

Early Neolithic Fishing in the Middle Tisza Region, Hungary

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ABSTRACT: This article presents taxonomic and biometric information on the taxonomy and sizes of the most important fish species inhabiting the inland waters of the Carpathian Basin: pike, wild carp, and catfish. Information on additional species is also discussed in the case of major assemblages. The Early Neolithic of Hungary developed under Southwest Asian influences that reached the region through the Balkan Peninsula. The mixed economy was based on cereal cultivation and the raising of sheep/goat and cattle as shown by the seed and bone remains, respectively. Although domestic livestock played a principal role during the early advancement of neolithization in this region, aquatic resources were also regularly exploited, although to a far lesser degree.

KEYWORDS: EARLY NEOLITHIC, FISHING, PIKE, WILD CARP, CATFISH, CARPATHIAN BASIN

RESUMEN: En este artículo se presenta información taxonómica y biométrica sobre las tallas de los tres peces de mayor tamaño en las aguas dulces de la Cuenca de los Cárpatos, el lucio, la carpa y el siluro. Se ofrece asimismo información complementaria de otras especies aparecidas en las principales muestras arqueológicas de la zona. El neolítico temprano en Hungría se desarrolló bajo las influencias del Próximo Oriente llegadas a través de la península Balcánica. La economía mixta incorporaba una agricultura cerealista y ganadería de ovicaprinos y vacuno según demuestran las evidencias encontradas. Aunque la ganadería tuvo una importancia capital en el avance del neolítico en la región, la explotación de los recursos acuáticos fue también constante, si bien a una menor escala.

PALABRAS CLAVE: NEOLÍTICO TEMPRANO, PESCA, LUCIO, CARPA, SILURO, CUENCA DE LOS CÁRPATOS

INTRODUCTION

Neolithization in the central portion of the Carpathian Basin, the area of modern-day Hungary, began during the 7th–6th millennium B.C. (Whittle *et al.*, 2002). While Mesolithic hunter-gatherer groups in the region are little known, the first occurrence of Körös culture settlements in the Great Hungarian Plain, which is divided by the Tisza River, represents not only a distinct ceramic style, but also the earliest evidence of food production in the area: the remains of domestic plants and animals. People of the early Neolithic Körös culture occupied river banks, terraces, and levees in the loess floodplains, usually away from the main river courses, but always in close proximity to water. The altitudes of the settlements under discussion here ranged between 67–91 m (mean = 79.4±7.6 m) above sea level.

Recent research into the Körös culture has given momentum to archaeozoological studies of this period. The continuing availability of systematically collected and calibrated radiocarbon dates (Whittle *et al.*, 2005), the discovery of new sites north of the «classical» Körös culture distribution area along the Tisza River, and the gradual introduction of water sieving (Bartosiewicz, 1988, 2007a; Kovács *et al.*, 2010) have greatly benefited the study of fish remains.

The source of domestication in this area has been hotly debated. Unquestionable evidence of some diffusion, however, is available in the form of sheep (*Ovis aries* L., 1758) and goat (*Capra hircus* L., 1758) bones, as the wild ancestors of these key Neolithic species were not available for domestication in Europe. Following the initial assessment of Körös culture animal exploitation that mirrored a straight, unilinear development from foraging to food production (e.g., Bökönyi, 1989), many of the assemblages containing high percentages of wild mammalian remains turned out to have been too small to be statistically representative. In fact, at most of the sites under discussion here the overwhelming majority of mammalian bones originated from domesticates, most typically caprines (Bartosiewicz, 2005). It seems that as a consequence of the Neolithic «revolution», mutton determined the character of Early Neolithic meat diets for centuries in this region.

Against the backdrop of food production, however, foraging seems to have maintained some significance, partly because the humid alluvial habi-

tats were less than ideal for sheep and goats domesticated in semi-arid environments. Hunting, fishing, and gathering seem to have been opportunistic activities, which were of fluctuating, possibly seasonal importance depending on the geographical location and socio-economic conditions of particular settlements. Under these circumstances, fishing had the potential to yield rich supplies of animal protein in the floodplain of the Tisza River and its tributaries occupying most of the Great Plain of Eastern Hungary.

