APPENDIX A

Fate of nutrients and trace contaminants in a large shallow soda lake. Spatial gradients and underlying processes from the tributary river to the reed belt

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A1. Sampling campaigns

A1.1 Sampling locations, dates and samples sizes

Table A1: Coordinates of the sampling sites.

Area	Sampling site	Latitude	Longitude
Wulka estuary	WU	47.862920960000054	16.656646830000057
Mörbisch	M1	47.769463304000055	16.696682020000026
	M2	47.769597626000063	16.691106430000048
	M3	47.769768521000060	16.688185916000066
	M4	47.770161576000078	16.686120702000039
	M5	47.768864634000067	16.683764013000030
Illmitz	IL1	47.769915341000058	16.749328489000050
	IL2	47.766945009000040	16.754934513000023
	IL3	47.765219253000055	16.752159369000026
	IL4	47.772130422000032	16.758498275000022
	IL5	47.772608579000064	16.760530081000070
	IL6	47.769779184000072	16.754637068000022
	IL7	47.775512210000045	16.756030635000059
	IL8	47.777346798000053	16.753617009000038
	IL9	47.752687826000056	16.747965074000035

Table A 2: Sampling dates in the Wulka estuary and at the two test areas Mörbisch and Illmitz between autumn 2017 and spring 2019 for the analysis of hydro-chemical parameters.

	Campaign 1	Campaign 2	Campaign 3	Campaign 4	Campaign 5
Wulka estuary	04.10.2017	28.03.2018	09.07.2018	17.10.2018	10.04.2019
	10.10.2017	05.04.2018	16.07.2018	23.10.2018	–
	18.10.2017	11.04.2018	23.07.2018	29.10.2018	–
Mörbisch	04.10.2017	28.03.2018	09.07.2018	17.10.2018	10.04.2019
	10.10.2017	05.04.2018	16.07.2018	23.10.2018	–
	18.10.2017	11.04.2018	23.07.2018	29.10.2018	–
Illmitz	02.10.2017	26.03.2018	11.07.2018	15.10.2018	08.04.2019
	09.10.2017	03.04.2018	18.07.2018	22.10.2018	–
	16.10.2017	09.04.2018	25.07.2018	30.10.2018	–

For all analysed hydro-chemical parameters, the resulting sample size at each sampling site was n = 13.

Table A 3: Sampling dates in the Wulka estuary and at the two test areas Mörbisch and Illmitz between autumn 2017 and autumn 2019 for the analysis of trace contaminants.

	Wulka	Mörbisch	Illmitz
Sampling dates	08.11.2017 17.04.2018 14.11.2018 09.04.2019 26.06.2019	08.11.2017 17.04.2018 01.10.2018 18.03.2019 09.04.2019 24.09.2019	09.11.2017 16.04.2018 03.09.2018 18.03.2019 08.04.2019 29.04.2019 26.06.2019 24.09.2019

Table A 4: Additional measurements of trace contaminants in the Wulka river/estuary from other publications, which have been included in the analyses for this study.

Parameter	Water fraction	Number of samples	Sampling period	Reference
Metals				
Cadmium, Copper, Lead, Mercury, Nickel, Zinc	Filtered	n = 4	July 2016 – August 2017	(Zoboli et al., 2019)
Organic micropollutants				
Perfluorooctanoic acid (PFOA) and Perfluorooctanesulfonic acid (PFOS)	Total	n = 4	July 2016 – August 2017	(Zoboli et al., 2019)
	Total	n = 8	April 2019 – October 2019	(Ghirardini et al., 2021)
Acesulfame K	Total	n = 8	April 2019 – October 2019	(Ghirardini et al., 2021)
Carbamazepine and Diclofenac	Total	n = 2	December 2017 April 2018	(Clara et al., 2019)
	Total	n = 1	August 2019	(Braun et al., 2020)
	Total	n = 8	April – October 2019	(Ghirardini et al., 2021)

Table A 5: Values of the additional measurements of trace contaminants in the Wulka river/estuary from other publications, which have been included in the analyses for this study.

Sampling point	Test area	Parameter	Value	LOQ	Unit	Reference
WU (river)	Wulka	Carbamazepine	0.2	0.0001	µg/L	Clara et al. (2019)
WU (river)	Wulka	Carbamazepine	0.19	0.0001	µg/L	Clara et al. (2019)
WU (river)	Wulka	Carbamazepine	0.43	0.001	µg/L	Braun et al. (2020)
WU (river)	Wulka	Carbamazepine	0.13	0.0025	µg/L	Ghirardini et al. (2021)
WU (river)	Wulka	Carbamazepine	0.037	0.0025	µg/L	Ghirardini et al. (2021)
WU (river)	Wulka	Carbamazepine	0.08	0.0025	µg/L	Ghirardini et al. (2021)
WU (river)	Wulka	Carbamazepine	0.221	0.0025	µg/L	Ghirardini et al. (2021)
WU (river)	Wulka	Carbamazepine	0.154	0.0025	µg/L	Ghirardini et al. (2021)
WU (river)	Wulka	Carbamazepine	0.049	0.0025	µg/L	Ghirardini et al. (2021)
WU (river)	Wulka	Carbamazepine	0.177	0.0025	µg/L	Ghirardini et al. (2021)
WU (river)	Wulka	Carbamazepine	0.176	0.0025	µg/L	Ghirardini et al. (2021)
WU (river)	Wulka	Diclofenac	0.83	0.0001	µg/L	Clara et al. (2019)
WU (river)	Wulka	Diclofenac	0.86	0.0001	µg/L	Clara et al. (2019)
WU (river)	Wulka	Diclofenac	1.5	0.001	µg/L	Braun et al. (2020)
WU (river)	Wulka	Diclofenac	0.261	0.0005	µg/L	Ghirardini et al. (2021)
WU (river)	Wulka	Diclofenac	0.063	0.0005	µg/L	Ghirardini et al. (2021)
WU (river)	Wulka	Diclofenac	0.339	0.0005	µg/L	Ghirardini et al. (2021)
WU (river)	Wulka	Diclofenac	0.499	0.0005	µg/L	Ghirardini et al. (2021)
WU (river)	Wulka	Diclofenac	0.598	0.0005	µg/L	Ghirardini et al. (2021)
WU (river)	Wulka	Diclofenac	0.09	0.0005	µg/L	Ghirardini et al. (2021)
WU (river)	Wulka	Diclofenac	0.702	0.0005	µg/L	Ghirardini et al. (2021)
WU (river)	Wulka	Diclofenac	1.444	0.0005	µg/L	Ghirardini et al. (2021)
WU (river)	Wulka	PFOA	0.00077	0.0001	µg/L	Ghirardini et al. (2021)
WU (river)	Wulka	PFOA	0.00088	0.0001	µg/L	Ghirardini et al. (2021)
WU (river)	Wulka	PFOA	0.0067	0.002	µg/L	Ghirardini et al. (2021)
WU (river)	Wulka	PFOA	0.002	0.002	µg/L	Ghirardini et al. (2021)
WU (river)	Wulka	PFOA	0.0022	0.002	µg/L	Ghirardini et al. (2021)
WU (river)	Wulka	PFOA	0.0013	0.002	µg/L	Ghirardini et al. (2021)
WU (river)	Wulka	PFOA	0.0019	0.002	µg/L	Ghirardini et al. (2021)
WU (river)	Wulka	PFOA	0.0015	0.002	µg/L	Ghirardini et al. (2021)
WU (river)	Wulka	PFOS	0.00069	0.002	µg/L	Ghirardini et al. (2021)
WU (river)	Wulka	PFOS	0.00102	0.002	µg/L	Ghirardini et al. (2021)
WU (river)	Wulka	PFOS	0.0055	0.002	µg/L	Ghirardini et al. (2021)
WU (river)	Wulka	PFOS	0.002	0.002	µg/L	Ghirardini et al. (2021)
WU (river)	Wulka	PFOS	0.0006	0.002	µg/L	Ghirardini et al. (2021)
WU (river)	Wulka	PFOS	0.0009	0.002	µg/L	Ghirardini et al. (2021)
WU (river)	Wulka	PFOS	0.0002	0.002	µg/L	Ghirardini et al. (2021)
WU (river)	Wulka	PFOS	0.0021	0.002	µg/L	Ghirardini et al. (2021)
WU (river)	Wulka	Acesulfame K	< LOQ	0.001	µg/L	Ghirardini et al. (2021)
WU (river)	Wulka	Acesulfame K	0.054	0.001	µg/L	Ghirardini et al. (2021)
WU (river)	Wulka	Acesulfame K	1.051	0.001	µg/L	Ghirardini et al. (2021)
WU (river)	Wulka	Acesulfame K	0.121	0.001	µg/L	Ghirardini et al. (2021)

Sampling point	Test area	Parameter	Value	LOQ	Unit	Reference
WU (river)	Wulka	Acesulfame K	0.235	0.001	µg/L	Ghirardini et al. (2021)
WU (river)	Wulka	Acesulfame K	0.066	0.001	µg/L	Ghirardini et al. (2021)
WU (river)	Wulka	Acesulfame K	0.083	0.001	µg/L	Ghirardini et al. (2021)
WU (river)	Wulka	Acesulfame K	0.001	0.001	µg/L	Ghirardini et al. (2021)
WU (river)	Wulka	Lead	0.1	0.01	µg/L	Zoboli et al. (2019)
WU (river)	Wulka	Lead	0.08	0.01	µg/L	Zoboli et al. (2019)
WU (river)	Wulka	Cadmium	0.007	0.001	µg/L	Zoboli et al. (2019)
WU (river)	Wulka	Cadmium	0.006	0.001	µg/L	Zoboli et al. (2019)
WU (river)	Wulka	Copper	4.3	0.01	µg/L	Zoboli et al. (2019)
WU (river)	Wulka	Copper	3.9	0.01	µg/L	Zoboli et al. (2019)
WU (river)	Wulka	Nickel	1.4	0.01	µg/L	Zoboli et al. (2019)
WU (river)	Wulka	Nickel	1.2	0.01	µg/L	Zoboli et al. (2019)
WU (river)	Wulka	Mercury	0.0038	0.0001	µg/L	Zoboli et al. (2019)
WU (river)	Wulka	Mercury	0.0031	0.0001	µg/L	Zoboli et al. (2019)
WU (river)	Wulka	Zinc	8.3	0.01	µg/L	Zoboli et al. (2019)
WU (river)	Wulka	Zinc	5.8	0.01	µg/L	Zoboli et al. (2019)
WU (river)	Wulka	Copper	0.97	0.01	µg/L	Zoboli et al. (2019)
WU (river)	Wulka	Copper	7.3	0.01	µg/L	Zoboli et al. (2019)
WU (river)	Wulka	Cadmium	0.0024	0.001	µg/L	Zoboli et al. (2019)
WU (river)	Wulka	Cadmium	0.01	0.001	µg/L	Zoboli et al. (2019)
WU (river)	Wulka	Lead	0.18	0.01	µg/L	Zoboli et al. (2019)
WU (river)	Wulka	Lead	0.017	0.01	µg/L	Zoboli et al. (2019)
WU (river)	Wulka	Nickel	0.85	0.01	µg/L	Zoboli et al. (2019)
WU (river)	Wulka	Nickel	1.8	0.01	µg/L	Zoboli et al. (2019)
WU (river)	Wulka	Zinc	3.8	0.01	µg/L	Zoboli et al. (2019)
WU (river)	Wulka	Zinc	7.8	0.01	µg/L	Zoboli et al. (2019)
WU (river)	Wulka	Mercury	0.0011	0.0001	µg/L	Zoboli et al. (2019)
WU (river)	Wulka	Mercury	0.02	0.0001	µg/L	Zoboli et al. (2019)
WU (river)	Wulka	PFOS	0.0048	0.001	µg/L	Zoboli et al. (2019)
WU (river)	Wulka	PFOA	0.0035	0.001	µg/L	Zoboli et al. (2019)
WU (river)	Wulka	PFOS	0.0044	0.001	µg/L	Zoboli et al. (2019)
WU (river)	Wulka	PFOA	< LOQ	0.001	µg/L	Zoboli et al. (2019)
WU (river)	Wulka	PFOS	0.011	0.001	µg/L	Zoboli et al. (2019)
WU (river)	Wulka	PFOA	0.0058	0.001	µg/L	Zoboli et al. (2019)
WU (river)	Wulka	PFOS	0.0048	0.001	µg/L	Zoboli et al. (2019)
WU (river)	Wulka	PFOA	< LOQ	0.001	µg/L	Zoboli et al. (2019)

Table A 6: Final available sample size (n) and number of censored data (cens. n., lower than LOQ) for trace contaminants. Measurements are aggregated for samples within the Wulka river/estuary and within three groups of sampling sites according to the level of connectivity to the open lake.

Parameter	**Fraction**	**Wulka river/estuary**		**Open lake**		**High-mid connected**		**Low connected-isolated**		**Total**	
		n	***cens. n***	**n**	***cens. n***	**n**	***cens. n***	**n**	***cens. n***	**n**	***cens. n***
Metals											
Cadmium	total	4	-	4	-	8	-	6	-	22	-
Cadmium	filtered	10	-	7	-	10	-	8	-	35	-
Copper	total	4	-	4	-	8	-	6	-	22	-
Copper	filtered	11	-	7	-	10	-	9	-	37	-
Lead	total	4	-	4	-	8	-	6	-	22	-
Lead	filtered	11	-	7	-	10	-	9	-	35	-
Mercury	total	4	-	4	-	8	-	6	-	22	-
Mercury	filtered	8	*1*	4	-	8	-	6	-	26	*1*
Nickel	total	4	-	4	-	8	-	6	-	22	-
Nickel	filtered	11	-	6	-	10	-	9	-	36	-
Zinc	total	4	-	4	-	8	-	6	-	22	-
Zinc	filtered	11	-	7	-	10	-	9	-	37	-
Organic micropollutants											
PFOA	total	19	*2*	12	-	5	-	8	-	44	*2*
PFOS	total	19	-	12	*7*	5	*3*	7	*3*	43	*13*
Acesulfame K	total	12	*1*	7	-	1	-	7	-	27	*1*
Carbamazepine	total	14	-	6	*2*	-	-	6	*3*	26	*5*
Diclofenac	total	14	-	6	*4*	-	-	6	*4*	26	*8*

A2. Analytical methods

A2.1 Hydro-chemical parameters

Table A 7: Overview of the applied analytical methods for the hydro-chemical parameters.

Parameter	Abbreviation	Unit	Standard
On site			
Water temperature	WT	[°C]	ÖNORM M 6616 (mod.)
Dissolved oxygen (concentration)	DO	[mg L^{-1}]	ÖNORM EN ISO 5814, ISO 17289
Dissolved oxygen (saturation)	DO	[%]	ÖNORM EN ISO 5814, ISO 17289
Electrical conductivity (25°C)	EC	[µS cm^{-1}]	EN 27888 (mod.)
pH	pH	[–log [H^+]]	EN ISO 10523 (mod.)
In the laboratory			
Calcium	Ca^{2+}	[mg L^{-1}]	EN ISO 14911 (mod.)
Magnesium	Mg^{2+}	[mg L^{-1}]	EN ISO 14911 (mod.)
Sodium	Na^+	[mg L^{-1}]	EN ISO 14911 (mod.)
Potassium	K^+	[mg L^{-1}]	EN ISO 14911 (mod.)
Chloride	Cl^-	[mg L^{-1}]	EN ISO 10304-1 (mod.)
Sulphate-sulphur	SO_4-S	[mg L^{-1}]	EN ISO 10304-1 (mod.)
Acid-neutralizing capacity to pH 4,3	ANC	[mMol L^{-1}]	EN ISO 9963-1 (mod.)
Total phosphorus	TP	[µg L^{-1}]	EN ISO 6878 (mod.)
Dissolved phosphorus	DP	[µg L^{-1}]	EN ISO 6878 (mod.)
Soluble reactive phosphorus (orthophosphate)	SRP	[µg L^{-1}]	EN ISO 6878 (mod.)
Soluble unreactive phosphorus (calculated)	SUP	[µg L^{-1}]	–
Particulate phosphorus (calculated)	PP	[µg L^{-1}]	–
Total nitrogen	TN	[mg L^{-1}]	EN 12260
Dissolved organic nitrogen	DON	[mg L^{-1}]	EN 12260
Nitrite-nitrogen	NO_2-N	[µg L^{-1}]	EN 26777 (mod.)
Nitrate-nitrogen	NO_3-N	[mg L^{-1}]	EN ISO 10304-1 (mod.)
Ammonium-nitrogen	NH_4-N	[µg L^{-1}]	ISO 7150-1 (mod.)
Particulate nitrogen (calculated)	PN	[mg L^{-1}]	–
Soluble reactive silica	SRSi	[mg L^{-1}]	Legler (1988)
Dissolved organic carbon	DOC	[mg L^{-1}]	EN 1484
Total organic carbon	TOC	[mg L^{-1}]	EN 1484
Particulate matter	PM	[mg L^{-1}]	EN 872 (mod.)
Particulate organic matter (calculated)	POM	[mg L^{-1}]	EN 872, DIN 38409-2 Ab. 5.3 (mod.)
Particulate inorganic matter	PIM	[mg L^{-1}]	
Chlorophyll a	Chl a	[µg L^{-1}]	DIN 38412-16 (mod.)

A2.2 Trace contaminants

Table A 8: Overview of the applied analytical methods for trace contaminants.

Parameter	Abbreviation	Water fraction	LOQ [µg L^{-1}]	Standard
Metals				
Cadmium	Cd	Total	0.001	DIN 38406-29-E29
Cadmium	Cd	Filtered	0.001	DIN 38406-29-E29
Copper	Cu	Total	0.01	DIN 38406-29-E29
Copper	Cu	Filtered	0.01	DIN 38406-29-E29
Lead	Pb	Total	0.01	DIN 38406-29-E29
Lead	Pb	Filtered	0.01	DIN 38406-29-E29
Mercury	Hg	Total	0.0001	DIN EN 13506-E35
Mercury	Hg	Filtered	0.0001	DIN EN 13506-E35
Nickel	Ni	Total	0.01	DIN 38406-29-E29
Nickel	Ni	Filtered	0.01	DIN 38406-29-E29
Zinc	Zn	Total	0.01	DIN 38406-29-E29
Zinc	Zn	Filtered	0.01	DIN 38406-29-E29
Organic micropollutants				
Perfluorooctanoic acid	PFOA	Total	0.00015-0.001	DIN 38407-F42
Perfluorooctanesulfonic acid	PFOS	Total	0.00015-0.001	DIN 38407-F42
Acesulfame K	Ace-K	Total	0.01	PV M 3700/0
Carbamazepine	CBZ	Total	0.005 - 0.01	PV M 2500/0
Diclofenac	DIC	Total	0.005 - 0.01	PV M 2500/0

A3. Results

A3.1 Principal Component Analysis

Table A 9: Results of the Principal Component Analysis applied to the main hydro-chemical parameters for all sampling sites and dates.

Importance of components	PC1	PC2	PC3	PC4	PC5	PC6	PC7	PC8	PC9
Standard deviation	2.096	1.660	1.454	1.103	0.991	0.908	0.758	0.556	0.536
Proportion of variance	0.314	0.197	0.151	0.087	0.070	0.059	0.041	0.022	0.021
Cumulative proportion	0.314	0.511	0.662	0.749	0.819	0.878	0.919	0.940	0.961

A3.2 Correlation

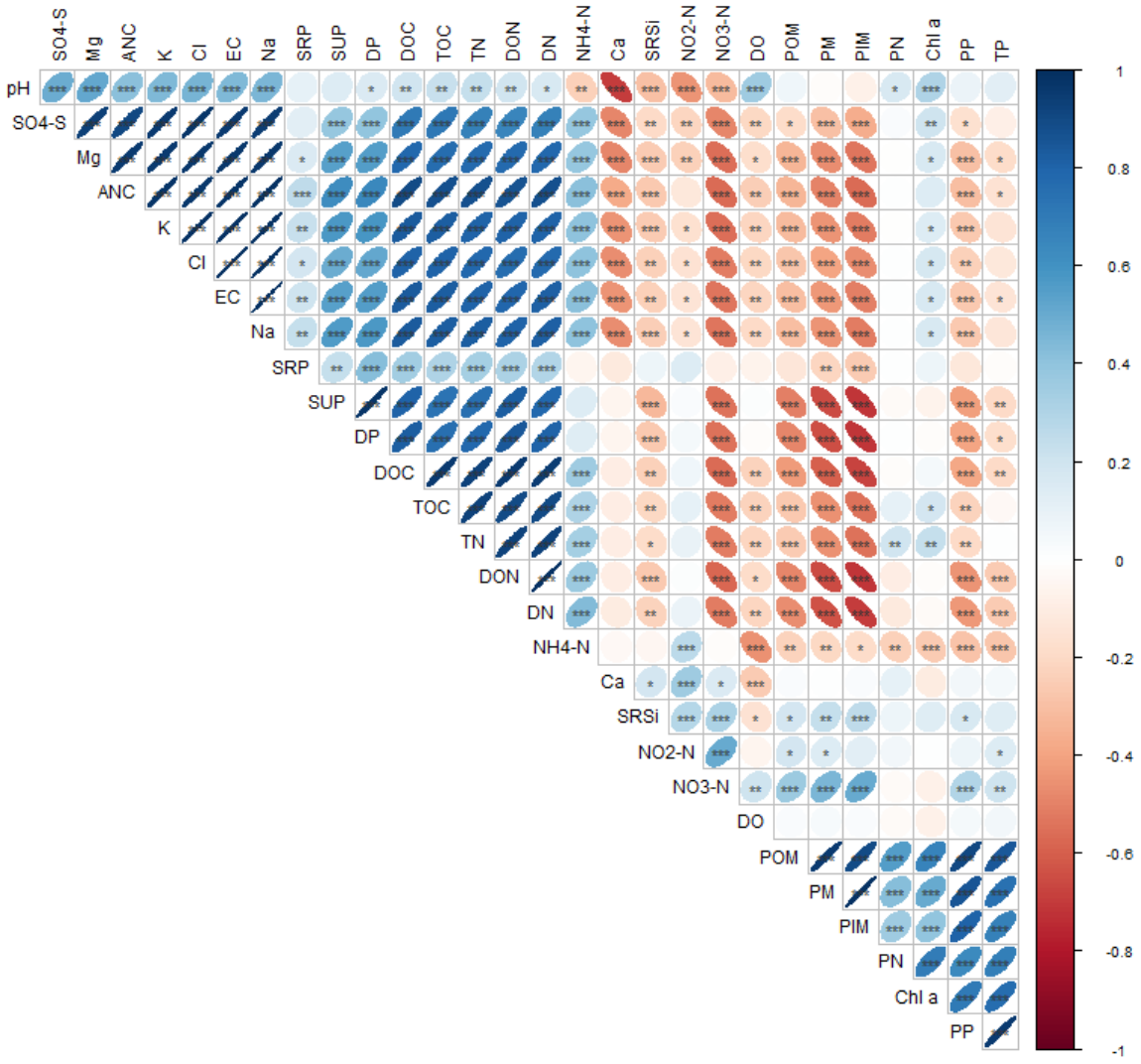

*Figure A 1: Correlation matrix of all measured hydro-chemical parameters from 13 sampling dates at all sampling sites, ordered by hierarchical clustering. Statistical significance of Pearson correlation coefficients is indicated: *** ($p < 0.001$, highly significant); ** ($p < 0.01$, very significant); * ($p < 0.05$, significant); blank ($p > 0.05$, not significant).*

