[] Dendrochronology Program Library Run RS\_D Program COF 14:56 Mon 20 Apr 2020 Page 1

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[] P R O G R A M C O F E C H A Version 6.06P 31158

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QUALITY CONTROL AND DATING CHECK OF TREE-RING MEASUREMENTS COF12K.for

Title of run: Red Spruce, Crawford Notch, NH (KT Smith

File of DATED series: RS\_D.rrw

CONTENTS:

Part 1: Title page, options selected, summary, absent rings by series

Part 2: Histogram of time spans

Part 3: Master series with sample depth and absent rings by year

Part 4: Bar plot of Master Dating Series

Part 5: Correlation by segment of each series with Master

Part 6: Potential problems: low correlation, divergent year-to-year changes, absent rings, outliers

Part 7: Descriptive statistics

RUN CONTROL OPTIONS SELECTED VALUE

1 Cubic smoothing spline 50% wavelength cutoff for filtering

32 years

2 Segments examined are 50 years lagged successively by 25 years

3 Autoregressive model applied A Residuals are used in master dating series and testing

4 Series not transformed to logarithms N

5 CORRELATION is Pearson (parametric, quantitative)

Critical correlation, 99% confidence level 0.3281

6 Master dating series saved N

7 Ring measurements listed N

8 Parts printed 1234567

9 Absent rings are omitted from master series and segment correlations (Y)

Time span of Master dating series is 1760 to 1993 234 years

Continuous time span is 1760 to 1993 234 years

Portion with two or more series is 1770 to 1993 224 years

>> D171 1984 absent in 1 of 62 series, but is not usually narrow: master index is -0.387

>> D182 1986 absent in 1 of 62 series, but is not usually narrow: master index is 0.667

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

\*C\* Number of dated series 63 \*C\*

\*O\* Master series 1760 1993 234 yrs \*O\*

\*F\* Total rings in all series 8745 \*F\*

\*E\* Total dated rings checked 8735 \*E\*

\*C\* Series intercorrelation 0.583 \*C\*

\*H\* Average mean sensitivity 0.200 \*H\*

\*A\* Segments, possible problems 2 \*A\*

\*\*\* Mean length of series 138.0 \*\*\*

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

ABSENT RINGS listed by SERIES: (See Master Dating Series for absent rings listed by year)

D171 1 absent rings: 1984

D182 2 absent rings: 1982 1986

D181 1 absent rings: 1982

D241 2 absent rings: 1972 1982

6 absent rings 0.069%

PART 2: TIME PLOT OF TREE-RING SERIES: Red Spruce, Crawford Notch, NH (KT Smith 14:56 Mon 20 Apr 2020 Page 2

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1050 1100 1150 1200 1250 1300 1350 1400 1450 1500 1550 1600 1650 1700 1750 1800 1850 1900 1950 2000 2050 Ident Seq Time-span Yrs

: : : : : : : : : : : : : : : : : : : : : -------- --- ---- ---- ----

. . . . . . . . . . . . . . . . .<============>. . D131 1 1866 1991 126

. . . . . . . . . . . . . . . . .<============>. . D132 2 1860 1991 132

. . . . . . . . . . . . . . . . . <===========>. . D162 3 1873 1991 119

. . . . . . . . . . . . . . . . .<============>. . D141 4 1864 1991 128

. . . . . . . . . . . . . . . . . <=========>. . D192 5 1897 1991 95

. . . . . . . . . . . . . . . . <=============>. . D142 6 1853 1991 139

. . . . . . . . . . . . . . . . <==============>. . D121 7 1849 1991 143

. . . . . . . . . . . . . . . . <===============>. . D122 8 1838 1991 154

. . . . . . . . . . . . . . . . . <===========>. . D161 9 1870 1991 122

. . . . . . . . . . . . . . .<======================>. . D172 10 1760 1991 232

. . . . . . . . . . . . . . . <=====================>. . D171 11 1770 1991 222

. . . . . . . . . . . . . . . . <================>. . D182 12 1820 1991 172

. . . . . . . . . . . . . . . . . <==========>. . D191 13 1887 1991 105

. . . . . . . . . . . . . . . . <================>. . D181 14 1823 1991 169

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. . . . . . . . . . . . . . . . <===============>. . D112 16 1832 1991 160

. . . . . . . . . . . . . . . . <==============>. . D272 17 1847 1992 146

. . . . . . . . . . . . . . . . . <===========>. . D241 18 1870 1992 123

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. . . . . . . . . . . . . . . . <=============>. . D211 21 1858 1992 135

. . . . . . . . . . . . . . . . <==============>. . D232 22 1847 1992 146

. . . . . . . . . . . . . . . . <==============>. . D271 23 1844 1992 149

. . . . . . . . . . . . . . . . <==============>. . D291 24 1845 1992 148

. . . . . . . . . . . . . . . . <=============>. . D251 25 1854 1992 139

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. . . . . . . . . . . . . . . . <==============>. . D231 27 1849 1992 144

. . . . . . . . . . . . . . . . <===============>. . D292 28 1838 1992 155

. . . . . . . . . . . . . . . . <=============>. . D262 29 1850 1992 143

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. . . . . . . . . . . . . . . . .<============>. . D341 31 1862 1992 131

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. . . . . . . . . . . . . . . . <===============>. . D361 35 1832 1992 161

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. . . . . . . . . . . . . . . . . <==========>. . D392 38 1888 1992 105

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. . . . . . . . . . . . . . . . . <===========>. . D391 41 1870 1992 123

. . . . . . . . . . . . . . . . <===============>. . D351 42 1832 1992 161

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. . . . . . . . . . . . . . . . <===============>. . D362 44 1837 1992 156

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. . . . . . . . . . . . . . . . <=============>. . D382 46 1856 1992 137

. . . . . . . . . . . . . . . . .<============>. . D381 47 1863 1992 130

. . . . . . . . . . . . . . . . <==============>. . D431 48 1841 1993 153

. . . . . . . . . . . . . . . . .<============>. . D422 49 1866 1993 128

. . . . . . . . . . . . . . . . . <==========>. . D421 50 1880 1993 114

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1050 1100 1150 1200 1250 1300 1350 1400 1450 1500 1550 1600 1650 1700 1750 1800 1850 1900 1950 2000 2050

PART 2: TIME PLOT OF TREE-RING SERIES: Red Spruce, Crawford Notch, NH (KT Smith 14:56 Mon 20 Apr 2020 Page 3

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1050 1100 1150 1200 1250 1300 1350 1400 1450 1500 1550 1600 1650 1700 1750 1800 1850 1900 1950 2000 2050 Ident Seq Time-span Yrs

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. . . . . . . . . . . . . . . . .<============>. . D462 53 1860 1993 134

. . . . . . . . . . . . . . . . .<============>. . D451 54 1867 1993 127

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. . . . . . . . . . . . . . . . . <==========>. . D441 56 1889 1993 105

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. . . . . . . . . . . . . . . . <=============>. . D472 63 1857 1993 137

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1050 1100 1150 1200 1250 1300 1350 1400 1450 1500 1550 1600 1650 1700 1750 1800 1850 1900 1950 2000 2050

PART 3: Master Dating Series: Red Spruce, Crawford Notch, NH (KT Smith 14:56 Mon 20 Apr 2020 Page 4

