[] Dendrochronology Program Library Run BALD4 Program COF 11:17 Mon 11 Mar 2013 Page 1

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[] P R O G R A M C O F E C H A Version 6.06P 28561

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QUALITY CONTROL AND DATING CHECK OF TREE-RING MEASUREMENTS

Title of run: BALD4\_3

File of DATED series: BALD4\_3COMP

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 30 years lagged successively by 15 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 .4226

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 1912 to 2012 101 years

Continuous time span is 1912 to 2012 101 years

Portion with two or more series is 1916 to 2012 97 years

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

\*C\* Number of dated series 24 \*C\*

\*O\* Master series 1912 2012 101 yrs \*O\*

\*F\* Total rings in all series 2020 \*F\*

\*E\* Total dated rings checked 2016 \*E\*

\*C\* Series intercorrelation .652 \*C\*

\*H\* Average mean sensitivity .248 \*H\*

\*A\* Segments, possible problems 7 \*A\*

\*\*\* Mean length of series 84.2 \*\*\*

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

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

177B 1 absent rings: 2004

180B 2 absent rings: 1998 2004

182A 1 absent rings: 2004

185A 1 absent rings: 2004

185B 1 absent rings: 2004

186A 2 absent rings: 2003 2004

186B 2 absent rings: 2003 2004

10 absent rings .495%

PART 2: TIME PLOT OF TREE-RING SERIES: BALD4\_3 11:17 Mon 11 Mar 2013 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

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

. . . . . . . . . . . . . . . . . . <=======> . 177A 1 1936 2012 77

. . . . . . . . . . . . . . . . . . <=======> . 177B 2 1938 2012 75

. . . . . . . . . . . . . . . . . .<=========> . 178A 3 1916 2012 97

. . . . . . . . . . . . . . . . . . <=======> . 178B 4 1935 2012 78

. . . . . . . . . . . . . . . . . . <=======> . 179A 5 1934 2012 79

. . . . . . . . . . . . . . . . . . <======> . 179B 6 1943 2012 70

. . . . . . . . . . . . . . . . . .<=========> . 180A 7 1912 2012 101

. . . . . . . . . . . . . . . . . . <=====> . 180B 8 1950 2012 63

. . . . . . . . . . . . . . . . . . <========> . 181A 9 1928 2012 85

. . . . . . . . . . . . . . . . . . <=======> . 181B 10 1932 2012 81

. . . . . . . . . . . . . . . . . . <=======> . 182A 11 1935 2012 78

. . . . . . . . . . . . . . . . . . <=======> . 182B 12 1935 2012 78

. . . . . . . . . . . . . . . . . . <========> . 183A 13 1925 2012 88

. . . . . . . . . . . . . . . . . . <========> . 183B 14 1922 2012 91

. . . . . . . . . . . . . . . . . . <=======> . 184A 15 1932 2012 81

. . . . . . . . . . . . . . . . . . <========> . 184B 16 1926 2012 87

. . . . . . . . . . . . . . . . . . <========> . 185A 17 1929 2012 84

. . . . . . . . . . . . . . . . . . <=======> . 185B 18 1931 2012 82

. . . . . . . . . . . . . . . . . . <========> . 186A 19 1926 2012 87

. . . . . . . . . . . . . . . . . . <========> . 186B 20 1922 2012 91

. . . . . . . . . . . . . . . . . . <========> . 187A 21 1920 2012 93

. . . . . . . . . . . . . . . . . . <========> . 187B 22 1925 2012 88

. . . . . . . . . . . . . . . . . . <========> . 188A 23 1921 2012 92

. . . . . . . . . . . . . . . . . .<=========> . 188B 24 1919 2012 94

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

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: BALD4\_3 11:17 Mon 11 Mar 2013 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