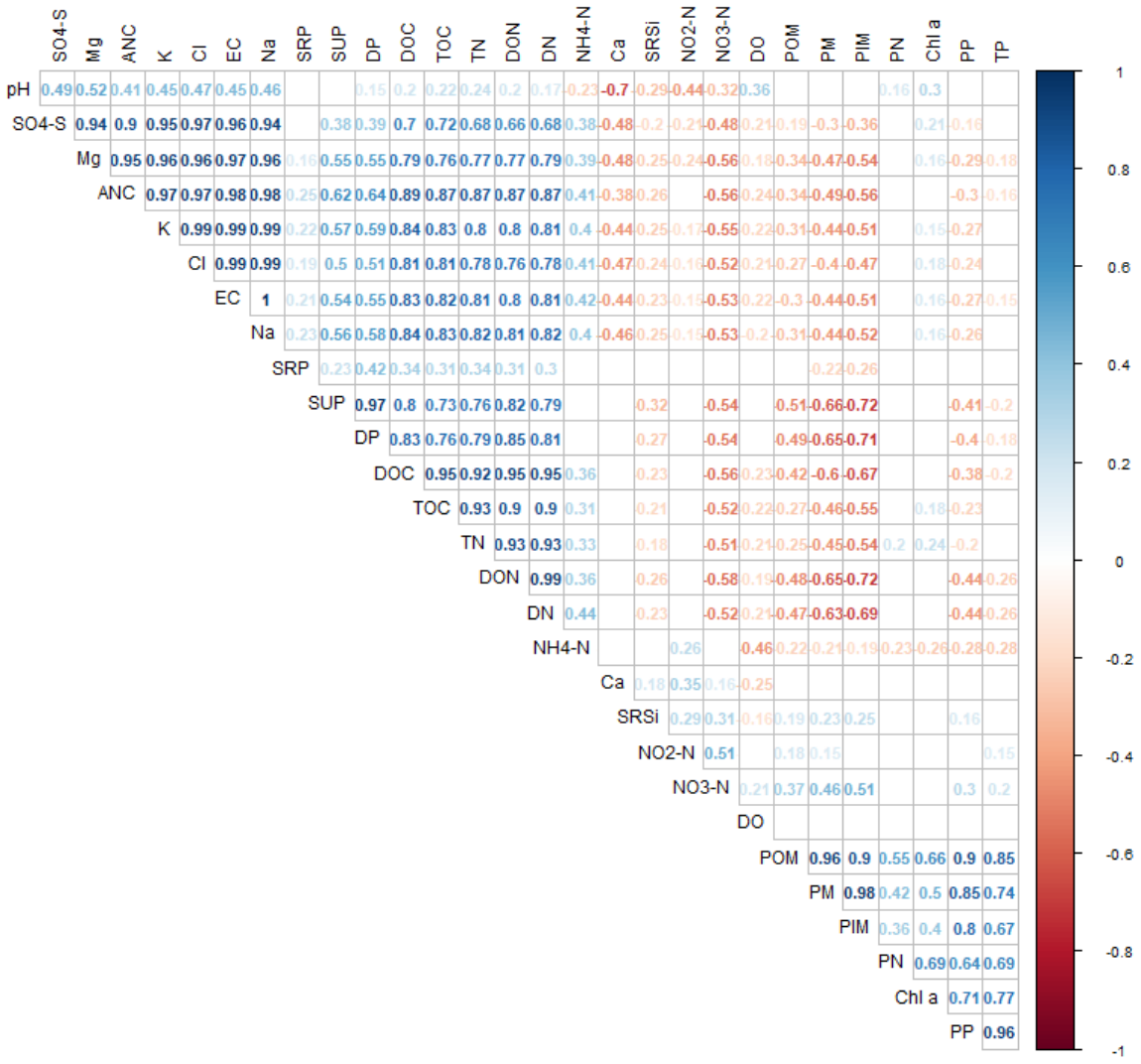

Figure A 2: Correlation matrix of all measured hydro-chemical parameters from 13 sampling dates at all sampling sites, ordered by hierarchical clustering. Significant (p≤0.05) Pearson correlation coefficients values are shown.

A3.3 Statistical descriptors for hydro-chemical parameters

Table A 10: Mean, median and standard deviation for hydro-chemical parameters at the individual sampling sites in the Wulka estuary, in the Mörbisch and in the Illmitz test areas.

Test area	Sampling site	Parameter	Mean	Median	Standard deviation	Unit
Wulka	Estuary	WT	12.9	11.4	4.5	[°C]
Illmitz	IL1	WT	13.7	12.7	5.4	[°C]
Illmitz	IL2	WT	14.0	12.9	5.7	[°C]
Illmitz	IL3	WT	14.1	13.5	5.8	[°C]
Illmitz	IL4	WT	14.0	13.3	5.5	[°C]
Illmitz	IL5	WT	14.1	14.3	5.2	[°C]
Illmitz	IL6	WT	15.2	13.6	5.6	[°C]
Illmitz	IL7	WT	14.2	13.3	5.3	[°C]
Illmitz	IL8	WT	14.7	13.9	5.3	[°C]
Illmitz	IL9	WT	16.1	15.2	5.3	[°C]
Mörbisch	M1	WT	14.6	13.2	5.2	[°C]
Mörbisch	M2	WT	14.6	13.4	5.2	[°C]
Mörbisch	M3	WT	15.0	13.8	5.1	[°C]
Mörbisch	M4	WT	15.3	13.8	4.8	[°C]
Mörbisch	M5	WT	15.3	13.8	4.7	[°C]
Wulka	Estuary	DO (conc.)	4.3	4.3	1.9	[mg L^{-1}]
Illmitz	IL1	DO (conc.)	10.1	10.3	1.4	[mg L^{-1}]
Illmitz	IL2	DO (conc.)	8.5	8.2	1.7	[mg L^{-1}]
Illmitz	IL3	DO (conc.)	7.4	7.4	2.0	[mg L^{-1}]
Illmitz	IL4	DO (conc.)	8.6	9.0	2.0	[mg L^{-1}]
Illmitz	IL5	DO (conc.)	8.9	9.0	1.6	[mg L^{-1}]
Illmitz	IL6	DO (conc.)	4.6	4.5	2.5	[mg L^{-1}]
Illmitz	IL7	DO (conc.)	9.2	9.2	1.5	[mg L^{-1}]
Illmitz	IL8	DO (conc.)	9.1	9.1	1.6	[mg L^{-1}]
Illmitz	IL9	DO (conc.)	9.8	10.0	1.3	[mg L^{-1}]
Mörbisch	M1	DO (conc.)	9.4	9.6	1.4	[mg L^{-1}]
Mörbisch	M2	DO (conc.)	8.1	8.0	1.7	[mg L^{-1}]
Mörbisch	M3	DO (conc.)	7.3	6.5	2.0	[mg L^{-1}]
Mörbisch	M4	DO (conc.)	8.7	9.1	1.5	[mg L^{-1}]
Mörbisch	M5	DO (conc.)	10.1	10.2	0.9	[mg L^{-1}]
Wulka	Estuary	DO (satur.)	40.1	38.9	14.1	[%]
Illmitz	IL1	DO (satur.)	97.1	97.1	2.8	[%]
Illmitz	IL2	DO (satur.)	82.6	84.6	7.9	[%]
Illmitz	IL3	DO (satur.)	72.9	75.7	13.8	[%]
Illmitz	IL4	DO (satur.)	82.4	84.9	12.0	[%]
Illmitz	IL5	DO (satur.)	86.1	87.2	9.6	[%]
Illmitz	IL6	DO (satur.)	44.9	44.7	20.8	[%]

Test area	Sampling site	Parameter	Mean	Median	Standard deviation	Unit
Illmitz	IL7	DO (satur.)	87.2	90.1	9.2	[%]
Illmitz	IL8	DO (satur.)	88.9	89.1	7.0	[%]
Illmitz	IL9	DO (satur.)	100.1	100.7	9.5	[%]
Mörbisch	M1	DO (satur.)	92.1	94.0	6.1	[%]
Mörbisch	M2	DO (satur.)	79.1	85.3	11.5	[%]
Mörbisch	M3	DO (satur.)	72.9	77.0	14.8	[%]
Mörbisch	M4	DO (satur.)	87.1	87.1	9.7	[%]
Mörbisch	M5	DO (satur.)	102.0	101.2	7.4	[%]
Wulka	Estuary	EC	1042.5	1057.0	92.9	[µS cm^{-1}]
Illmitz	IL1	EC	2412.3	2400.0	176.5	[µS cm^{-1}]
Illmitz	IL2	EC	2626.2	2600.0	349.0	[µS cm^{-1}]
Illmitz	IL3	EC	2611.5	2640.0	333.6	[µS cm^{-1}]
Illmitz	IL4	EC	2956.2	3090.0	578.7	[µS cm^{-1}]
Illmitz	IL5	EC	3151.5	3340.0	606.5	[µS cm^{-1}]
Illmitz	IL6	EC	2812.3	3010.0	439.5	[µS cm^{-1}]
Illmitz	IL7	EC	2713.1	2780.0	340.5	[µS cm^{-1}]
Illmitz	IL8	EC	2752.3	2840.0	361.5	[µS cm^{-1}]
Illmitz	IL9	EC	4633.8	4760.0	1142.4	[µS cm^{-1}]
Mörbisch	M1	EC	2451.5	2440.0	202.4	[µS cm^{-1}]
Mörbisch	M2	EC	2496.9	2500.0	230.1	[µS cm^{-1}]
Mörbisch	M3	EC	2585.4	2580.0	271.4	[µS cm^{-1}]
Mörbisch	M4	EC	2713.1	2800.0	340.1	[µS cm^{-1}]
Mörbisch	M5	EC	2759.2	2800.0	389.0	[µS cm^{-1}]
Wulka	Estuary	pH	7.7	7.7	0.2	[-log [H^{+1}]]
Illmitz	IL1	pH	8.9	8.9	0.1	[-log [H^{+1}]]
Illmitz	IL2	pH	8.8	8.9	0.1	[-log [H^{+1}]]
Illmitz	IL3	pH	8.6	8.6	0.2	[-log [H^{+1}]]
Illmitz	IL4	pH	8.9	8.9	0.1	[-log [H^{+1}]]
Illmitz	IL5	pH	8.9	9.0	0.2	[-log [H^{+1}]]
Illmitz	IL6	pH	8.4	8.4	0.2	[-log [H^{+1}]]
Illmitz	IL7	pH	8.8	8.8	0.2	[-log [H^{+1}]]
Illmitz	IL8	pH	8.9	8.8	0.2	[-log [H^{+1}]]
Illmitz	IL9	pH	9.0	9.0	0.2	[-log [H^{+1}]]
Mörbisch	M1	pH	8.9	8.9	0.1	[-log [H^{+1}]]
Mörbisch	M2	pH	8.7	8.8	0.2	[-log [H^{+1}]]
Mörbisch	M3	pH	8.7	8.8	0.1	[-log [H^{+1}]]
Mörbisch	M4	pH	8.8	8.9	0.1	[-log [H^{+1}]]
Mörbisch	M5	pH	8.9	8.9	0.2	[-log [H^{+1}]]
Wulka	Estuary	Ca^{2+}	98.0	99.9	9.1	[mg L^{-1}]
Illmitz	IL1	Ca^{2+}	16.5	14.8	4.4	[mg L^{-1}]
Illmitz	IL2	Ca^{2+}	19.0	16.8	3.8	[mg L^{-1}]

Test area	Sampling site	Parameter	Mean	Median	Standard deviation	Unit
Illmitz	IL3	Ca^{2+}	22.4	22.5	3.2	[mg L^{-1}]
Illmitz	IL4	Ca^{2+}	17.9	15.8	3.7	[mg L^{-1}]
Illmitz	IL5	Ca^{2+}	17.4	15.4	4.0	[mg L^{-1}]
Illmitz	IL6	Ca^{2+}	24.9	24.7	3.3	[mg L^{-1}]
Illmitz	IL7	Ca^{2+}	21.4	23.0	3.6	[mg L^{-1}]
Illmitz	IL8	Ca^{2+}	21.4	23.2	3.9	[mg L^{-1}]
Illmitz	IL9	Ca^{2+}	14.6	15.7	4.0	[mg L^{-1}]
Mörbisch	M1	Ca^{2+}	17.6	17.1	3.9	[mg L^{-1}]
Mörbisch	M2	Ca^{2+}	18.4	17.9	3.8	[mg L^{-1}]
Mörbisch	M3	Ca^{2+}	20.0	19.3	3.8	[mg L^{-1}]
Mörbisch	M4	Ca^{2+}	21.0	20.5	3.7	[mg L^{-1}]
Mörbisch	M5	Ca^{2+}	20.8	18.9	3.9	[mg L^{-1}]
Wulka	Estuary	Mg^{2+}	43.5	42.0	6.7	[mg L^{-1}]
Illmitz	IL1	Mg^{2+}	125.9	127.6	10.3	[mg L^{-1}]
Illmitz	IL2	Mg^{2+}	137.0	142.0	18.6	[mg L^{-1}]
Illmitz	IL3	Mg^{2+}	136.8	143.7	18.5	[mg L^{-1}]
Illmitz	IL4	Mg^{2+}	151.3	160.3	28.7	[mg L^{-1}]
Illmitz	IL5	Mg^{2+}	159.0	170.8	31.2	[mg L^{-1}]
Illmitz	IL6	Mg^{2+}	144.3	158.1	23.4	[mg L^{-1}]
Illmitz	IL7	Mg^{2+}	142.2	149.4	20.4	[mg L^{-1}]
Illmitz	IL8	Mg^{2+}	143.8	147.9	21.7	[mg L^{-1}]
Illmitz	IL9	Mg^{2+}	227.9	238.7	56.6	[mg L^{-1}]
Mörbisch	M1	Mg^{2+}	128.2	128.9	11.0	[mg L^{-1}]
Mörbisch	M2	Mg^{2+}	132.7	131.9	13.9	[mg L^{-1}]
Mörbisch	M3	Mg^{2+}	137.9	142.5	14.3	[mg L^{-1}]
Mörbisch	M4	Mg^{2+}	146.1	150.6	19.5	[mg L^{-1}]
Mörbisch	M5	Mg^{2+}	149.0	152.5	22.5	[mg L^{-1}]
Wulka	Estuary	Na^{+}	59.9	60.1	6.2	[mg L^{-1}]
Illmitz	IL1	Na^{+}	331.6	330.2	33.1	[mg L^{-1}]
Illmitz	IL2	Na^{+}	371.0	366.9	61.0	[mg L^{-1}]
Illmitz	IL3	Na^{+}	362.9	369.6	56.7	[mg L^{-1}]
Illmitz	IL4	Na^{+}	443.4	456.1	114.4	[mg L^{-1}]
Illmitz	IL5	Na^{+}	481.2	516.0	117.1	[mg L^{-1}]
Illmitz	IL6	Na^{+}	402.2	434.1	77.8	[mg L^{-1}]
Illmitz	IL7	Na^{+}	389.8	402.7	62.5	[mg L^{-1}]
Illmitz	IL8	Na^{+}	396.6	413.2	66.1	[mg L^{-1}]
Illmitz	IL9	Na^{+}	791.3	820.8	235.4	[mg L^{-1}]
Mörbisch	M1	Na^{+}	339.0	339.5	37.4	[mg L^{-1}]
Mörbisch	M2	Na^{+}	348.0	349.7	41.0	[mg L^{-1}]
Mörbisch	M3	Na^{+}	361.0	365.0	46.3	[mg L^{-1}]
Mörbisch	M4	Na^{+}	381.5	393.7	60.1	[mg L^{-1}]

Test area	Sampling site	Parameter	Mean	Median	Standard deviation	Unit
Mörbisch	M5	Na^+	391.7	394.9	68.3	[mg L^{-1}]
Wulka	Estuary	K^+	13.6	13.3	3.1	[mg L^{-1}]
Illmitz	IL1	K^+	34.4	34.6	3.5	[mg L^{-1}]
Illmitz	IL2	K^+	38.0	38.5	5.9	[mg L^{-1}]
Illmitz	IL3	K^+	37.8	38.0	5.3	[mg L^{-1}]
Illmitz	IL4	K^+	42.6	44.4	9.1	[mg L^{-1}]
Illmitz	IL5	K^+	45.6	47.3	9.6	[mg L^{-1}]
Illmitz	IL6	K^+	40.1	42.3	5.7	[mg L^{-1}]
Illmitz	IL7	K^+	39.5	40.3	5.3	[mg L^{-1}]
Illmitz	IL8	K^+	40.3	41.6	5.5	[mg L^{-1}]
Illmitz	IL9	K^+	68.2	69.2	17.3	[mg L^{-1}]
Mörbisch	M1	K^+	34.7	34.8	3.6	[mg L^{-1}]
Mörbisch	M2	K^+	35.5	35.7	3.8	[mg L^{-1}]
Mörbisch	M3	K^+	36.6	36.8	4.4	[mg L^{-1}]
Mörbisch	M4	K^+	38.5	40.3	5.4	[mg L^{-1}]
Mörbisch	M5	K^+	39.6	40.6	6.3	[mg L^{-1}]
Wulka	Estuary	Cl^-	85.2	84.3	8.0	[mg L^{-1}]
Illmitz	IL1	Cl^-	258.8	257.2	24.9	[mg L^{-1}]
Illmitz	IL2	Cl^-	285.2	278.0	46.6	[mg L^{-1}]
Illmitz	IL3	Cl^-	279.5	284.0	43.1	[mg L^{-1}]
Illmitz	IL4	Cl^-	325.7	340.5	75.2	[mg L^{-1}]
Illmitz	IL5	Cl^-	348.0	369.7	79.9	[mg L^{-1}]
Illmitz	IL6	Cl^-	300.7	324.4	56.3	[mg L^{-1}]
Illmitz	IL7	Cl^-	293.7	297.5	43.9	[mg L^{-1}]
Illmitz	IL8	Cl^-	296.9	306.3	47.6	[mg L^{-1}]
Illmitz	IL9	Cl^-	540.2	557.0	158.3	[mg L^{-1}]
Mörbisch	M1	Cl^-	263.4	260.0	26.8	[mg L^{-1}]
Mörbisch	M2	Cl^-	269.9	268.1	29.9	[mg L^{-1}]
Mörbisch	M3	Cl^-	278.7	278.5	34.5	[mg L^{-1}]
Mörbisch	M4	Cl^-	293.3	302.3	43.8	[mg L^{-1}]
Mörbisch	M5	Cl^-	300.5	302.4	49.9	[mg L^{-1}]
Wulka	Estuary	SO_4-S	42.1	37.3	10.0	[mg L^{-1}]
Illmitz	IL1	SO_4-S	129.6	129.2	12.6	[mg L^{-1}]
Illmitz	IL2	SO_4-S	141.0	139.3	22.1	[mg L^{-1}]
Illmitz	IL3	SO_4-S	136.7	139.3	19.9	[mg L^{-1}]
Illmitz	IL4	SO_4-S	150.8	158.0	29.4	[mg L^{-1}]
Illmitz	IL5	SO_4-S	157.6	165.7	31.8	[mg L^{-1}]
Illmitz	IL6	SO_4-S	140.0	149.0	24.1	[mg L^{-1}]
Illmitz	IL7	SO_4-S	138.5	138.8	20.8	[mg L^{-1}]
Illmitz	IL8	SO_4-S	138.7	140.3	22.6	[mg L^{-1}]
Illmitz	IL9	SO_4-S	207.1	209.5	55.6	[mg L^{-1}]

