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The present status of *Umbra krameri* WALBAUM in Romania

(Pisces, Umbridae)

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Abstract

The European mudminnow, *Umbra krameri* WALBAUM, was a widespread and common fish species in Romania according to old literature data, although only a few specific localities are mentioned. In the last two decades it has been found in the western and southern Romanian lowlands and in the Danube Delta. It is still quite abundant in many of these places. In contrast to the common assumption that the mudminnow exclusively inhabits stagnant waterbodies, it was found that at least in southern Romania, dense populations can be found in slow-running lowland rivulets. Some of these populations are endangered because of the conversion of such rivulets into larger lakes for recreational purposes. However, the mudminnow is not yet regarded a threatened species in Romania.

Key words: Umbridae, *Umbra krameri*, Romania, distribution, conservation.

Zusammenfassung

Der Europäische Hundsfisch, *Umbra krameri* WALBAUM, war nach älteren Literaturangaben eine weitverbreitete und häufige Fischart in Rumänien, obwohl nur wenige genaue Fundangaben existieren. In den letzten beiden Jahrzehnten wurden Vorkommen in den westlichen und südlichen Tieflandbecken Rumäniens sowie im Donaudelta gefunden. An vielen dieser Lokalitäten ist der Hundsfisch immer noch recht häufig. Im Gegensatz zur allgemeinen Annahme, daß der Hundsfisch ausschließlich stehende Gewässer bewohnt, wurde er zumindest im südlichen Rumänien in langsam fließenden Tieflandbächen gefunden. Einige dieser Populationen sind wegen der Umgestaltung solcher Tieflandbäche zu größeren Teichen für Freizeitaktivitäten gefährdet. Trotzdem wird der Hundsfisch in Rumänien noch nicht als gefährdet angesehen.

Distribution

In Romania *Umbra krameri* WALBAUM, 1792, is less endangered compared to other countries of the Danube River drainage basin. It is still present in many localities, being quite abundant in some places.

ANTIPA (1909) mentioned that this species was present in many stagnant waterbodies along the Danube and the Prut, the easternmost tributary of the Danube that marks the boundary between Romania and Moldova, being especially abundant in the Danube Delta. This information is vague and only two specific sites were given for the species:

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the pond Cristesti near the town Iasi (Fig. 1, site 1), and a partially brackish water pond in the Danube-Delta at the mouth of the Sulina-arm (Fig. 2, site 7).

VUTSKITS (1918) recorded *U. krameri* from the swamps at Eced, on the Romanian-Hungarian border, which are now totally drained, and from the Crisul-Repede (= Sebes-Körös) River, without specifying any locality (probably from the lower, Hungarian stretch).

BACESCU (1947) recorded the occurrence of the species from a number of localities in southern Romania: Izvoarele, Catana, and Plosca, in the Danube valley upstream of the confluence with the Jiu River (Fig. 1, sites 2 - 4), without specification whether it was found in lakes of the floodplain or in isolated ponds; further at Tiganesti and Cervenja in the valley of the Vedea River (Fig. 1, sites 5 - 6) and several sites in the drainage area of the Colentina River in the vicinity of Bucuresti: the river itself and ponds near the villages Cernica, Taganu, Bobesti, Balaceanca, and Orasani. He mentioned the abundance of the species throughout the basin of this river.

During the 1950s and 1960s a number of studies on the hydrobiology and fisheries biology of several shallow lakes of the floodplain of the Danube and the Danube Delta have been published. These papers included complete lists of collected fish species, but *U. krameri* is never mentioned. However, this does not necessarily mean that the mudminnow was not present in these lakes, but simply that it could not be collected with large-meshed nets used by commercial fisherman in the open water since it lives in the marginal areas in dense vegetation. The few records of *U. krameri* from this time are to a large extent due to the difficulty of collecting it.

During the last two decades *U. krameri* was found in four localities in the lowlands of southern Romania not far from Bucuresti: (1) the small and partially muddy rivulet Gurbanu, which flows into the shallow lake Comana (Fig. 1, site 7), (2) the rivulet Tanganu in the forest Cernica (Fig. 1, site 8), (3) a small channel near the villages Vasilati and Galbinasi (Fig. 1, site 9), (4) a pond near the village Frasinet (Fig. 1, site 10). The first locality is situated in the basin of the Neajlov River, the localities (2) and (3) in the basin of the Colentina River. Both river basins have been already mentioned by BACESCU (1947) for containing mudminnow populations. Frasinet lies in the basin of the Mosistea River, a short lowland tributary of the Danube east of the Arges River. There are no earlier records of *U. krameri* from this river basin. The species has been collected at Frasinet and identified by D. Vizitiu (unpublished).

