A Guide to Harmful and Toxic Creatures in the Gulf of Aqaba of Jordan

2016

Authors:
Ehab Eid
Mohammad Al Tawaha

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JREDS

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Material was reviewed by Dr Nidal Al Oran, International Research Center for Water, Environment and Energy\ Al Balqa' Applied University,and Dr. Omar Attum from Indiana University Southeast at the United State of America.

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Content

Forward

The Jordanian coastline at the Gulf of Aqaba is considered one the most unique ecosystems in the Hashemite Kingdom of Jordan. It is the Northern most outcropping of coral reef in the world and tolerates quite a high salinity rate compared with other seas. However, the temperate climate and gentle water currents, provide a perfect environment for an incomparable diversity of marine life.

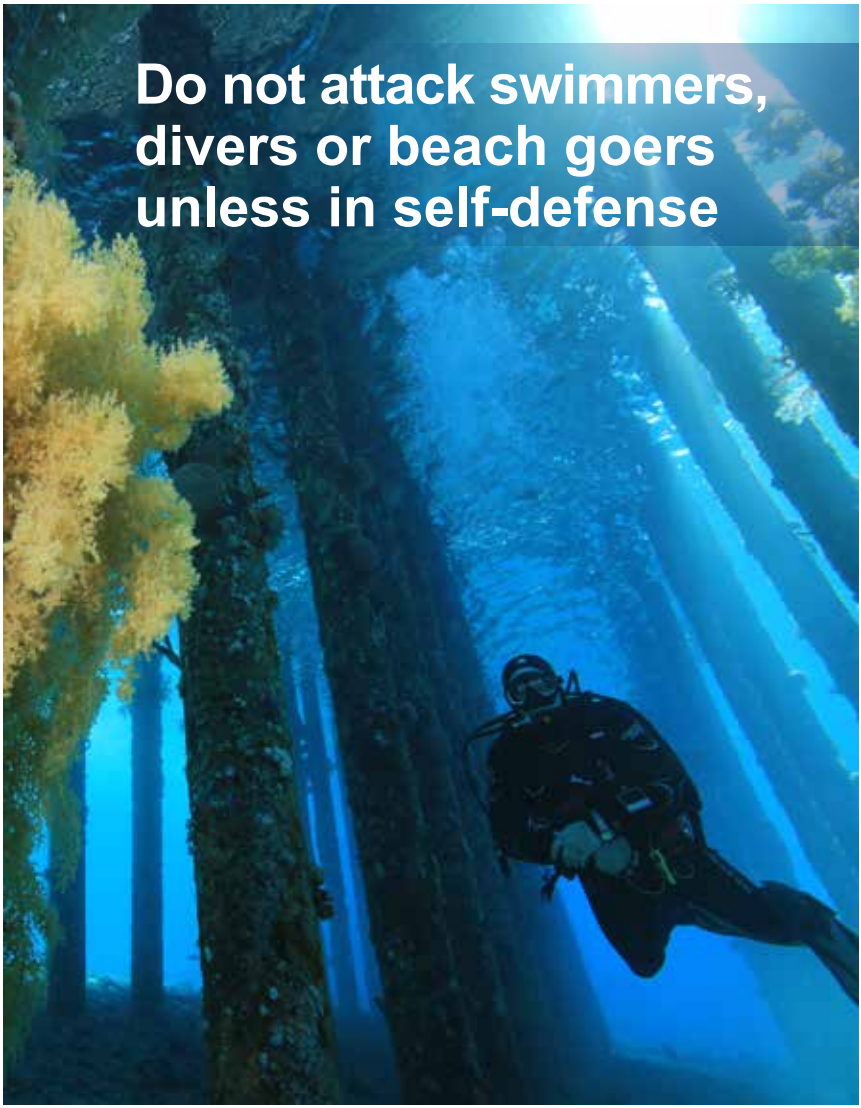
Thus, Aqaba is considered as an exceptional tourist attraction for divers and snorkelers alike, that starts right at the shoreline. However, this diversity does come at a certain price, and that is, the presence of harmful and toxic creatures which sea goers could very easily come in direct contact with. Although, these creatures may cause injuries to humans, they are not naturally aggressive toward humans and would never outwardly attack humans by themselves. The harmful traits are merely defense mechanisms that the marine life has developed as a means to survive. In addition, it is people's lack of awareness that is considered the main cause of most unpleasant injuries by these animals. Therefore, the best precautions humans can take, is to become more aware and to avoid physical contact.

Though we know of the harmful species' presence, limited knowledge is available, which was the very reason for publishing this work "A Guide to Harmful and Toxic Creature in the Gulf of Aqaba of Jordan". It gives me great pleasure and honor to write the forward to this much needed piece of work. Furthermore, this guide is an extremely important reference that will raise awareness of the public regarding this group of creatures, but more importantly it will increase the public's safety while decreasing the incidents or injury.

I would like to take this opportunity to thank and praise the Staff of the Royal Marine Conservation Society of Jordan (JREDS) for their tireless, yet meticulous efforts in developing this guide.

HRH Princess Basma bint Ali
Chairperson- JREDS

Creatures described in this guide



Index of Creatures Described in this Guide

Preface

Venomous, poisonous and potentially injurious marine creatures are always a subject of interest, due to their mysterious lifestyle, behaviors and evolution of different types of predatory and defensive mechanisms in order to survive such as venomous stings, spines and bites. However, limited research and information are available on their presence, and distribution locally and worldwide. Perhaps one of the most important reasons for erroneous interpretations regarding these species, is the absence of a reliable information.

These creatures are not naturally aggressive toward humans and do not attack humans by themselves. It only happens, when our presence and\ or behavior threatens and force them to act in self-defense. A lack of awareness among humans are considered the main cause of unpleasant encounters and injuries. Therefore, the best precaution is to avoid physical contact.

Hence, this guide was prepared as a means of awareness on the presence of the venomous, poisonous and potentially injurious creatures along the Aqaba's coastline. The guide is basically targeting beach goers and visitors, but ultimately aiming to put these species under spot for future research. Moreover, this guide does not aim to catalog all marine species encountered that could cause potential injury but instead identifies the main species which could be encountered in the Aqaba's water.

Precautions, attention, and good working knowledge of the marine environment should exclude severe injury. Any person who are exposed to any injuries or accidents should always consult medical attention directly.

Part One: Introduction

1.1 The Gulf of Aqaba; Jordan

The Gulf of Aqaba is a semi-enclosed water basin attached to the semi-enclosed Red Sea with a length of 170 Km; average width is about 15 km and more than 1800 m maximum depth. Aqaba is a Jordanian coastal city and characters by its warm water and high biodiversity.

The Gulf of Aqaba is connected with the Red Sea via the narrow and shallow Strait of Tiran. The average depth of the Gulf is about 800m with a maximum depth of around 1800m. It consists of a series of embayments with a wide range of communities present in each including rocky shore, reef flat, reef face, fore reef, sandy shore, sandy bottom and sea grass ecosystems. The Gulf coastlines are shared between Egypt, occupied Palestine, Saudi Arabia, and Jordan.

The Aqaba coastline is the only maritime region in Jordan and its global importance stems from its geographical location as it is the bridge where many floral and faunal species between Africa and Eurasia. The coastline of the Jordanian sector Gulf of Aqaba extends for 27Km.

1.2 Aqaba; a Paradise for Divers

"Throughout my boyhood, I dreamed about diving in the Red Sea. Finally, in 1972 this dream came true. My first dive ever in a tropical marine environment was in the Gulf of Aqaba, where I experienced an overwhelming underwater paradise, natural beauty beyond expectations, which in those days was still largely pristine."

Dr. Fareed (Friedhelm) Krupp
Director, Qatar Museum of Nature and Science\ Qatar Museums
Senckenberg Research Institute and Museum of Nature

Aqaba is well-known worldwide as a tourist's paradise overflowing with wildlife and adventure for scuba diving, as well as easy access to prominent and interesting diving sites. Aqaba's climate makes it an ideal location for year-round scuba diving and is by far considered a paradise for divers.

Aqaba coastal area is very unique due to the absence of stormy weather, along with the mild water currents, which contribute to a calm and clear water. This is also supported by relatively high salinity levels, which provided a suitable environment for the growth of corals and countless varieties of marine-life forms to be encountered.

The water of the Jordanian coastline is exceptionally clear, with high transparency and little wave actions throughout the year. The poor freshwater influx has led to poor supply of minerals salts and nutrients such as nitrogen or phosphorus compounds which left planktonic primary production very low. This astonishing characteristics supported by a water temperature ranges between 21 C° in winter and 27 C° in summer; and might reach 29 C° in shallow coastal areas during the warm months.

1.3 Biodiversity in the Gulf of Aqaba of Jordan

Despite the relatively small water body at the Gulf of Aqaba, it hosts an extraordinary marine diversity. Over 13 Km of the 27 Km of coastline is occupied by a discontinuous series of fringing coral reefs and reef flats that extend to 150m wide. Corals play a major role in supporting high levels of biological diversity as well as providing key ecosystem goods and services such as habitat for fisheries, coastal protection and tourism recreation.

More than 50% of the Gulf's shoreline is covered with ancient coral reef where over than 151 scleractinian (reef-building) coral species and more than 120 species of soft coral were recorded, some of which are globally endangered, such as the red and black corals. In addition, the Jordanian coastline is distinguished by an extensive fringing reefs which is considered one of the most dynamic and diverse of all natural ecosystems.