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Year Value No Ab Year Value No Ab Year Value No Ab Year Value No Ab Year Value No Ab Year Value No Ab

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1800 -0.241 2 1850 -0.218 27 1900 1.036 63 1950 -0.633 63

1801 -0.909 2 1851 0.535 27 1901 -0.505 63 1951 0.344 63

1802 -2.467 2 1852 -1.147 27 1902 -0.504 63 1952 1.001 63

1803 -1.450 2 1853 0.188 29 1903 0.823 63 1953 0.041 63

1804 -0.580 2 1854 -0.731 30 1904 0.341 63 1954 0.709 63

1805 0.551 2 1855 0.347 31 1905 0.369 63 1955 1.429 63

1806 0.169 2 1856 0.911 32 1906 0.119 63 1956 -0.711 63

1807 3.218 2 1857 0.328 34 1907 -0.031 63 1957 0.665 63

1808 1.013 2 1858 0.932 35 1908 0.082 63 1958 2.405 63

1809 -0.559 2 1859 0.051 36 1909 -1.514 63 1959 -0.355 63

1760 0.607 1 1810 -1.930 2 1860 1.180 41 1910 0.218 63 1960 -0.448 63

1761 -0.747 1 1811 -2.220 2 1861 1.840 41 1911 -1.171 63 1961 0.540 63

1762 0.720 1 1812 -0.981 2 1862 -0.684 42 1912 -1.258 63 1962 -0.830 63

1763 1.992 1 1813 0.760 2 1863 -0.332 43 1913 1.086 63 1963 0.123 63

1764 2.342 1 1814 0.465 2 1864 -1.321 45 1914 -0.058 63 1964 0.254 63

1765 -1.814 1 1815 0.136 2 1865 -0.141 45 1915 0.179 63 1965 0.438 63

1766 -0.534 1 1816 -0.916 2 1866 -0.975 49 1916 0.711 63 1966 -1.094 63

1767 -1.230 1 1817 0.350 2 1867 0.134 50 1917 -1.019 63 1967 -0.404 63

1768 -0.968 1 1818 1.461 2 1868 -0.496 51 1918 -1.497 63 1968 -0.761 63

1769 -1.277 1 1819 1.798 2 1869 -0.149 51 1919 0.217 63 1969 -0.091 63

1770 -1.750 2 1820 -1.193 3 1870 1.662 54 1920 0.596 63 1970 0.356 62

1771 -1.513 2 1821 -0.216 3 1871 -0.220 55 1921 0.085 63 1971 1.347 62

1772 -0.419 2 1822 0.079 3 1872 -0.602 55 1922 -0.296 63 1972 -0.519 62 1

1773 1.009 2 1823 -1.800 4 1873 -1.059 56 1923 -1.022 63 1973 -0.122 62

1774 1.094 2 1824 -1.030 4 1874 0.285 57 1924 2.170 63 1974 -1.145 62

1775 1.837 2 1825 0.870 4 1875 0.563 57 1925 -0.235 63 1975 0.333 62

1776 0.928 2 1826 0.325 4 1876 -1.399 57 1926 0.021 63 1976 -0.225 62

1777 1.926 2 1827 2.487 4 1877 0.155 57 1927 0.313 63 1977 0.326 62

1778 0.227 2 1828 1.219 4 1878 -0.741 57 1928 0.255 63 1978 0.299 62

1779 0.433 2 1829 0.654 4 1879 -0.025 57 1929 -0.681 63 1979 -0.483 62

1780 -0.713 2 1830 0.735 5 1880 0.335 58 1930 -0.385 63 1980 0.205 62

1781 -1.445 2 1831 0.822 5 1881 -0.220 58 1931 0.975 63 1981 -1.059 62

1782 -0.865 2 1832 -0.610 8 1882 -0.706 58 1932 1.703 63 1982 -1.596 62 3

1783 -0.678 2 1833 0.529 8 1883 -0.590 58 1933 0.175 63 1983 -0.172 62

1784 -0.554 2 1834 0.046 8 1884 -0.677 58 1934 1.357 63 1984 -0.387 62 1<<

1785 -0.262 2 1835 0.187 8 1885 -0.290 58 1935 -0.866 63 1985 0.483 62

1786 1.093 2 1836 0.399 8 1886 0.892 58 1936 -0.722 63 1986 0.667 62 1<<

1787 0.204 2 1837 -0.414 9 1887 -0.112 59 1937 -0.638 63 1987 1.638 62

1788 0.455 2 1838 -0.645 11 1888 0.861 60 1938 -0.629 63 1988 0.553 62

1789 1.247 2 1839 -1.043 11 1889 0.537 61 1939 0.322 63 1989 -1.006 62

1790 1.878 2 1840 -0.087 11 1890 1.527 61 1940 -0.140 63 1990 0.340 62

1791 3.161 2 1841 -0.284 12 1891 0.857 61 1941 0.893 63 1991 -0.345 62

1792 0.367 2 1842 1.147 12 1892 0.765 61 1942 -0.843 63 1992 0.502 46

1793 1.857 2 1843 0.440 12 1893 -0.427 61 1943 -0.728 63 1993 1.110 16

1794 -1.707 2 1844 -0.343 13 1894 0.883 61 1944 -0.726 63

1795 -2.060 2 1845 0.787 14 1895 -1.139 62 1945 0.473 63

1796 -1.905 2 1846 0.096 14 1896 0.650 62 1946 -0.090 63

1797 -1.098 2 1847 -1.913 19 1897 -1.071 63 1947 0.222 63

1798 0.083 2 1848 0.981 19 1898 -0.497 63 1948 -2.689 63

1799 -0.667 2 1849 -1.219 23 1899 -0.319 63 1949 -0.280 63

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PART 4: Master Bar Plot: Red Spruce, Crawford Notch, NH (KT Smith 14:56 Mon 20 Apr 2020 Page 5

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Year Rel value Year Rel value Year Rel value Year Rel value Year Rel value Year Rel value Year Rel value Year Rel value