It is necessary to determine if the species survived in the localities of the Danube valley upstream of the mouth of the Jiu River and those of the basin of the Vedea River, where it has been recorded by BACESCU (1947), as well as in the Cristesti pond near the town Iasi, where it has been recorded already by ANTIPA (1909). We have information on the occurrence of the mudminnow in a number of ponds near the confluence of the Moldova and Siret Rivers, rather north of the Danube (the locality is also called Cristesti; Fig. 1, site 13).

In recent years *U. krameri* has also been found in the lowlands of western Romania (WILHELM 1984): in the slowly flowing River Ier near Sacuieni (Fig. 1, site 11) and upstream to Urziceni (Fig. 1, site 12). On the contrary, the species has not been found in the south-western province Banat, where several apparently suitable biotopes are located. It does not live in the central Romanian province Transylvania, which is a plateau of high altitude.

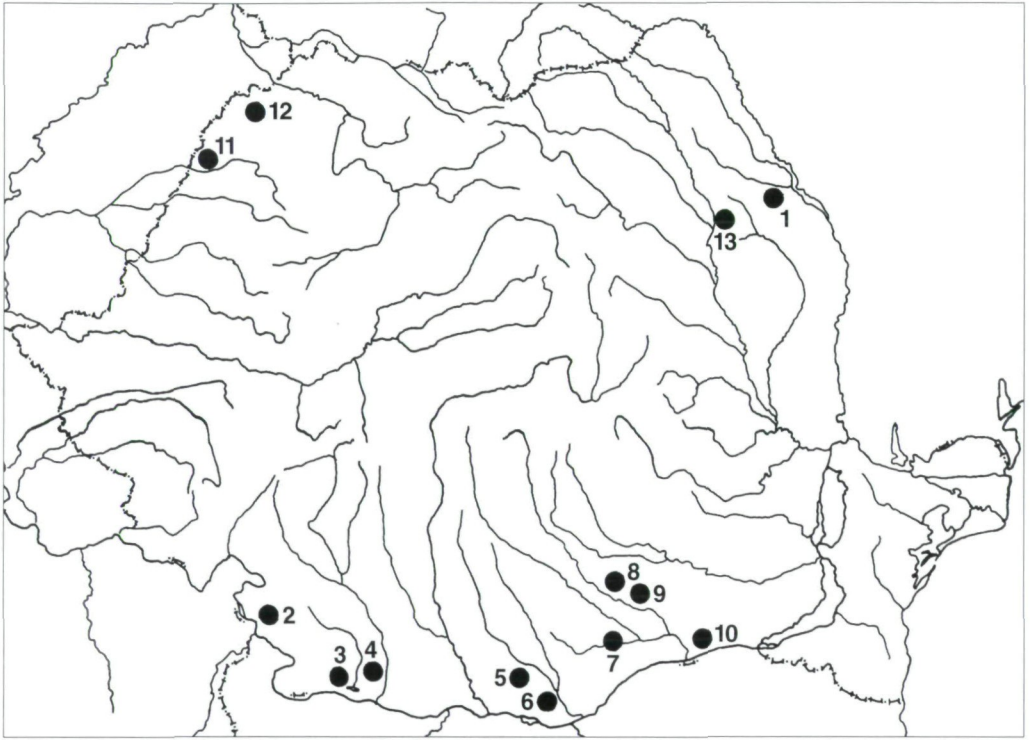


Fig. 1. Distribution of *U. krameri* in Romania (except the Danube Delta). 1 - 6: old literature records: 1. pond Cristesti near Iasi (ANTIPA 1909); 2. Izvoarele; 3. Catana; 4. Plosca; 5. Tiganesti; 6. Cervenia (BACESCU 1947). 7 - 12: recent, original records: 7. Rivulet Gurbanu, Neajlov River basin at Comana (P. Bănărescu); 8. Rivulet Tanganu, Cernica forest, Colentina River basin (P. Bănărescu); 9. Pond between the villages Vasilati and Galbinasi, Colentina River basin (A. Bănărescu); 10. Frasinet, Mostistea River basin (D. Visitiu); 11. Ier River at Sacuieni, Bihor county (A. Wilhelm); 12. Pond at Urziceni, Satu-Mare county (A. Wilhelm). 13. Cristesti near Pascani, Iasi county (N. Craciun, not verified information).

