



Tavorozsa Association
of Environmental Protection and Nature Conservation

H-2112 Veresegyház, Huba u. 43.

Telefon/Fax: +36 28 389-005

info@tavirozsa-egyesulet.hu; www.tavirozsa-egyesulet.hu

**European mudminnow (*Umbra krameri*) Conservation Program
(Hungary)**

Musterprogramm für den artenschutz des Ungarischen Hundsfisches
(*Umbra krameri*)
(Ungarn)

The Program was launched by Tavorozsa Association in 2008, with the support of Ministry of Environment and Water.

The main aim of the Program is to increase the population of IUCN Red List species, European mudminnow by artificial propagation, wetland rehabilitation and creation of new habitats.

Our association achieves the Program in collaboration with Szent István University, Department of Aquaculture (Gödöllő).

Introduction

European mudminnow is an endemic fish species of Danube and Dniester rivers. It is a typical stagnophil species (Wilhelm, 2008) and a sudden extinction of the globally endangered fish (Simić, 2007). It is on the Red List of many European countries (Hungary: Bankovics, 1990; Austria: Hacker, 1983; Slovenia: Povž, 1992; Croatia: Mrakovčić et al., 2006; Ukraina: Serbaka, 1994; Slovakia: Baruš, 1989) and it also appears in Appendix II. of Bern Convention and Natura 2000 species. It is categorized as "vulnerable" on the IUCN Red List due to its isolated populations consisting of only a few individuals and thus it is assumed that it may go extinct locally. The species is known to have been extirpated from many of its original habitats. It is estimated that mudminnow populations have declined by more than 30 % in the past 10 years (Freyhof and Kottelat, 2008.). The main reason for this decline is considered to be habitat destruction, especially channelization followed by the destruction of river and stream floodplains (Wanzenböck, 1996). Recently, the invasive and aggressive Rotan (*Percottus glenii*, Dybowski, 1877) supplants mudminnow in Hungarian waters (Specziár, 2010).

Systematic stockings of mudminnow into adjacent streams, canals and still waters might help to develop self-sustaining populations of *Umbra krameri* in places where the species disappeared or occurs only sparsely. The best method for the maintenance of populations would be the preservation and creation of a variety of suitable micro-habitats. Furthermore, artificial propagation of mudminnow could also help to increase its stocks (Bíró and Paulovits, 1995).

The main results of the Program (2008-2010):

- 6 new ponds fed by groundwater were created in a Demonstration Area in the northwestern part of the Great Hungarian Plain, in village Szada (average sizes of water surfaces and depths: 7x6 m, 1,5 m),
- water quality of 2 years old ponds are reached the characteristic values experienced in semi-natural habitats of mudminnow,
- the quantities and numbers of zooplankton and macro-invertebrate species are reached the characteristic values experienced in semi-natural habitats of mudminnow,
- successfully artificial propagation: approx. 400 individuals were reared in 2010 (10 females and 11 males were used for propagation),
- successfully stocking in natural habitats and in Demonstration Area: stocked individuals grew faster in a new pond than literature sources are describe it,
- we have 3 different stocks of *U. krameri* in three ponds in Demonstration Area (these waters serve as refuges of Hungarian mudminnow populations).



Tavirozsa Association
of Environmental Protection and Nature Conservation

H-2112 Veresegyház, Huba u. 43.

Telefon/Fax: +36 28 389-005

info@tavirozsa-egyesulet.hu; www.tavirozsa-egyesulet.hu

Long-term goals of the Program:

- reconstruction wetlands and creation still waters for improving ecological conditions and increasing the number of mudminnow habitats in abroad sites,
- artificial propagation for stocking in abroad sites,
- genetic researches in different populations in the distribution area of genus *Umbra*,
- monitoring of water quality, zooplankton, macro-invertebrate, macrophyte and fish populations in natural habitats of mudminnow and amur sleeper (*Perccottus glenii*),
- monitoring in reconstructed and new (artificially created) habitats,
- developing method for control spreading of the invasive amur sleeper,
- developing Demonstration Area: creating further separated ponds for *U. krameri* and other endangered marsh fish populations (eg. *Misgurnus fossilis*, *Carassius carassius*).

Contact:

Sándor TATÁR
program manager

Tavirozsa Association of Environmental Protection and Nature Conservation

E-mail: tatarsandor@invitel.hu

T/F: + 36 28 389-005

+ 36 70 210-1242

H-2112 Veresegyház, Huba u. 43.

www.tavirozsa-egyesulet.hu

References

- Bankovics, A. (1990). Halak (*Pisces*). In: Rakonczay, Z. (ed): Vörös könyv (Red List). Akadémiai Kiadó, Budapest pp. 166-168. in Hungarian
- Baruš, V. (ed.) (1989): Ěrvená kniha 2. Státní Zemišlské Nakladatelství, Praha, p. 26-27.
- Bíró P., Paulovits G. (1995) Distribution and status of *Umbra krameri* (Walbaum 1972) in the drainage of Lake Balaton. - 1st Int. Workshop on *Umbra krameri*, Nat. Hist. Mus. Vienna, Austria 97B, 470-477.
- Bohien, J.(1995). Laboratory studies on the reproduction of the European mudminnow, *Umbra krameri* Walbaum, 1972. Ann Naturhist Mus Wien 97B:502-507.
- Freyhof, J. & Kottelat, M. 2008. *Umbra krameri*. In: IUCN 2010. IUCN Red List of Threatened Species. Version 2010.2. <www.iucnredlist.org>. Downloaded on 30 June 2010.
- Hacker, R. (1983). Rote Liste gefährdeter Fische Österreichs (*Pisces*), pp: 67-68.
- Mrakovčić, M. Kerovec, M. (1990). *Umbra krameri*. - Ekoloski glasnik, Zagreb, 5(6): 68-69.
- Povž, M. (1992). The Red List of endangered Pisces and Cyclostomata in Slovenia. Varstvo Narave, 17: 51-59
- Serbaka, M., M. (ed.) 1994: Cservona kniga Ukrainu. Ukrainszka enciklopedija, M. P. Bazsana, p. 261
- Simić, V., Simić, S., Paunović, M., Cakić, P.(2007). Model of the assessment of the critical risk of extinction and the priorities of protection of endangered aquatic species at the national level. Biodiversity and Conservation 16, 2471-2493.
- Specziár, A. (2010): Fish fauna of Lake Balaton: stock composition, living conditions of fish and directives of the modern utilization of the fish stock. ACTA BIOL. DEBR. SUPPL. OECOL. HUNG. 23, (Hydrobiological Monographs vol. 2.): 7-185 (in Hungarian with English abstract)
- Wanzenböck, J. (1996). Workshop II. Conversation of European mudminnow, *Umbra krameri*. In.: Conservation of endangered freshwater fish in Europe. Eds.: Kirnhöfer, A., Hefti, D. Basel, Boston, Berlin: Birkhäuser. p. 339.
- Wilhelm, S. (2008). A lápi póc (The European mudminnow-monography). Erdélyi Múzeum-Egyesület, Kolozsvár, Romania, pp:1-118. in Hungarian