Even scarce evidence for fishing clearly illustrates the diversity of wild animal resources exploited on a lesser scale. Wherever they came from, Körös culture shepherders may have perceived their marshy environment as a «marginal zone» from a cognitive point of view (Raczky *et al.*, 2010), resorting to the complementary exploitation of aquatic resources probably more spontaneously than hunting. Fishing could have been practiced in a variety of simple ways, often in the form of «gathering» prey in residual flood pools that may have served as natural fish traps all over the plain (Bartosiewicz, 2007b).

Ancient trends in subsistence fishing are obscured by the inconsistent recovery and sporadic reporting of fish remains in the Hungarian archaeozoological literature. Species representation is thus unreliable; at many sites, only the sporadic presence of fish can be established. Familiarity with the range of fish species represented in large archaeoichthyological assemblages helps in reconstructing the roles various species played in Körös culture subsistence.

MATERIAL AND METHODS

A total of 36,191 fish bones were studied in this paper, all limited to finds from verified Körös culture settlements within the present-day political borders of Hungary (Table 1). The fish bone assemblages used in this study are listed from South to North. The geographical distribution of these sites in the Tisza River valley, constituting most of Eastern Hungary, is shown in Figure 1. The chronological placement of the fish bone assemblages was possible based on the available conventional and AMS radiocarbon dates (Table 1).

The information content of the nine settlements that yielded fish assemblages was further con-

Complete site name	Radiocarbon dates	Mammal NISP	Fish NISP	Source
Röszke–Lúdvár	5980–5780 (68.2%) calBC/conv.	1397	402	Bökönyi (1974)
Gyálarét–Szilágyi-tanya	6070–5840 (68.2%) calBC/conv.	293	57	Bökönyi (1974)
Endrőd–Öregszőlők 119	5840 (68.2%) 5560 calBC/AMS	22 355	592	Takács (1992)
Ecsegfalva 23B*	5800/5750–5650 calBC/AMS	4377	18 186	Bartosiewicz (2007a)
Szolnok–Szanda	5990 (68.2%) 5630 calBC/conv.	6525	147	Bartosiewicz n. d.
Szajol–Felsőföld	6220–5080 (68.2%) calBC/conv.	1361	67	Vörös (1980)
Nagykörű–TSz. Gyümölcsös*	6000 (68.2%) 5620 calBC/AMS	460	30	Raczky <i>et al.</i> (2010)
Kőtelek–Huszársarok	5720 (68.2%) 5520 calBC/conv.-AMS	67	6	Vörös (1980)
Ibrány–Nagyerdő*	5620 (68.2%) 5480 calBC/AMS	113	16 704	Kovács <i>et al.</i> (2010)

*Water-sieved assemblages

TABLE 1

Körös culture fish bone assemblages in the Great Hungarian Plain (Proceeding from South to North, see Figure 1).

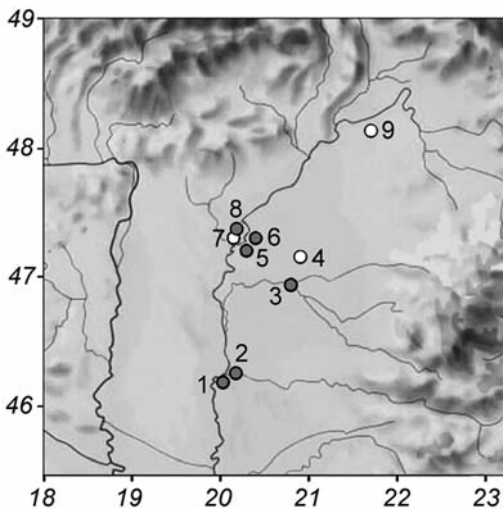


FIGURE 1

The South to North distribution of Körös culture sites discussed in the paper. Legend: 1=Röszke–Lúdvár, 2=Gyálarét–Szilágyi major, 3=Endrőd 119, 4=Ecsegfalva 23B, 5=Szolnok–Szanda, 6=Szajol–Felsőföld, 7=Nagykörű–TSz. gyümölcsös, 8=Kőtelek–Huszársarok, 9=Ibrány–Nagyerdő. Empty circles indicate water sieved materials. For details see Table 1. Open source base map by Zentai (1996).

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strained by the lack of consistently water sieved materials at all but three of the settlements (Bartosiewicz, 2012). The animal bones from Endrőd–Öregszőlők 119, Szolnok–Szanda, and Ecsegfalva 23B came from large-scale systematic excavations. Of these, a systematic water-sieving program (using 2.5 mm mesh size) was carried out only at Ecsegfalva. Kőtelek–Huszársarok, Nagykörű–TSz. Gyümölcsös, and Ibrány–Nagyerdő were represented by large single pits each, rather than major sections of settlements. The fill recovered from the pit at Ibrány was completely water sieved, through a 2.5 mm mesh.

