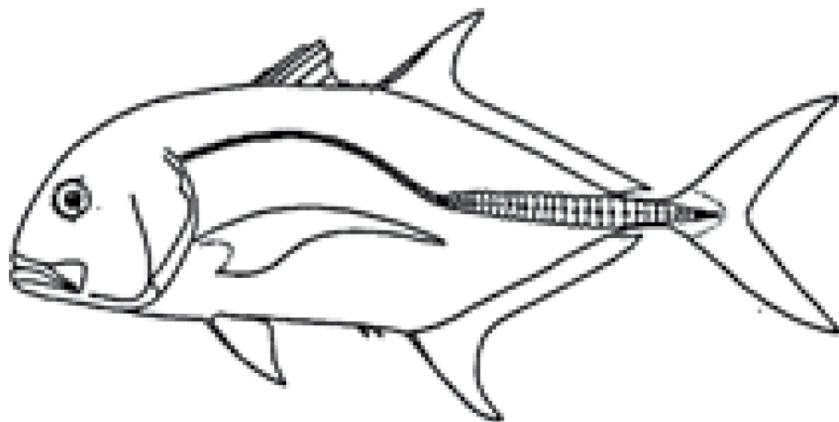
- Body:** elongated, slightly compressed, tapering from middle of spinous dorsal fin to head and tail.
- Mouth:** small, terminal.
- Fins:** two dorsal fins (little or no interspace), 1st with 9 to 13 spines, 2nd with 1 slender spine. Pelvic fins originate slightly behind origin of pectoral fin. Anal fin with 2 weak spines.
- Opercula:** often with one small and sharp opercular spine.

Sparidae (Porgies and seabreams)

(Source: FAO Carpenter et al. 1997)

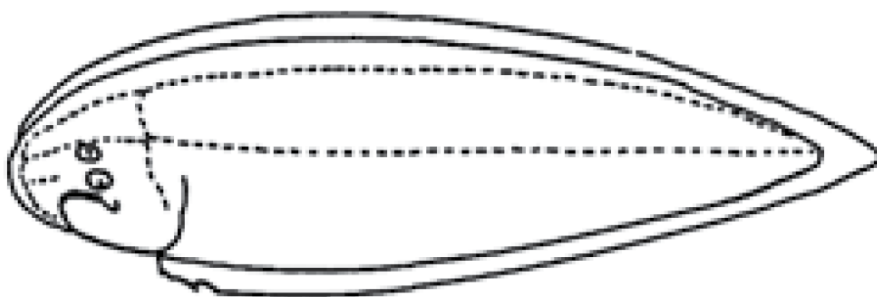
- Body:** oblong, more or less deep and compressed.
- Head:** large, often with a steep upper profile.
- Mouth:** hind tip of premaxilla overlapping maxilla. Teeth canine-like, or incisor-like, molars often present, roof of mouth toothless.
- Fins:** dorsal fin single continuous with 10 - 13 spines and 9 - 17 rays, anterior spines sometimes elongate or filamentous. Pectoral fins long and pointed. Pelvic fins below or just behind pectoral fin bases, with 1 spine and 5 soft rays. Anal fin with 3 spines and 7 to 15 rays; the spines, especially the second, often stout.
- Lateral line:** a single continuous lateral line extending backward to base of caudal.
- No scales** between eye and mouth; cheek: scaled. Preopercle margin smooth.

Carangidae (Jacks, trevallies, scads, queen-fishes, runners, and pompanos)



(Source: FAO Carpenter et al. 1997)

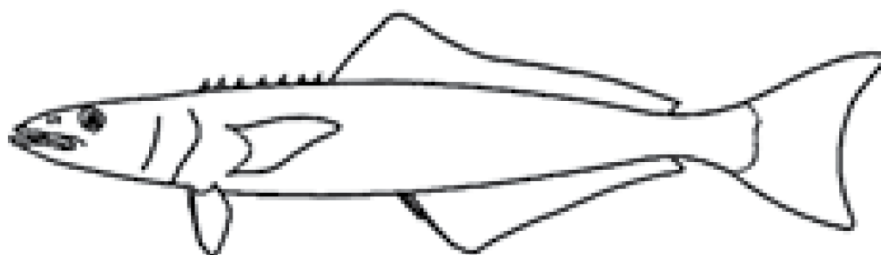
- Body:** extremely variable in shape, ranging from elongate and fusiform to deep and strongly compressed
- Head:** varying from moderately long and rounded to short, deep and very compressed; snout pointed to blunt.
- Fins:** two dorsal fins that are separate in small juveniles, the first of moderate height or very low, with 4 - 8 spines (the spines obsolete or embedded in adults of some species), the second dorsal fin with 1 spine and 18 - 44 soft rays. Anal fin with 3 spines, the first two detached and separate from rest of fin by a gap (becoming embedded in adults of some species). Caudal fin forked with the lobes equal in most species. Finlets present in some species after dorsal and anal fins.
- Scutes:** often present along lateral line.

Cynoglossidae (Tonguesoles)

(Source: FAO Carpenter et al. 1997)

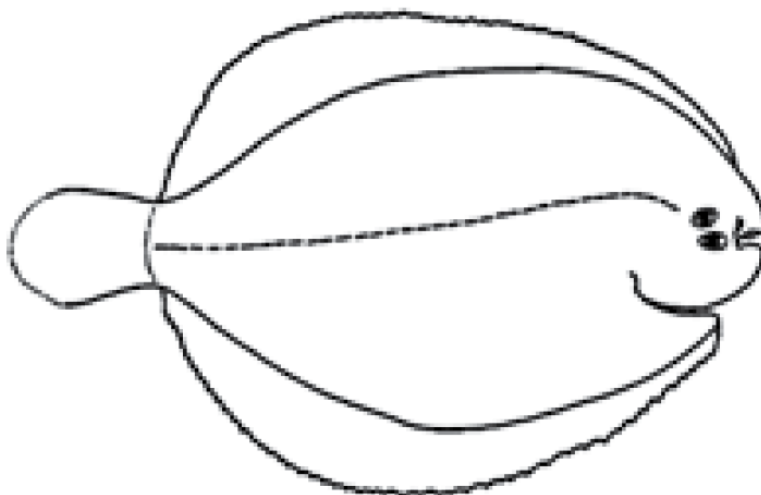
- Body:** highly compressed vertically (flattened, top-to-bottom).
- Eyes:** on one side, on left side of body; very small and usually close together.
- Mouth:** asymmetrical. Teeth minute and present on blind side only.
- Fins:** dorsal fin reaching forward onto head, joined to caudal fin. Pectoral fins absent or very small. Only left pelvic fin present. Anal fin long and joined to caudal fin.
- Lateral lines:** 0 to 3 on eyed side, 0 to 2 on blind side.

Rachycentridae (Cobias)



(Source: FAO Carpenter et al. 1997)

- Body:** elongate, subcylindrical
- Head:** broad and depressed. Eyes small, encircled by a narrow adipose eyelid.
- Fins:** two dorsal fins, 1st with 6 to 9 short but strong isolated spines, not connected by a membrane; ahead of the second long dorsal fin (1-3 spines and 26-33 soft rays). Pectoral fin are pointed, pointed and set low down on body. Anal fin long with 2 to 3 spines. Caudal fin lunate in adults, upper lobe longer than lower (caudal fin rounded in young, the central rays much prolonged).

Soleidae (Soles)

(Source: FAO Carpenter et al. 1997)

- Body:** oval or somewhat elongate and strongly compressed flat fishes.
- Eyes:** on one side of the body, on right side.
- Mouth:** small, asymmetrical, terminal or slightly inferior; snout sometimes hook-shaped.
- Fins:** dorsal fin extending far forward on head; dorsal and anal fins completely separate from, adherent to, or fused with caudal fin. Pectoral fins sometimes absent but when present, the right side always longer than the left. Pelvic fins sometimes asymmetrical, either free or joined to anal fins. No spines in fins.
- Lateral line:** single and straight on body, but sometimes branched on head.

Sphyraenidae (Barracudas)



(Source: FAO Carpenter et al. 1997)

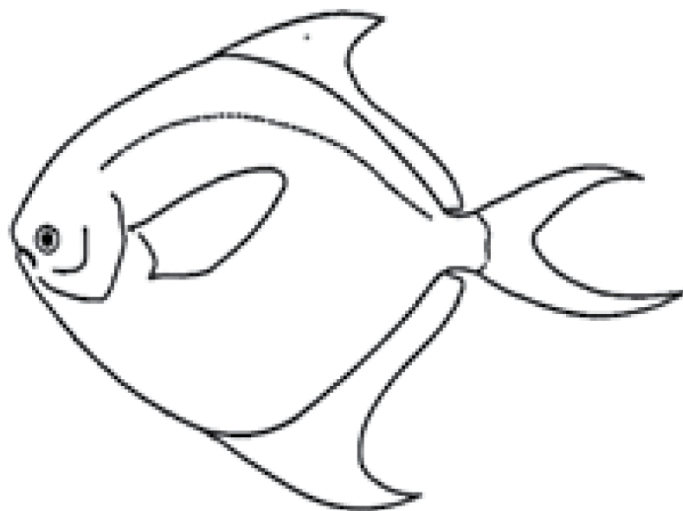
- Body:** elongate, usually slightly compressed.
- Head:** large, with a long, pointed snout.
- Mouth:** large, lower jaw projecting. Teeth strong sharp canine teeth (fang-like) of unequal size in jaws and on palatines (roof of mouth).
- Fins:** two dorsal fins (well separated from each other), 1st with 5 spines, 2nd with 1 spine; first dorsal fin often retracted in a groove. Pectoral fins are short and relatively low. Pelvic fins are posterior to pectorals, approximately opposite first dorsal-fin origin. Anal fin with 2 spines. Caudal fin forked.
- Lateral line:** well developed, nearly straight.

Scombridae (Albacores, bonitos, kawakawas, mackerels, and tunas)

(Source: FAO Carpenter et al. 1997)

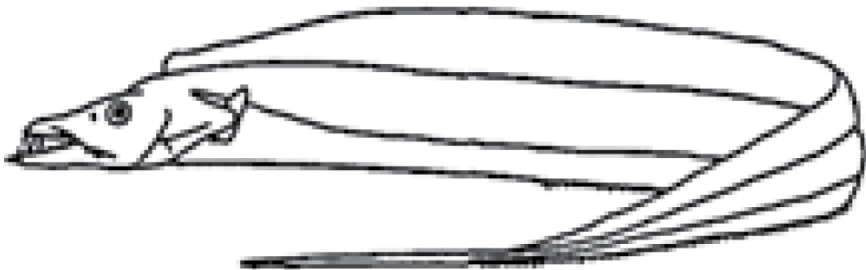
- Body:** elongate and fusiform, moderately compressed in some genera.
- Head:** snout pointed. Adipose eyelid sometimes present on eye.
- Fins:** two short dorsal fins, well separated from each other. Pectoral fins placed high on body. Moderate or small pelvic fins with one spine and five soft rays; placed beneath the pectorals. Caudal fin deeply forked. Finlets present after dorsal and anal fins.
- Keels:** at least two small keels on each side of caudal peduncle; a larger keel in between in many species.

Stromateidae (Butterfishes and silver pomfrets)



(Source: FAO Carpenter et al. 1997)

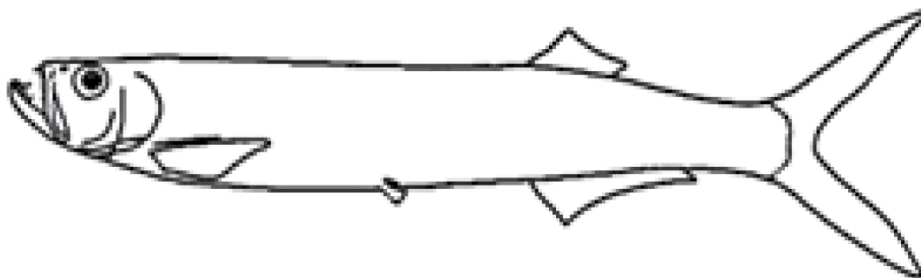
- Body:** very deep and compressed laterally (flattened, side-to-side).
- Head:** deep and broad, snout short and blunt. Eyes small on both sides of body, centrally located and surrounded by adipose tissue which extends forward around the large nostrils.
- Mouth:** sub-terminal, small and curved downward; maxilla immobile.
- Fins:** dorsal and anal fins single and continuous. Pectoral fins long and wing-like. Pelvic fins absent in adults. Caudal fin usually forked, in some species with very extended lobes.
- Lateral line:** single, high, following dorsal profile and extending onto caudal peduncle.

Trichiuridae (Cutlassfishes and hairtailfishes)

(Source: FAO Carpenter et al. 1997)

- Body:** strongly elongate, highly compressed and ribbon-like.
- Nostril:** a single nostril present on each side.
- Mouth:** large, lower jaw projecting. Strong canine teeth in jaws, those at front of upper jaw fang-like (very long).
- Fins:** single continuous dorsal fin or separated by shallow notch; low, long and far forward on body. Pectoral fin short and low on body. Pelvic fins reduced to a scale-like spine or completely absent. Anal fin long joined to caudal fin; low or reduced to short spinules. Caudal fin either small and forked or absent, body tapering to a fine point.

Chirocentridae (Wolf-herrings)



(Source: FAO Carpenter et al. 1997)

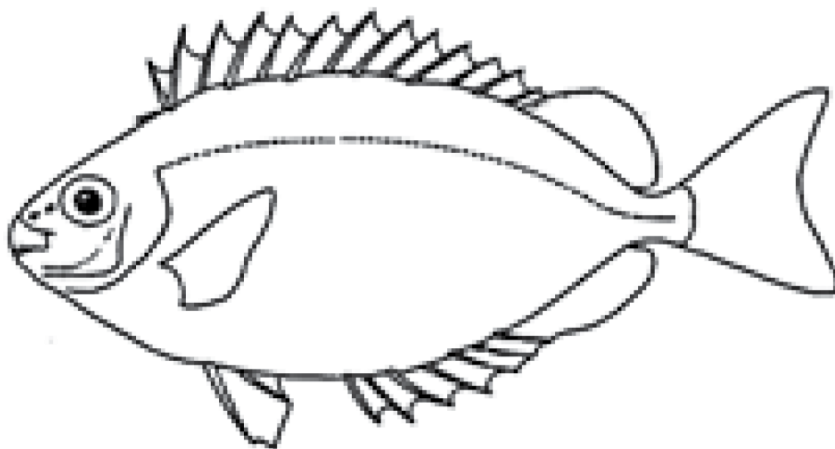
- Body:** strongly elongate and highly compressed.
- Teeth:** large canine teeth in both jaws.
- Fins:** dorsal fin short, spineless, set far back on body. Caudal fin deeply forked.
- Scutes:** absent.