1800----a 1850----a 1900---------D 1950--c

1801-d 1851-------B 1901---b 1951-------A

1802j 1852-e 1902---b 1952---------D

1803f 1853------A 1903--------C 1953-----@

1804---b 1854--c 1904-------A 1954--------C

1805-------B 1855-------A 1905-------A 1955----------F

1806------A 1856---------D 1906-----@ 1956--c

1807----------M 1857-------A 1907-----@ 1957--------C

1808---------D 1858---------D 1908-----@ 1958----------J

1809---b 1859-----@ 1909f 1959----a

1760--------B 1810h 1860---------E 1910------A 1960---b

1761--c 1811i 1861----------G 1911-e 1961-------B

1762--------C 1812-d 1862--c 1912-e 1962--c

1763----------H 1813--------C 1863----a 1913---------D 1963-----@

1764----------I 1814-------B 1864-e 1914-----@ 1964------A

1765g 1815------A 1865----a 1915------A 1965-------B

1766---b 1816-d 1866-d 1916--------C 1966-d

1767-e 1817-------A 1867------A 1917-d 1967---b

1768-d 1818----------F 1868---b 1918f 1968--c

1769-e 1819----------G 1869----a 1919------A 1969-----@

1770g 1820-e 1870----------G 1920--------B 1970-------A

1771f 1821----a 1871----a 1921-----@ 1971---------E

1772---b 1822-----@ 1872---b 1922----a 1972---b

1773---------D 1823g 1873-d 1923-d 1973----@

1774---------D 1824-d 1874------A 1924----------I 1974-e

1775----------G 1825---------C 1875-------B 1925----a 1975-------A

1776---------D 1826------A 1876f 1926-----@ 1976----a

1777----------H 1827----------J 1877------A 1927------A 1977------A

1778------A 1828---------E 1878--c 1928------A 1978------A

1779-------B 1829--------C 1879-----@ 1929--c 1979---b

1780--c 1830--------C 1880-------A 1930---b 1980------A

1781f 1831--------C 1881----a 1931---------D 1981-d

1782--c 1832---b 1882--c 1932----------G 1982f

1783--c 1833-------B 1883---b 1933------A 1983----a

1784---b 1834-----@ 1884--c 1934---------E 1984---b

1785----a 1835------A 1885----a 1935--c 1985-------B

1786---------D 1836-------B 1886---------D 1936--c 1986--------C

1787------A 1837---b 1887----@ 1937--c 1987----------G

1788-------B 1838--c 1888---------C 1938--c 1988-------B

1789---------E 1839-d 1889-------B 1939------A 1989-d

1790----------H 1840-----@ 1890----------F 1940----a 1990-------A

1791----------M 1841----a 1891--------C 1941---------D 1991----a

1792-------A 1842---------E 1892--------C 1942--c 1992-------B

1793----------G 1843-------B 1893---b 1943--c 1993---------D

1794g 1844----a 1894---------D 1944--c

1795h 1845--------C 1895-e 1945-------B

1796h 1846-----@ 1896--------C 1946-----@

1797-d 1847h 1897-d 1947------A

1798-----@ 1848---------D 1898---b 1948k

1799--c 1849-e 1899----a 1949----a

PART 5: CORRELATION OF SERIES BY SEGMENTS: Red Spruce, Crawford Notch, NH (KT S 14:56 Mon 20 Apr 2020 Page 5

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Correlations of 50-year dated segments, lagged 25 years

Flags: A = correlation under 0.3281 but highest as dated; B = correlation higher at other than dated position

Seq Series Time\_span 1750 1775 1800 1825 1850 1875 1900 1925 1950

1799 1824 1849 1874 1899 1924 1949 1974 1999

--- -------- --------- ---- ---- ---- ---- ---- ---- ---- ---- ---- ---- ---- ---- ---- ---- ---- ---- ---- ---- ---- ----

1 D131 1866 1991 .48 .46 .51 .45 .38

2 D132 1860 1991 .48 .65 .55 .47 .56

3 D162 1873 1991 .49 .49 .51 .51 .64

4 D141 1864 1991 .45 .49 .60 .68 .64

5 D192 1897 1991 .68 .70 .63 .58

6 D142 1853 1991 .49 .57 .63 .56 .61

7 D121 1849 1991 .51 .48 .54 .64 .57 .64

8 D122 1838 1991 .45 .48 .52 .60 .58 .60

9 D161 1870 1991 .54 .55 .61 .48 .49

10 D172 1760 1991 .70 .68 .63 .59 .66 .49 .56 .53 .40

11 D171 1770 1991 .70 .73 .76 .72 .61 .53 .63 .68 .57

12 D182 1820 1991 .56 .64 .64 .68 .71 .59 .56

13 D191 1887 1991 .62 .63 .68 .66

14 D181 1823 1991 .65 .65 .58 .55 .65 .59 .54

15 D111 1850 1991 .60 .49 .56 .60 .64

16 D112 1832 1991 .62 .73 .69 .66 .49 .43

17 D272 1847 1992 .52 .47 .60 .61 .69 .67

18 D241 1870 1992 .64 .59 .70 .65 .46

19 D252 1850 1992 .53 .63 .55 .52 .65

20 D212 1850 1992 .63 .57 .47 .49 .59

21 D211 1858 1992 .60 .60 .59 .63 .51

22 D232 1847 1992 .65 .58 .34 .50 .62 .60

23 D271 1844 1992 .53 .61 .71 .61 .45 .60

24 D291 1845 1992 .57 .52 .40 .49 .66 .72

25 D251 1854 1992 .47 .55 .58 .52 .57

26 D222 1847 1992 .49 .45 .44 .66 .60 .57

27 D231 1849 1992 .53 .54 .45 .48 .46 .55

28 D292 1838 1992 .64 .65 .66 .65 .63 .58

29 D262 1850 1992 .47 .67 .64 .52 .67

30 D242 1866 1969 .54 .67 .69 .75

31 D341 1862 1992 .54 .58 .65 .65 .49

32 D312 1874 1992 .51 .57 .76 .82 .71

33 D331 1857 1992 .70 .64 .73 .82 .73

34 D332 1860 1992 .68 .61 .64 .73 .69

35 D361 1832 1992 .65 .66 .60 .65 .72 .68

36 D321 1849 1992 .64 .63 .70 .75 .72 .73

37 D322 1860 1992 .47 .66 .73 .68 .59

38 D392 1888 1992 .59 .57 .58 .49

39 D352 1830 1992 .51 .48 .38 .51 .62 .47

40 D371 1860 1992 .43 .59 .69 .64 .57

41 D391 1870 1992 .44 .62 .71 .72 .60

42 D351 1832 1992 .66 .63 .59 .62 .53 .42

43 D372 1855 1992 .52 .53 .61 .76 .75

44 D362 1837 1992 .62 .65 .52 .50 .57B .51

45 D342 1847 1992 .64 .64 .65 .59 .40 .39

46 D382 1856 1992 .54 .49 .50 .67 .67

47 D381 1863 1992 .54 .70 .59 .47 .56

48 D431 1841 1993 .56 .46 .63 .67 .59 .60

49 D422 1866 1993 .42 .49 .69 .75 .63

50 D421 1880 1993 .38 .53 .71 .58

51 D412 1871 1993 .41 .52 .63 .67 .57

52 D411 1868 1993 .55 .65 .67 .56 .49

53 D462 1860 1993 .46 .61 .67 .71 .67

54 D451 1867 1993 .58 .71 .67 .55 .63

55 D442 1895 1993 .62 .68 .76 .74

56 D441 1889 1993 .75 .81 .75 .66

57 D432 1853 1993 .24B .58 .75 .80 .74

58 D461 1859 1993 .41 .57 .57 .64 .62

59 D452 1864 1993 .65 .67 .70 .57 .56

60 D492 1847 1993 .67 .62 .69 .65 .65 .72

61 D491 1866 1993 .54 .64 .60 .59 .61

62 D471 1849 1993 .66 .64 .68 .72 .67 .69

63 D472 1857 1993 .62 .77 .65 .68 .70

Av segment correlation 0.70 0.71 0.65 0.60 0.54 0.59 0.63 0.62 0.60

PART 6: POTENTIAL PROBLEMS: Red Spruce, Crawford Notch, NH (KT Smith 14:56 Mon 20 Apr 2020 Page 6

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For each series with potential problems the following diagnostics may appear:

[A] Correlations with master dating series of flagged 50-year segments of series filtered with 32-year spline,

at every point from ten years earlier (-10) to ten years later (+10) than dated

[B] Effect of those data values which most lower or raise correlation with master series

Symbol following year indicates value in series is greater (>) or lesser (<) than master series value

