[] Dendrochronology Program Library Run N39SM Program COF 11:14 Wed 04 Jan 2017 Page 1

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[] P R O G R A M C O F E C H A Version 6.06P 29956

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QUALITY CONTROL AND DATING CHECK OF TREE-RING MEASUREMENTS

Title of run: NAMP39\_ACSA\_Corr3-50

File of DATED series: NAMP39\_ACSA\_Corr3

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 Y

8 Parts printed 1234567

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

Time span of Master dating series is 1883 to 2015 133 years

Continuous time span is 1883 to 2015 133 years

Portion with two or more series is 1899 to 2015 117 years

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

\*C\* Number of dated series 36 \*C\*

\*O\* Master series 1883 2015 133 yrs \*O\*

\*F\* Total rings in all series 2980 \*F\*

\*E\* Total dated rings checked 2964 \*E\*

\*C\* Series intercorrelation .559 \*C\*

\*H\* Average mean sensitivity .272 \*H\*

\*A\* Segments, possible problems 11 \*A\*

\*\*\* Mean length of series 82.8 \*\*\*

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

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

1147B 2 absent rings: 1931 1933

2 absent rings .067%

1900 .885 2 1950 1.024 35 2000 -1.534 36

1901 .643 2 1951 1.013 35 2001 -.314 36

1902 1.160 2 1952 .255 35 2002 .662 36

1903 2.221 2 1953 .182 36 2003 -.637 36

1904 -1.179 2 1954 -.273 36 2004 .049 36

1905 -.478 2 1955 -.282 36 2005 .163 36

1906 -.903 2 1956 -.760 36 2006 -1.604 36

1907 -.303 2 1957 .178 36 2007 -.586 36

1908 -1.863 2 1958 -.028 36 2008 1.618 36

1909 -.551 2 1959 -1.508 36 2009 1.253 36

1910 1.337 2 1960 .526 36 2010 -1.743 36

1911 .837 2 1961 .876 36 2011 .670 36

1912 -1.380 2 1962 -.221 36 2012 .129 36

1913 -.313 4 1963 .275 36 2013 -.772 36

1914 -.562 4 1964 -.521 36 2014 .118 36

1915 -1.221 4 1965 -.708 36 2015 .938 36

1916 .324 8 1966 -.564 36

1917 .520 8 1967 -.563 36

1918 .602 8 1968 -1.242 36

1919 .639 8 1969 -.582 36

1920 1.604 8 1970 -.414 36

1921 1.562 8 1971 -1.022 36

1922 .955 8 1972 -.994 36

1923 -.190 8 1973 -1.779 36

1924 .401 8 1974 .505 36

1925 -.813 8 1975 1.522 36

1926 -.478 8 1976 .810 36

1927 -.001 9 1977 .747 36

1928 -.544 9 1978 1.526 36

1929 -.646 10 1979 .026 36

1930 -.143 11 1980 .754 36

1931 -.846 11 1 1981 .437 36

1932 -.938 11 1982 .481 36

1883 2.019 1 1933 -1.915 11 1 1983 -1.839 36

1884 1.011 1 1934 1.021 13 1984 -.323 36

1885 .824 1 1935 .718 13 1985 .731 36

1886 1.372 1 1936 -.716 21 1986 .025 36

1887 .193 1 1937 -.292 21 1987 .678 36

1888 .466 1 1938 -1.478 21 1988 -1.192 36

1889 -2.140 1 1939 -1.037 22 1989 -.419 36

1890 -1.720 1 1940 -.963 24 1990 .605 36

1891 -1.266 1 1941 .374 24 1991 .799 36

1892 -1.121 1 1942 1.067 24 1992 .152 36

1893 -1.240 1 1943 1.671 25 1993 .112 36

1894 -1.653 1 1944 1.180 26 1994 .408 36

1895 -1.848 1 1945 -.521 28 1995 .482 36

1896 -.714 1 1946 .116 32 1996 -1.282 36

1897 .959 1 1947 1.081 32 1997 .111 36

1898 1.393 1 1948 -.290 32 1998 1.188 36

1899 1.916 2 1949 1.192 33 1999 1.682 36

PART 5: CORRELATION OF SERIES BY SEGMENTS: NAMP39\_ACSA\_Corr3-50 11:14 Wed 04 Jan 2017 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 1875 1900 1925 1950 1975