Clupeidae (Herrings, sardinellas, sardines, and shads)

(Source: FAO Carpenter et al. 1997)

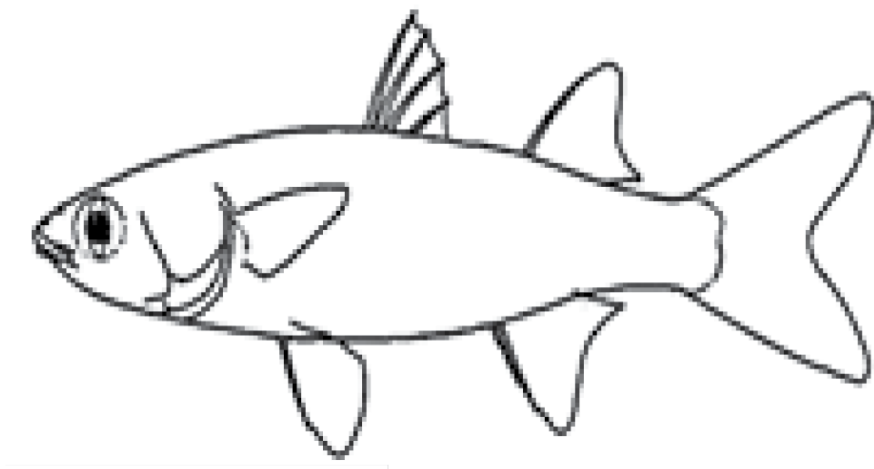
- Body:** fusiform, sub-cylindrical body sometimes quite strongly compressed.
- Teeth:** small or absent.
- Fins:** single dorsal fin without spines, usually short and near mid-point of body (dorsal fin absent in some species, filamentous at the end in some species). Pectoral fins set low on body. Caudal fin deeply forked. Fins lacking spiny rays.
- Scutes:** Present in most species along the belly.
- Lateral line:** absent.

Siganidae (Rabbitfishes and spinefoots)



(Source: FAO Carpenter et al. 1997)

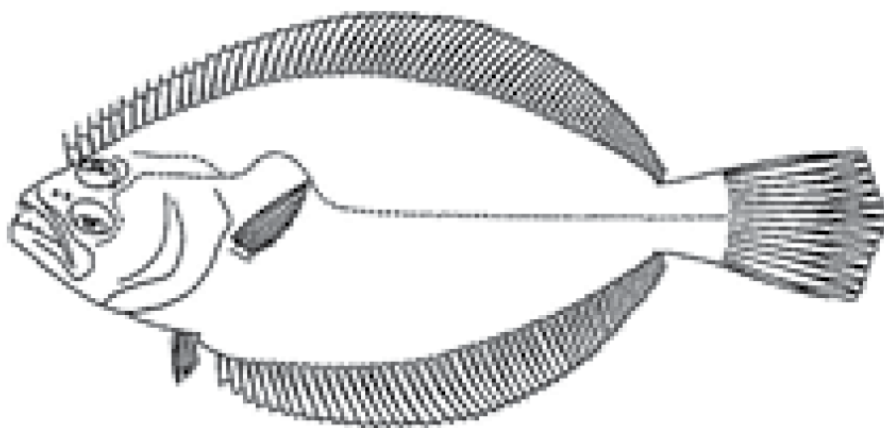
- Body:** laterally compressed, oval, deep or slender.
- Mouth:** small with a single row of compressed, asymmetrically bicuspid incisiform teeth in both jaws.
- Fins:** dorsal fin with 13 strong spines and 10 soft rays, preceded by a forward projecting spine. Pelvic fins with 2 strong spines separate by 3 soft rays a character unique to the family. Anal fin with 7 strong spines.

Mugilidae (Mulletts)

(Source: FAO Carpenter et al. 1997)

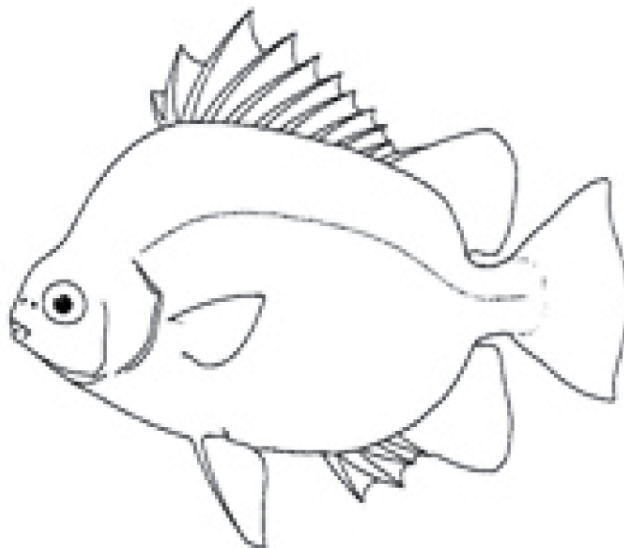
- Body:** elongate, cylindrical or a little compressed body.
- Head:** broad, flattened head (but head rounded in some species); blunt snout. Eye partly covered with an adipose eyelid.
- Mouth:** small, terminal inferior with small, feeble, hidden or absent teeth.
- Fins:** two short dorsal fins separated from each other, 1st with 4 spines, 2nd with 1 spine. Pectoral fins located high on body. Pelvic fins based about equidistant between pectoral fin base and origin of first dorsal fin; with 1 spine & 5 branched soft rays. Anal fin with 2 to 3 spines. Caudal fin moderately forked, emarginate or truncate.
- Lateral line:** absent or very faint.

Paralichthyidae (Sand flounders)



(Source: FAO Carpenter et al. 1997)

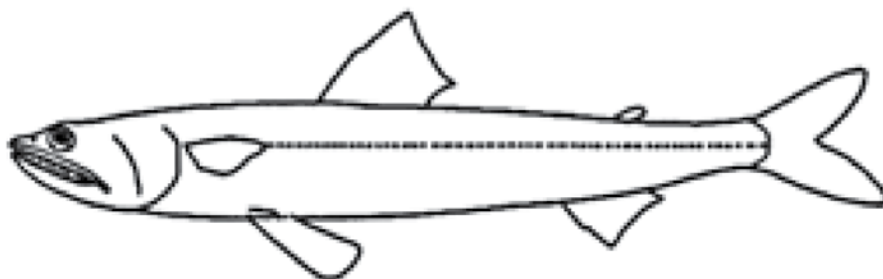
- Body:** dorso-ventrally flattened.
- Head:** most species with eyes on left side of head. Pre-opercle exposed, its posterior margin free and visible, not hidden by skin or scales.
- Mouth:** protractile, asymmetrical, lower jaw moderately prominent. Teeth in jaws sometimes canine-like; no teeth on vomer.
- Fins:** dorsal fin long, originating above, lateral to, or anterior to upper eye. Dorsal & anal fins not attached to caudal fin. Both pectoral fins present. Both pelvic fins present with 5-6 rays; pelvic-fin bases short nearly symmetrical (position of bases variable between species). Caudal fin with 17-18 rays, 10-13 rays branched. No spines in fins.
- Lateral line:** obvious on both sides of body.

Scatophagidae (Scats)

(Source: FAO Carpenter et al. 1997)

- Body:** highly compressed, quadrangular shaped fishes.
- Head:** profile rising steeply to nape, snout and interorbital space rounded.
- Mouth:** small, horizontal, not protrusible. Teeth in several rows, very small and brush-like; palate toothless.
- Fins:** dorsal fin with 11-12 strong spines, 16-18 soft rays, first spine procumbent; deep notch between spinous and soft portions of fin. Anal fin with 4 strong spines & 13-16 soft rays. Pectoral fins relatively small, with 16-17 rays. Caudal fin truncate or slightly emarginate (rounded in juveniles).

Synodontidae (Lizardfishes)



(Source: FAO Carpenter et al. 1997)

- Body:** elongate, usually cylindrical.
- Head:** lizard-like.
- Mouth:** large and terminal; maxilla extending beyond eye.
- Teeth:** rows of numerous small, slender and pointed needle-like teeth visible even when mouth is closed; teeth also on palate (roof of mouth) and tongue.
- Dorsal fin:** small adipose fin present.

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سوق السمك
FISH MARKET



4 Key to common fish species

4 Key to common fish species

Terminologies

- **Distribution:**
 - **International “Int’l”:** beyond area 51 - FAO
 - **FAO Area 51:** Western Indian Ocean (Check figure 13)
 - **Arabian Gulf:** also referred to as Persian Gulf
- **Seasons:**
 - **Spring** = March, April, May
 - **Summer** = June, July, August
 - **Fall** = September, October, November
 - **Winter** = December, January, February
- **Reproductive activity** = Breeding season
- **Fish species listed in the Central Statistical Bureau’s official fish wealth bulletin (Annex 1):**
 - CSB Assessed Fish (AF): categorised commercial fishery
 - CSB Unassessed Fish (UF): an aggregate of bycatch species listed under category “others”

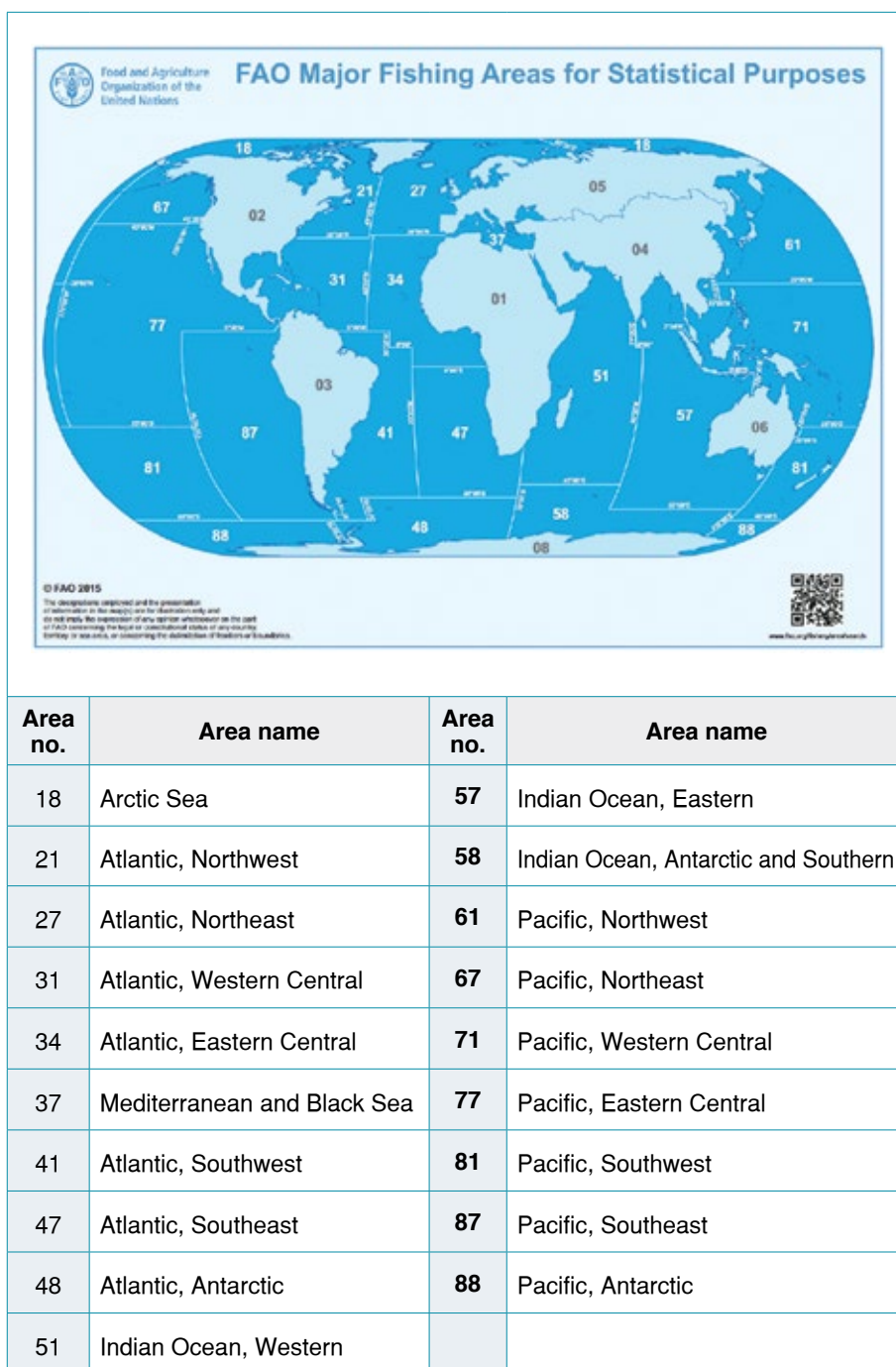


Figure 13. FAO major marine fishing areas (FAO, 2021).

Family: Carangidae

Unassessed Fish (UF)



(© EPA of Kuwait)

Family	Scientific name	Common name	Local name	الاسم المحلي
Carangidae	<i>Carangoides bajad</i>	Orangespotted trevally	Hamam	حمام

Main features:

- Both jaws with bands of villiform teeth.
- Breast completely scaled or with a narrow naked area below in front.
- 1st dorsal fin with 8 spines; 2nd with 1 spine and 24-26 soft rays.
- Anal fin with 2 detached spines, followed by 1 spine and 21-24 rays.
- Posterior part of lateral line with hardened scutes.
- Colour: Brassy dorsally, shading to silvery white on sides, with numerous conspicuous orange-yellow spots; no dark opercular spot; capable of rapidly changing colour to almost entirely orange.

IUCN redlist status	Globally: least concern, Arabian Gulf: least concern			
Distribution	Int'l: FAO Area 51, 57, 61, 71			
Reproductive activity	Spring	☒ Summer	☒ Early Fall	Winter
Maturation size	Range: Male: 19.4-25 cm Female: 16.6-24.6 cm	Average: Male: 31.9 cm Female: 20.6 cm		
Method caught	Line fishing	☒ Trawling	☒ Seine nets	Traps
	Cast nets	☒ Gill nets		
Threats	Urban activities	Industrial activities	Habitat modification	
	☒ Fishing/ harvesting	No known threats		
Habitat	• Coastal areas near rocky and coral reefs and usually found in 50 m depth.			
Comments	-			

Family: Carangidae

Unassessed Fish (UF)



(© EPA of Kuwait)

Family	Scientific name	Common name	Local name	الاسم المحلي
Carangidae	<i>Carangoides chrysophrys</i>	Longnose trevally	Hamam	حمام

Main features:

- Head profile gently sloping, then abruptly vertical just above mouth.
- Both jaws with bands of villiform teeth.
- 15-18 gill rakers on lower limb of 1st arch.
- Breast naked ventrally to behind pelvic-fin origins and laterally to pectoral-fin base.
- 18-20 soft dorsal-fin rays; 14-17 soft anal-fin rays.
- Posterior part of lateral line with hardened scutes.
- Colour: in life, generally silvery with head and body greenish above, silvery with yellow-green reflections below; a small black blotch on upper edge of opercle.