In addition, Aqaba's fish community is represented by more than 500 species of fishes, which is considered a rich habitat with high fish diversity if compared with 1280 fish species recorded in the Red Sea which extends over 1932 Km. The majority of fish species recorded from the Gulf of Aqaba are of benthic origin, where coral and boulders fish constitutes more than 53%.

The Jordan segment of the Gulf of Aqaba, attracts several migratory species to visit its calm and warm water. Some visitors are of high economic value, such as the tuna and sardine, while most species utilize the reef or seagrass areas. The marine environment in Aqaba is a host of several species of algae, sponges, snails, crabs and sea turtles.

More than 20% of mollusks and Echinodermata as well as several species of algae occurring in the Gulf may be endemic. The shores of the Gulf are also frequented with sea turtles that spend their time swimming amongst the swirling schools of fish. Harmless whale sharks, dolphins, and sea cows are also often spotted visiting the gulf.

Part Two: Harmful, toxic and Potentially Hazardous Marine Creatures in Aqaba

The extraordinary marine environment of Aqaba, holds the presence of several gorgeous species but also a number of potentially injurious creatures, which can cause serious injuries to unaware or careless divers or beach goers. Some injuries could even result in death in very rare cases. The severity of injury often depends on the amount of venom used, individual reactions, and nature of injury and location of accidents.

These structures have developed to aid in hunting and killing prey, but also evolved for defense, especially in harsh environment where predators and prey are living on the same reef. Some of the most dangerous marine animals are well camouflaged and practically invisible, so that they pose a much greater threat than if they were easily seen.

A general rule-of-thumb in the sea is do not touch at all, unless you know can confidently identify the species.

Photo: Scorpion Fish killed at Aqaba. Persecution of wildlife is prohibited

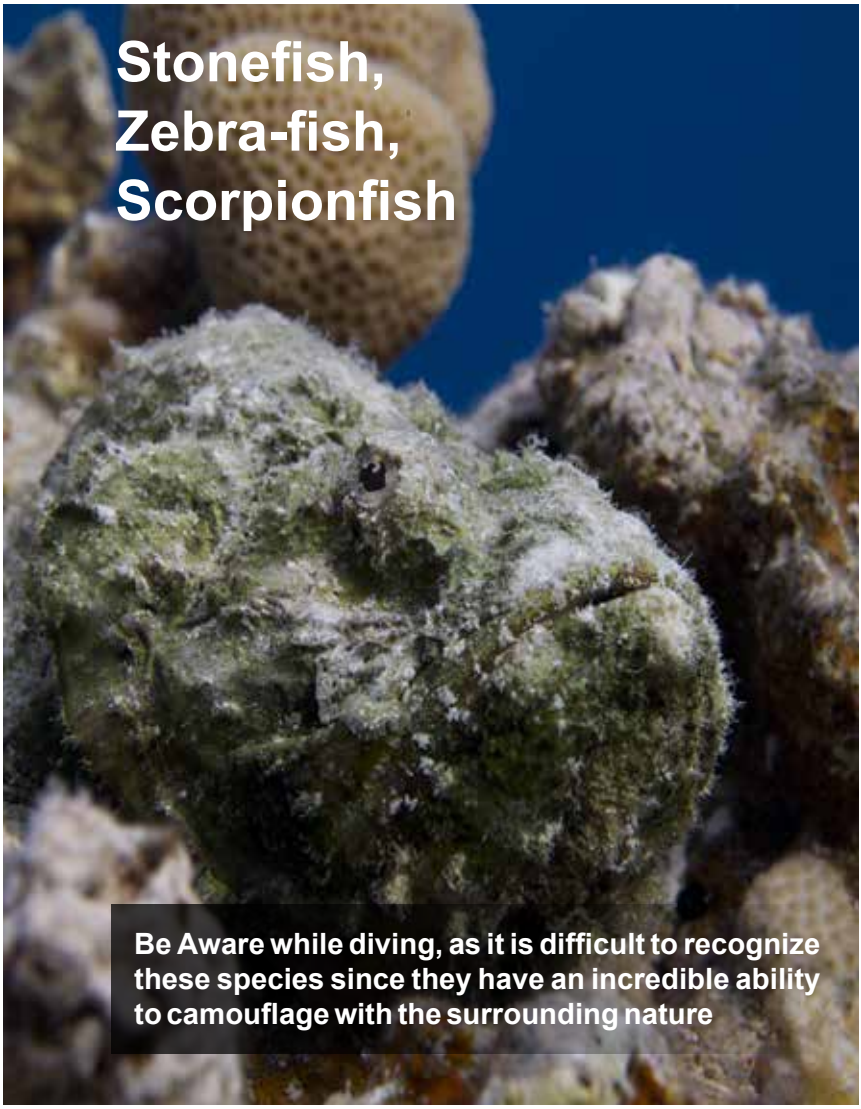
The Gulf of Aqaba is considered a friendly sea due to the very few hazardous marine animals present. People enjoy diving and swimming as they can observe and interact with the underwater marine life. Therefore, to avoid any injuries a zero contact with underwater life is the best precaution. The following points define best precaution measures.

- Enjoy observing underwater marine life, but avoid touching or handling them.
- Some marine creatures are very cryptic and are unnoticeable underwater, therefore, look carefully where you place your hands and feet. Also, shuffle your feet when walking in shallow water to prevent stepping on any animals.

Poisonous species: a creature is considered poisonous if it contains toxins stored in special tissues or organs that cause harm when eaten.

Venomous species: a creature is considered venomous if there are specialized mechanisms to physically deliver the toxins through bites, spines and stings.

Highly Venomous Fish



2.1 Highly Venonmous Fish (Stonefish, Zebra-fish, Scorpionfish)

2.1.1 General Information

There are several species of venomous marine creatures (fish and invertebrates), all of which live in shallow-water where they are well camouflaged on rocky or sandy areas. They are known to cause intense pain and even in some cases, fatalities.

Stonefish and scorpionfish are flattened vertically, dark and mottled, while zebrafish are ornate and feathery in appearance with alternating patches of dark and light color. Antivenin is specific for the stonefish but may have some beneficial effects against the scorpionfish and zebrafish.

2.1.2 Precautions

Divers should be alert for the presence of these species, avoid handling or touching suspected venomous fish.

2.1.3 Diagnosis

A Sting and puncture mark surrounded by skin discoloration, usually bluish, will be clearly seen, as well as immediate intense local pain. In addition, muscular paralysis, respiratory depression, peripheral vasodilation, shock, cardiac dysrhythmias, or cardiac arrest as venom is an unstable protein which acts as a myotoxin on skeletal, involuntary, and cardiac muscle.

2.1.4 First Aid and Treatment

- Casualty leave the water and observe the victim for any collapsing.
- Lay the patient down and reassure.
- Observe for any signs of shock.
- Remove any broken spines using forceps, if available, but do not incise the wound to search for spine fragments.
- Wash wound with cold, salt water, sterile saline solution or soapy water. Surgery may be required to open up the puncture wound.
- The wound should not be rubbed, as this could crush the spines and worsen the local effects of the sting.
- Do not apply a pressure bandage, tourniquet or cut or suck the wound.
- Institute hot water therapy through soaking the injured extremity in hot water up to 50C°, for 30 to 90 minutes, and use hot compresses if the wound is on the face as heat may break down the venom.
- Observe the causality carefully for the possible development of life-threatening complications, as muscular paralysis, respiratory depression, peripheral vasodilation, shock, cardiac dysrhythmias, or cardiac arrest.
- If the patient collapses, standard pre-hospital resuscitation should be used (airways, breathing, circulation), as appropriate.
- Seek medical advice at the earliest opportunity. This is especially important for stonefish stings, where an antivenom is available, which may give rapid and dramatic relief of symptoms.

2.1.5 Creatures Recorded at Aqaba

2.1.5.1 Stonefish

Common Name	Stonefish

Scientific Name	*Synanceia verrucosa*
Arabic Name:	Abu al Laban

Description

Brown or gray color, and it may have areas of yellow, orange or red. This species normally reaches a length between 30 to 40 centimeters, although specimens can reach up to 51 centimeters.

Habitats

Lives in coral reefs, and may settle on and around rocks, seagrasses, algae or rest on the seabed.

Hazardous to Human

A venomous species, which could cause fatality as venom possibly contains neurotoxins, myotoxins, procoagulants, cardiotoxins and necrotoxins. If puncture, severe local pain, swelling and bruising will occur. In addition, general symptoms might be noticed such as headache, nausea, vomiting, and collapsing.

2.1.5.2 Scorpionfish

Common Name	Red Sea Walkman

Scientific Name	*Inimicus filamentosus*
Arabic Name:	Abu al Laban

Description

Scorpionfishes may have a dull yellow, gray, brown, or rust with light blotches, and are very similar to that of the surrounding sandy or coral seabed in which they are found. These colors provide them with exceptional camouflage.

Habitats

Scorpionfish are a reef-associated species which inhabits sand and rubble bottoms of coral reefs and can be found down to a depth of 55 m. It typically lies partially buried on the sea floor or on a coral head during the day, covering itself with sand and other debris for further camouflage.

Hazardous to Human

Venomous species, which could cause serious injury. It fans out its brilliantly colored pectoral and caudal fins as a warning when disturbed by a scuba diver.

