

The fish fauna of the River Someş/Szamos¹ basin

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Introduction

The first records of fish species in the drainage area of the River Someş/Szamos are those dealing with the fish fauna of the entire Transylvania (Fridvaldsky, 1767; Benkő, 1778; Bielz, 1853, 1856, 1888) or of Hungary before 1918 (Herman, 1887; Vutskits, 1918). The data presented by these authors are too vague (excepting Vutskits for some species), mentioning the occurrence of the species in some rivers, but not the localities. A single paper is devoted only to the fish fauna of the Someş/Szamos river, but deals only with a restricted stretch of this: that of Jászfalusi (1943) on the fishes present in the Someşul Mic between Gilău and Cluj. More details are provided in the monographs of Bănărescu devoted to the bony fishes (1964) and to the lampreys (1969) of whole Romania and to the paper of Bănărescu and Müller (1960) of the fish fauna of the historical Transylvania. Data about the Hungarian section of the river Szamos were earlier published by Vásárhelyi (1960), and more recently by Harka (1995, 1997). The data mentioned in the publications listed above on the distribution and frequency of the fish species in the Romanian section of the river are now outdated because of the strong modifications of the habitat during the last three decades; it was therefore necessary to make new investigations.

Keywords: fish, River Someş/Szamos

Materials and methods

This paper summarises the results of field studies carried out by the co-authors in 1992 and 1996. In 1992 Nalbant and Ciobanu collected fishes in the upper reaches of the Someşul Mic, the same people and P. Bănărescu in the river Someşul Mic at Cluj, Bănărescu and Nalbant in the Someşul Mare, Bănărescu and Telcean in the Romanian and Hungarian section of the united Someş/Szamos river. The majority of data from Hungary were collected by Harka in 1993 and 1994, when not only the main bed but also a oxbow of the river Someş at Tunyogmatolcs was studied, a oxbow, which is not separated entirely from the river, but is still in connection with it through a sluice. Further information was given from competent people (anglers, fisheries officials and forest guards, etc.), mainly concerning commercially valuable species, which could not be collected with the available nets. Practically all data about the species present in standing water were obtained through verbal communication.

¹ The first name is Romanian, and the second Hungarian

Results

The following fish species are or were once present in the River “united” Someș/Szamos or in its components (Someșul Mare and Someșul Mic, and Someșul Cald and Someșul Rece respectively).

Fam. Petromyzonidae

Eudontomyzon danfordi Regan, 1911.

Cicar; Kárpáti ingola, Tiszai ingola; Carpathian lamprey; Karpathenneunauge.

It was recorded from the upper reach of the Someșul Mic and its tributaries (Chappuis, 1939, 1940), formerly downstream to Cluj, during the 1950s and 1960s downstream only to Gilău; also in the two components of the Someșul Mic (Someșul Cald from Giurcuța de Sus to Gilău) and the tributaries (Rișca and Agârbici) and Someșul Rece from Răcățău to Gilău and from the tributary Căpuș (Bănărescu & Müller, 1960; Bănărescu, 1964). It was not collected in the river Someșul Mic and its tributary during the 1992 and 1996 trips; although according to information from competent local people the species was present in the river.

There are no earlier reports on the occurrence of the Carpathian lamprey in the main channel of the river Someșul Mare, but only from tributaries: Anieș, Cormanian and Sălăuța (Bănărescu, 1969, after information from V. Homei). This species was collected in the Someșul Mare at Sângiorz in 1992 and upstream Sângiorz in 1996. It has also been reported from the upper reaches of the river Bistrița ardeleană, being a tributary of the Someșul Mare, and from the Firiza, being a tributary of the united Someș (Bănărescu, 1969). It was also collected from the Hungarian section of the Someș (Vásárhelyi, 1960), but there are not data from the last decades, probably it became extinct (Harka, 1997).

Fam. Acipenseridae

Acipenser ruthenus Linnaeus, 1758.

Cega; Kecsege; Sterlet; Sterlet.

It was recorded from the Someș/Szamos by Bielz (1888). During the 1960s it was considered to be present, in small number, throughout the Romanian section of the united Someș from downstream Dej, being somewhat more abundant in the gorges of Benesat. It lives presently in the lowermost part of the river in the Romanian (information from the Anglers Association of Satu Mare) and in the Hungarian sections, in Hungary in a medium number (Harka, 1995).

Fam. Salmonidae

Salmo trutta fario Linnaeus, 1758.

Păstrăv, Păstrăv-de-munte; Sebes pizstráng; Brown trout; Bachforelle.

It was recorded in the rivers Someșul Cald and Someșul Rece from the headwaters to downstream of their confluence, occasionally reaching the Someșul Mic to Florești; the river Someșul Mare downstream to Feldru, occasionally even to Năsăud (Bănărescu and Müller, 1960). It lives also in the tributaries of the Someșul Mare, namely in the brooks Anieș and Cormaia. It has been found in 1992, 1996 and 1997 in the Someșul Cald at Ic-Ponor and upstream, and in the lakes Beliș, Tarnița and Tarnița II; in these

lakes the individuals of *S. trutta lacustris* have also been introduced. The brown trout was found in the headwaters of the Someșul Mare and downstream to Șanț, as well as in the tributary Valea Măriei (in 1996).

Oncorhynchus mykiss (Walbaum, 1792) = *Salmo gairdneri* Richardson, 1836).

Păstrăv curcubeu; Szivárványos pisztráng; Rainbow-trout; Regenbogen Forelle.

The rainbow-trout is a North American species cultivated in fishery farms in the drainage area of the River Someșul Mic, occasionally escaping in rivers.

Salvelinus fontinalis (Mitchill, 1815).

Fântânel, Păstrăv-fântânel; Pataki szaibling; Brook trout; Bachsaibling.

The brook trout, of North American origin, has been introduced, probably before 1916, in three tributaries of the Someșul Mic, namely in the Negruța, Dumitreasa and Irișoara (Nemeș and Bănărescu, 1954). It lives at least in the former tributary.

Salvelinus sp.

An undetermined species of brook trout, possibly a hybrid, cultivated in fish farms at Gilău, in the drainage area of the Someșul Mic.

Hucho hucho (Linnaeus, 1758).

Lostrîța, Galóca; Huchen; Donaulachs.

This species obviously was once present in the Someș rivers but became extinct long ago (it is not mentioned by Bielz in 1853). It has successfully been introduced in the lake Tarnița on the river Someșul Cald. It was not found in the Hungarian section of the river, but rarely occur at its confluence with the Tisza, therefore its occurrence in the Szamos might be expected (Harka, 1997).

Coregonus sp.

A cisco species was introduced in lake Tarnița; this could not be determined, specimen having not been available.

Thymallus thymallus (Linnaeus, 1758).

Lipan; Péntes pér; Grayling; Aesche.