1924 1949 1974 1999 2024

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

1 1331A 1934 2015 .67 .73 .86

2 1331B 1934 2015 .73 .64 .72

3 1332A 1950 2015 .40 .42

4 1333A 1913 2015 .57 .50 .60 .66

5 1333B 1913 2015 .65 .60 .59 .67

6 1335A 1936 2015 .47 .38 .49

7 1335B 1936 2015 .55 .68 .76

8 1336A 1945 2015 .29A .31B .66

9 1336B 1946 2015 .30B .30A .55

10 1337A 1939 2015 .36B .31B .44

11 1337B 1944 2015 .29A .26B .50

12 1147A 1883 2015 .54 .54 .54 .57 .60

13 1147B 1899 2015 .59 .58 .48 .39 .46

14 1149A 1916 2015 .46 .51 .61 .59

15 1149B 1916 2015 .54 .51 .54 .43

16 1150A 1916 2015 .55 .52 .50 .55

17 1150B 1916 2015 .49 .46 .35 .50

18 1151A 1946 2015 .51 .61 .66

19 1151B 1946 2015 .64 .62 .76

20 1152A 1936 2015 .52 .44 .57

21 1152B 1936 2015 .53 .55 .68

22 1153A 1943 2015 .48 .43 .49

23 1153B 1949 2015 .51 .50 .47

24 1459A 1930 2015 .51 .37 .55

25 1459B 1927 2015 .37 .39 .56

26 1472A 1945 2015 .65 .65 .68

27 1472B 1929 2015 .50 .55 .68

28 1475A 1940 2015 .28A .35 .70

29 1475B 1940 2015 .49 .59 .65

30 1482A 1953 2015 .55 .70

31 1482B 1950 2015 .59 .59

32 1483A 1936 2015 .49 .49 .67

33 1483B 1936 2015 .51 .56 .66

34 1496A 1936 2015 .67 .73 .75

35 1496B 1936 2015 .63 .61 .60

36 1332B 1946 2015 .31A .30A .40

Av segment correlation .56 .55 .50 .50 .60

PART 6: POTENTIAL PROBLEMS: NAMP39\_ACSA\_Corr3-50 11:14 Wed 04 Jan 2017 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

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

1331A 1934 to 2015 82 years Series 1

[B] Entire series, effect on correlation ( .772) is:

Lower 1936> -.023 1956> -.016 1996> -.012 1937< -.010 1940> -.010 1973> -.008 Higher 2010 .033 2000 .024

1331A Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1934 99 70 125 56 32 51

1940 140 168 209 269 276 183 157 201 141 244

1950 223 250 271 305 279 273 313 329 245 161

1960 231 289 243 273 121 105 138 164 150 168

1970 122 82 117 133 335 402 317 300 349 271

1980 272 222 214 85 166 225 135 210 111 136

1990 198 203 196 253 251 221 181 193 223 226

2000 102 124 150 134 170 178 76 98 220 242

2010 63 144 70 78 124 106

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

1331B 1934 to 2015 82 years Series 2

[B] Entire series, effect on correlation ( .710) is:

Lower 1986< -.093 1936> -.016 1968> -.006 1973> -.006 2013> -.006 2006> -.006 Higher 2010 .028 2000 .025

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

1986 -4.6 SD

1331B Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1934 142 91 137 92 49 43

1940 116 182 188 275 289 181 277 324 241 314

1950 278 288 255 238 175 178 171 185 193 168

1960 212 228 149 170 104 107 131 132 158 156

1970 175 173 203 184 247 308 330 302 382 257

1980 227 221 258 98 163 279 87 260 149 233

1990 242 234 215 204 253 204 147 151 219 226

2000 105 130 155 119 142 140 98 129 245 226

2010 59 95 49 83 111 141

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

1332A 1950 to 2015 66 years Series 3

[B] Entire series, effect on correlation ( .384) is:

Lower 2010> -.087 1986< -.019 1950< -.015 2004< -.012 1990< -.011 1959> -.010 Higher 2006 .035 2000 .024

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

2010 +3.8 SD

1332A Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1950 166 193 256 268 206 203 200 236 198 211

1960 217 232 205 230 249 239 206 238 151 224

1970 293 291 272 257 319 482 410 460 496 367

1980 392 286 231 188 203 197 78 213 190 277

1990 195 273 203 249 236 235 179 232 260 233

2000 155 203 191 163 125 149 106 157 204 154

2010 169 142 125 82 114 105

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1333A 1913 to 2015 103 years Series 4

[B] Entire series, effect on correlation ( .601) is:

Lower 1945> -.020 1936> -.016 1962< -.012 2012> -.010 1967> -.010 1986> -.009 Higher 2000 .021 1988 .016

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

1959 -5.3 SD

1333A Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1913 16 20 6 34 39 32 25

1920 54 90 81 38 53 32 44 44 27 23

1930 57 14 35 22 172 205 266 241 208 230

1940 297 359 354 432 356 393 310 338 226 305

1950 291 284 271 291 212 204 186 227 197 126

1960 181 185 116 138 164 140 196 231 141 143

1970 160 155 165 136 211 328 232 211 222 110

1980 149 197 183 159 199 304 403 462 160 199

1990 284 310 213 229 281 261 205 272 369 402

2000 178 252 238 170 140 257 116 207 288 316

2010 129 128 257 76 131 90

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

1333B 1913 to 2015 103 years Series 5

[B] Entire series, effect on correlation ( .644) is:

Lower 1988< -.023 1964< -.014 1945> -.013 2003> -.011 1977< -.008 1936> -.008 Higher 2000 .020 2010 .020

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

1988 -5.1 SD

1333B Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1913 22 26 9 44 63 71 87

1920 55 53 45 29 45 33 44 45 32 28

1930 48 27 40 17 172 212 222 232 177 195

1940 176 380 449 488 458 456 416 441 321 412

1950 396 332 307 261 239 227 232 298 294 242

1960 261 245 215 221 125 133 181 202 143 139

1970 152 143 126 76 117 185 149 139 216 175

1980 258 292 366 234 225 248 322 318 146 236

1990 298 310 291 318 313 270 211 265 247 301

2000 170 230 284 265 164 236 93 94 174 116

2010 26 67 86 50 40 74

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1335A 1936 to 2015 80 years Series 6

[B] Entire series, effect on correlation ( .443) is:

Lower 1987< -.036 2006> -.017 2000> -.016 1964< -.015 1988> -.014 1983> -.013 Higher 2010 .081 1959 .014