2.1.5.2 Scorpionfish

Common Name	Bearded Scorpionfish

Scientific Name	*Scorpaenopsis barbata*
Arabic Name:	Abu al Laban

Description

Body is heavily pigmented dark or reddish brown, mottled with whitish and blackish blotches; often with a dark brown bar extending ventrally from posterior half of the eye and broadening onto lower cheek. Dorsal, anal, and pelvic spines can bear venom glands.

Habitats

Benthic species associated with reef down to more than 30 m depth.

Hazardous to Human

A venomous species that injects its venom from sharp spines coated with venomous mucus.

2.1.5.2 Scorpionfish

Common Name	Devil Scorpionfish

Scientific Name	*Scorpaenopsis diabola*
Arabic Name:	Abu al Laban

Description

This species can reach it's a maximum length of 30cm, and characterized by a large head that merges into the landscape very well.

Habitats

It inhabits reef-associated marine environment and can be found at depths up to 70 m. They are found well camouflaged around and among coral reefs blending into plants, rocks, mud and sand..

Hazardous to Human

When disturbed, it flashes its inner pectoral fins and can inflict a painful sting from its venomous spines along its back.

2.1.5.2 Scorpionfish

Common Name	Yellow- spotted Scorpionfish

Scientific Name	*Sebastapistes cyanostigma*
Arabic Name:	Abu al Laban

Description

This species can grow up to 10 cm in length, and can be recognized by the yellow and white spots on the body.

Habitats

Found in reef crests with rich coral growth at depths between 2-30 m. Typically found among the branches of Pocillopora corals in surge areas of seaward reefs. Also observed between the branches of the fire coral Millepora and Stylophora species.

Hazardous to Human

A venomous species which uses the sharp venomous spines on its back for protection.

2.1.5.3 Zebrafish

Common Name	Common Lionfish

Scientific Name	*Pterois miles*
Arabic Name:	Ra'na

Description

Vary in color from reddish to tan or grey and have numerous thin, dark, vertical bars on their head and body. The common lionfish grows up to 35 cm in length and its head is less angular than that of P. volitans.

Habitats

This fish is usually found in areas with crevices or lagoons, often on the outer slopes of coral reefs.

Hazardous to Human

The fin spines are highly venomous. Stings can occur even after the fish is dead, so handlers should be aware of lionfish at all times. Venom can cause systemic effects such as extreme pain, nausea, vomiting, fever, breathing difficulties, convulsions, dizziness, redness on the affected area, headache, numbness, paresthesia (pins and needles), heartburn, diarrhea, and sweating. In rare cases, stings can cause temporary paralysis of the limbs and heart failure.

2.1.5.3 Zebrafish

Common Name	Clearfin Lionfish

Scientific Name	*Pterois radiata*
Arabic Name:	Ra'na

Description

The head and body color is reddish-brown with about six vertical dark bands of different color on the body separated by thin white lines. Two white horizontal lines occur on the caudal peduncle which distinguishes this fish from other similar lionfishes.

Habitats

It is found on both inshore and offshore rocky reefs at depths to about 25 m. Lionfishes hide during the day in rock crevices, in small caves, or under overhangs. They are more active at night to feed on invertebrates like crabs and shrimps.

Hazardous to Human

Venom can cause systemic effects such as extreme pain, nausea, vomiting, fever, breathing difficulties, convulsions, dizziness, redness on the affected area, headache, numbness, paresthesia (pins and needles), heartburn, diarrhea, and sweating. In rare cases, stings can cause temporary paralysis of the limbs and heart failure.

2.1.5.3 Zebrafish

Common Name	Shortfin Lionfish; Shortfin Turkeyfish

Scientific Name	*Dendrochirus brachypterus*
Arabic Name:	Ra'na

Description

Fins fan-like, rays fully attached by membrane; inner surface with concentric bands.

Habitats

Inhabits reef flats and shallow lagoon and coastal reefs, from a depth between 2 to 80m. Typically on isolated coral heads or algae- or sponge- covered rocks in silty inshore areas. They often rest at the base of rocks or corals or hang upside-down under ledges.

Hazardous to Human

They have venomous spines that can cause systemic effects such as extreme pain, nausea, vomiting, fever, breathing difficulties, convulsions, dizziness, redness on the affected area, headache, numbness, paresthesia (pins and needles), heartburn, diarrhea, and sweating. Rarely, such stings can cause temporary paralysis of the limbs, heart failure, and even death.

Barracuda

Barracuda bites might result in a large amount of bleeding and tissue loss

2.2 Barracuda

2.2.1 General Information

Despite the presence of three species of barracuda at the Gulf of Aqaba, only one species is considered hazardous to human, which is the Great Barracuda; Sphyraena barracuda. The barracuda color ranges between silver to blue and it may grow up to three meters long. It is characterized by a long and thin body with large head characterized by prominent jaws and teeth and a V-shaped tail. Barracuda wounds can be distinguished from those of a shark by the tooth pattern where a barracuda leaves straight or V-shaped wounds, compared to sharks that leave curved wounds like the shape of its jaws.

The barracuda is fast swimmer, capable of striking rapidly and violently. It attacks surface swimmers and limbs dangling in the water, but rarely attacks underwater swimmers, and life threatening attacks are rare.

2.2.2 Precautions

As Barracuda are attracted by any bright objects; avoid wearing shiny jewelry. Also, avoid splashing or dangling limbs in barracuda-infested waters.

2.2.3 First Aid and Treatment

Since Barracuda bites might result in a large amount of bleeding and tissue loss, instant action to control bleeding using large gauze pressure bandages should be done through the following steps:

- ► Wrap the wound tightly using dressings preferably made with gauze to cover wounds, but if gauze is not available, then use any shirts or towels available.
- ► Ensure to direct pressure on injured points to control serious bleeding.
- ► If bleeding continues after direct pressure, then use a tourniquet or ligature even though there is the possibility of loss of the limb.
- Tourniquets are applied only as a last resort and with only enough pressure to control bleeding. Do not remove the tourniquet, except by a physician in a hospital setting.
- Treat for shock by laying the patient down and elevating their feet.
- You should monitor patient's color, pulse, and blood pressure if possible, and to maintain an airway.
- Transport the victim to a medical facility as soon as possible. Reassure the patient.

2.2.4 Species Recorded at Aqaba

Common Name	Great Barracuda

Scientific Name	*Sphyraena barracuda*
Arabic Name:	Iqama

Description

Side often seen with a few scattered dark spots; tail emarginated, dark with white tips.

Habitats

Found predominantly at or near the surface, and inhabits seaward reefs at a depth range between 1 to 100 m.

Hazardous to Human

Rarely attacks humans. Attacks consist of usually one quick, strike. Strikes are rarely fatal.

Sharks

Not only shark bites could cause injuries, but also by coming in contact with the shark's skin!

2.3 Sharks

2.3.1 General Information

Although it is extremely rare for sharks to bite humans, shark attacks on humans are unpredictable.

Most shark species pose no threats to humans, and there have not been any reported shark attacks in Aqaba.

2.3.2 Precautions

Pre-attack behavior by most sharks is somewhat predictable. Some species may exhibit pre-attach behavior such as swimming in circles of decreasing radius around the prey. An attack may be heralded by unexpected acceleration or other marked change in behavior, posture, or swim patterns.

2.3.3 First Aid and Treatment

Follow same first aid treatment of Barracuda bites.

2.3.4 Species Recorded at Aqaba

Common Name	Shortfin Mako Shark

Scientific Name	*Isurus oxyrinchus*
Arabic Name:	Qasaf, Qersh

Description

A fairly large species of shark with an average adult specimen measures around 3.2m in length and 60–150kg in weight. This shark has a cylindrical shape, with a vertically elongated tail. It exhibits countershading, with brilliant metallic blue coloration dorsally and white ventrally. The line of demarcation between blue and white on the body is distinct. The underside of the snout and the area around the mouth are white.

Habitats

A pelagic species that can be found from the surface to depths of 150 m, normally far from land, though occasionally closer to shore.

Hazardous to Human

This species do not generally attack humans, but due to its speed, power, and size, it is certainly capable of injuring people. Most recent attacks involving shortfin mako sharks are considered to have been provoked due to harassment or the shark being caught on a fishing line. Divers who have encountered shortfin makos note, prior to an attack, they swim in a figure-eight pattern and approach with mouths open.

2.3.4 Species Recorded at Aqaba

Common Name	Hammerhead Shark

Scientific Name	*Sphyrna lewini*
Arabic Name:	Samaket Matraqa, Qersh

Description

This species is named for it's the hammer-like shape of the head. The eyes and nostrils are at the tips of the extensions. The maximum length is 4.3 m and the maximum weight is 152.4 kg.

Habitats

Inhabits steep slopes of offshore islands and banks, usually below thermocline. Also considered a pelagic species and can be found at depth ranges from 5 to 275 m.

Hazardous to Human

Large hammerhead sharks are considered potentially dangerous to humans because of the animal's sheer size.

2.3.4 Species Recorded at Aqaba

Common Name	Sandbar Shark

Scientific Name	*Carcharhinus plumbeus*
Arabic Name:	Qersh

Description

A stout shark with a moderately long, rounded snout, high, triangular, saw-edged upper teeth, and an inter-dorsal ridge. Color is grey-brown or bronzy with no prominent markings and white belly. Fins plain or with slightly dusky tips.