During the 1960s the grayling was distributed in the river Someșul Mare from Rodna Veche to Feldru and in the lower reaches of the tributaries Anieș and Cormaia; in the Someșul Cald from Beliș to the confluence with the Someșul Rece and in the later river from Răcătău to the confluence. Downstream of the confluence of these two rivers, i. e. in the Someșul Mic, it occurred until Gilău or even Florești, exceptionally to Cluj (Bănărescu and Müller, 1960; Bănărescu, 1964). In the meantime the species has extended its range to the Someșul Mare with more than 10 km upstream, having been found in 1996 above the village Șanț, close to the confluence with the tributary Valea Mariei. The species has been found in 1992 at Rodna Veche. It is doubtful whether it still occurs downstream Feldru, as formerly.

In the Someșul Cald the species ranges now from Ic-Ponor to Beliș, being absent downstream this locality and from the lakes. In the Someșul Rece it lives now only upstream of Răcătău and in the damlake „Izvorul Băii“. The population from the two components of the Someșul Mic are no more in contact.

Hence the grayling has extended its range upstream and has withdrawn from a part of its range in all rivers.

Fam. Umbridae

Umbra krameri (Walbaum, 1792).

Țigănuș; Lăpi póc; Mudminnow; Hundfisch.

A typical inhabitant of standing water and slowly following lowland rivulets, present in the Hungarian section of the Szamos (Someș) river. From the backwater of the Szamos this species was mentioned first by Vásárhelyi (1960), and in 1991 some individuals were collected there again (Harka, 1995).

Fam. Esocidae

Esox lucius Linnaeus, 1758.

Știuca; Csuka; Pike; Hecht.

Earlier the pike has been recorded in the river Someșul Mic at Cluj where it was not present in the 1940s (Jászfalusi, 1943). During the 1960s it inhabited this river downstream of Gherla, also the Someșul Mare downstream of Beclean and the entire Romanian section of the united Someș as well as most ponds, oxbows and shallow lakes in the drainage area of the river Someș. It is probably became extinct from the main channel of the Someșul Mic, but survives in the other parts of its former range, being more frequent in ponds and shallow lakes: Zaul-de-Câmpie, Geaca, Țaga, Tăureni, Sic, Sântejude, Săcălia („lacul cu știuci / The Lake with Pikes“). In the Hungarian section of the Szamos it lives in medium number, but in the backwater at Tunyogmatolcs it is frequent (Harka, 1995).

Fam. Anguillidae

Anguilla anguilla (Linnaeus, 1758).

Anghila; Angolna; Eel; Aal.

The specimen of eel ascend occasionally from the Tisza in the Hungarian section of the Szamos river (Harka, 1997), but till now the species has not been recorded in the Romanian section. The eel cannot be considered to be native, since most individuals have been introduced, as young, from Western Europe in the German section of the Danube from where they dispersed in various directions.

Fam. Ciprinidae

Rutilus rutilus (Linnaeus, 1758)

Babușca; Bodorka; Roach; Plötze.

It was recorded by earlier authors from the River Someșul Mic near Cluj, where this species was not present during the early 1940s (Jászfalusi, 1943) and also now it is absent; reported by Herman (1887) and Vutskits (1918) from the ponds Zaul-de-Câmpie and Geaca in the drainage area of the same river, in which the species is presently absent (Bănărescu & Müller, 1960), however being present in the ponds Tăureni and Țaga (Müller, 1956). It is probably absent from the Someșul Mare. It was recorded by Bănărescu (1964) from the “united” Someș downstream Dej but there is no evidence of its occurrence upstream Sălsig. In the 1992 and 1996 trips it was collected at Sălsig and

Pomi (in 1992), and it also was present throughout the Hungarian section of the river. In Hungary it is frequent only in the backwaters, but it is rare in the river (Harka, 1995).

The validity of the subspecies *R. rutilus carpathorossicus*, to which all populations from Danube basin were ascribed, is no more accepted (Holik and Skorepa, 1971).

Rutilus pigus (Lacépède, 1804)

Babușca de Tur; Leánykoncér; - ; Frauennerflig.

It is not reported from the River Someș/Szamos yet, neither in Romania nor in Hungary, but it is present in the river Tisza at the confluence with the Szamos (Harka, 1997). It may occasionally ascent the latter river.

Chondrostoma nasus (Linnaeus, 1758)

Scobar, Poduț; Paduc; Nose; Nase.

Formerly (during the 1950s to 1970s) the nose was the most abundant fish species in the Someșul Mare from Ilva Mică and in the Someșul Mic downstream Gilău; also in the united Someș river, being the most abundant species down to the confluence with the river Lăpuș and present also between this confluence and the Hungarian border. Specimen from these localities are present in the collections. It is still present in the same sections, but extinct in the polluted section of the Someșul Mic downstream Cluj and in the Someșul Mare at Cășei. It was collected during the 1992 and 1996 trips in the Someșul Mic at Cluj, in the Someșul Mare at Dej and in all localities on the “united” Someș downstream Someș-Odorhei. It is also present and frequent in the Hungarian section of the Szamos river excepting the backwater at Tunyogmatolcs (Harka, 1995).

Leuciscus cephalus (Linnaeus, 1758)

Clean; Domolykó; Chub; Döbel.

It was recorded earlier from the lower sections of the rivers Someșul Cald and Someșul Rece and the whole reach of the Someșul Mic down to their confluence, from its tributaries (Căpuș, Luna, Gârbău, Nadăș, Gădălin) and from the Someșul Mare downstream of Sângiorz-Băi (Jászfalusi, 1943; Bănărescu & Müller, 1960; Bănărescu 1964). Unlike most others, this species favoured the hydrotechnical constructions and it retained its range (being absent only from the strongly polluted section of the river Someșul Mic downstream of Gherla). It has even extended its range in both components of the river Someșul Mic upstream, having colonised the lakes Tarnița and Beliș on the Someșul Cald, ascending occasionally the river as far upstream as Ic-Ponor. (information from competent local people, 1997). It was collected in 1992 in the Someșul Rece upstream of Gilău, in 1996 in lake Tarnița, in both years at Cluj-Mănăstur, then in the river Someșul Mare at Salva, Piatra, Beclean, Dej, in the “united” Someș at Cășei (in moderately polluted water), Someș-Odorhei, Țicău, Sălsig, Pomi and Vetiș. It is present and frequent throughout the Hungarian section of the river Szamos, but it is rare in backwaters (Harka, 1995).

Leuciscus leuciscus (Linnaeus, 1758)

Clean mic; Nyúldomolykó; Dace; Hasel

It was reported by Jászfalusi (1943), Bănărescu and Müller (1960) and Bănărescu (1964) from the river Someșul Mic between Florești and Gherla and its tributary Valea

Someșenilor. During the 1940s and early 1950s it was rather frequent in this river, but now it seems to have become totally extinct because it was not found in 1992 and 1996. However according to some information it may be present in lake Tarnița on the river Someșul Cald. It was never recorded from the Someșul Mare (it was however probably once present in this river, too) and from the “united” Someș/Szamos in either Romania or Hungary.

Leuciscus idus (Linnaeus, 1758)

Văduvița; Jászkeszeg, Ónosjász; Ide, orfe; Aland, Nerfling.

