

Observations on the distribution of *Umbra krameri* WALBAUM, 1792, in the Ukraine

(Pisces: Umbridae)

Y.V. Movchan*

Abstract

Within the Ukraine the European mudminnow (*Umbra krameri* WALBAUM) inhabits the Danube and the Dniester river basins. The present paper offers informations about the status of this species in the most eastern parts of its distribution area.

Key words: Umbridae, *Umbra krameri*, Ukraine, distribution.

Zusammenfassung

In der Ukraine bewohnt der Europäische Hundsfiſch (*Umbra krameri* WALBAUM) das Donau- und Dniestrbecken. Die vorliegende Arbeit gibt einen Überblick über den Status von *Umbra krameri* im östlichsten Abschnitt ihres Verbreitungsgebietes.

Introduction

The European mudminnow (*Umbra krameri* WALBAUM, 1792) is secretive in its behaviour, usually inhabiting shallow, silty areas of waters. These areas are often densely vegetated and are stagnant or slow-flowing sections of river tributary systems such as flood plain lakes and pools, or coastal bays with extensive areas of flooded vegetation. When threatened the fish immediately dives into the soft substrate. This behaviour makes the fish very difficult to sample or observe. So it will seldom be captured even when special fishing methods are used. For these reasons information on this species in the Ukraine is fragmentary and uncertain. Besides, the geographic range of the European mudminnow has continuously been reduced for the past 20 to 25 years. The species has disappeared or has become rare in certain localities as a result of pressure from anthropogenic factors such as land reclamation and serious industrial pollution. As a result, the existence of this species is threatened, and it requires conservation and population rehabilitation. Along with 33 other fish and cyclostome species, *U. krameri* therefore is listed in the Red Data Book of Ukraine.

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* Dr. Juryi V. Movchan, Schmalhausen Institute of Zoology, National Academy of Sciences of Ukraine, B. Chmelnitzky Str. 15, UA - 252601, Kiev 30, Ukraine.

