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SURVEY OF THE MARINE FISHES IN IRAQ

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ABSTRACT

A survey of fish species in the Iraqi marine waters was carried out for the period from November 2014 to March 2018. The list included 214 species representing 75 families.

The family Carangidae dominated the marine fishes in Iraq, which was represented by 24 species, followed by Haemulidae with 11 species, and then Serranidae and Sparidae with nine species for each, while 34 families contained a single species only.

Key words: Checklist, fish species, Iraq, marine waters, survey.

INTRODUCTION

The Arabian Gulf is a semi-enclosed shallow sea located in the subtropical climate. The Gulf is considered biologically impoverished, due to its environmental characteristics, in addition to its young age (Randall, 1995; Jabado *et al*., 2015). The environments of Iraqi marine waters are fairly different in comparison with other parts of the Arabian Gulf; the Shatt Al-Arab River, which is formed by the confluence of the Euphrates and Tigris rivers, is considered as a major fresh water discharge into the northwest Arabian Gulf. The potential sources of nutrients and organics in the northwestern Arabian Gulf are Shatt Al-Arab river and its associated marshes (Al-Yamani, 2008; Al-Mudaffar and Mahdi, 2014). The Shatt Al-Arab estuary plays an important role as feeding, nursery and protective grounds for many fish species (Hussain *et al*., 1999).

The fish species recorded in the Arabian Gulf were derived from the Indian Ocean, besides demonstrating that the Indian Ocean species cover the entire gulf and reaching even its most northern range (Hussain and Naama, 1989). The fish fauna of the Arabian Gulf have been identified by several systematic works (Blegvad and Løppenthin, 1944; Kuronuma and Abe, 1986; Randall, 1995; Assadi and Dehgani, 1997, Carpenter *et al*., 1997; Bishop, 2003; Iwatsuki *et al*., 2013).

The previous studies in the Iraqi marine waters could be divided into two parts, the first dealing with species composition and seasonal fluctuations either in the inland Iraqi marine waters, like in Khor Al-Zubair (Ali, 1985; Hussain *et al*., 1988; Hussain and Naama, 1989; Ali and Hussain, 1990; Hussain *et al*., 1994) and Khor Abdullah (Younis, 1990; Hussain and Younis, 1997), and the second dealing with classification of fishes or checklist in the regional Iraqi waters (Khalaf, 1961; Mahdi, 1962; Mahdi and Georg, 1969; Al-Daham, 1982; Mohamed *et al*., 2001).