IUCN redlist status	Globally: least concern, Arabian Gulf : least concern			
Distribution	Int'l: FAO Area 51, 57, 71			
Reproductive activity	Spring	Summer	☒ Fall	☒ Late Winter
Maturation size	Range: Male: 38-76.5 cm Female: 27.3-77.6 cm	Average: Male: 57.25 cm Female: 52.45 cm		
Method caught	☒ Line fishing	☒ Trawling	Seine nets	☒ Traps
	Cast nets	Gill nets		
Threats	Urban activities	Industrial activities	Habitat modification	
	☒ Fishing/ harvesting	No know threats		
Habitat	• This type of specie inhabits coastal waters, especially reefs at depth of 30-90 cm.			
Comments	• It consumes small fish, molluscs and crustaceans.			

Family: Carangidae

Unassessed Fish (UF)



(© EPA of Kuwait)

Family	Scientific name	Common name	Local name	الاسم المحلي
Carangidae	<i>Gnathanodon speciosus</i>	Golden Trevally	Rabeeb	ربيب

Main features:

- Upper jaw without teeth. Fleshy lips; lip noticeably papillose and upper jaw strongly protractile.
- Adipose eyelid poorly developed. Posterior part of lateral line with hardened scutes.
- 1st dorsal fin with 7 spines; 2nd with 1 spine and 18–20 soft rays.
- Anal fin with 2 detached spines, followed by 1 spine and 15–17 rays.
- Colour: Juveniles silvery to yellow with 7–11 black bands, the bands fading in adults and replaced by a few dark patches on sides. All fins yellow, tips of caudal-fin lobes usually blackish, the upper lobe more conspicuous than the lower lobe.

IUCN redlist status	Globally: least concern, Arabian Gulf: least concern			
Distribution	Int'l: FAO Area 51, 57, 61, 71, 77 , 87			
Reproductive activity	☒ Spring	Summer	Fall	Winter
Maturation size	Range: Male: 80-146 cm Female: 53-110 cm	Average: Male: 113 cm Female: 81.5 cm		
Method caught	Line fishing	☒ Trawling	☒ Seine nets	☒ Traps
	Cast nets	☒ Gill nets		
Threats	Urban activities	Industrial activities	Habitat modification	
	☒ Fishing/ harvesting	No known threats		
Habitat	• Tropical and subtropical water. • Inshore, including rocky reefs, deep lagoons and seaward reefs. • It will be found anywhere where food is available such as coral reefs and open sand flats.			
Comments	-			

Family: Carangidae

Assessed Fish (AF #13)



(© EPA of Kuwait)

Family	Scientific name	Common name	Local name	الاسم المحلي
Carangidae	<i>Parastromateus niger</i>	Black pomfret	Halwayo	حلوايوه

Main features:

- Body deep and compressed; dorsal and ventral profiles of body strongly and equally convex.
- Mouth terminal; both jaws with a single row of small conical teeth.
- Pelvic fins absent in specimens larger than about 10 cm; when present, located anterior to pectoral-fin base.
- Posterior part of lateral line with hardened scutes.
- Colour: in life, adults uniformly silvery-grey to bluish-brown (yellowish-brown when deciduous scales are missing); fins with dark edges.

IUCN redlist status	Globally: least concern – population decreasing Arabian Gulf: least concern			
Distribution	Int'l: FAO Area 51, 57, 61, 71			
Reproductive activity	Spring	☒ Late Summer	Fall	☒ Late Winter
Maturation size	Range: Male: 15-32 cm Female: 20-42 cm	Average: Male: 23.5 cm Female: 31 cm		
Method caught	Line fishing	☒ Trawling	☒ Seine nets	Traps
	Cast nets	Gill nets		
Threats	Urban activities	Industrial activities	Habitat modification	
	☒ Fishing/ harvesting	No know threats		
Habitat	• They are found on the pelagic zone at night and near the bottom during the day, usually found in 15 to 40 m depth and they prefer muddy bottoms.			
Comments	• Researchers found that temperatures play a vital role at triggering the spawning season in both sexes.			

Family: Carangidae

Assessed Fish (AF #8)



(© EPA of Kuwait)

Family	Scientific name	Common name	Local name	الاسم المحلي
Carangidae	<i>Scomberoides commersonnianus</i>	Talang queenfish	Thila'ah	ضلعة

Main features:

- Body oblong to elliptical, strongly compressed; dorsal and ventral profiles similar, snout blunt with dorsal profile of head and scales on midbody nape slightly convex.
- 5-8 large blotches on sides above or touching lateral line; no scutes on lateral line.
- Posterior soft dorsal and anal-fin rays are semidetached finlets.
- 8-15 total gill rakers on 1st gill arch.
- Anal-fin base about equal in length to 2nd dorsal-fin base.
- No caudal peduncle grooves.
- Colour: in life, head and body dusky green to bluish dorsally, grey to silvery below, large individuals often golden, especially ventrally. Dorsal and anal fins dark, uniformly pigmented.

IUCN redlist status	Globally: least concern, Arabian Gulf: least concern			
Distribution	Int'l: FAO Area 51, 57, 61, 71			
Reproductive activity	☒ Spring	☒ Early Summer	Fall	Winter
Maturation size	Range: Male: 43-107 cm Female: 22-96.9 cm	Average: Male: 75 cm Female: 59.5 cm		
Method caught	☒ Line fishing	☒ Trawling	☒ Seine nets	Traps
	Cast nets	☒ Gill nets		
Threats	Urban activities	Industrial activities	Habitat modification	
	☒ Fishing/ harvesting	No know threats		
Habitat	• Inhabits coastal water and are found near the reefs and offshore islands.			
Comments	-			

Family: Carangidae

Unassessed Fish (UF)



(© EPA of Kuwait)

Family	Scientific name	Common name	Local name	الاسم المحلي
Carangidae	<i>Trachinotus blochii</i>	Snubose pompano	Talah	طلاح

Main features:

- Body ovate in young to subovate in large adults and compressed; profile of snout broadly rounded.
- Height of dorsal-fin lobe 35-60% of fork length in specimens 10-40 cm fork length.
- 18-20 soft dorsal rays. Anal-fin base about equal in length to 2nd dorsal-fin base.
- No caudal peduncle grooves
- No scutes on lateral line
- Colour: in life, head and body generally silvery, blue-grey above, paler below; large adults sometimes with most of body golden-orange, especially snout and lower half of body. Anal fin dusky to dirty orange, lobe with a brownish anterior margin.

IUCN redlist status	Globally: least concern, Arabian Gulf : least concern			
Distribution	Int'l: FAO Area 51, 57, 61, 71			
Reproductive activity	☒ Mid Spring	Summer	Fall	☒ Winter
Maturation size	☒ Data Deficiency			
Method caught	☒ Line fishing	Trawling	Seine nets	☒ Traps
	Cast nets	☒ Gill nets		
Threats	Urban activities	Industrial activities	Habitat modification	
	Fishing/ harvesting	☒ No know threats		
Habitat	• Inhabits tropical and temperate coasts from the Indian Ocean to the Southern Japan. • Found in rocky and coral areas.			
Comments	-			

Family: Carangidae

Unassessed Fish (UF)



(© EPA of Kuwait)

Family	Scientific name	Common name	Local name	الاسم المحلي
Carangidae	<i>Trachinotus mookalee</i>	Pompano	Talah	طلاح

Main features:

- Body ovate in young to subovate in large adults and compressed; profile of snout broadly rounded, in adults becoming nearly straight to interorbital region.
- Height of dorsal-fin lobe 24-34% of fork length in specimens 10-40 cm fork length.
- 18-20 soft dorsal-fin rays.
- Anal-fin base about equal in length to 2nd dorsal-fin base.
- No caudal peduncle grooves.
- No scutes on lateral line.
- Colour: in life, head and body generally silvery, greenish to bluish-grey dorsally, paler below; large adults sometimes with body mostly bronze or greenish-golden. Anal fin bright to dirty yellow, lobe without a brownish anterior margin.

IUCN redlist status	Globally: least concern, Arabian Gulf: least concern			
Distribution	Int'l: FAO Area 51, 57, 71, 61			
Reproductive activity	☒ Mid Spring	Summer	Fall	☒ Winter
Maturation size	Range: Male: 53-90 cm Female: 10-40 cm	Average: Male: 71.5 cm Female: 25 cm		
Method caught	Line fishing	☒ Trawling	☒ Seine nets	☒ Traps
	Cast nets	Gill nets		
Threats	Urban activities	Industrial activities	Habitat modification	
	Fishing/ harvesting	☒ No know threats		
Habitat	• Inhabits shallow coastal waters.			
Comments	-			

Family: Chirocentridae

Unassessed Fish (UF)



(© EPA of Kuwait)

Family	Scientific name	Common name	Local name	الاسم المحلي
Chirocentridae	<i>Chirocentrus nudus</i>	Whitefin wolf-herring	Hiff	خف

Main features:

- Body very elongate, strongly compressed, belly sharp but without scutes.
- 2 fanglike canines pointing forward in upper jaw, a series of canine teeth in lower jaw.
- Dorsal fin with 16-19 rays; anal fin with 29-36 rays.
- Pectoral fin long, its length greater than distance from eye centre to border of gill cover.
- Colour: Dorsal and anal fins colourless (upper part of dorsal fin clear, no black on anterior part of anal fin); back with bands of green and blue.

IUCN redlist status	Globally: least concern Arabian Gulf: least concern - population stable			
Distribution	Int'l: FAO Area 51, 57, 71			
Reproductive activity	Spring	☒ Mid Summer	Fall	☒ Late Winter
Maturation size	☒ Data Deficiency_			
Method caught	Line fishing	☒ Trawling	☒ Seine nets	☒ Traps
	Cast nets	☒ Gill nets		
Threats	Urban activities	Industrial activities	Habitat modification	
	☒ Fishing/ harvesting	No know threats		
Habitat	• Inshore, pelagic species. • Depth range 0-150 m.			
Comments	• Feeds mostly on small fishes (98%) and secondarily on teuthids and crustaceans.			

Family: Clupeidae

Assessed Fish (AF #3)



(© EPA of Kuwait)

Family	Scientific name	Common name	Local name	الاسم المحلي
Clupeidae	<i>Tenualosa ilisha</i>	Hilsa shad	Suboor	صبور

Main features:

- Body fusiform, moderately deep and compressed. Belly with a distinct keel of 30 to 33 scutes.
- Mouth terminal.
- Upper jaw with distinct notch at centre.
- Fronto-parietal striae weakly developed.
- Colour: back bluelgreen, flanks silvery, with a dark blotch behind gill opening, followed by a series of small spots or blotches along flank.

IUCN redlist status	Globally: least concern - population decreasing Arabian Gulf: near threatened–decreasing			
Distribution	Int'l: FAO Area 51, 57			
Reproductive activity	☒ Early Spring	Summer	Fall	☒ Late Winter
Maturation size	Range: Male: 34-60 cm Female: -	Average: Male: 36 cm Female: 42 cm		
Method caught	Line fishing	Trawling	Seine nets	☒ Traps
	Cast nets	☒ Gill nets		
Threats	Urban activities	☒ Industrial activities	Habitat modification	
	☒ Fishing/ harvesting	No know threats		
Habitat	• Marine, pelagic-neritic and schooling in coastal waters, euryhaline, anadromous, ascending rivers for as much as 1,200 km, but usually about 50 to 100 km. • Occurs in tropical waters to a depth of 200 m.			
Comments	• It is mainly a filter feeder, consumes plankton but also practices grubbing on muddy bottoms.			

Family: Cynoglossidae

Unassessed Fish (UF)



(© EPA of Kuwait)

Family	Scientific name	Common name	Local name	الاسم المحلي
Cynoglossidae	<i>Cynoglossus arel</i>	Largescale Tonguesole	Elsan elthour	لسان الثور

Main features:

- Eyes on left side with a small scaly interorbital space; snout obtusely pointed; corner of mouth reaching posteriorly to or beyond lower eye, about midway between gill opening and tip of snout.
- Rostral hook short. Dorsal and anal fins joined to caudal fin; 116-130 dorsal-fin rays.
- Two lateral lines on eyed side, none on blind side.
- 7-9 scale rows between lateral lines; 56-70 scales in midlateral line.
- Colour: Eyed side uniform brown, with a dark patch on gill cover; blind side white.

IUCN redlist status	Globally: data deficient Arabian Gulf: least concern – population stable			
Distribution	Int'l: FAO Area 51, 57, 61, 71			
Reproductive activity	☒ Early Spring	Summer	Fall	☒ Late Winter
Maturation size	Range: 20-40 cm	Average: 30 cm		
Method caught	Line fishing	☒ Trawling	Seine nets	Traps
	Cast nets	☒ Gill nets		
Threats	Urban activities	Industrial activities	Habitat modification	
	☒ Fishing/ harvesting	No know threats		
Habitat	• Inhabits muddy and sandy bottoms of the continental shelf down to 125 m. Enters estuaries and tidal rivers.			
Comments	• Feeds predominantly on bottom-living invertebrates.			

Family: Haemulidae

Assessed Fish (AF #16)



(© EPA of Kuwait)

Family	Scientific name	Common name	Local name	الإسم المحلي
Haemulidae	<i>Diagramma pictum</i>	Painted sweetlips	Fersh	فرش

Main features:

- Mouth small, lips thick; chin with 6 pores but no median pit.
- Dorsal fin with 9-10 (very rarely 11) spines, the second one much longer than the first and with 21-26 soft rays.
- Scales small, ctenoid (rough to touch).
- Lateral line with 82-117 scales.
- Colour pattern changes from longitudinal black bands in juveniles to longitudinal rows of spots in subadults, to increasingly more scarce spots and mostly silvery in adults.

IUCN redlist status	Globally: Unassessed, Arabian Gulf: near threatened - population decreasing			
Distribution	Int'l: FAO Area 47, 51, 57, 61, 71, 81			
Reproductive activity	☒ Spring	Summer	☒ Late Fall	Winter
Maturation size	Average: Male: 26.7 cm Female: 35.7 cm_			
Method caught	Line fishing	☒ Trawling	Seine nets	Traps
	Cast nets	Gill nets		
Threats	Urban activities	Industrial activities	☒ Habitat modification	
	☒ Fishing/ harvesting	No know threats		
Habitat	• Reef associated. • Lower depth limit: 80-88m.			
Comments	• Found solitary or in groups, often in turbid water.			

