[] Dendrochronology Program Library Run 79 Program COF 09:54 Wed 20 Apr 2011 Page 1

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 QUALITY CONTROL AND DATING CHECK OF TREE-RING MEASUREMENTS

 File of DATED series: 79\_MAN

 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 transformed to logarithms Y Each series log-transformed for master dating series and testing

 5 CORRELATION is Pearson (parametric, quantitative)

 Critical correlation, 99% confidence level .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 1899 to 2010 112 years

 Continuous time span is 1899 to 2010 112 years

 Portion with two or more series is 1900 to 2010 111 years

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

 \*C\* Number of dated series 20 \*C\*

 \*O\* Master series 1899 2010 112 yrs \*O\*

 \*F\* Total rings in all series 1777 \*F\*

 \*E\* Total dated rings checked 1776 \*E\*

 \*C\* Series intercorrelation .423 \*C\*

 \*H\* Average mean sensitivity .215 \*H\*

 \*A\* Segments, possible problems 15 \*A\*

 \*\*\* Mean length of series 88.8 \*\*\*

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

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

 325A 2 absent rings: 1930 1931

 325B 2 absent rings: 1930 1931

 4 absent rings .225%

PART 2: TIME PLOT OF TREE-RING SERIES: 09:54 Wed 20 Apr 2011 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

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

 . . . . . . . . . . . . . . . . . <==========> . 322A 1 1904 2010 107

 . . . . . . . . . . . . . . . . . <==========> . 322B 2 1905 2010 106

 . . . . . . . . . . . . . . . . . <==========> . 323A 3 1903 2010 108

 . . . . . . . . . . . . . . . . . <===========> . 323B 4 1899 2010 112

 . . . . . . . . . . . . . . . . . . <=====> . 324A 5 1952 2010 59

 . . . . . . . . . . . . . . . . . . <=====> . 324B 6 1950 2010 61

 . . . . . . . . . . . . . . . . . <==========> . 325A 7 1900 2010 111

 . . . . . . . . . . . . . . . . . <==========> . 325B 8 1902 2010 109

 . . . . . . . . . . . . . . . . . . <=======> . 326A 9 1938 2010 73

 . . . . . . . . . . . . . . . . . . <======> . 326B 10 1944 2010 67

 . . . . . . . . . . . . . . . . . . <========> . 327A 11 1922 2010 89

 . . . . . . . . . . . . . . . . . . <=======> . 327B 12 1938 2010 73

 . . . . . . . . . . . . . . . . . . <=======> . 328A 13 1937 2010 74

 . . . . . . . . . . . . . . . . . . <=======> . 328B 14 1936 2010 75

 . . . . . . . . . . . . . . . . . .<=========> . 329A 15 1918 2010 93

 . . . . . . . . . . . . . . . . . . <=======> . 329B 16 1932 2010 79

 . . . . . . . . . . . . . . . . . <==========> . 330A 17 1903 2010 108

 . . . . . . . . . . . . . . . . . <==========> . 330B 18 1901 2010 110

 . . . . . . . . . . . . . . . . . .<=========> . 331A 19 1918 2010 93

 . . . . . . . . . . . . . . . . . . <======> . 331B 20 1941 2010 70

 : : : : : : : : : : : : : : : : : : : : :

 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: 09:54 Wed 20 Apr 2011 Page 3

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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

