

Visualization of mercury (Hg) concentrations estimated for the Gaussian GAM for the maximum and minimum possible contribution of *Clupea harengus membras* to diet of perch

For the visualization example LOG mercury concentrations were estimated for Model C simulating the maximum and minimum contribution ratios of *C. harengus membras*, as the food item demonstrated a significant mercury reducing effect (Table 4). The maximum and minimum contribution ratios were the same as those estimated by the SIAR model and are available in Additional file 1, Table S2. Hence for *C. harengus membras* the contribution ratio ranged from 0.0295 to 0.290 and was associated with perch subgroup 3 only. In both spring and autumn seasons, modelling showed significantly lower Hg concentrations for a scenario with the maximum contribution ratio of *C. harengus membras* affecting specimens in the river and gulf, stations 1 and 3, respectively (Table S3). Similar to Figure S1, the Wilcoxon rank sum exact test did not reveal significant differences in Hg concentrations between the minimum and maximum consumption of the *C. harengus membras* for specimens in the lake (station 2). A similar visualization technique can also be performed for food items which have shown insignificant effect on mercury concentrations, although the difference between maximum and minimum contribution scenarios may not be clearly pronounced.

Table S3. Wilcoxon rank sum exact test evaluating differences between Hg concentrations estimated from Gaussian GAM, Model C, which were affected by minimum or maximum consumption rate of *C. harengus membras* for perch sampled in Spring or Autumn season, at stations 1, 2 and 3.

Food item	Station	Season	Wilcoxon rank sum exact test
<i>C. harengus membras</i>	1	Autumn	W = 417, <i>p</i> -value = 0.043
		Spring	W = 419, <i>p</i> -value = 0.039
	2	Autumn	W = 312.5, <i>p</i> -value = 1
		Spring	W = 312.5, <i>p</i> -value = 1
	3	Autumn	W = 403, <i>p</i> -value = 0.081
		Spring	W = 463, <i>p</i> -value = 0.003

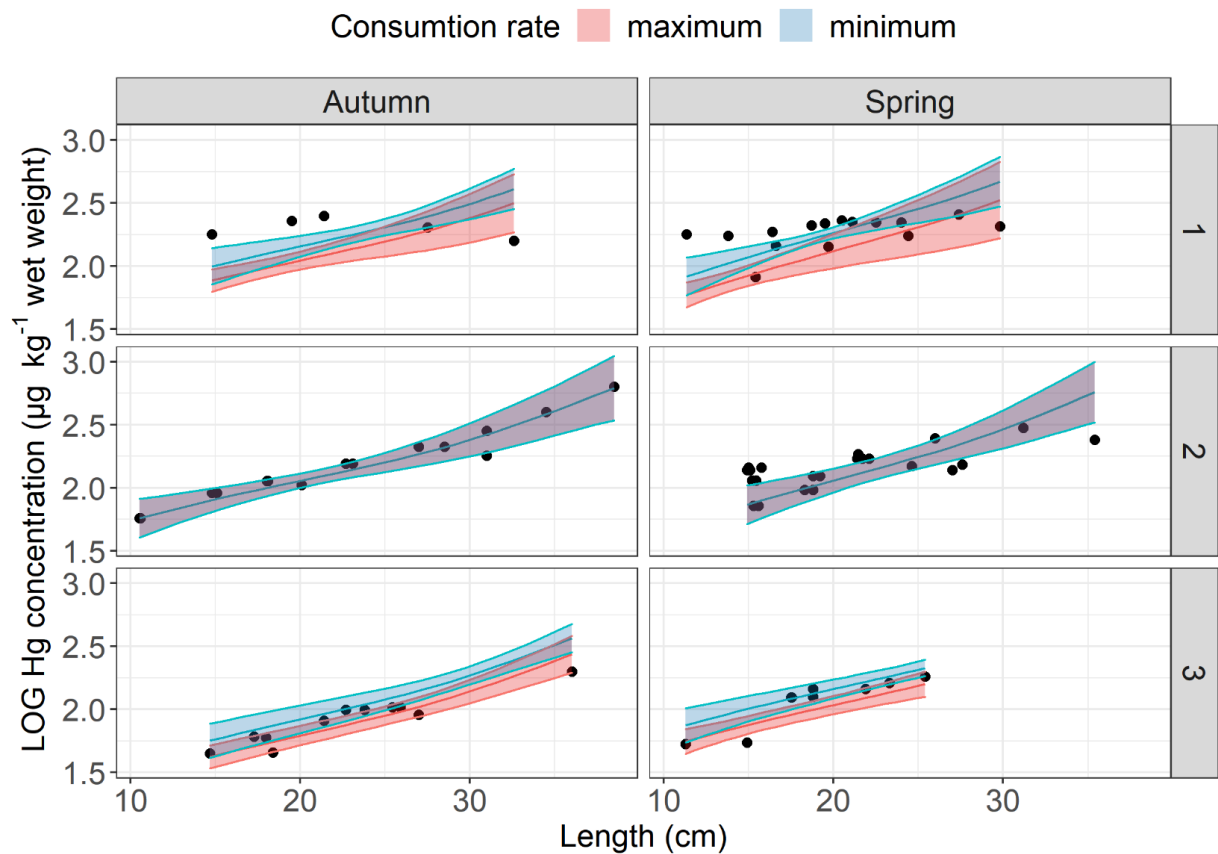


Figure S1. Estimated mercury LOG concentrations ($\mu\text{g kg}^{-1}$ wet weight) for maximum and minimum contribution rate of *C. harengus membras* in diet of perch at the studied sampling stations 1, 2 and 3, simulated for Gaussian GAM, Model C. **Red** and **blue lines** are predicted LOG Hg concentration values for maximum and minimum consumption rate, respectively; **red** and **blue smoothing** – measure of uncertainty for the predicted values; **black dots** – observed concentrations of mercury.