Test area	Sampling site	Parameter	Mean	Median	Standard deviation	Unit
Mörbisch	M1	SO_4-S	130.8	128.8	12.7	[mg L^{-1}]
Mörbisch	M2	SO_4-S	132.3	131.1	14.2	[mg L^{-1}]
Mörbisch	M3	SO_4-S	134.3	133.1	15.5	[mg L^{-1}]
Mörbisch	M4	SO_4-S	139.4	144.8	19.3	[mg L^{-1}]
Mörbisch	M5	SO_4-S	142.0	147.4	21.9	[mg L^{-1}]
Wulka	Estuary	ANC	6.5	6.4	0.5	[mMol L^{-1}]
Illmitz	IL1	ANC	11.8	11.7	0.7	[mMol L^{-1}]
Illmitz	IL2	ANC	13.0	12.7	1.6	[mMol L^{-1}]
Illmitz	IL3	ANC	13.1	13.3	1.6	[mMol L^{-1}]
Illmitz	IL4	ANC	15.4	15.8	3.3	[mMol L^{-1}]
Illmitz	IL5	ANC	16.7	17.7	3.4	[mMol L^{-1}]
Illmitz	IL6	ANC	14.6	14.7	2.3	[mMol L^{-1}]
Illmitz	IL7	ANC	14.2	15.0	1.7	[mMol L^{-1}]
Illmitz	IL8	ANC	14.4	15.0	1.8	[mMol L^{-1}]
Illmitz	IL9	ANC	27.4	28.6	7.5	[mMol L^{-1}]
Mörbisch	M1	ANC	12.2	12.2	0.9	[mMol L^{-1}]
Mörbisch	M2	ANC	12.6	12.6	1.0	[mMol L^{-1}]
Mörbisch	M3	ANC	13.2	13.3	1.3	[mMol L^{-1}]
Mörbisch	M4	ANC	14.0	14.0	1.8	[mMol L^{-1}]
Mörbisch	M5	ANC	14.4	14.2	2.0	[mMol L^{-1}]
Wulka	Estuary	TP	151.1	157.6	55.1	[µg L^{-1}]
Illmitz	IL1	TP	66.8	63.1	33.9	[µg L^{-1}]
Illmitz	IL2	TP	64.8	61.6	20.4	[µg L^{-1}]
Illmitz	IL3	TP	43.4	41.1	14.7	[µg L^{-1}]
Illmitz	IL4	TP	54.1	43.4	18.4	[µg L^{-1}]
Illmitz	IL5	TP	44.5	42.1	7.4	[µg L^{-1}]
Illmitz	IL6	TP	38.6	36.3	6.9	[µg L^{-1}]
Illmitz	IL7	TP	62.6	60.9	12.9	[µg L^{-1}]
Illmitz	IL8	TP	64.8	62.4	9.5	[µg L^{-1}]
Illmitz	IL9	TP	51.0	49.8	13.9	[µg L^{-1}]
Mörbisch	M1	TP	85.3	78.0	45.6	[µg L^{-1}]
Mörbisch	M2	TP	66.6	59.2	27.8	[µg L^{-1}]
Mörbisch	M3	TP	53.1	45.0	22.7	[µg L^{-1}]
Mörbisch	M4	TP	38.7	36.3	7.8	[µg L^{-1}]
Mörbisch	M5	TP	35.5	34.4	5.7	[µg L^{-1}]
Wulka	Estuary	DP	133.7	122.7	50.5	[µg L^{-1}]
Illmitz	IL1	DP	9.1	9.3	1.5	[µg L^{-1}]
Illmitz	IL2	DP	12.8	13.4	2.3	[µg L^{-1}]
Illmitz	IL3	DP	14.1	13.8	2.2	[µg L^{-1}]
Illmitz	IL4	DP	16.6	17.5	4.3	[µg L^{-1}]
Illmitz	IL5	DP	19.3	19.9	2.4	[µg L^{-1}]

Test area	Sampling site	Parameter	Mean	Median	Standard deviation	Unit
Illmitz	IL6	DP	17.5	18.0	3.4	[µg L^{-1}]
Illmitz	IL7	DP	18.3	17.6	2.7	[µg L^{-1}]
Illmitz	IL8	DP	19.9	18.9	3.7	[µg L^{-1}]
Illmitz	IL9	DP	26.0	26.5	3.6	[µg L^{-1}]
Mörbisch	M1	DP	10.6	10.4	1.4	[µg L^{-1}]
Mörbisch	M2	DP	11.6	11.5	1.5	[µg L^{-1}]
Mörbisch	M3	DP	13.4	13.9	1.7	[µg L^{-1}]
Mörbisch	M4	DP	15.4	15.4	2.0	[µg L^{-1}]
Mörbisch	M5	DP	16.1	16.1	1.8	[µg L^{-1}]
Wulka	Estuary	SRP	109.6	102.6	46.8	[µg L^{-1}]
Illmitz	IL1	SRP	2.2	2.2	1.0	[µg L^{-1}]
Illmitz	IL2	SRP	2.7	2.6	1.1	[µg L^{-1}]
Illmitz	IL3	SRP	2.8	2.9	1.0	[µg L^{-1}]
Illmitz	IL4	SRP	3.2	3.2	1.4	[µg L^{-1}]
Illmitz	IL5	SRP	3.8	3.7	1.5	[µg L^{-1}]
Illmitz	IL6	SRP	3.5	3.6	0.8	[µg L^{-1}]
Illmitz	IL7	SRP	3.5	3.5	1.2	[µg L^{-1}]
Illmitz	IL8	SRP	3.6	3.6	1.2	[µg L^{-1}]
Illmitz	IL9	SRP	5.6	5.7	2.2	[µg L^{-1}]
Mörbisch	M1	SRP	3.3	3.1	0.7	[µg L^{-1}]
Mörbisch	M2	SRP	3.0	2.9	0.5	[µg L^{-1}]
Mörbisch	M3	SRP	3.1	3.2	0.5	[µg L^{-1}]
Mörbisch	M4	SRP	2.7	2.8	0.7	[µg L^{-1}]
Mörbisch	M5	SRP	2.5	2.5	0.8	[µg L^{-1}]
Wulka	Estuary	SUP	24.0	24.7	5.9	[µg L^{-1}]
Illmitz	IL1	SUP	6.9	6.8	1.6	[µg L^{-1}]
Illmitz	IL2	SUP	10.1	9.9	2.5	[µg L^{-1}]
Illmitz	IL3	SUP	11.3	10.6	2.8	[µg L^{-1}]
Illmitz	IL4	SUP	13.3	14.2	3.7	[µg L^{-1}]
Illmitz	IL5	SUP	15.6	15.2	2.5	[µg L^{-1}]
Illmitz	IL6	SUP	14.0	14.2	3.1	[µg L^{-1}]
Illmitz	IL7	SUP	14.8	13.5	3.0	[µg L^{-1}]
Illmitz	IL8	SUP	16.4	15.6	4.4	[µg L^{-1}]
Illmitz	IL9	SUP	20.4	20.3	3.0	[µg L^{-1}]
Mörbisch	M1	SUP	7.3	7.5	1.5	[µg L^{-1}]
Mörbisch	M2	SUP	8.6	8.9	1.3	[µg L^{-1}]
Mörbisch	M3	SUP	10.3	10.9	1.7	[µg L^{-1}]
Mörbisch	M4	SUP	12.7	13.5	1.9	[µg L^{-1}]
Mörbisch	M5	SUP	13.6	13.7	1.9	[µg L^{-1}]
Wulka	Estuary	PP	17.5	14.7	12.2	[µg L^{-1}]
Illmitz	IL1	PP	57.7	54.5	34.5	[µg L^{-1}]

Test area	Sampling site	Parameter	Mean	Median	Standard deviation	Unit
Illmitz	IL2	PP	52.0	45.7	21.9	[µg L^{-1}]
Illmitz	IL3	PP	29.3	22.8	15.1	[µg L^{-1}]
Illmitz	IL4	PP	37.6	25.9	22.0	[µg L^{-1}]
Illmitz	IL5	PP	25.1	21.4	8.1	[µg L^{-1}]
Illmitz	IL6	PP	21.2	19.3	6.6	[µg L^{-1}]
Illmitz	IL7	PP	44.3	41.8	12.1	[µg L^{-1}]
Illmitz	IL8	PP	44.8	42.9	7.9	[µg L^{-1}]
Illmitz	IL9	PP	25.0	27.8	14.7	[µg L^{-1}]
Mörbisch	M1	PP	74.7	68.4	46.1	[µg L^{-1}]
Mörbisch	M2	PP	54.9	48.5	28.8	[µg L^{-1}]
Mörbisch	M3	PP	39.8	33.3	23.2	[µg L^{-1}]
Mörbisch	M4	PP	23.3	20.8	7.7	[µg L^{-1}]
Mörbisch	M5	PP	19.3	18.3	4.2	[µg L^{-1}]
Wulka	Estuary	TN	1.6	1.5	0.5	[mg L^{-1}]
Illmitz	IL1	TN	1.5	1.5	0.2	[mg L^{-1}]
Illmitz	IL2	TN	2.0	1.8	0.3	[mg L^{-1}]
Illmitz	IL3	TN	1.9	1.8	0.2	[mg L^{-1}]
Illmitz	IL4	TN	2.5	2.7	0.8	[mg L^{-1}]
Illmitz	IL5	TN	2.8	2.8	0.7	[mg L^{-1}]
Illmitz	IL6	TN	2.3	2.2	0.4	[mg L^{-1}]
Illmitz	IL7	TN	2.3	2.3	0.3	[mg L^{-1}]
Illmitz	IL8	TN	2.4	2.5	0.3	[mg L^{-1}]
Illmitz	IL9	TN	5.1	5.7	1.3	[mg L^{-1}]
Mörbisch	M1	TN	1.6	1.6	0.3	[mg L^{-1}]
Mörbisch	M2	TN	1.7	1.7	0.2	[mg L^{-1}]
Mörbisch	M3	TN	1.9	1.9	0.2	[mg L^{-1}]
Mörbisch	M4	TN	2.1	2.1	0.3	[mg L^{-1}]
Mörbisch	M5	TN	2.1	2.2	0.3	[mg L^{-1}]
Wulka	Estuary	DON	0.5	0.5	0.1	[mg L^{-1}]
Illmitz	IL1	DON	1.1	1.1	0.1	[mg L^{-1}]
Illmitz	IL2	DON	1.5	1.5	0.2	[mg L^{-1}]
Illmitz	IL3	DON	1.6	1.6	0.2	[mg L^{-1}]
Illmitz	IL4	DON	2.1	2.3	0.8	[mg L^{-1}]
Illmitz	IL5	DON	2.5	2.6	0.7	[mg L^{-1}]
Illmitz	IL6	DON	2.0	1.9	0.4	[mg L^{-1}]
Illmitz	IL7	DON	1.8	1.8	0.2	[mg L^{-1}]
Illmitz	IL8	DON	1.9	1.9	0.3	[mg L^{-1}]
Illmitz	IL9	DON	4.5	4.4	1.4	[mg L^{-1}]
Mörbisch	M1	DON	1.2	1.2	0.1	[mg L^{-1}]
Mörbisch	M2	DON	1.4	1.3	0.2	[mg L^{-1}]
Mörbisch	M3	DON	1.5	1.6	0.2	[mg L^{-1}]

Test area	Sampling site	Parameter	Mean	Median	Standard deviation	Unit
Mörbisch	M4	DON	1.8	1.8	0.3	[mg L^{-1}]
Mörbisch	M5	DON	1.9	1.9	0.3	[mg L^{-1}]
Wulka	Estuary	NO_2-N	19.4	14.8	13.0	[µg L^{-1}]
Illmitz	IL1	NO_2-N	1.1	0.6	1.0	[µg L^{-1}]
Illmitz	IL2	NO_2-N	1.6	1.4	1.0	[µg L^{-1}]
Illmitz	IL3	NO_2-N	1.6	1.4	0.5	[µg L^{-1}]
Illmitz	IL4	NO_2-N	1.6	1.5	0.6	[µg L^{-1}]
Illmitz	IL5	NO_2-N	1.7	1.8	0.5	[µg L^{-1}]
Illmitz	IL6	NO_2-N	2.1	2.1	0.7	[µg L^{-1}]
Illmitz	IL7	NO_2-N	1.5	1.5	0.6	[µg L^{-1}]
Illmitz	IL8	NO_2-N	1.6	1.1	1.1	[µg L^{-1}]
Illmitz	IL9	NO_2-N	3.1	2.7	1.4	[µg L^{-1}]
Mörbisch	M1	NO_2-N	2.0	1.7	0.8	[µg L^{-1}]
Mörbisch	M2	NO_2-N	2.0	2.2	0.7	[µg L^{-1}]
Mörbisch	M3	NO_2-N	2.0	2.0	0.6	[µg L^{-1}]
Mörbisch	M4	NO_2-N	1.6	1.5	0.5	[µg L^{-1}]
Mörbisch	M5	NO_2-N	1.3	1.1	0.7	[µg L^{-1}]
Wulka	Estuary	NO_3-N	0.9	0.7	0.5	[mg L^{-1}]
Illmitz	IL1	NO_3-N	0.021	0.000	0.039	[mg L^{-1}]
Illmitz	IL2	NO_3-N	0.010	0.000	0.024	[mg L^{-1}]
Illmitz	IL3	NO_3-N	0.005	0.003	0.006	[mg L^{-1}]
Illmitz	IL4	NO_3-N	0.010	0.000	0.024	[mg L^{-1}]
Illmitz	IL5	NO_3-N	0.003	0.000	0.005	[mg L^{-1}]
Illmitz	IL6	NO_3-N	0.001	0.000	0.003	[mg L^{-1}]
Illmitz	IL7	NO_3-N	0.001	0.000	0.002	[mg L^{-1}]
Illmitz	IL8	NO_3-N	0.002	0.000	0.005	[mg L^{-1}]
Illmitz	IL9	NO_3-N	0.004	0.000	0.008	[mg L^{-1}]
Mörbisch	M1	NO_3-N	0.056	0.045	0.041	[mg L^{-1}]
Mörbisch	M2	NO_3-N	0.034	0.024	0.026	[mg L^{-1}]
Mörbisch	M3	NO_3-N	0.020	0.014	0.019	[mg L^{-1}]
Mörbisch	M4	NO_3-N	0.007	0.000	0.009	[mg L^{-1}]
Mörbisch	M5	NO_3-N	0.003	0.000	0.006	[mg L^{-1}]
Wulka	Estuary	NH_4-N	65.0	32.7	78.6	[µg L^{-1}]
Illmitz	IL1	NH_4-N	17.1	15.8	6.0	[µg L^{-1}]
Illmitz	IL2	NH_4-N	65.2	36.7	84.9	[µg L^{-1}]
Illmitz	IL3	NH_4-N	65.3	41.7	61.2	[µg L^{-1}]
Illmitz	IL4	NH_4-N	34.0	29.2	14.3	[µg L^{-1}]
Illmitz	IL5	NH_4-N	36.2	32.6	12.2	[µg L^{-1}]
Illmitz	IL6	NH_4-N	57.0	51.5	25.5	[µg L^{-1}]
Illmitz	IL7	NH_4-N	24.8	19.7	10.0	[µg L^{-1}]
Illmitz	IL8	NH_4-N	25.6	19.2	17.2	[µg L^{-1}]

Test area	Sampling site	Parameter	Mean	Median	Standard deviation	Unit
Illmitz	IL9	NH_4-N	50.9	42.8	28.7	[µg L^{-1}]
Mörbisch	M1	NH_4-N	28.3	21.9	26.9	[µg L^{-1}]
Mörbisch	M2	NH_4-N	63.5	47.2	50.4	[µg L^{-1}]
Mörbisch	M3	NH_4-N	106.2	69.9	92.6	[µg L^{-1}]
Mörbisch	M4	NH_4-N	104.1	91.8	89.9	[µg L^{-1}]
Mörbisch	M5	NH_4-N	38.5	24.2	33.9	[µg L^{-1}]
Wulka	Estuary	PN	0.1	0.1	0.1	[mg L^{-1}]
Illmitz	IL1	PN	0.3	0.3	0.2	[mg L^{-1}]
Illmitz	IL2	PN	0.4	0.4	0.2	[mg L^{-1}]
Illmitz	IL3	PN	0.2	0.2	0.1	[mg L^{-1}]
Illmitz	IL4	PN	0.3	0.3	0.1	[mg L^{-1}]
Illmitz	IL5	PN	0.3	0.2	0.1	[mg L^{-1}]
Illmitz	IL6	PN	0.2	0.2	0.1	[mg L^{-1}]
Illmitz	IL7	PN	0.4	0.5	0.2	[mg L^{-1}]
Illmitz	IL8	PN	0.5	0.5	0.2	[mg L^{-1}]
Illmitz	IL9	PN	0.6	0.4	0.6	[mg L^{-1}]
Mörbisch	M1	PN	0.4	0.3	0.2	[mg L^{-1}]
Mörbisch	M2	PN	0.3	0.3	0.2	[mg L^{-1}]
Mörbisch	M3	PN	0.3	0.3	0.1	[mg L^{-1}]
Mörbisch	M4	PN	0.2	0.2	0.1	[mg L^{-1}]
Mörbisch	M5	PN	0.2	0.2	0.1	[mg L^{-1}]
Wulka	Estuary	SRSi	5.6	6.4	1.7	[mg L^{-1}]
Illmitz	IL1	SRSi	3.3	4.4	2.1	[mg L^{-1}]
Illmitz	IL2	SRSi	3.1	3.1	1.3	[mg L^{-1}]
Illmitz	IL3	SRSi	4.0	4.2	1.0	[mg L^{-1}]
Illmitz	IL4	SRSi	4.0	4.3	1.2	[mg L^{-1}]
Illmitz	IL5	SRSi	3.8	3.1	1.6	[mg L^{-1}]
Illmitz	IL6	SRSi	4.7	4.5	1.4	[mg L^{-1}]
Illmitz	IL7	SRSi	2.4	2.5	1.1	[mg L^{-1}]
Illmitz	IL8	SRSi	2.0	2.1	1.4	[mg L^{-1}]
Illmitz	IL9	SRSi	2.1	2.3	0.9	[mg L^{-1}]
Mörbisch	M1	SRSi	4.2	5.0	1.5	[mg L^{-1}]
Mörbisch	M2	SRSi	3.8	3.2	1.2	[mg L^{-1}]
Mörbisch	M3	SRSi	3.1	2.8	0.9	[mg L^{-1}]
Mörbisch	M4	SRSi	1.9	2.0	0.8	[mg L^{-1}]
Mörbisch	M5	SRSi	1.0	0.9	0.6	[mg L^{-1}]
Wulka	Estuary	DOC	6.9	6.9	1.0	[mg L^{-1}]
Illmitz	IL1	DOC	15.6	15.4	1.2	[mg L^{-1}]
Illmitz	IL2	DOC	20.5	20.2	3.5	[mg L^{-1}]
Illmitz	IL3	DOC	21.8	21.1	3.0	[mg L^{-1}]
Illmitz	IL4	DOC	30.5	31.5	11.0	[mg L^{-1}]

Test area	Sampling site	Parameter	Mean	Median	Standard deviation	Unit
Illmitz	IL5	DOC	35.8	35.0	10.8	[mg L^{-1}]
Illmitz	IL6	DOC	29.2	26.1	6.8	[mg L^{-1}]
Illmitz	IL7	DOC	26.3	26.8	4.1	[mg L^{-1}]
Illmitz	IL8	DOC	28.1	28.7	3.9	[mg L^{-1}]
Illmitz	IL9	DOC	70.2	70.0	17.3	[mg L^{-1}]
Mörbisch	M1	DOC	17.5	17.2	1.8	[mg L^{-1}]
Mörbisch	M2	DOC	19.1	19.2	2.3	[mg L^{-1}]
Mörbisch	M3	DOC	21.8	21.2	3.2	[mg L^{-1}]
Mörbisch	M4	DOC	24.9	24.6	4.2	[mg L^{-1}]
Mörbisch	M5	DOC	26.2	24.7	4.6	[mg L^{-1}]
Wulka	Estuary	TOC	7.5	7.3	0.8	[mg L^{-1}]
Illmitz	IL1	TOC	19.9	19.1	2.8	[mg L^{-1}]
Illmitz	IL2	TOC	23.9	23.4	4.3	[mg L^{-1}]
Illmitz	IL3	TOC	23.8	23.4	3.6	[mg L^{-1}]
Illmitz	IL4	TOC	33.2	34.0	11.4	[mg L^{-1}]
Illmitz	IL5	TOC	38.7	39.2	11.5	[mg L^{-1}]
Illmitz	IL6	TOC	30.9	27.3	7.0	[mg L^{-1}]
Illmitz	IL7	TOC	30.0	28.0	5.1	[mg L^{-1}]
Illmitz	IL8	TOC	31.0	32.3	4.5	[mg L^{-1}]
Illmitz	IL9	TOC	75.8	73.8	17.9	[mg L^{-1}]
Mörbisch	M1	TOC	21.0	20.7	2.9	[mg L^{-1}]
Mörbisch	M2	TOC	21.9	21.9	2.7	[mg L^{-1}]
Mörbisch	M3	TOC	24.1	22.9	3.2	[mg L^{-1}]
Mörbisch	M4	TOC	26.6	27.9	4.1	[mg L^{-1}]
Mörbisch	M5	TOC	27.7	26.4	4.2	[mg L^{-1}]
Wulka	Estuary	PM	4.4	3.4	3.6	[mg L^{-1}]
Illmitz	IL1	PM	72.5	73.6	42.5	[mg L^{-1}]
Illmitz	IL2	PM	60.2	59.9	29.2	[mg L^{-1}]
Illmitz	IL3	PM	25.2	19.2	19.5	[mg L^{-1}]
Illmitz	IL4	PM	31.3	18.5	30.6	[mg L^{-1}]
Illmitz	IL5	PM	15.4	11.9	12.5	[mg L^{-1}]
Illmitz	IL6	PM	8.4	7.1	6.7	[mg L^{-1}]
Illmitz	IL7	PM	25.3	23.7	12.9	[mg L^{-1}]
Illmitz	IL8	PM	22.9	22.5	10.9	[mg L^{-1}]
Illmitz	IL9	PM	18.0	19.3	12.1	[mg L^{-1}]
Mörbisch	M1	PM	88.7	77.7	54.6	[mg L^{-1}]
Mörbisch	M2	PM	61.8	56.8	36.5	[mg L^{-1}]
Mörbisch	M3	PM	42.0	31.2	30.5	[mg L^{-1}]
Mörbisch	M4	PM	17.8	17.1	10.0	[mg L^{-1}]
Mörbisch	M5	PM	9.4	9.0	2.7	[mg L^{-1}]
Wulka	Estuary	POM	2.4	2.2	1.2	[mg L^{-1}]

Test area	Sampling site	Parameter	Mean	Median	Standard deviation	Unit
Illmitz	IL1	POM	22.1	24.0	12.0	[mg L^{-1}]
Illmitz	IL2	POM	21.1	22.3	8.9	[mg L^{-1}]
Illmitz	IL3	POM	10.4	8.3	7.0	[mg L^{-1}]
Illmitz	IL4	POM	13.2	8.2	10.4	[mg L^{-1}]
Illmitz	IL5	POM	8.1	7.3	4.4	[mg L^{-1}]
Illmitz	IL6	POM	4.7	3.9	2.5	[mg L^{-1}]
Illmitz	IL7	POM	11.5	11.1	3.6	[mg L^{-1}]
Illmitz	IL8	POM	11.3	11.0	3.6	[mg L^{-1}]
Illmitz	IL9	POM	11.4	13.5	6.7	[mg L^{-1}]
Mörbisch	M1	POM	24.6	23.1	15.5	[mg L^{-1}]
Mörbisch	M2	POM	20.2	19.8	11.1	[mg L^{-1}]
Mörbisch	M3	POM	15.7	12.2	10.6	[mg L^{-1}]
Mörbisch	M4	POM	8.1	7.7	3.2	[mg L^{-1}]
Mörbisch	M5	POM	5.8	6.0	1.2	[mg L^{-1}]
Wulka	Estuary	PIM	2.0	1.2	2.4	[mg L^{-1}]
Illmitz	IL1	PIM	50.4	49.6	30.9	[mg L^{-1}]
Illmitz	IL2	PIM	39.1	37.5	20.6	[mg L^{-1}]
Illmitz	IL3	PIM	14.8	10.9	12.5	[mg L^{-1}]
Illmitz	IL4	PIM	18.1	10.2	20.2	[mg L^{-1}]
Illmitz	IL5	PIM	7.2	5.1	8.2	[mg L^{-1}]
Illmitz	IL6	PIM	3.7	2.2	4.3	[mg L^{-1}]
Illmitz	IL7	PIM	13.8	11.7	9.5	[mg L^{-1}]
Illmitz	IL8	PIM	11.6	10.5	7.7	[mg L^{-1}]
Illmitz	IL9	PIM	6.6	5.8	5.9	[mg L^{-1}]
Mörbisch	M1	PIM	64.1	49.3	39.9	[mg L^{-1}]
Mörbisch	M2	PIM	41.5	37.9	25.6	[mg L^{-1}]
Mörbisch	M3	PIM	26.3	18.9	19.9	[mg L^{-1}]
Mörbisch	M4	PIM	9.8	9.1	6.8	[mg L^{-1}]
Mörbisch	M5	PIM	3.6	3.1	1.7	[mg L^{-1}]
Wulka	Estuary	Chl a	6.3	6.6	4.3	[µg L^{-1}]
Illmitz	IL1	Chl a	15.7	13.7	10.6	[µg L^{-1}]
Illmitz	IL2	Chl a	15.5	15.5	6.4	[µg L^{-1}]
Illmitz	IL3	Chl a	9.2	8.9	2.9	[µg L^{-1}]
Illmitz	IL4	Chl a	13.3	12.7	4.5	[µg L^{-1}]
Illmitz	IL5	Chl a	9.8	9.8	4.1	[µg L^{-1}]
Illmitz	IL6	Chl a	9.7	10.0	5.2	[µg L^{-1}]
Illmitz	IL7	Chl a	17.8	18.8	6.1	[µg L^{-1}]
Illmitz	IL8	Chl a	19.0	17.7	6.8	[µg L^{-1}]
Illmitz	IL9	Chl a	20.0	26.1	13.8	[µg L^{-1}]
Mörbisch	M1	Chl a	15.7	12.7	7.2	[µg L^{-1}]
Mörbisch	M2	Chl a	12.9	12.2	4.5	[µg L^{-1}]

Test area	Sampling site	Parameter	Mean	Median	Standard deviation	Unit
Mörbisch	M3	Chl a	11.1	8.1	6.2	[µg L^{-1}]
Mörbisch	M4	Chl a	7.3	7.3	2.4	[µg L^{-1}]
Mörbisch	M5	Chl a	6.7	6.1	2.6	[µg L^{-1}]

A3.4 Statistical descriptors for trace contaminants

Table A 11: Mean, median and standard deviation for trace contaminants for sampling sites aggregated for the Wulka river estuary and within the lake according to their grade of connectivity with the open lake.