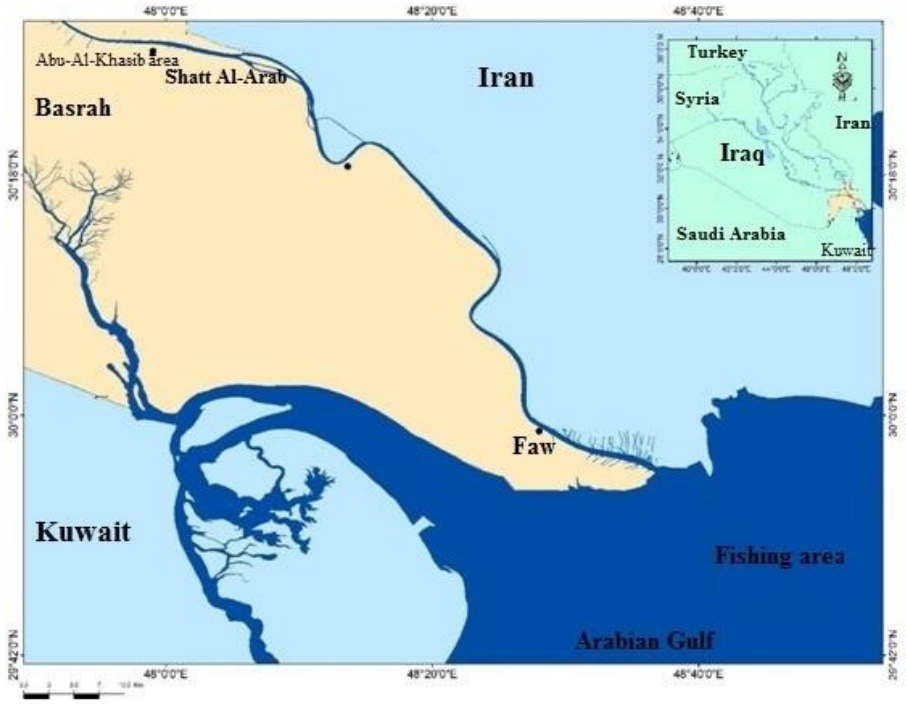
Survey of the marine fishes

The aim of the present study is to update the list of marine fish species based on a survey in them from the Iraqi marine waters for the period from November 2014 till March 2018.

MATERIALS AND METHODS

Fish samples were collected from the Iraqi marine waters (29° 46' 50"N 48° 39' 46" E to 29° 78' 83"N 48° 75' 78"E) (Map 1), northwest of the Arabian Gulf during the period from November 2014 to March 2018, by using a fishing boat supplemented by trawl net; also the fish samples were collected from commercial fisheries, through coordination and cooperation with fishermen of the region, which used different fishing nets, benthic trawl nets, fixed gill nets, gill nets (mesh 78×78 mm, 67×67 mm, 57×57 mm, 48×48 mm, 42×42 mm, 33×33 mm, 30×30 mm and 28×28 mm), traps with different circular base (2 m, 2.5 m and 4 m) and fish hooks, as well from commercial fishery of Al-Nasr society for the fishing and marketing of marine fish in Al-Faw district, 100 km south of Basrah city.

Fish species were identified depending on Kuronuma and Abe (1986); Carpenter *et al*. (1997) and Froese and Pauly (2018). The fish images were taken by Canon SX600 HS. The arrangement of higher taxa (Classes, Orders and Families) of fishes followed Nelson (2006).



Map (1): Fishing area in the Iraqi marine waters.

RESULTS AND DISCUSSION

A total of 214 species belonging to 75 families and 21 orders were recorded from the Iraqi marine waters (Tab. 1), (Pl.1 and 2 showed some species). The number of cartilaginous fish species (Class: Elasmobranchii) was 16 species and the number of bony fish species (Class: Actinopterygii) was 198 species; the order Perciform dominated the ichthyofauna of the Iraqi marine waters, which is represented by 36 families and 132 species. A total of 34 families contained a single species only, 16 families contained two species and seven families contained three species, the remaining families were represented by more than three species. The most successful fish families are Carangidae (11.21%) which contains 24 species, followed by Haemulidae (5.14%) with 11 species, while Serranidae and Sparidae (4.20%) in the third place each is represented by nine species per each, then Sciaenidae and Lutjanidae (3.73%) with eight species each.

The previous studies have developed a database for the identification of marine fish species in Iraqi marine waters, but they have been based on fisheries or have been short term studies. The most prominent study about ichthyofauna of Iraqi marine waters was carried out by Mohamed *et al*. (2001) for the period 1995-1999, by using two fishing boats; they recorded 116 species belonging to 58 families. The present study is the next study of Mohamed *et al*. (2001) about ichthyofauna of the Iraqi marine waters; the number of species reached 214 which belong to 75 families; the increase in fish species in the present study could be due to using different fishing gears at different depths by the fishermen. On the other hand, this increase in the number of species may be due to modifications in Iraqi marine habitat outside its control. The quantity of freshwater discharges into the northwest Arabian Gulf varies from time to time, as the construction of dams on the Tigris and Euphrates rivers in Turkey and decreased the discharge of Karun river; the various species were distributed in the northwestern Arabian Gulf as could be expected in view of salinity variations, different topography and muddy substratum (Mohamed *et al*., 2001).

The Perciform is considered to be the largest order within the teleost fishes (Nelson, 2006), this order dominates the ichthyofauna in northwest of the Arabian Gulf (Khalaf, 1961; Mahdi, and Georg, 1969; Al-Daham, 1982; Kuronuma, and Abe, 1986; Bishop, 2003), and which is represented by 36 families and 132 species in the present study.