Habitats

A coastal shark, often found in shallow waters associated with sandy or muddy flats, bays, and harbors and also further offshore, particularly on banks, near flat reefs and other topographic features in open waters.

Hazardous to Human

The sandbar shark poses little threat to humans due to its preference for smaller prey and its tendency to avoid beaches. Although it has been rarely associated with attacks on humans, its size makes it potentially dangerous

2.3.4 Species Recorded at Aqaba

Common Name	Tiger Shark

Scientific Name	*Galeocerdo cuvieri*
Arabic Name:	Qersh

Description

Body elongated, head depressed and rounded; powerful teeth in each jaw keel mid- ventral on caudal peduncle. The color dark grey or greyish-brown with dark brown or black rectangular spots often forming bars on sides and fins, but fading with growth. Can reach lengths up to 4 m, although lengths up to 5 m may be possible.

Habitats

Usually found near surface to depths of 140 m, and could occur adjacent to jetties in harbors, and in coral lagoons. Bottom-associated species and sometimes pelagic.

Hazardous to Human

The tiger shark is responsible for a large percentage of fatal shark bites and is regarded as one of the most dangerous shark species.

Stingrays and Electric Ray

Most attacks occur when waders inadvertently step on a ray, so be careful where to put your foot!

2.4 Stingrays and Electric Ray

2.4.1 General Information

Species of this group have a bat-like shape and a long tail, and usually favor sheltered water and burrow into sand with only eyes and tail exposed. Most attacks occur when humans inadvertently step on a ray, causing it to lash out defensively with its tail. The spine is located near the base of the tail. A total of 11 species of stingray are reported from the Red Sea, with three species recorded at the Gulf of Aqaba.

Electric rays are a group of rays, flattened cartilaginous fish with enlarged pectoral fins. They are known for being capable of producing an electric discharge, ranging from 8 to 220 volts, depending on species, used to stun prey and for defense. Two species occur in the Red Sea of which one is recorded in the Gulf of Aqaba.

2.4.2 Precautions

As stingray prefer shallow waters, always shuffle feet when waking to alert the rays, which encourages them to move.

2.4.3 Key Diagnostic Features

Wounds are either of the laceration or puncture type and are extremely painful. The wound appears swollen and pale with a blue rim. Secondary wound infections are common. Systemic symptoms may be present and can include fainting, nausea, vomiting, sweating, respiratory difficulty, and cardiovascular collapse.

2.4.4 First Aid and Treatment

- Get victim out of water; watch for collapsing.
- Lay patient down and reassure.
- Observe for signs of shock.
- Institute hot water therapy through soaking the injured extremity in hot water up to 50C°, for 30 to 90 minutes, since heat may break down the venom, and use hot compresses if the wound is on the face.
- Clean and debride wound and ensure removing integument sheath gently away from major blood vessels as it will continue to release toxin.
- Stings to the chest and abdomen, in general, should be left untouched, as removal may cause further damage and endanger the patient. In particular, stings to the chest wall, near the heart, can prove lethal and inexpert removal of the sting can precipitate rapid collapse and death.
- Observe patient carefully for the possible development of life-threatening complications. Symptoms can include cardiac dysrhythmias, hypotension, vomiting, diarrhea, sweating, muscle paralysis, respiratory depression, and cardiac arrest. Fatalities have been occasionally reported.
- Transport the victim to medical care as soon as safely possible

2.4.5 Species Recorded at Aqaba

2.4.5.1 Stingray's

Common Name	Darkspotted Stringray

Scientific Name	*Himantura uarnak*
Arabic Name:	Warnak

Description

Huge stingray with conspicuous dark spots on a light brown disc. The tail is whip-like and extremely thin, measuring 3 – 3.5 times as long as the disc when intact, and lacks fin folds. Usually one serrated stinging spine is located on the upper surface on the tail, some distance from the base.

Habitats

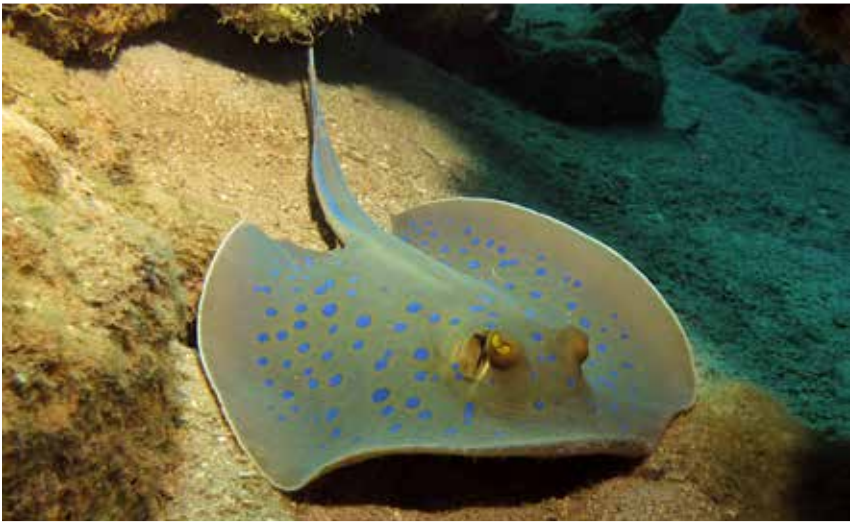
It is frequently found off sandy beaches and in sandy areas of coral reefs, and it can survive offshore to depths of at least 50 m.

Hazardous to Human

Humans are usually stung in the foot area when they step on the species by the barbed stinger in their tail. Sting causes local trauma (from the cut itself), pain and, swelling from the venom, and possible later infection from bacteria. Fatal stings are very rare. Pain normally lasts up to 48 hours, but is most severe in the first 30–60 minutes and may be accompanied by nausea, fatigue, headaches, fever, and chills.

2.4.5.1 Stingray's

Common Name	Blue- spotted Stingray



Scientific Name	*Taeniura lymma*
Arabic Name:	Um Qurbaj

Description

The dorsal coloration consists of numerous circular, neon blue spots on a yellowish brown or green background; the spots vary in size, becoming smaller and denser towards the disc margin. The tail has two stripes of the same blue running along each side as far as the spines. The eyes are bright yellow and the belly is white.

Habitats

Often found along shallow coastal tropical waters, and rarely found deeper than 30 m. It is also commonly encountered in the intertidal zone and tidal, and has been sighted near seagrass beds.

Hazardous to Human

Venomous tail spines present and mild envenoming can occur from a sting.

2.4.5.1 Stingray's

Common Name	Black- blotched Stingray

Scientific Name	*Taeniura meyeni*
Arabic Name:	

Description

One of the largest stingray species in the Red Sea, which can grow to 1.8 m across, 3.3 m long, and 150 kg in weight. The dorsal coloration is light to dark gray, brown-gray, or purplish, becoming most intense towards the fin margins, with a highly variable pattern of irregular darker mottling and white speckles or streaks. The tail past the spine, including the fin fold, is uniformly black, while the underside is creamy white with darker fin margins and additional dots. Young rays are plainer in coloration than adults.

Habitats

Often found in along shallow coastal tropical waters, and can be observed lying on the bottom of the flats and patches of sand between coral areas. Most often they are completely or partially buried in the sand or mud with only tail, eyes and spiracles exposed.

Hazardous to Human

A mildly venomous species, whose stings can cause venom-induced pain, swelling, and bleeding due to mechanical trauma. If the chest or abdomen are punctured, this could potentially be lethal.

2.4.5.2 Electric Ray's

Common Name	Scalloped Torpedo Ray; Leopard Torpedo Ray

Scientific Name	*Torpedo panthera*
Arabic Name:	Khadala Ramlya

Description

The flattened body and enlarged pectoral fins form a circular disc shape, which in this species is dark brown patterned with clusters of whitish spots. The mouth is situated on the underside of the flabby body and small, bulging eyes are situated on top of the head, surrounded by small spiracles. Produce an electrical discharge from large kidney-shaped organs situated between the head and the pectoral fins.

Habitats

Recorded on muddy and sandy bottoms of the continental shelf to depths of 110 m.

Hazardous to Human

Not well researched

2.4.5.2 Electric Ray's

Common Name	Spotted Eagle Ray

Scientific Name	*Taeniura meyeni*
Arabic Name:	Not Available

Description

The dorsal coloration is light to dark gray, brown-gray, or purplish, becoming most intense towards the fin margins, with a highly variable pattern of irregular darker mottling and white speckles or streaks. The tail past the spine, including the fin fold, is uniformly black, while the underside is creamy white with darker fin margins and additional dots.

Habitats

Inhabits sandy areas of reef flat and outer reef slopes at depths ranging from 1 to 80 m.

Hazardous to Human

The species is not aggressive but there is one record of a human injury attributed to this species worldwide.

Moray Eels

Not a snake! It is an Eel. Extreme care should be taken when reaching into holes or crevices where it survive.

2.5 Moray Eels

2.5.1 General Information

Snake-like in both appearance and movement. Has a tough, leathery skin and grow to a length of 3 meters. A moray eel is extremely territorial and attacks on humans are usually in self-defense as a result from humans reaching into a crevice or hole occupied by the eel. Eels have prominent teeth and powerful bite, and sometimes may not dislodge after a bite is initiated. Injuries are usually inflicted on hands or forearms and may vary from multiple small puncture wounds to the tearing, jagged type with profuse bleeding if there has been a struggle.

2.5.2 Precautions

Extreme care should be used when reaching into holes or crevices.