Area	Parameter	Mean	Median	Stand. dev.	Unit
Wulka	Cadmium (total)	0.0050	0.0050	0.0008	[µg L^{-1}]
Open lake	Cadmium (total)	0.0295	0.0310	0.0187	[µg L^{-1}]
High-mid connected	Cadmium (total)	0.0120	0.0115	0.0046	[µg L^{-1}]
Low conn. – isolated	Cadmium (total)	0.0072	0.0065	0.0032	[µg L^{-1}]
Wulka	Cadmium (dissolved)	0.0065	0.0055	0.0041	[µg L^{-1}]
Open lake	Cadmium (dissolved)	0.0160	0.0100	0.0132	[µg L^{-1}]
High-mid connected	Cadmium (dissolved)	0.0102	0.0055	0.0086	[µg L^{-1}]
Low conn. – isolated	Cadmium (dissolved)	0.0079	0.0065	0.0045	[µg L^{-1}]
Open lake	Copper (total)	1.41	1.29	0.98	[µg L^{-1}]
Open lake	Copper (total)	3.38	3.05	1.88	[µg L^{-1}]
High-mid connected	Copper (total)	2.25	2.40	0.83	[µg L^{-1}]
Low conn. – isolated	Copper (total)	1.69	1.70	1.01	[µg L^{-1}]
Wulka	Copper (dissolved)	2.30	1.10	2.19	[µg L^{-1}]
Open lake	Copper (dissolved)	3.06	3.50	1.29	[µg L^{-1}]
High-mid connected	Copper (dissolved)	1.74	1.65	0.84	[µg L^{-1}]
Low conn. – isolated	Copper (dissolved)	0.77	0.90	0.32	[µg L^{-1}]
Wulka	Lead (total)	0.13	0.12	0.07	[µg L^{-1}]
Open lake	Lead (total)	1.25	1.12	0.95	[µg L^{-1}]
High-mid connected	Lead (total)	0.62	0.46	0.39	[µg L^{-1}]
Low conn. – isolated	Lead (total)	0.25	0.24	0.09	[µg L^{-1}]
Wulka	Lead (dissolved)	0.20	0.09	0.30	[µg L^{-1}]
Open lake	Lead (dissolved)	0.73	0.11	1.02	[µg L^{-1}]
High-mid connected	Lead (dissolved)	0.39	0.12	0.53	[µg L^{-1}]
Low conn. – isolated	Lead (dissolved)	0.34	0.28	0.31	[µg L^{-1}]
Wulka	Mercury (total)	0.0020	0.0020	0.0003	[µg L^{-1}]
Open lake	Mercury (total)	0.0044	0.0043	0.0022	[µg L^{-1}]
High-mid connected	Mercury (total)	0.0039	0.0029	0.0031	[µg L^{-1}]
Low conn. – isolated	Mercury (total)	0.0028	0.0026	0.0010	[µg L^{-1}]
Wulka	Mercury (dissolved)	0.0038	0.0012	0.0067	[µg L^{-1}]
Open lake	Mercury (dissolved)	0.0018	0.0017	0.0011	[µg L^{-1}]
High-mid connected	Mercury (dissolved)	0.0015	0.0014	0.0008	[µg L^{-1}]
Low conn. – isolated	Mercury (dissolved)	0.0020	0.0023	0.0010	[µg L^{-1}]
Wulka	Nickel (total)	1.02	1.05	0.18	[µg L^{-1}]
Open lake	Nickel (total)	2.15	2.10	0.90	[µg L^{-1}]
High-mid connected	Nickel (total)	1.33	1.15	0.42	[µg L^{-1}]
Low conn. – isolated	Nickel (total)	0.73	0.68	0.24	[µg L^{-1}]

Area	Parameter	Mean	Median	Stand. dev.	Unit
Wulka	Nickel (dissolved)	1.19	1.10	0.41	[µg L^{-1}]
Open lake	Nickel (dissolved)	1.41	1.12	0.88	[µg L^{-1}]
High-mid connected	Nickel (dissolved)	1.08	0.83	0.61	[µg L^{-1}]
Low conn. – isolated	Nickel (dissolved)	0.72	0.66	0.27	[µg L^{-1}]
Wulka	Zinc (total)	6.75	7.35	2.21	[µg L^{-1}]
Open lake	Zinc (total)	6.50	7.55	3.02	[µg L^{-1}]
High-mid connected	Zinc (total)	4.03	3.45	1.88	[µg L^{-1}]
Low conn. – isolated	Zinc (total)	3.32	3.15	1.01	[µg L^{-1}]
Wulka	Zinc (dissolved)	5.08	4.60	2.26	[µg L^{-1}]
Open lake	Zinc (dissolved)	4.80	3.80	2.56	[µg L^{-1}]
High-mid connected	Zinc (dissolved)	2.71	2.55	1.71	[µg L^{-1}]
Low conn. – isolated	Zinc (dissolved)	1.53	1.10	1.01	[µg L^{-1}]
Wulka	PFOA	0.0030	0.0030	0.0020	[µg L^{-1}]
Open lake	PFOA	0.0098	0.0094	0.0031	[µg L^{-1}]
High-mid connected	PFOA	0.0146	0.0129	0.0025	[µg L^{-1}]
Low conn. – isolated	PFOA	0.0101	0.0100	0.0036	[µg L^{-1}]
Wulka	PFOS	0.0034	0.0030	0.0025	[µg L^{-1}]
Open lake	PFOS	0.0008	0.0008	0.0002	[µg L^{-1}]
High-mid connected	PFOS	0.0007	0.0005	0.0005	[µg L^{-1}]
Low conn. – isolated	PFOS	0.0013	0.0011	0.0006	[µg L^{-1}]
Wulka	Acesulfame K	0.32	0.10	0.47	[µg L^{-1}]
Open lake	Acesulfame K	0.60	0.80	0.31	[µg L^{-1}]
High-mid connected	Acesulfame K	0.38	0.38	na	[µg L^{-1}]
Low conn. – isolated	Acesulfame K	0.49	0.63	0.28	[µg L^{-1}]
Wulka	Carbamazepine	0.18	0.18	0.10	[µg L^{-1}]
Open lake	Carbamazepine	0.014	0.014	0.005	[µg L^{-1}]
High-mid connected	Carbamazepine	-	-	-	[µg L^{-1}]
Low conn. – isolated	Carbamazepine	0.007	0.007	0.002	[µg L^{-1}]
Wulka	Diclofenac	0.68	0.65	0.50	[µg L^{-1}]
Open lake	Diclofenac	0.013	0.013	0.003	[µg L^{-1}]
High-mid connected	Diclofenac	-	-	-	[µg L^{-1}]
Low conn. – isolated	Diclofenac	0.007	0.007	0.0014	[µg L^{-1}]

A3.5 Kruskal-Wallis test for hydro-chemical parameters

*Table A 12: Results of the Kruskal-Wallis test applied to the hydro-chemical parameters within the test areas Illmitz (9 sites) and Mörbisch (5 sites), respectively. Statistical significance: * (p < 0.05, significant); ** (p < 0.01, very significant); *** (p < 0.001, highly significant); - (p > 0.05, not significant).*

Test area	Parameter	Chi square	p value	Statistical significance
Illmitz	WT	5.19	7.37E-01	-
Mörbisch	WT	1.63	8.03E-01	-
Illmitz	DO (concentration)	41.50	1.68E-06	***
Mörbisch	DO (concentration)	19.89	5.25E-04	***
Illmitz	DO (saturation)	70.66	3.62E-12	***
Mörbisch	DO (saturation)	36.95	1.84E-07	***
Illmitz	EC	43.79	6.23E-07	***
Mörbisch	EC	10.01	4.03E-02	*
Illmitz	pH	51.15	2.46E-08	***
Mörbisch	pH	12.36	1.49E-02	*
Illmitz	Ca^{2+}	51.36	2.23E-08	***
Mörbisch	Ca^{2+}	7.72	1.02E-01	*
Illmitz	Mg^{2+}	36.02	1.74E-05	***
Mörbisch	Mg^{2+}	14.13	6.90E-03	**
Illmitz	Na^{+}	47.67	1.14E-07	***
Mörbisch	Na^{+}	9.60	4.77E-02	*
Illmitz	K^{+}	43.08	8.47E-07	***
Mörbisch	K^{+}	10.99	2.67E-02	*
Illmitz	Cl^{-}	39.62	3.78E-06	***
Mörbisch	Cl^{-}	9.03	6.03E-02	*
Illmitz	SO_4-S	24.75	1.71E-03	**
Mörbisch	SO_4-S	4.28	3.69E-01	*
Illmitz	ANC	53.09	1.04E-08	***
Mörbisch	ANC	16.01	3.00E-03	**
Illmitz	TP	40.85	2.23E-06	***
Mörbisch	TP	30.23	4.39E-06	***
Illmitz	DP	78.77	8.64E-14	***
Mörbisch	DP	42.20	1.52E-08	***
Illmitz	SRP	33.49	5.03E-05	***
Mörbisch	SRP	11.03	2.63E-02	*
Illmitz	SUP	71.80	2.15E-12	***
Mörbisch	SUP	44.95	4.08E-09	***
Illmitz	PP	48.32	8.57E-08	***
Mörbisch	PP	39.22	6.29E-08	***

Test area	Parameter	Chi square	p value	Statistical significance
Illmitz	TN	73.11	1.18E-12	***
Mörbisch	TN	21.55	2.46E-04	***
Illmitz	DON	76.09	3.00E-13	***
Mörbisch	DON	39.51	5.46E-08	***
Illmitz	NO_2-N	29.08	3.07E-04	***
Mörbisch	NO_2-N	12.81	1.23E-02	*
Illmitz	NO_3-N	9.89	2.73E-01	*
Mörbisch	NO_3-N	33.97	7.56E-07	***
Illmitz	NH_4-N	54.89	4.63E-09	***
Mörbisch	NH_4-N	22.83	1.37E-04	***
Illmitz	PN	22.12	4.69E-03	**
Mörbisch	PN	9.42	5.14E-02	-
Illmitz	SRSi	38.16	7.03E-06	***
Mörbisch	SRSi	41.77	1.86E-08	***
Illmitz	DOC	78.29	1.08E-13	***
Mörbisch	DOC	37.66	1.31E-07	***
Illmitz	TOC	71.32	2.68E-12	***
Mörbisch	TOC	23.80	8.75E-05	***
Illmitz	PM	60.49	3.74E-10	***
Mörbisch	PM	45.51	3.12E-09	***
Illmitz	POM	47.09	1.48E-07	***
Mörbisch	POM	38.90	7.30E-08	***
Illmitz	PIM	68.81	8.49E-12	***
Mörbisch	PIM	47.19	1.40E-09	***
Illmitz	Chl a	26.91	7.32E-04	***
Mörbisch	Chl a	29.03	7.71E-06	***

A3.6 Kruskal-Wallis test for trace contaminants

*Table A 13: Results of the Kruskal-Wallis test applied to the analysed trace contaminants within sampling sites grouped for the Wulka river estuary and within the lake according to the connectivity grade ("Open lake", "High-mid connected", "Low connected-isolated"). Statistical significance: * ($p < 0.05$, significant); ** ($p < 0.01$, very significant); *** ($p < 0.001$, highly significant); - ($p > 0.05$, not significant).*

Parameter	Chi square	p value	Statistical significance
Metals			
Cd (total)	12.7	0.0053	*
Cd (dissolved)	2.1	0.556	-
Cu (total)	4.3	0.23	-
Cu (dissolved)	12.6	0.0056	**
Hg (total)	5.0	0.175	-
Hg (dissolved)	2.51	0.473	-
Ni (total)	11.6	0.0089	**
Ni (dissolved)	10.9	0.0122	*
Pb (total)	12.3	0.0064	**
Pb (dissolved)	2.7	0.45	-
Zn (total)	6.5	0.0898	-
Zn (dissolved)	14	0.0029	**
Organic micropollutants			
PFOA	31.4	6.9E-07	***
PFOS	20.2	0.0002	***
Acesulfame K	4.8	0.184	-
Carbamazepine	19.3	6.5E-05	***
Diclofenac	19.2	6.3E-05	***

A3.7 Post hoc Dunn test for hydro-chemical parameters in Illmitz

*Table A 14: Results of the pairwise comparison (post hoc Dunn test) of all nine sites within the Illmitz test area applied for all hydro-chemical parameters. Only pairs of sites with statistically significant difference are reported. Statistical significance based on p value adjusted with the Holm method: * (p < 0.05, significant); ** (p < 0.01, very significant); *** (p < 0.001, highly significant); - (p > 0.05, not significant).*

Parameter	Pair of sites	Z value	Adjusted p value	Statistical significance
DO (concentration)	IL1 - IL3	3.46	1.69E-02	*
DO (concentration)	IL1 - IL6	5.27	4.83E-06	***
DO (concentration)	IL5 - IL6	3.64	8.64E-03	**
DO (concentration)	IL6 - IL7	-3.87	3.73E-03	**
DO (concentration)	IL6 - IL8	-3.71	6.79E-03	**
DO (concentration)	IL3 - IL9	-3.18	4.46E-02	*
DO (concentration)	IL6 - IL9	-4.99	2.08E-05	***
DO (saturation)	IL1 - IL2	3.51	1.22E-02	*
DO (saturation)	IL1 - IL3	4.78	5.65E-05	***
DO (saturation)	IL1 - IL4	3.29	2.58E-02	*
DO (saturation)	IL1 - IL6	6.41	5.02E-09	***
DO (saturation)	IL4 - IL6	3.12	4.53E-02	*
DO (saturation)	IL5 - IL6	3.75	5.37E-03	**
DO (saturation)	IL6 - IL7	-4.02	1.82E-03	**
DO (saturation)	IL6 - IL8	-4.30	5.56E-04	***
DO (saturation)	IL2 - IL9	-3.73	5.63E-03	**
DO (saturation)	IL3 - IL9	-5.00	1.91E-05	***
DO (saturation)	IL4 - IL9	-3.51	1.24E-02	*
DO (saturation)	IL6 - IL9	-6.63	1.19E-09	***
EC	IL1 - IL5	-3.60	9.88E-03	**
EC	IL1 - IL9	-5.70	4.20E-07	***
EC	IL2 - IL9	-4.43	3.17E-04	***
EC	IL3 - IL9	-4.66	1.12E-04	***
EC	IL6 - IL9	-3.36	2.34E-02	*
EC	IL7 - IL9	-3.96	2.52E-03	**
EC	IL8 - IL9	-3.68	7.53E-03	**
pH	IL6 - IL7	-3.59	9.10E-03	**
pH	IL6 - IL8	-3.71	6.14E-03	**
pH	IL3 - IL9	-4.18	9.51E-04	***
pH	IL6 - IL9	-5.23	6.16E-06	***
Ca^{2+}	IL1 - IL3	-3.42	1.84E-02	*
Ca^{2+}	IL1 - IL6	-4.60	1.50E-04	***

Parameter	Pair of sites	Z value	Adjusted p value	Statistical significance
Ca^{2+}	IL4 - IL6	-3.83	4.04E-03	**
Ca^{2+}	IL5 - IL6	-4.19	9.41E-04	***
Ca^{2+}	IL3 - IL9	3.99	2.18E-03	**
Ca^{2+}	IL6 - IL9	5.17	8.47E-06	***
Ca^{2+}	IL7 - IL9	3.68	7.31E-03	**
Ca^{2+}	IL8 - IL9	3.64	8.28E-03	**
Mg^{2+}	IL1 - IL5	-3.45	1.82E-02	*
Mg^{2+}	IL1 - IL9	-5.17	8.34E-06	***
Mg^{2+}	IL2 - IL9	-3.95	2.60E-03	**
Mg^{2+}	IL3 - IL9	-4.11	1.38E-03	**
Mg^{2+}	IL7 - IL9	-3.32	2.89E-02	*
Na^{+}	IL1 - IL5	-3.70	6.67E-03	**
Na^{+}	IL1 - IL9	-5.90	1.28E-07	***
Na^{+}	IL2 - IL9	-4.63	1.24E-04	***
Na^{+}	IL3 - IL9	-4.98	2.25E-05	***
Na^{+}	IL6 - IL9	-3.63	8.66E-03	**
Na^{+}	IL7 - IL9	-4.00	2.13E-03	**
Na^{+}	IL8 - IL9	-3.76	5.35E-03	**
K^{+}	IL1 - IL5	-3.69	7.13E-03	**
K^{+}	IL1 - IL9	-5.79	2.48E-07	***
K^{+}	IL2 - IL9	-4.44	3.09E-04	***
K^{+}	IL3 - IL9	-4.46	2.82E-04	***
K^{+}	IL6 - IL9	-3.41	2.00E-02	*
K^{+}	IL7 - IL9	-3.74	6.05E-03	**
K^{+}	IL8 - IL9	-3.34	2.50E-02	*
Cl^{-}	IL1 - IL5	-3.36	2.34E-02	*
Cl^{-}	IL1 - IL9	-5.49	1.47E-06	***
Cl^{-}	IL2 - IL9	-4.17	1.04E-03	**
Cl^{-}	IL3 - IL9	-4.50	2.33E-04	***
Cl^{-}	IL6 - IL9	-3.42	1.96E-02	*
Cl^{-}	IL7 - IL9	-3.75	5.78E-03	**
Cl^{-}	IL8 - IL9	-3.54	1.29E-02	*
SO_4-S	IL1 - IL9	-4.31	5.94E-04	***
SO_4-S	IL3 - IL9	-3.37	2.68E-02	*
ANC	IL1 - IL4	-3.16	4.58E-02	*
ANC	IL1 - IL5	-4.01	2.03E-03	**
ANC	IL1 - IL9	-6.27	1.32E-08	***

Parameter	Pair of sites	Z value	Adjusted p value	Statistical significance
ANC	IL2 - IL9	-5.13	1.02E-05	***
ANC	IL3 - IL9	-5.03	1.66E-05	***
ANC	IL6 - IL9	-3.63	8.66E-03	**
ANC	IL7 - IL9	-3.89	3.27E-03	**
ANC	IL8 - IL9	-3.63	8.65E-03	**
TP	IL2 - IL3	3.32	2.80E-02	*
TP	IL1 - IL6	3.17	4.36E-02	*
TP	IL2 - IL6	4.03	1.90E-03	**
TP	IL3 - IL7	-3.34	2.69E-02	*
TP	IL6 - IL7	-4.05	1.79E-03	**
TP	IL3 - IL8	-3.77	5.33E-03	**
TP	IL5 - IL8	-3.30	2.86E-02	*
TP	IL6 - IL8	-4.48	2.64E-04	***
DP	IL1 - IL4	-3.73	5.18E-03	**
DP	IL1 - IL5	-5.23	5.68E-06	***
DP	IL2 - IL5	-3.76	4.85E-03	**
DP	IL3 - IL5	-3.12	4.31E-02	*
DP	IL1 - IL6	-4.01	1.80E-03	**
DP	IL1 - IL7	-4.44	2.74E-04	***
DP	IL1 - IL8	-5.23	5.60E-06	***
DP	IL2 - IL8	-3.76	4.74E-03	**
DP	IL3 - IL8	-3.12	4.17E-02	*
DP	IL1 - IL9	-7.29	1.16E-11	***
DP	IL2 - IL9	-5.82	2.10E-07	***
DP	IL3 - IL9	-5.17	7.30E-06	***
DP	IL4 - IL9	-3.56	9.79E-03	**
DP	IL6 - IL9	-3.27	2.66E-02	*
SRP	IL1 - IL5	-3.18	4.85E-02	*
SRP	IL1 - IL9	-5.02	1.87E-05	***
SRP	IL2 - IL9	-3.83	4.47E-03	**
SRP	IL3 - IL9	-3.78	5.42E-03	**
SUP	IL1 - IL4	-3.75	5.08E-03	**
SUP	IL1 - IL5	-4.97	2.18E-05	***
SUP	IL2 - IL5	-3.49	1.32E-02	*
SUP	IL1 - IL6	-3.91	2.79E-03	**
SUP	IL1 - IL7	-4.38	3.73E-04	***
SUP	IL1 - IL8	-5.05	1.52E-05	***