The most successful fish family in the Iraqi marine waters was Carangidae, represented by 24 species, this number is likely to increase, where were occurrence 32 species in Kuwait (Bishop, 2003) and 40 species in the Arabian Gulf (Carpenter *et al*., 1997). This applies to the rest of families as Haemulidae, Serranidae, Sparidae and Sciaenidae.

This study provided an updating list of the ichthyofauna of Iraqi marine waters as to be a base for various studies in the future.

Table (1): List of fish species from the Iraqi marine waters.

Order	**Family**	**Species**
Orectolobiformes	Hemiscylliidae	*Chiloscyllium arabicum* Gubanov, 1980
	Rhincodontidae	*Rhincodon typus* Smith, 1828
Carcharhiniformes	Carcharhinidae	*Carcharhinus leucas* (Müller & Henle, 1839)
		Rhizoprionodon acutus (Rüppell, 1837)
	Sphyrnidae	*Sphyrna mokarran* (Rüppell, 1837)
Rhinopristiformes	Pristidae	*Pristis zijsron* Bleeker, 1851
	Rhinobatidae	*Glaucostegus granulatus* (Cuvier, 1829)
Myliobatiformes	Dasyatidae	*Brevitrygon imbricata* (Bloch & Schneider, 1801)
		Brevitrygon walga (Müller & Henle, 1841)
		Himantura uarnak (Gmelin, 1789)
		Maculabatis gerrardi (Gray, 1851)
		Pastinachus sephen (Forsskål, 1775)
		Pateobatis bleekeri (Blyth, 1860)
	Gymnuridae	*Gymnura poecilura* (Shaw, 1804)
	Myliobatidae	*Aetobatus flagellum* (Bloch & Schneider, 1801)
		Aetobatus narinari (Euphrasen, 1790)
Anguilliformes	Muraenesocidae	*Muraenesox cinereus* (Forsskål, 1775)
Clupeiformes	Chirocentridae	*Chirocentrus dorab* (Forsskål, 1775)
		Chirocentrus nudus Swainson, 1839
	Clupeidae	*Anodontostoma chacunda* (Hamilton, 1822)
		Nematalosa nasus (Bloch, 1795)
		Sardinella albella (Valenciennes,1847)
		Sardinella gibbosa (Bleeker, 1849)
		Sardinella longiceps Valenciennes,1847
		Tenualosa ilisha (Hamilton, 1822)
	Dussumieriidae	*Dussumieria acuta* Valenciennes, 1847
	Engraulidae	*Thryssa dussumieri* (Valenciennes, 1848)
		Thryssa hamiltonii Gray, 1835
		Thryssa sp.
		Thryssa vitrirostris (Gilchrist & Thompson, 1908)
		Thryssa whiteheadi Wongratana, 1983
	Pristigasteridae	*Ilisha compressa* Randall, 1994
		Ilisha melastoma (Bloch & Schneider, 1801)
Gonorynchiformes	Chanidae	*Chanos chanos* (Forsskål, 1775)
Siluriformes	Ariidae	*Plicofollis dussumieri* (Valenciennes, 1840)
		Netuma bilineata (Valenciennes, 1840)
		Netuma thalassina (Rüppell, 1837)
	Plotosidae	*Plotosus lineatus* (Thunberg, 1787)
Aulopiformes	Synodontidae	*Saurida tumbil* (Bloch, 1795)
		Saurida undosquamis (Richardson, 1848)
Gadiformes	Bregmacerotidae	*Bregmaceros neclabanus* Whitley, 1941
Ophidiiformes	Ophidiidae	*Neobythites steatiticus* Alcock, 1894
Batrachoidiformes	Batrachoididae	*Allenbatrachus grunniens* (Linnaeus, 1758)
Mugiliformes	Mugilidae	*Liza carinata* (Valenciennes, 1836)
		Liza klunzingeri (Day, 1888)
		Planiliza subviridis (Valenciennes, 1836)

