Data Questionnaire – Mann et al. (1999) *Journal of Geophysical Research*

(1) **Primary Contact**

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(2) **Title of Data Set**

Supplementary data, code, and information for ‘Long-term variability in the El Niño/Southern Oscillation and associated teleconnections’

(3) **Date of Final Version**

2000

(4) **Abstract**

We analyze global patterns of reconstructed surface temperature for insights into the behavior of the El Niño/Southern Oscillation (ENSO) and related climatic variability during the past three centuries. The global temperature reconstructions are based on calibrations of a large set of globally distributed proxy records, or “multiproxy” data, against the dominant patterns of surface temperature during the past century. These calibrations allow us to estimate large-scale surface temperature patterns back in time. The reconstructed eastern equatorial Pacific “Niño-3” areal-mean sea surface temperature (SST) index is used as a direct diagnostic of El Niño itself, while the global ENSO phenomenon is analyzed based on the full global temperature fields. We document low-frequency changes in the base state, amplitude of interannual variability, and extremes in El Niño, as well as in the global pattern of ENSO variability. Recent anomalous behavior in both El Niño and the global ENSO is interpreted in the context of the long-term reconstructed history and possible forcing mechanisms. The mean state of ENSO, its global patterns of influence, amplitude of interannual variability, and frequency of extreme events show considerable multidecadal and century-scale variability over the past several centuries. Many of these changes appear to be related to changes in global climate, and the histories of external forcing agents, including recent anthropogenic forcing.

(5) **Researchers**

Michael E. Mann (University of Massachusetts, now Penn State), Raymond S. Bradley (University of Massachusetts), Malcolm K. Hughes (University of Arizona)

(6) **Data Access**

FTP

(7) **Additional Information**

None

(8) **Keywords**

Climate, climate variability, global warming, El Niño

(9) **References**

(10) **DOI**

Yes, create one.

(11) **Supplementary Materials**

None

(12) **Additional Points of Access**

None