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

 1900 -.417 2 1950 -.576 19 2000 .297 20

 1901 -1.021 3 1951 .417 19 2001 .437 20

 1902 .353 4 1952 .917 20 2002 1.302 20

 1903 .597 6 1953 1.165 20 2003 .602 20

 1904 1.194 7 1954 -.119 20 2004 .710 20

 1905 1.830 8 1955 .511 20 2005 -.423 20

 1906 .496 8 1956 -1.567 20 2006 -1.829 20

 1907 -.938 8 1957 1.320 20 2007 -.795 20

 1908 -.319 8 1958 1.204 20 2008 -.881 20

 1909 -.420 8 1959 -.184 20 2009 .773 20

 1910 .558 8 1960 -.340 20 2010 1.025 20

 1911 -2.721 8 1961 .804 20

 1912 -.268 8 1962 -1.631 20

 1913 .679 8 1963 -1.017 20

 1914 -1.078 8 1964 .228 20

 1915 .775 8 1965 -.284 20

 1916 .911 8 1966 .289 20

 1917 1.314 8 1967 -.455 20

 1918 1.642 10 1968 .070 20

 1919 1.208 10 1969 .542 20

 1920 1.620 10 1970 1.888 20

 1921 1.205 10 1971 1.953 20

 1922 .371 11 1972 .455 20

 1923 -.507 11 1973 .366 20

 1924 -.076 11 1974 -1.144 20

 1925 -.252 11 1975 -1.027 20

 1926 -1.868 11 1976 -1.033 20

 1927 -.660 11 1977 -.870 20

 1928 -.592 11 1978 -.768 20

 1929 -1.188 11 1979 -.659 20

 1930 -1.674 11 2 1980 -.483 20

 1931 -.620 11 2 1981 -1.458 20

 1932 -.597 12 1982 -.576 20

 1933 -.627 12 1983 -.810 20

 1934 -1.424 12 1984 -.945 20

 1935 -1.725 12 1985 -.160 20

 1936 -1.495 13 1986 .174 20

 1937 -.528 14 1987 .969 20

 1938 1.147 16 1988 .553 20

 1939 .406 16 1989 .559 20

 1940 1.682 16 1990 1.151 20

 1941 .725 17 1991 1.236 20

 1942 .939 17 1992 1.715 20

 1943 -.202 17 1993 1.004 20

 1944 .642 18 1994 .156 20

 1945 .934 18 1995 -.201 20

 1946 -.468 18 1996 -1.450 20

 1947 .412 18 1997 -.756 20

 1948 -1.224 18 1998 -.008 20

 1899 -2.144 1 1949 .398 18 1999 .667 20

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PART 4: Master Bar Plot: 09:54 Wed 20 Apr 2011 Page 4

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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

 1900---b 1950---b 2000------A

 1901-d 1951------B 2001------B

 1902------A 1952--------D 2002---------E

 1903-------B 1953---------E 2003-------B

 1904---------E 1954----@ 2004-------C

 1905----------G 1955-------B 2005---b

 1906-------B 1956f 2006g

 1907-d 1957---------E 2007--c

 1908----a 1958---------E 2008--d

 1909---b 1959----a 2009--------C

 1910-------B 1960----a 2010--------D

 1911k 1961--------C

 1912----a 1962g

 1913-------C 1963-d

 1914-d 1964-----A

 1915--------C 1965----a

 1916--------D 1966------A

 1917---------E 1967---b

 1918----------G 1968-----@

 1919---------E 1969-------B

 1920----------F 1970----------H

 1921---------E 1971----------H

 1922------A 1972------B

 1923---b 1973------A

 1924-----@ 1974-e

 1925----a 1975-d

 1926g 1976-d

 1927---c 1977--c

 1928---b 1978--c

 1929-e 1979---c

 1930g 1980---b

 1931---b 1981f

 1932---b 1982---b

 1933---c 1983--c

 1934f 1984-d

 1935g 1985----a

 1936f 1986-----A

 1937---b 1987--------D

 1938---------E 1988-------B

 1939------B 1989-------B

 1940----------G 1990---------E

 1941-------C 1991---------E

 1942--------D 1992----------G

 1943----a 1993--------D

 1944-------C 1994-----A

 1945--------D 1995----a

 1946---b 1996f

 1947------B 1997--c

 1948-e 1998-----@

 1899i 1949------B 1999-------C

PART 5: CORRELATION OF SERIES BY SEGMENTS: 09:54 Wed 20 Apr 2011 Page 5

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 Correlations of 50-year dated segments, lagged 25 years

 Flags: A = correlation under .3281 but highest as dated; B = correlation higher at other than dated position