It was vaguely reported from the River Someș/Szamos by Bielz (1888) and Vutskits (1918) without specification of locality and recorded by Bănărescu (1964) from the Romanian section of the Someș between the confluence with the tributary Lăpuș and Satu Mare, but only on the base of information from local people. It was not found during the 1992 and 1996 trips. The species is recorded from the Hungarian section of the River Szamos, but only one specimen was collected at Tunyogmatolcs (Harka, 1995).

Scardinius erythrophthalmus (Linnaeus, 1758)

Roșioara; Vörösszárnnyú keszeg; Bodorka; Rudd; Rotfeder

It is present in the shallow lakes and ponds in the drainage area of the River Someșul Mic at Sic, Geaca, Țaga, Zaul-de-Câmpie and Tăureni (Müller, 1956). Once it was collected in the Someșul Mare at Beclean (Bănărescu, 1954), but being an inhabitant of standing waters, it occurs only occasionally in rivers. It was not collected during the 1992 and 1996 trips. It was recorded from the Hungarian reach of the Szamos, but only from backwaters where it is a rare species (Harka, 1995).

Alburnus alburnus (Linnaeus, 1758)

Obleț; Kűsz; Bleak; Ukelei

It was recorded in the river Someșul Mic downstream of Gilău and in its tributaries (Nadăș and Căpuș), in the Someșul Mare downstream of Beclean and in the entire Romanian section of the “united” Someș (Jászfalusi, 1943; Bănărescu and Müller, 1960; Bănărescu, 1964). It has not been collected during the 1992 and 1996 trips in the River Someșul Mic but it has been found in the Someșul Mare at Dej and in the “united” Someș in all sites downstream of Cășei. It is very frequent throughout the Hungarian section of the Szamos, just like in backwaters (Harka, 1995). According to information from anglers, this species is present in the pond Chinteni (drainage area of the Someșul Mic), probably in the other ponds and shallow lakes in the same drainage area, however being absent from the lake Tarnița, where other lowland species are present.

Alburnoides bipunctatus (Bloch, 1782)

Latîța, Beldița; Sujtásos kűsz; - ; Schneider

It was recorded from the lower reaches of both components of the river Someșul Mic (Someșul Cald and Someșul Rece) and from the entire section of this river, downwards to its confluence; also from the tributaries (Căpuș, Luna, Gârbău, Nadăș and Gădălin); from the Someșul Mare from upstream of Feldru to its confluence at Dej and from most of the Romanian section of the united Someș, downstream almost to Satu Mare

(Jászfalusi, 1943; Bănărescu and Müller, 1960; Bănărescu, 1964). It was found in 1992 in the lower reaches of the Someșul Rece and in the Someșul Mic at Cluj; became extinct downstream of this town. In 1992 and 1996 it was found in the river Someșul Mare at Sângiorz (and in the tributary Ilva), at Salva, Piatra, Beclean and Dej. It was absent from the polluted section of the united Someș at Căței, but it was present downstream, at Letca, Someș-Odorhei, Țicău, Sălsig and Pomi and absent downstream (at Păulești and Vetiș) and from the Hungarian section of the river (Harka, 1997).

Blicca bjoerkna (Linnaeus, 1758)

Batca; Karikakeszeg; White bream; Güster

The species has been vaguely recorded from the Romanian stretch of the Someș/Szamos river at Satu-Mare (Bănărescu, 1964), however this species has not been found in Romania during the 1992 and 1996 trips. In Hungary it is present in medium number both in the river and in its backwater (Harka, 1995).

Abramis brama (Linnaeus, 1758)

Plătica; Dévérkeszeg; Bream; Common bream; Brachsen; Blei

Formerly it was present in the River Someșul Mic at Gherla and downstream, now it became extinct and present in the ponds and shallow lakes in the drainage area of the river at Geaca, Țaga, Sântejude, Tăureni and Zaul-de-Câmpie (Herman, 1887; Bielz, 1888; Bănărescu and Müller, 1960). According to information from the association of anglers in Cluj, the species lives in these ponds. It is absent from the Someșul Mare, but (after information from competent people) it inhabits the entire Romanian stretch of the united Someș, even the polluted section downstream of Dej and Căței. It has not been collected in 1992 and 1996. It is present in medium number in the Hungarian stretch, and it is frequent in the backwater at Tunyogmatolcs (Harka, 1995).

Abramis sapa (Pallas, 1811)

Cosac-cârñ; Bagolykeszeg; White-eyed bream; Zobel

This species has not been recorded earlier from the Romanian stretch of the rivers. It was collected only in 1992 from in the “united” Someș at Sălsig, Pomi, Păulești and Vetiș. It is present in the Hungarian stretch, being the most frequent *Abramis* species, but it was not found in the backwater at Tunyogmatolcs (Harka, 1995).

Abramis ballerus (Linnaeus, 1758)

Cosac-cu-bot ascuțit; Laposkeszeg; Pointed-snout bream; Zope

This species has not been recorded from the Romanian reach of the River Someș/Szamos (where it may occasionally ascend in some years) and was not collected either in 1992 and 1996. It has been found in the Hungarian stretch, but only in very low number. One specimen was caught in the backwater at Tunyogmatolcs (Harka, 1995).

Vimba vimba (Linnaeus, 1758)

Morunaș; Évakeszeg; Szilvaorrú keszeg; Vimba-bream; Zahrté, Russnase

The species is a rather recent intruder in the Transylvanian reach of the Someș river, having not been mentioned by Bielz (1853, 1888) and Herman (1887). It was identified in 1948 (specimen from the united Someș at Ileanda, in the fish-marked of Cluj), than

by Pojoga (1965) in the Someșul Mic at Gherla but it became extinct from this river. In addition it was collected in the “united” Someș at Jibou in 1983 and during the 1992 and 1996 trips in all localities between Someș-Odorhei and Vetiș. It also inhabits the Hungarian reach of Szamos being frequent at Csenger and present in medium number downstream (Harka, 1995).

Pelecus cultratus (Linnaeus, 1758)

Săbița; Garda; -; Ziege

It was never recorded or found in the Romanian reach of the River Someș/Szamos, but occasionally some specimen ascend from the Tisza in its lower reaches in Hungary. In 1993 one specimen was collected at Olcsvaapáti (Harka, 1995).

Aspius aspius (Linnaeus, 1758)

Avat; Ragadozó őn; Balin; -; Rapfen

It was recorded in the Romanian reach of the “united” Someș from downstream Dej. This species was found in 1992 and 1996 also in the Someșul Mare on a short distance upstream of Dej; in the “united” Someș (Romanian reach) it has been collected only at Pomi, Păulești and Vetiș but is evidently present on the entire stretch between Jibou and Pomi, possibly in smaller number. It is also present in the Hungarian reach and in the backwater at Tunyogmatolcs in medium number (Harka, 1995).