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

1950 -1.219 24 2000 .090 24

1951 .515 24 2001 .505 24

1952 .261 24 2002 .391 24

1953 .682 24 2003 -2.077 24 2

1954 .458 24 2004 -2.868 24 7

1955 .953 24 2005 -.675 24

1956 -1.293 24 2006 .002 24

1957 .582 24 2007 1.488 24

1958 .994 24 2008 -.588 24

1959 .708 24 2009 .157 24

1960 .060 24 2010 1.021 24

1961 1.282 24 2011 .473 24

1912 -2.297 1 1962 -.788 24 2012 1.207 24

1913 -1.016 1 1963 .269 24

1914 1.885 1 1964 -1.543 24

1915 -.064 1 1965 -.700 24

1916 1.901 2 1966 -2.189 24

1917 .488 2 1967 -.948 24

1918 -.255 2 1968 -.883 24

1919 -1.343 3 1969 -.106 24

1920 -1.144 4 1970 1.244 24

1921 -.246 5 1971 1.602 24

1922 .072 7 1972 .927 24

1923 -1.252 7 1973 .168 24

1924 .776 7 1974 .038 24

1925 1.446 9 1975 .867 24

1926 1.132 11 1976 1.161 24

1927 .443 11 1977 .729 24

1928 -.213 12 1978 -.468 24

1929 -.373 13 1979 -.296 24

1930 .616 13 1980 .164 24

1931 .660 14 1981 -.706 24

1932 .554 16 1982 .711 24

1933 .052 16 1983 -.777 24

1934 -.655 17 1984 -1.690 24

1935 -.140 20 1985 -1.479 24

1936 -.683 21 1986 -.712 24

1937 .657 21 1987 .367 24

1938 .387 22 1988 .010 24

1939 -.520 22 1989 .600 24

1940 .326 22 1990 .720 24

1941 .112 22 1991 1.529 24

1942 -.277 22 1992 2.299 24

1943 -.939 23 1993 1.520 24

1944 .392 23 1994 -.065 24

1945 .827 23 1995 .417 24

1946 -.444 23 1996 -1.024 24

1947 .905 23 1997 -1.491 24

1948 -1.565 23 1998 -1.305 24 1

1949 -1.056 23 1999 -.434 24

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PART 4: Master Bar Plot: BALD4\_3 11:17 Mon 11 Mar 2013 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

1950-e 2000-----@

1951-------B 2001-------B

1952------A 2002------B

1953--------C 2003h

1954------B 2004k

1955---------D 2005--c

1956-e 2006-----@

1957-------B 2007----------F

1958---------D 2008--b

1959--------C 2009-----A

1960-----@ 2010---------D

1961----------E 2011-------B

1912i 1962--c 2012---------E

1913-d 1963------A

1914----------H 1964f

1915----@ 1965--c

1916----------H 1966i

1917-------B 1967-d

1918----a 1968--d

1919-e 1969----@

1920-e 1970---------E

1921----a 1971----------F

1922-----@ 1972---------D

1923-e 1973-----A

1924--------C 1974-----@

1925----------F 1975--------C

1926---------E 1976---------E

1927------B 1977--------C

1928----a 1978---b

1929---a 1979---a

1930-------B 1980-----A

1931--------C 1981--c

1932-------B 1982--------C

1933-----@ 1983--c

1934--c 1984g

1935----a 1985f

1936--c 1986--c

1937--------C 1987------A

1938------B 1988-----@

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

1940------A 1990--------C

1941-----@ 1991----------F

1942---a 1992----------I

1943-d 1993----------F

1944------B 1994----@

1945--------C 1995------B

1946---b 1996-d

1947---------D 1997f

1948f 1998-e

1949-d 1999---b

PART 5: CORRELATION OF SERIES BY SEGMENTS: BALD4\_3 11:17 Mon 11 Mar 2013 Page 5

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Correlations of 30-year dated segments, lagged 15 years

Flags: A = correlation under .4226 but highest as dated; B = correlation higher at other than dated position

Seq Series Time\_span 1905 1920 1935 1950 1965 1980 1995

1934 1949 1964 1979 1994 2009 2024

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

1 177A 1936 2012 .71 .76 .64 .73 .73

2 177B 1938 2012 .66 .65 .83 .92 .94

3 178A 1916 2012 .47 .52 .46 .23B .51 .84 .82

4 178B 1935 2012 .43 .69 .60 .79 .77

5 179A 1934 2012 .49 .55 .55B .70 .81 .81

6 179B 1943 2012 .67 .70 .78 .77 .77

7 180A 1912 2012 .46 .54 .46 .49B .72 .82 .82

8 180B 1950 2012 .65 .68 .80 .83

9 181A 1928 2012 .58 .66 .74 .76 .85 .88

10 181B 1932 2012 .48 .59 .80 .77 .70 .73

11 182A 1935 2012 .53 .72 .65 .69 .68

12 182B 1935 2012 .71 .70 .73 .78 .76

13 183A 1925 2012 .36A .50 .61 .81 .90 .90

14 183B 1922 2012 .54 .80 .81 .77 .81 .83

15 184A 1932 2012 .45 .59 .78 .68 .90 .91

16 184B 1926 2012 .60 .76 .68 .57 .70 .73

17 185A 1929 2012 .69 .72 .75 .73 .82 .87

18 185B 1931 2012 .57 .62 .49 .62 .73 .75

19 186A 1926 2012 .53 .67 .62 .68 .84 .86

20 186B 1922 2012 .47 .63 .74 .64 .61 .74

21 187A 1920 2012 .55 .77 .78 .71 .75 .80

22 187B 1925 2012 .48 .67 .62 .51 .78 .79

23 188A 1921 2012 .46 .41A .46 .56 .70 .72

24 188B 1919 2012 .39A .37B .64 .79 .77 .86 .84

Av segment correlation .44 .51 .62 .66 .69 .79 .80

PART 6: POTENTIAL PROBLEMS: BALD4\_3 11:17 Mon 11 Mar 2013 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 30-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

