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Supplemental Information for

North American weather regimes are becoming more persistent: Is Arctic amplification a factor?

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The following tables and figures provide additional information and analysis to supplement those in the main paper body. Each is referenced in the text.

Table S1: Trends in dry PLDEs (number/year x 10) 1950-2015

	JFM	AMJ	JAS	OND	ANN
Massachusetts	0.8	0.5	0.5	0.4	2.4
NE Ohio	0.4	0.1	0.9	-0.3	1.3
N. Carolina	0.7	0.1	-0.8	0.4	0.1
S. Georgia	0.1	0.3	0.2	0.4	0.8
Minnesota	-1.2	-1.0	-0.6	-2.2	-4.9
E. Montana	0.3	-0.6	-0.5	0.4	-0.4
NW Iowa	0.1	-1.1	1.0	0.1	0.2
N. Illinois	1.5	-0.2	1.3	0.5	3.4
NE Colorado	2.8	2.8	2.4	3.5	11.4
Oklahoma	0.6	0.3	-0.2	2.7	3.3
SE Arkansas	-1.2	-1.0	0.6	-1.6	-3.7
SE Texas	0.5	0.9	0.7	1.9	4.1
E. Washington	-0.3	-0.9	0.7	0.3	-0.3
Oregon	0.3	0.1	-0.2	0.0	0.2
S. Idaho	1.1	-0.1	-0.7	-1.1	-1.0
California	-1.0	-0.3	-0.4	0.7	-1.3
Arizona	0.3	-0.8	0.1	0.1	-0.1

Trend: Change in number of long-duration dry spells (>3 days)/decade from 1950 to 2015

Table S2: Change (%) in mean duration of dry PLDEs: 1976-1995 to 1996-2015

	JFM	AMJ	JAS	OND
Massachusetts	-14	5	2	-8
NE Ohio	-9	3	2	-7
N. Carolina	-15	-5	-6	5
S. Georgia	-1	6	4	12
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Minnesota	0	-3	0	-4
E. Montana	-12	-5	4	-16
NW Iowa	-15	-4	-4	4
N. Illinois	3	-6	-3	2
NE Colorado	-1	-9	-11	-25
Oklahoma	4	1	4	-13
SE Arkansas	5	-1	4	8
SE Texas	6	15	6	-11
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E. Washington	-15	3	9	-9
Oregon	-8	3	-12	-26
S. Idaho	-7	3	-13	-16
California	28	6	21	-7
Arizona	24	27	-7	3

Table S3: Trends in frequency of **wet** PLDEs (number/year x 10) 1950-2015

	JFM	AMJ	JAS	OND	ANN
Massachusetts	0.8	0.5	0.5	0.4	8.8
NE Ohio	0.4	0.1	0.9	-0.3	8.6
N. Carolina	0.7	0.1	-0.8	0.4	2.0
S. Georgia	0.1	0.3	0.2	0.4	0.6
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Minnesota	-1.2	-1.0	-0.6	-2.2	1.3
E. Montana	0.3	-0.6	-0.5	0.4	2.0
NW Iowa	0.1	-1.1	1.0	0.1	0.6
N. Illinois	1.5	-0.2	1.3	0.5	5.8
NE Colorado	2.8	2.8	2.4	3.5	3.5
Oklahoma	0.6	0.3	-0.2	2.7	0.8
SE Arkansas	-1.2	-1.0	0.6	-1.6	-0.9
SE Texas	0.5	0.9	0.7	1.9	-2.0
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E. Washington	-0.3	-0.9	0.7	0.3	1.1
Oregon	0.3	0.1	-0.2	0.0	0.3
S. Idaho	1.1	-0.1	-0.7	-1.1	-1.0
California	-1.0	-0.3	-0.4	0.7	1.2
Arizona	0.3	-0.8	0.1	0.1	1.1

Trend: Change in number of long-duration dry spells (>3 days)/decade from 1950 to 2015

Darker shade = trend significant > 95%, lighter shade > 90% and < 95%. Top tier: east of Mississippi River; middle tier: central U.S.; bottom tier: west of Rockies.