[C] Year-to-year changes very different from the mean change in other series

[D] Absent rings (zero values)

[E] Values which are statistical outliers from mean for the year

====================================================================================================================================

D131 1866 to 1991 126 years Series 1

[B] Entire series, effect on correlation ( 0.437) is:

Lower 1957<-0.019 1974>-0.017 1916<-0.012 1883>-0.011 1945<-0.010 1987<-0.009 Higher 1924 0.014 1895 0.013

[E] Outliers 1 3.0 SD above or -4.5 SD below mean for year

1877 +4.1 SD

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D132 1860 to 1991 132 years Series 2

[B] Entire series, effect on correlation ( 0.532) is:

Lower 1974>-0.032 1861<-0.023 1913<-0.016 1864>-0.014 1905<-0.014 1934<-0.013 Higher 1958 0.023 1924 0.023

[E] Outliers 1 3.0 SD above or -4.5 SD below mean for year

1974 +4.2 SD

====================================================================================================================================

D162 1873 to 1991 119 years Series 3

[B] Entire series, effect on correlation ( 0.526) is:

Lower 1884>-0.019 1939<-0.017 1923>-0.015 1888<-0.011 1941<-0.010 1991>-0.010 Higher 1948 0.023 1924 0.023

[E] Outliers 1 3.0 SD above or -4.5 SD below mean for year

1965 +3.1 SD

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D141 1864 to 1991 128 years Series 4

[B] Entire series, effect on correlation ( 0.544) is:

Lower 1864>-0.025 1964<-0.012 1900<-0.011 1897>-0.011 1909>-0.011 1941<-0.011 Higher 1948 0.036 1958 0.023

[E] Outliers 2 3.0 SD above or -4.5 SD below mean for year

1864 +3.4 SD; 1983 +3.5 SD

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D192 1897 to 1991 95 years Series 5

[B] Entire series, effect on correlation ( 0.641) is:

Lower 1913<-0.014 1972>-0.013 1989>-0.013 1966>-0.012 1943>-0.009 1949<-0.009 Higher 1948 0.038 1932 0.011

[E] Outliers 1 3.0 SD above or -4.5 SD below mean for year

1961 +3.6 SD

====================================================================================================================================

D142 1853 to 1991 139 years Series 6

[B] Entire series, effect on correlation ( 0.557) is:

Lower 1861<-0.021 1956>-0.013 1891<-0.012 1870<-0.010 1951<-0.010 1925>-0.008 Higher 1948 0.012 1862 0.010

[E] Outliers 1 3.0 SD above or -4.5 SD below mean for year

1957 +3.4 SD

====================================================================================================================================

D121 1849 to 1991 143 years Series 7

[B] Entire series, effect on correlation ( 0.583) is:

Lower 1884>-0.027 1890<-0.020 1852>-0.011 1952<-0.011 1924<-0.010 1939<-0.010 Higher 1948 0.015 1913 0.012

[E] Outliers 2 3.0 SD above or -4.5 SD below mean for year

1884 +4.5 SD; 1885 +3.1 SD

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D122 1838 to 1991 154 years Series 8

[B] Entire series, effect on correlation ( 0.553) is:

Lower 1848<-0.015 1912>-0.014 1852>-0.013 1952<-0.012 1909>-0.011 1887<-0.011 Higher 1948 0.014 1847 0.013

[E] Outliers 2 3.0 SD above or -4.5 SD below mean for year

1855 +3.0 SD; 1874 +3.9 SD

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D161 1870 to 1991 122 years Series 9

[B] Entire series, effect on correlation ( 0.530) is:

Lower 1895>-0.036 1958<-0.023 1948>-0.017 1972>-0.012 1910<-0.010 1912>-0.008 Higher 1924 0.026 1913 0.015

[E] Outliers 1 3.0 SD above or -4.5 SD below mean for year

1895 +4.0 SD

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D172 1760 to 1991 232 years Series 10

[\*] Early part of series cannot be checked from 1760 to 1769 -- not matched by another series

[B] Entire series, effect on correlation ( 0.555) is:

Lower 1776>-0.018 1959>-0.014 1828<-0.011 1778<-0.010 1843<-0.009 1902>-0.008 Higher 1807 0.016 1948 0.014

[E] Outliers 1 3.0 SD above or -4.5 SD below mean for year

1776 +3.0 SD

====================================================================================================================================

D171 1770 to 1991 222 years Series 11

[B] Entire series, effect on correlation ( 0.612) is:

Lower 1776<-0.020 1778>-0.012 1972>-0.012 1983<-0.011 1895>-0.008 1943>-0.008 Higher 1948 0.017 1958 0.011

[D] 1 Absent rings: Year Master N series Absent

1984 -0.387 62 1 >> WARNING: Ring is not usually narrow

[E] Outliers 2 3.0 SD above or -4.5 SD below mean for year

1943 +3.1 SD; 1972 +3.1 SD

====================================================================================================================================

D182 1820 to 1991 172 years Series 12

[B] Entire series, effect on correlation ( 0.585) is:

Lower 1839>-0.015 1823>-0.013 1831<-0.009 1971<-0.009 1925>-0.008 1977<-0.008 Higher 1924 0.019 1948 0.015

[D] 2 Absent rings: Year Master N series Absent

1982 -1.596 62 3

1986 0.667 62 1 >> WARNING: Ring is not usually narrow

====================================================================================================================================

D191 1887 to 1991 105 years Series 13

[B] Entire series, effect on correlation ( 0.633) is:

Lower 1924<-0.019 1957<-0.015 1972>-0.014 1966>-0.013 1973>-0.011 1943>-0.011 Higher 1948 0.036 1932 0.013

====================================================================================================================================

D181 1823 to 1991 169 years Series 14

[B] Entire series, effect on correlation ( 0.583) is:

Lower 1970<-0.012 1971<-0.011 1832>-0.011 1886<-0.010 1825<-0.010 1980<-0.009 Higher 1948 0.015 1847 0.013

[D] 1 Absent rings: Year Master N series Absent

1982 -1.596 62 3

====================================================================================================================================

D111 1850 to 1991 142 years Series 15

[B] Entire series, effect on correlation ( 0.594) is:

Lower 1851<-0.016 1888<-0.012 1934<-0.011 1920<-0.009 1913<-0.009 1896<-0.009 Higher 1870 0.010 1895 0.010

====================================================================================================================================

D112 1832 to 1991 160 years Series 16

[B] Entire series, effect on correlation ( 0.582) is:

Lower 1958<-0.016 1955<-0.015 1957<-0.010 1934<-0.008 1936>-0.007 1835<-0.007 Higher 1924 0.022 1861 0.011

[E] Outliers 1 3.0 SD above or -4.5 SD below mean for year

1983 +3.9 SD

====================================================================================================================================

D272 1847 to 1992 146 years Series 17

[B] Entire series, effect on correlation ( 0.577) is:

Lower 1855<-0.029 1931<-0.016 1858<-0.013 1850>-0.010 1877<-0.009 1975<-0.009 Higher 1924 0.030 1958 0.016

====================================================================================================================================

D241 1870 to 1992 123 years Series 18

[B] Entire series, effect on correlation ( 0.595) is:

Lower 1971<-0.025 1873>-0.012 1979>-0.012 1983>-0.010 1985<-0.010 1899>-0.009 Higher 1948 0.026 1870 0.015