 Seq Series Time\_span 1900 1925 1950 1975

 1949 1974 1999 2024

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

 1 322A 1904 2010 .57 .64 .66 .65

 2 322B 1905 2010 .53 .55 .60 .57

 3 323A 1903 2010 .35 .39 .47 .30B

 4 323B 1899 2010 .51 .68 .58 .43

 5 324A 1952 2010 .44 .48

 6 324B 1950 2010 .58 .50

 7 325A 1900 2010 .55 .33 .40 .46

 8 325B 1902 2010 .51 .51 .49 .53

 9 326A 1938 2010 .43 .58 .61

 10 326B 1944 2010 .57 .56 .53

 11 327A 1922 2010 .50 .49 .43 .43

 12 327B 1938 2010 .33 .13B .14B

 13 328A 1937 2010 .25A .26B .29B

 14 328B 1936 2010 .09B .12B .07B

 15 329A 1918 2010 .39 .31B .25B .13B

 16 329B 1932 2010 .39 .42 .59

 17 330A 1903 2010 .39 .48 .31A .27A

 18 330B 1901 2010 .45 .58 .61 .59

 19 331A 1918 2010 .42 .52 .35 .23B

 20 331B 1941 2010 .47 .52 .40

 Av segment correlation .47 .44 .44 .41

PART 6: POTENTIAL PROBLEMS: 09:54 Wed 20 Apr 2011 Page 5

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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

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

 322A 1904 to 2010 107 years Series 1

 [B] Entire series, effect on correlation ( .581) is:

 Lower 2006> -.016 1953< -.014 2010< -.013 1952< -.012 1954> -.011 1923> -.009 Higher 1962 .034 1956 .016

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 322B 1905 to 2010 106 years Series 2

 [B] Entire series, effect on correlation ( .554) is:

 Lower 1923< -.017 1926> -.017 1942< -.014 1934> -.013 1920< -.010 2001< -.009 Higher 1911 .034 2006 .014

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

 1915 +3.4 SD

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

 323A 1903 to 2010 108 years Series 3

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

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

 1961 2010 -3 -.01 .14 -.24 -.19 .18 -.08 -.27 .41\* .09 -.09 .30| - - - - - - - - - -

 [B] Entire series, effect on correlation ( .365) is:

 Lower 1965< -.042 1943> -.021 2009< -.021 1963> -.020 1937< -.018 1935> -.013 Higher 1956 .017 1962 .015

 1961 to 2010 segment:

 Lower 1965< -.062 2009< -.046 1963> -.044 1990< -.021 2006> -.020 1988> -.008 Higher 1962 .035 1974 .019

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

 1963 +3.2 SD

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

 323B 1899 to 2010 112 years Series 4

 [\*] Early part of series cannot be checked from 1899 to 1899 -- not matched by another series

 [B] Entire series, effect on correlation ( .490) is:

 Lower 2006> -.018 1906> -.015 2007< -.015 1907> -.015 1960< -.011 1904< -.010 Higher 1956 .016 1926 .011

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

 2006 2007 -4.6 SD

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

 324A 1952 to 2010 59 years Series 5

 [B] Entire series, effect on correlation ( .449) is:

 Lower 1954> -.038 1974> -.033 1955< -.024 2004< -.020 1993< -.019 1959> -.019 Higher 1962 .092 1956 .065

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

 324B 1950 to 2010 61 years Series 6

 [B] Entire series, effect on correlation ( .466) is:

 Lower 2004< -.121 1954> -.059 1993< -.022 1975> -.015 1967> -.011 1952< -.010 Higher 1962 .109 1956 .022

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

 325A 1900 to 2010 111 years Series 7

 [B] Entire series, effect on correlation ( .499) is:

 Lower 1934> -.026 2000< -.022 1979> -.015 1918< -.014 1962> -.013 1946> -.011 Higher 1911 .088 2006 .022