Even using water sieving, it was mainly the remains of the characteristically large fish species (pike, wild carp, and catfish) that could be identified in greatest numbers at Ecsegfalva. A major difference, however, was that the presence of numerous small cyprinid species and young individuals of large fish such as pike could also be documented (Bartosiewicz, 2007a). The same may be said about Ibrány, although a quantitative difference between these two sites is immediately noticeable: three relatively large trenches opened at Ecsegfalva yielded 18,186 fish remains, more or less the same number as a single stratified pit at Ibrány (17,051). Pike at the latter site was better represented by an order of magnitude while catfish was completely missing. This latter species was only characteristic of the hand-collected materials from two large settlement materials, pits at Endrőd near the Körös River and several houses and pits at the multi-period Körös culture settlement of Szolnok, located along the main current of the Tisza River.

In previous general faunal reports (Gyálarét–Szilágyi-tanya, Röske–Lúdvár: Bökönyi, 1974: 364, 396; Kótelek–Huszársarok, Szajol–Felsőföld: Vörös, 1980: 56) fish remains were identified at varying levels of precision, while only at the site of Endrőd were fish remains identified by a specialist in ichthyoarchaeology (Takács, 1992). I carried out first-hand fish identifications at Ecsefalva, Ibrány, Nagykörű, and Szolnok.

Hand collection is inevitably size-selective, and therefore acts as a major source of taphonomic bias, skewing the taxonomic evaluation of fish remains. Sites where fish are poorly represented are comparable only to similarly incomplete find materials published in the literature. They can be used at best for drafting a general framework of fish exploitation.

Taxonomic identification to species level was performed based on modern comparative specimens as well as using the manuals prepared by Lepiksaar (1981–1992) and Radu (2005). The binomial Linnaean names of the fish species identified are listed in Table 2. Bone measurements were taken following Morales & Rosenlund (1979). Pike size estimations were carried out

against the backdrop of parameters calculated from a sample of 24 present-day pike skeletons whose measurements had been taken at Göteborgs Naturhistoriska Museum, Sweden. For the detailed description of measurements and calculations, see Bartosiewicz (1990).

RESULTS

Regardless of the method of recovery used, fish remains were recovered at all examined sites, indicating the dietary role of aquatic resources in Körös culture subsistence economy. While the non-sieved assemblages (Table 1) were dominated by mammalian remains, there was a massive numerical presence of fish remains in most of the sieved assemblages.

Taxonomic composition

The taxonomic distribution of Körös culture fish remains is summarized in Table 2. The list of taxa was dominated by small species in the

	Sterlet (<i>Acipenser ruthenus</i>)	Pike (<i>Esox lucius</i>)	Orfe (<i>Leuciscus idus</i>)	Tench (<i>Tinca tinca</i>)	Crucian carp (<i>Carassius carassius</i>)	Bream (<i>Abramis brama</i>)	Barbel (<i>Barbus barbus</i>)	Roach (<i>Rutilus rutilus</i>)	Vimba (<i>Vimba vimba</i>)	Carp (<i>Cyprinus carpio</i>)	Cyprinidae family	Catfish (<i>Silurus glanis</i>)	Pikeperch (<i>Stizostedion lucioperca</i>)	Pisces indet.
Röske		1										1		400
Gyálarét		1										1		55
Endrőd		30								223		338	1	4
Ecsefalva*	4	896	5	42	4	3	7	23	11	526	6872	57	5	9731
Szolnok		10								53	23	53	1	7
Szajol														67
Nagykörű*	1	2								5	17	5		2
Kótelek														6
Ibrány*		6002	3	6	2	54	17	12		785	9824			346

*Water-sieved assemblages

TABLE 2

NISP values for fish and non-identified remains at the nine Körös culture settlements.

Cyprinidae family whose remains were identifiable only to the family level.

Empty cells in this table suggest the lack of precision in recovery as well as in the identification of the varied and fragmentary skeletal elements of fish rather than trends in subsistence. In this study, 13 species of fish from five families represented the ichthyofauna of Körös culture settlements. A full presentation of this taxonomic diversity was observed only at the site of Ecsegfalva, and nine species were identified in the water-sieved assemblage from Ibrány.