[D] 2 Absent rings: Year Master N series Absent

1972 -0.519 62 1

1982 -1.596 62 3

====================================================================================================================================

D252 1850 to 1992 143 years Series 19

[B] Entire series, effect on correlation ( 0.574) is:

Lower 1925>-0.014 1936>-0.014 1934<-0.014 1861<-0.013 1875<-0.011 1857<-0.011 Higher 1924 0.027 1958 0.020

[E] Outliers 1 3.0 SD above or -4.5 SD below mean for year

1925 +3.4 SD

====================================================================================================================================

D212 1850 to 1992 143 years Series 20

[B] Entire series, effect on correlation ( 0.572) is:

Lower 1962>-0.016 1931<-0.013 1910<-0.009 1955<-0.008 1903<-0.008 1851<-0.007 Higher 1958 0.018 1870 0.011

[E] Outliers 2 3.0 SD above or -4.5 SD below mean for year

1855 +3.4 SD; 1945 +4.1 SD

====================================================================================================================================

D211 1858 to 1992 135 years Series 21

[B] Entire series, effect on correlation ( 0.585) is:

Lower 1982>-0.022 1903<-0.012 1988<-0.010 1873>-0.008 1962>-0.008 1952<-0.007 Higher 1958 0.024 1861 0.013

[E] Outliers 1 3.0 SD above or -4.5 SD below mean for year

1982 +3.2 SD

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D232 1847 to 1992 146 years Series 22

[B] Entire series, effect on correlation ( 0.575) is:

Lower 1924<-0.027 1918>-0.018 1896<-0.013 1962>-0.012 1909>-0.010 1877<-0.009 Higher 1848 0.012 1932 0.011

[E] Outliers 1 3.0 SD above or -4.5 SD below mean for year

1951 +3.3 SD

====================================================================================================================================

D271 1844 to 1992 149 years Series 23

[B] Entire series, effect on correlation ( 0.574) is:

Lower 1970<-0.026 1972>-0.015 1942>-0.014 1849>-0.012 1931<-0.011 1900<-0.011 Higher 1948 0.028 1924 0.020

[E] Outliers 1 3.0 SD above or -4.5 SD below mean for year

1970 -4.6 SD

====================================================================================================================================

D291 1845 to 1992 148 years Series 24

[B] Entire series, effect on correlation ( 0.574) is:

Lower 1944>-0.017 1912>-0.016 1904<-0.015 1870<-0.011 1977<-0.010 1929>-0.010 Higher 1948 0.032 1847 0.015

[E] Outliers 2 3.0 SD above or -4.5 SD below mean for year

1912 +3.2 SD; 1944 +3.3 SD

====================================================================================================================================

D251 1854 to 1992 139 years Series 25

[B] Entire series, effect on correlation ( 0.523) is:

Lower 1973<-0.015 1861<-0.011 1877<-0.010 1979>-0.009 1987<-0.008 1868>-0.008 Higher 1948 0.017 1958 0.015

====================================================================================================================================

D222 1847 to 1992 146 years Series 26

[B] Entire series, effect on correlation ( 0.539) is:

Lower 1847>-0.019 1886<-0.015 1971<-0.014 1981>-0.012 1966>-0.011 1895>-0.011 Higher 1948 0.029 1924 0.019

====================================================================================================================================

D231 1849 to 1992 144 years Series 27

[B] Entire series, effect on correlation ( 0.494) is:

Lower 1955<-0.019 1923>-0.016 1987<-0.015 1931<-0.013 1934<-0.013 1870<-0.012 Higher 1924 0.030 1948 0.014

====================================================================================================================================

D292 1838 to 1992 155 years Series 28

[B] Entire series, effect on correlation ( 0.602) is:

Lower 1989>-0.013 1904<-0.013 1849>-0.009 1934<-0.008 1871>-0.008 1958<-0.008 Higher 1948 0.023 1924 0.020

[E] Outliers 1 3.0 SD above or -4.5 SD below mean for year

1916 +3.2 SD

====================================================================================================================================

D262 1850 to 1992 143 years Series 29

[B] Entire series, effect on correlation ( 0.590) is:

Lower 1896<-0.030 1856<-0.021 1860<-0.015 1936>-0.013 1925>-0.009 1886<-0.009 Higher 1924 0.027 1870 0.012

[E] Outliers 4 3.0 SD above or -4.5 SD below mean for year

1877 +3.2 SD; 1936 +3.1 SD; 1937 +3.0 SD; 1938 +3.1 SD

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D242 1866 to 1969 104 years Series 30

[B] Entire series, effect on correlation ( 0.656) is:

Lower 1869>-0.023 1938>-0.013 1875<-0.011 1893>-0.010 1911>-0.010 1904<-0.009 Higher 1924 0.035 1948 0.022

[E] Outliers 1 3.0 SD above or -4.5 SD below mean for year

1869 +3.5 SD

====================================================================================================================================

D341 1862 to 1992 131 years Series 31

[B] Entire series, effect on correlation ( 0.524) is:

Lower 1982>-0.050 1862>-0.015 1886<-0.014 1953>-0.010 1913<-0.008 1882>-0.008 Higher 1948 0.035 1958 0.023

[E] Outliers 1 3.0 SD above or -4.5 SD below mean for year

1982 +5.2 SD

====================================================================================================================================

D312 1874 to 1992 119 years Series 32

[B] Entire series, effect on correlation ( 0.671) is:

Lower 1876>-0.027 1992<-0.013 1905<-0.013 1913<-0.010 1979>-0.009 1916<-0.008 Higher 1924 0.018 1948 0.017

====================================================================================================================================

D331 1857 to 1992 136 years Series 33

[B] Entire series, effect on correlation ( 0.709) is:

Lower 1975<-0.023 1937>-0.009 1984>-0.009 1913<-0.008 1885>-0.007 1887>-0.006 Higher 1958 0.019 1948 0.016

====================================================================================================================================

D332 1860 to 1992 133 years Series 34

[B] Entire series, effect on correlation ( 0.686) is:

Lower 1924<-0.014 1905>-0.013 1944>-0.012 1882>-0.009 1975<-0.007 1954<-0.007 Higher 1958 0.018 1948 0.015

[E] Outliers 1 3.0 SD above or -4.5 SD below mean for year

1905 +3.2 SD

====================================================================================================================================

D361 1832 to 1992 161 years Series 35

[B] Entire series, effect on correlation ( 0.646) is:

Lower 1842<-0.015 1902>-0.007 1892<-0.007 1934<-0.007 1881>-0.006 1978<-0.006 Higher 1958 0.014 1861 0.008

[E] Outliers 2 3.0 SD above or -4.5 SD below mean for year

1932 +3.8 SD; 1985 +3.5 SD

====================================================================================================================================

D321 1849 to 1992 144 years Series 36

[B] Entire series, effect on correlation ( 0.700) is:

Lower 1850>-0.014 1896<-0.012 1894<-0.011 1959>-0.008 1903<-0.008 1945<-0.007 Higher 1948 0.016 1958 0.015

[E] Outliers 3 3.0 SD above or -4.5 SD below mean for year

1850 +3.5 SD; 1870 +3.6 SD; 1975 +3.0 SD

====================================================================================================================================