Parameter	Pair of sites	Z value	Adjusted p value	Statistical significance
SUP	IL2 - IL8	-3.56	1.03E-02	*
SUP	IL1 - IL9	-7.01	8.72E-11	***
SUP	IL2 - IL9	-5.52	1.18E-06	***
SUP	IL3 - IL9	-4.88	3.40E-05	***
SUP	IL4 - IL9	-3.26	2.95E-02	*
SUP	IL6 - IL9	-3.10	4.85E-02	*
PP	IL2 - IL5	3.65	8.26E-03	**
PP	IL1 - IL6	4.06	1.61E-03	**
PP	IL2 - IL6	4.69	9.74E-05	***
PP	IL5 - IL7	-3.19	4.10E-02	*
PP	IL6 - IL7	-4.23	7.96E-04	***
PP	IL5 - IL8	-3.34	2.50E-02	*
PP	IL6 - IL8	-4.38	4.16E-04	***
PP	IL2 - IL9	3.39	2.14E-02	*
TN	IL1 - IL4	-4.14	1.09E-03	**
TN	IL1 - IL5	-5.30	3.89E-06	***
TN	IL3 - IL5	-3.58	9.21E-03	**
TN	IL1 - IL6	-3.82	4.07E-03	**
TN	IL1 - IL7	-3.76	4.85E-03	**
TN	IL1 - IL8	-4.38	3.75E-04	***
TN	IL1 - IL9	-7.38	5.55E-12	***
TN	IL2 - IL9	-5.16	8.26E-06	***
TN	IL3 - IL9	-5.66	5.19E-07	***
TN	IL4 - IL9	-3.25	2.92E-02	*
TN	IL6 - IL9	-3.57	9.37E-03	**
TN	IL7 - IL9	-3.62	8.26E-03	**
DON	IL1 - IL4	-4.25	6.42E-04	***
DON	IL1 - IL5	-5.85	1.77E-07	***
DON	IL2 - IL5	-4.00	1.83E-03	**
DON	IL3 - IL5	-3.49	1.29E-02	*
DON	IL1 - IL6	-4.52	1.97E-04	***
DON	IL1 - IL7	-3.94	2.25E-03	**
DON	IL1 - IL8	-4.30	5.25E-04	***
DON	IL1 - IL9	-7.34	7.85E-12	***
DON	IL2 - IL9	-5.49	1.35E-06	***
DON	IL3 - IL9	-4.98	2.06E-05	***
DON	IL7 - IL9	-3.39	1.79E-02	*

Parameter	Pair of sites	Z value	Adjusted p value	Statistical significance
NO_2-N	IL1 - IL6	-3.25	3.70E-02	*
NO_2-N	IL1 - IL9	-4.74	7.87E-05	***
NO_2-N	IL2 - IL9	-3.37	2.60E-02	*
NO_2-N	IL7 - IL9	-3.27	3.55E-02	*
NO_2-N	IL8 - IL9	-3.59	1.14E-02	*
NH_4-N	IL1 - IL2	-4.23	7.83E-04	***
NH_4-N	IL1 - IL3	-5.16	8.76E-06	***
NH_4-N	IL1 - IL4	-3.57	1.02E-02	*
NH_4-N	IL1 - IL5	-4.02	1.83E-03	**
NH_4-N	IL1 - IL6	-5.56	9.91E-07	***
NH_4-N	IL3 - IL7	3.24	3.25E-02	*
NH_4-N	IL6 - IL7	3.64	8.28E-03	**
NH_4-N	IL3 - IL8	3.39	1.97E-02	*
NH_4-N	IL6 - IL8	3.79	4.72E-03	**
NH_4-N	IL1 - IL9	-4.89	3.40E-05	***
NH_4-N	IL8 - IL9	-3.12	4.67E-02	*
PN	IL3 – IL8	-3.33	3.09E-02	*
PN	IL6 – IL8	-3.24	4.17E-02	*
SRSi	IL6 - IL7	3.74	6.31E-03	**
SRSi	IL3 - IL8	3.28	3.45E-02	*
SRSi	IL4 - IL8	3.25	3.55E-02	*
SRSi	IL6 - IL8	4.19	9.96E-04	***
SRSi	IL3 - IL9	3.27	3.48E-02	*
SRSi	IL4 - IL9	3.24	3.58E-02	*
SRSi	IL6 - IL9	4.18	1.02E-03	**
DOC	IL1 - IL4	-4.21	7.49E-04	***
DOC	IL1 - IL5	-5.43	1.92E-06	***
DOC	IL2 - IL5	-3.71	5.68E-03	**
DOC	IL3 - IL5	-3.16	3.60E-02	*
DOC	IL1 - IL6	-4.37	3.93E-04	***
DOC	IL1 - IL7	-3.84	3.58E-03	**
DOC	IL1 - IL8	-4.43	3.03E-04	***
DOC	IL1 - IL9	-7.61	9.95E-13	***
DOC	IL2 - IL9	-5.89	1.39E-07	***
DOC	IL3 - IL9	-5.34	3.03E-06	***
DOC	IL4 - IL9	-3.39	1.79E-02	*
DOC	IL6 - IL9	-3.24	2.95E-02	*

Parameter	Pair of sites	Z value	Adjusted p value	Statistical significance
DOC	IL7 - IL9	-3.77	4.57E-03	**
DOC	IL8 - IL9	-3.18	3.53E-02	*
TOC	IL1 - IL4	-3.73	5.95E-03	**
TOC	IL1 - IL5	-4.93	2.77E-05	***
TOC	IL2 - IL5	-3.37	1.80E-02	*
TOC	IL3 - IL5	-3.43	1.48E-02	*
TOC	IL1 - IL6	-3.58	9.45E-03	**
TOC	IL1 - IL7	-3.58	9.11E-03	**
TOC	IL1 - IL8	-3.98	2.22E-03	**
TOC	IL1 - IL9	-7.18	2.60E-11	***
TOC	IL2 - IL9	-5.62	6.49E-07	***
TOC	IL3 - IL9	-5.68	4.62E-07	***
TOC	IL4 - IL9	-3.45	1.48E-02	*
TOC	IL6 - IL9	-3.59	9.90E-03	**
TOC	IL7 - IL9	-3.59	9.57E-03	**
TOC	IL8 - IL9	-3.20	3.19E-02	*
PM	IL1 - IL5	4.62	1.29E-04	***
PM	IL2 - IL5	4.62	1.27E-04	***
PM	IL1 - IL6	5.98	8.25E-08	***
PM	IL2 - IL6	5.97	8.17E-08	***
PM	IL3 - IL6	3.17	4.29E-02	*
PM	IL6 - IL7	-3.71	6.17E-03	**
PM	IL6 - IL8	-3.27	3.15E-02	*
PM	IL1 - IL9	3.74	6.00E-03	**
PM	IL2 - IL9	3.73	5.88E-03	**
POM	IL1 - IL5	3.52	1.33E-02	*
POM	IL2 - IL5	3.95	2.60E-03	**
POM	IL1 - IL6	5.18	7.74E-06	***
POM	IL2 - IL6	5.61	7.11E-07	***
POM	IL4 - IL6	3.14	4.86E-02	*
POM	IL6 - IL7	-3.82	4.37E-03	**
POM	IL6 - IL8	-3.78	5.11E-03	**
POM	IL6 - IL9	-3.36	2.34E-02	*
PIM	IL1 - IL5	4.89	3.40E-05	***
PIM	IL2 - IL5	4.64	1.13E-04	***
PIM	IL1 - IL6	6.22	1.77E-08	***
PIM	IL2 - IL6	5.97	8.46E-08	***

Parameter	Pair of sites	Z value	Adjusted p value	Statistical significance
PIM	IL3 - IL6	3.60	9.15E-03	**
PIM	IL4 - IL6	3.36	2.19E-02	*
PIM	IL6 - IL7	-3.68	6.91E-03	**
PIM	IL1 - IL8	3.21	3.53E-02	*
PIM	IL1 - IL9	4.87	3.61E-05	***
PIM	IL2 - IL9	4.62	1.19E-04	***
Chl a	IL3 - IL8	-3.42	2.23E-02	*

A3.8 Post hoc Dunn test for hydro-chemical parameters in Mörbisch

*Table A 15: Results of the pairwise comparison (post hoc Dunn test) of all nine sites within the Mörbisch test area applied for all hydro-chemical parameters. Only pairs of sites with statistically significant difference are reported. Statistical significance based on p value adjusted with the Holm method: * (p < 0.05, significant); ** (p < 0.01, very significant); *** (p < 0.001, highly significant); - (p > 0.05, not significant).*

Parameter	Pair of sites	Z value	Adjusted p value	Statistical significance
DO (concentration)	M2 - M5	-3.26	1.01E-02	*
DO (concentration)	M3 - M5	-4.07	4.78E-04	***
DO (saturation)	M1 - M3	3.23	9.86E-03	**
DO (saturation)	M2 - M5	-4.72	2.12E-05	***
DO (saturation)	M3 - M5	-5.43	5.79E-07	***
DO (saturation)	M4 - M5	-3.22	8.94E-03	**
pH	M3 - M5	-3.11	1.87E-02	*
Mg^{2+}	M1 - M4	-2.90	3.31E-02	*
Mg^{2+}	M1 - M5	-3.10	1.93E-02	*
K^{+}	M1 - M5	-2.85	4.34E-02	*
ANC	M1 - M4	-2.86	3.84E-02	*
ANC	M1 - M5	-3.32	8.86E-03	**
TP	M1 - M4	3.54	3.24E-03	**
TP	M2 - M4	3.28	7.33E-03	**
TP	M1 - M5	4.32	1.56E-04	***
TP	M2 - M5	4.06	4.40E-04	***
TP	M3 - M5	2.95	1.93E-02	*
DP	M1 - M3	-2.86	2.52E-02	*
DP	M1 - M4	-4.68	2.61E-05	***
DP	M2 - M4	-3.67	1.69E-03	**
DP	M1 - M5	-5.35	8.69E-07	***
DP	M2 - M5	-4.35	1.11E-04	***
SRP	M1 - M5	2.84	4.48E-02	*
SUP	M1 - M3	-2.79	3.16E-02	*
SUP	M1 - M4	-4.89	9.29E-06	***
SUP	M2 - M4	-3.87	7.65E-04	***
SUP	M1 - M5	-5.47	4.60E-07	***
SUP	M2 - M5	-4.45	6.88E-05	***
SUP	M3 - M5	-2.68	3.72E-02	*
PP	M1 - M4	4.01	4.77E-04	***
PP	M2 - M4	3.55	2.72E-03	**
PP	M1 - M5	5.06	4.16E-06	***

Parameter	Pair of sites	Z value	Adjusted p value	Statistical significance
PP	M2 - M5	4.59	3.90E-05	***
PP	M3 - M5	3.40	4.01E-03	**
TN	M1 - M4	-3.59	3.32E-03	**
TN	M2 - M4	-2.88	3.15E-02	*
TN	M1 - M5	-3.57	3.24E-03	**
TN	M2 - M5	-2.86	2.94E-02	*
DON	M1 - M3	-2.94	2.00E-02	*
DON	M1 - M4	-4.62	3.53E-05	***
DON	M2 - M4	-3.19	9.80E-03	**
DON	M1 - M5	-5.39	6.91E-07	***
DON	M2 - M5	-3.97	5.69E-04	***
NO_2-N	M2 - M5	2.94	2.95E-02	*
NO_2-N	M3 - M5	2.97	2.96E-02	*
NO_3-N	M1 - M4	4.12	3.48E-04	***
NO_3-N	M2 - M4	3.22	9.01E-03	**
NO_3-N	M1 - M5	4.85	1.21E-05	***
NO_3-N	M2 - M5	3.96	6.05E-04	***
NH_4-N	M1 - M3	-3.88	1.03E-03	**
NH_4-N	M1 - M4	-3.67	2.21E-03	**
NH_4-N	M3 - M5	2.90	2.99E-02	*
PN	M1 – M5	2.94	3.27E-02	*
SRSi	M1 - M4	3.51	3.12E-03	**
SRSi	M2 - M4	3.30	5.73E-03	**
SRSi	M1 - M5	5.23	1.67E-06	***
SRSi	M2 - M5	5.03	4.52E-06	***
SRSi	M3 - M5	4.20	2.13E-04	***
DOC	M1 - M3	-3.03	1.47E-02	*
DOC	M1 - M4	-4.53	5.24E-05	***
DOC	M2 - M4	-3.47	3.58E-03	**
DOC	M1 - M5	-5.02	5.16E-06	***
DOC	M2 - M5	-3.96	5.94E-04	***
TOC	M1 - M4	-3.32	7.22E-03	**
TOC	M2 - M4	-2.73	4.39E-02	*
TOC	M1 - M5	-4.04	5.34E-04	***
TOC	M2 - M5	-3.45	4.97E-03	**
PM	M1 - M4	4.00	4.99E-04	***
PM	M2 - M4	3.23	7.54E-03	**

Parameter	Pair of sites	Z value	Adjusted p value	Statistical significance
PM	M1 - M5	5.80	6.71E-08	***
PM	M2 - M5	5.02	4.65E-06	***
PM	M3 - M5	3.93	5.92E-04	***
POM	M1 - M4	3.60	2.23E-03	**
POM	M2 - M4	3.17	9.02E-03	**
POM	M1 - M5	5.20	2.03E-06	***
POM	M2 - M5	4.77	1.65E-05	***
POM	M3 - M5	3.73	1.51E-03	**
PIM	M1 - M4	4.08	3.66E-04	***
PIM	M2 - M4	3.25	7.01E-03	**
PIM	M1 - M5	5.94	2.79E-08	***
PIM	M2 - M5	5.11	2.85E-06	***
PIM	M3 - M5	3.93	5.92E-04	***
Chl a	M1 - M4	3.69	1.78E-03	**
Chl a	M2 - M4	3.13	1.21E-02	*
Chl a	M1 - M5	4.38	1.17E-04	***
Chl a	M2 - M5	3.82	1.19E-03	**

A3.9 Post hoc tests for trace contaminants

*Table A 16: Results of the pairwise comparison (post hoc Dunn test) of pairs of sampling points aggregated in the following four groups: ("Wulka", "Open lake", "High-mid connected", "Low connected-isolated") with respect to trace contaminants without censored data. Only pairs with statistically significant difference are reported. Statistical significance based on p value adjusted with the Holm method: * ($p < 0.05$, significant); ** ($p < 0.01$, very significant); *** ($p < 0.001$, highly significant); - ($p > 0.05$, not significant).*

Parameter	Pair of groups	Z value	Adjusted p value	Statistical significance
Cadmium (total)	Wulka vs. Open lake	- 3.09	0.0120	*
Cadmium (total)	Open lake vs. High-mid connected	- 2.62	0.0437	*
Lead (total)	Wulka vs. Open lake	- 3.00	0.0163	*
Lead (total)	Open lake vs. High-mid connected	- 2.79	0.0268	*
Nickel (total)	Open lake vs. Low connected-isolated	3.23	0.0073	**
Copper (dissolved)	Open lake vs. Low connected-isolated	3.49	0.0029	**
Nickel (dissolved)	Wulka vs. Low connected-isolated	2.83	0.0276	*
Nickel (dissolved)	Open lake vs. Low connected-isolated	2.75	0.0300	*

Parameter	Pair of groups	Z value	Adjusted p value	Statistical significance
Zinc (dissolved)	Wulka vs. Low connected-isolated	3.18	0.0090	*
Zinc (dissolved)	Open lake vs. Low connected-isolated	3.02	0.0128	*

*Table A 17: Results of the pairwise comparison (Peto-Peto test) of pairs of sampling points aggregated in the following four groups: ("Wulka", "Open lake", "High-mid connected", "Low connected-isolated") with respect to the organic micropollutants with censored data. Only pairs with statistically significant difference are reported. Statistical significance based on p value adjusted with the Benjamin-Hochberg (BH) method: * ($p < 0.05$, significant); ** ($p < 0.01$, very significant); *** ($p < 0.001$, highly significant); - ($p > 0.05$, not significant).*

Parameter	Pair of sites groups	Adjusted p value	Statistical significance
PFOA	Wulka vs. Open lake	1.5E-07	***
PFOA	Wulka vs. High-mid connect	1.1E-07	***
PFOA	Wulka vs. Low connect-isolated	6.9E-07	***
PFOA	Open lake vs. High-mid connect	0.0086	**
PFOA	High-mid connect vs. Low connect-isolated	0.028	*
PFOS	Wulka vs. Open lake	0.048	*
Carbamazepine	Wulka vs. Open lake	0.0012	**
Carbamazepine	Wulka vs. Low connect-isolated	0.0012	**
Diclofenac	Wulka vs. Open lake	0.0012	**
Diclofenac	Wulka vs. Low connect-isolated	0.0012	**

A3.10 Boxplots of the hydro-chemical parameters

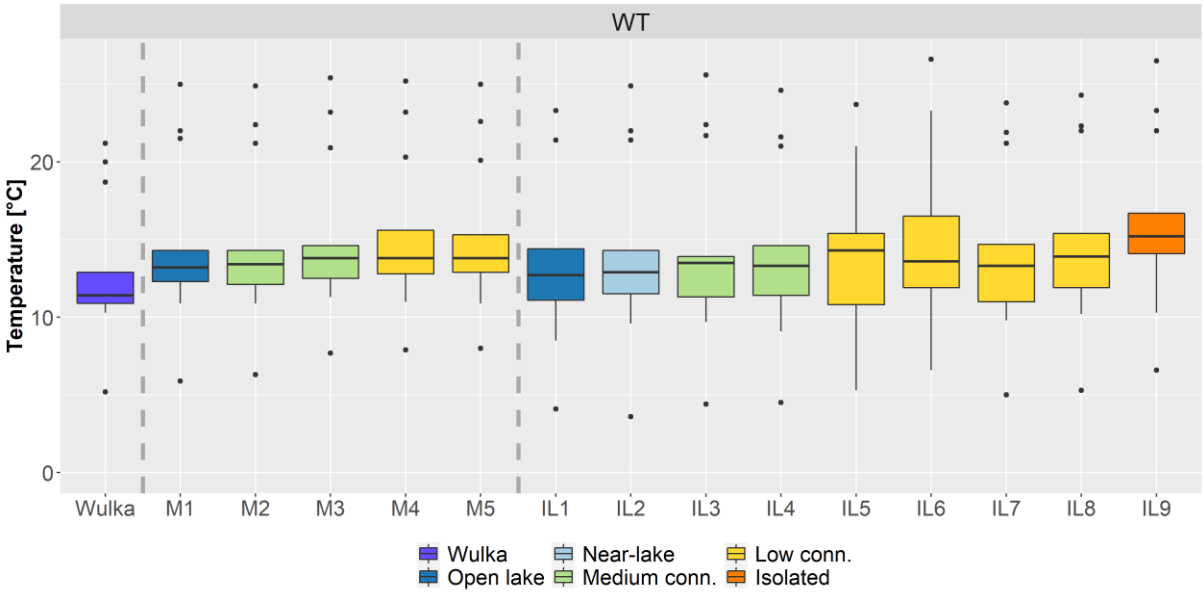

Figure A 3: Boxplots of water temperature (WT) from 13 sampling dates at individual sampling sites: left) in the Wulka estuary; centre) in the Mörbisch test area, right) in the Illmitz test area.

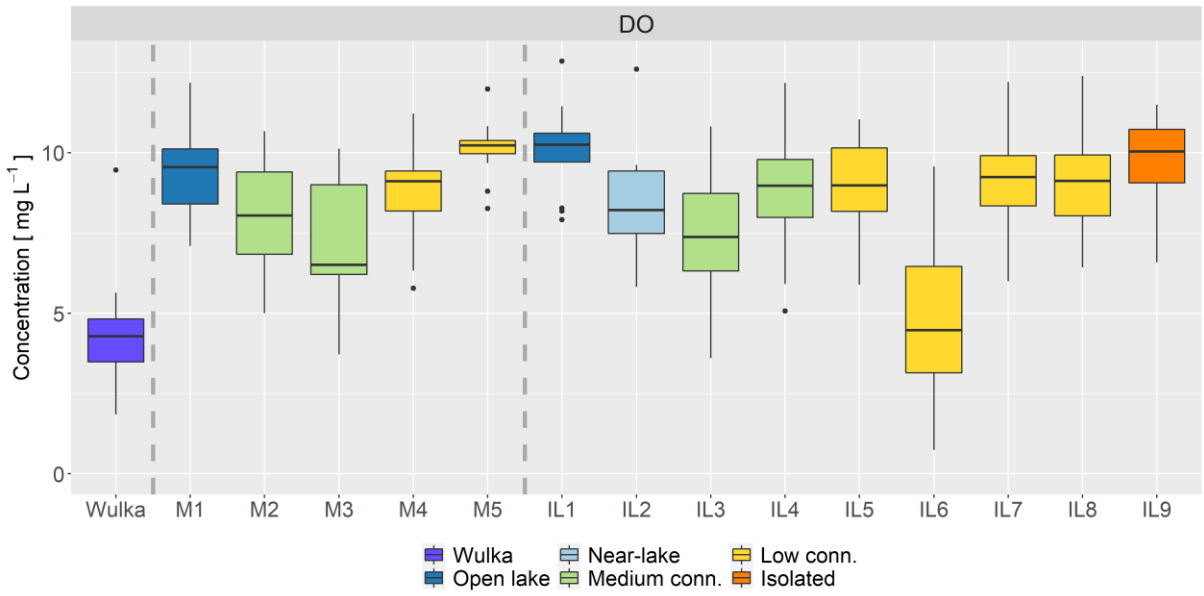

Figure A 4: Boxplots of dissolved oxygen (DO) from 13 sampling dates at individual sampling sites: left) in the Wulka estuary; centre) in the Mörbisch test area, right) in the Illmitz test area.

