Annals of R.S.C.B., ISSN:1583-6258, Vol. 25, Issue 6, 2021, Pages. 3736 - 3741
Received 25 April 2021; Accepted 08 May 2021.

The Occurrences and Reclassification of *Torpedo Panthera* in Iraqi Marine Waters

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ABSTRACT
When two specimens of the *Torpedo Panthera* electric straw were caught in Iraqi marine waters in November 2020, their presence was known and reclassified through the study of 17 Morphometric characters, some of which were correlated with salinity Disk length, Disk width, and Eye diameter, and others with temperature First dorsal fin length, Second dorsal fin and Tail length, During the research, the chemical composition of the ray was investigated.

KEYWORDS
Torpedo Panthera, Iraqi Marine Water, Morphometric Characters, Rays.

Introduction

They are unmistakably monophyletic, with large pectoral electric organs derived from bronchial muscles, anteriorly expanded and branched antorbital cartilages, a neurocranium lacking supraorbital crests, and posteriorly arched scapulocoracoids, among other features, distinguishing them from other batoids (Compagno, 1977; McEachran et al., 1996). Electric ray species belonging to the genus *Torpedo panthera* Torpedo Houttuyn, 1764, is a genus of medium to large electric rays that can grow up to 180 cm in total length and can be found in tropical and temperate waters all over the world, from the shoreline to about 600 m on the continental slope. Larger specimens are capable of producing strong electric shocks that have been reported to reach a discharge of 220 volts (Coates and Cox, 1942; Bigelow and Schroeder, 1953). Electric rays are flattened cartilaginous fish with enlarged pectoral fins that belong to the ray family.

Fins They're known for being able to produce an electric discharge that can range from 8 to 220 volts, depending on the species, and is used to stun prey and defend themselves. The Torpedinidae family is distinguished by a transversely elliptical disc that is subcircular rather than pear-shaped, monocuspid teeth, and a well-developed tail with two moderately sized dorsal fins and a large caudal fin that is much higher than the dorsal fins. (Sujatha, *et al*.,2014) n the Western Indian Ocean, there are some species with a hazy distribution. It is most likely to be found from the Red Sea to the Bay of Bengal, passing through the Gulf of Aden, the Arabian Sea, the Sea of Oman, and the Gulf of Aden. It could be more widespread than previously thought, and a taxonomic examination is needed to determine the species' status in the area. In the region, torpedo species are frequently confused, and species-species confusion is common. because torpedo species are frequently confused in the region, species-specific data is scarce. Trawling is putting a lot of pressure on parts of the species' range. (i.e., Iran, Pakistan) while in other areas (i.e., Oman, UAE). There is no danger from trawling. When discarded at sea, the chances of survival are extremely slim. However, due to a complete lack of catch data and a scarcity of biology and distribution information, an assessment beyond Data Deficient is not possible. obtaining catch data to quantify fishing mortality necessitates some effort. In Iraqi marine waters, some researchers studied cartilaginous fishes, which included them. (Al-Faisal and Mutlak 2018; Alami, 2016; Mohamed 1993; Ali 1993.)

The study's goal was to learn more about *Torpedo panthera*, and it is the first of its kind in Iraq, having been discovered by Mohamed in Iraqi marine waters in 2001.

Material and Methods

Study Area

The Iraqi marine waters represent the most northwestern part of the Arabian Gulf, with depths exceeding 20 meters and a sandy-clay-silt substratum (48.2% sand, 23.5% silt, and 28.3% clay). Al-Badran, (1995). (fig.1).

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Fish Collection

Fish were caught using fishing survey boats (Anwar 2), which are 16 meters long, 4.5 meters wide, and have a 2-meter draft, and have a horsepower of 150 horses. Each boat is equipped with a trawl net with a mesh size of 5*5 cm and a bag mesh size of 3*3 cm, with a net pull rope length of 75-100 meters. Three hours were spent pulling the net, and two specimens were collected from Iraqi marine waters in November 2020.

Using a trawl net, 41' 43 46" E (figure 1), depending on the commercial fishery. The specimens are kept at the Marine Science Centre in Iraq's Department of Marine Vertebrates. 17 morphometric characters were measured to the nearest mm using a digital caliper and a fish measuring board.

Carpenter *et al*., 1997; Sujatha *et al*., 1998; Carpenter *et al*., 1998; Carpenter *et al*., 1998; Carpenter *et al*., 1998; Carpenter (2014). The percentage of standard length was used for all morphometric measurements. The salinity concentration was measured using the Sense-Direct 150 salinity meter manufactured by the German company Lovibond and the result is ppt, and the water temperature was measured in a field using a simple mercury thermometer graded from (0-100) m.