Pike, catfish, and wild carp were present in most of the archaeological assemblages. Figure 2 shows a summary of these three fish species of major importance, widely available in both hand-picked and water-sieved collections. Proportions changing between species North to South are evident in the graph in spite of the dramatic differences in sample sizes. These results are undoubtedly influenced by the precision of recovery, especially visible in the case of Ecsegfalva that does not fit this geographical trend.

Interestingly, catfish remains were absent from the sieved materials of Ibrány. The presence of these fish in non-sieved sites is not surprising as they are the largest fish in Hungary after great sturgeon and have large bones that are consistently

recovered even without water sieving. When sieving was used and substantial amounts of bones from small-bodied species in the Cyprinidae family appeared, at least the remains of small catfish should have occurred as well.

Fish size estimations

A fish species of paradigmatic importance in this study is pike as its relatively well-preserved bones were recovered in substantial quantities. The observation that larger individuals were caught at Ibrány was first approached from a taphonomic point of view. In the Ecsegfalva assemblage, 896 identifiable pike remains weighed 162.6 g. In comparison, at the settlement of Ibrány, 6002 identifiable pike bones weighed 2238.0 g. This means that the average weight of pike fragments was 0.181 g at Ecsegfalva and 0.373 g at Ibrány. Using a Student's t-test, this twofold difference was statistically significant ($P=0.000$).

Using osteological measurements, the two sets of archaeological pike remains were compared against the backdrop of a sample of 24 present-day pike skeletons. For the detailed description of

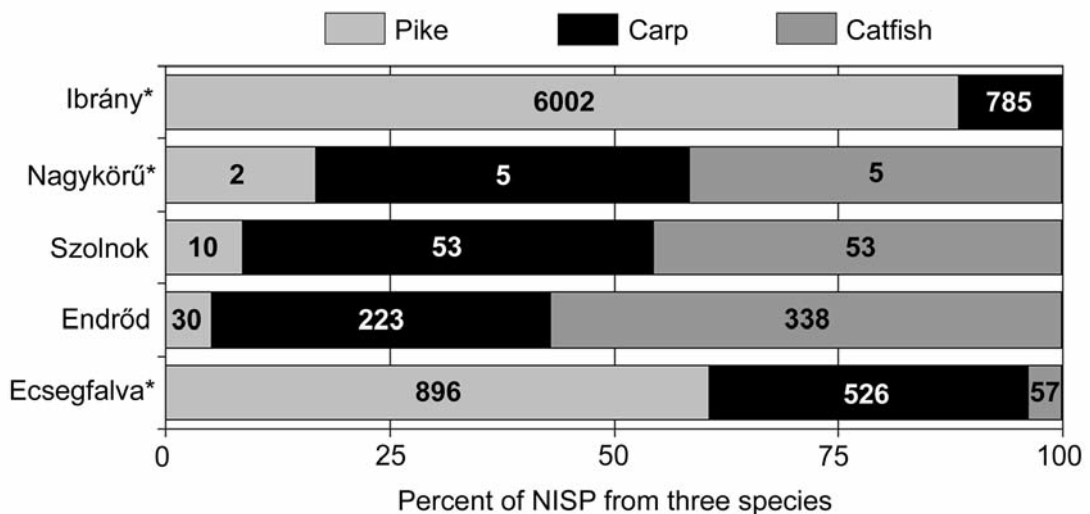


FIGURE 2

Comparison between the gross proportions of pike, carp, and catfish in major Körös culture fish bone assemblages. *Water sieved assemblages.

measurements and calculations, see Bartosiewicz (1990).

In spite of the overlap caused by standard deviations, the ca. 8 cm difference between the mean estimated length of pikes at the two sites (Ecsegfalva, $n=56$, mean value= 385 ± 135 mm; Ibrány, $n=154$, mean value= 462 ± 127 mm), statistically significant ($P=0.0002$) differences were found between the length estimates of specimens from these two sites (Kovács *et al.*, 2010: 248, fig. 7, tab. 7). The osteometric parameters of the reference collection in Sweden were used in standardizing measurements taken on the bones of Körös culture pike (Figure 3). Except for a single specimen from Ibrány, all Neolithic estimates fell below the mean value of the 24 reference specimens from Sweden (0 in Figure 3) and the negative skew caused by the Ecsegfalva estimates reached almost 4 units of standard deviation.