		Mugil cephalus Linnaeus, 1758
		Valamugil speigleri (Bleeker, 1858)
Beloniformes	Belonidae	*Ablennes hians* (Valenciennes, 1846)
		Strongylura strongylura (van Hasselt, 1823)
		Tylosurus crocodilus (Péron & Lesueur, 1821)
	Hemiramphidae	*Hemiramphus marginatus* (Forsskasl, 1775)
		Hyporhamphus limbatus (Valenciennes, 1846)
		Rhynchorhamphus georgii (Valenciennes, 1846)
Beryciformes	Monocentridae	*Monocentris japonica* (Houttuyn, 1782)
Gasterosteiformes	Pigasidae	*Pegasus volitans* Linnaeus, 1758
Syngnathiformes	Syngnathidae	*Hippocampus kuda* Bleeker, 1852
Scorpaeniformes	Platycephalidae	*Platycephalus indicus* (Linnaeus, 1758)
		Grammoplites scaber (Linnaeus, 1758)
		Pseudosynanceia melanostigma Day, 1875
		Minous monodactylus (Bloch & Schneider, 1801)
		Synanceia nana Eschmeyer & Rama-Rao, 1973
Perciformes	Acanthuridae	*Acanthurus sohal* (Forsskål, 1775)
	Apogonidae	*Apogonichthyoides taeniatus* (Cuvier, 1828)
	Ariommatidae	*Ariomma indica* (Day, 1870)
	Carangidae	*Alectis ciliaris* (Bloch, 1787)
		Alectis indica (Rüppell, 1830)
		Alepes djedaba (Forsskål, 1775)
		Alepes kleinii (Bloch, 1793)
		Alepes melanoptera (Swainson, 1839)
		Alepes vari (Cuvier, 1833)
		Atropus atropos (Bloch & Schneider, 1801)
		Atule mate (Cuvier, 1833)
		Carangoides armatus (Rüppell, 1830)
		Carangoides bajad (Forsskål, 1775)
		Carangoides chrysophrys (Cuvier, 1833)
		Carangoides malabaricus (Bloch & Schneider, 1801)
		Caranx sexfasciatus Quoy & Gaimard, 1825
		Decapterus russelli (Rüppell, 1830)
		Gnathanodon speciosus (Forsskål, 1775)
		Megalaspis cordyla (Linnaeus, 1758)
		Parastromateus niger (Bloch, 1795)
		Scomberoides commersonnianus Lacepède, 1801
		Scomberoides tol (Cuvier, 1832)
		Selar crumenophthalmus (Bloch, 1793)
		Seriolina nigrofasciata (Rüppell, 1829)
		Trachinotus baillonii (Lacepède, 1801)
		Trachinotus mookalee Cuvier, 1832
		Uraspis helvola (Forster, 1801)
	Chaetodontidae	*Chaetodon gardineri* Norman, 1939
	Drepanidae	*Drepane longimana* (Bloch & Schneider, 1801)
		Drepane punctata (Linnaeus, 1758)
	Echeneidae	*Echeneis naucrates* Linnaeus, 1758