Family: Haemulidae

Unassessed Fish (UF)



(© EPA of Kuwait)

Family	Scientific name	Common name	Local name	الاسم المحلي
Haemulidae	<i>Plectorhinchus sordidus</i>	Sordid rubberlip	Yanam	ينم

Main features:

- Lips fleshy, swollen with age.
- Chin with 6 pores and no median pit.
- 12 dorsal-fin spines, 17-20 soft dorsal-fin rays.
- Soft dorsal-fin base about equal to head length.
- Lateral line with about 54 tubed scales.
- Colour: greyish to brownish grey, posterior edge of operculum dark brown.

IUCN redlist status	Globally: least concern Arabian Gulf: least concern - population stable			
Distribution	Int'l: FAO Area 47, 51, 57			
Reproductive activity	☒ Spring	Summer	Fall	Winter
Maturation size	Start From: Male: 24.8 cm Female: 26 cm	Average: Male: 29.8 cm Female: 28.7 cm		
Method caught	☒ Line fishing	Trawling	Seine nets	Traps
	Cast nets	☒ Gill nets		
Threats	Urban activities	Industrial activities	☒ Habitat modification	
	☒ Fishing/ harvesting	No know threats		
Habitat	• Found over rocks, corals, and shallow weedy areas. • Depth range 2-25 m. • Tropical.			
Comments	-			

Family: Haemulidae

Assessed Fish (AF #4)



(© EPA of Kuwait)

Family	Scientific name	Common name	Local name	الاسم المحلي
Haemulidae	<i>Pomadasys kaakan</i>	Javelin grunt	Nagroor	نقروور

Main features:

- Mouth small, maxilla reaching to eye; jaw teeth villiform (brush-like).
- 2 pores and a median pit on chin.
- Dorsal fin with 12 spines and 13-15 soft rays; anal fin with 3 spines and 7-8 soft rays.
- Scales ctenoid; 7 scale rows between lateral line and dorsal fin origin.
- Colour: adults uniform golden green above, silvery below with traces of the vertical bars present only when alive and spots on dorsal fins indistinct or absent; large individuals sometimes with head, ventral parts of body and lower lobe of caudal fin yellowish.

IUCN redlist status	Globally: Unassessed, Arabian Gulf: least concern - population stable			
Distribution	Restricted: FAO Area 51			
Reproductive activity	☒ Spring	☒ Mid Summer	Fall	☒ Late Winter
Maturation size	Start From: Male: 39.3 cm Female: 47.7 cm			
Method caught	☒ Line fishing	☒ Trawling	Seine nets	☒ Traps
	Cast nets	☒ Gill nets		
Threats	Urban activities	Industrial activities	Habitat modification	
	☒ Fishing/ harvesting	No known threats		
Habitat	• Inhabits both estuaries and coastal waters. • Inhabits coastal rocky areas, coral reefs and in muddy substrates to depths of 75 m.			
Comments	-			

Family: Haemulidae

Unassessed Fish (UF)



(© EPA of Kuwait)

Family	Scientific name	Common name	Local name	الاسم المحلي
Haemulidae	<i>Pomadasys stridens</i>	Striped piggy	Yimyam	يَمِيَام

Main features:

- Body oblong and compressed with rounded head; its upper profile convex.
- Mouth small; maxilla reaching to eye; teeth in jaws in wide villiform bands.
- 10 scale rows between lateral line and dorsal-fin origin.
- Chin with 2 pores followed by median pit with 2 pores on each side.
- Colour: body brown above, white below, with 3 brown to golden stripes on body; a dark spot present on opercle.

IUCN redlist status	Globally: least concern Arabian Gulf: least concern - population stable			
Distribution	Restricted: FAO area 51			
Reproductive activity	☒ Spring	☒ Early Summer	Fall	☒ Winter
Maturation size	Average: 19.84 cm			
Method caught	☒ Line fishing	Trawling	Seine nets	Traps
	Cast nets	Gill nets		
Threats	Urban activities	Industrial activities	Habitat modification	
	☒ Fishing/ harvesting	No know threats		
Habitat	• Inhabits soft bottoms in coastal waters.			
Comments	• Diet consists of crustaceans and fishes. • <i>P. stridens</i> characterized by prolong spawning season and females are the predominant sex in the population.			

Family: Lethrinidae

Assessed Fish (AF #17)



(© EPA of Kuwait)

Family	Scientific name	Common name	Local name	الاسم المحلي
Lethrinidae	<i>Lethrinus lentjan</i>	Pinkear emperor	Sheeri	شعري

Main features:

- Profile of head near eye nearly straight or slightly concave. Eyes usually not close to dorsal profile.
- Inner surface of pectoral-fin base with scales. 5.5 scale rows above lateral line to 5th dorsal-fin spine.
- Colour: body green-grey above, lighter to silver below; white spots sometimes on scale centres especially above lateral line. Head brownish mauve-purple; a bright red margin to opercle and usually to pectoral fin base. Dorsal and caudal fins mauve, often mottled with orange, other fins yellow-orange, sometimes with a pinkish hue.

IUCN status	Globally: least concern, Arabian Gulf: least concern			
Distribution	Int'l: FAO Area 47, 51, 57, 61, 71, 77			
Reproductive activity	Spring	Summer	☒ Early Fall	☒ Late Winter
Maturation size	Range: 17-26 cm			
Method caught	☒ Line fishing	☒ Trawling	☒ Seine nets	☒ Traps
	Cast nets	☒ Gill nets		
Threats	Urban activities	Industrial activities	☒ Habitat modification	
	☒ Fishing/ harvesting	No know threats		
Habitat	• Marine, brackish, tropical. Inhabits sandy bottoms in coastal areas, deep lagoons and near coral reefs; depth range 10-90 m.			
Comments	• Feeds primarily on crustaceans and mollusks but echinoderms, polychaetes and fishes. • <i>L. lenjtans</i> spawn eggs in extended batches during all the months of the year. However, the main spawning season was identified as occurring in February and March. • Sex changes from female to male.			

Family: Lethrinidae

Unassessed Fish (UF)



(© EPA of Kuwait)

Family	Scientific name	Common name	Local name	الاسم المحلي
Lethrinidae	<i>Lethrinus nebulosus</i>	Spangled emperor	Sheeri	شعري

Main features:

- Profile of head near eye nearly straight or slightly concave.
- Eye usually not close to dorsal profile.
- Inner surface of pectoral-fin base with scales.
- 5.5 scale rows above lateral line to 5th dorsal-fin spine.
- Melanophores covering membranes of inner pelvic-fin rays.
- Colour: olive-green above, paler below; usually 2 or 3 blue streaks radiating from eye; usually several yellow longitudinal stripes on sides.

IUCN redlist status	Globally: least concern, Arabian Gulf: least concern			
Distribution	Int'l: FAO Area 51, 57, 61, 71			
Reproductive activity	☒ Spring	☒ Early Summer	Fall	Winter
Maturation size	Average: Male: 19.4 cm Female: 26.7 cm			
Method caught	Line fishing	☒ Trawling	☒ Seine nets	☒ Traps
	Cast nets	☒ Gill nets		
Threats	Urban activities	Industrial activities	Habitat modification	
	☒ Fishing/ harvesting	No know threats		
Habitat	• Inhabits nearshore and offshore coral reefs, coralline lagoons, sea-grass beds, mangrove swamps and coastal sand and rock areas, to depths of 75 m.			
Comments	• <i>Lethrinus nebulosus</i> diet consists of mollusks, crustaceans, echinoderms and less often on polychaetes and fishes.			

Family: Lutjanidae

Unassessed Fish (UF)



(© EPA of Kuwait)

Family	Scientific name	Common name	Local name	الاسم المحلي
Lutjanidae	<i>Lutjanus fulvivlamma</i>	Dory snapper	Naysarah	نيسره

Main features:

- A small, robust snapper with head profile convex and interorbital space broad and flat.
- Vomerine tooth patch (on roof of mouth) triangular, with a medial posterior extension; tongue with a patch of granular teeth.
- Dorsal fin with 10 spines and 12-14 soft rays. Preopercular notch and knob poorly developed.
- Scale rows on back rising obliquely above lateral line.
- 16-19 gill rakers on 1st gill arch.
- Colour: Back and upper sides brown; lower sides whitish or light brown; a series of 6-7 yellow stripes on sides; fins yellowish; with a prominent round, black blotch on lateral line below junction of soft and spinous parts of dorsal fin.

IUCN redlist status	Globally: least concern Arabian Gulf: least concern - population stable			
Distribution	Int'l: FAO Area 51, 57, 71			
Reproductive activity	☒ Mid Spring	☒ Summer	Fall	Winter
Maturation size	Average: Male: 16.7 cm Female: 18.7 cm_			
Method caught	☒ Line fishing	☒ Trawling	Seine nets	☒ Traps
	Cast nets	☒ Gill nets		
Threats	Urban activities	Industrial activities	Habitat modification	
	☒ Fishing / harvesting	No known threats		
Habitat	• Marine Neritic, Intertidal • This species inhabits coral reefs and muddy bottoms to depths of 35 m.			
Comments	-			

Family: Lutjanidae

Assessed Fish (AF #9)



(© EPA of Kuwait)

Family	Scientific name	Common name	Local name	الاسم المحلي
Lutjanidae	<i>Lutjanus malabaricus</i>	Malabar blood snapper	Hamrah	حمرة

Main features:

- Preorbital bone much broader than eye diameter.
- Preopercular notch and knob poorly developed.
- Mouth large, maxilla length about equal to distance between bases of last dorsal and anal fin rays; vomerine teeth (on roof of mouth) in a triangular patch, without a medial posterior extension; tongue toothless.
- Dorsal fin with 11 spines and 12-14 soft rays.
- Scale rows on back rising obliquely above lateral line.
- 18-20 gill rakers on 1st gill arch.
- Colour: Back and sides red or red-orange, lighter on lower parts; fins red-dish.

IUCN redlist status	Globally: least concern, Arabian Gulf : near threatened			
Distribution	Int'l: FAO Area 51, 57, 61, 71			
Reproductive activity	☒ Spring	☒ Summer	☒ Fall	☒ Winter
Maturation size	☒ Data Deficiency_			
Method caught	☒ Line fishing	☒ Trawling	Seine nets	Traps
	Cast nets	☒ Gill nets		
Threats	Urban activities	Industrial activities	Habitat modification	
	☒ Fishing/ harvesting	No known threats		
Habitat	• Inhabits both coastal and offshore reefs from about 12-100 m depth.			
Comments	• Feeds on bottom-living invertebrates.			

Family: Lutjanidae

Unassessed Fish (UF)



(© EPA of Kuwait)

Family	Scientific name	Common name	Local name	الاسم المحلي
Lutjanidae	<i>Lutjanus malabaricus</i>	Moses Snapper / russell's snapper	Naysarah	نيسره

Main features:

- Moderately deep-body; head profile a little concave. teeth on roof of mouth.
- Dorsal fin: 10 spines and 14-15 soft rays; anal fin: 3 spines and 8-9 soft rays; caudal fin truncate to emarginate.
- Longitudinal rows of scales above lateral line rise obliquely to dorsal profile; predorsal scales (on roof of head) beginning behind eyes;
- Colour: body reddish brown or silvery, with a dark, variable black blotch above lateral line. About 8 golden or light brown lines on body, lower ones horizontal and upper ones rising obliquely to dorsal profile; pelvic and anal fins yellow.

IUCN redlist status	Globally: Unassessed, Arabian Gulf: least concer			
Distribution	Int'l: FAO Area 51, 57, 71			
Reproductive activity	☒ Spring	☒ Summer	☒ Fall	Winter
Maturation size	☒ Data Deficiency_			
Method caught	☒ Line fishing	☒ Trawling	Seine nets	☒ Traps
	Cast nets	☒ Gill nets		
Threats	Urban activities	Industrial activities	☒ Habitat modification	
	Fishing/ harvesting	No known threats		
Habitat	• Inhabits shallow waters in rocky and coral reef areas; juveniles are found in mangrove areas; depth 3-80cm.			
Comments	• Populations in continental waters have extended spawning throughout the summer, whereas those occurring around islands spawn throughout the year with peaks in spring and fall.			

Family: Mugilidae

Assessed Fish (AF #10)



(© EPA of Kuwait)

Family	Scientific name	Common name	Local name	الاسم المحلي
Mugilidae	<i>Planiliza klunzingeri</i>	Klunzinger's mullet	Maid	ميد

Main features:

- Maxilla wide, strongly curved tip visible when mouth closed.
- Preorbital strongly concave in front, with a wide square rear tip.
- Predorsal scales with a median ridge.
- 32-38 scales in lateral series.
- Anal fin with 3 spines and 9 soft rays.

IUCN redlist status	Globally: Unassessed, Arabian Gulf: vulnerable – population decreasing			
Distribution	Restricted: FAO Area 51			
Reproductive activity	Spring	Summer	Fall	☒ Winter
Maturation size	Range: Male: 15.8-19.5 cm Female: 15.7-22.5 cm	Average: Male: 17.65 cm Female: 19.1 cm		
Method caught	Line fishing	Trawling	☒ Seine nets	☒ Traps
	☒ Cast nets	☒ Gill nets		
Threats	Urban activities	Industrial activities	Habitat modification	
	☒ Fishing/ harvesting	No known threats		
Habitat	• Subtropical, shallow coastal waters.			
Comments	-			

Family: Mugilidae

Assessed Fish (AF #6)



(© EPA of Kuwait)

Family	Scientific name	Common name	Local name	الإسم المحلي
Mugilidae	<i>Planiliza subviridis</i>	Greenback mullet	Beyah	بياح

Main features:

- Body robust, head wide, dorsally flattened.
- Adipose eyelid covering about half of iris.
- Maxilla wide, strongly curved tip visible when mouth closed.
- First dorsal fin nearer to caudal fin base than to snout tip or midway between them.
- Anal fin with 3 spines and usually 9 soft rays.
- Usually 28-32 scales in lateral series; predorsal scales without a median ridge.
- Colour: dark greenish above, white below; caudal fin edged with black.

