

The first record of *Carassius gibelio* (Bloch, 1782) in Al Assad lake (Raqqa, Syria)

*¹Dr. Mohamed Mojahed Batal, *²Dr. Cathrine R. Mansour, *³Deem M. Deeb

*Professor; Department of Zoology, Faculty of Science, Tishreen University-Lattakia- Syria.

** Lecturer assistant; Department of Zoology, Faculty of Science, Tishreen University-Lattakia- Syria.

***Doctoral student; Department of Zoology, Faculty of Science, Tishreen University-Lattakia- Syria

Abstract

The aim of the present paper is to report the first occurrence of Prussian carp *Carassius gibelio* (Bloch, 1782), introduced into Al Assad lake (Raqqa, Syria). This species was captured in Al Assad lake between March and September 2019. This exotic fish species was probably introduced by accident. The morphometric characteristics and ecological features of this species are also presented.

Keywords : *Carassius gibelio*, , Al Assad lake , freshwater , exotic species.

I. INTRODUCTION

Lake Al Assad is a water reservoir on the Euphrates in Raqqa province, Syria. It was constructed in 1974 when the Tabqa Dam was finished. It is the largest lake in Syria. The lake provides drinking water for the city of Aleppo and supports a fisheries. The shores of Lake Al Assad have developed into important ecological zones. Studies of Syrian freshwater fish, including the Euphrates River, are very few. [1] conducted a comprehensive study of freshwater fish in Syria. Sporadic studies of the German mission [2] were carried out in 1980, on fish and aquatic life in Lake Al Assad, showing 21 species.

Carassius gibelio (Bloch, 1782) is a member of the Cyprinidae family and its natural distribution areas are Korea, Northeast China, and Russia in Asia [4][3]. *C. gibelio* was introduced into Europe from Asia in the 17th century and has since become widely distributed throughout Europe [5]. The species was accidentally introduced in to Southern European countries [6] and then it was reported from several lakes, reservoirs and ponds in Turkey [7] [8] [9]. *C. gibelio* inhabits a wide variety of water bodies and lowland rivers and is very tolerant of low oxygen concentrations and pollution [3]. Today it is widespread and commonly stocked together with *Cyprinus carpio* (Linnaeus, 1758,) [3] [10] [11] [12]

The aim of the study is to report the first record of *C. gibelio* in Al Assad lake Raqqa, Syria.

II. Materials and Methods

A. Study site & data available:

A total number of 100 samples of *C. gibelio* individuals from four different sampling stations (station 1: Tabqa 2: Jabaar 3: Toyhenaa 4: Shoab alzeke) (Figure 1) were caught by native fishermen by using gill nets casting net, and electro-shocker from 26 March to 23 September 2019. The samples were fixed in a 10% formalin and transferred to the laboratory for classification.

The taxonomic key given by [3] was used to identify this species. Morphometric measurements including many features were recorded (the total weight was taken to the nearest g, and length to the nearest cm).

The physico-chemical parameters were measured at the sampling sites including water temperature (°C), pH, and transparency (secchi disk).

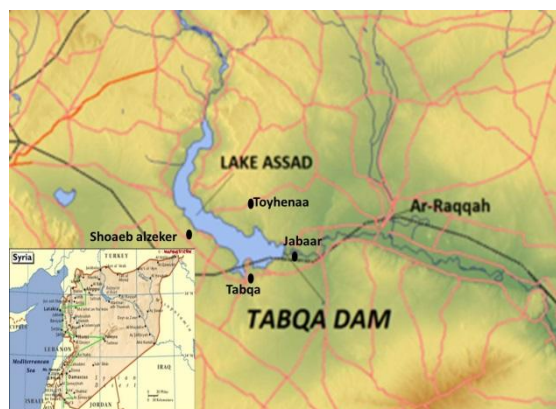


Figure 1: Map of the study area

III. RESULTS

In this study, *Carassius gibelio* was found in Al Assad lake, 100 specimens of *C. gibelio* were collected from the four sites.

- **Common names :** Prussian Carp

- **Taxonomic Standing**

Kingdom Animalia

Subphylum Vertebrata
 Class Actinopterygii
 Order Cypriniformes
 Family Cyprinidae
 Genus Carassius (Nilsson, 1832)
 Species *Carassiusgibelio* (Bloch, 1782)

- **Morphology:**) figure 2, Head and body laterally compressed, body high, greatest depth before dorsal-fin origin ,the body is covered with scales , its scales are slightly larger ,Head small with terminal mouth, Lateral line starts from the posterior dorsal point of operculum. Ventral fins lie under 2nd or 3rd dorsal fin ray. Anal fin anterior edge lies below the penultimate dorsal fin ray. Pectoral fins never reach anterior edge of dorsal fin. Horizontal line passing through the mouth touches the lower edge of orbit. Dorsal and anal fin spines hard and large. First gill arch with 47 gill rakers. Total number of vertebrae 28, 14 ribs on each side morphometric and meristic data of specimens are shown in table 1 .

C. *gibelio* is characterized with a set of characters depending on the external morphology, which distinguish it from the other Carassius species given by Kottelat and Freyhof (2007).

- **Colouring:** Overall silvery colouring (also known as the silver Crucian carp), sometimes silvery-brown.
- **collect:** collected from the four sites(1: Tabqa 2: Jabaar 3:Toyhenaa 4:Shoab Al zeker) and the length of the study period.

Table 1: Morphometric measurements and meristic counts of *C. gibelio* from Al Assad lake

Morphometric (cm) / Meristic characters (n=40)	range	Mean
Total length	14.0-20.0	16.3
Standard length	11.5-17.5	13.6
Body depth	5-9.5	6.3
Head length	2.5-3.7	2.9
Head depth	1.9-2.4	2.1
Eye diameter	0.6-0.7	6.8
Dorsal fin	3.8-4.26	3.98
Meristic characters		
Lateral line	28-31	29.3
Scales above the lateral line	6-7	6.3
Scales below the lateral line	5-6	5.1
Dorsal fin unbranched	3	3

rays 3-3 3 0		
Dorsal fin branched rays	17-18	17.5
Anal fin unbranched rays	3	3
Anal fin branched rays	5	5
Pectoral fin unbranched rays	1	1
Pectoral fin branched rays	14-17	15.3
Pelvic fin unbranched rays	1	1
Pelvic fin branched rays	7-8	7.8
Number of gill rakers	43-48	45.3
Total number of vertebrae	30-31	30.6



Figure 2 : photo of *C. gibelio*

Temperatures ranged from 18 ° C in March to 28 ° C in September , and pH of water ranged from 7 in March to 7.5 in July. Transparency differed among the four sites, where the Tabqa area was the most transparent and reached 7 meters in June. The smallest was in the area of Tuhaina, where it recorded half a meter in March because of the many water weeds in that area.

IV. DISCUSSION

This species has been recorded in the waters of this lake during our study and it believed to have reached its waters by accident from Turkey, The geographic continuity of water systems in Syria and Turkey (the Euphrates River) allows for the free movement of freshwater fish species across borders.

The presence of *C. gibelio* in Syria has been confirmed by this study, but the effects of this species on local ones have not been identified so far.

V. CONCLUSION

In this study we record of *c.gibelio* for the first time, the presence of *C. gibelio* in Syria is considered as a serious threat to native and particularly to endangered freshwater fish species and should be taken seriously.

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