The occurrence of *U. krameri* in the Danube Delta deserves a special discussion: ANTIPA (1909) asserted that it was very abundant in the delta, specifying, however, only one locality (mentioned above). BĂNĂRESCU (1964) reported that the species is present in the Razelm lagoon, where it can reach five years of age. He specified no exact localities for the species in the delta. It has been recorded from the Ukrainian sector of the Danube delta which was published together with data on biometry and growth rates by PAVLOV (1953). There are no other published records from the Danube delta. Otel and Suciu (unpublished data) collected specimens from five localities indicated in Fig. 2. It should be mentioned that more than 100 specimen were collected in a small canal north of the Sulina arm (Fig. 2, site 2) within a short stretch. In the ichthyological collections of the Institute of Biology of the Romanian Academy, there are specimens from two other localities in the Danube Delta: the fishery farms at Caraorman (Fig. 2, site 6) and Sulina (Fig. 2, site 7).

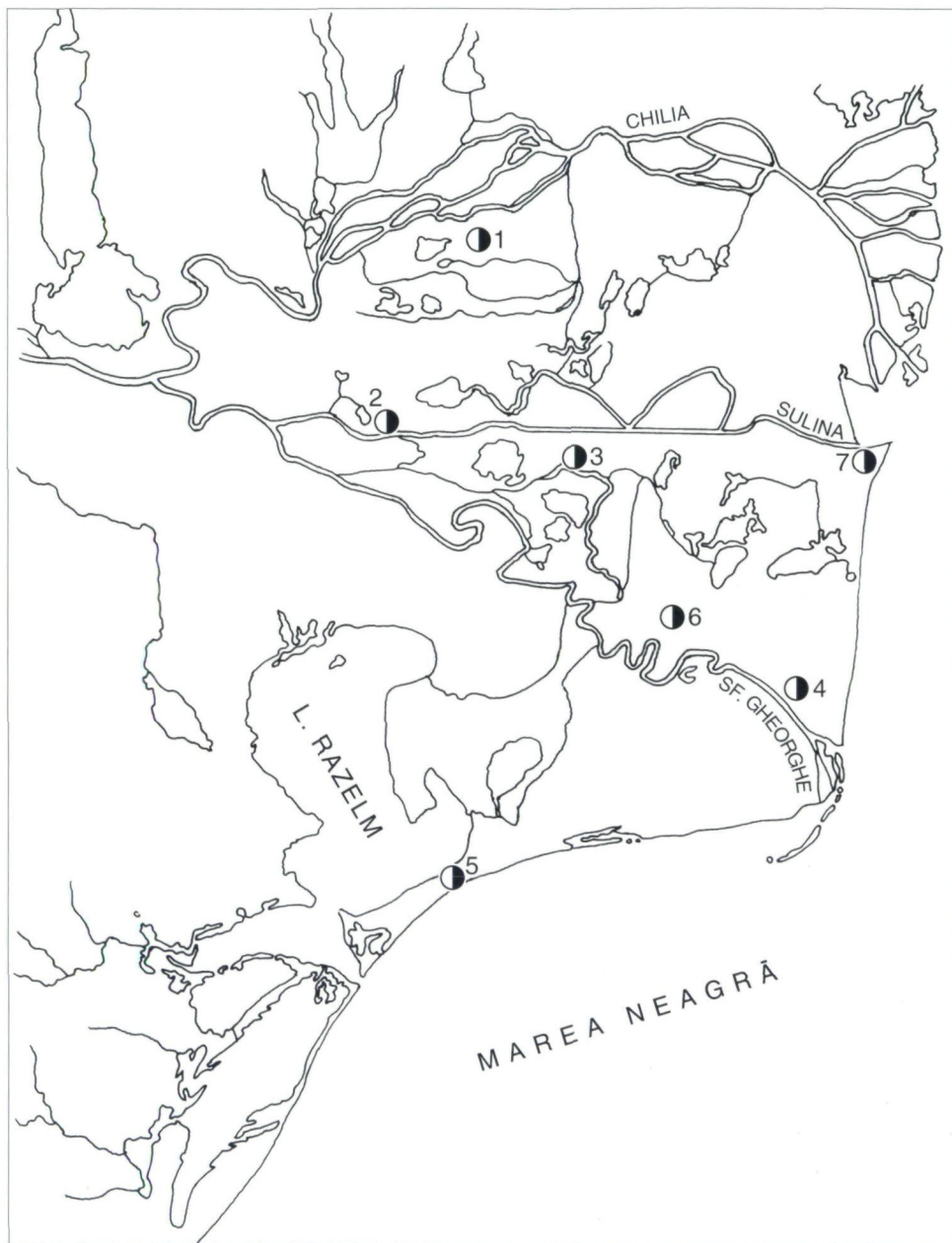


Fig. 2. Localities in the Danube Delta in which *U. krameri* has been collected by Otel and Suci (if not indicated otherwise): 1. canal near Tatanir, south of the Chilia arm (found in stomachs of pike-perch, *Stizostedion lucioperca* (L., 1758), in February 1995); 2. a small canal north of the Sulina arm (1988); 3. pits resulting from excavation of gravel for dams, near Maliuc (1993); 4. shallow ponds at Saraturile (1994); 5. a shallow pond between lake Razelm and the Black Sea near Periteasca (1994); 6. fisheries farm at Caraorman (1965 - 1967, leg. S. Dragasanu); 7. mouth of the Sulina arm (ANTIPA 1909, collected again by V. Constantinescu, 1979).

Habitat characteristics

Some remarks may be made about the habitats of *U. krameri* in the localities where it has been collected recently.

Colentina is a slowly running river flowing through the eastern sections of Bucuresti. Initially it consisted of a chain of small shallow ponds rich in vegetation. According to BACESCU (1947) and personal observations, *U. krameri* was quite abundant in these ponds. Subsequently, the ponds have been "managed" and converted to deeper lakes for aquatic sports, angling, and partially for commercial fisheries. At the same time the mudminnow has totally disappeared or may just survive in the marginal areas of some lakes.

Tanganu is a small rivulet, a tributary of the Colentina, which has not been "managed". It has retained its original character of a slow and shallow lowland rivulet full with aquatic vegetation. Some stretches are shaded by trees, devoid of vegetation, and the bottom is covered by a thick layer of dead leaves. Mudminnows are found in large numbers in this rivulet, among both the aquatic plants and the dead leaves. Other fish species, e.g. *Carassius auratus gibelio* (BLOCH), *Cobitis taenia* L., *Misgurnus fossilis* (L.), and *Proterorhinus marmoratus* (PALLAS), are much rarer.