Table S4: Change (%) in mean duration of **wet** PLDEs: 1976-1995 to 1996-2015

	JFM	AMJ	JAS	OND
Massachusetts	11	19	4	14
NE Ohio	20	8	3	8
N. Carolina	10	8	9	7
S. Georgia	9	11	16	19
Minnesota	14	5	-13	-5
E. Montana	2	31	-4	2
NW Iowa	-1	7	-3	2
N. Illinois	1	7	5	-3
NE Colorado	-1	-1	-4	10
Oklahoma	5	7	-2	25
SE Arkansas	1	-1	7	-11
SE Texas	-2	-10	2	-2
E. Washington	-6	-1	-14	9
Oregon	6	9	-4	3
S. Idaho	-6	-1	6	-12
California	-1	6	3	3
Arizona	-17	-5	-5	-1

Bold colors: change 10% or greater. Pale colors: between 5% and 10%

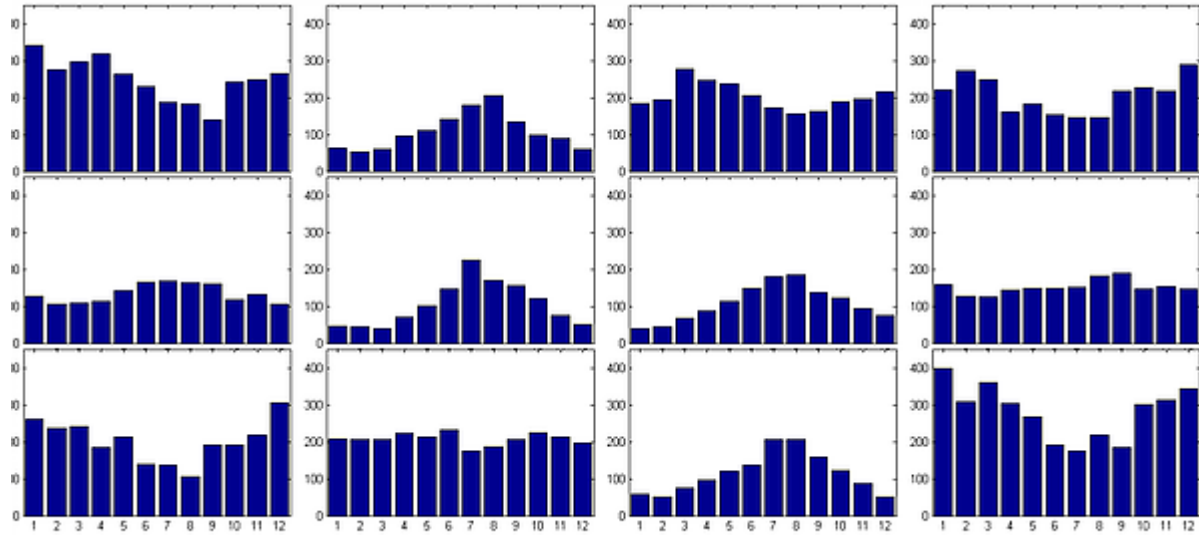


Figure S1: Monthly distributions of node frequency (days) for the SOM matrix in Fig. 2.