While only few measurements were available on the remains of catfish from Szolnok, it is noteworthy that this species, underrepresented at the two aforementioned sites, was present in the form

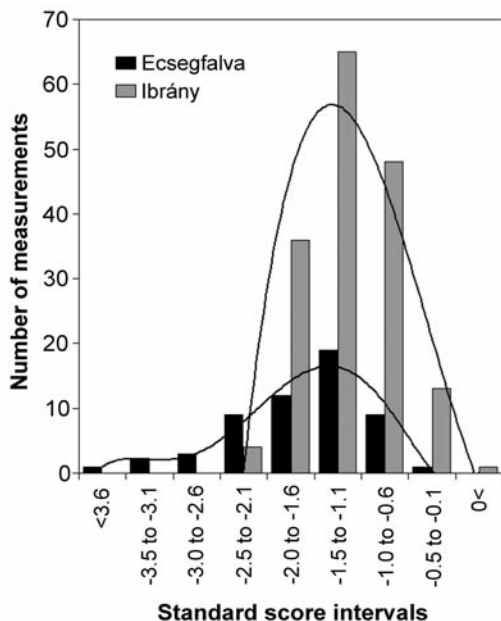


FIGURE 3

Differences between the size distributions of pike in the water sieved assemblages of Ecsegfalva (56 specimens) and Ibrány (154 specimens) as reconstructed from bone measurements. The comparison is based on standard scores calculated from a modern reference collection. Explanation in text.

of numerous remains of unusually large specimens (Figures 4-6), far exceeding the dimensions of bones from a ca. 650 mm long modern reference specimen measured after Takács (1987).

The size of wild carp is also worth considering. It must be emphasized that this species was native to the Lower and Middle Danube as well as its tributaries (Figure 7) prior to the Middle Ages (Hoffmann, 1995: 71) when its domestic form began outcompeting the wild ancestor in its natural habitats. Descriptive statistics are available only for the pharyngeal process of wild carps from Szolnok, Nagykörű, and Ecsegfalva. This bone represents the bony base of the keratinous «palate» on the ventral side of the basioccipital bone of cyprinids against which the pharyngeal teeth grind fibrous plant material. The mean width of 30 carp pharyngeal bones from Ecsegfalva resulted in a mean value of 12.1 ± 2.9 mm (ranging between 4.2 and 18.2 mm). Even without being converted into body sizes or ages, these values exhibit a wide size range of wild carps (Figure 8). Many of the specimens originated from adult individuals around the peak of the largely normal distribution shown in the figure, while three unusually large wild carp can also be identified. At the other extreme, three measurements taken on pharyngeal processes of tench more or less corresponded to the size range estimated for small pike as discussed previously. While no comparable measurements were available from Ibrány, the Körös culture sites of Nagykörű yielded two such bones from very large wild carp. Measuring 19.2 and 25.1 mm, respectively (Raczky *et al.*, 2010), both fall well above the size range represented at Ecsegfalva, dwarfing the size of the average carp caught there. Two hand-collected pharyngeal processes of large wild carp (20.9 and 25.2 mm) from Szolnok also indicate that catfish was not the only species of considerable size targeted at that site.

DISCUSSION

It is evident that the patterning observed in fish remains from archaeological sites is a composite outcome of several factors. In addition to natural taphonomic loss often exacerbated by the differential recovery, ancient aquatic environments, seasonal availability, and traditional fishing techniques all have an impact upon the taxonomic and anatomical composition of ichthyoarchaeological assemblages.



FIGURE 4

Illustrating catfish size from Szolnok–Szanda: Early Neolithic cleithrum fragment compared to the complete cleithrum of a 650 mm long modern specimen (right).



FIGURE 5

Illustrating catfish size from Szolnok–Szanda: Early Neolithic pectoral fin ray fragment compared to the complete pectoral fin ray of a 650 mm long modern specimen (right).

Environmental aspects

Conclusions concerning prehistoric alluvial habitats and the possible seasonal nature of fishing can be drawn only on the basis of large water-sieved samples from Ecsegfalva and Ibrány, as the water-sieved sample from the site of Nagykörű Archaeofauna 22 (2013): 133-144

was relatively small. Most species in Table 2 tend to be indicative of aquatic habitats having slow current with soft substrate (Bartosiewicz & Bonsall, 2004). One of the mechanisms through which temperature affects aquatic habitats is its influence on the concentration of dissolved oxygen utilized by fish. Even subtle shifts in temperature may have an impact on this important parameter. Regression equations by Bartosiewicz & Bonsall (2004: 263) express a trend that under temperate climatic conditions (Danube Valley) every additional 1 °C rise in temperature would result in a 0.2 mg/l loss of dissolved oxygen, while 1 m/s increase in water velocity adds almost 2 mg/l to the oxygen content in rivers.