Lake Comana, which is rather a large pond than a shallow lake, is connected to the Neajlov River, a tributary of the Arges River. It receives water both from this river and from the tributary rivulet Gurbanu. The lake has a rich fish fauna, exploited by anglers and commercial fishermen. The mudminnow was a common fish species in the lake, in the adjacent swamps, and in the rivulet Gurbanu. Now, however, the Neajlov River is heavily polluted and so is lake Comana. Its depth has been reduced substantially by sedimentation. Only the rivulet Gurbanu brings clean water throughout the dry season. Some stretches of this rivulet are slow running, the bottom is partially muddy, and the submersed vegetation is well developed. Other stretches are characterized by relatively fast running water with sandy bottom and sparse vegetation. The mudminnow is very abundant in the stretches of the first category, whereas other fish species including *Carassius auratus gibelio*, *Cobitis taenia*, *Misgurnus fossilis*, *Neogobius gymnotrachelus* KESSLER, and *Proterorhinus marmoratus* are much rarer compared to the sections of the second category. It is worth mentioning that in the running sections an apparently endemic, not yet described subspecies of the dwarf chub, *Leuciscus borysthenicus* (KESSLER), was found which deserves protection similar to *U. krameri*.

The mudminnow population from the rivulet Gurbanu is dominated by small specimens. In autumn of 1981 68.9 % of the collected specimens are supposed to belong to the 0+ age group, 21.6 % to the 1+ age group, 6 % to the 2+ and 3+ age classes while only one large specimens was probably more than 6 years of age (S. Damian, unpublished data).

The mudminnow is almost unanimously considered a typical inhabitant of stagnant water. Our field observations in the basins of the Rivers Neajlov, Colentina, and Mostistea demonstrate that, at least in this area, the species lives mainly in slowly running water, in muddy rivulets containing rich aquatic vegetation. *Umbra krameri* is almost certainly present in many other localities in the drainage basins of these three rivers, probably in those from other slow-running rivers in southern Romania, too. But certainly not in all localities which appear to provide suitable habitats: for example the species was not found in a tributary of the Neajlov River at Calugarnei, where conditions were, at least apparently, identical to those in the Gurbanu rivulet.

The mudminnow can only be protected by habitat conservation. A number of lowland rivulets (above all Gurbanu rivulet) should be declared a protected area and pollution or removal of water has to be prevented.

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