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Long-Term Trends in Ecological Systems:

A Basis for Understanding Responses to Global Change

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Appendix 4. Regression coefficients and R^2 values for nine climatic variables for which linear regression against time is significant ($p < 0.05$)

(Sites are grouped by ecosystem type. See Appendix 26 for length of record for each station at a site.)

Site code	Variable	Slope	Y-intercept[1]	R^2
Alpine and arctic				
GLA	Maximum air temperature	0.07	1.6	0.3
	Mean air temperature	0.07	-1.4	0.3
LVW	Maximum air temperature	-0.07	7.5	0.3
MCM	Minimum air temperature	-0.11	-20.1	0.3
	Precipitation	0.21	-0.01	0.4
NWT	Maximum air temperature	0.04	6.5	0.3
	Mean air temperature	0.02	1.2	0.1
	Precipitation	-0.49	86.4	0.2
Aridlands				
EOA	Mean air temperature	0.01	7.3	0.2
	Minimum air temperature	0.02	-0.4	0.2
RCE	Maximum air temperature	0.03	15.7	0.2
	Mean air temperature	0.03	8.2	0.3
	Minimum air temperature	0.03	0.7	0.3
SEV	Mean air temperature	-0.01	14.5	0.1
	Minimum air temperature	-0.01	5.3	0.04
WGE	Maximum air temperature	0.01	24.8	0.05
	Mean air temperature	0.01	16.9	0.2
	Minimum air temperature	0.01	9.0	0.3
Coastal				
CCE	Mean air temperature	0.02	16.8	0.3
	Minimum air temperature	0.03	12.7	0.4
	Sea level	0.002	-0.2	0.8
	Water clarity	-0.11	17.0	0.3
	Water temperature	0.01	16.6	0.2
FCE	Mean air temperature	0.02	23.2	0.4
	Minimum air temperature	0.04	17.1	0.3
	Sea level	0.002	-0.2	0.9
	Streamflow	110.58	564.7	0.2
	Water temperature	-0.03	26.5	0.4
GCE	Sea level	0.003	-0.2	0.8
MCR	Mean air temperature	0.08	24.7	0.6
	Sea level	0.003	-0.04	0.5
PAL	Mean air temperature	0.06	-3.2	0.3
	Minimum air temperature	0.08	-4.9	0.3

Appendix 4. Regression coefficients and R^2 values for nine climatic variables for which linear regression against time is significant ($p < 0.05$)—*Continued*

Site code	Variable	Slope	Y-intercept[1]	R^2
PIE	Mean air temperature	-0.01	10.2	0.05
	Minimum air temperature	-0.01	5.0	0.2
	Precipitation	0.36	87.6	0.3
	Sea level	0.003	-0.2	0.9
SBC	Mean air temperature	0.01	15.2	0.2
	Minimum air temperature	0.02	8.7	0.4
	Sea level	0.001	-0.1	0.3
	Water temperature	0.02	15.5	0.2
VCR	Maximum air temperature	0.02	19.2	0.2
	Mean air temperature	0.03	13.7	0.4
	Minimum air temperature	0.04	8.3	0.5
	Sea level	0.004	-0.3	0.9
Eastern forests				
BEN	Mean air temperature	0.01	12.6	0.1
	Minimum air temperature	0.03	5.3	0.3
CRO	Maximum air temperature	-0.02	25.2	0.3
	Mean air temperature	-0.02	18.2	0.4
	Minimum air temperature	-0.02	11.2	0.2
CWT	Mean air temperature	0.01	12.3	0.1
	Minimum air temperature	0.02	4.9	0.2
FER	Maximum air temperature	-0.02	17.8	0.2
	Mean air temperature	-0.01	10.6	0.1
HAR	Mean air temperature	0.01	19.4	0.1
	Minimum air temperature	0.02	13.3	0.2
HBR	Ice duration	-0.45	140.6	0.2
	Maximum air temperature	0.02	11.5	0.1
	Mean air temperature	0.03	5.8	0.3
	Minimum air temperature	0.03	0.2	0.4
HFR	Maximum air temperature	0.03	12.5	0.3
	Mean air temperature	0.03	6.7	0.4
	Minimum air temperature	0.04	0.8	0.4
	Precipitation	0.59	97.8	0.1
LUQ	Sea level	0.002	-0.1	0.4
MAR	Mean air temperature	0.02	3.4	0.2
	Minimum air temperature	0.03	-3.6	0.3
	Precipitation	0.20	57.0	0.2
NTL	Ice duration	-0.19	117.9	0.2
	Streamflow	2.29	102.7	0.2
	Water temperature	0.06	13.0	0.4
SAN	Maximum air temperature	-0.01	25.7	0.1
	Minimum air temperature	-0.01	11.9	0.1
	Streamflow	4.89	13.5	0.7

Appendix 4. Regression coefficients and R^2 values for nine climatic variables for which linear regression against time is significant ($p < 0.05$)—*Continued*

Site code	Variable	Slope	Y-intercept[1]	R^2
TAL	Mean air temperature	-0.01	17.3	0.1
	Minimum air temperature	-0.02	11.6	0.2
	Precipitation	0.24	123.2	0.1
WBW	Maximum air temperature	0.02	20.0	0.1
	Mean air temperature	0.01	14.0	0.1
Temperate grasslands and savannas				
CDR	Precipitation	0.05	65.1	0.03
FTK	Mean air temperature	0.01	7.3	0.1
	Minimum air temperature	0.02	0.4	0.1
GRL	Maximum air temperature	-0.01	23.1	0.1
	Minimum air temperature	0.02	8.0	0.2
	Precipitation	0.19	68.8	0.1
GSW	Precipitation	0.30	79.9	0.1
KBS	Maximum air temperature	0.02	14.4	0.2
	Mean air temperature	0.02	8.7	0.2
	Minimum air temperature	0.02	3.0	0.2
	Precipitation	0.38	75.2	0.2
	Streamflow	122.12	20,810.5	0.2
SGS	Mean air temperature	0.02	8.3	0.2
	Minimum air temperature	0.04	-0.6	0.3
SPR	Minimum air temperature	0.01	7.1	0.1
Urban				
BES	Maximum air temperature	0.01	18.2	0.1
	Sea level	0.003	-0.3	0.9
CAP	Maximum air temperature	0.01	30.3	0.2
	Mean air temperature	0.02	20.0	0.5
	Minimum air temperature	0.03	9.7	0.5
Western forests				
CHE	Maximum air temperature	0.01	14.7	0.1
	Mean air temperature	0.01	10.1	0.1
	Minimum air temperature	0.01	5.5	0.2
FRA	Minimum air temperature	-0.03	0.01	0.4
PRI	Mean air temperature	0.01	6.4	0.05
	Minimum air temperature	0.01	-0.7	0.2
WIN	Maximum air temperature	-0.02	15.9	0.1
	Minimum air temperature	0.01	2.3	0.1

[1] Y-intercept was calculated for the first year of a dataset, which contains records of one variable over time for one site.