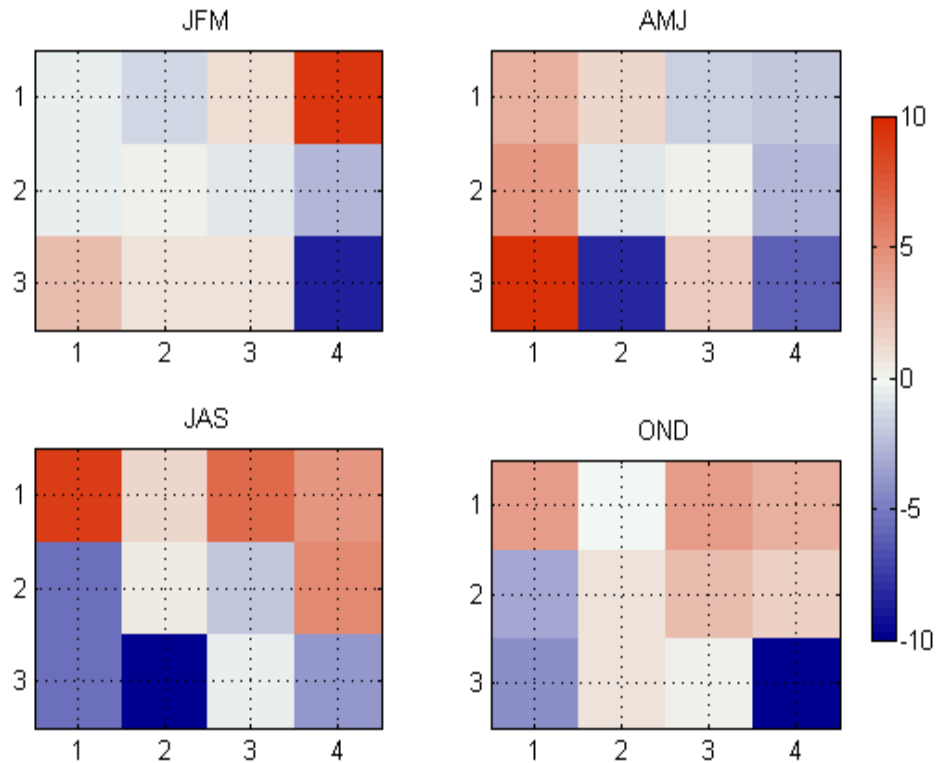


Figure S2: Seasonal change in number of CLDEs per node from 1976-1995 to 1996-2015. Number of CLDEs normalized by total CLDEs in time period, expressed as percent.