D322 1860 to 1992 133 years Series 37

[B] Entire series, effect on correlation ( 0.591) is:

Lower 1860<-0.014 1861<-0.013 1894<-0.012 1964<-0.010 1975<-0.009 1867>-0.007 Higher 1924 0.030 1948 0.026

[E] Outliers 2 3.0 SD above or -4.5 SD below mean for year

1867 +3.5 SD; 1934 +4.5 SD

====================================================================================================================================

D392 1888 to 1992 105 years Series 38

[B] Entire series, effect on correlation ( 0.522) is:

Lower 1982>-0.028 1890<-0.023 1913<-0.018 1942>-0.013 1961<-0.012 1905>-0.011 Higher 1924 0.035 1948 0.026

====================================================================================================================================

D352 1830 to 1992 163 years Series 39

[B] Entire series, effect on correlation ( 0.473) is:

Lower 1830<-0.020 1982>-0.018 1895>-0.017 1836>-0.014 1948>-0.013 1987<-0.008 Higher 1847 0.016 1861 0.015

[E] Outliers 4 3.0 SD above or -4.5 SD below mean for year

1836 +4.3 SD; 1896 +5.3 SD; 1920 +3.8 SD; 1977 +3.8 SD

====================================================================================================================================

D371 1860 to 1992 133 years Series 40

[B] Entire series, effect on correlation ( 0.553) is:

Lower 1861<-0.015 1968>-0.014 1991>-0.013 1863>-0.013 1975<-0.012 1932<-0.011 Higher 1948 0.021 1924 0.018

[E] Outliers 2 3.0 SD above or -4.5 SD below mean for year

1863 +3.2 SD; 1874 +3.2 SD

====================================================================================================================================

D391 1870 to 1992 123 years Series 41

[B] Entire series, effect on correlation ( 0.559) is:

Lower 1872>-0.028 1877<-0.011 1901>-0.010 1976>-0.008 1981>-0.008 1875<-0.007 Higher 1948 0.035 1924 0.026

[E] Outliers 2 3.0 SD above or -4.5 SD below mean for year

1872 +3.3 SD; 1983 +3.4 SD

====================================================================================================================================

D351 1832 to 1992 161 years Series 42

[B] Entire series, effect on correlation ( 0.572) is:

Lower 1948>-0.021 1912>-0.014 1955<-0.011 1971<-0.010 1839>-0.010 1871>-0.010 Higher 1958 0.016 1924 0.013

[E] Outliers 1 3.0 SD above or -4.5 SD below mean for year

1871 +3.3 SD

====================================================================================================================================

D372 1855 to 1992 138 years Series 43

[B] Entire series, effect on correlation ( 0.628) is:

Lower 1920<-0.013 1862>-0.012 1856<-0.011 1975<-0.010 1875<-0.008 1871>-0.007 Higher 1958 0.018 1870 0.010

[E] Outliers 1 3.0 SD above or -4.5 SD below mean for year

1965 +3.1 SD

====================================================================================================================================

D362 1837 to 1992 156 years Series 44

[A] Segment High -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 +1 +2 +3 +4 +5 +6 +7 +8 +9 +10

--------- ---- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---

1925 1974 6 -.10 -.22 -.07 .16 .03 -.35 -.04 .04 -.13 -.04 .57|-.27 -.19 .12 .01 -.01 .58\*-.11 -.02 -.01 -.02

[B] Entire series, effect on correlation ( 0.545) is:

Lower 1838>-0.019 1923>-0.012 1898>-0.012 1946>-0.011 1972>-0.011 1888<-0.010 Higher 1958 0.012 1870 0.012

1925 to 1974 segment:

Lower 1946>-0.033 1972>-0.031 1948>-0.028 1941<-0.016 1926>-0.014 1939<-0.014 Higher 1958 0.036 1966 0.023

[E] Outliers 2 3.0 SD above or -4.5 SD below mean for year

1898 +3.5 SD; 1946 +3.3 SD

====================================================================================================================================

D342 1847 to 1992 146 years Series 45

[B] Entire series, effect on correlation ( 0.530) is:

Lower 1982>-0.024 1952<-0.013 1931<-0.010 1977<-0.010 1992<-0.010 1932<-0.009 Higher 1924 0.032 1948 0.023

[E] Outliers 2 3.0 SD above or -4.5 SD below mean for year

1975 +4.5 SD; 1982 +3.8 SD

====================================================================================================================================

D382 1856 to 1992 137 years Series 46

[B] Entire series, effect on correlation ( 0.571) is:

Lower 1924<-0.023 1911>-0.013 1903<-0.012 1914>-0.011 1856<-0.010 1870<-0.010 Higher 1948 0.013 1909 0.011

[E] Outliers 2 3.0 SD above or -4.5 SD below mean for year

1888 +3.1 SD; 1970 +3.2 SD

====================================================================================================================================

D381 1863 to 1992 130 years Series 47

[B] Entire series, effect on correlation ( 0.548) is:

Lower 1864>-0.027 1959>-0.016 1869<-0.012 1914>-0.011 1936>-0.011 1971<-0.010 Higher 1924 0.023 1958 0.021

[E] Outliers 3 3.0 SD above or -4.5 SD below mean for year

1864 +3.5 SD; 1865 +3.2 SD; 1936 +3.0 SD

====================================================================================================================================

D431 1841 to 1993 153 years Series 48

[B] Entire series, effect on correlation ( 0.588) is:

Lower 1870<-0.015 1897>-0.014 1842<-0.012 1925>-0.012 1968>-0.010 1861<-0.009 Higher 1847 0.013 1924 0.012

[E] Outliers 2 3.0 SD above or -4.5 SD below mean for year

1886 +3.7 SD; 1968 +3.2 SD

====================================================================================================================================

D422 1866 to 1993 128 years Series 49

[B] Entire series, effect on correlation ( 0.551) is:

Lower 1881>-0.029 1870<-0.023 1897>-0.023 1894<-0.016 1917>-0.016 1982>-0.015 Higher 1948 0.022 1958 0.020

[E] Outliers 1 3.0 SD above or -4.5 SD below mean for year

1881 +4.3 SD

====================================================================================================================================

D421 1880 to 1993 114 years Series 50

[B] Entire series, effect on correlation ( 0.511) is:

Lower 1991>-0.031 1908<-0.025 1923>-0.024 1972>-0.020 1924<-0.015 1912>-0.013 Higher 1948 0.034 1958 0.028

[E] Outliers 2 3.0 SD above or -4.5 SD below mean for year

1923 +3.5 SD; 1991 +4.1 SD

====================================================================================================================================

D412 1871 to 1993 123 years Series 51

[B] Entire series, effect on correlation ( 0.545) is:

Lower 1910<-0.025 1871>-0.020 1974>-0.019 1984>-0.014 1956>-0.014 1985<-0.012 Higher 1948 0.024 1958 0.023

====================================================================================================================================

D411 1868 to 1993 126 years Series 52

[B] Entire series, effect on correlation ( 0.545) is:

Lower 1985<-0.013 1987<-0.012 1871>-0.012 1974>-0.012 1929>-0.010 1965<-0.008 Higher 1958 0.036 1948 0.017

[E] Outliers 3 3.0 SD above or -4.5 SD below mean for year

1913 +3.1 SD; 1939 +3.3 SD; 1958 +3.5 SD

====================================================================================================================================