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

1987 -4.8 SD

1335A Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1936 27 187 212 261

1940 208 185 238 297 276 183 370 373 261 258

1950 228 240 219 194 256 265 275 249 223 185

1960 266 241 256 259 154 179 233 286 216 246

1970 272 230 238 204 281 368 320 286 355 237

1980 299 278 274 249 322 267 200 170 235 278

1990 245 224 278 225 192 187 169 198 179 231

2000 165 169 191 137 126 94 135 107 143 116

2010 33 152 222 146 216 268

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1335B 1936 to 2015 80 years Series 7

[B] Entire series, effect on correlation ( .653) is:

Lower 1946< -.042 1953< -.020 1962> -.013 1939> -.011 1977< -.011 1973> -.011 Higher 2010 .050 1983 .032

1335B Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1936 67 214 174 344

1940 284 303 327 388 322 253 140 252 263 297

1950 276 261 227 163 193 181 226 276 214 201

1960 346 352 343 386 209 252 290 282 281 314

1970 286 230 222 284 318 392 346 281 398 301

1980 335 332 373 262 300 336 298 375 316 332

1990 394 383 343 319 362 347 267 345 356 387

2000 263 313 276 262 233 352 216 273 408 384

2010 127 321 348 165 252 247

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1336A 1945 to 2015 71 years Series 8

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

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

1945 1994 0 .15 .10 -.09 .20 .09 -.04 .02 .13 .24 .12 .29\*-.10 -.08 .00 -.04 -.33 -.18 .06 -.06 -.30 .18

1950 1999 10 .07 .06 -.09 .22 .15 .07 .17 .03 .19 .29 .31|-.07 -.09 .04 .07 -.41 -.23 .11 -.20 -.29 .34\*

[B] Entire series, effect on correlation ( .532) is:

Lower 1983> -.034 1959> -.025 1964> -.022 2006> -.021 1990< -.018 1993< -.014 Higher 2010 .078 2000 .066

1945 to 1994 segment:

Lower 1983> -.046 1959> -.039 1964> -.036 1990< -.031 1993< -.019 1947< -.016 Higher 1973 .066 1949 .033

1950 to 1999 segment:

Lower 1983> -.044 1959> -.040 1964> -.040 1990< -.038 1993< -.025 1961< -.019 Higher 1973 .072 1996 .035

1336A Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1945 235 244 219 171 258

1950 256 236 219 247 212 152 174 162 207 190

1960 151 127 156 130 201 159 135 120 97 99

1970 100 74 59 26 181 287 342 352 369 248

1980 308 325 365 290 314 249 235 267 228 188

1990 178 262 207 161 170 212 161 178 195 177

2000 109 131 174 105 184 148 139 154 154 147

2010 43 234 215 102 84 132

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1336B 1946 to 2015 70 years Series 9

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

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

1946 1995 -3 .01 -.15 -.15 .16 -.04 -.16 .19 .42\* .03 .04 .30| .15 .11 -.10 -.07 .00 -.29 .00 -.12 -.11 .10

1950 1999 0 -.06 -.10 -.10 .19 -.06 -.13 .26 .27 .01 .19 .30\* .08 .05 -.04 -.01 -.03 -.31 -.02 -.18 .01 .21

[B] Entire series, effect on correlation ( .491) is:

Lower 1964> -.028 2006> -.023 1983> -.021 1988> -.020 1986< -.015 1973> -.014 Higher 2010 .109 1996 .016

1946 to 1995 segment:

Lower 1964> -.050 1988> -.032 1983> -.026 1987< -.022 1973> -.021 1960< -.020 Higher 1959 .037 1948 .026

1950 to 1999 segment:

Lower 1964> -.050 1988> -.030 1983> -.023 1987< -.022 1973> -.021 1960< -.019 Higher 1996 .048 1959 .036

1336B Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1946 261 256 166 227

1950 249 216 181 208 170 122 146 130 142 99

1960 100 99 113 94 155 125 107 110 79 83

1970 75 68 49 132 180 182 202 253 222 178

1980 232 224 242 205 271 253 126 153 219 208

1990 254 249 270 247 246 187 132 139 186 269

2000 146 153 228 198 231 148 166 132 211 227

2010 42 187 112 118 126 100

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1337A 1939 to 2015 77 years Series 10

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

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

1939 1988 7 .03 .15 -.02 .13 -.14 -.17 -.03 .00 .05 -.06 .36| .04 -.18 -.10 .05 .22 .06 .41\* .12 -.05 .02

1950 1999 7 .14 .12 -.08 .03 -.14 -.06 .04 -.05 -.03 -.15 .31|-.04 -.10 -.01 .08 .12 .00 .34\* .05 .00 .11

[B] Entire series, effect on correlation ( .429) is:

Lower 2009< -.044 1961< -.019 1971> -.013 1956> -.013 1964> -.012 1973> -.012 Higher 2000 .092 1959 .025

1939 to 1988 segment:

Lower 1961< -.033 1971> -.024 1956> -.023 1973> -.023 1964> -.023 1981< -.019 Higher 1959 .068 1983 .034

1950 to 1999 segment:

Lower 1961< -.035 1971> -.022 1956> -.021 1964> -.021 1981< -.020 1973> -.019 Higher 1959 .081 1983 .045

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

1959 -5.1 SD

1337A Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1939 168

1940 47 161 298 426 342 219 220 237 254 292

1950 316 321 280 307 241 202 248 214 165 123

1960 181 151 190 156 195 154 126 170 174 211

1970 235 224 193 185 195 178 126 194 252 151

1980 197 118 100 90 160 234 232 230 145 221

1990 194 182 155 112 134 169 140 152 138 195

2000 45 71 106 76 59 66 72 221 181 45

2010 40 205 148 154 147 187

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1337B 1944 to 2015 72 years Series 11