Leucaspis delineatus (Heckel, 1843)

Fufa; Kurta baing; -; Moderlieschen

This species is mainly an inhabitant of standing waters. In the Romanian area of the Someș basin there are earlier records only from the confluence of the river Lăpuș with the Someș and from lake Geaca but surely it is more widely distributed in ponds and shallow lakes. In Hungary it has big populations in newly established shallow lakes and in channels with stagnant water, but some individuals were found in rivers of various measurement, even from their fast flowing reaches (Györe, Sallai, Csikai, 1995 Harka, Györe, Sallai, Wilhelm, 1998). In the Hungarian section of the Szamos it was not recorded earlier, the first individuals were collected in 1994 at Tunyogmatolcs (Harka, 1995).

Phoxinus phoxinus (Linnaeus, 1758)

Boiștean; Furge cselle; Minnow; Elritze

It inhabits mainly mountain brooks and rivers. It was recorded from the upper reaches of the components and tributary of the river Someșul Mic downstream to Gherla and in the Someșul Mare to below Năsăud. It was found during the 1992 and 1996 expeditions in the Someșul Cald at Ic-Ponor and in the lake Tarnița, in the Someșul Rece at Răcățău and Gilău, in the Someșul Mic at Cluj-Mănăstur. This species became extinct downstream of Cluj but has continuous distribution upstream this town. In the Someșul Mare it has been collected at Sângiorz-Băi, Salva, Piatra and the tributary Ilva and it is absent at Beclean and downstream as well as in the united Someș.

Hypophthalmichthys (s.str.) molitrix (Valenciennes, 1844)

Sângier; Fehér busa; Silver carp; Silberkarpfen

Hypophthalmichthys (Aristichthyes) nobilis (Richardson, 1845)

Novac; Pettyes busa; Bighead carp; Marmorkarpfen

These two species are of East Asian origin and cultivated in fish farms in Romania and Hungary as well. They occasionally escape in natural waters and some specimen were found in the River Szamos in Hungary (Harka, 1997).

Rhodeus sericeus amarus (Bloch, 1782)

Boarța; Szivárványos ökle; Bitterling; Bitterling

It was recorded by earlier authors in the river Someșul Mic at Cluj where the species is no more present since the 1940s (Jászfalusi, 1943; Bănărescu and Müller, 1960). During the late 1940s it was present in this river downstream of Gherla (Bănărescu and Müller, 1960), where this species was not found in 1992 and 1996, but may still survive. It was recorded from the Someșul Mare at Beclean and downstream and in the shallow lakes Zaul-de-Câmpie, Țaga and Tăureni in the drainage area of the Someșul Mic (Bănărescu and Müller, 1960; Bănărescu, 1964). This species was found in 1992 and 1996 in the Someșul Mare at Beclean and downstream and in the Romanian stretch of the “united” Someș/Szamos at Someș-Odorhei, Sălsig, Țicău, Pomi, Păulești and Vetis, but nowhere in great quantities. In the Hungarian reach of the river it was rather rare in 1993 and in 1994, since only three individuals was caught (one at Csenger, two at Olcsvaapáti), the result being very poor in comparison with other similar rivers. The reason for this is probably that the heavy water pollutions occurred previously exterminated the shells indispensable for the reproduction of this ostracophil species. At the same time about 500 individuals were collected from the backwater at Tunyogmatolcs, where the shells are abundant (Harka, 1995).

Pseudorasbora parva (Schlegel, 1842)

Murgoi-bălțat; Razbóra; Pseudokeilfleckbarbe; Blaubandbarbling

This small-sized fish of East Asian origin is now widely distributed in Romania, Hungary and most other European countries, being abundant mainly in small lowland rivers. It is rare in the Someș/Szamos river and its two components in Romania, since no specimen have been found during the 1992 and 1996 expeditions, but specimen were collected in the lake Tarnița on the River Someșul Cald, at a rather high altitude; possibly the species has been introduced there by anglers. *P. parva* is present in low number in the Hungarian reach of the River Szamos, but it can be found in medium number in the backwater (Harka, 1995).

Gobio gobio (Linnaeus, 1758)

Porcușor comun; Fenékjáró küllő; Common gudgeon; Gemeiner Gründling

The species was recorded earlier in the River Someșul Mare from upstream of Nepos to its confluence, in the Someșul Mic from upstream of Gilău (i.e. also in the lower stretch of its both components) and in the tributaries and in the entire Romanian stretch of the “united” Someș. The species has extended its range upstream in both components of the Someșul Mic, Someșul Rece and Someșul Cald, in the later as far as the lake Tarnița. It was collected in 1992 in the River Someșul Rece, in 1996 in the lake Tarnița and at Cluj-Mănăstur, being absent in the strongly polluted stretch downstream of Cluj,

but present again in the less polluted section downstream of Gherla. It has also been found in the river Someșul Mare at Salva, Piatra, Beclean and Dej and in the united Someș between Cășei (near Dej) and Vetiş (Hungarian frontier), becoming gradually more rare downstream. It is rare in the Hungarian reach of the river, being found only at Tunyogmatolcs, where it is present also in the backwater (Harka, 1995). In the Hungarian rivers this species became rare in the last two decades, being replaced by a relative species (*Gobio albipinnatus*), especially in the Great Hungarian Plain (Harka, 1996).

Gobio uranoscopus frici Vladykov, 1925

Porcușor-de-vas; Felpillantó küllő; Stone-gudgeon; Streingressling

This species was vaguely recorded from the Someșul Mare (Nagy Szamos) at Beclean (Vutskits, 1918). The first sure document about its occurrence in this river is the finding of a specimen at Năsăud by T. Ceuca in 1946 (Bănărescu, 1954). Later it was recorded in the same river at Nepos and Beclean. In 1992 and 1996 it was found at Salva, Piatra and Beclean. It was not mentioned in the monograph of Jászfalusi (1943) of the fishes of the Someșul Mic, but it was found in this river upstream from Cluj in 1955 and 1992 at Cluj-Mănăștur. It is absent from the lower stretch of the Someșul Mare and from the entire Romanian and Hungarian reach of the “united” Someș/Szamos (Harka, 1997).

Gobio (Romanogobio) albipinnatus vladykovi Fang, 1943

Porcușor-de-șes; Halványfoltú küllő; Whitefin gudgeon; Weisflossen Gründling

This species was found in the River Someș at Satu Mare. During the 1940s to the early 1950s it was absent or rare in the middle reaches of the “united” Someș and in the lower section of the Someșul Mare. It ascended later upstream, having been found in 1983 in the Someșul Mare at Dej and in 1992 and 1996 in the same locality and in the entire Romanian reach of the “united” Someș, being abundant at Letca, rare at Someș-Odorhei and again abundant further downstream. It is very abundant in the Hungarian reach of the River Szamos, and not rare in the backwater at Tunyogmatolcs (Harka, 1995).

Gobio kessleri Dybowski, 1862

Porcușor-de-nisip; Homoki küllő; Sand-gudgeon; Sandgressling

This species has been found within the drainage area of the River Someș first from the Someșul Mare at Dej in 1948, having been later recorded from the entire stretch of the “united” Someș in Romania. It was found during the 1992 and 1996 trips in the Someșul Mare at Dej and in all sites on the “united” Someș downstream from Cășei, being very abundant at Someș-Odorhei and becoming gradually more rare downstream. In the Hungarian section it was found at Csenger, Rápolt and Olcsvaapáti, but only in low number (Harka, 1995). It has never been recorded from the Someșul Mic and now is surely absent from this river.