D462 1860 to 1993 134 years Series 53

[B] Entire series, effect on correlation ( 0.616) is:

Lower 1865<-0.021 1888<-0.015 1983<-0.010 1917>-0.010 1874<-0.008 1905<-0.007 Higher 1924 0.032 1958 0.014

[E] Outliers 1 3.0 SD above or -4.5 SD below mean for year

1924 +3.3 SD

====================================================================================================================================

D451 1867 to 1993 127 years Series 54

[B] Entire series, effect on correlation ( 0.635) is:

Lower 1879>-0.014 1938>-0.011 1972>-0.009 1898>-0.009 1870<-0.008 1950>-0.008 Higher 1924 0.034 1987 0.010

[E] Outliers 2 3.0 SD above or -4.5 SD below mean for year

1879 +3.7 SD; 1924 +3.5 SD

====================================================================================================================================

D442 1895 to 1993 99 years Series 55

[B] Entire series, effect on correlation ( 0.678) is:

Lower 1917>-0.023 1918>-0.015 1934<-0.012 1990<-0.009 1976>-0.009 1961<-0.007 Higher 1948 0.025 1924 0.009

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D441 1889 to 1993 105 years Series 56

[B] Entire series, effect on correlation ( 0.716) is:

Lower 1985<-0.017 1890<-0.015 1951<-0.011 1954<-0.010 1932<-0.007 1976>-0.007 Higher 1958 0.020 1924 0.018

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D432 1853 to 1993 141 years Series 57

[A] Segment High -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 +1 +2 +3 +4 +5 +6 +7 +8 +9 +10

--------- ---- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---

1853 1902 5 -.10 -.01 -.14 .06 -.15 -.08 .24 -.14 .17 -.16 .24| .16 -.08 -.01 -.08 .26\* .06 -.22 .17 -.22 .20

[B] Entire series, effect on correlation ( 0.573) is:

Lower 1862>-0.048 1861<-0.027 1873>-0.013 1895>-0.012 1892<-0.011 1975<-0.009 Higher 1958 0.023 1948 0.021

1853 to 1902 segment:

Lower 1862>-0.125 1861<-0.067 1873>-0.033 1892<-0.026 1895>-0.026 1881>-0.015 Higher 1876 0.049 1896 0.029

[C] Year-to-year changes diverging by over 4.0 std deviations:

1861 1862 4.9 SD

[E] Outliers 1 3.0 SD above or -4.5 SD below mean for year

1862 +3.9 SD

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D461 1859 to 1993 135 years Series 58

[B] Entire series, effect on correlation ( 0.546) is:

Lower 1862>-0.018 1904>-0.017 1993<-0.016 1869<-0.012 1872>-0.011 1935>-0.010 Higher 1987 0.012 1890 0.011

[E] Outliers 2 3.0 SD above or -4.5 SD below mean for year

1875 +3.7 SD; 1904 +4.2 SD

====================================================================================================================================

D452 1864 to 1993 130 years Series 59

[B] Entire series, effect on correlation ( 0.647) is:

Lower 1890<-0.024 1958<-0.024 1950>-0.012 1986<-0.011 1910<-0.008 1913<-0.008 Higher 1924 0.026 1870 0.013

[E] Outliers 2 3.0 SD above or -4.5 SD below mean for year

1896 +3.5 SD; 1920 +3.2 SD

====================================================================================================================================

D492 1847 to 1993 147 years Series 60

[B] Entire series, effect on correlation ( 0.657) is:

Lower 1932<-0.018 1913<-0.010 1931<-0.009 1859<-0.007 1860<-0.007 1963>-0.006 Higher 1948 0.020 1924 0.013

====================================================================================================================================

D491 1866 to 1993 128 years Series 61

[B] Entire series, effect on correlation ( 0.579) is:

Lower 1871>-0.019 1912>-0.016 1971<-0.014 1874<-0.012 1931<-0.011 1902>-0.009 Higher 1948 0.027 1924 0.012

[E] Outliers 1 3.0 SD above or -4.5 SD below mean for year

1871 +3.5 SD

====================================================================================================================================

D471 1849 to 1993 145 years Series 62

[B] Entire series, effect on correlation ( 0.670) is:

Lower 1923>-0.012 1886<-0.011 1860<-0.010 1874<-0.009 1988>-0.008 1918>-0.008 Higher 1948 0.021 1924 0.019

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D472 1857 to 1993 137 years Series 63

[B] Entire series, effect on correlation ( 0.647) is:

Lower 1858<-0.029 1988>-0.017 1883>-0.010 1993<-0.009 1862>-0.009 1931<-0.008 Higher 1924 0.024 1948 0.013

[E] Outliers 1 3.0 SD above or -4.5 SD below mean for year

1988 +4.0 SD

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PART 7: DESCRIPTIVE STATISTICS: Red Spruce, Crawford Notch, NH (KT Smith 14:56 Mon 20 Apr 2020 Page 7

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Corr //-------- Unfiltered --------\\ //---- Filtered -----\\

No. No. No. with Mean Max Std Auto Mean Max Std Auto AR

Seq Series Interval Years Segmt Flags Master msmt msmt dev corr sens value dev corr ()

--- -------- --------- ----- ----- ----- ------ ----- ----- ----- ----- ----- ----- ----- ----- --

