UNEP/GRID Documentation Summary for Data Set:

Monthly Climate Anomalies (WMO/WCDP)

The source of the Monthly Climate Anomalies is the Climate System Monitoring (CSM) Bulletin of the WMO/World Climate Data Program (WCDP), published on a monthly basis; but usually with a three-month (or longer) time lag. The CSM Bulletin contains information on global climate, regional and anomalous climate events, and analyses of various climate indicators.

The actual maps of climate anomalies, both precipitation and temperature, are included at the beginning of the CSM Bulletin as A-4 (8" by 10") page sized global maps in the Mercator Projection. These maps are based on reports from approximately 2500 observing stations for a minimum of 26 or 27 days over a given monthly period; they are produced at NOAA's Climate Analysis Center in the U.S.A. GRID digitizes these paper maps, transforms the projection to Plate Carree (Simple Cylindrical, or a particular form of Equirectangular), and converts the resulting vector maps into a one-half degree latitude/longitude grid cell (raster) format. This spatial resolution not only matches many other GRID-held global data sets, but is also deemed appropriate according to the scale of (1:200,000,000) and lack of detail found in the original maps.

The Monthly Precipitation and Temperature Anomalies are each portrayed on separate monthly map as shaded polygons depicting regional-sized areas where anomalies were estimated to be within the driest/wettest 10% or coldest/hottest 10% of climatological occurrences. Countries with insufficient data for analysis are also indicated.

The GRID-digitized maps are available since January 1985 (until December 1990 at present) in both a generic raster and an ARC/INFO vector format. The data files have an origin of 180 degrees West longitude and 75 degrees North latitude, and extend to 180 degrees East longitude and 60 degrees South latitude (i.e. they cover the entire world longitudinally, but only 135 degrees of latitude). Raster maps come in 270 row (line) by 720 column (element/pixel/sample) arrays, and thus comprise 194.4 Kb. per data file. Cold/dry polygon anomalies have a d.n. value of one (1), and hot/wet polygon anomalies have a d.n. value of two (2) in all data files. A global coastlines template is also available to serve as a locational overlay for all of the Precipitation and Temperature Anomaly data files.

Precipitation Anomalies

The precipitation anomalies are portrayed on each monthly map as shaded polygons depicting regional-sized areas where precipitation anomalies were estimated to be within the wettest 10% or driest 10% of climatological occurrences. Countries with insufficient data for analysis are also indicated. The following descriptive paragraphs are taken from original map margins and reproduced here:

"The anomalies on this chart are based on approximately 2500 observing stations for which at least 27 days of precipitation observations (including zero amounts) were received or estimated from synoptic reports. As a result of both missing observations and the use of estimates from synoptic reports (which are conservative), a dry bias in the total precipitation amount may exist for some stations used in this analysis. This in turn may have resulted in an overestimation of the extent of some dry anomalies.

In climatologically arid regions where normal precipitation for the one month period is less than 20 mm. dry anomalies are not depicted. Additionally, wet anomalies for such arid regions are not depicted unless the total one month precipitation exceeds 50 mm.

In some regions, insufficient data exist to determine the magnitude of anomalies. These regions are located in parts of tropical Africa, southwestern Asia, interior equatorial South America, and along the Arctic Coast. Either current data are too sparse or incomplete for analysis, or historical data are insufficient for determining percentiles, or both. No attempt has been made to estimate the magnitude of anomalies in such regions.

The chart shows general areas of one month precipitation anomalies. Caution must be used in relating it to local conditions, especially in mountainous regions."

The GRID-digitized maps are available since January 1985 (until December 1991 at present) in both a raster and ARC/INFO vector format. The data have an origin of 180° West longitude and 75° North latitude, and extend to 180° East longitude and 60° South latitude (i.e. they cover the entire world longitudinally, but only 135 degrees of latitude). Raster maps come in 270 row (line) by 720 column (element, sample) arrays, and thus comprise up to 276.5 Kb but normally 194.4 Kb per file. Dry precipitation anomaly polygons have a value of one, and wet precipitation anomaly polygons a value of two. A global boundaries 'template' is also available to serve as a locational overlay for the anomaly polygons.

Temperature Anomalies

The temperature anomalies are portrayed on each monthly map as shaded polygons depicting regional-sized areas where temperature anomalies were estimated to be within the warmest 10% or coldest 10% of climatological occurrences. Countries with insufficient data for analysis are also indicated. The following descriptive paragraphs are taken from the original map margins and reproduced here:

" The anomalies on this chart are based on approximately 2500 observing stations for which at least 26 days of temperature observations were received from synoptic reports. Many stations do not operate on a twenty-four basis so many nighttime observations are not taken. As a result of these missing observations the estimated minimum temperature may have a warm bias. This in turn may have resulted in an overestimation of the extent of some warm anomalies.

Temperature anomalies are not depicted unless the magnitude of temperature departures from normal exceeds 2.5°C.

In some regions, insufficient data exist to determine the magnitude of anomalies. These regions are located in parts of tropical Africa, southwestern Asia, interior equatorial South America, and along the Arctic Coast. Either current data are too sparse or incomplete for analysis, or historical data are insufficient for determing percentiles, or both. No attempt has been made to estimate the magnitude of anomalies in such regions.

This chart shows general areas of one month temperature anomalies. Caution must be used in relating it to local conditions, especially in mountainous regions."

The GRID-digitized maps are available since January 1985 (until December 1991 at present) in both a raster and ARC/INFO vector format. The data have an origin of 180° West longitude and 75° North latitude, and extend to 180° East longitude and 60° South latitude (i.e. they cover the entire world longitudinally, but only 135 degrees of latitude). Raster maps come in 270 row (line) by 720 column (element, sample) arrays, and thus comprise up to 276.5 Kb but normally 194.4 Kb per file. Cold temperature anomaly polygons have a value of one, and hot temperature anomaly polygons have a value of two. A global boundaries 'template' is also available to serve as a locational overlay for the anomaly polygons.