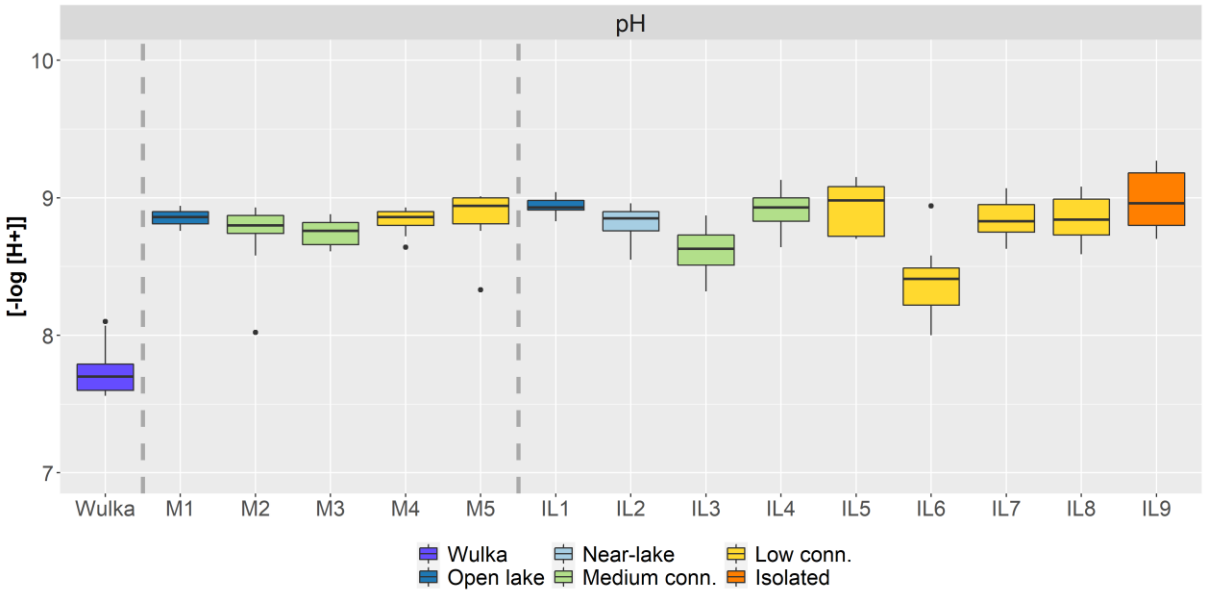

Figure A 5: Boxplots of pH from 13 sampling dates at individual sampling sites: left) in the Wulka estuary; centre) in the Mörbisch test area, right) in the Illmitz test area.

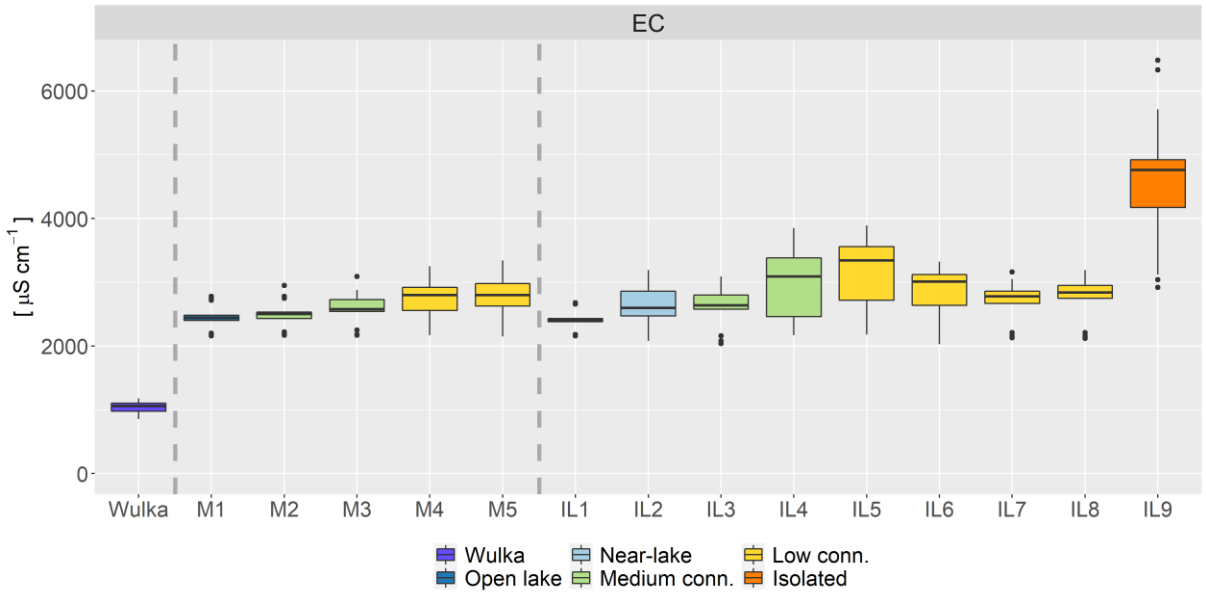

Figure A 6: Boxplots of electrical conductivity (EC) from 13 sampling dates at individual sampling sites: left) in the Wulka estuary; centre) in the Mörbisch test area, right) in the Illmitz test area.

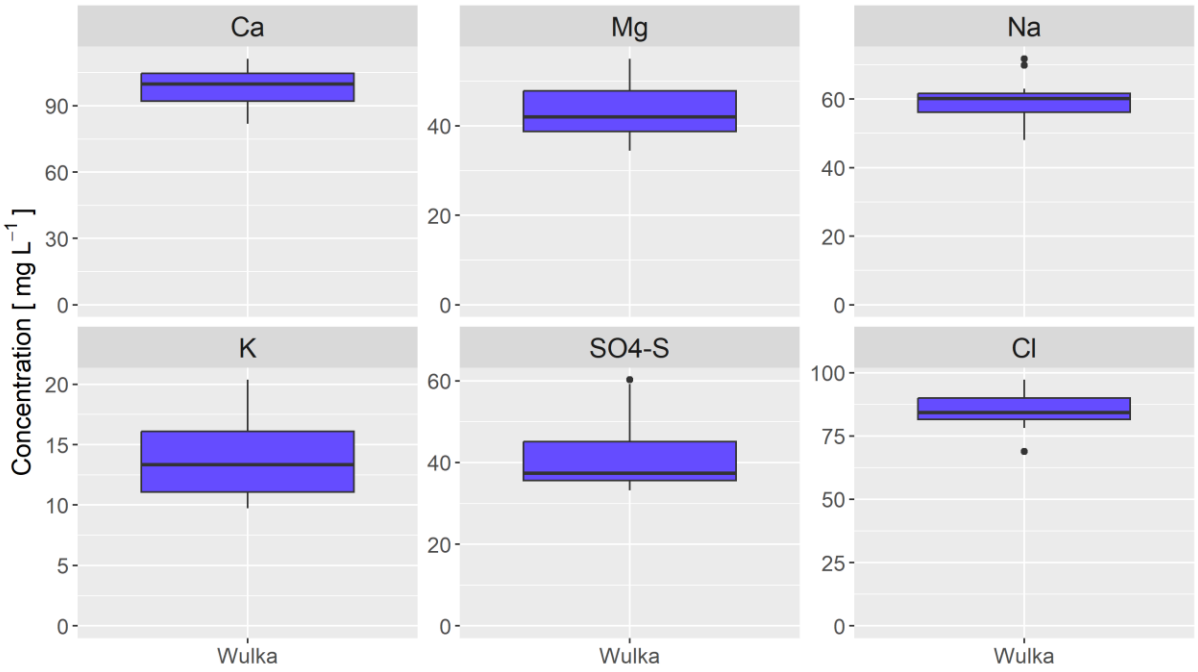

Figure A 7: Boxplots of major ions Ca^{2+}, Mg^{2+}, Na^{+}, K^{+}, Cl^{-} and SO_4-S from 13 sampling dates in the Wulka estuary.

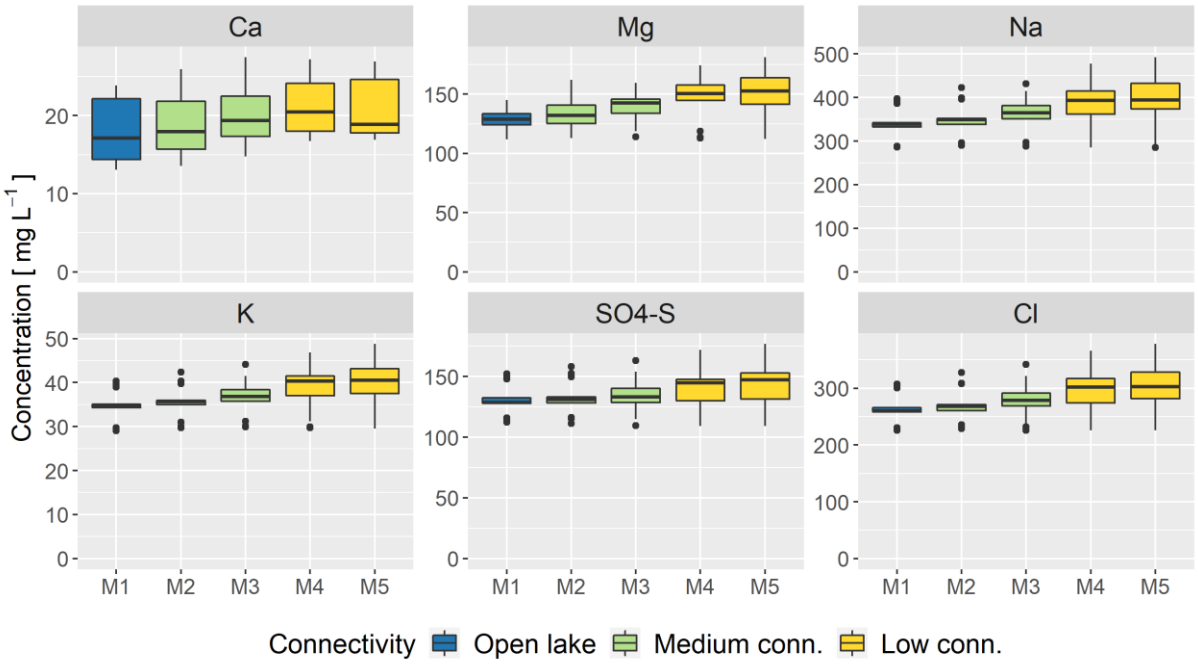

Figure A 8: Boxplots of major ions Ca^{2+}, Mg^{2+}, Na^{+}, K^{+}, Cl^{-} and SO_4-S from 13 sampling dates at individual sampling sites in the Mörbisch test area.

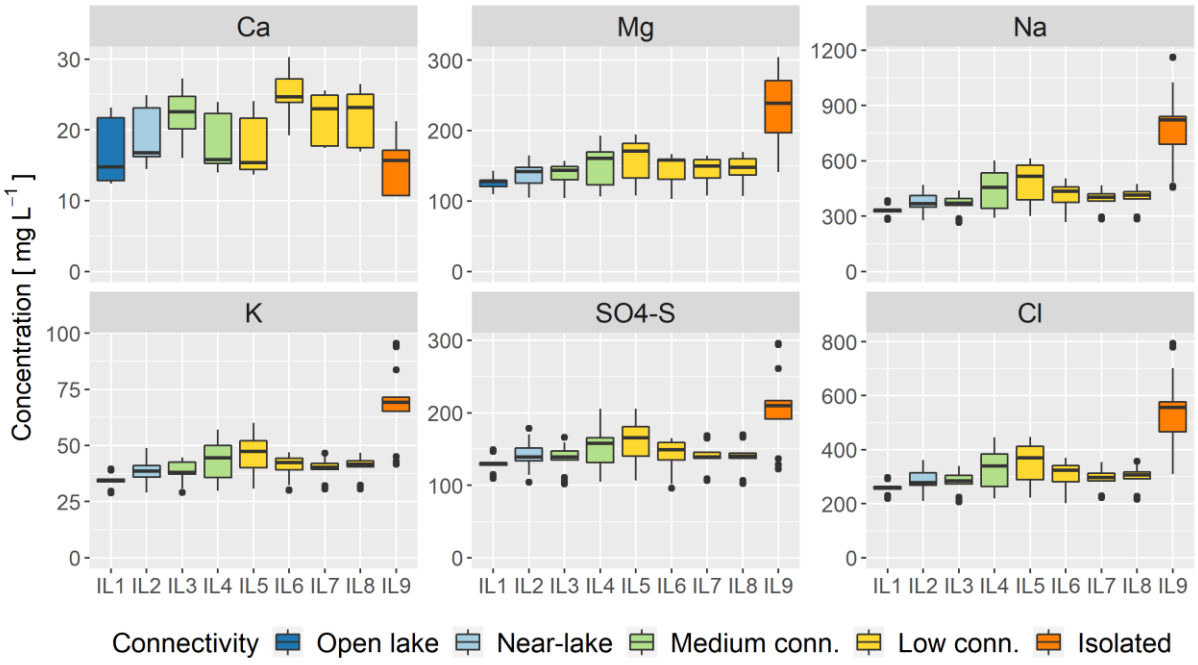

Figure A 9: Boxplots of major ions Ca^{2+}, Mg^{2+}, Na^{+}, K^{+}, Cl^{-} and SO_4-S from 13 sampling dates at individual sampling sites in the Illmitz test area.

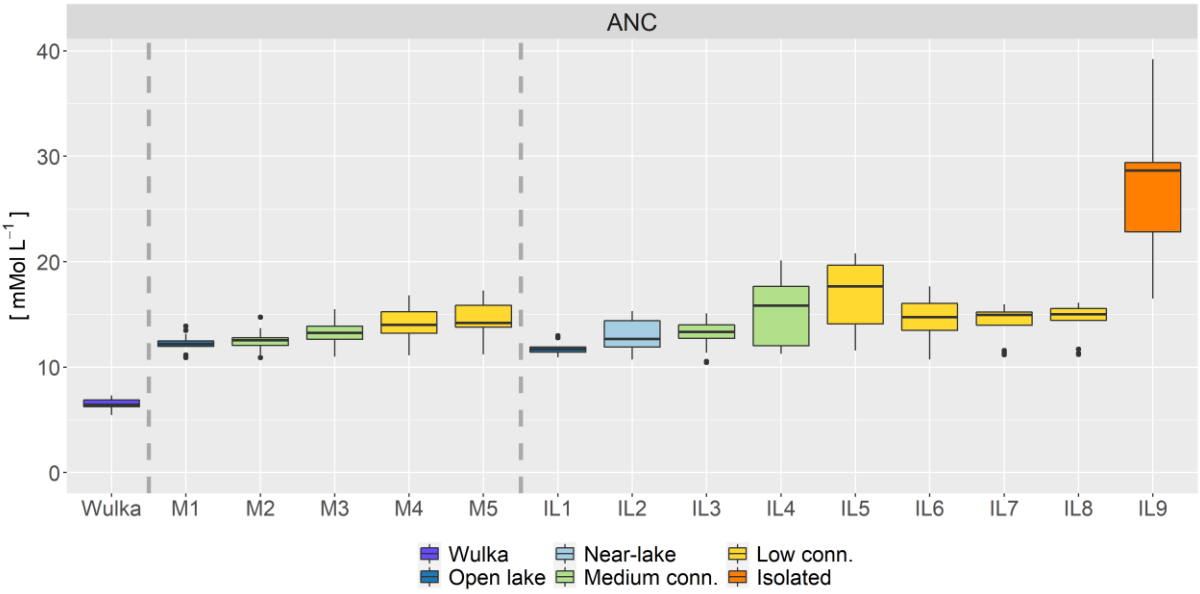

Figure A 10: Boxplots of acid-neutralizing capacity to pH 4.3 (ANC) from 13 sampling dates at individual sampling sites: left) in the Wulka estuary; centre) in the Mörbisch test area, right) in the Illmitz test area.

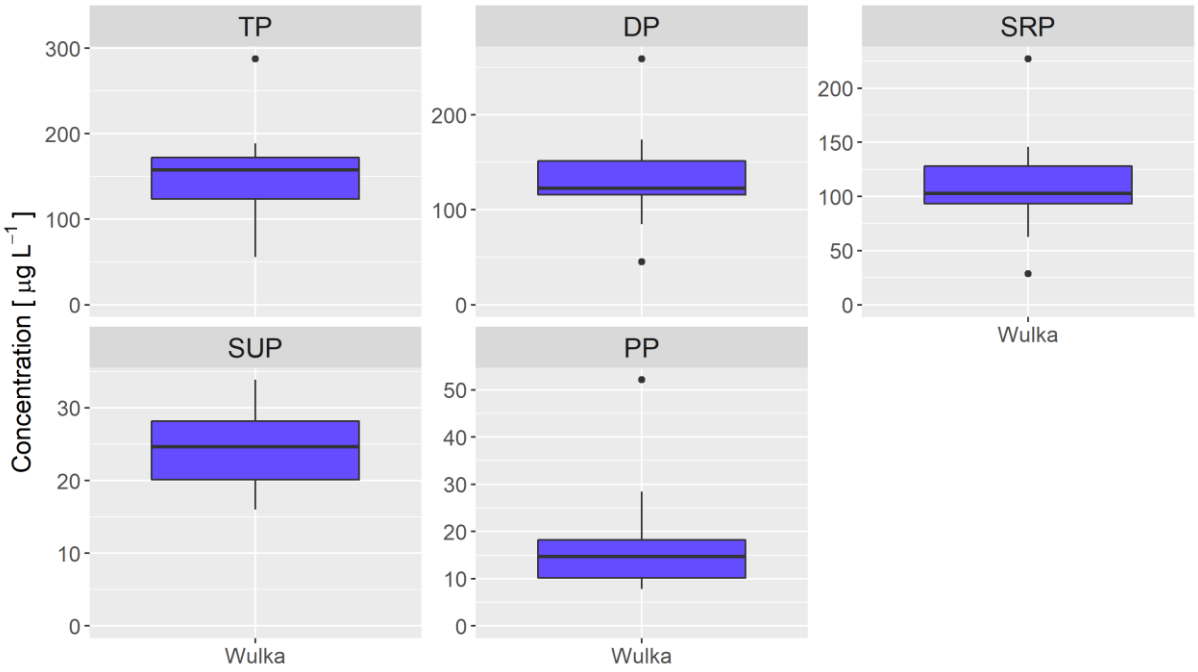

Figure A 11: Boxplots of total phosphorus (TP), dissolved phosphorus (DP), soluble reactive phosphorus (SRP), soluble unreactive phosphorus (SUP) and particulate phosphorus (PP) from 13 sampling dates in the Wulka estuary.

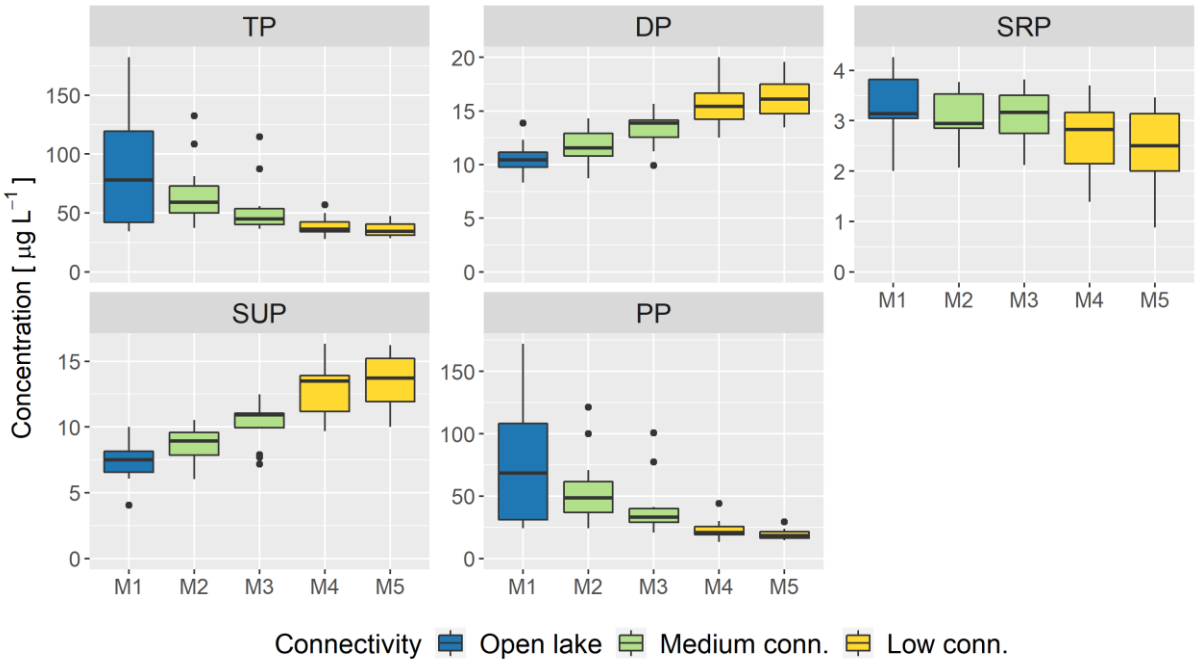

Figure A 12: Boxplots of total phosphorus (TP), dissolved phosphorus (DP), soluble reactive phosphorus (SRP), soluble unreactive phosphorus (SUP) and particulate phosphorus (PP) from 13 sampling dates at individual sampling sites in the Mörbisch test area.