2.5.3 First Aid and Treatment

Primary first aid must stop the bleeding through direct pressure and raising the injured extremity until the injury is evaluated by a physician.

Mild envenomation may occur from a toxin that is released from the palatine mucosa in the mouth of certain moray eels. The nature of this toxin is not known. Antibiotic therapy should be given early. Immediate specialized care by a hand surgeon may be necessary for tendon and nerve repair of the hand to prevent permanent damage and loss of function.

2.5.4 Creatures Recorded at Aqaba

Common Name	Giant Moray

Scientific Name	*Gymnothorax javanicus*
Arabic Name:	Qmum

Description

The largest moray, with brown and black flecks, where those on body and tail forming leopard- like spots.

Habitats

A bottom dweller species and is commonly found in holes and crevices or under rocks and coral and can survive at a depth ranges from 1 to 46 m.

Hazardous to Human

This species may be hazardous to people as it has been implicated in provoked and unprovoked attacks on scuba divers. In addition, it is considered poisonous if eaten as its mucus is toxic.

2.5.4 Creatures Recorded at Aqaba

Common Name	Yellow-mouth moray

Scientific Name	*Gymnothorax nudivomer*
Arabic Name:	Qmum

Description

This species has a relatively short, blunt snout and the larger specimens lack vomerine teeth and median intermaxillary teeth. The largest teeth are finely serrate; and jaws not arched, even in large specimens.

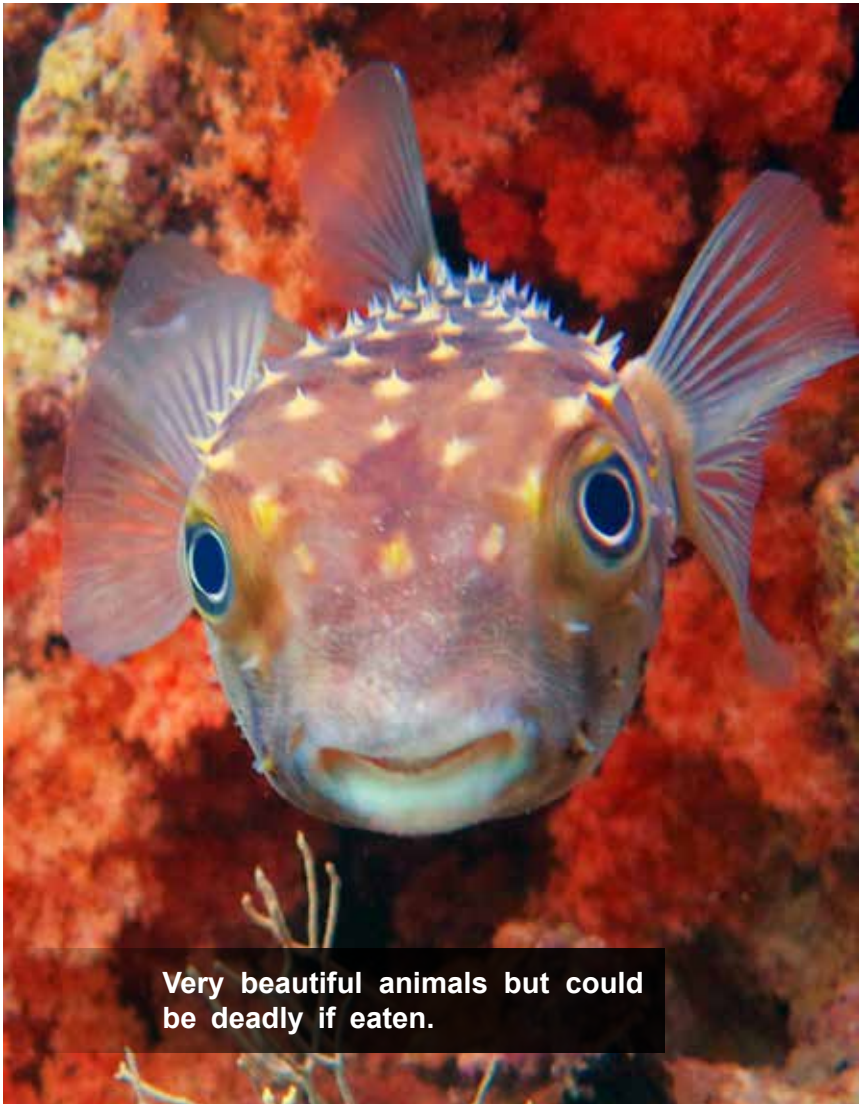
Habitats

Benthic species associated with reef at depth ranges from 2 - 271 m.

Hazardous to Human

Poisonous if eaten as its mucus is toxic.

Puffer and Porcupine Fish Poisoning



Very beautiful animals but could be deadly if eaten.

2.6 Puffer and Porcupine Fish Poisoning

2.6.1 General Information

Puffer and porcupine fish contains an extremely potent neurotoxin called tetrodotoxin in the viscera, gonads, liver, and skin. The first sign of poisoning is usually tingling around the mouth, which spreads to the extremities and may lead to a body wide numbness. Neurological findings may progress to stumbling gait (ataxia), generalized weakness, and paralysis. The victim, though paralyzed, remains conscious until death occurs by respiratory arrest.

2.6.2 Precautions

Avoid eating puffer and porcupine fish, as cooking the poisonous flesh will not destroy the toxin.

2.6.3 First Aid and Treatment

- Provide supportive care with airway management and monitor breathing and circulation.
- Monitor changes in bowel movement.
- Monitor and treat cardiac dysrhythmias.
- Escort the patient to the nearest hospital.

2.6.4 Creatures Recorded at Aqaba

Common Name	Masked Puffer

Scientific Name	*Arothron diadematus*
Arabic Name:	Alnajem

Description

Body elongated and streamlined, with olive- green color superiorly with brown spots. It can reach a length of more than 100 cm.

Habitats

The species can be found in shallow coastal waters down to 250m.

Hazardous to Human

Extremely poisonous if eaten because it contains tetrodotoxin in its ovaries and to a lesser extent its skin, muscles and liver, which protects it from voracious predators. It becomes toxic as it eats bacteria that contain the toxin. This deadly substance causes paralysis of voluntary muscles, which may cause its victims to stop breathing or induce heart failure.

2.6.4 Creatures Recorded at Aqaba

Common Name	Porcupinefish

Scientific Name	*Diodon hystrix*
Arabic Name:	Hadroom Abu Shouka

Description

Body robust and covered with long, sharp spines, folded backwards when body not inflated. Body grayish tan, with small black spots, but no large dark blotches.

Habitats

Commonly seen in caves and holes in shallow reefs and occur in lagoon and seaward reefs to at least 50 m.

Hazardous to Human

Reported as toxic to humans.

Aggressive Fish

The bite of this group could be serious!

2.7 Aggressive Fish

Common Name	Blue Triggerfish

Scientific Name	*Pseudobalistes fuscus*
Arabic Name:	Hijma

Description

The body is mainly brown, but fins have yellow margins. Juveniles are yellowish brown with a network of brilliant bluish wavy lines. With growth these lines become interconnected.

Habitats

A reef-associated species, which prefers coastal waters, shallow lagoons and seaward reefs, at 30–50 meters of depth.

Hazardous to Human

A territorial fish known for its aggressiveness and many divers choose to keep a safe distance from this species.

2.6.4 Creatures Recorded at Aqaba

Common Name	Orange-striped triggerfish

Scientific Name	*Balistapus undulatus*
Arabic Name:	Um Qaren

Description

Green with curved orange stripes and the female found with stripes on snout.

Habitats

Inhabits coral- rich areas of lagoon and seaward reefs on a depth ranges between 1 to 50 m.

Hazardous to Human

Some divers have been bitten from territorial male triggerfish protecting the eggs.

Hallucinate Fish

This group could hallucinate humans!

2.8 Creatures Recorded in Aqaba

Common Name	Brassy Sea Chub

Scientific Name	*Kyphosus vaigiensis*
Arabic Name:	Tahmal

Description

Grey with dusky dorsal and caudal fins. Darker grey to yellowish lines along scale rows. Sometimes with blotched pattern that is showing intermittently. The maximum size is 90 cm total length.

Habitats

Occurs over hard, algal coated bottoms of exposed surf-swept outer reef flats, lagoons, and seaward reefs to a depth of 24 m.

Hazardous to Human

They can induce Lysergic acid diethylamide (LSD)-like hallucinations if eaten. In 2006, two men who apparently ate the fish experienced hallucinations lasting for several days

Scombroid Fish Poisoning

Do not eat any fish that has been left in the sun or in the heat longer than two hours.

2.9 Scombroid Fish Poisoning

2.9.1 General Information

Scombroid fish poisoning occurs from different types of fish that have not been promptly cooled or prepared for immediate consumption. Typical fish causing scombroid poisoning include tuna, skipjack, and mackerel. A rapid bacterial production of histamine and saurine (a histamine-like compound) produce the symptoms of a histamine reaction: nausea, abdominal pain, vomiting, facial flushing, urticarial (hives), headache, pruritus (itching), bronchospasm, and a burning or itching sensation in the mouth. Symptoms may begin one hour after ingestion and last 8 to 12 hours death is rare.

2.9.2 Precautions

Immediately clean the fish and preserve by rapid chilling, and as a general precaution, do not eat any fish that has been left in the sun or in the heat longer than two hours.