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

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

1944 1993 0 .24 .26 -.12 .19 -.06 .07 -.06 -.11 -.07 -.01 .29\*-.01 -.19 .05 -.11 -.16 -.13 .08 -.12 .14 .22

1950 1999 -10 .37\* .21 -.10 .04 -.12 -.02 .01 -.09 .02 .05 .26|-.11 -.08 -.06 .00 -.13 -.06 .08 -.12 .15 .29

[B] Entire series, effect on correlation ( .443) is:

Lower 1974< -.062 1988> -.018 1993< -.017 1948> -.016 1982< -.016 1955< -.015 Higher 2010 .036 1973 .025

1944 to 1993 segment:

Lower 1974< -.083 1988> -.029 1948> -.024 1982< -.020 1993< -.018 1963< -.014 Higher 1973 .059 1945 .036

1950 to 1999 segment:

Lower 1974< -.095 1988> -.027 1982< -.023 1993< -.021 1998< -.017 1963< -.016 Higher 1973 .070 1983 .030

1337B Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1944 247 176 237 220 262 263

1950 246 275 211 235 196 156 195 242 162 169

1960 262 196 197 152 190 206 169 213 163 194

1970 226 174 137 68 59 232 239 148 250 152

1980 199 109 80 101 169 228 157 338 193 306

1990 236 184 119 66 114 145 110 127 101 147

2000 66 102 160 75 110 78 60 62 161 132

2010 44 155 83 77 101 116

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1147A 1883 to 2015 133 years Series 12

[\*] Early part of series cannot be checked from 1883 to 1898 -- not matched by another series

[B] Entire series, effect on correlation ( .550) is:

Lower 1925> -.022 1905> -.012 1989< -.011 2015< -.010 1914< -.010 1983> -.010 Higher 2000 .028 2006 .010

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

1925 +3.1 SD; 1989 -5.7 SD

1147A Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1883 131 105 104 126 94 106 46

1890 55 69 76 77 68 65 112 210 252 270

1900 248 256 320 333 166 185 145 139 102 117

1910 183 152 85 57 33 39 47 56 42 59

1920 53 50 45 34 38 41 28 24 22 16

1930 17 19 24 18 79 61 33 46 36 32

1940 96 122 148 181 200 125 167 251 209 232

1950 201 220 166 184 208 243 194 211 205 157

1960 185 179 168 150 109 88 75 100 125 143

1970 120 169 160 137 249 292 225 168 189 193

1980 196 168 171 153 136 153 126 180 98 65

1990 100 164 126 124 134 138 92 99 140 211

2000 110 94 97 112 142 163 71 68 118 113

2010 86 96 125 118 116 93

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1147B 1899 to 2015 117 years Series 13

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

Lower 1983> -.037 1925> -.027 1905< -.012 1998< -.010 1951< -.007 1915> -.007 Higher 1904 .018 2000 .016

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

1931 -.846 11 1

1933 -1.915 11 1

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

1973 -6.4 SD; 1983 +3.7 SD

1147B Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1899 297

1900 213 181 172 218 97 99 86 93 56 69

1910 89 69 34 45 42 40 52 37 42 43

1920 35 39 41 29 14 30 6 24 16 6

1930 10 0 23 0 65 43 31 46 33 37

1940 91 82 142 173 237 93 167 241 128 200

1950 164 143 110 181 186 229 182 217 224 190

1960 324 314 269 247 254 189 185 218 171 155

1970 185 208 206 102 241 288 222 254 373 332

1980 348 348 378 392 401 296 264 343 277 271

1990 240 314 220 323 272 225 96 131 109 248

2000 87 121 107 111 107 151 58 46 77 114

2010 63 169 142 98 96 73

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1149A 1916 to 2015 100 years Series 14

[B] Entire series, effect on correlation ( .543) is:

Lower 1959> -.019 1941< -.013 1916< -.011 2010> -.011 1988> -.010 1972> -.009 Higher 1983 .032 1973 .015

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

1983 -5.3 SD

1149A Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1916 136 151 145 183

1920 229 223 166 157 234 143 133 141 131 136

1930 135 149 149 101 201 209 148 141 132 138

1940 97 80 119 195 162 47 74 140 89 135

1950 228 182 182 168 145 137 141 176 172 164

1960 185 156 99 139 101 117 148 149 106 143

1970 179 91 149 90 113 158 155 190 215 154

1980 159 191 213 69 174 271 277 343 268 344

1990 367 371 241 276 253 285 191 188 342 315

2000 173 170 201 218 232 206 157 161 294 274

2010 131 155 197 86 111 235

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1149B 1916 to 2015 100 years Series 15

[B] Entire series, effect on correlation ( .470) is:

Lower 2000> -.051 1996> -.021 2010> -.014 1951< -.013 1916< -.012 1978< -.011 Higher 1983 .050 1988 .018

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

2000 +3.1 SD

1149B Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1916 163 177 179 195

1920 263 221 254 193 165 103 109 108 91 86

1930 100 56 90 90 142 163 94 112 92 127

1940 80 69 120 128 102 60 76 100 34 80

1950 85 48 42 35 37 58 42 46 76 58

1960 67 85 72 98 94 104 147 159 138 141

1970 162 108 119 141 283 263 244 241 190 148

1980 206 225 197 78 160 211 305 303 175 262

1990 323 345 233 346 306 308 325 248 368 322

2000 322 217 164 81 179 130 164 182 280 243

2010 185 267 319 131 180 275

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1150A 1916 to 2015 100 years Series 16