Catfish, wild carp, and several other cyprinids (especially tench) are typical of stagnant, muddy waters of relatively high temperatures and concomitant low rates of dissolved oxygen (Pénzes & Tölg, 1977: 327), best indicated by the 0.7 mg/l oxygen requirement characterizing tench. The rarity of bones from species requiring highly aerated



FIGURE 6

Illustrating catfish size from Szolnok–Szanda: Early Neolithic precaudal vertebrae in cranial and lateral aspects (right).

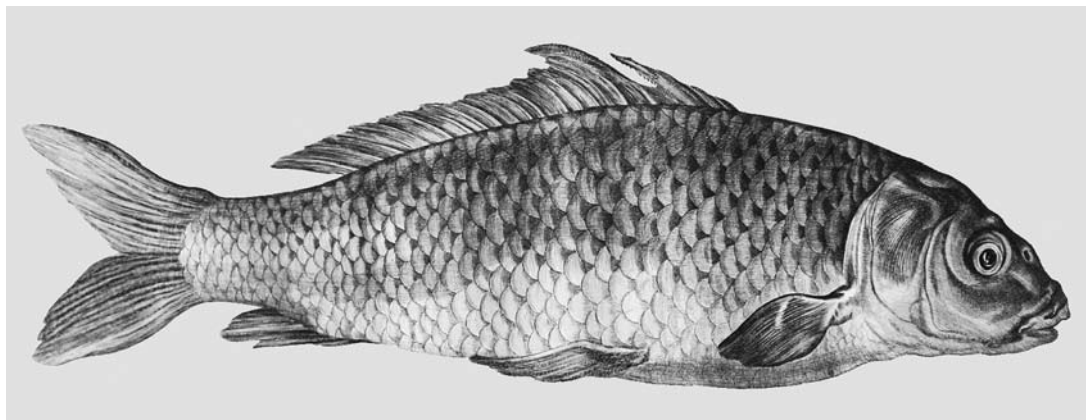


FIGURE 7

Wild carp depicted in the book of Luigi Fernando Marsigli (1726: tab. 19).

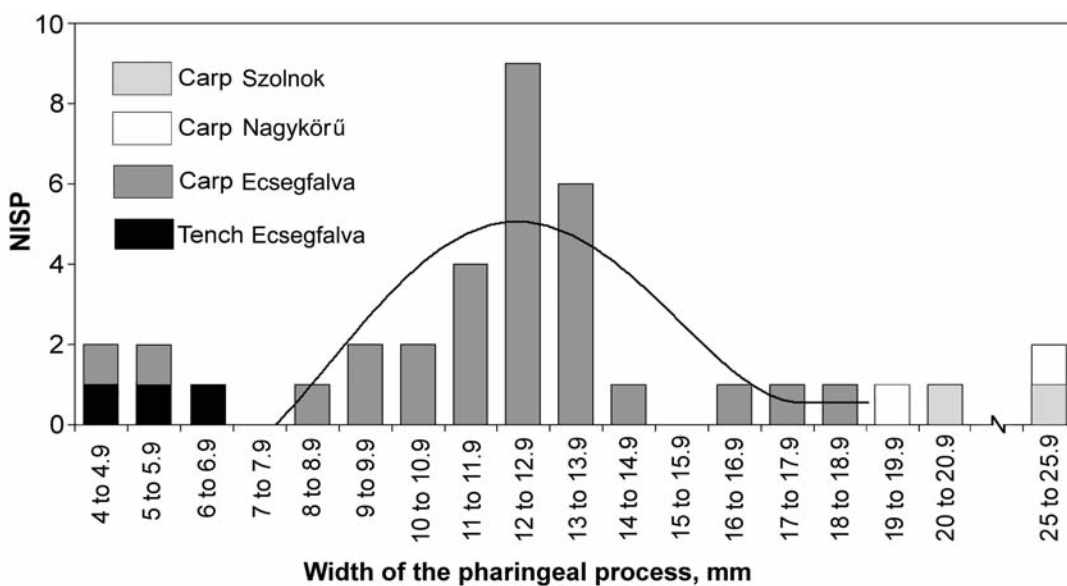


FIGURE 8

The size distribution of pharyngeal process width in carp at Szolnok and carp and tench at Ecsegfalva. Although the bones represent a largely symmetrical trend, two specimens of far larger sizes were identified at both Nagykörű and Szolnok.

waters such as pikeperch (2.0–3.0 mg/l) and sterlet (3.0–3.5 mg/l) is symptomatic of the «quiet backwaters» typically exploited by Körös culture foragers. Pike represents a special case as it is a ubiquitous predator preying largely on small cyprinids, thus relying on high visibility in clear waters.