Tinca tinca (Linnaeus, 1758)

Lin; Compó; Tench; Schleie

The tench is a typical inhabitant of standing waters, being only exceptionally present in rivers. It was reported from the shallow lakes Zaul-de-Câmpie, Țaga, Geaca, Bujorul in the drainage area of the river Someșul Mic (Bănărescu and Müller, 1960; Bănărescu, 1964). There are no recent information concerning its occurrence and abundance in this lakes. The species has not been found during the 1992 and 1996 expeditions. It was recorded in the Hungarian reach of the River Szamos, in the backwater at Tunyogmatolcs (Harka, 1995).

Ctenopharyngodon idella (Valenciennes, 1843)

Cosaș; Amur; Grasscarp; Grasskarpfen

An East Asian species, cultivated in fishery farms and occasionally it is found in natural waters. It is rare in the Hungarian reach of the Szamos, but is frequent in the backwater at Tunyogmatolcs (Harka, 1995).

Barbus barbus (Linnaeus, 1758)

Mreana; Márna; Barbel; Barbe

It was recorded in the River Someșul Mic from Gilău to Dej, in Someșul Mare from Nepos to Dej and throughout the Romanian stretch of the united Someș river (Jászfalusi, 1943; Bănărescu & Müller, 1960; Bănărescu, 1964). The species has not been found in 1992 and 1996 in the Someșul Mic, but it probably lives upstream of Cluj. It was found in the Someșul Mare at Beclean and Dej throughout the Romanian stretch of the united Someș. It is frequent in the whole stretch of the Szamos in Hungary, being caught in the greatest number at Csenger. Rarely some specimen coming from the river can occur in the backwater at Tunyogmatolcs (Harka, 1995).

Barbus peloponnesius petenyi Heckel, 1847

Moioaga, Mreana vânătă; Magyar márna, Petényi-márna; Balcanic Barbe; Semling, Afterbarbe

It was recorded from the lower reaches of the rivers Someșul Cald and Someșul Rece, from the Someșul Mic between Gilău and Apahida and its tributaries (Căpuș, Gârbău, Nadăș), from the Someșul mare from upstream of Rodna-Veche to Beclean, in small number also at Dej, sporadically also in the "united" Someș (Jászfalusi, 1943; Bănărescu & Müller, 1960; Bănărescu, 1964). It has extended its range in the river Someșul Cald far upstream, but became extinct in the Someșul Mic downstream of Cluj. It was found in 1992 and 1996 in the River Someșul Cald at Ic-Ponor and in the lake Tarnița (here in great number), in the lower reach of the Someșul Rece, in the Someșul Mic at Cluj-Mănăstur, in the Someșul Mare at Salva, Piatra, Beclean and Dej and in the tributary Ilva and in the "united" Someș at Someș-Odorhei, in 1992 and 1996. It is missing from the Hungarian reach of the river (Harka, 1997).

Cyprinus carpio Linnaeus, 1758

Crap; Ponty; Carp; Karpfen

The carp inhabits mainly standing waters and the deeper sections of lowland rivers. It was reported from the River Someșul Mic at Apahida and downstream, from the entire Romanian stretch of the “united” Someș and from all ponds and shallow lakes in the drainage area of the Someșul Mic. It became extinct from the main channel of the Someșul Mic which is polluted. It is present in the ponds and lakes of Țaga, Geaca, Tăureni, Chinteni, Sic and Bujor. It is absent from the main channel of the Someșul Mare, but, according to oral information, it is present in the entire Romanian reach of the united Someș. Fishes were collected in 1992 and 1996. It also inhabits the Hungarian reach of the Szamos and it is frequent in the backwater at Tunyogmatolcs (Harka, 1995).

Carassius carassius (Linnaeus, 1758)

Caracuda; Kárász; Crucian carp; Karausche

The crucian carp is an almost exclusive inhabitant of standing waters. Formerly it was widely distributed in all ponds and shallow lakes throughout the drainage area of the Someș/Szamos, but since the 1950s it underwent a strong numerical decline in the entire basin of the middle and lower Danube basin. According to information from the Anglers Association of Cluj, it is still present, in small number, in the shallow lake Săcălaia („Lacul stiucilor“) and in small ponds close to the River Someșul Mic at Florești and Cluj. In Hungary, at the end of the 1980s fishermen caught some specimen from the backwater of Tunyogmatolcs, but it was not found in the last few years (Harka, 1995). Because of this drastic decrease, which is caused by the overpopulation of the concurrent *Carassius auratus*, this species would be protected.

Carassius auratus gibelio (Bloch, 1783)

Caras; Ezüstkárász; German carp; Giebel

This is an exotic species of eastern Asian origin, which was introduced with fry of carp in the drainage area of the Someș/Szamos river during the early 1950s and has replaces everywhere the native crucian carp. It is present in all lakes and ponds in the catchment area of the Someș and in the lower reach of this river, both in Romania and in Hungary.

Family Cobitidae

Orthrias barbatulus (Linnaeus, 1758)

Molan, Grindel; Kövicsik; Stoneloach; Schmerle

It was recorded in the lower reaches of the rivers Someșul Rece and Someșul Cald, from the Someșul Mic downstream Apahida, from its tributaries Căpuș, Gârbău, Luna, Nadăș and Valea Chintăului and from the Someșul Mare, from upstream of Sângiorz to Dej (Jászfalusi, 1943; Bănărescu and Müller, 1960; Bănărescu, 1964). Single isolated individuals have also been collected in the “united” Someș at Apa and Bușag. In 1992 and 1996 it has been collected in the rivers Someșul Cald between Ic-Ponor and Doda Pili, Someșul Rece (lower reach), Someșul Mic at Cluj-Mănăstur (being extinct farther downstream), Someșul Mare at Rodna Veche, Sângiorz, Salva, Piatra; one specimen was found in the “united” Someș at Sălsig.

Misgurnus fossilis (Linnaeus, 1758)

Țipar; Réticsík; Mud loach; Schlampeitzger

This species lives almost exclusively in standing waters. It was earlier recorded in the river Someșul Mic at Cluj, where it was not present even in the early 1940s (Jászfalusi, 1943). Later it was recorded in ponds at Someșeni and in an oxbow of the River Someșul Mic at Apahida and vaguely, in ponds within the drainage area of the “united” Someș downstream of Ulmeni-Sălaj (Bănărescu and Müller, 1960; Bănărescu, 1964). There are no recent data about its occurrence in the Romanian section of the Someș. According to information, it has been present in ponds at Săcălaia („Lacul cu știuci”) and Chinteni where it became extinct. There are no recent data about its occurrence (or extinction) in the Romanian area of the “united” Someș drainage area. It is recorded from the Hungarian stretch of the Szamos river. In the autumn 1991 some individuals were caught by fishermen from a backwater of the river at Ökörítőfülpösnél (Harka, 1995).

Sabanejewia aurata (Filippi, 1865).