[B] Entire series, effect on correlation ( .546) is:

Lower 1973< -.027 1967> -.013 1922< -.011 1996> -.011 1933> -.011 1975< -.011 Higher 1983 .032 2000 .019

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

1967 +3.0 SD; 1973 -6.9 SD

1150A Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1916 264 205 231 150

1920 236 174 112 91 109 85 121 136 126 131

1930 167 140 124 134 160 193 66 219 79 157

1940 68 133 253 298 173 32 115 185 140 145

1950 146 178 128 96 132 127 62 125 106 91

1960 132 153 106 133 117 85 107 189 123 145

1970 160 155 165 53 155 167 223 193 166 173

1980 226 199 237 137 198 304 223 294 254 389

1990 363 289 323 284 304 329 288 274 392 316

2000 140 230 299 251 265 289 110 155 319 203

2010 60 166 93 129 210 237

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1150B 1916 to 2015 100 years Series 17

[B] Entire series, effect on correlation ( .474) is:

Lower 1996> -.033 1978< -.028 1972> -.014 1975< -.013 1977< -.012 2000> -.010 Higher 2006 .023 1943 .015

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

1925 -4.5 SD; 1972 +3.3 SD; 1996 +3.4 SD

1150B Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1916 275 264 265 190

1920 236 227 180 133 143 100 144 133 137 149

1930 160 164 123 119 173 177 101 218 188 221

1940 197 190 241 555 341 291 368 377 220 214

1950 185 194 194 200 201 203 117 269 239 192

1960 305 251 162 165 89 120 149 171 85 139

1970 163 98 168 71 95 80 108 68 59 87

1980 153 86 145 87 107 164 181 192 114 177

1990 182 184 124 146 168 230 254 205 246 257

2000 164 160 196 136 173 163 89 91 219 217

2010 108 144 116 97 102 132

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1151A 1946 to 2015 70 years Series 18

[B] Entire series, effect on correlation ( .591) is:

Lower 1971> -.027 1953< -.024 1986> -.021 2000> -.018 2012> -.014 1962> -.013 Higher 2010 .040 1983 .038

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

1971 +3.1 SD; 1986 +3.3 SD

1151A Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1946 213 211 201 190

1950 244 213 158 116 109 175 141 173 110 110

1960 132 118 134 153 92 100 71 82 70 91

1970 111 169 123 99 122 171 186 165 208 130

1980 200 212 212 127 192 227 339 320 188 178

1990 231 196 179 183 152 202 110 183 185 273

2000 155 148 172 117 105 104 95 86 152 118

2010 71 177 206 138 154 167

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1151B 1946 to 2015 70 years Series 19

[B] Entire series, effect on correlation ( .683) is:

Lower 1953< -.042 1959> -.023 1986> -.017 1999< -.015 1998< -.012 1995< -.011 Higher 2010 .033 1983 .033

1151B Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1946 137 156 112 170

1950 195 194 186 96 105 152 124 179 157 138

1960 130 154 123 131 85 70 78 76 86 101

1970 115 89 93 63 157 211 253 217 292 210

1980 257 286 272 124 201 261 358 268 189 206

1990 261 263 229 202 198 147 97 125 142 141

2000 104 174 222 176 150 172 98 101 134 119

2010 67 133 144 97 88 148

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1152A 1936 to 2015 80 years Series 20

[B] Entire series, effect on correlation ( .594) is:

Lower 1967< -.117 1988> -.031 2006> -.020 1945> -.009 1986> -.008 1964> -.007 Higher 2010 .038 2000 .030

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

1966 1967 -4.1 SD

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

1967 -6.6 SD

1152A Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1936 3 28 9 11

1940 17 48 111 147 141 149 124 170 168 227

1950 217 209 245 227 157 133 153 159 160 117

1960 163 186 128 137 154 137 152 73 122 142

1970 174 156 154 167 248 241 286 410 398 300

1980 277 298 309 192 252 302 341 298 308 271

1990 240 220 212 191 199 242 191 208 274 262

2000 168 188 211 153 181 196 183 174 225 261

2010 122 225 154 88 128 182

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1152B 1936 to 2015 80 years Series 21

[B] Entire series, effect on correlation ( .659) is:

Lower 2006> -.035 1967< -.018 1968> -.017 1959> -.012 2002< -.011 1948> -.011 Higher 2000 .051 2010 .039

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

1967 -5.4 SD

1152B Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1936 6 28 9 4

1940 47 149 236 239 164 138 120 167 191 216

1950 192 183 183 167 124 105 106 137 181 166

1960 214 209 159 140 121 99 97 53 127 135

1970 139 167 183 183 274 334 296 340 401 366

1980 319 284 353 249 204 247 214 242 209 217

1990 252 296 288 274 302 294 261 268 337 295

2000 190 216 186 131 169 188 200 183 205 258

2010 129 217 129 61 93 222

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1153A 1943 to 2015 73 years Series 22

[B] Entire series, effect on correlation ( .455) is:

Lower 2010> -.051 1996> -.037 1964> -.023 1987< -.021 2011< -.018 1943< -.013 Higher 2006 .050 1983 .041

1153A Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1943 292 295 213 273 313 277 369

1950 308 273 269 346 241 212 186 189 121 71

1960 98 148 126 131 224 161 165 73 118 127

1970 102 120 120 86 291 387 313 345 391 226

1980 290 326 261 103 195 348 379 213 210 234

1990 268 224 305 310 253 277 368 336 435 429

2000 247 249 345 271 208 244 100 210 286 234

2010 196 110 47 92 150 162

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

1153B 1949 to 2015 67 years Series 23

[B] Entire series, effect on correlation ( .472) is:

Lower 2012< -.109 2010> -.025 1964> -.019 1991< -.017 2003> -.016 2013> -.016 Higher 2000 .074 1959 .023

1153B Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1949 506

1950 464 392 308 296 353 316 266 254 178 91

1960 120 176 164 213 287 232 235 121 121 235

1970 250 235 155 122 393 412 411 499 603 426

1980 502 547 388 184 291 473 418 301 202 182

1990 283 236 266 260 215 186 182 213 208 230

2000 139 168 202 237 239 221 148 163 260 241

2010 161 203 57 122 155 189

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1459A 1930 to 2015 86 years Series 24

[B] Entire series, effect on correlation ( .543) is:

Lower 1956< -.064 1989< -.015 1973> -.012 2006> -.011 1968> -.010 2011< -.009 Higher 2010 .041 2008 .019

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

1956 -4.7 SD

1459A Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1930 19 28 35 35 124 107 108 122 95 140

1940 160 264 223 293 271 181 251 303 235 356

1950 316 391 415 360 322 345 176 284 285 279

1960 292 364 334 360 266 278 373 386 323 323

1970 198 103 123 199 243 263 183 180 243 196

1980 215 207 174 125 118 135 100 97 87 68

1990 146 133 96 127 174 178 110 133 114 122

2000 93 115 133 120 131 120 101 72 207 182

2010 50 63 70 64 71 103

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1459B 1927 to 2015 89 years Series 25

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

Lower 1983> -.031 1973> -.023 1971< -.022 1989< -.021 1996> -.016 1960< -.015 Higher 2010 .041 1988 .020

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

1972 1973 4.1 SD

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

1989 -6.7 SD

1459B Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1927 36 32 34

1930 18 22 35 36 88 150 165 181 126 122

1940 174 239 214 262 228 240 287 349 329 469

1950 434 397 378 388 355 308 204 247 316 289

1960 237 331 311 430 258 247 231 303 251 236

1970 255 101 80 240 303 359 253 338 339 301

1980 291 242 234 226 193 174 120 165 82 49

1990 115 153 128 121 127 133 135 160 162 173

2000 87 96 84 76 124 158 57 55 220 279

2010 80 139 129 69 56 126

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1472A 1945 to 2015 71 years Series 26

[B] Entire series, effect on correlation ( .683) is:

Lower 2006< -.018 1983> -.018 2010> -.017 2011< -.013 2012> -.013 1986> -.009 Higher 2000 .040 1996 .015

1472A Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1945 214 207 277 211 251

1950 213 218 179 193 159 163 142 131 117 103

1960 139 118 94 96 113 97 65 53 58 68

1970 89 95 113 125 267 385 338 373 445 350

1980 347 288 355 306 395 372 421 342 282 310

1990 387 382 340 372 301 328 226 263 354 359

2000 194 300 402 307 319 347 134 241 320 321

2010 232 231 326 226 265 297

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1472B 1929 to 2015 87 years Series 27

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

Lower 1988> -.020 1987< -.019 1934< -.019 1961< -.018 1986> -.014 1956> -.012 Higher 2000 .032 2006 .019

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

2006 -5.7 SD

1472B Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1929 11

1930 33 45 29 19 17 46 47 55 39 24

1940 95 290 302 306 344 288 250 249 237 236

1950 245 266 200 223 194 192 202 180 144 114

1960 164 121 107 79 107 96 89 101 53 53

1970 78 74 111 65 239 391 291 287 306 189

1980 239 221 247 198 296 309 374 272 279 246

1990 269 312 320 293 303 306 227 262 297 288

2000 203 243 328 274 293 228 106 175 278 257

2010 167 159 213 125 158 217

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

1475A 1940 to 2015 76 years Series 28

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

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1940 1989 0 -.22 -.08 .01 .14 -.09 -.27 .03 .08 .02 -.06 .28\* .18 .21 .04 .05 .14 .06 -.05 -.07 -.19 -.11

[B] Entire series, effect on correlation ( .559) is:

Lower 1988> -.042 1940< -.020 1952< -.018 1945> -.017 1959> -.017 1956> -.012 Higher 2010 .081 2000 .029

1940 to 1989 segment:

Lower 1988> -.069 1945> -.027 1959> -.023 1952< -.022 1951< -.020 1956> -.020 Higher 1949 .024 1974 .024

1475A Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1940 102 270 322 289 272 281 244 235 226 246

1950 237 163 100 93 102 115 128 86 97 97

1960 103 123 55 93 69 64 68 57 50 64

1970 45 59 62 112 406 432 328 375 404 258

1980 250 247 209 171 234 196 255 255 357 388

1990 403 308 272 170 217 192 139 252 349 368

2000 171 140 142 98 130 141 88 157 210 236

2010 74 188 203 117 180 212

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1475B 1940 to 2015 76 years Series 29

[B] Entire series, effect on correlation ( .596) is:

Lower 1945> -.025 1967< -.020 2004< -.019 2012> -.017 1951< -.012 1957< -.012 Higher 2010 .068 1996 .019

1475B Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1940 47 201 253 310 284 400 350 387 332 452