The absence of catfish remains at Ibrány is thought-provoking. Unfortunately, in the absence

of water sieving, only remains of large catfish were recovered from Szolnok. The massive presence of large catfish at that site in comparison with Ibrány, however, seems indicative of a different aquatic habitat. Over 200 km downstream, the Tisza River becomes more open, deeper, and slower moving near Szolnok than at Ibrány which is located in the Upper Tisza region.

Possible effects of seasonality

Normative environmental conclusions may be fine-tuned by looking at a broader range of species from water-sieved assemblages. Given the relatively small and sporadic nature of fish finds compared to those of domestic livestock at Körös culture settlements, the complementary nature of fishing in subsistence has been hypothesized. Part of the differences therefore observed may be related to seasonal (spring vs. summer) fishing activity. Stochastically speaking, since spawning occurs near riverbanks, it offers a better chance of catching different species during the spring and early summer. When the remains of identifiable small cyprinids are grouped by their spawning regimes (Figure 9; Pike-Tay *et al.*, 2004: 236, table 3) in the two large water-sieved samples, a dominance of bones from early spawning species, such as cold-tolerant but oxygen-preferring barbel, bream, and roach, was evident at Ibrány. The opposite held true for Ecsegfalva, where the bones of late-spawning species, such as tench, crucian carp, and orfe, dominated among the small cyprinids. Testing the heterogeneity in the distribution of pooled early spawning (Ecsegfalva NISP=44, Ibrány

NISP=83) and late spawning (Ecsegfalva NISP=51, Ibrány NISP=11) small cyprinids listed in Table 1 resulted in a statistically significant difference ($\text{Chi}^2=37.779$, degree of freedom=1, $P=0.000$) between sites. Early- and late-spawning species were represented in comparable numbers at Ecsegfalva, while early-spawning cyprinids dominated at Ibrány. These differences are attributable to habitat: the broad categories established on the basis of spawning schedules largely correspond to the groups of *rheophilous* (preferring rapid waters) vs. *stagnophilous* (preferring stagnant waters) species distinguished on the basis of the intensities of current, directly related to temperature and the amount of oxygen dissolved in the water.

Human decision-making

While the seasonal exploitation of riverine resources may have been opportunistic, it may also have taken the form of different fishing techniques. Complementary evidence was sought in the case of the best represented large species: pike, wild carp, and catfish.