2.9.3 First Aid and Treatment

Because the histamine toxin is heat stabile it is not affected by cooking, freezing, smoking and canning. Therefore, the best way to avoid scombroid poisoning is by preventing its production through:

- Refrigerate fish to 40C° at all times.
- Reject fresh fish >40C° at delivery.
- Fresh fish should be eaten within 48 hours at refrigerated temperatures.

Octopuses

Avoid octopuses, regardless of its size

2.10 Octopuses

2.10.1 General Information

The octopus has a large sac surrounded by 8 to 10 tentacles. The head sac is large with well-developed eyes and horny jaws on the mouth. Movement is made by jet action produced by expelling water from the mantle cavity through the siphon. The octopus hide in caves, crevices and shells. It possesses a well-developed venom apparatus in its salivary glands and stings by biting.

2.10.2 Precautions

Octopus should not be touched regardless of size.. Divers should be careful when moving close to caves and crevices with residing octopus.

2.10.3 First Aid and Treatment

- If bitten, control local bleeding.
- Clean the wound and cover with a clean dressing.
- Administer tetanus prophylaxis as appropriate.

2.8 Creatures Recorded in Aqaba

All octopus are hazardous regardless of their size. Octopus bites consist of two small punctures. A burning or tingling sensation results and might soon spread. Swelling, redness, and inflammation are common. Bleeding may be severe and the clotting ability of the blood is often retarded by the action of an anticoagulant in the venom.

Common Name	White Spotted Octopus

Scientific Name	*Callistoctopus macropus*
Arabic Name:	Akhtabout

Description

Grows to a mantle length of 20 cm with a total length of 150 cm. The first pair of arms are a meter or so long, and are much longer than the remaining three pairs. The arms are all connected by a shallow web. This octopus is red, with white blotches on its body, and paired white spots on its arms. When it is disturbed, its color becomes more intense which may make it appear threatening to a potential predator.

Habitats

It lives near the shore at depths down to about 17 m. Its favored habitat is sand, rubble or seagrass meadows, and it sometimes buries itself under the sand.

2.8 Creatures Recorded in Aqaba

Common Name	Mimic Octopus

Scientific Name	*Thaumoctopus mimicus*
Arabic Name:	Akhtabout

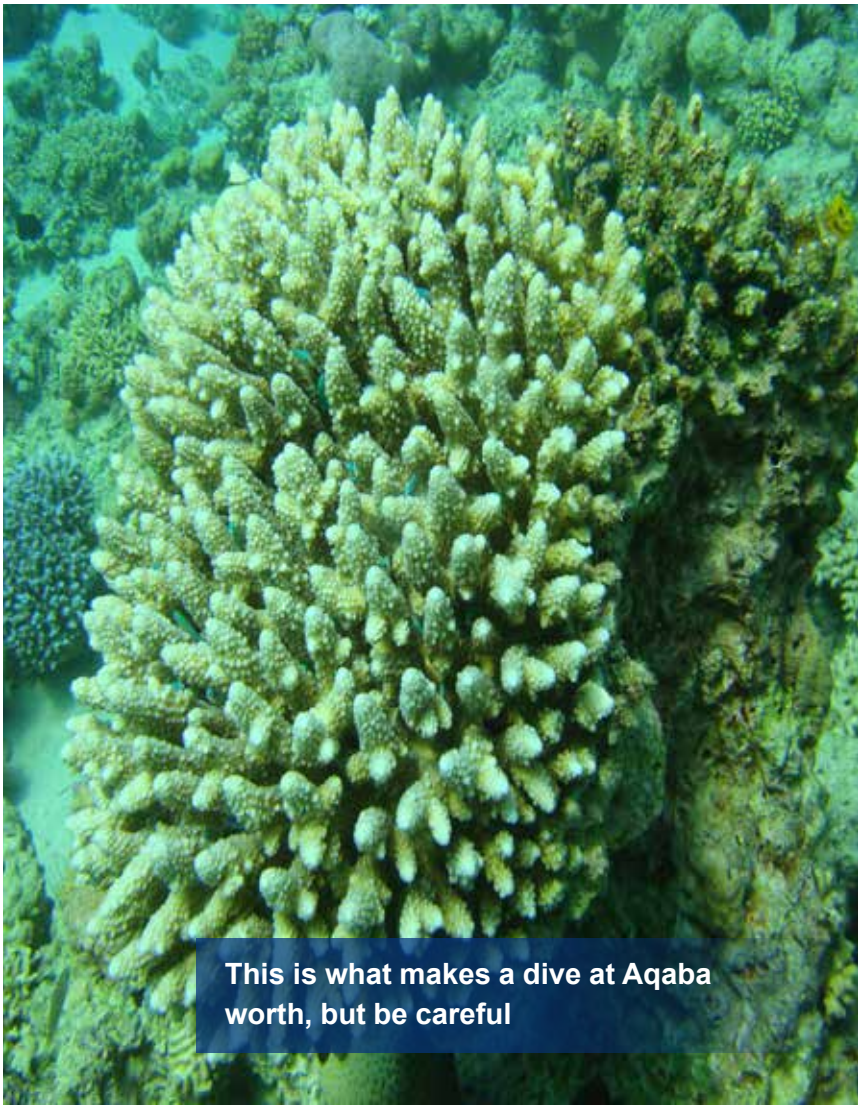
Description

A smaller octopus that grows to a total length of about 60 cm including arms, with a diameter approximately that of a pencil at their widest. The octopus' natural color is a light brown/beige color, but usually appear a more noticeable color of striped white and brown to scare off predators by imitating poisonous species. Its ability to change shape is the reason this species was named the "mimic" octopus, and it is a main defense besides camouflage.

Habitats

It is primarily found in areas with sand or silt at depths of less than 15 m. It prefers obscuring murky and muddy sea floors to blend in with its natural brown, beige color.

Corals



This is what makes a dive at Aqaba worth, but be careful

2.11 Corals

2.11.1 General Information

Coral, an animal with a rock-like formation, is extremely sharp and the most delicate coral is often the most dangerous because of their razor-sharp edges. Coral cuts, while usually fairly superficial, take a long time to heal and can cause temporary disability. The smallest cut, if left untreated, can develop into a skin ulcer. Secondary infections often occur and may be recognized by the presence of a red and tender area surrounding the wound. All coral cuts should receive medical attention.

In addition, fire coral should be dealt with care as upon contact, an intense pain can be felt and may last for two days up to two weeks. The very small nematocysts on fire corals contain tentacles that protrude from numerous surface pores (similar to jellyfish stings). In addition, fire corals have a sharp, calcified external skeleton that can scrape the skin.

2.11.2 Precautions

Extreme care should be used when working or moving near coral communities, and coral should not be handled with bare hands. Feet should be protected with booties, coral shoes or tennis shoes. Wet suits and protective clothing should be worn when near coral.

2.11.3 First Aid and Treatment

- Control local bleeding.
- Promptly clean with hydrogen peroxide or 10-percent povidone-iodine solution and debride the wound, removing all foreign particles.
- Cover with a clean dressing.
- Administer tetanus prophylaxis as appropriate.
- Topical antibiotic ointment has been proven very effective in preventing secondary infection.
- In severe cases, restrict the patient to bed rest with elevation of the extremity, wet-to-dry dressings, and systemic antibiotics. Systemic steroids may be needed to manage the inflammatory reaction resulting from a combination of trauma and dermatitis.

2.11.4 Creatures Recorded at Aqaba

Common Name	Fire Coral

Scientific Name	*Millepora dichotoma*
Arabic Name:	Morgan Nari

Description

Fire corals have a bright yellow-green and brown skeletal covering and are widely distributed in tropical and subtropical waters. They appear in small brush-like growths on rocks and coral. Divers often mistake fire coral for seaweed, and accidental contact is common.

Habitats

This species is most abundant in shallow reef habitat at depths of less than 15 m. Millepora species are generally found in inshore areas characterized by turbidity, and exhibit a tolerance for siltation. They often occur in clear offshore sites.

Hazardous to Human

A sting from Fire coral is rarely dangerous unless accompanied by an allergic reaction or anaphylactic shock. In fact, the most serious effects seen after extensive stings are possible nausea and vomiting for two to three hours afterwards. The sting caused by these animals is a result of the injection of a water-soluble, heat affected, proteinaceous toxin. The discharged nematocysts cause small welts on the skin with red lesions around the raised areas. Swelling, blisters, and pus-filled encystations may occur soon after being stung. However, all symptoms generally disappear after 24 hours.

If stung, treatment consists of a breakdown of the protein by soaking the affected area in hot water, or swabbing the welts with vinegar. After initial treatment, topical anesthetics may be applied to ease the burning sensation.

Sea Urchins and Sea Stars

A penetration of the sea urchin spine can cause intense local pain

2.12 Sea Urchins

2.12.1 General Information

There are various species of sea urchins, of which all has a radial shape and long spines. Penetration of the sea urchin spine can cause intense local pain due to a venom in the spine or from another type of stinging organ called the globiferous pedicellariae. Numbness, generalized weakness, paresthesias, nausea, vomiting, and cardiac dysrhythmias have been reported.

2.12.2 Precautions

Avoid contact with sea urchins, as even the short-spined sea urchin can inflict its venom via the pedicellariae stinging organs. Protective footwear and gloves are recommended. Spines can penetrate wet suits, booties, and tennis shoes.

