Supplementary Material

Title of the article: Interspecific differences and ontogenetic shifts in the body size-related microhabitat use by fishes in small, Central European submountain streams
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Studied stream reaches and descriptive statistics of number of sampled patches and three habitat variables

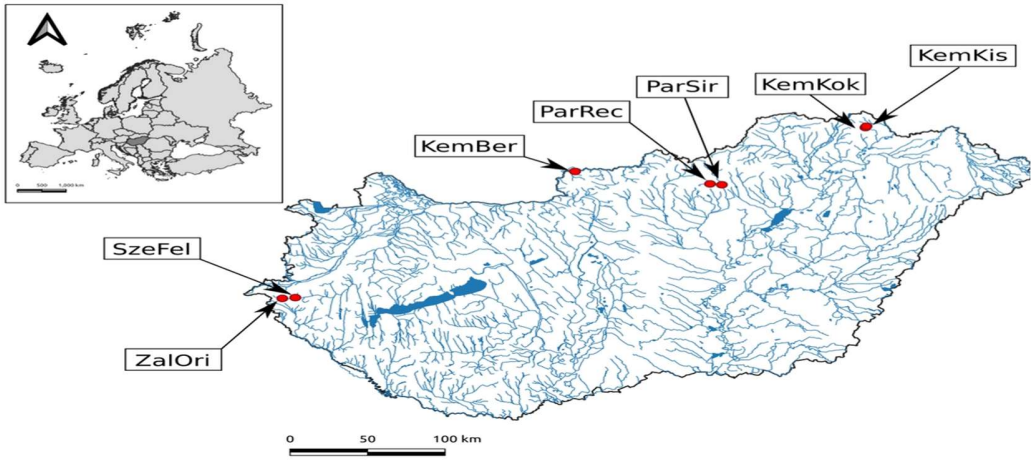


Fig. S1. Location of the sampling sites within Hungary.



Fig. S2. A part of the sampled reach of Zala stream at Őriszentpéter (ZalOri). Photo Á. Maroda and P. Sály.



Fig. S3. A part of the sampled reach of Szentjakabi stream at Felsőjánosfa (SzeFel). Photo Á. Maroda and P. Sály.



Fig. S4. A part of the sampled reach of Kemence stream at Kőkapu (KemKok). Photo Á. Maroda and P. Sály.



Fig. S5. A part of the sampled reach of Kemence stream at Kishuta (KemKis). Photo Á. Maroda and P. Sály.



Fig. S6. A part of the sampled reach of Parádi-Tarna stream at Sirok (ParSir). Photo Á. Maroda and P. Sály.



Fig. S7. A part of the sampled reach on Parádi-Tarna stream at Recsk (ParRec). Photo Á. Maroda and P. Sály.



Fig. S8. A part of the sampled reach of Kemence stream at Bernecebaráti (KemBer). Photo Á. Maroda and P. Sály.

Sampling design

Within a sampled reach, the point-abundance fishing method was conducted to sample the fish assemblage in ~1 m^2 (= patch) that was selected randomly while wading in a zigzag line. These patches were the sampling units of the study. Water depth and current velocity were measured in five points within a patch (Fig. S1). The percentage composition of the substratum types and the organic debris in the patches were estimated visually. The distance of the central point of the patch (point 5) from the left bank along the cross-section of the channel and the wetted with of the channel along the entire crosssection were measured by a measuring tape.