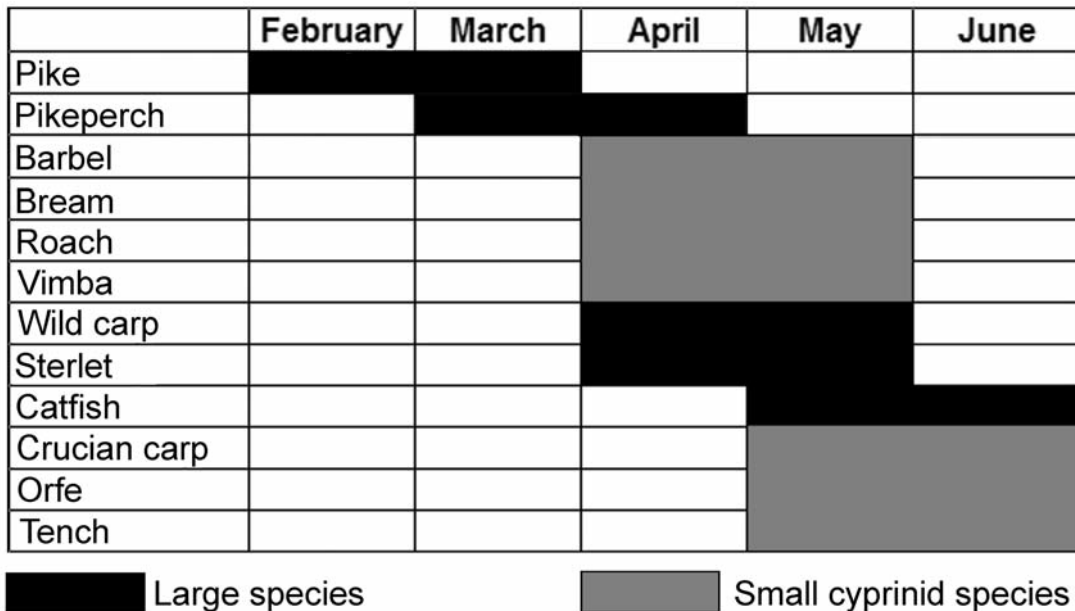


FIGURE 9

Spawning periods of the main fish species in Hungary (Pike-Tay *et al.*, 2004, modified).

Pike body size estimation for the remains recovered using water-sieving, in the case of Ibrány and Ecsefalva, highlighted two size-selective fishing strategies:

- opportunistic seasonal gathering of fish in floodpools
- active fishing using hook and line, harpoons, etc., targeting large individuals

Historical records reveal that, as early summer floods receded, millions of fish of all sizes (cf. stagnophilous small cyprinids and small/young pike at Ecsefalva) were trapped in residual pools: Mátyás Bél, a mid-18th-century Hungarian naturalist, complains about the insufferable stench of decaying fish left behind after major floods of the Tisza (Bél, 1764 [1984]). While still alive, such small fish can be simply gathered in shallow water by hand or «potting», using large, bottomless baskets well-known in the late 20th-century ethnographic literature in Hungary (Kunkovác, 2001: 12–15). When gathered in time, these fish must have provided an easily available rich source of food for Körös culture pastoralists. Artifactual evidence of active fishing remains were indirect at Ecsefalva 23, and included small bone double points, which may be possibly interpreted as fish gorges (Choyke & Bartosiewicz, 1994). Although the small-scale excavations at Ibrány did not reveal implements associated with active fishing, the size distribution indicative of large pike may be seen as evidence for targeted if not specialized activity. Preying upon large individuals of catfish or pike on a regular basis, on the other hand, must have required some form of active fishing, possibly in relatively deep waters. Those methods required different skills and may even have meant the involvement of different members of prehistoric communities.

CONCLUSIONS

The composition of archaeological fish bone assemblages was determined by the aquatic habitats exploited, the precision of recovery, and the form of fishing pursued by prehistoric populations. Equifinality is an inevitable result of these three factors. Some trends, however, may be associated with ancient subsistence practices.

Given sufficiently large sample size, Early Neolithic animal bone assemblages of the Körös culture in the Tisza Valley contained at least sporadic evidence of fishing, even when materials were collected only by hand. In varying proportions, the most common fish remains encountered were pike, wild carp, and catfish. The intensity of spring and summer floods evidently influenced the seasonality of landscape use. Residual flood pools offered abundant sources of food until flocks of sheep and to a lesser extent, goat could return to the rejuvenated pastures on low-lying ground. Remains of large fish species, however, suggest that some form of active fishing was likely to have also been practiced.

As shown by the remains of pike, the two comparably water-sieved assemblages from Ecsefalva and Ibrány represent potentially different attitudes to aquatic food resources. While the opportunistic exploitation of fish seems more characteristic of established shepherders in the core area of sites, of which Ecsefalva has been studied in detail, Ibrány may be seen as a settlement in a frontier position upstream along the Tisza River in the far north.

Large remains of catfish of considerable sizes were commonly found even by hand-collection. Their conspicuous absence at Ibrány in the north and abundance at the settlements of Endrőd and Szolnok showed that the roles of active fishing also changed from site to site. Catfish is an ubiquitous carnivore, inhabiting warm, slow-moving waters, showing, however, a great tolerance towards extreme environmental circumstances.

Wild carp, as well as smaller species of cyprinids, identified in the assemblages under discussion here are typical of shallow waters where specimens of all sizes may easily be caught by various methods. Except for the early spring spawning season, however, large pike and catfish tend to seek deeper, cooler, and cleaner waters where they need to be pursued by active fishing.

The general impression offered by these assemblages is that in the food producing Early Neolithic economies of the Körös culture, fish represented a relatively unimportant but still omnipresent form of subsistence used to complement the dominant form of meat provisioning based on livestock keeping. The forms of fishing varied from site to site as may be concluded from differences between the taxonomic composition and fish size distributions observed.

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