1 D131 1866 1991 126 5 0 0.437 1.03 2.11 0.482 0.868 0.193 0.71 0.236 0.012 1

2 D132 1860 1991 132 5 0 0.532 1.29 2.40 0.456 0.798 0.176 0.53 0.220 -0.001 1

3 D162 1873 1991 119 5 0 0.526 1.05 3.10 0.653 0.887 0.228 0.71 0.277 0.000 1

4 D141 1864 1991 128 5 0 0.544 1.25 3.24 0.733 0.908 0.192 0.54 0.231 0.013 2

5 D192 1897 1991 95 4 0 0.641 0.95 1.74 0.295 0.745 0.189 0.65 0.228 -0.020 1

6 D142 1853 1991 139 5 0 0.557 1.30 3.89 0.681 0.850 0.226 0.66 0.270 0.021 2

7 D121 1849 1991 143 6 0 0.583 0.96 2.80 0.638 0.925 0.187 0.76 0.245 -0.015 1

8 D122 1838 1991 154 6 0 0.553 1.14 3.20 0.678 0.916 0.185 0.77 0.242 -0.003 1

9 D161 1870 1991 122 5 0 0.530 1.63 3.61 0.635 0.813 0.181 0.53 0.223 -0.006 1

10 D172 1760 1991 232 9 0 0.555 0.92 2.60 0.516 0.864 0.234 1.08 0.304 -0.011 1

11 D171 1770 1991 222 9 0 0.612 0.81 2.73 0.517 0.894 0.234 0.93 0.296 -0.016 1

12 D182 1820 1991 172 7 0 0.585 0.92 2.86 0.457 0.786 0.297 1.76 0.520 0.004 2

13 D191 1887 1991 105 4 0 0.633 1.16 2.20 0.393 0.692 0.231 0.68 0.279 -0.015 1

14 D181 1823 1991 169 7 0 0.583 1.01 2.10 0.475 0.848 0.262 0.83 0.293 0.002 2

15 D111 1850 1991 142 5 0 0.594 1.75 3.80 0.529 0.729 0.172 0.48 0.198 -0.006 1

16 D112 1832 1991 160 6 0 0.582 1.42 3.94 0.781 0.909 0.168 0.57 0.202 0.018 2

17 D272 1847 1992 146 6 0 0.577 1.00 3.26 0.638 0.915 0.199 0.89 0.261 0.012 1

18 D241 1870 1992 123 5 0 0.595 1.04 3.34 0.680 0.894 0.293 0.90 0.346 0.003 2

19 D252 1850 1992 143 5 0 0.574 0.84 2.16 0.546 0.908 0.208 0.82 0.279 0.013 2

20 D212 1850 1992 143 5 0 0.572 1.48 3.15 0.543 0.753 0.192 0.69 0.230 -0.012 1

21 D211 1858 1992 135 5 0 0.585 0.94 2.03 0.317 0.709 0.201 0.73 0.243 0.004 2

22 D232 1847 1992 146 6 0 0.575 0.93 2.26 0.437 0.853 0.189 0.67 0.253 0.019 1

23 D271 1844 1992 149 6 0 0.574 0.92 2.37 0.455 0.851 0.201 0.62 0.260 0.003 2

24 D291 1845 1992 148 6 0 0.574 0.88 2.71 0.520 0.889 0.204 0.90 0.292 -0.032 1

25 D251 1854 1992 139 5 0 0.523 0.81 3.54 0.531 0.883 0.189 0.69 0.246 0.007 1

26 D222 1847 1992 146 6 0 0.539 1.43 4.05 0.595 0.762 0.195 0.62 0.275 -0.028 1

27 D231 1849 1992 144 6 0 0.494 0.82 1.90 0.473 0.901 0.206 0.90 0.324 0.059 1

28 D292 1838 1992 155 6 0 0.602 0.80 2.02 0.431 0.867 0.213 0.75 0.269 0.004 1

29 D262 1850 1992 143 5 0 0.590 0.90 1.97 0.522 0.914 0.212 0.94 0.310 -0.026 1

30 D242 1866 1969 104 4 0 0.656 1.40 2.78 0.592 0.802 0.201 0.89 0.269 0.062 1

31 D341 1862 1992 131 5 0 0.524 1.05 2.33 0.393 0.762 0.195 0.66 0.245 0.013 2

32 D312 1874 1992 119 5 0 0.671 1.47 2.33 0.334 0.568 0.171 0.46 0.205 -0.006 1

33 D331 1857 1992 136 5 0 0.709 1.13 2.10 0.423 0.770 0.200 0.85 0.246 0.005 1

34 D332 1860 1992 133 5 0 0.686 1.22 2.45 0.389 0.710 0.184 0.65 0.237 0.002 1

35 D361 1832 1992 161 6 0 0.646 1.03 2.40 0.461 0.827 0.186 0.84 0.248 -0.001 1

36 D321 1849 1992 144 6 0 0.700 1.25 3.56 0.561 0.790 0.167 0.77 0.218 -0.012 1

37 D322 1860 1992 133 5 0 0.591 1.20 3.11 0.670 0.914 0.159 0.93 0.238 -0.021 1

38 D392 1888 1992 105 4 0 0.522 1.36 2.75 0.450 0.803 0.152 0.51 0.199 -0.010 1

39 D352 1830 1992 163 6 0 0.473 0.98 3.26 0.692 0.886 0.245 1.39 0.363 -0.005 1

40 D371 1860 1992 133 5 0 0.553 0.96 1.93 0.315 0.794 0.164 0.53 0.202 -0.013 1

41 D391 1870 1992 123 5 0 0.559 1.43 2.75 0.495 0.802 0.184 0.68 0.247 0.014 2

42 D351 1832 1992 161 6 0 0.572 0.80 2.47 0.478 0.863 0.241 0.89 0.308 -0.016 1

43 D372 1855 1992 138 5 0 0.628 1.42 2.61 0.450 0.771 0.159 0.48 0.198 0.019 1

44 D362 1837 1992 156 6 1 0.545 1.15 2.63 0.509 0.851 0.190 0.64 0.273 -0.027 1

45 D342 1847 1992 146 6 0 0.530 0.92 3.23 0.567 0.888 0.189 0.67 0.204 -0.001 1

46 D382 1856 1992 137 5 0 0.571 1.53 3.73 0.750 0.803 0.245 0.81 0.282 0.000 2

47 D381 1863 1992 130 5 0 0.548 1.03 2.21 0.438 0.828 0.189 0.46 0.209 0.000 2

48 D431 1841 1993 153 6 0 0.588 1.08 2.11 0.372 0.662 0.218 0.80 0.286 0.007 1

PART 7: DESCRIPTIVE STATISTICS: Red Spruce, Crawford Notch, NH (KT Smith 14:56 Mon 20 Apr 2020 Page 8

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Corr //-------- Unfiltered --------\\ //---- Filtered -----\\

No. No. No. with Mean Max Std Auto Mean Max Std Auto AR

Seq Series Interval Years Segmt Flags Master msmt msmt dev corr sens value dev corr ()

--- -------- --------- ----- ----- ----- ------ ----- ----- ----- ----- ----- ----- ----- ----- --

49 D422 1866 1993 128 5 0 0.551 1.63 4.07 0.792 0.921 0.157 0.53 0.193 -0.022 1

50 D421 1880 1993 114 4 0 0.511 1.69 4.04 0.887 0.926 0.153 0.50 0.192 0.014 1

51 D412 1871 1993 123 5 0 0.545 1.34 2.46 0.484 0.816 0.164 0.49 0.216 -0.003 1

52 D411 1868 1993 126 5 0 0.545 1.06 2.44 0.420 0.851 0.161 0.84 0.210 -0.003 1

53 D462 1860 1993 134 5 0 0.616 1.23 2.73 0.481 0.773 0.192 0.98 0.251 -0.023 1

54 D451 1867 1993 127 5 0 0.635 1.15 3.18 0.528 0.822 0.201 1.16 0.277 -0.026 1

55 D442 1895 1993 99 4 0 0.678 1.24 2.16 0.362 0.711 0.178 0.53 0.218 0.050 1

56 D441 1889 1993 105 4 0 0.716 1.27 3.44 0.528 0.781 0.195 0.63 0.229 0.023 4

57 D432 1853 1993 141 5 1 0.573 1.25 2.67 0.435 0.699 0.199 0.68 0.241 0.004 1

58 D461 1859 1993 135 5 0 0.546 1.47 3.30 0.473 0.720 0.180 0.65 0.224 -0.011 1

59 D452 1864 1993 130 5 0 0.647 1.29 3.70 0.656 0.892 0.187 0.67 0.222 0.001 1

60 D492 1847 1993 147 6 0 0.657 1.25 3.24 0.722 0.881 0.211 0.59 0.270 -0.044 1

61 D491 1866 1993 128 5 0 0.579 1.17 3.06 0.631 0.893 0.197 0.54 0.250 -0.051 1

62 D471 1849 1993 145 6 0 0.670 1.12 2.94 0.505 0.813 0.208 0.69 0.255 0.020 2

63 D472 1857 1993 137 5 0 0.647 1.14 2.93 0.459 0.726 0.191 0.78 0.265 -0.032 1

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Total or mean: 8745 339 2 0.583 1.14 4.07 0.530 0.827 0.200 1.76 0.258 -0.002

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