IUCN status	Globally:Unassessed, Arabian Gulf: least concern			
Distribution	Int'l: FAO Area 51, 57, 61, 71, 77			
Reproductive activity	Spring	Summer	☒ Mid Fall	☒ Mid Winter
Maturation size	Start From: Male: 13.7 cm Female: 14.2 cm			
Method caught	Line fishing	Trawling	☒ Seine nets	☒ Traps
	☒ Cast nets	☒ Gill nets		
Threats	Urban activities	Industrial activities	☒ Habitat modification	
	Fishing/ harvesting	No know threats		
Habitat	• Shallow coastal waters and enters lagoons, estuaries, and fresh water to feed. • Depth range 0-5 meters.			
Comments	• Feed on small algae, diatoms and benthic detrital material taken in with sand and mud; fry take zooplankton, diatoms, detrital material and inorganic sediment. • Temperature is the most important factor influencing spawning.			

Family: Nemipteridae

Assessed Fish (AF #6)



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Family	Scientific name	Common name	Local name	الاسم المحلي
Nemipteridae	<i>Nemipterus japonicus</i>	Japanese threadfin bream	Bassey	باسي

Main features:

- Membrane between dorsal-fin spines not deeply incised.
- Pelvic fin long. Upper lobe of caudal fin produced to an elongated filament.
- No pronounced spine on suborbital.
- Three transverse scale rows on preopercle.
- Prominent red and yellow blotch below origin of lateral line.
- Colour: pinkish above, silvery below, 11-12 yellow stripes along body. Dorsal fin rosy, with a yellow/orange margin and a broad yellow band along base. Caudal fin red, tip of upper lobe and filament bright yellow.

IUCN redlist status	Globally: least concern, Arabian Gulf : least concern			
Distribution	Int'l: FAO Area 51, 57, 61, 71			
Reproductive activity	☒ Spring	Summer	☒ Late Fall	☒ Winter
Maturation size	Start From: Male: 10 cm Female: 9.5 cm			
Method caught	Line fishing	☒ Trawling	Seine nets	Traps
	Cast nets	☒ Gill nets		
Threats	Urban activities	Industrial activities	☒ Habitat modification	
	☒ Fishing/ harvesting	No know threads		
Habitat	• Marine, demersal, tropical. Abundant in coastal waters, found on mud or sand bottoms. • Depth range 5-80 meters.			
Comments	• Non-migratory, Feeds mainly on small fishes, crustaceans, mollusks (mainly cephalopods), polychaetes and echinoderms.			

Family: Nemipteridae

Unassessed Fish (UF)



(© EPA of Kuwait)

Family	Scientific name	Common name	Local name	الاسم المحلي
Nemipteridae	<i>Nemipterus peronii</i>	Notchedfin threadfin bream	Bassey	باسي

Main features:

- Three transverse scale rows on preopercle.
- No pronounced spine on suborbital.
- Membrane between dorsal-fin spines deeply incised. No caudal filament.
- Colour: several faint yellow lines along flanks; a reddish-brown spot at origin of lateral line; dorsal fin translucent or yellow-tinged, its margin red, with a very narrow yellow-orange stripe immediately below; pelvic fins white, their bases and axillary scales yellow; anal fin milky white, usually translucent or partly pale yellow; caudal fin rosy, its lower margin whitish, tip of upper lobe rosy or yellowish, fork margin red.

IUCN redlist status	Globally: least concern, Arabian Gulf: least concern			
Distribution	Int'l: FAO Area 51, 57, 61, 71			
Reproductive activity	☒ Spring	Summer	Fall	☒ Mid Winter
Maturation size	Start From: Male: 10.4 cm Female: 9.67 cm	Average: Male: 17.5 cm Female: 17 cm		
Method caught	☒ Line fishing	☒ Trawling	Seine nets	Traps
	Cast nets	☒ Gill nets		
Threats	Urban activities	Industrial activities	☒ Habitat modification	
	☒ Fishing/ harvesting	No know threats		
Habitat	• Marine; brackish; demersal, tropical. Occurs on sand or mud bottoms. • Depth range: 17-100m.			
Comments	• Non-migratory. • Feeds on fish, crustaceans, mollusks and polychaetes.			

Family: Nemipteridae

Unassessed Fish (UF)



(© EPA of Kuwait)

Family	Scientific name	Common name	Local name	الاسم المحلي
Nemipteridae	<i>Scolopsis taeniata</i>	Blackstreaked moncole bream	Ebzaimy	ابزيمي

Main features:

- No small anterior pointing spine below eye.
- Suborbital with large backward-pointing spine.
- Colour: Greenish olive above, whitish below; a narrow whitish stripe along base of dorsal fin, beneath this, a dusky stripe above lateral line (from below spinous portion of dorsal fin to caudal peduncle); a bright blue stripe from eye to upper jaw and from posterior edge of the eye to base of pectoral fin, where it ends in a blue spot; fins yellowish or reddish.

IUCN redlist status	Globally: least concern, Arabian Gulf : least concern			
Distribution	Restricted: FAO Area 51			
Reproductive Activity	Data Deficiency_			
Maturation size	☒ Data Deficiency_			
Method caught	☒ Line fishing	☒ Trawling	Seine nets	☒ Traps
	Cast nets	☒ Gill nets		
Threats	Urban activities	Industrial activities	Habitat modification	
	Fishing/ harvesting	☒ No know threats		
Habitat	• Marine Neritic. • A benthic species, commonly found associated with reefs.			
Comments	-			

Family: Paralichthyidae

Unassessed Fish (UF)



(© EPA of Kuwait)

Family	Scientific name	Common name	Local name	الاسم المحلي
Paralichthyidae	<i>Pseudorhombus arsius</i>	Targettooth flounder	Khofa'a	خوفعة

Main features:

- Upper profile of head with a slight notch in front of upper eye.
- Maxilla extending to below rear half of lower eye.
- Upper jaw teeth small, closely spaced posteriorly, becoming widely spaced and enlarged anteriorly; lower jaw teeth large, widely spaced, 8-18 on blind side lower jaw.
- Dorsal fin with 71-84 rays; anal fin with 53-62 rays.
- Colour: Background colour of eyed side brownish with varying pattern of dark spots but always a large black blotch and 1 or 2 smaller dark spots along lateral line.

IUCN redlist status	Globally:Unassessed, Arabian Gulf: least concern			
Distribution	Int'l: FAO Area 51, 57, 61, 71			
Reproductive activity	Spring	☒ Late Summer	☒ Fall	Winter
Maturation size	☒ Data Deficiency_			
Method caught	Line fishing	☒ Trawling	Seine nets	Traps
	Cast nets	☒ Gill nets		
Threats	☒ Urban activities	☒ Industrial activities	Habitat modification	
	☒ Fishing/ harvesting	No know threats		
Habitat	• Inhabits shallow water and estuaries, prefer a muddy and sandy bottom, and can reach to 200m depth.			
Comments	-			

Family: Platycephalidae

Unassessed Fish (UF)



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Family	Scientific name	Common name	Local name	الاسم المحلي
Platycephalidae	<i>Platycephalus indicus</i>	Bartail flathead	Wahara	وحره

Main features:

- Body elongate; head strongly depressed with smooth bony ridges; a single, small preocular spine; vomerine teeth in one transverse patch; 2 preopercular spines, the upper a little shorter than the lower.
- 1st dorsal fin: 9-10 spines, the 1st and last often separated from other spines; 2nd dorsal fin usually with 13-14 soft rays; 13 anal fin rays. 65-84 pored lateral line scales.
- Colour: Brownish or greyish above, whitish below; small dark blotches on back and head; pectoral and pelvic fins with numerous brown blotches; caudal fin centrally yellow with black stripes on upper and lower margins.

IUCN redlist status	Globally: data deficient, Arabian Gulf: least concern			
Distribution	Int'l: FAO Area 51, 57, 61, 71			
Reproductive activity	☒ Spring	☒ Late Summer	Fall	☒ Mid- Winter
Maturation size	Range: 45.7-100cm			
Method caught	☒ Line fishing	☒ Trawling	Seine nets	Traps
	Cast nets	☒ Gill nets		
Threats	Urban activities	Industrial activities	Habitat modification	
	☒ Fishing/ harvesting	No know threats		
Habitat	- Found on sandy and muddy bottoms of coastal waters. Close to coral reefs in subtropical climates. Younger life stages use estuaries and freshwater habitats as nursery grounds. - Maximum depth 25 m.			
Comments	-			

Family: Polynemidae

Assessed Fish (AF #12)



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Family	Scientific name	Common name	Local name	الاسم المحلي
Polynemidae	<i>Eleutheronema tetradactylum</i>	Fourfinger threadfin	Sheem	شيم

Main features:

- Lips absent, except for lower lip near corner of mouth.
- Eyes large.
- 1st dorsal fin with 8 spines, 2nd dorsal fin with 1 spine and 14 (rarely 13 or 15) soft rays; Anal fin with 3 spines and 14-16 soft rays.
- 4 free filamentous rays in lower pectoral fin (Not showing in the picture).
- Colour: body silvery green above, cream below; dorsal and caudal fins grey, dusky at edges, pelvic and anal fins orange, pectoral filamentous rays white.

IUCN redlist status	Globally: least concern Arabian Gulf: endangered - population decreasing			
Distribution	Restricted: FAO Area 51			
Reproductive activity	Spring	Early Summer	☒ Mid Fall	☒ Mid Winter
Maturation size	Range: Male: 15-18 cm Female: 18-21 cm	Average: Male: 16.5 cm Female: 19.5 cm		
Method caught	☒ Line fishing	☒ Trawling	Seine nets	Traps
	Cast nets	☒ Gill nets		
Threats	Urban activities	Industrial activities	Habitat modification	
	☒ Fishing/ harvesting	No know threats		
Habitat	• Inhabits shallow sandy, muddy coastal waters.			
Comments	-			

Family: Polynemidae

Unassessed Fish (UF)



(© EPA of Kuwait)

Family	Scientific name	Common name	Local name	الاسم المحلي
Polynemidae	<i>Polydactylus sextarius</i>	Blackspot threadfin	Aryan / Ghazal	عريان / غزال

Main features:

- Mouth moderately large, with small teeth; upper lip absent, lower lip well developed.
- Eyes large.
- Snout projecting.
- 6 free filamentous rays in lower pectoral fin.
- Colour: golden olive above, silvery below; fins yellowish with black spots; inner side of gill cover pigmented with black; a large black blotch at beginning of lateral line.

IUCN redlist status	No data			
Distribution	Int'l: FAO Area 51, 57, 61, 71			
Reproductive activity	☒ Data Deficiency			
Maturation size	Range: Male: 9-13.4 cm Female: 10.5-14.9 cm	Average: Male: 11.2 cm Female: 12.7 cm		
Method caught	☒ Line fishing	☒ Trawling	Seine nets	Traps
	Cast nets	Gill nets		
Threats	Urban activities	Industrial activities	Habitat modification	
	Fishing/ harvesting	☒ No know threats		
Habitat	• Inhabits sandy and muddy substrates of continental shelves and can enter estuaries.			
Comments	-			

Family: Rachycentridae

Assessed Fish (AF #18)



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Family	Scientific name	Common name	Local name	الاسم المحلي
Rachycentridae	<i>Rachycentron canadum</i>	Cobia	Sikin	سكين

Main features:

- Head broad and depressed.
- First dorsal fin with 7-9 short, strong, isolated spines.
- Upper lobe of caudal fin longer than lower.
- Caudal fin lunate in adults, upper lobe longer than lower (caudal fin rounded in young, the central rays much prolonged)
- Small scales embedded in thick skin.
- Colour: back and sides dark brown, with two sharply defined narrow light bands; belly yellowish.

IUCN redlist status	Globally: least concern Arabian Gulf: least concern – population stable			
Distribution	Restricted: FAO Area 51			
Reproductive activity	☒ Mid Spring	☒ Late Summer	Fall	Winter
Maturation size	Range: Male: 54-63.31 cm Female: 60-75.08 cm	Average: Male: 58.6 cm Female: 67.54 cm		
Method caught	☒ Line fishing	☒ Trawling	Seine nets	Traps
	Cast nets	Gill nets		
Threats	Urban activities	Industrial activities	Habitat modification	
	Fishing/ harvesting	☒ No know threats		
Habitat	• It is a pelagic species and found over coral reefs, rocky shores, near mangroves, and often enters estuaries.			
Comments	-			

Family: Scatophagidae

Unassessed Fish (UF)



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Family	Scientific name	Common name	Local name	الاسم المحلي
Scatophagidae	<i>Scatophagus argus</i>	Spotted scat	Shanag	شنق

Main features:

- Body quadrangular, strongly compressed.
- Forehead steep, mouth small, with brush-like teeth.
- Dorsal fin with 11 spines and 16-18 soft rays; anal fin with 4 spines and 14-15 soft rays.
- Colour: greenish to silvery with numerous dark spots mainly confined to upper portion of sides.

IUCN redlist status	Globally: least concern Arabian Gulf: least concern – population stable			
Distribution	Int'l: FAO Area 51, 57, 61, 71			
Reproductive activity	Spring	☒ Summer	☒ Fall	Winter
Maturation size	Range: Male: 12.05-12.55 cm Female: 14.05-14.55 cm	Average: Male: 12.3 cm Female: 14.3 cm		
Method caught	Line fishing	☒ Trawling	☒ Seine nets	Traps
	Cast nets	☒ Gill nets		
Threats	Urban activities	Industrial activities	Habitat modification	
	☒ Fishing/ harvesting	No known threats		
Habitat	• Inhabits muddy habitats such as mangroves, estuaries and harbours with depth of 0-5 m.			
Comments	-			

Family: Sciaenidae

Assessed Fish (AF #7)



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Family	Scientific name	Common name	Local name	الاسم المحلي
Sciaenidae	<i>Otolithes ruber</i>	Tigertooth croaker	Nuwaibi	نوبيي

Main features:

- Body slender.
- Upper jaw with 1-2 pairs of strong canines at front; a pair of canine teeth at tip of lower jaw.
- 8-11 gill rakers on lower limb of 1st arch.
- Dorsal fin with 9-10 spines, followed by a notch, second part with 1 spine and 27-30 soft rays.
- Colour: brownish above, silvery with a golden sheen on flanks and belly, often with oblique dark streaks dorsally.

IUCN redlist status	Globally: least concern Arabian Gulf: vulnerable – population decreasing			
Distribution	Restricted: FAO Area 51			
Reproductive activity	☒ Late Spring	Summer	Fall	☒ Mid-Winter
Maturation size	Range: 30-40 cm	Average: 35 cm		
Method caught	☒ Line fishing	☒ Trawling	Seine nets	☒ Traps
	Cast nets	☒ Gill nets		
Threats	Urban activities	Industrial activities	Habitat modification	
	☒ Fishing/ harvesting	No know threats		
Habitat	• This species is a benthopelagic species and found over sandy, rocky, and muddy substrates in coastal waters.			
Comments	• Some articles mentioned that peak seasonality for O.ruber is full year round.			