2.12.3 First Aid and Treatment

- Remove large spine fragments gently, being very careful not to break them into small fragments that remain in the wound.
- Bathe the wound in vinegar or isopropyl alcohol. Soaking the injured extremity in hot water up to 50ºC may help.
- Clean and debride the wound.
- Remove as much of the spine as possible, and note that some small fragments may be absorbed by the body. Do not use fire or smoke cigarettes to remove spines
- Surgical removal, preferably with a dissecting microscope, may be required when spines are near nerves and joints.
- X-rays may be required to locate these spines. Spines can form granulomas months later and may even migrate to other sites.
- Get medical attention for deep wounds.

2.12.4 Creatures Recorded at Aqaba

Common Name	Crown of Thorns Starfish

Scientific Name	*Acanthaster planci*
Arabic Name:	Not Available

Description

Large, multiple-armed starfish (or seastar), which receives its name from venomous thorn-like spines that cover its upper surface, or the crown of thorns. It is one of the largest sea stars in the world.

Habitats

It occurs where coral reefs or hard coral communities exist, as it usually preys upon hard, or stony, coral polyps (Scleractinia).

Hazardous to Human

It has no mechanism for injecting the toxin, but as the spines perforate tissue of a predator or unwary person, tissue containing the saponins is lost into the wound. In humans, this immediately causes a sharp, stinging pain that may last for several hours, persistent bleeding due to the haemolytic effect of saponins, and nausea and tissue swelling that may persist for a week or more. The spines, which are brittle, may also break off and become embedded in the tissue where they must be removed surgically.

2.12.4 Creatures Recorded at Aqaba

Common Name	Red Sea Fire Urchin

Scientific Name	*Asthenosoma marisrubri*
Arabic Name:	Not Available

Description

Short spines with venomous globular swelling are found at tips, and may cause painful injuries. It can grow up to 15 cm.

Habitats

Can survive on sand, rubble, and dead coral or among seagrasses of lagoon and seaward reef slopes, at depth range between 3 to 30 m.

Hazardous to Human

Proteinaceous venom pouches at the tips of their shorter spines which, when ruptured by pressure, release a venom which causes localized pain and inflammation.

2.12.4 Creatures Recorded at Aqaba

Common Name	Common Long- spined Urchin

Scientific Name	*Diadema paucispinum*
Arabic Name:	Abu Hylaman

Description

It has extremely long spines, up to 25 cm; which may inflict painful injuries. It can grow up to 40 cm and anal opening has red ring.

Habitats

It survive on subtidal reef flats and protected reef slopes to 25 m.

Hazardous to Human

Injured areas from spine penetration should be soaked in hot water to deactivate the toxins and later vinegar may help soften the spines. Surgical removal of spine tips that remain in the skin is difficult because of their fragility. Left alone, the spines may gradually be absorbed into the tissues.

2.12.4 Creatures Recorded at Aqaba

Common Name	Common Long- spined Urchin

Scientific Name	*Diadema setosum*
Arabic Name:	Abu Hylaman

Description

It is a typical sea urchin, with extremely long, hollow spines that are mildly venomous.

Habitats

D. setosum differs from other *Diadema* with five, characteristic white dots that can be found on its body. Despite being capable of causing painful stings when stepped upon, the urchin is only slightly venomous and does not pose a serious threat to humans.

Hazardous to Human

The toxin mostly causes swelling and pain, and gradually diffuses over several hours. More danger is presented by the delivery system – the urchin's spines which are extremely brittle and needle-like. They easily break off within flesh and are quite a challenge to extract. Like other venomous sea urchins, the venom of *Diadema setosum* is only mild and not fatal to humans.

2.12.4 Creatures Recorded at Aqaba

Common Name	Collector Urchin

Scientific Name	*Tripneustes gratilla*
Arabic Name:	

Description

Dark in color, usually bluish-purple with white spines. The pedicles are also white, with a dark or black base.

Habitats

Prefer open sea bottoms with some cover of seagrasses and algae, but the young prefer rocky areas for concealment.

Hazardous to Human

This species is considered mildly venomous.

Cone Shells

Be careful if the animal was there since the sting could be as severe as a poisonous snake bite

2.13 Cone Shells

2.13.1 General Information

The cone shell is widely distributed in all regions and is usually found under rocks and coral or crawling along sand. The shell is most often symmetrical in a spiral coil, colorful, with a distinct head, one to two pairs of tentacles, two eyes, and a large flattened foot on the body.

A cone shell sting should be considered as severe as a poisonous snake bite. It has a highly developed venom apparatus. Venom is contained in darts inside the proboscis which extrudes from the narrow end but is able to reach most of the shell. Cone shell stings are followed by a stinging or burning sensation at the site of the wound. Numbness and tingling begin at the site of the wound and may spread to the rest of the body. Symptoms may include muscular paralysis, difficulty with swallowing and speech, visual disturbances, and respiratory distress.

2.13.2 Diagnosis

Victims of cone stinging usually feel a sharp sting as the harpoon is thrust into their flesh. A sting by one of the fish-eating cones can affect vision, hearing, and speech, and the victim may become partially or completely paralyzed. A sting by worm-eating or mollusk eating cones may cause pain, swelling, and discoloration of the area near the puncture.

2.13.3 Precautions

Avoid handling cone shells as venom can be injected through clothing and gloves. If handled, cone shells should be handled only by the blunt end of the shell and dropped immediately if the tubular proboscis appears within striking distance.

2.13.4 First Aid and Treatment

- Lay the patient down.
- Do not apply a loose constricting band or ligature.
- Transport the patient to a medical facility while ensuring that the patient is breathing adequately.
- Cone shell venom results in paralysis or paresis of skeletal muscle, with or without myalgia. Symptoms develop within minutes of the sting and effects can last up to 24 hours.
- No antivenin is available.

2.13.5 Creatures Recorded at Aqaba

Common Name	Geography Cone

Scientific Name	*Conus geographus*
Arabic Name:	Sadafa, Wada'a

Description

It can grow up to 15 cm. shell is creamy, with brown markings; animal creamy with black spots; siphon with brown rings.

Habitats

Survive on protected reef flats and shallow lagoons and seawards reefs. Common in area with patches of sand and rubble.

Hazardous to Human

Among the most dangerous of cone shells, responsible for many human fatalities. Stings produce a puncture wound, followed by numbness, loss of coordination, muscular paralysis and respiratory failure. Quick medical treatment is essential.

2.12.4 Creatures Recorded at Aqaba

Common Name	Striated Cone

Scientific Name	*Conus striatus*
Arabic Name:	Sadafa, Wada'a

Description

It can grow up to 12.5 cm. shell is creamy with irregular lengthwise bands of perpendicular dark pinstripes; animal creamy with dark cross- streaks.

Habitats

Survive on sand and hard bottoms of reef flats and lagoon and seaward reefs to at least 40 m.

Hazardous to Human

Dangerous species and caused human fatalities.

2.13.5 Creatures Recorded at Aqaba

Common Name	*Conus textile neovicarius*

Scientific Name	*Conus striatus*
Arabic Name:	Sadafa, Wada'a

Description

It can grow up to 13 cm. It has numerous white tent- like markings, siphon with red tip and black ring.

Habitats

In most coral reef habitats, from reef flats and lagoon and seaward reef to at least 50 m. Nocturnal, usually under rocks, rubble or buried in sandy by day.

Hazardous to Human

Very dangerous, has caused human fatalities.

Other cones Species that might survive at Aqaba

- Comb Murex; *Murex forskoeblii*
- Lineated Conch; *Strombus fasciatus*
- Jumping Conch; *Strombus terebellatus*
- Red Sea *Topshell; Tectus dentatus*

Sponges

A contact with sponges should be done after wearing gloves

2.14 Sponges

2.14.1 General Information

Sponges are composed of minute multicellular animals with spicules of silica or calcium carbonate embedded in a fibrous skeleton. Exposure of skin to the chemical irritants on the surface of certain sponges or exposure to the minute sharp spicules can cause a painful skin condition called dermatitis. Sponges feed by filtering seawater that contains nutrients, minerals and also the toxins excreted by other animals and plants. They may reuse (sequester) these toxins for their own metabolic functions (secondary metabolites). Sponges also produce their own toxins through normal metabolism, or in collaboration with the many microbes that live inside them.

Whatever the source of these toxic chemicals, many have been found to be highly toxic to other life forms. In fact some of the most toxic chemicals known in nature have been discovered from sponges. Some of these chemicals have potential pharmaceutical applications, including anti-cancer, anti-malaria and pain control (analgesics). In fact the major reason why our knowledge of sponges has escalated over the past few decades is directly due to the increasing interest in their pharmaceutical properties.