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

 1930 -1.674 11 2

 1931 -.620 11 2

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

 1979 +3.2 SD

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 325B 1902 to 2010 109 years Series 8

 [B] Entire series, effect on correlation ( .510) is:

 Lower 1909< -.033 1948> -.015 1934> -.015 1981> -.014 2005> -.010 1966< -.008 Higher 1911 .049 2006 .019

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

 1930 -1.674 11 2

 1931 -.620 11 2

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 326A 1938 to 2010 73 years Series 9

 [B] Entire series, effect on correlation ( .496) is:

 Lower 1938< -.072 1946< -.051 1972> -.015 1964< -.011 1990< -.010 1950> -.009 Higher 2006 .040 1948 .024

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

 1946 -5.4 SD

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 326B 1944 to 2010 67 years Series 10

 [B] Entire series, effect on correlation ( .556) is:

 Lower 1945< -.049 1999< -.026 1994> -.025 1946> -.018 1971< -.016 1955< -.014 Higher 2006 .039 1956 .033

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 327A 1922 to 2010 89 years Series 11

 [B] Entire series, effect on correlation ( .452) is:

 Lower 1934> -.045 1988< -.018 1929> -.018 1970< -.017 1944< -.014 1968< -.011 Higher 1962 .035 2006 .024

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 327B 1938 to 2010 73 years Series 12

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

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

 1950 1999 -4 -.03 -.10 -.08 .10 .01 .02 .14\* .13 -.01 -.06 .13|-.04 -.08 -.03 -.32 -.07 .12 -.20 .04 .03 -.11

 1961 2010 -7 .09 -.05 -.04 .15\* .03 -.03 .06 .00 -.09 -.02 .14| - - - - - - - - - -

 [B] Entire series, effect on correlation ( .234) is:

 Lower 1988< -.073 1984> -.025 1944< -.023 1974> -.019 1996> -.015 1956> -.014 Higher 1948 .045 2006 .034

 1950 to 1999 segment:

 Lower 1988< -.107 1984> -.032 1974> -.021 1966< -.017 1996> -.016 1991< -.013 Higher 1970 .036 1962 .030

 1961 to 2010 segment:

 Lower 1988< -.103 1984> -.035 1974> -.026 1996> -.020 2005> -.019 2004< -.018 Higher 2006 .058 1970 .039

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

 328A 1937 to 2010 74 years Series 13

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

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

 1937 1986 0 .06 .23 .07 .02 -.03 -.14 -.09 .15 -.07 -.07 .25\* .09 -.16 .14 -.14 -.11 .04 -.22 .08 -.13 -.13

 1950 1999 -3 .14 .05 .07 .06 .06 -.02 -.11 .26\*-.16 .06 .26| .21 -.18 .07 -.20 -.25 .09 -.22 .05 .01 -.12

 1961 2010 -10 .31\* .03 .00 .10 .13 -.10 -.11 .03 -.13 .25 .29| - - - - - - - - - -

 [B] Entire series, effect on correlation ( .305) is:

 Lower 1938< -.047 1981> -.034 1961< -.021 2008> -.019 1960> -.015 1956> -.012 Higher 2006 .056 1970 .026

 1937 to 1986 segment:

 Lower 1938< -.066 1981> -.044 1961< -.030 1960> -.020 1966< -.015 1956> -.013 Higher 1970 .042 1940 .026

 1950 to 1999 segment:

 Lower 1981> -.044 1961< -.036 1960> -.019 1966< -.018 1989< -.018 1988< -.013 Higher 1970 .042 1992 .027

 1961 to 2010 segment:

 Lower 1981> -.058 1961< -.037 2008> -.032 1966< -.019 1989< -.018 1977> -.017 Higher 2006 .100 1970 .050

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

 328B 1936 to 2010 75 years Series 14

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

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

 1936 1985 1 -.06 -.03 .08 -.02 .12 -.03 .02 -.07 -.14 -.05 .09| .13\* .00 .11 -.04 .09 -.10 .02 -.18 -.05 -.19