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

177A 1936 to 2012 77 years Series 1

[B] Entire series, effect on correlation ( .716) is:

Lower 1941< -.027 1994> -.016 1986< -.015 1951< -.014 1978> -.013 1946> -.008 Higher 2003 .024 1956 .023

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

177B 1938 to 2012 75 years Series 2

[B] Entire series, effect on correlation ( .781) is:

Lower 1964> -.021 1942> -.018 1963< -.016 1941< -.010 1966> -.008 1951< -.007 Higher 1948 .025 2003 .020

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

2004 -2.868 24 7

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

178A 1916 to 2012 97 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

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

1950 1979 2 .10 -.08 -.20 -.24 .12 -.10 .04 .12 .27 .06 .23| .09 .29\* .05 -.09 -.42 -.09 -.05 -.07 .06 -.34

[B] Entire series, effect on correlation ( .527) is:

Lower 1956> -.056 1965< -.045 1926< -.022 1970< -.017 1973> -.014 1953< -.013 Higher 1948 .022 1966 .019

1950 to 1979 segment:

Lower 1956> -.144 1965< -.067 1970< -.041 1973> -.030 1953< -.029 1958< -.012 Higher 1966 .103 1962 .057

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

178B 1935 to 2012 78 years Series 4

[B] Entire series, effect on correlation ( .518) is:

Lower 1942< -.055 1948> -.048 1949< -.041 2008> -.023 1943> -.015 1941> -.010 Higher 1956 .034 2003 .023

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179A 1934 to 2012 79 years Series 5

[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 1979 2 .23 -.31 .01 -.52 .26 -.46 .29 -.27 .40 -.34 .55|-.23 .56\*-.16 .26 -.21 .29 -.17 -.07 -.46 -.13

[B] Entire series, effect on correlation ( .603) is:

Lower 1956> -.039 1936< -.030 1934> -.027 1942> -.014 1975< -.014 1977< -.010 Higher 1966 .022 2004 .016

1950 to 1979 segment:

Lower 1956> -.124 1975< -.032 1977< -.022 1976< -.019 1973> -.015 1965> -.008 Higher 1966 .082 1962 .071

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179B 1943 to 2012 70 years Series 6

[B] Entire series, effect on correlation ( .709) is:

Lower 1954< -.024 1961< -.019 1943> -.018 2008< -.011 1948> -.009 1977< -.008 Higher 1956 .024 1964 .014

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180A 1912 to 2012 101 years Series 7

[\*] Early part of series cannot be checked from 1912 to 1915 -- not matched by another series

[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 1979 6 .01 -.31 .02 -.18 .17 -.35 .49 -.27 .39 -.12 .49|-.34 .25 -.39 .19 -.20 .52\*-.29 .14 -.29 -.01

[B] Entire series, effect on correlation ( .585) is:

Lower 1960< -.055 1919> -.029 1964> -.011 1932< -.011 1939> -.009 1946> -.009 Higher 1956 .018 1966 .015

1950 to 1979 segment:

Lower 1960< -.111 1964> -.041 1962> -.029 1974> -.019 1975< -.010 1967> -.007 Higher 1956 .062 1966 .053

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180B 1950 to 2012 63 years Series 8

[B] Entire series, effect on correlation ( .681) is:

Lower 1960< -.020 1998< -.017 1956> -.016 1979< -.013 1958< -.009 1982< -.006 Higher 2004 .019 1964 .015

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

1998 -1.305 24 1

2004 -2.868 24 7

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181A 1928 to 2012 85 years Series 9

[B] Entire series, effect on correlation ( .744) is:

Lower 1943< -.039 1956> -.028 1972< -.010 1983> -.008 1980< -.007 1932> -.006 Higher 2003 .019 1966 .013

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181B 1932 to 2012 81 years Series 10

[B] Entire series, effect on correlation ( .631) is:

Lower 1933< -.029 1942> -.025 1951< -.015 1939> -.013 1932> -.012 1980< -.011 Higher 1966 .019 1956 .019