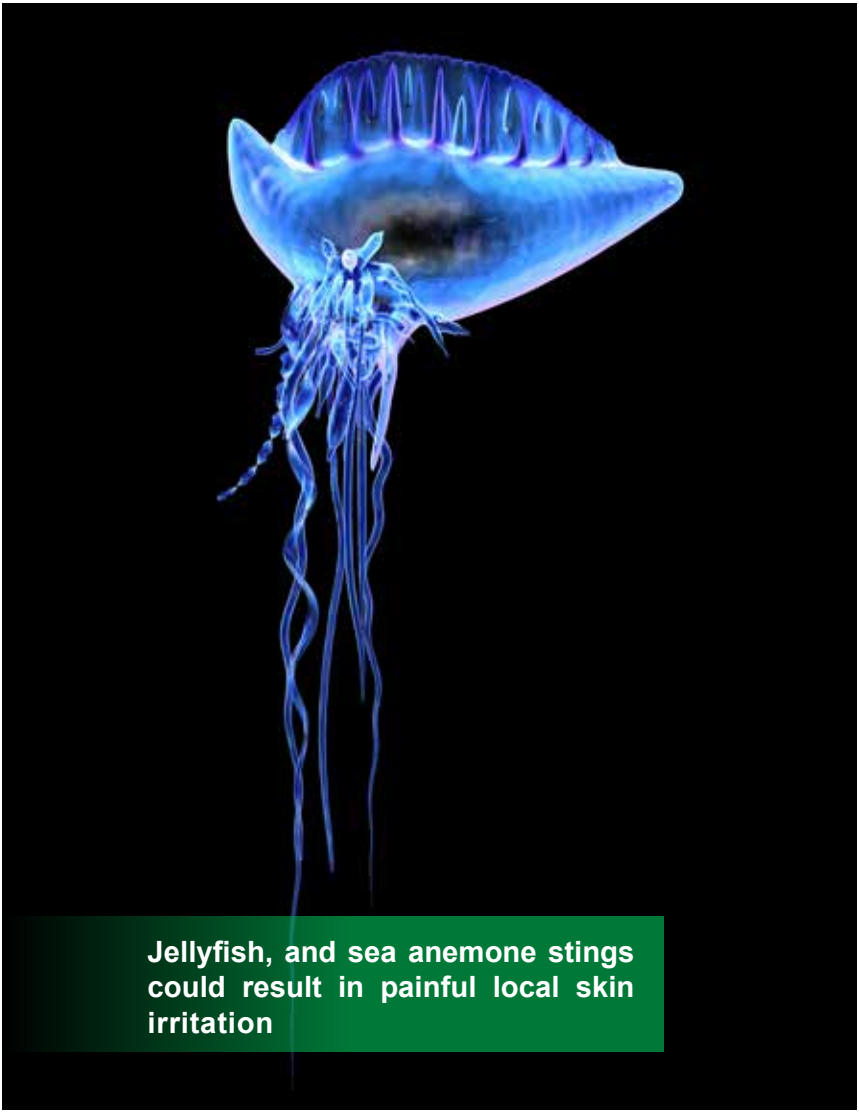
2.14.2 Precautions

Avoid handling or contact with sponges.

2.14.3 First Aid and Treatment

- Adhesive or duct tape can effectively remove the sponge spicules.
- Vinegar or 3- 10% acetic acid should be applied with saturated compresses as sponges may be secondarily inhabited by stinging coelenterates.
- Antihistamine lotion (diphenhydra-mine) and later a topical steroid (hydrocortisone), may be applied to reduce the early inflammatory reaction.
- Antibiotic ointment is effective in reducing the chance of a secondary infection.

Coelenterates



Jellyfish, and sea anemone stings could result in painful local skin irritation

2.15 Coelenterates

2.15.1 General Information

Hazardous types of coelenterates include jellyfish, and sea anemone. Jellyfish vary widely in color (blue, green, pink, red, and brown) or may be transparent. They appear to be balloon-like floats with tentacles dangling down into the water. The most common stinging injury are from jellyfish. Jellyfish can come into direct contact with a diver in virtually any sea region, worldwide. When this happens, the diver is exposed to literally thousands of minute stinging organs in the tentacles called nematocysts. Most jellyfish stings result only in painful local skin irritation.

2.15.2 Precautions

Do not handle jellyfish either alive or dead as beached or apparently dead specimens may still be able to sting.

Swimmers and divers should avoid close proximity to jellyfish to avoid contacting their tentacles, especially when near the surface. In addition, wet suits, body shells, or protective clothing should be worn when diving in waters where jellyfish are abundant.

2.15.3 First Aid and Treatment

- Gently remove any remaining tentacles using a towel or clothing, without rubbing.
- Use vinegar or a 3 - 10% solution of acetic acid, for preventing any further discharge of the stinging nematocysts.
- Do not use alcohol or preparations containing alcohol as it has demonstrated to cause a massive discharge of the nematocysts. In addition, these compounds may also worsen the skin inflammatory reaction.

2.15.4 Hazardous Species Recorded at Aqaba

Common Name	luminescent Jellyfish

Scientific Name	*Pelagia noctiluca*
Arabic Name:	Not Available

Description

The medusa is filled with an abiotic gel-like substance called the mesoglea with pink to purple in color, having blue, brown, and magenta pigments. It has 8 tentacles, which can reach up to 10 m in length, and four large oral arms. The tentacles, oral arms, exumbrella, and gastric pouches are covered in cnidocytes, cells that eject a toxin-filled stinging thread. The average size of P. noctiluca is 6.5 cm diameter across the bell but they may grow to be 10 cm or more. If disturbed, it will bioluminesce, and this luminescence is often seen at night.

Habitats

It forms actively swimming aggregations and is usually found peaking at a depth of 12 m to 30 m. Offshore aggregations rarely contain more than 20 individuals per cubic meter, but inshore swarms can have up to 600 individuals per cubic meter.

Hazardous to Human

This species contains stinging nematocysts which inject toxins into anything they contact.

2.15.4 Hazardous Species Recorded at Aqaba

Common Name	Upside- down Jellyfish

Scientific Name	*Cassiopea andromeda*
Arabic Name:	Not Available

Description

This is a sedentary jellyfish that lives in a symbiotic relationship with photosynthetic dinoflagellate algae, zooxanthellae, and shrimp. This jellyfish, is often mistaken for a sea anemone.

Habitats

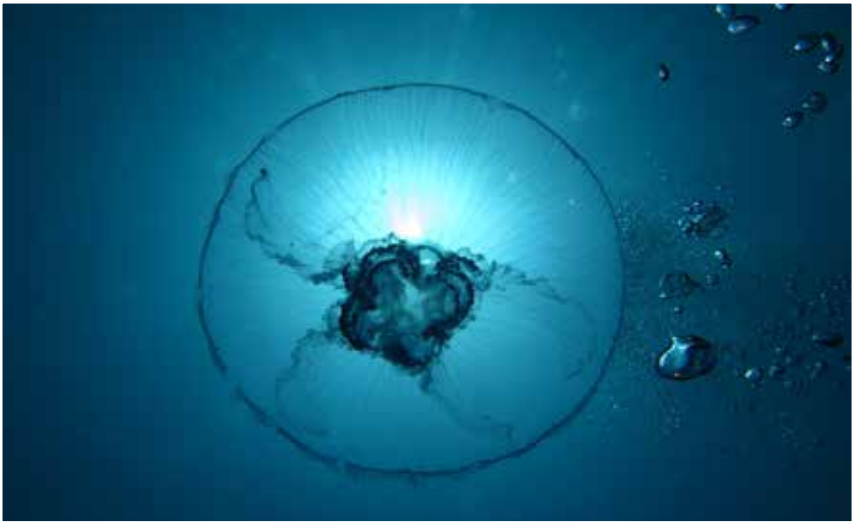
Usually lives in intertidal sand or mud flats, shallow lagoons, and around mangroves.

Hazardous to Human

The jelly can sting which makes it important to take precautions when around it. Symptoms include pain, rash, swelling and vomiting.

2.15.4 Hazardous Species Recorded at Aqaba

Common Name	Moon Jellyfish



Scientific Name	*Aurelia aurita*
Arabic Name:	Not Available

Description

The jellyfish is translucent, usually about 25–40 cm in diameter, and can be recognized by its four horseshoe-shaped gonads, easily seen through the top of the bell. It is capable of only limited motion, and drifts with the current, even when swimming.

Habitats

In general, it is an inshore genus that is dominating harbors areas.

Hazardous to Human

The sting of the moon jellyfish is not fatal or dangerous to humans. Stings are usually minor, with some individuals not having any reactions. In severe cases, the victim may experience some burning sensation at the site of the sting.

3. References

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About Authors

Ehab Eid

Mr. Eid is the Acting Executive Director at JREDS. He holds a master degree in conservation, access and management of species in trade from the International University of Andalusia in Spain.

Since more than 15 years, Mr. Eid developed an extensive experiences in the marine and terrestrial biodiversity conservation at the national and regional level. He have published several peer- reviewed articles and is a member in several national, regional and international conservation bodies.

Mohammad Al- Tawaha

He is working with JREDS as the marine conservation program manager since 2011. Mr. Tawaha holds a master degree in marine science and he have an extensive experiences working at Aqaba marine environment.

He is considered an activist in conservation field, and he have published several articles in peer- reviewed journals.

About JREDS

The Royal Marine Conservation Society of Jordan (JREDS) is a Jordanian Non-Governmental Organization founded in 1993, and devoted for the conservation of the marine environment of Jordan. JREDS has achieved recognition at the national, regional and international level through the implementation of three programs which are the marine conservation, outreach and advocacy and the sustainable development programs.

JREDS believes that development can be accomplished effectively under well-established ecological information. Therefore, it invested in developing a marine conservation program which work toward implementing research and monitoring programs at the Gulf of Aqaba, analyzing information and developing a solid database which will be used afterward for a management purposes.

The marine conservation program is leaded by a qualified team whom are capable and well- trained on designing surveys, conducting field work and also developing clear recommendations which will give a clear guidance to the management authorities at the Gulf of Aqaba.

Great Barracuda

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