Câra; Törpecsík; Balcan spined loach; Balkan Steinbeisser.

It was recorded in the River Someșul Mare from Nepos to Dej, in the lower reaches of the rivers Someșul Cald and Someșul Rece, in the Someșul Mic from Gilău to Dej and its tributaries Căpuș and Gârbău and in the entire Romanian stretch of the “united” Someș from downstream Dej and in the tributary Lăpuș at its confluence (Bănărescu and Müller, 1960; Bănărescu, 1964). It became extinct from the Someșul Mic downstream of Cluj, has no more been found in the lower reaches of the Someșul Cald and Someșul Rece. It was found, in 1992 and 1996 in the river Someșul Mic at Cluj-Mănăştur, in the Someșul Mare at Sângiorz-Băi, Salva, Piatra, Beclean and Dej, in the “united” Someș at Letca, Someș-Odorhei, Sălsig, Pomi, Păulești and Vetiș, and in Hungary, at the confluence of the Szamos river with the Tisza. This species is also recorded in the whole Hungarian stretch of the Szamos, being present in relatively great number at Csenger and Kérsemjén (Harka, 1995). The populations of the Someșul Mare, Someșul Mic and the “united” Someș upstream of Pomi are typical *S. aurata balcanica* Karaman, 1922, those from Pomi, Păulești and Vetiș (and surely those from the Hungarian reach, too) are intergrades between the subspecies *balcanica* and *bulgarica*, while those from the Tisza at the confluence with the Szamos can be considered as typical *S. aurata bulgarica* (Drensky, 1928).

Cobitis taenia danubialis Băcescu, 1993.

Zvârluga; Vágócsík; Spined loach; Steinbeisser.

The Spined loach has been recorded in the river Someșul Mic at Cluj and downstream to the confluence with the Someșul Mare, in the tributaries Nadăș and Gădălin and in the nearby ponds and in the “united” Someș from Apa (confluence with the river Lăpuș) to the Hungarian border (Jászfalusi, 1943; Bănărescu and Müller, 1960, Bănărescu, 1964). This species has been found during the 1992 and 1996 expeditions in the river Someșul Mic at Cluj-Mănăştur, being absent in the strongly polluted stretch downstream of the town, but present again in the polluted stretch downstream of Gherla (and probably farther downstream, too) and in the united Someș only at Pomi. It

probably occurs also at Păulești and Vetîș but in small numbers. It is also present in the Hungarian reach of the Szamos, and in the backwater at Tunyogmatolcs (Harka, 1995), but seems to be absent from the Someșul Mare.

Fam. Siluridae

Silurus glanis Linnaeus, 1758

Somn; Harcsa; Wels; Wels.

There are earlier records of the wels in the River Someșul Mic near its confluence, where it may have become extinct. In the Someșul Mare it was present until the 1950s only at Beclean and downstream it was absent at Năsăud, where the Romanian vernacular name “*somn*” was used for *Lota lota*. It ascended later also at Năsăud (information from Prof. T. Ceuca). It has been found in 1996 in the Someșul Mare at Beclean and in 1992 in the “united” Someș at Sălsig. It is present in the Hungarian reach of the Szamos in medium number and occur in the bakwater at Tunyogmatolcs (Harka, 1995).

Fam. Ictaluridae

Ictalurus nebulosus (Le Sueur, 1818).

Somn pitic, Somn american; Törpeharcsa; Brown bullhead, Catfish; Zwergwels.

An introduced North American species, vaguely recorded in the Romanian stretch of the River Someș/Szamos and in adjacent ponds from Dej to Satu Mare (Bănărescu, 1964). Vászárhelyi (1960) mentioned this species to be frequent in the Hungarian reaches of the river, but more recently it was found only at Olcsvaapáti in 1992 (Harka, 1995). It was also found in 1996 in a channel connected with the river at Pomi.

Fam. Gadidae

Lota lota (Linnaeus, 1758)

Mihalt; Menyhal; Burbot; Quappe.

It was recorded earlier in the Someșul Mic at Cluj where it was not present during the 1940s (Jászfalusi, 1943). It was also recorded in the Someșul Mare at Năsăud and downstream and throughout the Romanian reach of the River Someș/Szamos (Bănărescu, 1964). It is also present in the Hungarian reach (Harka, 1995), but it was not found in 1992 and 1996.

Fam. Cottidae

Cottus gobio Linnaeus, 1758.

Zglăvoc; Botos kölönte; Bullhead, Sculpin; Groppe.

It was recorded from the rivers Someșul Cald and Someșul Rece downstream of their confluence, from the Someșul Mic downstream to Florești and from the Someșul Mare between Șant and Nepos, reaching exceptionally downstream to Năsăud (Bănărescu and Müller 1960, Bănărescu, 1964). It was found in 1992, 1996 and 1997 in the River Someșul Cald at Ic Ponor and Doda Pili, in the Someșul Rece at Blăjoaia and Răcătău, in the Someșul Mare from the headwaters to Sângiorz and in its tributaries (Valea Măriei, Ilva and Anieș).

Fam. Centrarchidae

Lepomis gibbosus (Linnaeus, 1758)

Biban-soare; Naphal; Sunfish, Pumpkinseed; Sonnenbarsch.

This is an introduced North American species and it was not recorded earlier from the drainage area of the River Someș in Romania. A few specimen were found in 1996 in a channel connected with the Someș at Pomi. The species is present in the Hungarian reach of the Szamos river, three individuals were collected at Tunyogmatolcs (Harka, 1995).

Fam. Percidae

Perca fluviatilis Linnaeus, 1758

Biban; Sügér; Perch; Barsch.

The perch has been recorded from the ponds and lakes of Apahida, Sic, Geaca, Țaga, Zaul-de-Câmpie, Tăureni and Bujor in the drainage area of the river Someșul Mic, in the same river downstream of Apahida and also in the Romanian reach of the “united” Someș and adjacent ponds (Bănărescu, 1964). It has extended its range far upstream, especially in the Someșul Mic and Someșul Cald. It has been found in 1996 in the river Someșul Mic at Cluj and in the lake Tarnița on the Someșul Cald. It was not found in the River Someșul Mare (according to oral information it is present as far upstream as Năsăud) and in the “united” Someș (it is present, but rare). It also lives in the Hungarian reach, being frequent in the backwater at Tunyogmatolcs, but more rare in the river (Harka, 1995).

Gymnocephalus cernuus (Linnaeus, 1758)

Ghiborț; Vágódurbincs; Ruffe; Kaulbarsch.

It was recorded by Bielz (1888) from the River Someș in historical Transylvania (i.e. upstream of the confluence with the River Lăpuș) without other indication. According to information from competent people, the species is present in the shallow lake Săcălia („Lacul cu știuci“), in the drainage area of the Someșul Mic, probably in other standing waters of the same drainage, too. A specimen has been seen in a pond near Cluj by M. Ciobanu. This species has not been collected in the main channel of the Someșul Mare or of the “united” Someș in 1992 and 1996, since it inhabits mainly standing waters. It lives in the Hungarian reach of River Szamos (Harka, 1997).

