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The first record of Nile tilapia *Oreochromis niloticus* (*L*.1758) In the Diyala River /Buhriz

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Abstract

The Nile tilapia (*Oreochromis niloticus)* was recorded for the first time in Diyala River/ Buhriz.during september and October 2017. The total length has ranged from 155 mm to 200 mm with a total weight of 97.6 to 235.8 g. A number of gill rakers on the first arch gill of 27-30. The number of soft rays in the dorsal fin 12-13 and the spine 15 to 16. The anal fin with 9-10 in the soft rays and 3-3 on the spine. The number of soft rays in the pectoalfin 13. The body depth is 40.62% and body thickness is 16.29%. The eye diameter is 4.41%, the head length is 27% and the height is 35%, respectively and the length of the snout is 6%.

Keywords: First appearance,Nile tilapia, Diyala River.

Introduction

The Nile tilapia *(Oreochromisniloticus)* is a freshwater cichlid native to the Nile River basin,southwestern Middle East ;the Niger, Benue, Volta and Senegal rivers, and the lakes Chad, Tanganyika, Albert, Edward (1). The Nile tilapia is widely cultured in many tropical and subtropical countries of the world (2). The original habitat of Nile tilapia in Central, North Africa and the Middle East (3) is believed to have evolved from marine ancestors (4). Nile tilapia has many biological characteristics that enable it to succeed in large areas around the world. It is ranked second among the most fertile freshwater fish, characterized by low production cost, quality of meat, good taste and resistance to harsh environmental conditions and rapid growth rate (5). O. *niloticus* is one of the top ten species (6) and has been introduced to more than 90 countries around the world in breeding farms and on all continents except Antarctica (7)The Nile tilapia culture dates back to the ancient Egyptian ages to more than 4,000 years. It was spread over the years 1940 to 1950 in Thailand, from which it was introduced to the Philippines, to Côte d'Ivoire and from there to Brazil in 1971, from Brazil to the United States in 1974, China, which leads the world's production of these fish and produces more than half of world production. The large expansion of the tilapia industry in 1980 led to the commercialization of many tilapia species, while the Nile tilapia remains the most important species cultivated worldwide (8).

The present study aims to register a new species of fish in Iraqi waters while identifying the taxonomic characteristics of species in Diyala River.

Materials and Methods

Fish samples were collected during September and October 2017 from the Diyala River / Buhriz (Fig. 1).Using the fishing nets of the monument. The fish were transferred to the laboratory of fish and animalre sourcecenter in containers containing crushed ice. Vernewas used to measure body depth, body thickness, eye diameter, and snout length. A wooden measuring board was used to measure the total and standard length. Used Asensitive electrical balance of Sartorius to weigh the fish.