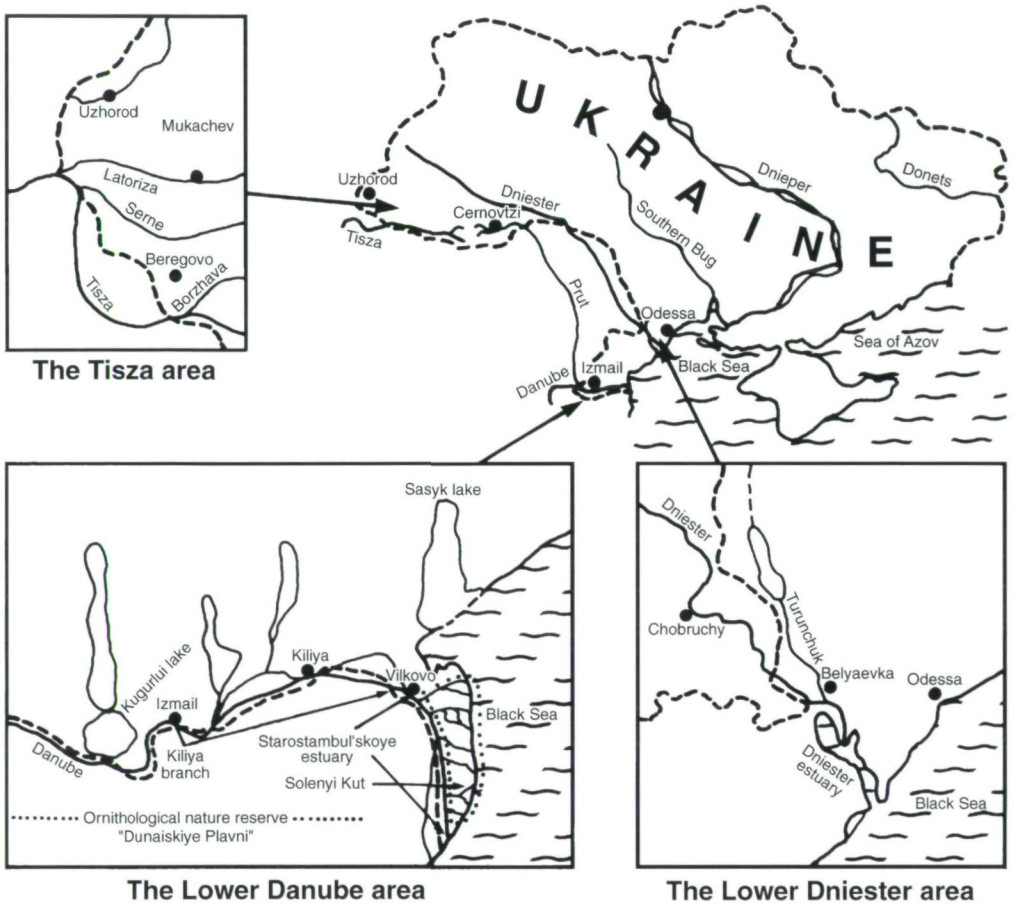


Fig. 1: The presumed habitats and distribution of *Umbra krameri* in the Ukraine in 1994. See text for details.

Distribution area

Within the Ukraine the distribution area of the European mudminnow covers the Danube and Dniester river basins:

The Danube basin

The largest population of this fish inhabits the lower reaches of the Danube, where it is apparently distributed over most of the Danube delta. It has been recorded from Lake Kugurlui near Izmail, from the lower part of the Kiliya branch (maritime floods of the Sarostambul'skoye estuary) and from the so-called Solenyi-Kut (PAVLOV 1953, 1980). The collections in the Zoological Museum of the Schmalhausen Institute of Zoology contain a specimen collected in Lake Sasyk, as well as extensive samples collected between 1962 - 1974 (by the author) in channels in the Vilkovo area and in the Starostambul'skoye estuary. We currently have some joint efforts with Rumanian col-

leagues to organize a national park based on the "Dunaiskiye Plavni" ornithological nature reserve. We expect this will provide a new opportunity to protect the largest mudminnow population of the lower Danube and make it available for scientific study.

The Prut area

The situation of *U. krameri* in the Danube tributaries is serious. Mudminnows have been caught in the Prut River itself. Two specimens were collected in the Chernovtzi area in June 1953 by SHNAREVICH (1959), who suggested that this species occurred only at flood time. Our intensive collecting efforts in the 1970's and 1980's did not produce any specimens. This probably indicates that the species has disappeared from the Prut midflow basin. In the lower part of the Prut River, where mudminnows were previously recorded by BERG (1948), PAVLOV (1953), and others, the fish is now reported as rare (POPA 1976).

The Tisza area

Among other Danube tributaries within the Ukraine the European mudminnow has been known from the Tisza River basin. It was reported from the lower Tisza basin, Latoritza River, and a swampy channel in the Beregovo vicinity (VLADYKOV 1926, 1931). Much later it was pointed out that, after the "Chorny mochar" drainage, the mudminnow remained only in a drainage channel in the vicinity of Harazdivka village (Beregovo area), where it inhabited an area of about 1.5 to 2.0 ha under highly unfavourable conditions (VLASOVA 1956, 1964). This area is subjected to winter freezing and associated anoxia, increased water flow during floods, desiccation of habitat during hot summers, predation from pike and perch, and water pollution from hemp maceration. All these factors have adversely affected the living conditions of this fish. According to literature, there are no recent occurrences of the European mudminnow in the Tisza River basin. We unsuccessfully examined several water bodies in the Transcarpathian region, including a channel from which *U. krameri* has been reported by VLASOVA (1964). Only in 1986, in the Mukachev area, we found a small mudminnow population, associated with other fish species (pike, perch, tench, goldfish). The habitat was a shallow (0.15 - 0.5 deep), silty, weed-filled, small meander (2 x 7 m), separated by about 1 km from the main Latoritza River. This finding shows that small mudminnow populations still remain in the Tisza basin. Further research is needed to develop conservation measures in this area.