Gymnocephalus baloni Holik et Hensel, 1974

Ghiborț-de-râu; Széles durbincs; Balon's ruffe; Flusskaulbarsch.

This species has been confounded until recently with *G. cernuus*, with which it shares much similarity and is probably closely related, but differs biologically, being an inhabitant of lowland rivers, like *G. schraetser*. It is surely present in the lower part of the Romanian reach of River Someș/Szamos, but it has not been found there yet. It is present in the Hungarian reach, one specimen was collected at Olcsvaapáti in 1994 (Harka, 1995).

Gymnocephalus schraetser (Linnaeus, 1758)

Răspâr; Selymes durbincs; Yellow pope; Schraetser.

The species was recorded from the lower Romanian stretch of the River Someș/Szamos (Bănărescu, 1964) where it lives (information from competent people). It was not found in 1992 and 1996. It is present in the Hungarian reach, being frequent everywhere excepting the backwater at Tunyogmatolcs, where it was missing (Harka, 1995).

Stizostedion lucioperca (Linnaeus, 1758)

Șalău; Süllő; Pikeperch; Zander, Schill.

It was reported from the shallow lake Țaga in the drainage area of the river Someșul Mic and from the lower part of the Romanian stretch of the Someș near Satu Mare (Bănărescu, 1964). It is present also in the shallow lake Chinteni, being in the drainage area of the Someșul Mic. Numerous specimen have been seen by fishermen in the “united” Someș at Pomi and downstream in 1992. The species is present in the Hungarian reach of the River Szamos, being frequent in the river, but rarer in the backwater at Tunyogmatolcs (Harka, 1995).

Stizostedion volgense (Gmelin, 1788).

Șalău-vărgat; Kösüllő; - ; Wolgazander.

The species has never been recorded or found in the Romanian stretch of the River Someș and in other rivers of Romania, excepting the Danube. It was found in the Hungarian stretch of the River Szamos (Harka, 1997).

Zingel streber (Siebold, 1863)

Fusar, Fusar mic; Német bucó; - ; Streber.

The species has been recorded once in the River Someșul Mic downstream of Cluj (Nemeș, 1961) where it is now extinct. It has not been recorded from the Someșul Mare where it may occur. Bănărescu (1964) mentions its occurrence in the Romanian reach of the “united” Someș. Actually its specimen have been collected only at Satu Mare during the early 1960s, but not during the expeditions in 1992 and 1996. According to oral information, some species were rarely caught by anglers in the Hungarian reach of the river, but it was not found in 1993 and 1994. However it was collected in the Tisza upstream and downstream its confluence with the Szamos, therefore this species is almost surely occur in the lowest section of the (Harka, 1995).

Zingel zingel (Linnaeus, 1758)

Fusar-mare, Pietrar; Magyar bucó, Nagy bucó; - ; Zingel.

This species was recorded in the River Someșul Mic downstream of Cluj (Jászfalusi, 1943) where it is now extinct. It was also recorded in the Someșul Mare downstream of Beclean and in the Romanian stretch of the “united” Someș (Bănărescu and Müller, 1960; Bănărescu, 1964). However in scientific collections there are only specimen collected at Satu Mare in 1961. The species has not been found in 1992 and 1996. It may became totally extinct from the Romanian reach of the River Someș/Szamos. It is recorded in the Hungarian reach at Olcsvaapáti and at Tunyogmatolcs in 1993 and 1994 (Harka, 1995).

Summary

The total number of fish species present in the basin of the river Someș/Szamos is 62; 49 of them are native, 13 introduced (including *Anguila anguila* and *Hucho hucho*, which has been re-introduced). The 49 native species belong to the following biogeographic categories:

- endemic to the Danube basin: *Eudontomyzon danfordi*, *Rutilus pigus*, *Gymnocephalus schraetser*;
- centering in the Danube basin, also present in a few neighbouring basins (mainly the Nistru and the Vardar): *Umbra krameri*, *Gobio uranoscopus*, *G. kessleri*, *Barbus peloponnesius*, both *Zingel* species;
- true (primary) freshwater species present mainly or exclusively in the Ponto-Caspian or Aralo-Caspo-Pontic areas: *Abramis sapa*, *Gobio albipinnatus*, *Sabanejewia aurata*, *Gymnocephalus baloni*, *Stizostedion volgensis*;
- more widely distributed: 14 species are central European, 6 have wide European or West-Palearctic ranges, 10 are Euro-Siberian, 2 Palearctic and 3 are Holarctic in distribution.

The anthropogenic impact has strongly modified the fish fauna in the River Someșul Mic. The construction of lakes like Tarnița has enabled the upstream dispersal of many lowland species and determined a numerical decline of *Eudontomyzon danfordi* and *Thymallus thymallus* but has made possible the reintroductions of the formerly extinct *Hucho hucho*. The strong pollution of the river with industrial and urban wastes determined the almost total extinction of the fish fauna downstream of the town Cluj.

On the contrary the river Someșul Mare has been affected only slightly by the human activity. Life conditions remained good and the fish fauna is rich. Downstream the confluence of rivers the fish fauna is impoverished on a short reach (apparently less than 25 km.), but becomes quite rich further downstream, especially in the reach Someș-Odorhei - Benesat (the so-called „Benesat gorges“), where certain typical oxyphilic species - *Alburnoides bipunctatus*, *Barbus peloponnesius* and especially *Gobio kessleri* - are abundant.

A single species seems to have become extinct, namely *Leuciscus leuciscus* (formerly recorded only from the Someșul Mic). *Acipenser ruthenus* became extinct from the middle reach of the River Someș, but survives in the lower reach. Some species also underwent a numerical decline, such as *Eudontomyzon danfordi*, *Thymallus thymallus* (only in the Someșul Mic), *Chondrostoma nasus*, *Barbus barbus*, possibly *Gobio kessleri* and especially both *Zingel* species among inhabitants of running waters, and *Misgurnus fossilis*, *Tinca tinca* and especially *Carassius carassius* among stagnant waters inhabitants. The rheophilic and oxyphilic species retaining their abundance are *Salmo trutta fario*, *Phoxinus phoxinus*, *Alburnoides bipunctatus*, *Barbus peloponnesius*, *Orthrias barbatulus*, *Leuciscus cephalus* and *Gobio uranoscopus*, while *Alburnus alburnus*, *Aspius aspius*, *Gobio albipinnatus* and *Perca fluviatilis* became more abundant and partially extended their ranges, especially upstream.

In Table we proposed Red List of the Fish fauna of the R. Someș is shown.

