

Trends of Changes in Minimum Lake Water Temperature in Poland

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Table S1. Changes in lake minimum water temperatures in the period 1972-2021.

Śląskie				Śępoleńskie				
Period	S	Z-value	P-value	Sen's Slope (°C per decade)	S	Z-value	P-value	Sen's Slope (°C per decade)
Nov	330	2.84	0.005**	0.45	438	3.77	0.000**	0.51
Dec	532	4.58	0.000**	0.51	398	3.42	0.001**	0.31
Jan	138	1.18	0.238	0.07	160	1.37	0.171	0.07
Feb	354	3.04	0.002**	0.23	124	1.06	0.289	0.09
Mar	302	2.59	0.009**	0.28	246	2.11	0.035*	0.22
Apr	296	2.54	0.011*	0.37	196	1.68	0.093	0.26
May	484	4.16	0.000**	0.75	372	3.20	0.001**	0.69
Jun	344	2.96	0.003**	0.51	300	2.58	0.010**	0.49
Jul	536	4.61	0.000**	0.72	352	3.03	0.002**	0.53
Aug	634	5.46	0.000**	0.75	400	3.44	0.001**	0.52
Sep	414	3.56	0.000**	0.62	364	3.13	0.002**	0.44
Oct	378	3.25	0.001**	0.59	332	2.85	0.004**	0.42
Year	320	2.75	0.006**	0.13	220	1.89	0.059	0.08
T90%	458	3.94	0.000**	0.32	236	2.03	0.043*	0.15

Charzykowskie				Gardno				
Period	S	Z-value	P-value	Sen's Slope (°C per decade)	S	Z-value	P-value	Sen's Slope (°C per decade)
Nov	376	3.23	0.001**	0.55	330	2.84	0.005**	0.38
Dec	374	3.22	0.001**	0.40	390	3.35	0.001**	0.14
Jan	298	2.56	0.010*	0.14	-33	-0.28	0.781	0.00
Feb	404	3.47	0.001**	0.19	-68	-0.58	0.562	0.00
Mar	494	4.25	0.000**	0.36	288	2.47	0.013*	0.17
Apr	434	3.73	0.000**	0.58	420	3.61	0.000**	0.70
May	542	4.66	0.000**	0.83	372	3.20	0.001**	0.83
Jun	370	3.18	0.001**	0.62	484	4.16	0.000**	0.80
Jul	318	2.73	0.006**	0.58	354	3.04	0.002**	0.56
Aug	432	3.72	0.000**	0.53	440	3.78	0.000**	0.58
Sep	332	2.85	0.004**	0.30	230	1.97	0.048*	0.36
Oct	256	2.20	0.028*	0.30	448	3.85	0.000**	0.68
Year	390	3.35	0.001**	0.13	1	0.00	1.000	0.00

T90%	476	4.09	0.000**	0.37	154	1.32	0.187	0.05
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Bachotek				Jeziorak				
Period	S	Z-value	P-value	Sen's Slope (°C per decade)	S	Z-value	P-value	Sen's Slope (°C per decade)
Nov	567	4.88	0.000**	0.80	338	2.90	0.004**	0.45
Dec	521	4.48	0.000**	0.44	214	1.84	0.066	0.14
Jan	222	1.90	0.057	0.10	7	0.05	0.959	0.00
Feb	316	2.72	0.007**	0.14	108	0.92	0.356	0.06
Mar	370	3.18	0.001**	0.31	128	1.09	0.274	0.08
Apr	406	3.49	0.000**	0.53	212	1.82	0.069	0.36
May	468	4.03	0.000**	0.95	418	3.59	0.000**	0.75
Jun	404	3.47	0.001**	0.73	342	2.94	0.003**	0.57
Jul	468	4.03	0.000**	0.66	468	4.03	0.000**	0.67
Aug	518	4.46	0.000**	0.71	502	4.32	0.000**	0.76
Sep	440	3.78	0.000**	0.55	402	3.46	0.001**	0.63
Oct	424	3.65	0.000**	0.56	274	2.35	0.019*	0.43
Year	366	3.15	0.002**	0.10	50	0.42	0.672	0.01
T90%	404	3.47	0.001**	0.29	118	1.01	0.313	0.08

Mikołajskie				Selmęt Wielki				
Period	S	Z-value	P-value	Sen's Slope (°C per decade)	S	Z-value	P-value	Sen's Slope (°C per decade)
Nov	376	3.16	0.002**	0.45	410	3.53	0.000**	0.54
Dec	374	3.04	0.002**	0.33	544	4.68	0.000**	0.40
Jan	298	0.84	0.398	0.03	378	3.25	0.001**	0.13
Feb	404	2.08	0.038*	0.06	404	3.47	0.001**	0.16
Mar	494	2.21	0.027*	0.15	416	3.58	0.000**	0.26
Apr	434	2.40	0.016*	0.36	408	3.51	0.000**	0.59
May	542	3.23	0.001**	0.60	458	3.94	0.000**	0.92
Jun	370	2.90	0.004**	0.62	456	3.92	0.000**	0.78
Jul	318	3.35	0.001**	0.49	462	3.97	0.000**	0.65
Aug	432	4.04	0.000**	0.54	480	4.13	0.000**	0.55