 1950 1999 1 -.01 -.18 .01 .00 .09 .07 -.04 .13 -.13 .06 .12| .20\* .10 -.03 .00 -.07 -.01 -.04 -.16 .01 -.07

 1961 2010 -3 .00 -.27 -.03 -.03 .07 .07 -.10 .25\*-.02 .13 .07| - - - - - - - - - -

 [B] Entire series, effect on correlation ( .115) is:

 Lower 1981> -.040 1980< -.020 2005> -.018 1956> -.016 1946> -.014 1936> -.010 Higher 1957 .030 1992 .020

 1936 to 1985 segment:

 Lower 1981> -.051 1980< -.027 1956> -.021 1946> -.018 1936> -.013 1965> -.011 Higher 1957 .045 1943 .016

 1950 to 1999 segment:

 Lower 1981> -.060 1980< -.037 1956> -.024 1999< -.016 1965> -.012 1995> -.012 Higher 1957 .047 1992 .031

 1961 to 2010 segment:

 Lower 1981> -.058 1980< -.031 2005> -.026 2001< -.017 1999< -.016 1965> -.012 Higher 1992 .034 2006 .026

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

 1980 1981 4.6 SD

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 329A 1918 to 2010 93 years Series 15

 [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 2 -.04 .00 -.17 -.21 -.04 -.16 .07 -.07 -.28 -.18 .31|-.01 .35\* .26 .06 -.02 .14 -.10 .20 .18 -.12

 1950 1999 3 .03 .21 -.05 -.11 .04 -.11 .17 -.06 -.22 -.22 .25|-.04 .26 .28\*-.07 -.08 .07 -.27 .23 .11 -.09

 1961 2010 -9 .18 .45\*-.13 .08 -.10 -.13 .04 -.18 -.13 -.17 .13| - - - - - - - - - -

 [B] Entire series, effect on correlation ( .282) is:

 Lower 1971< -.040 1962> -.027 1935> -.021 1934> -.017 1985< -.015 1996> -.010 Higher 1956 .024 1970 .022

 1925 to 1974 segment:

 Lower 1971< -.062 1962> -.047 1935> -.035 1934> -.029 1972< -.018 1974> -.016 Higher 1970 .037 1956 .032

 1950 to 1999 segment:

 Lower 1971< -.064 1962> -.052 1985< -.020 1996> -.019 1974> -.017 1993< -.014 Higher 1956 .041 1970 .040

 1961 to 2010 segment:

 Lower 1971< -.074 1962> -.038 1985< -.022 1993< -.017 2008> -.017 1996> -.016 Higher 1970 .055 2006 .046

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 329B 1932 to 2010 79 years Series 16

 [B] Entire series, effect on correlation ( .431) is:

 Lower 1958< -.127 1948> -.042 1961< -.018 1947< -.017 1960> -.016 1975> -.013 Higher 1962 .067 1934 .023

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 330A 1903 to 2010 108 years Series 17

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

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

 1950 1999 0 -.10 .03 .05 .08 -.07 -.04 -.16 -.05 .06 .04 .31\* .08 -.19 .13 -.14 -.01 .11 .02 -.06 .17 -.10

 1961 2010 0 -.05 .05 -.10 .10 -.09 .04 -.04 -.11 .11 -.01 .27\* - - - - - - - - - -

 [B] Entire series, effect on correlation ( .341) is:

 Lower 1985< -.052 1943> -.022 2010< -.022 1915< -.021 1996> -.019 1909> -.009 Higher 1911 .019 1956 .019

 1950 to 1999 segment:

 Lower 1985< -.129 1996> -.045 1999< -.019 1960> -.016 1953< -.014 1963> -.014 Higher 1956 .051 1974 .045

 1961 to 2010 segment:

 Lower 1985< -.109 2010< -.051 1996> -.044 1999< -.018 1969< -.013 1963> -.013 Higher 1974 .048 1962 .041

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

 1943 +3.0 SD

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 330B 1901 to 2010 110 years Series 18