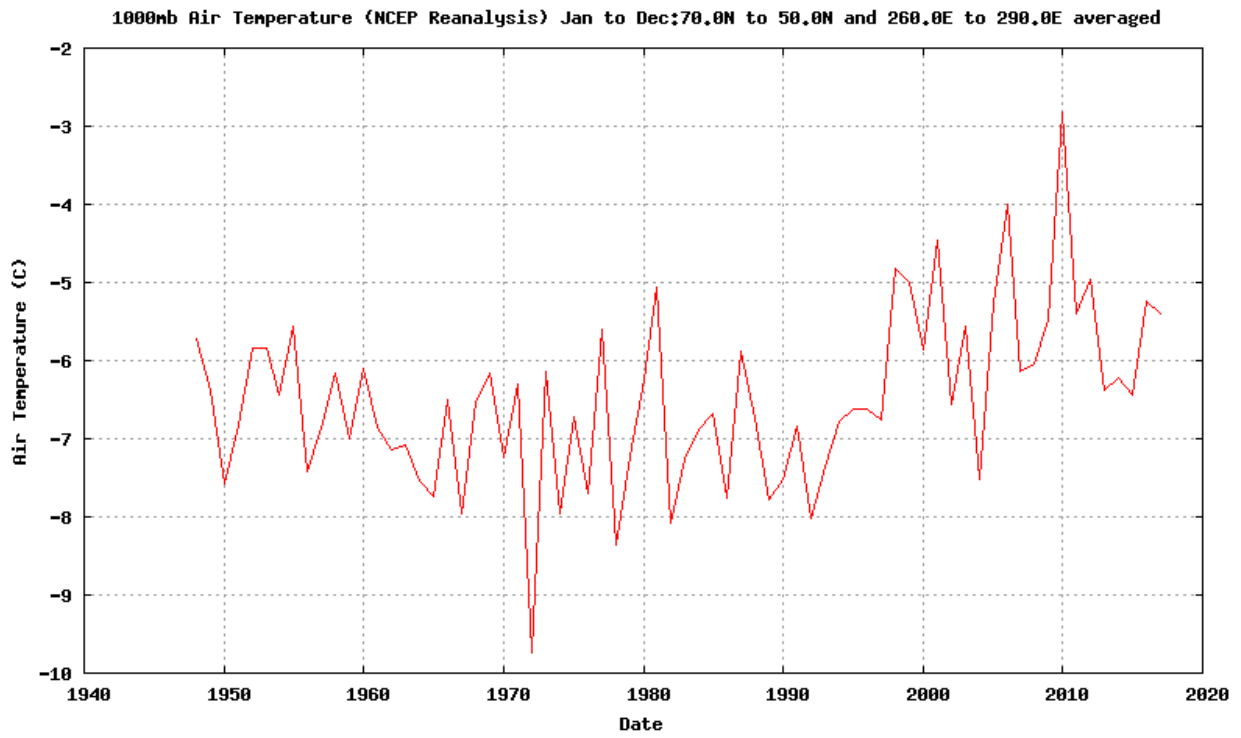


Figure S3: Time series of annual-mean near-surface air temperatures in the Hudson Bay region (plotted using NCEP reanalysis output from <http://www.esrl.noaa.gov/psd>).

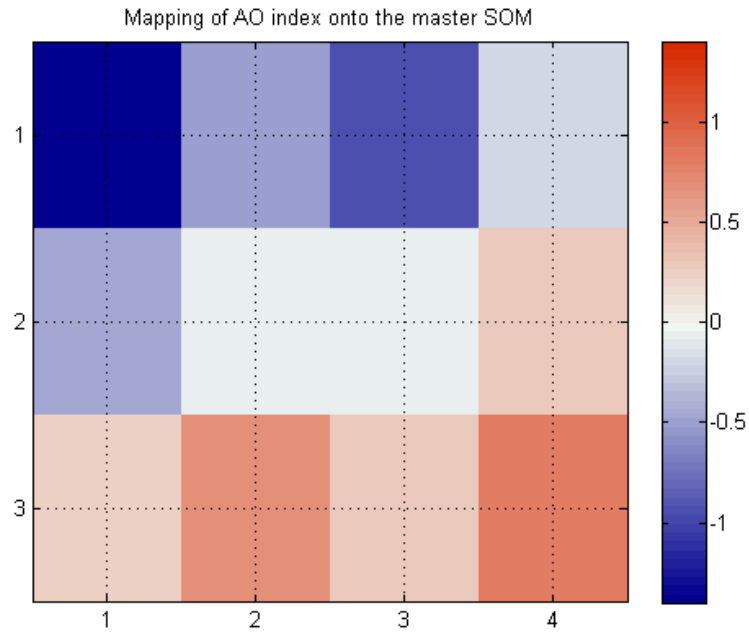


Figure S4: Daily Arctic Oscillation index mapped onto the master SOM.