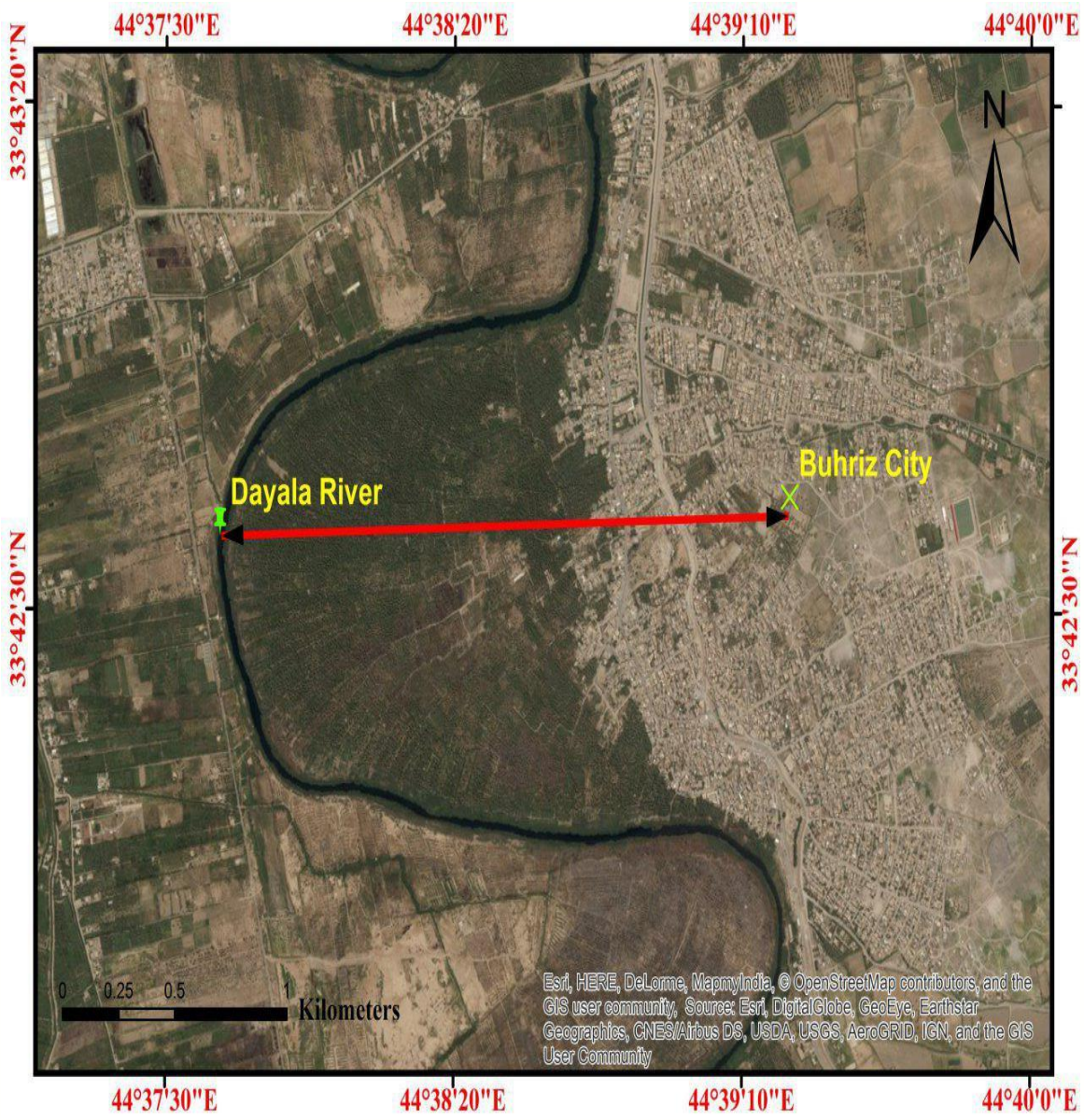

Figure 1: A map showing location of the study

Results and discussion.

The Cichlidae family is characterized by a monotonous hole on each side of the head and a lateral line with two parts that end up under the soft rays of the dorsal fin. The lower part starts from under the upper part and then continues to the base of the sinus and the quail-type sutures (9). The number of gill recker on the first cylindrical arch is 27-33 in the tilapia and 16-17 in the dorsal fin And 11-15 fine rays . Nile tilapia also has a black dot on the thoracic lid from the back. It contains 8-10 ribbons on the body and 4-5 vertical bars on the tail

Category: (10)
Family: Cichlidae
Order: Perciformes
Class: Actinopterygii
Species: *Oreochromisniloticus*

Tilapia in diyala river reached a total length of 155mm to 200mm with a standard length of 130to 170mm and total weights ranged from 97.6 to 235.8 g. The number of gill rakers from 27 to 30. The number of soft rays in the dorsal fin was 15.25, the number of spines was 12.25, the number of spines in the anal fin was 3, the number of soft rays 9.75, and the number of soft rays in the pectoal13 (Table 1) (Fig. 2). There is an affinity with the results of the (11) study, since the lengths of the kidneys ranged from 68 - 279 mm and weights total of 6.6 to 379.68 g for Nile tilapia in the Tigris River south of Baghdad. The results of the current study differed with the study of (12) as the Nile tilapia in the Kibuye River South Africa reached 230.4.And a results of the current study differed with the results of (13) with a total length of 13 to 33 cm and a record length of 11 to 31.5 cm and total weights from 30.6 to 1446 g. The number of gill rakers from 27-31 and the number of spines in the dorsal fin 16 And soft rays of 12-13.They differed with the results of (14)When found total lengths ranged from 192 to 292 mm in total weights from 136.5 to 500.06 g, the number of spines in the dorsal fin from 17-18, and the number of gill rakers From 28 to 31. It agrees with the results of (15) which found that the average length of total tilapia was 20 cm. And differed with the results of (16) where the length ranges from 68 to 274 mm and the ranges of total weights from 6.6 to 378.79 g.

Table 1: Numerical characteristics of the Nile tilapia (*Oreochromisniloticus*) in Diyala– River/ buhriz

Qualities	Range	Mean	S.E ±
Dorsal fin			
Fin spine	**16-15**	**15.25**	**0.25**
Soft rays	**13 -12**	**12.25**	**0.25**
Anal fin			
Fin spine	**3**	**3**	**0.00**
Soft rays	**10 -9**	**9.75**	**0.25**
FinPectoal			
Soft rays	**13**	**13**	**0.00**
Gill rakers	**30-27**	**28**	**0.70**

Fig 2: Nile tilapia in the Diyala- River/ buhriz

The average of body depth is 40.62% and the body thickness of 16.29% and the length of the snout is 6%. The length of the head was 27%and the height was 35%and the diameter of an eye rate of 4.41% mm. Differed with the results of (17) who found that the depth of the body constitutes 84% of the standard length.

Table 2: Appearance characteristics of Nile tilapia (*Oreochromisniloticus*) in Diyala-River/ buhriz

Appearance characteristics Mm	Percentage of phenotypic characteristics relative to total length%		
	Range	Average%	S.E ±
Body depth	83.95 -62.37	40.62	4.68
Body thickness	24.5334.24 -	16.29	2.10
Snout length	13.68 -9.56	6	0.97
Head length	56.79 -44.25	27	2.85
Head higth	73.15 -56.69	35	3.73
Eye diameter	7.92 -7.42	4.41	0.11

Conclusion

The Nile tilapia is an exotic fish on Iraqi waters and has rapid growth rates and adaptation to environmental conditions, enabling it to spread and exist in most Iraqi waters and environments.

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