Family: Sciaenidae

Unassessed Fish (UF)



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Family	Scientific name	Common name	Local name	الاسم المحلي
Sciaenidae	<i>Pennahia anea</i>	Bigeye croaker / greyfin croaker	Jilajjel	جليجل

Main features:

- Mouth large and terminal. Mental pores in 2 pairs, both small. Well-developed enlarged teeth.
- 9-12 gill rakers on lower limb of 1st arch.
- Dorsal fin with 9-10 spines on anterior part; 1 spine and 22-24 soft rays on posterior part; anal fin with 2 spines and 7 soft rays.
- Caudal fin truncate.
- Colour: Head and body greyish light brown on back, becoming paler ventrally with increasing silvery reflection to whitish abdomen; gill cover with diffused dark blotch; upper 2/3 of spinous dorsal fin dusky.

IUCN redlist status	Globally: least concern, Arabian Gulf : least concern			
Distribution	Int'l: FAO Area 51, 57, 61, 71			
Reproductive activity	☒ Spring	☒ Early Summer	Fall	Winter
Maturation size	Start from: Male: 11.9 cm Female: 12.5 cm			
Method caught	Line fishing	☒ Trawling	Seine nets	Traps
	Cast nets	☒ Gill nets		
Threats	☒ Urban activities	Industrial activities	Habitat modification	
	☒ Fishing/ harvesting	No know threats		
Habitat	• Marine neritic, Intertidal. • Inhabits coastal waters down to 60 m.			
Comments	-			

Family: Sciaenidae

Assessed Fish (AF #19)



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Family	Scientific name	Common name	Local name	الاسم المحلي
Sciaenidae	<i>Protonibea diacanthus</i>	Blackspotted croaker	Shemahei	شماهي

Main features:

- Big, nearly horizontal, terminal mouth.
- 7-8 gill rakers on lower limb of 1st arch.
- Dorsal fin with 9-10 spines, followed by a low notch, second part of the fin with 1 spine and 22-24 soft rays; pectoral fin fairly small, a little more than half of head length.
- Colour: 5 dark bars along back and many small black spots (about the size of pupil) on top of head, upper half of body and caudal fin; pectoral, pelvic, anal and lower part of caudal fins black. In larger fishes the 5 bars and the smaller spots are absent.

IUCN redlist status	Globally: near threatened – population decreasing Arabian Gulf: least concern			
Distribution	Int'l: FAO Area 51, 57, 61, 71			
Reproductive activity	Spring	☒ Summer	☒ Fall	Winter
Maturation size	☒ Data Deficiency_			
Method caught	☒ Line fishing	☒ Trawling	☒ Seine nets	☒ Traps
	Cast nets	☒ Gill nets		
Threats	Urban activities	Industrial activities	Habitat modification	
	☒ Fishing/ harvesting	No known threats		
Habitat	• Inhabits coastal waters over mud bottoms to depths of 60 m.			
Comments	-			

Family: Scombridae

Unassessed Fish (UF)



(© EPA of Kuwait)

Family	Scientific name	Common name	Local name	الاسم المحلي
Scombridae	<i>Rastrelliger kanagurta</i>	Indian mackerel	Khadra	خضره

Main features:

- Mouth large, rear margin extends behind eye.
- 1st dorsal fin with 8-11 spines; 2nd dorsal with 11-13 soft rays followed by 5-6 finlets.
- Anal-fin spine thin, rudimentary.
- Two small keels on sides of caudal peduncle (no large median keel).
- Colour: back blue/green, flanks silver with a golden tint; 2 rows of small dark spots on sides of dorsal fin bases, narrow dark longitudinal bands on upper part of body (golden in fresh specimens) and a black spot on body near lower margin of pectoral fin.

IUCN redlist status	Globally: data deficient, Arabian Gulf: least concern			
Distribution	Int'l: FAO Area 51, 57, 61, 71			
Reproductive activity	☒ Spring	☒ Summer	☒ Fall	☒ Winter
Maturation size	Start From: Male: 18.4 cm Female: 18.8 cm			
Method caught	Line fishing	☒ Trawling	☒ Seine nets	☒ Traps
	☒ Cast nets	☒ Gill nets		
Threats	Urban activities	Industrial activities	Habitat modification	
	☒ Fishing/ harvesting	No know threats		
Habitat	• This fish species is a pelagic swimmer that inhabits turbid coastal waters.			
Comments	-			

Family: Scombridae

Assessed Fish (AF #8)



(© EPA of Kuwait)

Family	Scientific name	Common name	Local name	الاسم المحلي
Scombridae	<i>Scomberomorus commerson</i>	Narrow-barred Spanish mackerel	Kanaad	كنعد

Main features:

- Body elongate, moderately strongly compressed.
- Teeth in jaws strong, compressed, almost knife-like.
- Lateral line abruptly bent downward below end of 2nd dorsal fin.
- 2 small keel and a large median keel on sides of caudal peduncle.
- Colour: Back iridescent blue-grey, sides silver with bluish reflections, marked with numerous thin, wavy vertical bands (mostly on lower sides); juveniles frequently spotted.

IUCN redlist status	Globally: near threatened – population decreasing Arabian Gulf: vulnerable - decreasing			
Distribution	Int'l: FAO Area 51, 57, 71			
Reproductive activity	☒ Mid Spring	☒ Summer	☒ Late Fall	Winter
Maturation size	Range: Male: 58.4-84.6 cm Female: 57.1-80.7 cm	Average: Male: 71.5 cm Female: 75 cm		
Method caught	☒ Line fishing	☒ Trawling	☒ Seine nets	☒ Traps
	Cast nets	☒ Gill nets		
Threats	Urban activities	Industrial activities	Habitat modification	
	☒ Fishing/ harvesting	No known threats		
Habitat	• An epipelagic fish species found close to continental shelf to shallow turbid coastal waters. It is also found in drop-offs, and shallow or gently sloping reef and lagoon waters. It inhabits coastal waters at depths to 200 m.			
Comments	-			

Family: Scombridae

Assessed Fish (AF #20)



(© EPA of Kuwait)

Family	Scientific name	Common name	Local name	الاسم المحلي
Scombridae	<i>Scomberomorus guttatus</i>	Indo-Pacific king mackerel	Khubaat	خباط

Main features:

- Body elongate, strongly compressed; head pointed.
- Teeth in jaws strong, compressed, almost knife like.
- Lateral line gently bent downward below 2nd dorsal fin.
- Two small keels and a large median keel on sides of caudal peduncle.
- Colour: blue on back, silvery on sides; about 3 irregular rows of dark round spots along sides of body; spinous dorsal fin dark up to the 8th spine, white posteriorly, with the distal margin black.

IUCN redlist status	Globally: data deficient, Arabian Gulf : least concern			
Distribution	Int'l: FAO Area 51, 57, 61, 71			
Reproductive activity	☒ Late Spring	Summer	Fall	☒ Mid-Winter
Maturation size	Range: Male: 20.5-55 cm Female: 25.4-49 cm	Average: Male: 37.75 cm Female: 37.2 cm		
Method caught	☒ Line fishing	☒ Trawling	Seine nets	☒ Traps
	Cast nets	☒ Gill nets		
Threats	Urban activities	Industrial activities	Habitat modification	
	☒ Fishing/ harvesting	No know threats		
Habitat	• This species is pelagic found in coastal waters and might swim to turbid estuaries.			
Comments	-			

Family: Serranidae

Unassessed Fish (UF)



(© EPA of Kuwait)

Family	Scientific name	Common name	Local name	الاسم المحلي
Serranidae	<i>Cephalopholis hemistiktos</i>	Yellowfin hind	Ishnaino	شنيانو

Main features:

- Dorsal fin with 9 spines and 14-15 soft rays.
- Pectoral fins 1.4 to 1.6 times in head length, and with 16 to 18 rays.
- Anal fin pointed, reaching to or beyond base of caudal fin.
- Caudal fin rounded.
- Pored lateral line scales 48 to 52; lateral scale series 95 to 115.
- Colour: dark brown to red with small, dark-edged, blue spots on ventro-lateral parts of head and body, caudal fin and rear part of dorsal and anal fins; pectoral fins brown, with a few dark-edged blue spots at base, the distal margin broadly yellow.

IUCN redlist status	Globally: least concern - population decreasing Arabian Gulf: Near Threatened - decreasing			
Distribution	Restricted: FAO Area 51			
Reproductive activity	Spring	☒ Mid-Summer	☒ Fall	Winter
Maturation size	Start From: 25.3 cm			
Method caught	☒ Line fishing	Trawling	Seine nets	☒ Traps
	Cast nets	Gill nets	☒ Other: Spear	
Threats	Urban activities	Industrial activities	Habitat modification	
	☒ Fishing/ harvesting	No know threats		
Habitat	• Marine, associated with coral reef.			
Comments	• It is a monogamous species and each pair jointly defends a common territory of up to 62 m². • It is a diurnal, ambush predator feeding throughout the day on fishes and crustaceans.			

Family: Serranidae

Unassessed Fish (UF)



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Family	Scientific name	Common name	Local name	الاسم المحلي
Serranidae	<i>Epinephelus areolatus</i>	Areolate grouper	Gatu	قطو

Main features:

- Interspinous membrane of dorsal fin incised.
- Dorsal fin with 11 spines and 15-17 soft rays. Anal fin with 3 spines and 8 soft rays.
- Entire caudal fin with spots. Caudal fin truncate or emarginate in adults.
- 49-53 lateral-line scales.
- Colour: head, body and fins pale, covered with numerous dark brown spots; about 8-14 dark spots from last dorsal spine to anus; spots relatively smaller and more numerous with growth. Caudal fin with a narrow pale margin. Pectoral fins covered with dark spots or bands.

IUCN redlist status	Globally: least concern, Arabian Gulf: near threatened			
Distribution	Int'l: FAO Area 51, 57, 61, 71			
Reproductive activity	☑ Late Spring	☑ Early Summer	Fall	Winter
Maturation size	Start From: Male: 22.8 cm Female: 23.5 cm			
Method caught	☑ Line fishing	☑ Trawling	Seine nets	☑ Traps
	Cast nets	Gill nets		
Threats	Urban activities	Industrial activities	Habitat modification	
	☑ Fishing/ harvesting	No know threats		
Habitat	• Marine, neritic. • Usually found in turbid water in seagrass beds or silty sand bottoms around isolated small rock outcrops, as well as near dead coral or soft coral as deep as 200 metres. It has also been observed on artificial reefs.			
Comments	• It feeds on fish and benthic invertebrates, primarily prawns and crabs.			

Family: Serranidae

Unassessed Fish (UF)



(© EPA of Kuwait)

Family	Scientific name	Common name	Local name	الاسم المحلي
Serranidae	<i>Epinephelus bleekeri</i>	Duskytail grouper	Gatu	قطو

Main features:

- Preopercle serrate with 2-9 enlarged serrae at the angle.
- Dorsal fin with 11 spines and 16-18 (usually 17) soft rays; anal fin with 3 spines and 8-9 soft rays; 17-19 pectoral fin rays; caudal fin margin truncate to slightly rounded.
- 16-18 gill rakers on lower limb.
- Colour: Brownish to purplish grey with numerous orange-yellow spots (about half pupil diameter in adults) on head, body, dorsal fin and upper third of caudal fin; Lower part of caudal fin dark.

IUCN redlist status	Globally: data deficient – population decreasing Arabian Gulf: near threatened - decreasing			
Distribution	Int'l: FAO Area 51, 57, 61, 71			
Reproductive activity	-			
Maturation size	☒ Data Deficiency_			
Method caught	☒ Line fishing	☒ Trawling	Seine nets	Traps
	Cast nets	☒ Gill nets		
Threats	Urban activities	Industria activities	Habitat modification	
	☒ Fishing/ harvesting	No know threats		
Habitat	• Marine Neritic. • This demersal species inhabits mostly shallow coral and rocky banks, can be associated with non-reefal and turbid habitat, and is not known from well-developed coral reefs. • Benthic on shallow banks and adjacent soft substrate in depths of 30-105 m.			
Comments	-			

Family: Serranidae

Assessed Fish (AF #5)



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Family	Scientific name	Common name	Local name	الاسم المحلي
Serranidae	<i>Epinephelus coioides</i>	Orange-spotted grouper	Hamoor	هامور

Main features:

- Preopercle serrated at the angle.
- Dorsal fin with 11 spines and 13-16 soft rays; anal fin with 3 spines and 8 soft rays; pectoral fins with 18-20 (usually 20) rays.
- Caudal fin rounded.
- Colour: Head, body and usually median fins with numerous orange, brownish orange or reddish brown spots; body with 5 faint irregular greyish bars which bifurcate ventrally.

IUCN redlist status	Globally: least concern - population decreasing, Arabian Gulf: vulnerable - decreasing			
Distribution	Int'l: FAO Area 51, 57, 61, 71			
Reproductive activity	☒ Spring	☒ Early Summer	Fall	Winter
Maturation size	Range: Male: 55-75 cm Female: 25-30 cm	Average: Male: 65 cm Female: 27.5 cm		
Method caught	☒ Line fishing	☒ Trawling	Seine nets	☒ Traps
	Cast nets	☒ Gill nets	☒ Other: Lift/Lever nets	
Threats	Urban activities	Industrial activities	Habitat modification	
	☒ Fishing / harvesting	No know threats		
Habitat	• Inhabits coral reefs typically along continental coastlines and large islands.			
Comments	• It primarily consumes fishes, shrimps, crabs and other benthic crus- taceans.			

Family: Serranidae

Unassessed Fish (UF)



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Family	Scientific name	Common name	Local name	الإسم المحلي
Serranidae	<i>Epinephelus diacanthus</i>	Spinycheek grouper	Birtaam	برطام

Main features:

- Preopercle serrated at the angle.
- Dorsal fin with 11 spines and 14-17 rays; anal fin with 3 spines and 8-9 (rarely 9) soft rays; pectoral fins with 18-20 rays.
- Colour: Body pale greyish brown, usually with 5 dark vertical bars broader than interspaces.