Field device made in the United States THE TRI-METER Produced by a business Kalbuneh is a type of kalbuneh. In terms of ph measurement, The American Health Association described and followed the Oxygen Winkler method (APHA,1999). The chemical components of the sample were estimated using the methods described in A.O.A.C. (2000) A known weight of the sample was dried in an oven to determine the percentage of humidity. at The protein, the amount was estimated by calculating the amount of nitrogen *6.25 until the weight stabilized at 105°C. After the digestion process is completed in a Micro-Kjedahle manner, To perform the distillation process with boric acid and correct with Hydrochloric acid concentration 0.1N, a known weight of the sample was used. To figure out how much nitrogen is in your system,

In a device, there is an extraction method. Soxhlet is a fictional character. The ash percentage was estimated after burning the sample in an incinerator (Muffle furnace) at a temperature of 525 m for 14 hours until the weight stabilized, then carbohydrates were calculated on dry weight using the following equation for intermittent extraction to measure lipid content using the solvent cyclohexane for 6 hours.

%Carpohydrat=100-[%Humidity+%Protiens+%Fats+%Ash]

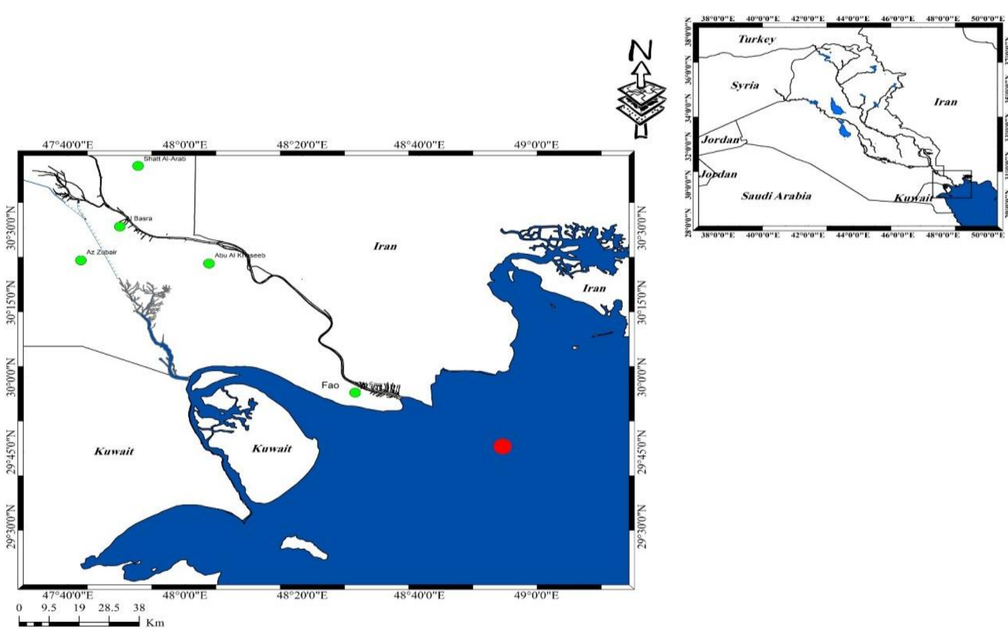

Fig. 1. Explain the study area in Iraqi marine waters

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Result and Discussion

Torepedo panthera, an eagle ray (Figures 2–3), belonged to the following classification section:
Class: Elasmobatiformes
Order: Torpediniformes
Family: Torpedinidae
Genus: Torpedo
Species: *Torpedo panthera*

Fig. 2. Explain Dorsal *Torpedo panthera* catch From Iraqi marine water

Fig. 3. Explain Ventral *Torpedo panthera* catch from Iraqi marine water

Table (1) Show The width of the disc (280 mm) and the relatively short length of the disc (210 mm) are characterized by the morphometric characteristics of *Torpedo panthera* from Iraqi marine waters, with the anterior convex diameter of the eye 9.51 mm becoming deeply concave at the origin of the rostral lobe. The head is prominently protruding well ahead of the base length of the pectoral fin (200mm).

Table 1. Morphometric characters of *Torpedo panthera* (a and b) from catch Iraqi marine water

Morphometric characters	a (mm)	b(mm)
Disc width	280	263

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Disc length	210	202
Preorbital length	49.71	43.2
Preoral length	37.39	35.1
Tail length	160	153
Eye diameter	9.51	9.23
Width of first- gill slit	11.49	11
Width of second- gill slit	12.91	12.23
Width of third- gill slit	13.68	12.91
Width of fourth- gill slit	15.02	14.82
Width of fifth- gill slit	8.09	7.97
First dorsal fin length	27.74	26.32
First dorsal fin height	44.78	43.65
Second dorsal fin length	19.35	18.96
Second dorsal fin height	32.45	31.22
Pelvic fin base length	75.35	74..21
Pectoral fin base length	200	196

Teeth Mouth Spiracle median protuberance anteriorly, broadly rounded in outline with relatively straight anterior margin. The origin of the pelvic fins is barely overlapped by the disc, so there is no prominent free lobe posteriorly. The preorbital snout is slightly longer than the prenatal snout and shorter than the perioral snout. The distance between the eyes and the spiracles is the same as the horizontal eye diameter.