Sep	332	2.94	0.003**	0.42	190	1.63	0.103	0.28
Oct	256	2.19	0.029*	0.29	290	2.49	0.013*	0.41
Year	390	1.34	0.182	0.02	589	5.07	0.000**	0.15
T90%	476	3.08	0.002**	0.16	356	3.06	0.002**	0.17

Studzieniczne				Hancza				
Period	S	Z-value	P-value	Sen's Slope (°C per decade)	S	Z-value	P-value	Sen's Slope (°C per decade)
Nov	330	2.84	0.005**	0.46	104	0.89	0.375	0.11
Dec	232	1.99	0.046*	0.17	296	2.54	0.011*	0.19
Jan	66	0.56	0.575	0.02	236	2.05	0.040*	0.04
Feb	288	2.47	0.013*	0.11	430	3.70	0.000**	0.09
Mar	366	3.15	0.002**	0.22	362	3.11	0.002**	0.16
Apr	334	2.87	0.004**	0.40	370	3.18	0.001**	0.32
May	288	2.47	0.013*	0.59	490	4.22	0.000**	0.77
Jun	296	2.54	0.011*	0.47	320	2.75	0.006**	0.74
Jul	314	2.70	0.007*	0.47	252	2.16	0.030*	0.49
Aug	426	3.66	0.000**	0.57	290	2.49	0.013*	0.38
Sep	308	2.65	0.008**	0.47	26	0.22	0.829	0.05
Oct	322	2.77	0.006**	0.41	146	1.25	0.211	0.24
Year	196	1.68	0.093	0.05	242	2.18	0.029*	0.01
T90%	396	3.40	0.001**	0.16	424	3.65	0.000**	0.20

*- significant at a level of 0.05, **- significant at a level of 0.01

Table S2 Changes in air temperatures in selected meteorological stations in the period 1972-2021

Zielona Góra				Łeba			
Period	S	Z-value	P-value	Sen's Slope (°C per decade)	S	Z-value	Sen's Slope (°C per decade)
Nov	112	0.96	0.339	0.25	112	0.96	0.339
Dec	220	1.89	0.059	0.83	220	1.89	0.059
Jan	-8	-0.06	0.952	-0.04	-8	-0.06	0.952
Feb	56	0.47	0.635	0.28	56	0.47	0.635
Mar	116	0.99	0.322	0.30	116	0.99	0.322
Apr	204	1.75	0.080	0.36	204	1.75	0.080
May	138	1.18	0.238	0.37	138	1.18	0.238
Jun	462	3.97	0.000**	0.71	462	3.97	0.000**
Jul	364	3.13	0.002**	0.48	364	3.13	0.002**
Aug	344	2.96	0.003**	0.56	344	2.96	0.003**
Sep	194	1.66	0.096	0.27	194	1.66	0.096
Oct	198	1.70	0.089	0.37	198	1.70	0.089
Year	-6	-0.04	0.966	-0.01	-6	-0.04	0.966
T90%	186	1.59	0.111	0.30	186	1.59	0.111

Chojnice				Kętrzyn			
Period	S	Z-value	P-value	Sen's Slope (°C per decade)	S	Z-value	Sen's Slope (°C per decade)
Nov	200	1.72	0.086	0.50	166	1.42	0.155
Dec	282	2.42	0.015*	1.04	278	2.39	0.017*
Jan	-46	-0.39	0.698	-0.17	-64	-0.54	0.587
Feb	-2	-0.01	0.993	-0.01	4	0.03	0.979
Mar	126	1.08	0.281	0.39	106	0.91	0.365
Apr	216	1.85	0.064	0.35	246	2.11	0.035*
May	204	1.75	0.080	0.44	206	1.77	0.077
Jun	528	4.54	0.000**	0.78	374	3.22	0.001**
Jul	453	3.90	0.000**	0.59	418	3.59	0.000**
Aug	308	2.65	0.008**	0.39	438	3.77	0.000**
Sep	272	2.34	0.019*	0.39	218	1.87	0.061
Oct	130	1.11	0.266	0.26	78	0.66	0.507
Year	-12	-0.09	0.924	-0.10	-36	-0.30	0.763
T90%	204	1.75	0.080	0.32	168	1.44	0.150

Olsztyn				Toruń			
Period	S	Z-value	P-value	Sen's Slope (°C per decade)	S	Z-value	Sen's Slope (°C per decade)
Nov	188	1.61	0.107	0.50	156	1.34	0.182
Dec	258	2.22	0.027*	1.11	290	2.49	0.013*
Jan	-58	-0.49	0.623	-0.31	0	0.00	1.000
Feb	-16	-0.13	0.897	-0.15	2	0.01	0.993
Mar	88	0.75	0.453	0.28	76	0.65	0.518
Apr	282	2.42	0.015*	0.38	218	1.87	0.061
May	200	1.72	0.086	0.45	212	1.82	0.069
Jun	482	4.15	0.000**	0.69	489	4.21	0.000**

Jul	342	2.94	0.003**	0.41	378	3.25	0.001**	0.44
Aug	404	3.47	0.001**	0.52	296	2.54	0.011*	0.43
Sep	160	1.37	0.171	0.30	232	1.99	0.046*	0.31
Oct	134	1.15	0.252	0.26	130	1.11	0.266	0.28
Year	-14	-0.11	0.911	-0.04	-18	-0.15	0.883	-0.09
T90%	212	1.82	0.069	0.41	222	1.90	0.057	0.31

*- significant at a level of 0.05, **- significant at a level of 0.01