IUCN redlist status	Globally: least concern – population decreasing, Arabian Gulf: -			
Distribution	Int'l: FAO Area 51, 57			
Reproductive activity	☒ Spring	☒ Summer	☒ Fall	☒ Winter
Maturation size	Data Deficiency_			
Method caught	☒ Line fishing	☒ Trawling	Seine nets	☒ Traps
	Cast nets	☒ Gill nets		
Threats	Urban activities	Industrial activities	Habitat modification	
	☒ Fishing/ harvesting	No know threats		
Habitat	• Marine, neritic. • Occurs on mud or muddy sand bottoms in depths of 10 to 300 m.			
Comments	-			

Family: Serranidae

Unassessed Fish (UF)



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Family	Scientific name	Common name	Local name	الاسم المحلي
Serranidae	<i>Epinephelus epistictus</i>	Dotted grouper	Birtaam	برطام

Main features:

- Upper edge of operculum straight or slightly convex.
- Dorsal fin with 11 spines and 14-15 rays; anal fin with 3 spines and 7-8 rays; pectoral fins with 16-19 rays.
- Preopercle angle produced, with 3-5 distinctly enlarged serrae.
- Colour: Background colour pale brownish to greyish; faint brownish black dots usually visible on dorso-lateral part of body and sometimes on postorbital part of head; faint dark band from eye to end of operculum.

IUCN redlist status	Globally: least concern, Arabian Gulf: data deficient			
Distribution	Int'l: FAO Area 51, 57, 61, 71			
Reproductive activity	-			
Maturation size	☒ Data Deficiency_			
Method caught	☒ Line fishing	Trawling	Seine nets	Traps
	Cast nets	☒ Gill nets		
Threats	Urban activities	Industrial activities	Habitat modification	
	Fishing/ harvesting	☒ No know threats		
Habitat	• Marine Neritic, deep Benthic. • This species occurs in deeper waters on rocky reef, and sandy/ soft bottom.			
Comments	-			

Family: Serranidae

Unassessed Fish (UF)



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Family	Scientific name	Common name	Local name	الاسم المحلي
Serranidae	<i>Epinephelus polylepis</i>	Smallscaled grouper	Gatu	قطو

Main features:

- Preopercle serrate, with enlarged serrae at the angle.
- Interspinous membrane of dorsal fin incised. Dorsal fin with 11 spines and 16-17 soft rays.
- Anal fin with 3 spines and 8 soft rays.
- Pectoral fins with 18-19 rays.
- Caudal fin truncate or slightly emarginate with white margin.
- 65-72 lateral-line scales.
- Colour: Head, body and fins covered (except ventral parts of head and body) with numerous small close-set dark brown spots; rear edge of caudal fin with white line and a row of blackish brown spots; dark maxillary streak present.

IUCN redlist status	Globally: least concern – population decreasing Arabian Gulf: near threatened			
Distribution	Restricted: FAO Area 51			
Reproductive activity	Spring	☒ Summer	☒ Mid Fall	Winter
Maturation size	☒ Data Deficiency_			
Method caught	☒ Line fishing	☒ Trawling	Seine nets	Traps
	Cast nets	☒ Gill nets		
Threats	Urban activities	Industrial activities	Habitat modification	
	☒ Fishing/ harvesting	No know threats		
Habitat	• Marine, neritic. • Known from rocky areas adjacent to soft bottoms from 10 m to 155 m.			
Comments	-			

Family: Siganidae

Unassessed Fish (UF)



(© EPA of Kuwait)

Family	Scientific name	Common name	Local name	الاسم المحلي
Siganidae	<i>Siganus canaliculatus</i>	White-spotted spinefoot	Safi	صافي

Main features:

- Body compressed, moderately slender. Head profile slightly concave above orbit; snout pointed rather than blunt.
- Caudal fin almost emarginate in specimens under 10 cm, forked in larger fish.
- 21-27 scale rows between lateral line and dorsal-fin spines. Last anal-fin spine 1.2-1.5 times in longest anal-fin spine.
- Colour: highly variable, depending on mood of fish and colour of substrate; greenish grey above to silver on belly; numerous pearly blue spots covering nape and sides, arranged more or less in horizontal rows, 2-3 rows above lateral line; frightened and injured fish mottled brown.

IUCN redlist status	Globally: least concern Arabian Gulf: least concern – population stable			
Distribution	Int'l: FAO Area 51, 57, 61, 71, 81			
Reproductive activity	☒ Mid-Spring	☒ Mid-Summer	Fall	Winter
Maturation size	Range: Male: 17-21 cm Female:18-20 cm	Average: Male: 19 cm Female:19 cm		
Method caught	Line fishing	☒ Trawling	Seine nets	☒ Traps
	☒ Cast nets	☒ Gill nets		
Threats	Urban activities	Industrial activities	Habitat modification	
	☒ Fishing/ harvesting	No know threats		
Habitat	• Marine Demersal, neritic, schooling in turbid inshore areas and inner reefs near river mouths down to 40 m.			
Comments	-			

Family: Sillaginidae

Unassessed Fish (UF)



(© EPA of Kuwait)

Family	Scientific name	Common name	Local name	الاسم المحلي
Sillaginidae	<i>Sillago sihama</i>	Silver sillago	Hasoom	حاسوم

Main features:

- Body elongate.
- Snout pointed; upper head profile slightly convex.
- Mouth small, terminal.
- 11 spines in 1st dorsal fin.
- 66-72 lateral-line scales.
- Colour: back light brown, lower ventral flanks and belly whitish or silvery, without dark blotches. Both dorsal fins and caudal fin dusky, other fins pale.

IUCN redlist status	Globally: least concern – population stable Arabian Gulf: least concern - stable			
Distribution	Int'l: FAO Area 51, 57, 61, 71			
Reproductive activity	☒ Mid Spring	☒ Early Summer	Fall	Winter
Maturation size	Range: Male: 10.44-25.4 cm Female:11.2-24.8 cm	Average: Male: 17.92 cm Female: 18 cm		
Method caught	☒ Line fishing	☒ Trawling	☒ Seine nets	Traps
	Cast nets	Gill nets		
Threats	Urban activities	Industrial activities	Habitat modification	
	☒ Fishing/ harvesting	No know threats		
Habitat	• Inhabits shallow waters of sandy bottoms or estuaries.			
Comments	-			

Family: Soleidae

Unassessed Fish (UF)



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Family	Scientific name	Common name	Local name	الاسم المحلي
Soleidae	<i>Brachirus orientalis</i>	Oriental sole	Mizlegan	مزلقان

Main features:

- Eyes on right side.
- Dorsal and anal fins joined to caudal fin.
- Pectoral fins well developed.
- Head scales of blind side modified into cutaneous sensory processes.
- Colour: gray or brown with cloudy indistinct patches on eyes side, tinged yellow on blind side; pectoral fin on eyed side darker.

IUCN redlist status	Globally: least concern Arabian Gulf: least concern - population stable			
Distribution	Int'l: FAO Area 51, 57, 61, 71			
Reproductive activity	☒ Spring	☒ Summer	☒ Fall	☒ Late Winter
Maturation size	☒ Data Deficiency_			
Method caught	☒ Line fishing	☒ Trawling	Seine nets	Traps
	Cast nets	☒ Gill nets		
Threats	☒ Urban activities	☒ Industrial activities	☒ Habitat modification	
	☒ Fishing/ harvesting	No know threats		
Habitat	• Marine, neritic; wetlands (inland) • Inhabits sand or mud bottoms in shallow coastal waters.			
Comments	-			

Family: Sparidae

Unassessed Fish (UF)



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Family	Scientific name	Common name	Local name	الاسم المحلي
Sparidae	<i>Acanthopagrus bifasciatus</i>	Two-bar seabream	Faskar	فسكر

Main features:

- Dorsal-fin spines strong, appearing alternately broad and narrow on either side.
- Both jaws with 4-6 large fairly compressed conical teeth in front, followed by 4-6 rows of molar-like teeth.
- 4-4.5 scale rows between lateral line and 4th dorsal-fin spine.
- Colour: body yellowish above, silvery below, head silvery; 2 vertical black bars across head. Pelvic and anal fins black while dorsal, pectoral and caudal fins yellowish.

IUCN redlist status	Globally: least concern, Arabian Gulf: least concern			
Distribution	Restricted: FAO Area 51			
Reproductive activity	☒ Mid Spring	Summer	Fall	☒ Mid Winter
Maturation size	Start From: Male: 21.9 cm Female: 26.4 cm	Average: Male: 32.7 cm Female: 33.6 cm		
Method caught	Line fishing	☒ Trawling	Seine nets	☒ Traps
	Cast nets	Gill nets		
Threats	☒ Urban activities	☒ Industrial activities	☒ Habitat modification	
	☒ Fishing/ harvesting	No know threats		
Habitat	• Marine; brackish; reef associated. • Tropical and temperate coastal waters. • Lower depth limit = 30m			
Comments	-			

Family: Sparidae

Assessed Fish (AF #14)



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Family	Scientific name	Common name	Local name	الاسم المحلي
Sparidae	<i>Acanthopagrus latus</i> *	Yellowfin seabream	Sheim	شعم

Main features:

- Dorsal-fin spines strong, appearing alternately broad and narrow on either side.
- Pelvic and anal fins whitish tinged yellowish when young.
- 4-4.5 scale rows between lateral line and 4th dorsal-fin spine.
- Caudal fin whitish with a black rear margin, lower margin often yellowish.

IUCN redlist status	Globally: data deficient, Arabian Gulf : Unassessed			
Distribution	Int'l: FAO Area 51, 57, 61			
Reproductive activity	☒ Late Spring	☒ Summer	☒ Fall	Winter
Maturation size (cm)	Range: Male: 12.3-14.2 Female: 24.3-26.2	Average: Male: 13.25 Female: 25.25		
Method caught	☒ Line fishing	Trawling	☒ Seine nets	Traps
	Cast nets	Gill nets	☒ Others: stake traps	
Threats	Urban activities	Industrial activities	Habitat modification	
	☒ Fishing/ harvesting	No know threats		
Habitat	• Marine, neriticInhabits shallow coastal waters.			
Comments	• <i>A. latus</i> species complex occurs. • <i>A. latus</i> was long identified as a single valid Indo-West Pacific Ocean species until 2013 when Iwatsuki reviewed and separated it into 5 cryptic species of which two are novel to the Arabian Gulf region: <i>Acanthopagrus arabicus</i> and <i>Acanthopagrus sheim</i> .			

*High potential that the above fish is the Arabian yellowfin seabream *Acanthopagrus arabicus* yet it is still identified and listed in the KCSB fishery bulletin as *A. latus*.

Family: Sparidae

Assessed Fish (AF #23)



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Family	Scientific name	Common name	Local name	الاسم المحلي
Sparidae	<i>Argyrops spinifer</i>	King soldier bream	Andaac	عندق

Main features:

- Scaly interorbital area pointed anteriorly. In both jaws 4-6 enlarged canines in front followed by 2 rows of molars (outer row more pointed anteriorly).
- First 2 dorsal-fin spines very short, followed by 3-6 elongate, flattened spines (except in very large individuals); anal fin with 3 spines (2nd and 3rd sub-equal) and 8 soft rays.
- Large adults (perhaps only males) developing a hump on nape.
- Colour: mostly silvery pinkish.

IUCN redlist status	Globally: least concern - stable, Arabian Gulf: least concern			
Distribution	Int'l: FAO Area 47, 51, 57, 61, 71			
Reproductive activity	☒ Early Spring	Summer	☒ Late Fall	☒ Winter
Maturation size	Range: Male: 20-68 cm Female: 25-70 cm			
Method caught	☒ Line fishing	☒ Trawling	☒ Seine nets	☒ Traps
	Cast nets	☒ Gill nets		
Threats	Urban activities	Industrial activities	Habitat modification	
	☒ Fishing/ harvesting	No know threats		
Habitat	• Marine, neritic. • Bottom dwelling species, common from 5m to 100 m.			
Comments	-			

Family: Sparidae

Unassessed Fish (UF)



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Family	Scientific name	Common name	Local name	الاسم المحلي
Sparidae	<i>Crenidens crenidens</i>	Karenteen seabream	Battan	بطان

Main features:

- No molars or molar-like teeth; in both jaws. 2-3 series of incisors; outer teeth movable, with brown edges.
- Colour: silvery greyish above with longitudinal stripes along scale rows on mid and upper sides.

IUCN redlist status	Globally: least concern, Arabian Gulf : Unassessed			
Distribution	Int'l: FAO Area 47, 51, 57			
Reproductive activity	Spring	Summer	☒ Fall	☒ Winter
Maturation size	Range: Male: 20-30 cm Female: 33-40 cm	Average: Male: 25 cm Female: 36.5 cm		
Method caught	☒ Line fishing	Trawling	Seine nets	Traps
	Cast nets	Gill nets		
Threats	Urban activities	Industrial activities	☒ Habitat modification	
	Fishing/ harvesting	No know threats		
Habitat	• Marine, neritic. • It can be found in sandy, muddy and on the bottom of sea grass beds and usually prefer shallow coastal waters.			
Comments	-			

Family: Sparidae

Unassessed Fish (UF)



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Family	Scientific name	Common name	Local name	الاسم المحلي
Sparidae	<i>Diplodus kotschy</i>	One spot seabream	Imchawah	امجوه

Main features:

- Body oval, rather deep, compressed.
- Head profile fairly steep (almost straight) from tip of snout to nape and strongly convex on back; snout pointed, mouth rather protrusible, the maxilla reaching to about below anterior margin of eye.
- In both jaws 8 broad incisor-like teeth in front followed by 2-4 rows of rounded molar-like teeth
- Scales moderate, 60 to 68 in lateral line, 7 or 8 between lateral line and 4th dorsal spine.
- Colour: silvery grey; with a distinct round black blotch on caudal peduncle.

IUCN status	Globally: least concern, Arabian Gulf : Unassessed			
Distribution	Restricted: FAO Area 51			
Reproductive activity	☒ Early Spring	Summer	☒ Late Fall	☒ Winter
Maturation size	☒ Data Deficiency_			
Method caught	☒ Line fishing	☒ Trawling	☒ Seine nets	Traps
	Cast nets	Gill nets		
Threats	Urban activities	Industrial activities	Habitat modification	
	☒ Fishing/ harvesting	No know threats		
Habitat	• It can found in rocky shallow coastal waters as well as muddy bottoms.			
Comments	-			

Family: Sparidae

Unassessed Fish (UF)



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Family	Scientific name	Common name	Local name	الاسم المحلي
Sparidae	<i>Rhabdosargus haffara</i>	Haffara seabream	Gurgufan	قرقفان

Main features:

- Body fairly elongate, its depth 2.5-3 times in standard length.
- Upper profile very convex, more abruptly bent at eye level.
- At front of each jaw, 4-6 incisiform teeth followed by 3-5 series of molariform teeth, of which the inner posterior one is greatly enlarged.
- Dorsal fin single, with 11-12 rather slender spines and 11-14 soft rays; anal fin with 3 spines and 10-12 soft rays.
- Colour: head and body silvery black; pelvic anal and caudal fins dusky gray to blackish, no yellow or golden longitudinal lines on body. Dark blotch at origin of lateral line.

