

Supplementary Materials

Table S1. Catchment Land Use of the Reservoirs

Reservoir/ Watercourse	Catchment area W [km ²]	Utilization of catchment			
		Crop lands [%]	Meadows [%]	Forests [%]	Others [%]
Piekary/ Szczyrzawy	6.3	68.9	23.0	1.6	6.5
Tonie/ Sudół	14.7	29.6	43.4	11.6	15.4
Węgrzce/ Sudół	6.7				
Dominikański		66.7	9.3	7.5	16.5
Janowice/ Wilga	22.9	46.1	17.8	18.9	17.2
Krempna/ Wisłok	165.3	4.0	14.0	80.0	2.0
Zesławice/ Dłubnia	218.0	78.1	1.6	9.5	10.8
Maziarnia/ Łęg	233.0	46.2	21.9	11.6	20.3
Cierpisz/ Tuszymka	54.5	20.2	33.1	43.0	3.7
Niedźwiadek/ Górnio	233.0	46.2	21.9	11.6	20.3
Narożniki/ Dęba	18.8	40.3	35.0	20.1	4.6
Krempna/ Wisłok	25.0	34.5	13.1	50.0	2.4

Table S2. Mean Annual Thickness of Deposited Sediment in Analyzed Reservoirs

Reservoir	Mean annual silting ratio	Mean annual volume of deposited sediment	Mean annual thickness of deposited sediment
	S _A [%]	[m ³]	h _A [m]
Krempna	2.27	2542.4	0.068
Zesławice	1.61	367.08	0.004
Maziarnia	1.16	44776	0.028
Cierpisz	1.5	517.5	0.023
Niedźwiadek	0.52	647.4	0.007
Narożniki	0.15	424.5	0.002

Table S3. Limit Content of Dissolved Heavy Metals in Water of Various Pollution Levels

Criterion according to	Maximum allowable concentration [mg·dm ⁻³]		
	Pb	Cd	Ni
Water Quality Criteria (drinking water quality)			
WHO Guidelines [S1]	0.01	0.003	0.07
RME [26]	0.01	0.005	0.02

EU Directive 1998 [S2]	0.01	0.005	0.02
EU Directive 2013 [33]	0.014	0.00045	0.034
US EPA [35]	0	0.005	0.1
Canadian Guidelines 2008	0.01	0.005	na*
China Guidelines [22]	0.05	0.01	na*
Water Quality Criteria (protection of aquatic life)			
US EPA [S3]	0.01	0.001	0.01
China Guidelines [22]	0.1	0.005	0.1

*na – no appointed value

S1. World Health Organization (WHO). Guidelines for Drinking-water Quality, 4th ed., WA 675, WHO Library; 2011.

S2. European Union Council Directive 98/83/EC of 3 November 1998 on the Quality of Water Intended for Human Consumption, Off. J. Eur. Commun. L330; 1998.

S3. Federal Provincial Territorial Committee on Health and the Environment, Guidelines for Canadian Drinking Water Quality Summary Table, Health Canada, Ottawa, Canada; 2008.

Table S4. Limit Content of Heavy Metals in Sediment for Various Pollution Levels According to [29]

Criterion according to	Maximum allowable concentration [mg·kg ⁻¹]		
	Pb	Cd	Ni
Threshold effect sediment quality guidelines for metals			
TEL (threshold effect level)	35	0.6	18
ERL (effects range low)	35	5	30
LEL (lowest effect level)	31	0.6	16
MET (minimal effect)	42	0.9	35
Midrange effect sediment quality guidelines for metals			
PEL (probable effects level)	91.3	3.53	36
ERM (effect range median)	110	9	50
Extreme effect sediment quality guidelines for metals			
TET (toxic effect threshold)	170	3	61
SEL (severe effect level)	250	10	75

Table S5. Water pH Values at the Inflows to the Designed Reservoirs [17]

Water-course	pH				SD*	CV* [%]
	min.	max.	mean	median		
Szczyrzawy	7.0	7.9	7.5	7.5	0.2	3
Sudół	7.3	8.3	7.7	7.7	0.2	3
Sudół Dominikański	7.5	8.3	7.9	7.9	0.2	3
Wilga	7.5	8.6	8.1	8.1	0.2	2