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

1942 +3.4 SD

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182A 1935 to 2012 78 years Series 11

[B] Entire series, effect on correlation ( .613) is:

Lower 1945< -.039 1949> -.019 1994> -.011 1967> -.009 1935> -.008 1990< -.007 Higher 1992 .016 1964 .015

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

2004 -2.868 24 7

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

1949 +3.2 SD; 2004 -4.7 SD

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182B 1935 to 2012 78 years Series 12

[B] Entire series, effect on correlation ( .708) is:

Lower 2008> -.026 2011< -.021 1978< -.015 1981> -.012 1958< -.012 1952> -.008 Higher 2003 .026 1964 .014

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183A 1925 to 2012 88 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

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

1925 1954 0 -.18 .16 -.20 -.16 -.04 -.15 -.18 -.17 -.16 .05 .36\* .02 .12 -.33 .15 .01 .12 .17 -.10 .03 -.04

[B] Entire series, effect on correlation ( .586) is:

Lower 1932< -.065 1956> -.027 1934< -.023 1948> -.016 1955< -.015 1963< -.009 Higher 1966 .023 2003 .020

1925 to 1954 segment:

Lower 1932< -.133 1948> -.050 1946> -.022 1944< -.016 1949> -.013 1928> -.010 Higher 1934 .039 1925 .033

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

1934 -5.3 SD

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183B 1922 to 2012 91 years Series 14

[B] Entire series, effect on correlation ( .695) is:

Lower 1933> -.033 1924< -.020 1929< -.011 1942< -.011 1962> -.010 1922> -.007 Higher 1948 .033 1956 .024

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

1933 +3.5 SD

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

184A 1932 to 2012 81 years Series 15

[B] Entire series, effect on correlation ( .654) is:

Lower 1935< -.045 1934> -.025 1948> -.024 1936> -.015 1933< -.012 1978< -.010 Higher 1956 .027 2003 .027

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184B 1926 to 2012 87 years Series 16

[B] Entire series, effect on correlation ( .664) is:

Lower 1996> -.021 1930< -.018 1956> -.017 1981> -.014 1977< -.012 1994< -.012 Higher 2003 .040 1964 .018

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185A 1929 to 2012 84 years Series 17

[B] Entire series, effect on correlation ( .725) is:

Lower 1934< -.020 1933> -.016 1942> -.013 1937< -.013 1936> -.010 1951< -.010 Higher 1948 .032 1956 .023

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

2004 -2.868 24 7

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185B 1931 to 2012 82 years Series 18

[B] Entire series, effect on correlation ( .685) is:

Lower 1956> -.046 1990< -.012 1991< -.008 1966> -.008 1958< -.008 1952< -.007 Higher 1948 .034 2003 .014

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

2004 -2.868 24 7

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

1956 +3.1 SD

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186A 1926 to 2012 87 years Series 19

[B] Entire series, effect on correlation ( .696) is:

Lower 1964> -.016 1978> -.015 1929> -.014 1937< -.014 1932< -.013 1933> -.012 Higher 2003 .036 1956 .016

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

2003 -2.077 24 2

2004 -2.868 24 7

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186B 1922 to 2012 91 years Series 20

[B] Entire series, effect on correlation ( .651) is:

Lower 1937< -.030 1980< -.025 1938< -.017 1943> -.016 1933> -.014 1927> -.011 Higher 2003 .046 1948 .040

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

2003 -2.077 24 2

2004 -2.868 24 7

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

1938 -4.9 SD

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187A 1920 to 2012 93 years Series 21

[B] Entire series, effect on correlation ( .697) is:

Lower 1933< -.021 1941< -.017 1981> -.013 1923> -.013 1920< -.012 2008> -.011 Higher 1948 .032 2003 .026

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187B 1925 to 2012 88 years Series 22

[B] Entire series, effect on correlation ( .606) is:

Lower 1931< -.020 1978> -.019 1994> -.017 1950> -.015 1939> -.013 1944< -.012 Higher 1948 .049 2003 .030

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

1950 +3.2 SD

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188A 1921 to 2012 92 years Series 23

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

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

1935 1964 0 -.03 -.08 .28 -.09 .12 -.13 .13 .11 .00 -.05 .41\*-.24 .12 -.06 -.08 -.12 .04 -.36 .10 -.33 .25

[B] Entire series, effect on correlation ( .533) is:

Lower 1978> -.017 1939> -.014 2004> -.014 1951< -.014 1936> -.014 1964> -.012 Higher 2003 .039 1966 .023