IUCN status	Globally: least concern, Arabian Gulf: near threatened			
Distribution	Restricted: FAO Area 51			
Reproductive activity	-			
Maturation size	Range: Male: 14.5-27.2 cm Female: 15-26.8 cm	Average: Male: 20.85 cm Female: 20.9 cm		
Method caught	☒ Line fishing	☒ Trawling	☒ Seine nets	Traps
	Cast nets	☒ Gill nets		
Threats	Urban activities	Industrial activities	Habitat modification	
	☒ Fishing/ harvesting	No know threats		
Habitat	• Marine, neritic. • Occurs in shallow waters, at about 10 m depth, mainly around coral reefs, and over sandy or mud-sandy bottoms.			
Comments	• Carnivorous, feeds on bottom invertebrates (gastropods and crustaceans), mostly on sand.			

Family: Sparidae

Unassessed Fish (UF)



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Family	Scientific name	Common name	Local name	الاسم المحلي
Sparidae	<i>Sparidentex hasta</i>	Sobaity seabream	Sobaity / Muzayzi	سبيطي، مزيزي

Main features:

- Jaws with 4-6 enlarged canines at front, smaller conical and villiform teeth behind; molars absent.
- Dorsal fin with 11 spines and 11-12 soft rays, spines of dorsal fin normally graduated; anal fin with 3 spines and 8 soft rays, 2nd and 3rd anal fin spines subequal in length.
- Colour: Silvery grey on back, paler to whitish on belly; scales with dark margins forming faint lines along sides of body; dorsal and anal fins dusky grey; pectoral fins light yellow to whitish and pelvic fins light grayish to whitish darker posterior margin; caudal fin dusky and posterior margin darker. A diffuse dark blotch at origin of lateral line.

IUCN status	Globally: least concern, Arabian Gulf: least concern			
Distribution	Restricted: FAO Area 51			
Reproductive activity	☒ Early Spring	Summer	☒ Mid Fall	☒ Winter
Maturation size	Average: 24cm			
Method caught	☒ Line fishing	☒ Trawling	Seine nets	Traps
	Cast nets	☒ Gill nets		
Threats	Urban activities	Industrial activities	Habitat modification	
	☒ Fishing/ harvesting	No know threats		
Habitat	• Marine, neritic. • Adults occur in shallow coastal waters to moderate depths.			
Comments	-			

Family: Sphyraenidae

Unassessed Fish (UF)



(© EPA of Kuwait)

Family	Scientific name	Common name	Local name	الاسم المحلي
Sphyraenidae	<i>Sphyraena putnamae</i>	Sawtooth barracuda	Duwaitmi	دويلمي

Main features:

- Lower Jaw with a pointed fleshy tip; maxilla reaching to just below anterior margin of eye.
- No gill rakers on 1st gill arch; upper and lower gill arch with rough platelets which lack distinct spines.
- Origin of 1st dorsal fin behind pelvic fin origin, last ray of 2nd dorsal and anal fins elongate in comparison to penultimate ray. Caudal fin forked, in large adults with a pair of indistinct lobes at posterior margin. 120-130 pored lateral line scales.
- Colour: About 15 dark chevron-shaped bars crossing lateral line on body; dorsal, caudal and upper part of pectoral fins dusky; pelvic and anal fins white.

IUCN redlist status	Globally: Unassessed, Arabian Gulf: least concern - population stable			
Distribution	Restricted: FAO Area 51			
Reproductive activity	☒ Spring	☒ Summer	☒ Fall	☒ Winter
Maturation size	Start From: Male: 46 cm Female: 58 cm			
Method caught	☒ Line fishing	☒ Trawling	Seine nets	Traps
	Cast nets	☒ Gill nets		
Threats	Urban activities	Industrial activities	Habitat modification	
	☒ Fishing/ harvesting	No know threats		
Habitat	• Marine, neritic. • Inhabiting bays and turbid inner lagoons.			
Comments	• A nocturnally active species occurring in relatively large schools during the day. • The species spawns all through the year with 2 peaks, during April-May and November-January.			

Family: Stromateidae

Assessed Fish (AF #2)



(© EPA of Kuwait)

Family	Scientific name	Common name	Local name	الاسم المحلي
Stromateidae	<i>Pampus argenteus</i>	Silver pomfret	Zubaidi	زبيدي

Main features:

- Body firm, very deep, oval, compressed.
- Mouth inferior and oblique.
- Dorsal and anal fin with posteriorly elevated lobes; dorsal and anal fins preceded by 5-10 short, blade-like spines with pointed ends (embedded and barely visible in adults); dorsal fin rays 37-43; no pelvic fin.
- Caudal fin deeply forked, lower lobe often extended.
- Color: Silvery white on sides, slightly darker bluish or greyish on back.

IUCN redlist status	Globally: Unassessed, Arabian Gulf: vulnerable - population decreasing			
Distribution	Int'l: FAO Area 51, 57, 61, 71			
Reproductive activity	☒ Late Spring	☒ Summer	☒ Mid Fall	Winter
Maturation size	Start From: Male: 12.5 cm Female: 20.5 cm			
Method caught	Line fishing	☒ Trawling	☒ Seine nets	Traps
	Cast nets	☒ Gill nets		
Threats	☒ Urban activities	Industrial activities	Habitat modification	
	☒ Fishing/ harvesting	No know threats		
Habitat	• Marine, neritic. • Demersal on the continental shelf to about 80 m; forms large schools over muddy bottoms.			
Comments	-			

Family: Synodontidae

Assessed Fish (AF #22)



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Family	Scientific name	Common name	Local name	الاسم المحلي
Synodontidae	<i>Saurida tumbil</i>	Greater lizardfish	Kasoor	كاسور

Main features:

- Body elongate and tubular; head and caudal peduncle somewhat depressed.
- Anterior palatine teeth in 3 or more rows.
- Nine pelvic-fin rays, the innermost ray not much longer than outermost ray.
- No dark spots on 2nd dorsal-fin ray or upper caudal-fin ray (compared to another species).
- Colour: back and sides brown, belly pale or silvery.

IUCN redlist status	Globally: least concern, Arabian Gulf: least concern			
Distribution	Int'l: FAO Area 51, 57			
Reproductive activity	☒ Late Spring	Summer	☒ Mid Fall	Winter
Maturation size	Average: Male: 25.3 cm Female: 27.4 cm			
Method caught	Line fishing	☒ Trawling	Seine nets	Traps
	Cast nets	Gill nets		
Threats	☒ Urban activities	☒ Industrial activities	☒ Habitat modification	
	☒ Fishing/ harvesting	No know threats		
Habitat	• This species inhabits muddy bottoms in depth between 20-60 m or near continental shelves.			
Comments	-			

Family: Trichiuridae

Unassessed Fish (UF)



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Family	Scientific name	Common name	Local name	الاسم المحلي
Trichiuridae	<i>Eupleurogrammus glossodon</i>	Longtooth hairtail	Esabah	عصابة

Main features:

- Body ribbon-like tapering to a point; eye small, located close to dorsal profile of head.
- Pair of fangs at tip of lower jaw.
- Pectoral fins extending beyond lateral line; black blotch on base of anterior margin of pectoral fins.
- Pelvic fins scale-like situated below 11th to 14th soft dorsal fin ray.
- Colour: Fresh specimens are steel blue with metallic reflections, becoming silvery grey after death; dorsal side of posterior part of body slightly black; dermal process at tip of each jaw black.

IUCN redlist status	Globally: Unassessed, Arabian Gulf: least concern - population stable			
Distribution	Restricted: FAO Area 51			
Reproductive activity	-			
Maturation size	Range: 30-38 cm	Average: 34 cm		
Method caught	☒ Line fishing	☒ Trawling	Seine nets	Traps
	Cast nets	☒ Gill nets		
Threats	Urban activities	Industrial activities	Habitat modification	
	☒ Fishing/ harvesting	No know threats		
Habitat	• Marine, neritic. • Benthopelagic, in coastal waters down to depths of about 80 m.			
Comments	• Data on this species is deficient as it is not a commercial fish			

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5 Fisheries conservation



5 Fisheries conservation

In order to conserve fish diversity, their ecosystems and facilitate sustainable fisheries management, it is vital that policy makers and legislators gain accurate information on fisheries catch/effort and monitor ecosystems to detect changes in fish assemblages/habitats over time. Such information will not only ensure the sustainability of the resources supported by fish assemblages, but will primarily provide baselines for monitoring, conservation and recovery of fish biodiversity. This can be achieved by:

- Funding of scientific research to support long-term surveys of fish communities and habitats.
- Integrating biodiversity considerations within the management strategies implemented regarding fisheries policies.
- Developing an adequate legislative framework to ensure that both commercial and recreational fishing activities and instruments (closing seasons, fishing gear, mesh size, fishing effort, bag size, catch limit etc.) do not damage the environment.
- Ensuring effective, prompt implementation and enforcement of legislations, and imposing fines regarding infringement, illegal fishing and habitat damage.
- Committing to international fishery and biodiversity agreements to gain knowledge regarding latest strategies and action plans.
- Considering broader range of conservation measures that include MPAs, biodiversity hot spots and no-take zones (i.e. nursery grounds) where and when appropriate.
- Raising public awareness among resource users, the wider public and policy-makers, regarding importance of sustainable conservation.
- Elucidating to the community the importance of valuing the services provided by fish diversity on an individual (food security, economic security), social (cultural, recreational, human well-being), and environmental level (ecosystem function, ecosystem health).
- Promoting the purchase of seasonal fish among consumers, thus allowing other fish to reproduce and their recruits to mature and develop, all towards maintaining healthy sustainable fish stocks.
- Collaborating with policy makers on a national and regional level.

Annex 1

State of Kuwait
CENTRAL STATISTICAL BUREAU



دولة الكويت
الإدارة المركزية للإحصاء

النشرة السنوية لإحصاءات الثروة السمكية

2019

**ANNUAL BULLETIN
OF FISHERIES STATISTICS**

TABLE (1)

TOTAL QUANTITIES AND VALUES OF FISH PRODUCED IN KUWAIT IN 2019

جدول رقم (1)

إجمالي كميات الأسماك المنتجة في دولة الكويت في عام 2019

TYPE	GRAND TOTAL			FISH COMPANIES *			الإسك المستوردة			الإسك المستوردة			الإسك المحلية			الأصناف
	القيمة KD	متوسط AVRG PRICE	الكمية QUANTITY KG	القيمة VALUE KD	متوسط AVRG PRICE	الكمية QUANTITY KG	القيمة VALUE KD	متوسط AVRG PRICE	الكمية QUANTITY KG	القيمة VALUE KD	متوسط AVRG PRICE	الكمية QUANTITY KG	القيمة VALUE KD	متوسط AVRG PRICE	الكمية QUANTITY KG	
SHRIMPS	5187722	2.180	2379660	0	0.000	0	0	0.000	0	2649424	1.813	1481740	2538298	2.765	917920	روبيان
SILVER POMFRET	10272030	6.888	1491300	0	0.000	0	0	0.000	0	9230637	6.597	1399116	1041393	11.297	92184	نجمي
RIVER SHAD	192716	1.952	98713	0	0.000	0	0	0.000	0	0	0.000	0	192716	1.952	98713	سمور
SILVERY GRUNT	1093438	1.859	588276	0	0.000	0	0	0.000	0	1021849	1.787	571974	71589	4.391	16302	نكرور
BROWN SPOTTED GROUPER	3470423	3.108	1116718	0	0.000	0	0	0.000	0	2930977	2.864	1023378	539446	5.779	93340	حماور
BLUE SPOTTED MULLET	490512	1.417	346160	0	0.000	0	0	0.000	0	0	0.000	0	490512	1.417	346160	ميد
SILVERY CROAKER	909761	2.102	432830	0	0.000	0	0	0.000	0	279700	1.665	168030	630061	2.379	264800	خروسي
BARRED SPANISH MACREL	364228	1.989	183125	0	0.000	0	0	0.000	0	111436	1.654	67371	252792	2.184	115754	كشم
CRIMSON SNAPPER	84529	1.965	43010	0	0.000	0	0	0.000	0	49433	1.624	30446	35096	2.793	12564	حماور
LARGE-SCALED MULLET	86304	1.644	52507	0	0.000	0	0	0.000	0	31743	1.401	22651	54561	1.827	29856	ميج
HERRING TRAVELLY	359780	1.035	347521	0	0.000	0	0	0.000	0	265379	0.867	236891	154401	1.396	110630	حمام
THREAD LINE	356404	2.446	145713	0	0.000	0	0	0.000	0	277816	2.094	132652	78588	6.017	13061	شيم
JACK-POMFRET	175694	1.693	103761	0	0.000	0	0	0.000	0	147382	1.802	92008	28312	2.409	11753	خطريه
YELLOW FINNED BLACK PORGY	1105784	2.304	479967	0	0.000	0	0	0.000	0	533989	1.869	285670	571795	2.943	194297	اسمور
BERTIAN	168551	1.706	98813	0	0.000	0	0	0.000	0	105922	1.504	70419	62629	2.206	28394	برهام
THREE-BANDED GRUNT	42301	1.323	31981	0	0.000	0	0	0.000	0	17920	1.058	16931	24381	1.620	15050	فراش
RED-FINNED PIGFACE BREAM	246062	1.745	141001	0	0.000	0	0	0.000	0	75552	1.450	52092	170510	1.918	88909	اسمور
COBIA	110149	1.724	63898	0	0.000	0	0	0.000	0	774866	1.607	48194	32683	2.081	15704	سفن
GRAY FINNED CROAKER	149561	2.074	72127	0	0.000	0	0	0.000	0	54605	1.632	33452	94956	2.455	38675	سموري
SPOTTED SPANISH MACREL	111155	1.824	60943	0	0.000	0	0	0.000	0	18163	1.548	11731	92992	1.890	49212	خبيط
NOTCHED THREAD-FIN BREAM	127982	0.960	133302	0	0.000	0	0	0.000	0	68024	0.732	92968	59958	1.487	40334	بسن
SPOTTED LIZARD FISH	6904	0.453	15029	0	0.000	0	0	0.000	0	3069	0.359	8548	3735	0.576	6481	كندور
ANDA' AC	117456	1.288	91211	0	0.000	0	0	0.000	0	56964	0.946	60196	60492	1.950	31015	عقلي
OTHERS	3154065	1.778	1773624	0	0.000	0	847004	1.849	458146	1510816	1.620	932546	796245	2.079	382932	اخرى
TOTAL	28383411	2.758	10291190	0	0.000	0	847004	1.849	458146	19458266	2.854	6819004	8078141	2.680	3014040	الإجمالي

* لم يزلت أي بيانات من الشركات لهذا العام



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