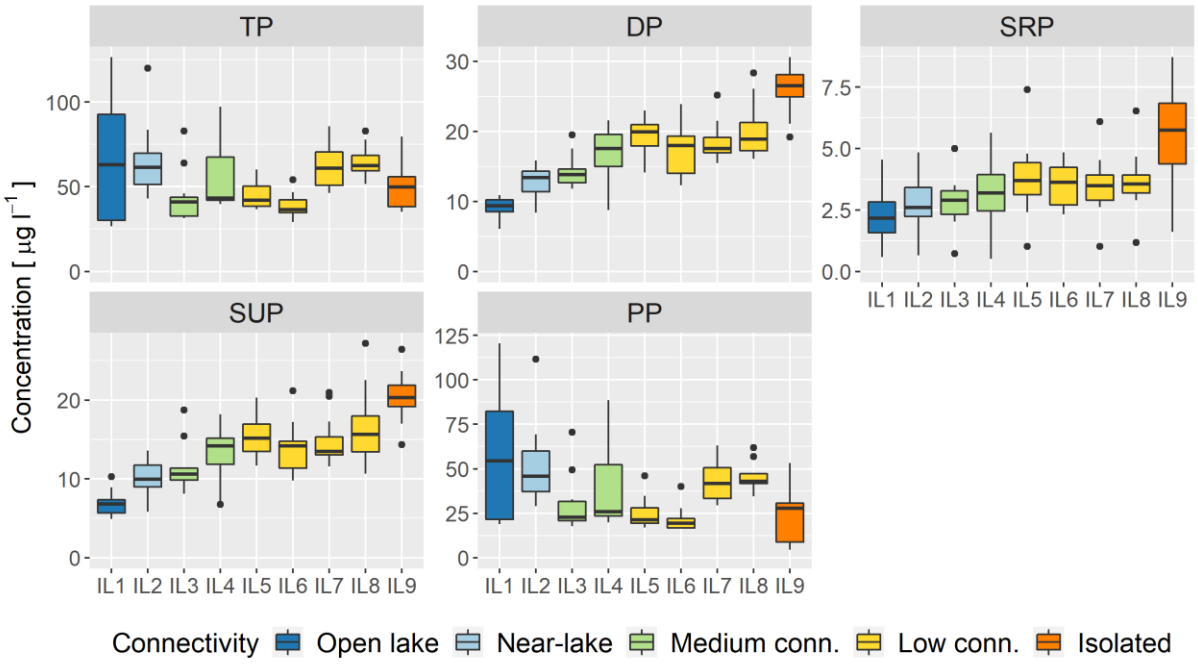

Figure A 13: Boxplots of total phosphorus (TP), dissolved phosphorus (DP), soluble reactive phosphorus (SRP), soluble unreactive phosphorus (SUP) and particulate phosphorus (PP) from 13 sampling dates at individual sampling sites in the Illmitz test area.

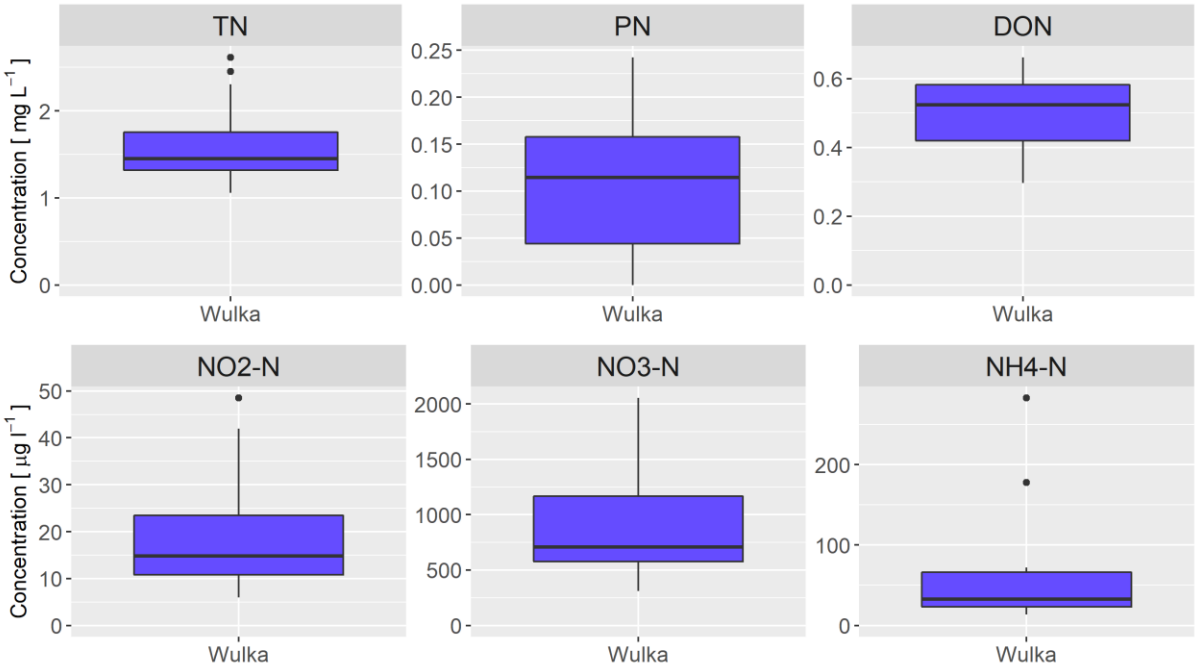

Figure A 14: Boxplots of total nitrogen (TN), dissolved organic nitrogen (DON), nitrite-nitrogen (NO_2-N), nitrate-nitrogen (NO_3-N), ammonium-nitrogen (NH_4-N) and particulate nitrogen (PN) from 13 sampling dates in the Wulka estuary.

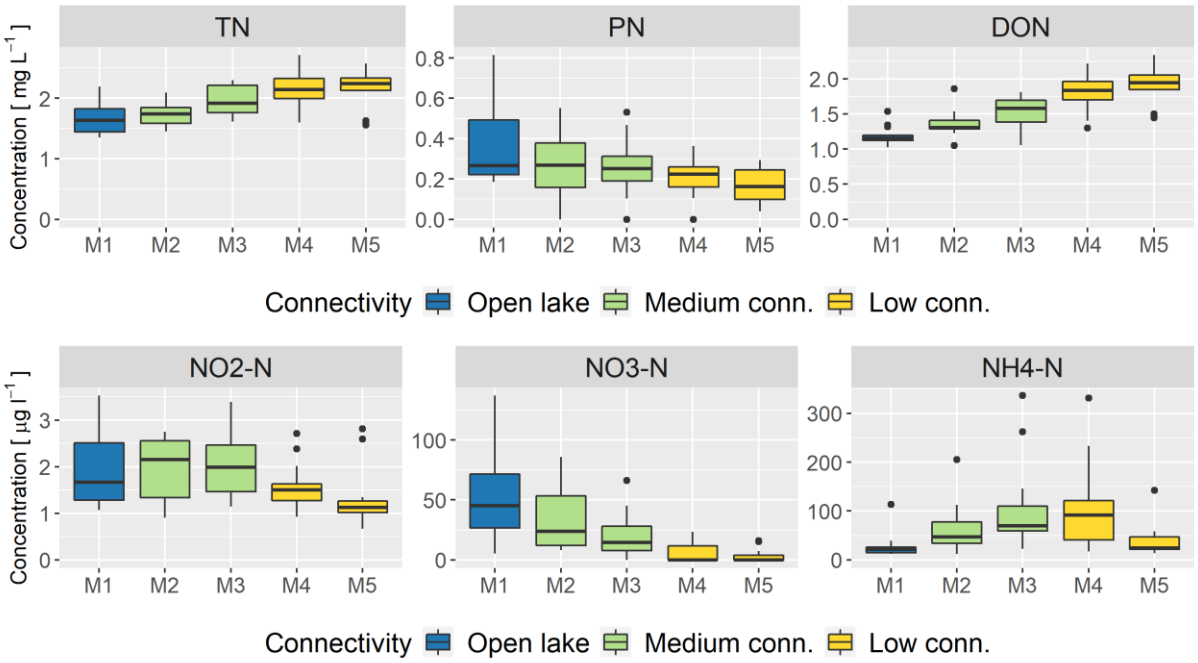

Figure A 15: Boxplots of total nitrogen (TN), dissolved organic nitrogen (DON), nitrite-nitrogen (NO_2-N), nitrate-nitrogen (NO_3-N), ammonium-nitrogen (NH_4-N) and particulate nitrogen (PN) from 13 sampling dates at individual sampling sites in the Mörbisch test area.

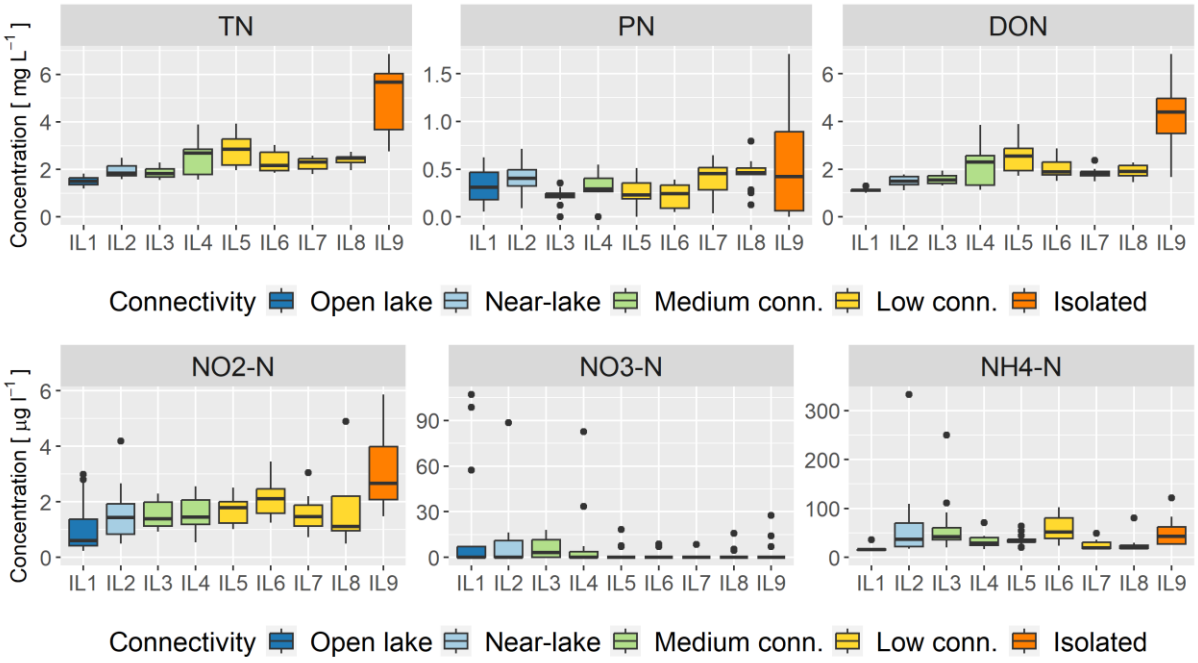

Figure A 16: Boxplots of total nitrogen (TN), dissolved organic nitrogen (DON), nitrite-nitrogen (NO_2-N), nitrate-nitrogen (NO_3-N), ammonium-nitrogen (NH_4-N) and particulate nitrogen (PN) from 13 sampling dates at individual sampling sites in the Illmitz test area.

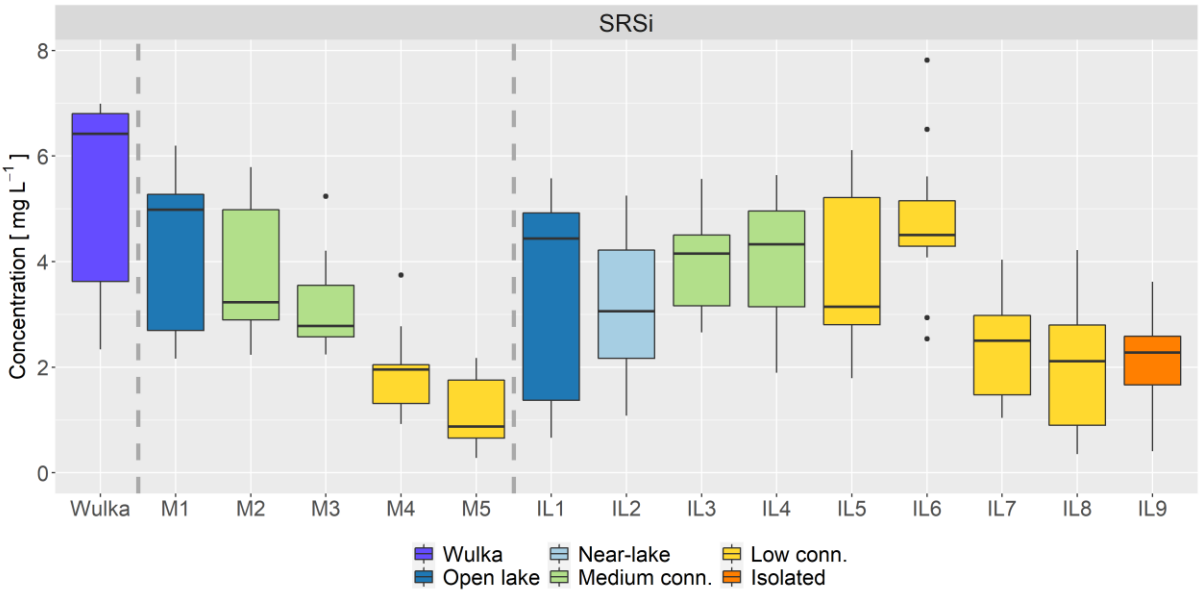

Figure A 17: Boxplots of soluble reactive silica (SRSi) from 13 sampling dates at individual sampling sites: left) in the Wulka estuary; centre) in the Mörbisch test area, right) in the Illmitz test area.

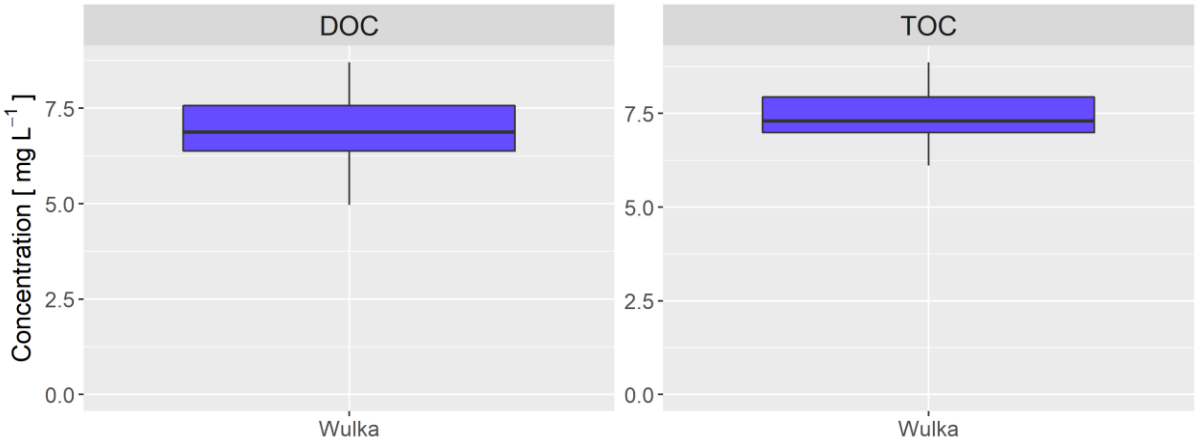

Figure A 18: Boxplots of dissolved organic carbon (DOC) and total organic carbon (TOC) from 13 sampling dates in the Wulka estuary.

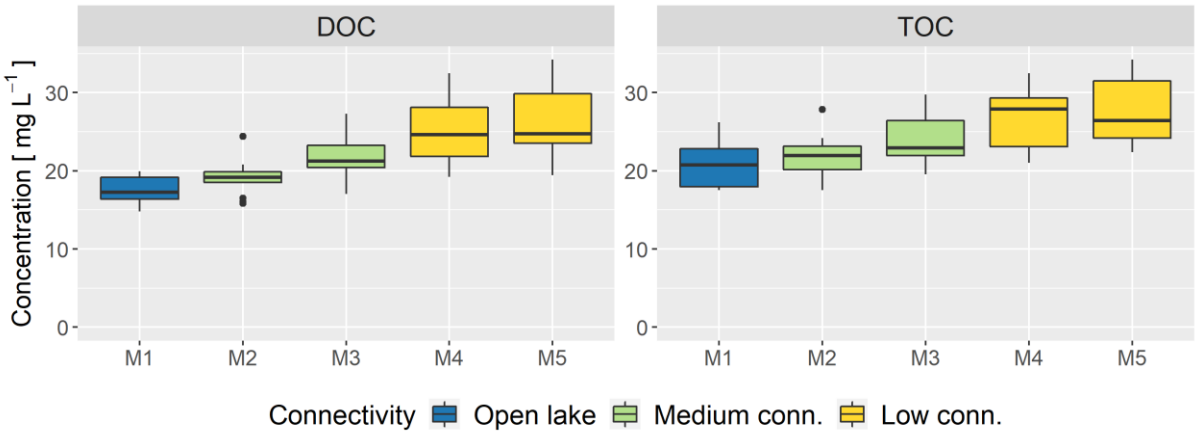

Figure A 19: Boxplots of dissolved organic carbon (DOC) and total organic carbon (TOC) from 13 sampling dates at individual sampling sites in the Mörbisch test area.

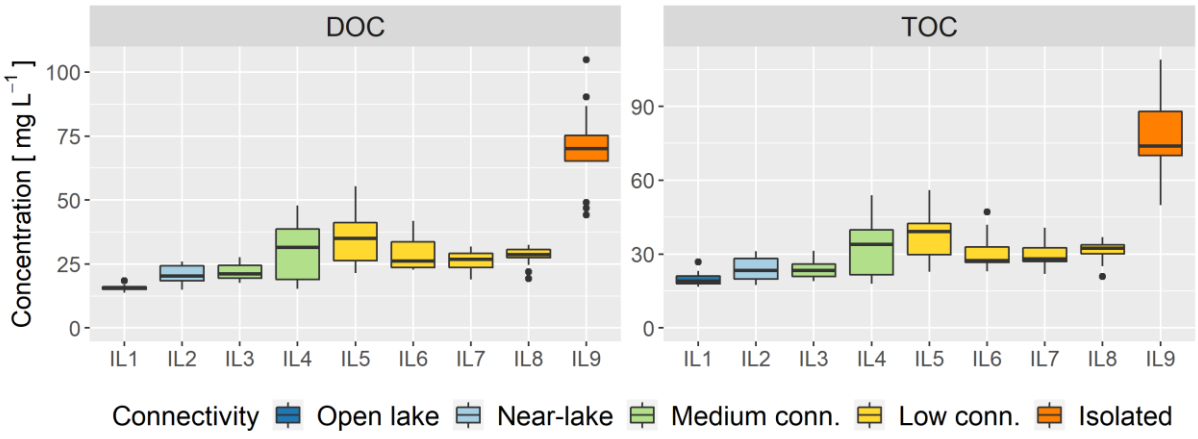

Figure A 20: Boxplots of dissolved organic carbon (DOC) and total organic carbon (TOC) from 13 sampling dates at individual sampling sites in the Illmitz test area.

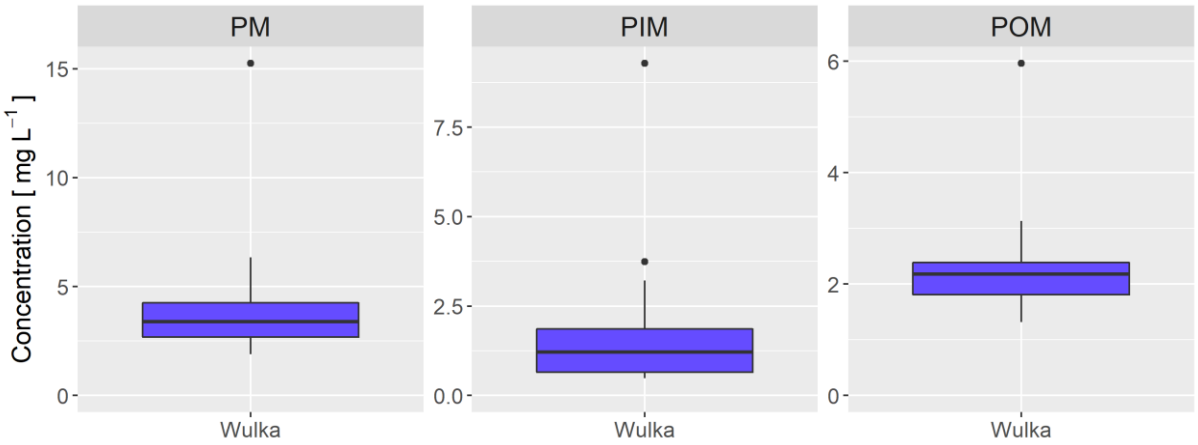

Figure A 21: Boxplots of particulate matter (PM), particulate organic matter (POM) and particulate inorganic matter (PIM) from 13 sampling dates in the Wulka estuary.

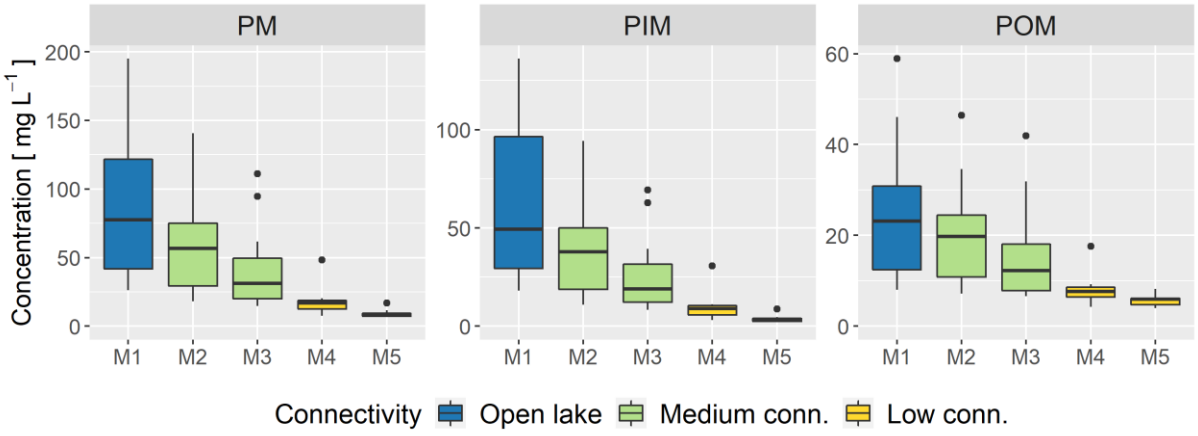

Figure A 22: Boxplots of particulate matter (PM), particulate organic matter (POM) and particulate inorganic matter (PIM) from 13 sampling dates at individual sampling sites in the Mörbisch test area.