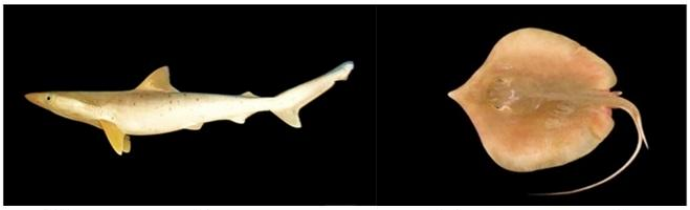
	Ephippidae	*Ephippus orbis* (Bloch, 1787)
		Platax teira (Forsskål, 1775)
	Gerreidae	*Gerres infasciatus* Iwatsuki & Kimura, 1998
		Gerres limbatus Cuvier, 1830
		Gerres longirostris (Lacepède, 1801)
		Gerres oyena (Forsskål, 1775)
	Gobiidae	*Acentrogobius dayi* Koumans, 1941
		Bathygobius fuscus (Rüppell, 1830)
		Boleophthalmus dussumieri Valenciennes, 1837
		Cryptocentrus lutheri (Klausewitz, 1960)
		Periophthalmus waltoni Koumans, 1941
		Trypauchen vagina (Bloch & Schneider, 1801)
	Haemulidae	*Diagramma pictum* (Thunberg, 1792)
		Plectorhinchus pictus (Tortonese, 1936)
		Plectorhinchus sordidus (Klunzinger, 1870)
		Pomadasys aheneus McKay & Randall, 1995
		Pomadasys argenteus (Forsskål, 1775)
		Pomadasys kaakan (Cuvier, 1830)
		Pomadasys maculatus (Bloch, 1793)
		Pomadasys olivaceus (Day, 1875)
		Pomadasys punctulatus (Rüppell, 1838)
		Pomadasys stridens (Forsskål, 1775)
		Pomadasys taeniatus McKay & Randall, 1995
	Labridae	*Cheilinus lunulatus* (Forsskål, 1775)
	Lactariidae	*Lactarius lactarius* (Bloch & Schneider, 1801)
	Leiognathidae	*Leiognathus equulus* (Forsskål, 1775)
		Leiognathus oblongus (Valenciennes, 1835)
		Nuchequula gerreoides (Bleeker, 1851)
		Photopectoralis bindus (Valenciennes, 1835)
	Lethrinidae	*Lethrinus borbonicus* Valenciennes, 1830
		Lethrinus microdon Valenciennes, 1830
		Lethrinus nebulosus (Forsskasl, 1775)
	Lutjanidae	*Lutjanus argentimaculatus* (Forsskål, 1775)
		Lutjanus ehrenbergii (Peters, 1869)
		Lutjanus fulviflamma (Forsskål, 1775)
		Lutjanus lutjanus Bloch, 1790
		Lutjanus malabaricus (Bloch & Schneider, 1801)
		Lutjanus russellii (Bleeker, 1849)
		Lutjanus sanguineus (Cuvier, 1828)
		Pristipomoides filamentosus (Valenciennes, 1830)
	Menidae	*Mene maculata* (Bloch & Schneider, 1801)
	Mullidae	*Parupeneus cyclostomus* (Lacepède, 1801)
		Parupeneus margaritatus Randall &Gueze, 1984
		Upeneus doriae (Günther, 1869)
		Upeneus tragula Richardson, 1846
		Upeneus vittatus (Forsskål, 1775)
	Nemipteridae	*Nemipterus bipunctatus* (Valenciennes, 1830)
		Nemipterus japonicus (Bloch, 1791)