Figure (4) shows a canonical analysis of environmental factors using morphometric characters from the Torpedo panther species. Temperature is one of the most important factors in the overlap of the species' Morphometric characters, and it is positively correlated with First dorsal fin length, Second dorsal fin length, Second dorsal fin height, and Tail length, as well as the species temperature tolerance This has been confirmed by Haron *et al* (2017). Salinity plays an "important" role in determining the biological community and its composition when studying fish species in Egyptian marine waters (Power *et al*., 2000). The specific characteristics of disk length, disk width, and eye diameter are all related to salinity. Furthermore, the species is prone to high salinity This is what Al-Shamary, *et al*., (2020) confirmed while studying the Iraqi marine waters, and transport to various environments Before Psomadakis, *et al*., this was traded (2015). While there was no correlation between oxygen and acidity and any of the species' characteristics, this is determined by the nature of the water body in which it lives.

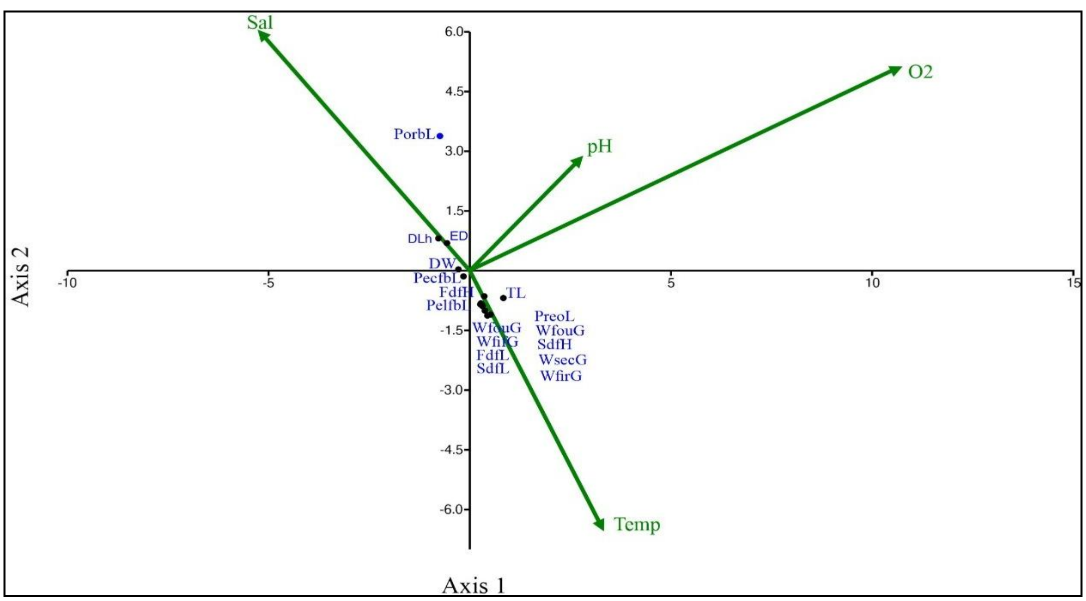

Figure 4. Analysis of Canonical Correspondences with Ecological Factors and Morphometric Characters in the *Torpedo Panthera*

These studies confirm that the period of reproduction affects the chemical composition of muscles and other body systems when studying the specific composition of electrophoresis species (Table,2). It is noted in the table that the differences between the percentages of the chemical composition and this is also a result of "differences in the collection area sometimes" and "the lack of data" The chemical composition varies due to differences in the environment, the physiological state of the species, and the age and type of food consumed. It is well known that as the moisture content and fat content increase, the fat content decreases, and vice versa, as Ackman mentioned (1995) While fat percentages varied depending on wet weight, which drops during the migration or the reproductive stage. In general, "it rises as the quality of the food used improves" (FAO, 2000). Measuring the ash content of fish and marine boats is also considered a reliable indicator of their mineral salt content, which varies depending on the species and environment in which they live. This is the case. Carbohydrates are also scarce in fish and fish, as Carvalho *et al.*, (2002) discovered during their research in the Arabian Sea.

Table 2. Illustrate chemical composition *of Torpedo panthera* from catch Iraqi marine water

Ash%	Fats%	Proteins%	Humidity %	% Carbohydrates
2.01	11.02	18.8	67.23	0.94

Acknowledgment

All thanks and appreciation to Dr. Abbas Jassim Al-Faisal for his assistance in classifying the *Torpedo panthera* in the laboratories of the Marine Sciences Center.

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