Species	Someșul Mic	Someșul Mare	Someșul Unit	Observations
<i>Eudontomyzon danfordi</i>	V	V	-	
<i>Acipenser ruthenus</i>	-	-	R	
<i>Salmo trutta fario</i>	C	C	-	
<i>Thymallus thymallus</i>	V	RC	-	
<i>Esox lucius</i>	-	RC	RC	
<i>Umbra krameri</i>	-	-	V	
<i>Rutilus rutilus</i>	-	-	R	
<i>Leuciscus cephalus</i>	C	C	C	
<i>Leuciscus leuciscus</i>	Ex	-	?	not cited
<i>Leuciscus idus</i>	-	-	R	
<i>Aspius aspius</i>	-	C	C	
<i>Chondrostoma nasus</i>	R	C	C	
<i>Alburnus alburnus</i>	C	C	C	
<i>Alburnoides bipunctatus</i>	C	C	C	
<i>Blicca bjoerkna</i>	-	-	R	
<i>Abramis brama</i>	Ex	-	C	
<i>Abramis sapa</i>	-	-	RC	
<i>Abramis ballerus</i>	-	-	R	
<i>Vimba vimba</i>	Ex	C	RC	
<i>Phoxinus phoxinus</i>	C	C	-	
<i>Rhodeus sericeus</i>	?	C	C	not cited
<i>Gobio gobio</i>	C	C	RC	
<i>Gobio uranoscopus frici</i>	R	C	-	
<i>Gobio albipinnatus vladykovi</i>	-	RC	C	
<i>Gobio kessleri</i>	-	C	C	
<i>Barbus barbus</i>	RC	C	RC	
<i>Barbus peloponnesius petenyi</i>	C	C	R	
<i>Cyprinus carpio</i>	-	-	RC	
<i>Carassius carassius</i>	Ex?	-	R	
<i>Orthrias barbatulus</i>	C	C	R	
<i>Cobitis taenia danubialis</i>	R	R	C	
<i>Sabanejewia aurata balcanica</i>	C	C	C	
<i>Silurus glanis</i>	-	RC	RC	
<i>Lota lota</i>	-	Ex	R	
<i>Cottus gobio</i>	C	C	-	
<i>Perca fluviatilis</i>	C	RC	C	
<i>Gymnocephalus cernuus</i>	R	-	R	
<i>Gymnocephalus baloni</i>	-	-	R	
<i>Gymnocephalus schraetzer</i>	-	-	RC	
<i>Stizostedion lucioperca</i>	-	-	C	
<i>Stizostedion volgense</i>	-	-	R	
<i>Zingel streber</i>	Ex	-	V	
<i>Zingel zingel</i>	-	Ex	V	

Table 1. Recommended Red List

Ex: extinct; E: endangered; V: vulnerable; C: common; ?: uncertain

References

- Bănărescu, P., Müller, G. (1960): Peștii Ardealului și răspândirea lor (Die Fische Siebenbürgens und deren Verbreitung). -*St. Cer. Biol.*, Cluj, 10 (2): 335-366.
- Bănărescu, P. (1964) Pisces - Osteichthyes. -*Fauna R.P.R.*, 13, Ed. Acad., București.
- Bănărescu, P. (1969): Cyclostomata et Chondrichthyes. -*Fauna R.S.R.*, 12 (1), Ed. Acad., București.
- Benkő, J. (1778): Transylvania sive Magnus Transylvaniae Principatus. -Typya Jos. Nob. de Kurz.
- Bielz, E. A. (1853): Übersicht der lebenden Fische Siebenbürgens. - *Ver. u. Mitt. Siebenb. Ver. Naturwiss.*, 4:172-183.
- Bielz, E. A. (1856): Fauna der Wirbeltiere Siebenbürgens, eine systematische Aufzählung und Bescheibug der in Siebenbürgen vorkommenden Säugetiere, Vögel, Amphibien und Fische. -Hermannstadt (Sibiu).
- Bielz, E. A. (1888): Fauna der Wirbeltiere Siebenbürgens. - *Verh. u. Mitt. Siebenb. Ver. Naturwiss.*, 38: 15-120.
- Bogutskaya, N. G. (1990): Morphological Fundamentals in Classification of the Subfamily Leuciscinae (Cyprinidae), Communication I. (in Russian) -*Vopr. Ichthiol.*, 30 (3): 356-367.
- Bogutskaya, N. G. (1991): Limits and Morphological Features of the Cyprinid Subfamily Leuciscinae (Cyprinidae), (translated from Russian) -*Probl. Ikhtiol.*, 31 (6): 79-94.
- Chappuis, P. A. (1939): Über die Lebensweise von Eudontomyzon danfordi. - *Regan. Arch. f. Hydrobiol.*, 34: 645-658.
- Chappuis, P. A. (1940): Felul de viață al cicarului din apele noastre de munte (The Manner of Life of the Lamprey in our Mountain Waters). -*Carpații*, 3: 63-69.
- Fridvaldsky, J. (1767): Mineralogia Magni Principatus Transylvaniae. -*Typya Academicis Jesu Claudiopoli*.
- Györe, K., Sallai, Z., Csikai, Cs. (1995): A Tisza magyarországi felső szakaszának halfaunája (Fish Fauna of the Upper Tisza in Hungary) -*Halászat* 85: 144-148.
- Harka, Á. (1995): A Szamos halfaunája (Fish Fauna of the River Szamos) -*Halászat*, 88: 14-19.
- Harka, Á. (1996): A küllőfajok hazai elterjedése (Distribution of Gudgeon Species in Hungary) -*Halászat*, 89. 95-98.
- Harka, Á. (1997): Halaink (Our Fishes) -Term. és Környezetvédő Tanárok Egyesülete, Budapest.
- Harka, Á., Györe, K., Sallai, Z., Wilhelm, S. (1998): A Berettyó halfaunája a forrástól a torkolatig (Fish Fauna of the River Berettyó/Barcau) -*Halászat*, 91:68-74.
- Herman, O. (1887): A magyar halászat könyve. (The Handbook of Hungarian Fishery) 1-2, -Budapest.
- Holcik, J., Skorepa V. (1971): Revision of the Roach, *Rutilus rutilus* (Linnaeus, 1758) with Regard to its Subspecies. -*Annot. Zool. Botan.* (Bratislava), 64: 1-54.

- Jászfalusi, J. (1943): A Kis Szamos (Gyalu-Kolosvár) és mellékpatakainak halai valamint természetes állati tápláléka (The fishes and their natural animal food in the Someşul Mic and its brooks). - *Acta Sc. Mathem. et Nat. Kolosvár* (Cluj), 17.
- Nalbant, T. T. (1993): Some Problems in the Systematics of the Genus *Cobitis* and Its Relatives (Pisces, Cobitidae). - *Rev. Roum. Biol., Biol. Anim.*, 38 (2): 101-110.
- Nemeş M., Bănărescu, P. (1954): Prezenţa păstrăvului fântânel în bazinul superior al Someşului Mic (The Occurrence of the Brook Trout in the Drainage Area of the Someşul Mic). - *Bul. Inst. Cerc. Piscic.*, an. XI G, 1: 33-39.
- Vásárhelyi, I. (1960): Adatok Magyarország halfaunájához. A Bodrog, Kraszna és a Szamos halfaunája. (Data to the Hungarian Fish Fauna. The Fish Fauna of the rivers Bodrog, Kraszna and Szamos)- *Vertebrata Hungarica*, 2: 163-174.
- Vutskits, G. (1918): Classis Pisces in: Fauna Regni Hungariae. - Akad. Kiadó, Budapest.

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