*SD – standard deviation, CV – coefficient of variation

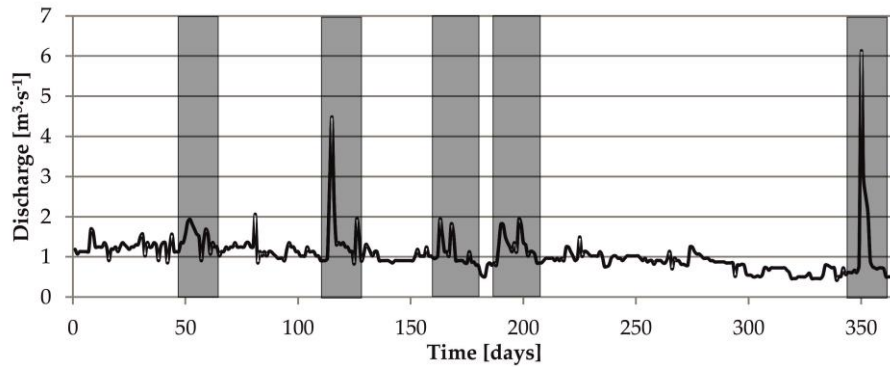


Fig. S2. Hydrograph of Dłubnia River (Zesławice reservoir) for a hydrological year 2001 with marked flood waves.

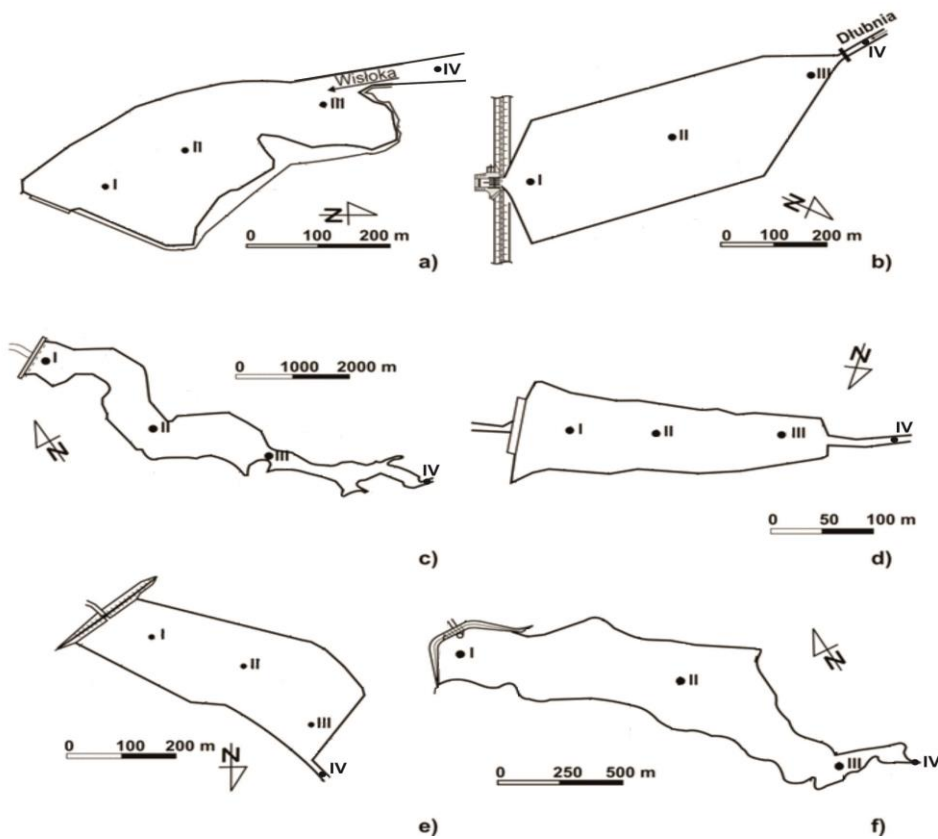


Fig. S2. Investigated small reservoirs: (a) Krempna, (b) Zesławice, (c) Maziarnia, (d) Cierpisz, (e) Niedźwiadek, (f) Narożniki, with marked points of the bottom sediment sampling (I-I, II-II, III-III) and point of the water sampling at the inlet to the reservoirs (IV).