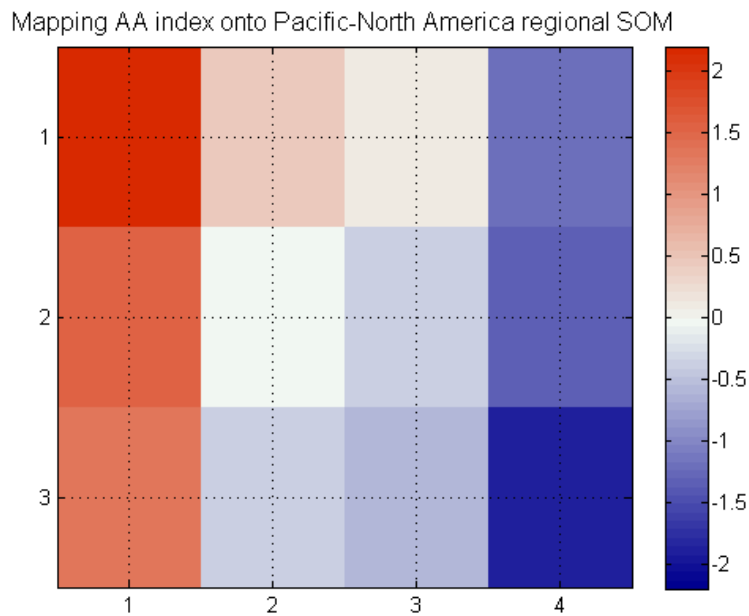


Figure S5: Regional amplified Arctic warming (AAW) index ($^{\circ}\text{C}$) mapped onto SOM matrix. AAW is calculated by subtracting mid-latitude (30°N - 60°N) 2-m air temperature anomalies from those in the Arctic (70°N - 90°N).

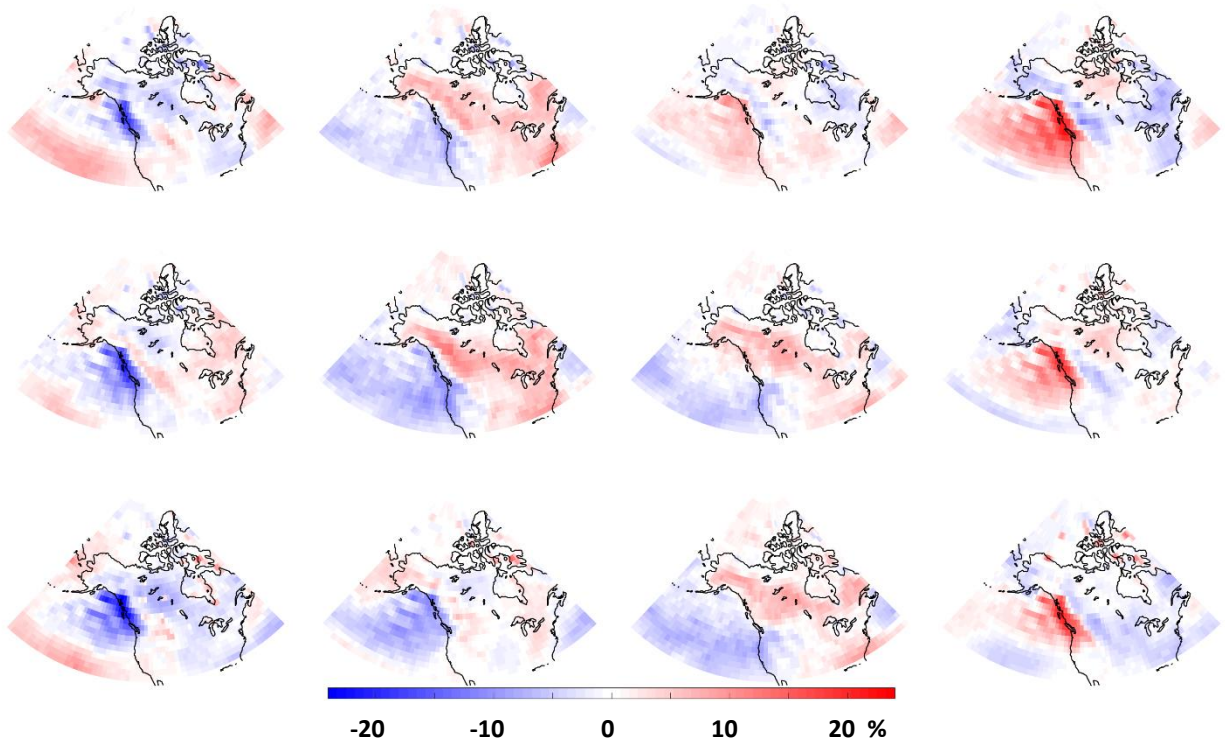


Figure S6: Percentage of days in each node at each gridbox that experiences a precipitation rate exceeding $4 \times 10^{-5} \text{ kg m}^{-2} \text{ s}^{-1}$ minus the mean percentage of days with precipitation for the entire data set.