The Dniester basin

In the Dniester basin mudminnows formerly inhabited small, swampy water bodies, often covered with flooded vegetation, from the Dniester estuary to Chobruchy village - a distance of about 100 km along the river (WIEDHALM 1879, BRAUNER 1889, JAEGERMANN 1926, MAKAROV 1936). In 1951 - 1954 the species was reported from the Turunchuk River, a tributary to the Dniester, from the Dniester between Khotyn and the estuary, and in the Dniester estuary (ZAMBRYBORSHCH 1953, CHEPURNOV & al. 1953, BURNASHEV & al. 1954). From April to November 1963 the species was found over the entire estuary (BURNASHEV & al. 1967). The fish was also found in the Dniester midflow and flood plain regions (SHNAREVICH 1959). In September 1972 we found it in the Dniester coastal water bodies in the region of Belyaevka village (Odessa area). At the same time all our efforts to find the mudminnow in Dniester midflow water bodies were

unsuccessful. Recent years provide no evidence to confirm the existence of this fish in the Dniester basin and estuary. At the same time, SHNAREVICH & al. (1989) assumed that a number of fish species, probably including the mudminnow, have been lost from the Dniester fauna as a result of a serious industrial waste water spill in the Lvov area in September 1983. This information is somewhat doubtful and requires verification to discover if mudminnow population might have persisted in the Dniester basin. Such populations would deserve protection as the eastern limit of the range of this species.

Conclusion

Umbra krameri certainly still exists in the Ukraine. Relatively abundant populations are found in water bodies in the lower reaches of the Danube. It is very rare in the Tisza basin, and probably still persists in the lower reaches of the Prut and Dniester rivers.

References

- BERG, L.S. 1948: Freshwater fishes of the USSR and adjoining lands, pt. 1. – Moscow-Leningrad, 466 pp. (in Russian).
- BRAUNER, A.A. 1887: Notes on fishery in the river Dniester and Dniester estuary within Odessa ujezd. – Sbornik Khersonskogo Zemstva 3(3): 1-52 (in Russian).
- BURNASHEV, M.S., V.S. CHEPURNOV & V.N. DOLGIY 1954: Fishes and fishery of the Dniester river. – Uchenye Zapiski Chernovitzkogo Univ. 13: 17-40 (in Russian).
- BURNASHEV, M.S., L.P. GAVRILITZA & S.I. YAROVAYA 1967: Changes in the fish fauna and biology of main economically important fish species of the Dniester estuary after Dniester river flow control. – Uchenye Zapiski Chernovitzkogo Univ. 89: 72-86 (in Russian).
- CHEPURNOV, V.S., M.S. BURNASHEV, Y.M. SAYENKO & V.N. DOLGIY 1953: Materials for the vertebrate fauna of the lower Dniester, Prut and southern regions of Moldavia. – Uchenye Zapiski Chernovitzkogo Univ. 8: 359-367 (in Russian).
- JAEGERMANN, F.F. 1926: Materials to the fish fauna of Kuchurgan estuary (Dniester basin) collected 1922 - 1925. – Trudy Vseukrainskoi gosudarstvennoi Chernomorsko-Azovskoi nauchno-promyslovoi opytnoi stantsii 2(1): 1-92 (in Russian).
- MAKAROV, A.K. 1936: *Umbra* in the Dniester. – Priroda 2: 111-112 (in Russian).
- PAVLOV, P.I. 1953: *Umbra* from the Danube lower reaches. – Zool. Zhurn. 32(2): 272-276 (in Russian).
- PAVLOV, P.I. 1980: Fauna of Ukraine. Vol. 8. Fishes 1. – Kiev, Naukova Dumka, 351 pp. (in Ukrainian).
- POPA, L.L. 1976: Fishes of the Prut river basin. – Chernovtzi, Stiintza, 85 pp. (in Russian).
- SHNAREVICH, I.D. 1959: The fishes of the Soviet Bukovina. In: Animal life of the Soviet Bukovina. – Chernovtzi: Univ. Press.: 206-263 (in Russian).
- SHNAREVICH, I.D., E.G. PRIKHODSKAYA & M.I. CHEREDARIK 1989: Changes in the fish species composition of the Dniester river basin under anthropogenic factors influence. – Vsesoyuznoye Soveshchanie po Problemam Kadastra i Ucheta Zhivotnogo Mira. Tezisy Dokladov. – Ufa, Bashkirskoje Knizhnoje Izdatelstvo 3: 401 (in Russian).
- VLADYKOV, V. 1926: Fishes of Subcarpathian Russia and principal fishing methods. – Uzhgorod, 151 pp. (in Russian).