1935 to 1964 segment:

Lower 1951< -.074 1939> -.048 1936> -.044 1947< -.029 1954< -.009 1952< -.009 Higher 1956 .081 1948 .054

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

1979 +3.0 SD

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188B 1919 to 2012 94 years Series 24

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

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

1919 1948 0 - - - .16 .26 -.11 -.02 -.26 -.19 .03 .39\* .07 -.05 -.05 .33 -.26 .32 -.38 .25 -.08 .02

1920 1949 6 - - .13 -.06 .24 .09 -.09 -.07 -.21 .00 .37|-.03 -.03 -.04 .22 -.18 .51\*-.33 .29 -.11 .00

[B] Entire series, effect on correlation ( .693) is:

Lower 1936> -.020 1940< -.019 1934> -.018 1937< -.010 1932> -.007 1920> -.007 Higher 2003 .031 1956 .016

1919 to 1948 segment:

Lower 1940< -.064 1936> -.059 1934> -.052 1937< -.032 1944< -.022 1920> -.016 Higher 1948 .118 1924 .036

1920 to 1949 segment:

Lower 1940< -.078 1936> -.063 1934> -.052 1937< -.039 1944< -.027 1945< -.015 Higher 1948 .154 1924 .038

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

1936 +3.4 SD

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PART 7: DESCRIPTIVE STATISTICS: BALD4\_3 11:17 Mon 11 Mar 2013 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 177A 1936 2012 77 5 0 .716 1.17 2.29 .532 .851 .227 2.63 .520 -.077 1

2 177B 1938 2012 75 5 0 .781 1.24 2.35 .452 .714 .277 2.55 .502 .041 1

3 178A 1916 2012 97 7 1 .527 1.30 3.35 .569 .583 .312 2.76 .513 .099 1

4 178B 1935 2012 78 5 0 .518 .98 1.65 .338 .730 .213 2.55 .446 -.076 2

5 179A 1934 2012 79 6 1 .603 1.68 3.17 .637 .600 .287 2.70 .549 -.069 1

6 179B 1943 2012 70 5 0 .709 1.35 2.71 .553 .729 .245 2.76 .476 -.048 1

7 180A 1912 2012 101 7 1 .585 1.06 3.91 .866 .903 .295 2.79 .479 -.009 1

8 180B 1950 2012 63 4 0 .681 .40 1.13 .217 .830 .349 2.81 .574 -.052 1

9 181A 1928 2012 85 6 0 .744 1.23 2.94 .539 .696 .262 2.81 .488 .019 1

10 181B 1932 2012 81 6 0 .631 1.04 2.58 .409 .773 .225 2.74 .540 -.127 1

11 182A 1935 2012 78 5 0 .613 .56 1.58 .264 .688 .331 2.58 .388 .015 1

12 182B 1935 2012 78 5 0 .708 1.09 2.42 .503 .645 .308 2.78 .590 -.040 1

13 183A 1925 2012 88 6 1 .586 1.45 3.71 .637 .763 .228 2.56 .465 -.016 1

14 183B 1922 2012 91 6 0 .695 1.00 2.87 .503 .830 .232 2.72 .438 -.019 1

15 184A 1932 2012 81 6 0 .654 1.15 2.32 .449 .815 .202 2.62 .602 -.062 1

16 184B 1926 2012 87 6 0 .664 1.48 2.85 .553 .735 .217 2.66 .540 .028 1

17 185A 1929 2012 84 6 0 .725 1.18 2.25 .525 .889 .265 2.47 .541 -.062 1

18 185B 1931 2012 82 6 0 .685 1.38 2.84 .673 .787 .337 2.55 .471 -.012 1

19 186A 1926 2012 87 6 0 .696 .98 2.42 .511 .855 .253 2.68 .421 -.070 1

20 186B 1922 2012 91 6 0 .651 .98 3.08 .546 .893 .221 2.63 .448 .000 1

21 187A 1920 2012 93 6 0 .697 1.43 3.21 .484 .758 .196 2.77 .568 .042 1

22 187B 1925 2012 88 6 0 .606 1.31 2.31 .525 .898 .158 2.40 .404 -.073 1

23 188A 1921 2012 92 6 1 .533 1.12 2.76 .575 .904 .190 2.66 .547 -.018 1

24 188B 1919 2012 94 7 2 .693 1.25 2.82 .588 .903 .179 2.59 .430 -.057 1

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Total or mean: 2020 139 7 .652 1.17 3.91 .527 .785 .248 2.81 .496 -.025

- = [ COFECHA BALD4COF ] = -