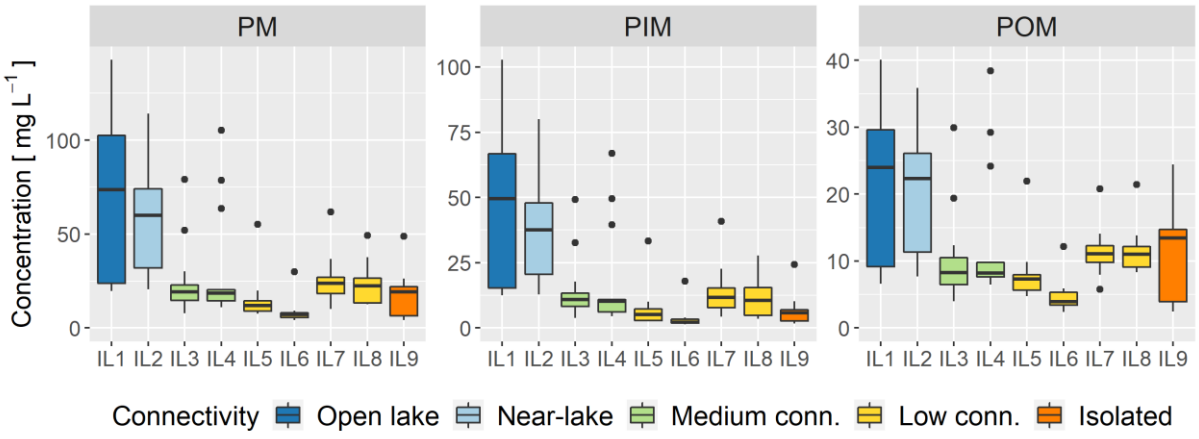

Figure A 23: Boxplots of particulate matter (PM), particulate organic matter (POM) and particulate inorganic matter (PIM) from 13 sampling dates at individual sampling sites in the Illmitz test area.

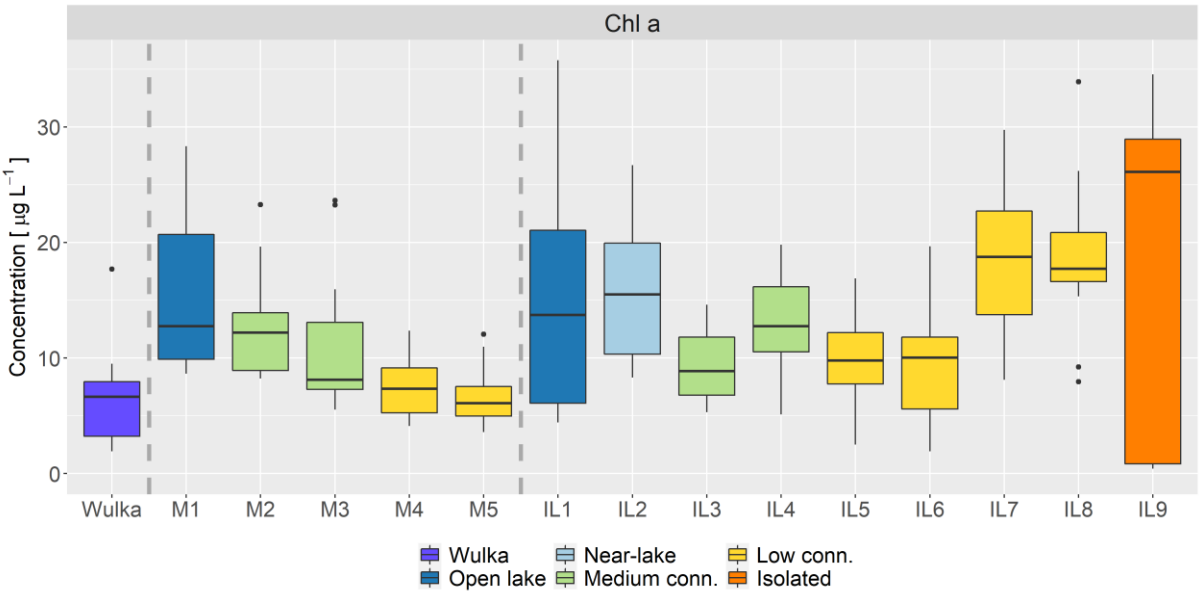

Figure A 24: Boxplots of Chlorophyll a (Chl a) from 13 sampling dates at individual sampling sites: left) in the Wulka estuary; centre) in the Mörbisch test area, right) in the Illmitz test area

A3.11 Boxplots of trace contaminants

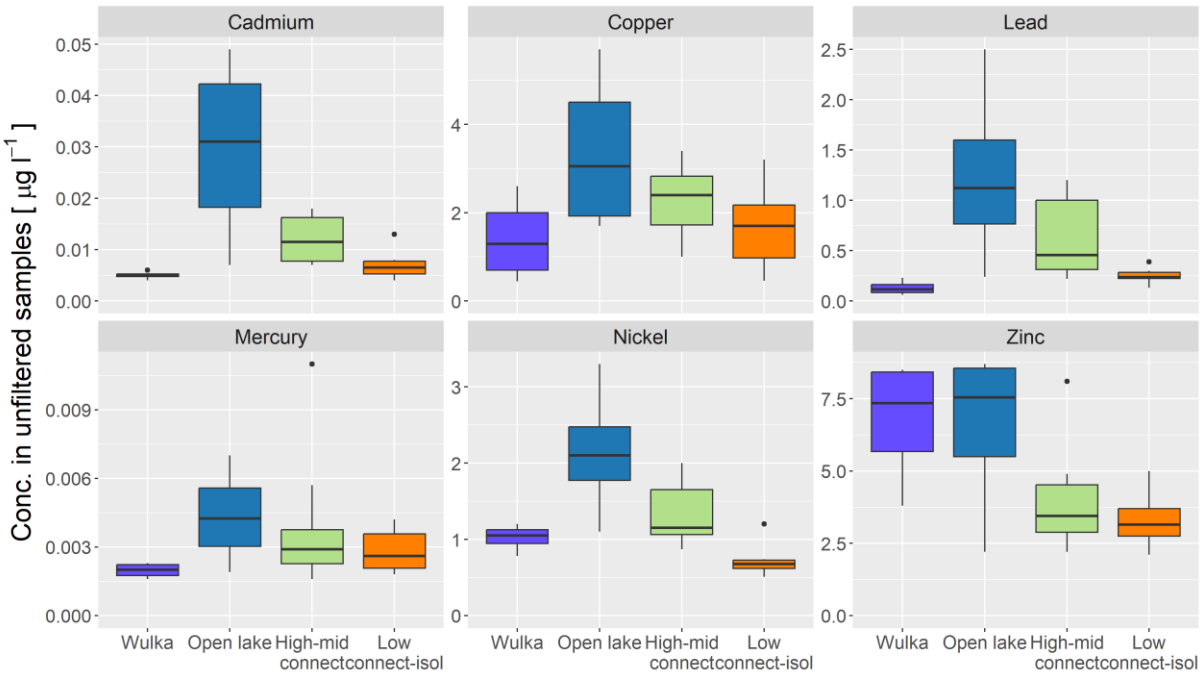

Figure A 25: Boxplots of metals (total fraction) for sampling sites aggregated for the Wulka river estuary and for three groups in the lake: "Open lake", "High-mid connected", "Low connected-isolated".

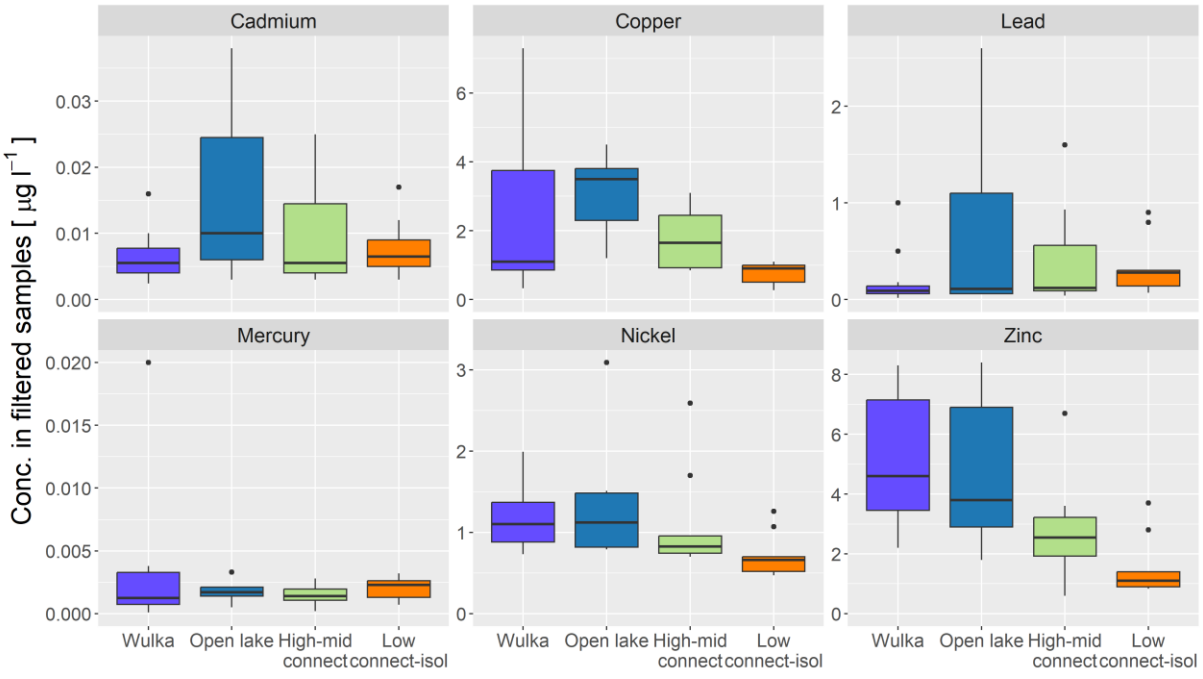

Figure A 26: Boxplots of metals (dissolved fraction) for sampling sites aggregated for the Wulka river estuary and for three groups in the lake: "Open lake", "High-mid connected", "Low connected-isolated".

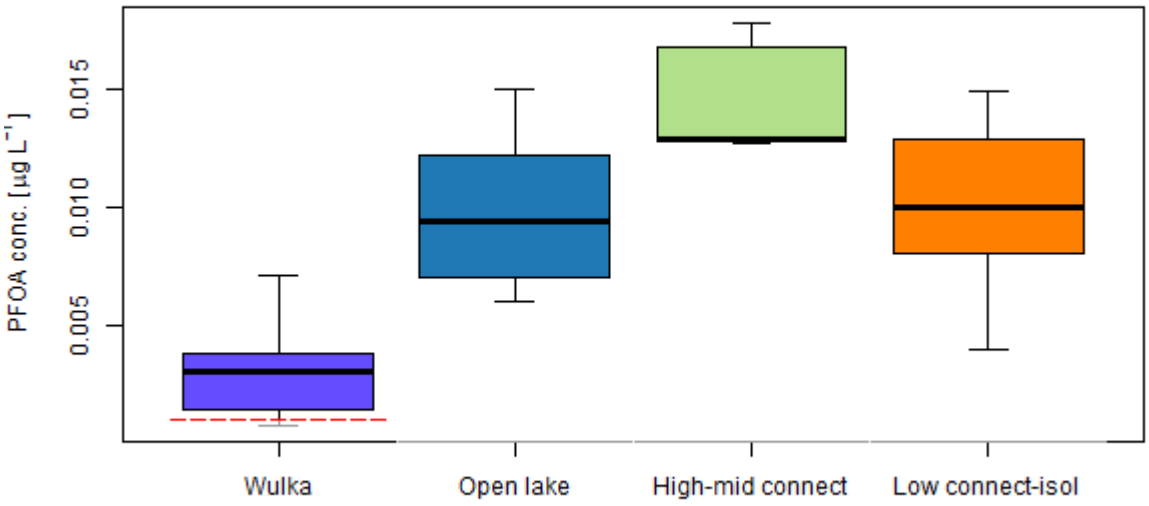

Figure A 27: Boxplots of PFOA for sampling sites aggregated for the Wulka river estuary and for three groups within the lake: "Open lake", "High-mid connected", "Low connected-isolated". The limit of quantification (LOQ) is drawn as dashed red line. Portions of boxplots below the LOQ (shown with grey lines) are estimates computed using regression on order statistics (ROS).

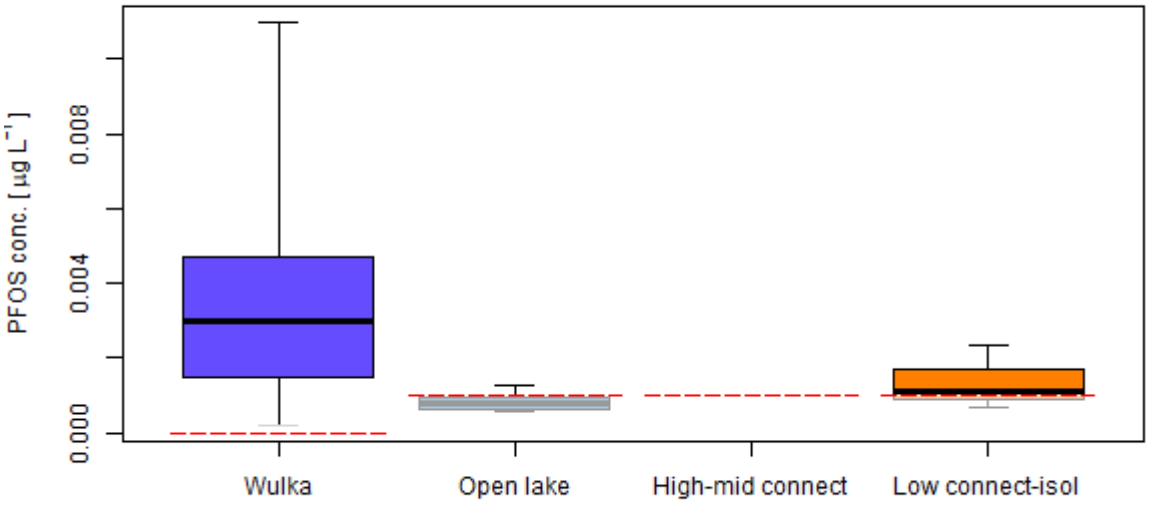

Figure A 28: Boxplots of PFOS for sampling sites aggregated for the Wulka river estuary and for three groups within the lake: "Open lake", "High-mid connected", "Low connected-isolated". The limit of quantification (LOQ) is drawn as dashed red line. Portions of boxplots below the LOQ (shown with grey lines) are estimates computed using regression on order statistics (ROS).

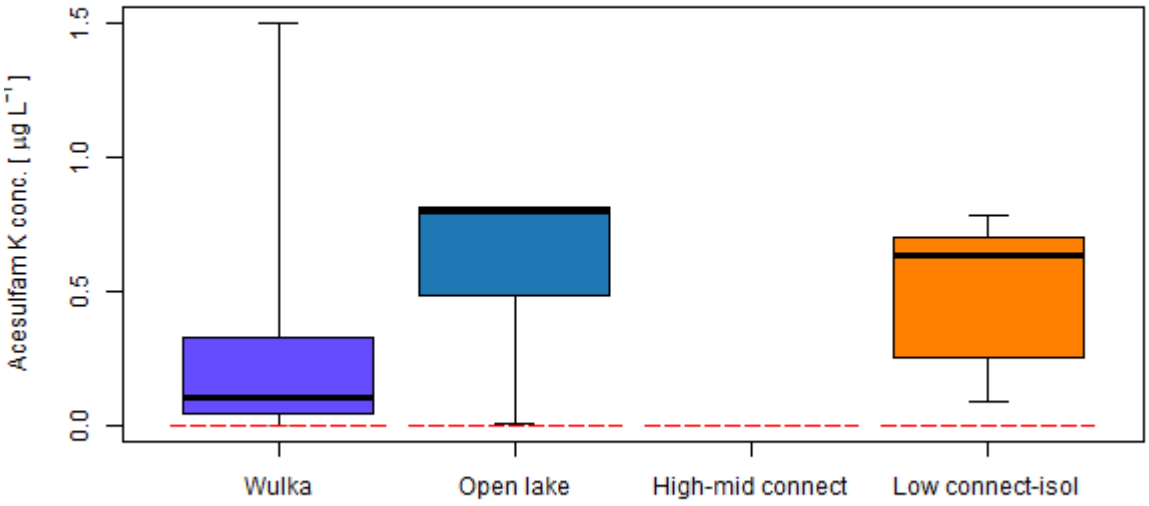

Figure A 29: Boxplots of Acesulfame K for sampling sites aggregated for the Wulka river estuary and for three groups within the lake: "Open lake", "High-mid connected", "Low connected-isolated". The limit of quantification (LOQ) is drawn as dashed red line. Portions of boxplots below the LOQ (shown with grey lines) are estimates computed using regression on order statistics (ROS).

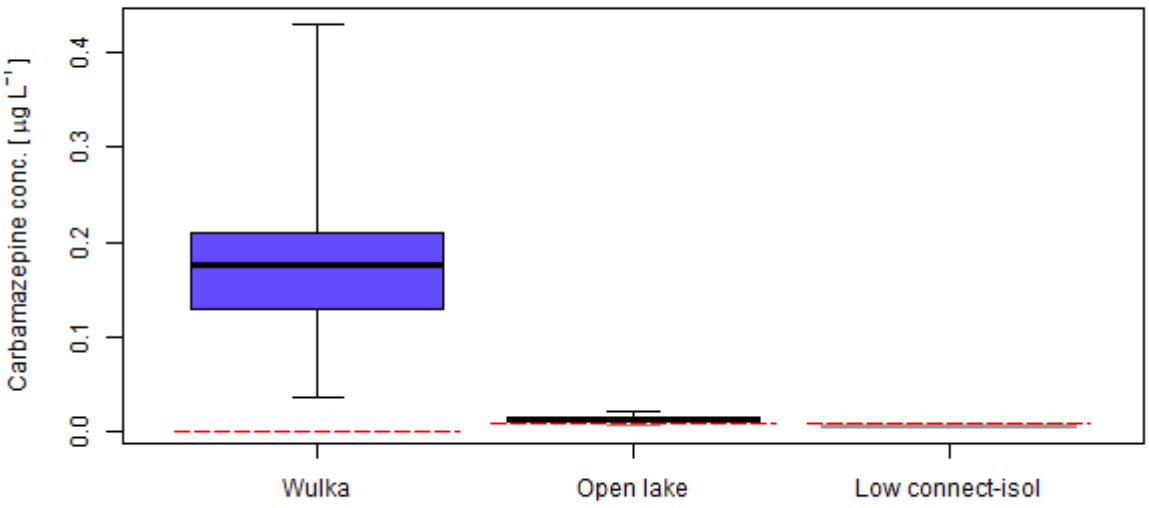

Figure A 30: Boxplots of Carbamazepine for sampling sites aggregated for the Wulka river estuary and for three groups within the lake: "Open lake", "High-mid connected", "Low connected-isolated". The limit of quantification (LOQ) is drawn as dashed red line. Portions of boxplots below the LOQ (shown with grey lines) are estimates computed using regression on order statistics (ROS).

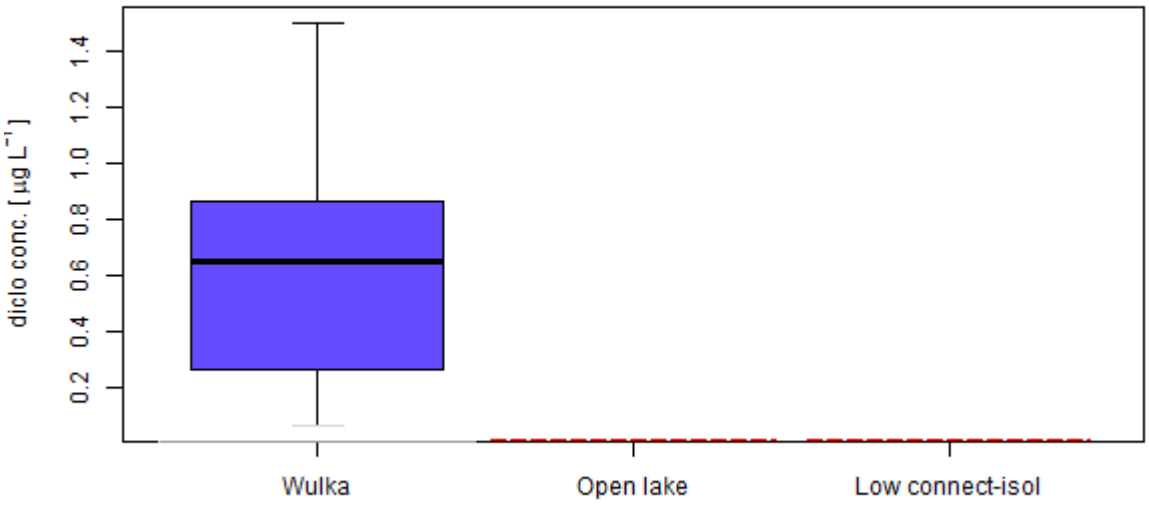

Figure A 31: Boxplots of Diclofenac for sampling sites aggregated for the Wulka river estuary and for three groups within the lake: "Open lake", "High-mid connected", "Low connected-isolated". The limit of quantification (LOQ) is drawn as dashed red line. Portions of boxplots below the LOQ (shown with grey lines) are estimates computed using regression on order statistics (ROS).

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Clara, M., Hartmann, C., Deutsch, K., 2019. Arzneimittelwirkstoffe und Hormone in Fließgewässern - GZÜV Sondermessprogramm 2017/2018. Bundesministerium für Nachhaltigkeit und Tourismus, Wien.

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Zoboli, O., Clara, M., Gabriel, O., Scheffknecht, C., Humer, M., Brielmann, H., Kulcsar, S., Trautvetter, H., Kittlaus, S., Amann, A., Saracevic, E., Krampe, J., Zessner, M., 2019. Occurrence and levels of micropollutants across environmental and engineered compartments in Austria. Journal of Environmental Management 232, 636–653. https://doi.org/10.1016/j.jenvman.2018.10.074