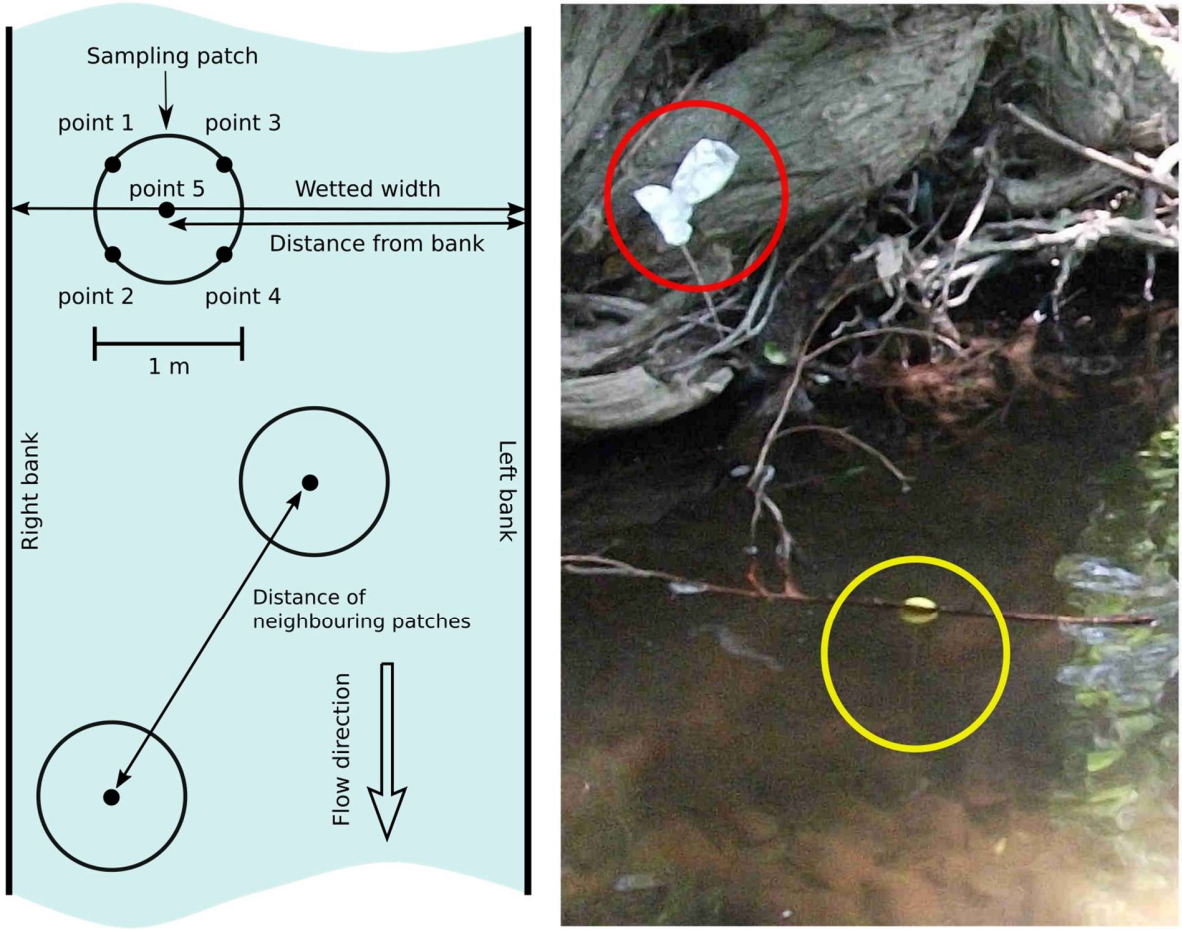


Fig. S9. Left – the sampling unit and the sampling design. Right – marking the sampled patches (i.e. microhabitats). The red circle indicates a piece of aluminium foil with an identification code of the patch. The yellow circle indicates a yellow buoy that marks the central point of the sampled patch.

Table S1. Hydrological characteristics of the studied stream reaches and the number of sampled patches per reach. Empty patches are those in which fish were not caught (i.e. fishless). Sd = standard deviation.

Sampled reach ID	Stream name	Length of sampled reach (m)	Number of sampled patches	Number of empty patches	Wetted width (mean ± sd) (m)	Current velocity (mean ± sd) (cm/s)	Water depth (mean ± sd) (cm)
ZalOri	Zala	334.2	50	7	3.742 ± 1.578	2.540 ± 6.682	33.832 ± 19.469
SzeFel	Szentjakabi stream	332	50	13	3.196 ± 0.750	13.952 ± 15.619	32.940 ± 17.718
KemKok*	Kemencestream	400	50	25	2.934 ± 0.980	18.025 ± 16.061	20.388 ± 12.557
KemKis*	Kemencestream	286.1	40	5	3.323 ± 1.205	15.463 ± 14.452	25.845 ± 18.421
ParSir	Parádi-Tarna	304	40	0	7.258 ± 1.124	5.162 ± 7.009	26.505 ± 15.880
ParRec	Parádi-Tarna	146.8	25	0	4.640 ± 1.874	15.726 ± 20.293	30.232 ± 25.782
KemBer*	Kemencestream	247.3	37	0	5.159 ± 1.456	7.751 ± 11.949	27.357 ± 21.620

* Note that there were two streams with identical names but in different geographical regions. Sampled reaches denoted by IDs KemKok and KemKis were on the Kemence stream that is in the Zemplén Mountains, northeastern Hungary. Sampled reach denoted by KemBer was on the Kemence stream that is in the Börzsöny Mountains, northern Hungary.

Fish capture data

Table S2. Number of individuals per species caught in the sampled reaches. See Table S1 for the complete names of the streams.

Scientific name	Common name	KemBer	SzeFel	KemKis	KemKok	ZalOri	ParRec	ParSir	Total
Barbatula barbatula	stone loach	29	9	28	18	150	75	37	346
Gobio gobio complex	gudgeon	41	99	0	0	27	16	67	250
Phoxinus phoxinus	European minnow	101	12	0	0	48	0	0	161
Rhodeus amarus	bitterling	50	0	0	0	1	0	0	51
Squalius cephalus	chub	140	79	5	7	29	58	152	470
Alburnus alburnus	bleak	0	17	0	0	0	0	8	25
Perca fluviatilis	perch	0	3	1	3	0	0	0	7
Barbus carpathicus	Carpathian barbel	24	0	46	11	0	0	0	81
Alburnoides bipunctatus	spirlin	84	0	56	24	0	73	123	360
Salmo trutta	brown trout	2	0	10	18	0	0	0	30
Eudontomyzon danfordi	Carpathian lamprey	0	0	1	1	0	0	0	2
Cobitis elongatoides	spined loach	0	0	0	0	0	0	1	1
Esox lucius	European pike	0	0	0	0	0	1	0	1
	Total per reach	471	219	147	82	255	223	388	