

Table RMT 4 - Translation of Historical Climate Proxy Record for New England, after Baron 1988

REGIONAL CLIMATE RECORD FOR EASTERN MASSACHUSETTS (BARON 1988)

Decade	Midpoint	Moisture Conditions (Table 2)					Relative Coolness and Warmth (Table 1)					Dry Grow Seasons		Years with Flooding		Th-storms/yr		% Fair Days/year		
		Dry (1)	Drier (2)	Average (3)	Damp (4)	Wet (5)	Value	Hot (1)	Warm (2)	Average (3)	Cool (4)	Cold (5)	Value	n/10	% Max	n/10	% Max	Summer	% Max	Summer
1760s	1765	X											9	100	1	12.5	12.8	100	66.2	87.5
1770s	1775		X										7	77.778	6	75.0	12.9	100.78	64.1	84.7
1780s	1785			X									6	66.667	8	100.0	11.8	92.188	58.5	77.3
1790s	1795				X								7	77.778	5	62.5	8.4	65.625	63.1	83.4
1800s	1805		X					X					7	77.778	3	37.5	6.8	53.125	57.8	76.4
1810s	1815			X					X				3	33.333	7	87.5	4.4	34.375	64.1	84.7
1820s	1825	X							X				3	33.333	5	62.5	4.8	37.5	68.0	89.8
1830s	1835		X						X				2	22.222	3	37.5	5.3	41.406	75.7	100.0
1840s	1845			X					X				1	11.111	3	37.5	4.8	37.5	71.9	95.0
1850s	1855				X				X				4	44.444	3	37.5	7.1	55.469	48.4	63.9
1860s	1865					X				X			5	55.556	2	25.0	6.7	52.344	47.4	62.6

Steady Increase in ambient wetness

Average to warm conditions

Increase toward ave

Constant below ave

Minor increase

Signific Decrease

Notes

Three significant trends for the 30 year period 1830-1860, a surrogate for the 1828-1859 gap between dam and petition: All consistent with a climate change mechanism

(1) A steady increase in moisture from dry to damp.

(2) A steady decrease in fair summer days from 76% to 48%

(3) A steady, but minor, increase in the number of summer thunderstorms from 5.3 to 7.1

No increase in flood frequency, consistent with the local mechanisms

1800-1860, deforestation from 70% to 30% accelerating toward end

COMPARE WITH DATA FROM EBEN AT WALTHAM (Table RMT 2)

1824-1835 is an older wetter phase both in terms of summer rainfall and total rainfall

1835-1859 is part of long-term trend of increasing annual rainfall at Waltham from about 38 to 42 inches with significant spikes, especially in 1846 drought and 1850 wet

1855-1859 was the longest conspicuous period of higher than average early summer (June+July) rainfall for the period since 1835

1855-1859 was a significant jump in July rainfall, which seems to be the critical month. [The most most critical month, the lowest month, and the most stable month, is the one with the biggest change, a doubling from ca 2 to 4 inches.](#) Less change in June

The transtion from 1854-1855 was the key indicator, a rise coinciding with the end of the Middlesex Canal Corporation