 [B] Entire series, effect on correlation ( .511) is:

 Lower 1903< -.052 1989< -.015 1901> -.014 1915< -.010 1946> -.009 1914> -.008 Higher 1911 .046 1962 .025

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 331A 1918 to 2010 93 years Series 19

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

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

 1961 2010 -2 -.30 -.10 -.21 .06 -.16 .06 .03 -.10 .32\* .01 .23| - - - - - - - - - -

 [B] Entire series, effect on correlation ( .311) is:

 Lower 1998< -.059 2002< -.021 1984> -.015 2006> -.013 1923> -.012 1959> -.011 Higher 1962 .026 1934 .025

 1961 to 2010 segment:

 Lower 1998< -.109 2002< -.038 1984> -.031 2006> -.026 2005> -.017 1978> -.016 Higher 1962 .062 1970 .048

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 331B 1941 to 2010 70 years Series 20

 [B] Entire series, effect on correlation ( .375) is:

 Lower 1941< -.069 2006> -.067 1965> -.028 1998< -.022 1994> -.017 2002< -.015 Higher 1962 .048 1974 .037

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

 2006 +3.0 SD

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PART 7: DESCRIPTIVE STATISTICS: 09:54 Wed 20 Apr 2011 Page 6

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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 322A 1904 2010 107 4 0 .581 1.08 1.94 .321 .699 .193 2.66 .496 -.052 1

 2 322B 1905 2010 106 4 0 .554 1.28 2.09 .349 .613 .191 3.00 .503 .045 1

 3 323A 1903 2010 108 4 1 .365 .89 4.20 .696 .933 .232 2.66 .374 -.067 3

 4 323B 1899 2010 112 4 0 .490 .89 2.39 .578 .886 .236 2.76 .462 -.048 3

 5 324A 1952 2010 59 2 0 .449 1.85 3.79 .859 .774 .245 2.75 .504 .097 1

 6 324B 1950 2010 61 2 0 .466 1.56 3.99 .816 .820 .227 2.71 .480 .013 1

 7 325A 1900 2010 111 4 0 .499 1.47 4.75 .989 .910 .261 2.58 .355 -.104 1

 8 325B 1902 2010 109 4 0 .510 1.01 4.17 .832 .933 .250 2.77 .474 .047 2

 9 326A 1938 2010 73 3 0 .496 1.16 2.32 .535 .811 .239 2.51 .404 -.098 1

 10 326B 1944 2010 67 3 0 .556 1.53 3.39 .806 .854 .244 2.81 .620 .055 2

 11 327A 1922 2010 89 4 0 .452 1.37 2.63 .546 .830 .173 2.63 .547 -.051 1

 12 327B 1938 2010 73 3 2 .234 1.59 2.94 .508 .762 .175 2.52 .412 -.084 1

 13 328A 1937 2010 74 3 3 .305 1.76 3.04 .656 .647 .269 2.63 .524 .003 1

 14 328B 1936 2010 75 3 3 .115 1.22 3.50 .678 .908 .209 2.54 .487 -.091 1

 15 329A 1918 2010 93 4 3 .282 1.88 3.73 .760 .816 .187 2.86 .532 .022 1

 16 329B 1932 2010 79 3 0 .431 1.64 3.19 .516 .716 .191 2.53 .480 .025 4

 17 330A 1903 2010 108 4 2 .341 1.20 2.25 .478 .718 .245 2.63 .450 -.011 1

 18 330B 1901 2010 110 4 0 .511 1.15 2.30 .342 .719 .182 2.51 .410 -.059 1

 19 331A 1918 2010 93 4 1 .311 1.46 3.79 .697 .892 .171 2.64 .498 -.061 2

 20 331B 1941 2010 70 3 0 .375 2.20 4.41 .874 .853 .170 2.64 .517 .037 1

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

 Total or mean: 1777 69 15 .423 1.36 4.75 .629 .806 .215 3.00 .471 -.023

 - = [ COFECHA 79 COF ] = -