1950 339 181 133 160 128 140 142 90 110 56

1960 100 116 63 94 64 87 84 40 61 90

1970 84 97 86 82 208 281 158 172 330 280

1980 279 399 367 264 328 401 376 383 285 300

1990 396 291 237 213 239 232 152 246 320 292

2000 187 211 273 219 131 160 135 151 191 176

2010 78 177 210 122 131 123

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1482A 1953 to 2015 63 years Series 30

[B] Entire series, effect on correlation ( .623) is:

Lower 1973> -.025 1959> -.024 2011< -.016 1960< -.016 2013> -.015 1976< -.014 Higher 2010 .075 1983 .030

1482A Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1953 410 343 285 233 281 292 285

1960 204 306 285 184 217 202 214 75 61 64

1970 94 182 209 218 184 281 138 213 293 267

1980 259 222 232 140 206 309 225 314 194 249

1990 264 267 242 232 249 263 164 260 314 344

2000 204 247 292 210 217 264 142 246 357 257

2010 17 125 170 239 249 218

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1482B 1950 to 2015 66 years Series 31

[B] Entire series, effect on correlation ( .558) is:

Lower 2010> -.078 1990< -.031 1950< -.017 2015< -.016 2013> -.015 2011< -.015 Higher 2000 .044 2006 .039

1482B Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1950 514 583 610 466 418 392 365 395 289 206

1960 265 362 268 251 218 208 72 71 29 70

1970 64 72 122 114 188 229 211 282 306 242

1980 282 293 262 145 242 249 257 211 137 209

1990 168 192 195 199 210 202 108 222 293 304

2000 138 199 241 142 187 190 104 188 263 226

2010 203 155 139 186 199 157

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1483A 1936 to 2015 80 years Series 32

[B] Entire series, effect on correlation ( .532) is:

Lower 1959< -.116 1967> -.012 1948> -.011 1996> -.011 1968> -.007 1953< -.006 Higher 2010 .023 1973 .017

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

1958 1959 -4.0 SD

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

1959 -7.1 SD

1483A Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1936 119 76 25 103

1940 171 325 347 364 442 360 335 413 427 372

1950 330 389 316 217 195 232 194 210 235 82

1960 170 183 161 156 136 124 149 197 170 139

1970 138 135 100 33 120 170 241 257 314 191

1980 205 197 167 134 129 166 184 194 166 223

1990 319 352 333 356 344 344 291 282 333 297

2000 181 187 227 155 153 86 64 40 158 159

2010 51 180 115 83 60 76

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1483B 1936 to 2015 80 years Series 33

[B] Entire series, effect on correlation ( .602) is:

Lower 1962< -.070 1973> -.033 1984< -.015 2014< -.012 2000> -.012 1999< -.009 Higher 2010 .039 1988 .019

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

1962 -4.8 SD; 1973 +3.4 SD

1483B Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1936 123 25 16 102

1940 150 398 475 492 420 299 319 383 310 325

1950 403 384 302 268 248 247 185 186 216 174

1960 230 232 102 148 98 127 174 237 153 195

1970 187 207 220 277 276 286 317 226 381 206

1980 245 219 183 112 91 182 144 162 88 122

1990 174 174 189 144 174 155 111 140 177 139

2000 105 95 137 101 168 158 102 90 160 152

2010 38 101 77 37 17 41

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1496A 1936 to 2015 80 years Series 34

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

Lower 2012< -.029 1973> -.020 2003< -.019 1964> -.015 2006> -.013 1948> -.013 Higher 2000 .037 2010 .020

1496A Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1936 64 11 6 30

1940 100 287 376 328 338 219 294 401 378 344

1950 282 318 301 284 260 230 191 231 194 177

1960 252 288 221 244 259 214 148 161 107 122

1970 116 93 129 225 290 385 294 359 507 357

1980 432 421 475 301 403 504 437 438 278 281

1990 297 257 248 235 228 192 126 158 267 273

2000 140 149 189 100 177 164 136 142 221 211

2010 103 215 89 127 152 264

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

1496B 1936 to 2015 80 years Series 35

[B] Entire series, effect on correlation ( .560) is:

Lower 2012< -.075 2010> -.031 1964> -.014 1988> -.011 1959> -.011 1991< -.009 Higher 2000 .070 1983 .018

1496B Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1936 52 14 11 28

1940 87 274 381 356 353 295 291 358 359 384

1950 336 283 257 188 192 139 130 130 141 163

1960 211 228 175 212 224 174 151 137 72 80

1970 70 61 49 42 104 235 260 197 219 113

1980 140 144 198 136 185 300 302 307 273 240

1990 326 273 274 349 362 335 222 269 338 298

2000 132 171 214 138 293 260 196 183 261 232

2010 173 192 72 80 117 152

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1332B 1946 to 2015 70 years Series 36

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

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

1946 1995 0 .06 .14 -.14 .13 -.19 -.09 .02 .01 -.20 -.20 .31\*-.06 .24 -.01 .06 .17 .06 .16 .01 -.24 .08

1950 1999 0 .00 .15 -.16 .18 -.18 -.03 .06 -.09 -.13 -.15 .30\*-.05 .24 .02 .03 .22 .05 .10 -.01 -.16 .08

[B] Entire series, effect on correlation ( .384) is:

Lower 2005< -.083 1973> -.057 1957< -.018 1978< -.015 1959> -.013 1972> -.013 Higher 2000 .063 1983 .030

1946 to 1995 segment:

Lower 1973> -.113 1957< -.033 1978< -.028 1972> -.025 1959> -.024 1976< -.020 Higher 1983 .076 1988 .039

1950 to 1999 segment:

Lower 1973> -.105 1957< -.035 1978< -.030 1972> -.022 1976< -.022 1959> -.020 Higher 1983 .080 1988 .042

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

1973 +5.2 SD; 2005 -5.0 SD

1332B Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1946 117 178 112 157

1950 233 248 165 190 209 227 213 195 236 245

1960 255 255 269 260 242 255 228 286 306 301

1970 313 326 453 611 477 535 245 265 276 246

1980 382 367 299 206 311 408 216 381 239 399

1990 309 376 256 279 287 236 239 253 223 279

2000 160 204 211 168 145 92 121 136 185 128

2010 94 112 72 80 84 101

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PART 7: DESCRIPTIVE STATISTICS: NAMP39\_ACSA\_Corr3-50 11:14 Wed 04 Jan 2017 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 1331A 1934 2015 82 3 0 .772 1.87 4.02 .804 .683 .304 2.52 .503 -.055 1

2 1331B 1934 2015 82 3 0 .710 1.86 3.82 .735 .622 .280 2.56 .437 -.096 1

3 1332A 1950 2015 66 2 0 .384 2.25 4.96 .853 .785 .206 2.53 .480 -.074 1

4 1333A 1913 2015 103 4 0 .601 1.90 4.62 1.080 .774 .330 2.60 .459 -.069 1

5 1333B 1913 2015 103 4 0 .644 1.93 4.88 1.211 .887 .288 2.44 .361 -.012 1

6 1335A 1936 2015 80 3 0 .443 2.24 3.73 .669 .606 .235 2.60 .488 .018 2

7 1335B 1936 2015 80 3 0 .653 2.90 4.08 .705 .340 .221 2.54 .543 -.053 1

8 1336A 1945 2015 71 3 2 .532 1.90 3.69 .759 .741 .251 2.66 .530 -.028 1

9 1336B 1946 2015 70 3 2 .491 1.72 2.71 .613 .618 .241 2.45 .402 -.048 1

10 1337A 1939 2015 77 3 2 .429 1.80 4.26 .737 .657 .290 2.56 .491 .045 1

11 1337B 1944 2015 72 3 2 .443 1.66 3.38 .669 .534 .341 2.60 .504 .047 1

12 1147A 1883 2015 133 5 0 .550 1.27 3.33 .694 .847 .232 2.62 .399 .021 2

13 1147B 1899 2015 117 5 0 .511 1.52 4.01 1.050 .863 .373 2.54 .381 -.026 2

14 1149A 1916 2015 100 4 0 .543 1.76 3.71 .671 .633 .256 2.46 .355 -.014 2

15 1149B 1916 2015 100 4 0 .470 1.63 3.68 .882 .803 .272 2.61 .404 -.018 1

16 1150A 1916 2015 100 4 0 .546 1.80 3.92 .798 .603 .351 2.42 .342 -.027 2

17 1150B 1916 2015 100 4 0 .474 1.75 5.55 .752 .623 .264 2.90 .482 -.045 1

18 1151A 1946 2015 70 3 0 .591 1.59 3.39 .549 .601 .240 2.76 .567 -.025 1

19 1151B 1946 2015 70 3 0 .683 1.60 3.58 .644 .726 .243 2.56 .534 -.027 2

20 1152A 1936 2015 80 3 0 .594 1.87 4.10 .814 .830 .244 2.49 .380 -.046 1

21 1152B 1936 2015 80 3 0 .659 1.93 4.01 .860 .837 .266 2.61 .437 .014 1

22 1153A 1943 2015 73 3 0 .455 2.32 4.35 .951 .685 .288 2.60 .489 -.037 2

23 1153B 1949 2015 67 3 0 .472 2.61 6.03 1.201 .765 .259 2.41 .391 -.069 2

24 1459A 1930 2015 86 3 0 .543 1.87 4.15 1.018 .852 .236 2.62 .390 .013 1

25 1459B 1927 2015 89 3 0 .511 1.97 4.69 1.102 .838 .269 2.61 .460 .054 2

26 1472A 1945 2015 71 3 0 .683 2.46 4.45 1.073 .819 .199 2.47 .380 -.018 1

27 1472B 1929 2015 87 3 0 .581 1.94 3.91 .996 .838 .256 2.53 .420 -.041 2

28 1475A 1940 2015 76 3 1 .559 1.93 4.32 1.038 .778 .261 2.55 .433 -.084 1

29 1475B 1940 2015 76 3 0 .596 2.07 4.52 1.081 .804 .284 2.54 .486 -.065 1

30 1482A 1953 2015 63 2 0 .623 2.29 4.10 .737 .449 .299 2.41 .437 .036 1

31 1482B 1950 2015 66 2 0 .558 2.30 6.10 1.152 .846 .258 2.54 .518 -.072 2

32 1483A 1936 2015 80 3 0 .532 2.07 4.42 1.037 .842 .287 2.43 .293 -.057 1

33 1483B 1936 2015 80 3 0 .602 1.93 4.92 1.053 .814 .316 2.62 .413 -.035 1

34 1496A 1936 2015 80 3 0 .716 2.41 5.07 1.134 .796 .291 2.59 .567 -.064 1

35 1496B 1936 2015 80 3 0 .560 2.04 3.84 .979 .809 .269 2.57 .432 -.037 2

36 1332B 1946 2015 70 3 2 .384 2.45 6.11 1.060 .730 .215 2.62 .452 -.022 1

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Total or mean: 2980 115 11 .559 1.95 6.11 .894 .736 .272 2.90 .441 -.027

- = [ COFECHA N39SMCOF ] = -