		Nemipterus peronii (Valenciennes, 1830)
		Nemipterus randalli (Russell, 1986)
		Scolopsis taeniata (Cuvier, 1830)
	Polynemidae	*Eleutheronema tetradactylum* (Shaw, 1804)
		Polydactylus sextarius (Bloch & Schneider, 1801)
	Pomacanthidae	*Pomacanthus maculosus* (Forsskål, 1775)
	Pomacentridae	*Neopomacentrus sindensis* (Day, 1873)
	Priacanthidae	*Priacanthus hamrur* (Forsskål, 1775)
		Priacanthus tayenus Richardson, 1846
	Rachycentridae	*Rachycentron canadum* (Linnaeus, 1766)
	Scaridae	*Chlorurus sordidus* (Forsskål, 1775)
		Scarus ghobban Forsskål, 1775
	Scatophagidae	*Scatophagus argus* (Linnaeus, 1766)
	Sciaenidae	*Argyrosomus hololepidotus* (Lacepède, 1801)
		Johnius amblycephalus (Bleeker, 1855)
		Johnius belangerii (Cuvier, 1830)
		Johnius dussumieri (Cuvier, 1830)
		Nibea maculata (Bloch & Schneider, 1801)
		Otolithes ruber (Bloch & Schneider, 1801)
		Pennahia anea (Bloch, 1793)
		Protonibea diacantha (Lacepède, 1802)
	Scombridae	*Euthynnus affinis* (Cantor, 1849)
		Rastrelliger kanagurta (Cuvier, 1816)
		Scomberomorus commerson (Lacepède, 1800)
		Scomberomorus guttatus (Bloch & Schneider, 1801)
	Serranidae	*Cephalopholis hemistiktos* (Rüppell, 1830)
		Epinephelus areolatus (Forsskål, 1775)
		Epinephelus bleekeri (Vaillant, 1878)
		Epinephelus coioides (Hamilton, 1822)
		Epinephelus diacanthus (Valenciennes, 1828)
		Epinephelus epistictus (Temminck & Schlegel, 1842)
		Epinephelus malabaricus (Bloch & Schneider, 1801)
		Epinephelus polylepis Randall & Heemstra, 1991
		Epinephelus stoliczkae (Day, 1875)
	Siganidae	*Siganus canaliculatus* (Park, 1797)
	Sillaginidae	*Sillago arabica* McKay & McCarthy, 1989
		Sillago attenuata McKay, 1985
		Sillago sihama (Forsskål, 1775)
	Sparidae	*Acanthopagrus arabicus* Iwatsuki, 2013
		Acanthopagrus berda (Forsskål, 1775)
		Acanthopagrus bifasciatus (Forsskål, 1775)
		Argyrops spinifer (Forsskål, 1775)
		Crenidens crenidens (Forsskål, 1775)
		Diplodus kotschyi (Steindachner, 1876)
		Rhabdosargus haffara (Forsskal, 1775)

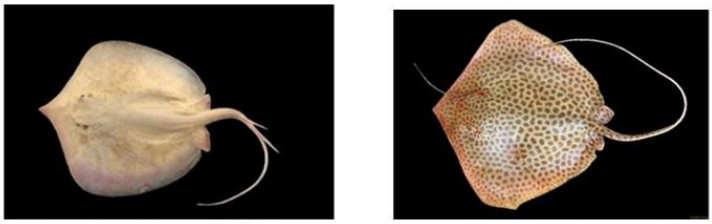
		Rhabdosargus sarba (Forsskål, 1775)
		Sparidentex hasta (Valenciennes, 1830)
	Sphyraenidae	*Sphyraena obtusata* Cuvier, 1829
		Sphyraena qenie Klunzinger, 1870
	Stromateidae	*Pampus argenteus* (Euphrasen, 1788)
	Terapontidae	*Terapon jarbua* (Forsskål, 1775)
		Terapon puta Cuvier, 1829
		Terapon theraps Cuvier, 1829
		Pelates quadrilineatus (Bloch, 1790)
	Trichiuridae	*Trichiurus lepturus* Linnaeus, 1758
Pleuronectiformes	Cynoglossidae	*Cynoglossus arel* (Bloch & Schneider, 180)
		Cynoglossus kopsii (Bleeker, 1851)
	Paralichthyidae	*Pseudorhombus arsius* (Hamilton, 1822)
		Pseudorhombus javanicus (Bleeker, 1853)
	Psettodidae	*Psettodes erumei* (Bloch & Schneider, 1801)
	Soleidae	*Brachirus orientalis* (Bloch & Schneider, 1801)
		Solea elongata Day, 1877
		Solea stanalandi Randall & McCarthy, 1989
		Zebrias captivus Randall, 1995
Tetraodontiformes	Balistidae	*Abalistes stellaris* (Bloch & Schneider, 1801)
	Molidae	*Ranzania laevis* (Pennant, 1776)
	Monacanthidae	*Paramonacanthus choirocephalus* (Bleeker, 1851)
		Paramonacanthus oblongus (Temminck & Schlegel, 1850)
		Thamnaconus modestoides (Barnard, 1927)
	Tetraodontidae	*Arothron stellatus* (Anonymous, 1798)
		Lagocephalus lunaris (Bloch & Schneider,1801)
	Triacanthidae	*Triacanthus biaculeatus* (Bloch,1786)
		Pseudotriacanthus strigilifer (Cantor, 1849)

Plate (1): Cartilaginous fish species from the Iraqi marine waters

Chiloscyllium arabicum *Carcharhinus leucas*



Rhizoprionodon acutus *Brevitrygon imbricata*



Brevitrygon walga *Himantura uarnak*

Maculabatis gerrardi *Pastinachus sephen*

Glaucostegus granulatus *Gymnura poecilura*

Plate (2): Bony fish species from the Iraqi marine waters.

Pegasus volitansi

Pseudosynanceia melanostigma

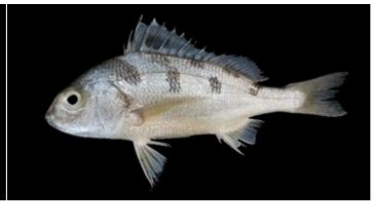
Ariomma indica

Platax teira

Gerres limbatus

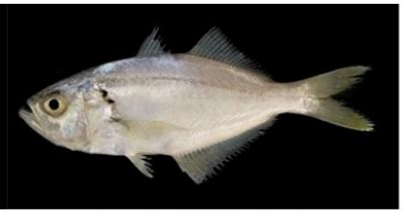
Gerres longirostris

Cryptocentrus lutheri



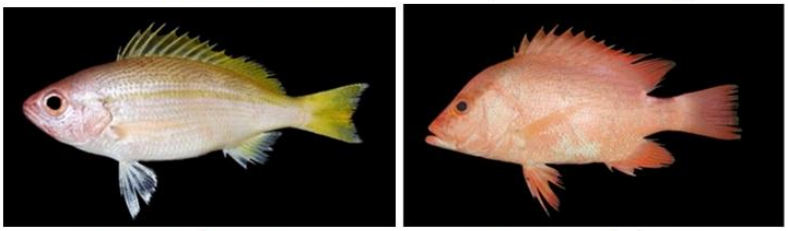
Pomadasys maculatus

Pomadasys taeniatus



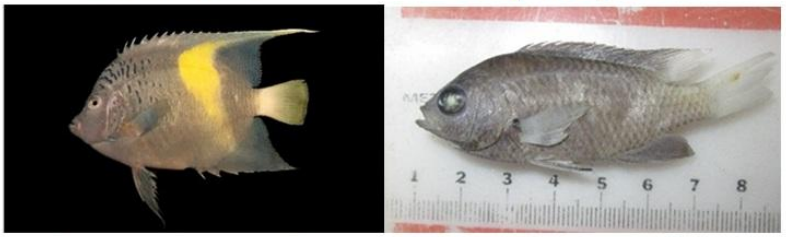
Lactarius lactarius

Lethrinus nebulosus *Lutjanus ehrenbergli*



Lutjanus lutjanus *Lutjanus malabaricus*

Mene maculate *Nemipterus peronii*



Pomacanthus maculosus *Neopomacentrus sindensis*

Priacanthus tayenus *Rachycentron canadum*

Argyrosomus hololepidotus *Protonibea diacantha*

Euthynnus affinis *Cephalopholis hemistiktos*

Siganus canaliculatus *Acanthopagrus bifasciatus*

Sphyraena obtusata *Cynoglossus kopsii*

Paramonacanthus choirocephalus *Pseudotriacanthus strigilifer*

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مسح لأنواع الأسماك البحرية في العراق

عباس جاسم الفيصل و فلاح معروف مطلك
مركز علوم البحار، جامعة البصرة، البصرة، العراق

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الخلاصة

اجري مسح لأنواع الأسماك المتواجدة في المياه البحرية العراقية للمدة من تشرين الثاني 2014 ولغاية اذار 2018. شملت الدراسة تسجيل 214 نوعاً تعود الى 75 عائلة.

وجدت عائلة Carangidae هي الاكثر سيادة وتمثلت بـ 24 نوعاً ثم تلتها عائلة Haemulidae بـ11 نوعاً ثم عائلتي Serranidae و Sparidae بتسعة انواع لكل منهما، بينما ضمت العوائل الـ 34 عائلة نوعاً واحداً فقط.