U.S. MOPEX Data Set – DVD Contents

1. 6hr_MAP

This directory contains 6-hr mean areal precipitation data for 438 US MOPEX basins. The data were compiled for 4 6-hr periods on a local 24hr clock and for 4 6-hr periods on a 12z-12z clock. The date in each data record is the date at the end of the 4th 6hr period. In the case of the local 24hr clock, this is date corresponding to 2400 hrs on the day all of the precipitation was observed. In the case of the 12z-12z clock the date is the date at 12z at the end of the 4th 6-hr period.

The data units are in mm/6-hr

1.1 local_24hrs

This directory contains 6-hr MAP data for a local 24-hr clock in two different formats.

1.1.1 ascii

These files contain one record per day. The data items are:

- Year
- Month
- Day
- Precipitiation amount – period 1
- Precipitiation amount – period 2
- Precipitiation amount – period 3
- Precipitiation amount – period 4

1.1.2 std_card

This directory contains files in NWSRFS standard card format. The data are the same as in the ascii directory. This format is explained in the NWSRFS user manual that is available at http://www.nws.noaa.gov/oh/hrl/nwsrfs/users_manual/htm/xrfsdocpdf.php

1.2 z12_z12

This directory contains 6-hr MAP data for a 12z-12z 24-hr clock in two different formats.

1.2.1 ascii

These files contain one record per day. The data items are:

- Year
- Month
- Day
- Precipitiation amount – period 1
- Precipitiation amount – period 2
- Precipitiation amount – period 3
- Precipitiation amount – period 4

1.2.2 std_card

This directory contains files in NWSRFS standard card format. The data are the same as in the ascii directory. This format is explained in the NWSRFS user manual that is available at http://www.nws.noaa.gov/oh/hrl/nwsrfs/users_manual/htm/xrfsdocpdf.php

1.3 Basin_Boundaries

This directory contains basin boundary coordinates (lat,lon) for the points on the basin boundary for each of about 1800 MOPEX basins. Many of these basins are very small and do not contain enough precipitation gages to compute a very accurate MAP value. The boundary coordinates were derived using a 15 arc second DEM that is part of the NWS National Operational Hydrologic Remote Sensing Center's IHABBS system. More about this can be found at http://www.nohrsc.noaa.gov/gisdatasets/

1.4 Basin_Characteristics

This directory contains 2 files and several subdirectories. The two files are:

- allrfc1861.gls – a list of the USGS station ID's and the gage locations of all 1861 potential MOPEX basins
- allrfc438.gls – a list of the USGS station ID's and the gage locations of the 438 MOPEX basins with MAP estimates

Each record in the *.gls files contains the following items:

- USGS ID
- Longitude (Decimal degrees East)
- Latitude (Decimal degrees North)
- Drainage Area (Square Miles)
- Required number of precipitation gages to meet MAP accuracy criteria
- Number of gages in total gage window used to estimate MAP
- Avaliable number of gages in the basin
- Ratio of Available to Required number of gages in the basin

1.5 Greeness Fraction

This directory contains 2 files. The readme file has a brief explanation of the data. The other file contains monthly greenness fractions (in percent) for each month of the year for each of the 438 MOPEX basins.

1.6 Hydrologic Ratios

This directory contains 2 files. The readme file has a brief explanation of the data. The other file contains values of 3 hydrologic ratios for each of the 438 MOPEX basins. The ratios are:

- Annual precipitation/annual potential evaporation ratio
- Annual runoff/annual precipiation ratio
- Annual evaporation/annual potential evaporation ratio

1.7 NDVI 5wk Gradients

This directory contains a readme file with an explanation of the data and a file containing values of the 5wk maximum NDVI difference for each of the 438 MOPEX basins. The reference for this data set is:

> V. Koren, F. Kogan, and C. Barrett, 1997. Parameterization of hydrological model using NOAA/AVHRR data', Adv. Space Res., vol. 19, No. 3, pp 507-510. Pergamon, PII: S0273-1177(97)00062-8.

1.8 Noah Soils Properties

This directory contains 2 files. The readme file has a brief explanation of the data. The other file contains values of default soils parameters that can be used with the Noah Model.

1.9 PE Adjustment Factors

This directory contains 2 files. The readme file has a brief explanation of the data. The other file contains monthly PE adjustment factors that are used with the Sacramento Model (multiplier for monthly PE estimate to account for vegetation dynamic effects) for each month of the year for each of the 438 MOPEX basins. For more detail see NWSRFS user manual available at http://www.nws.noaa.gov/oh/hrl/nwsrfs/users_manual/htm/xrfsdocpdf.php.

1.10 PE Climate Normals

This directory contains 2 files. The readme file has a brief explanation of the data. The other file contains monthly PE average values in mm for each month of the year for each of the 438 MOPEX basins. The data are derived from data sets described in the following reference:

> Farnsworth, R.K., E. S. Thompson, and E.L. Peck, 1982, Evaporation Atlas for the contiguous 48 United States, NOAA Technical Report, NWS 33, Washington, DC, 26p

1.11 PRISM Precipitation Normals

This directory contains 3 files. The readme file has a brief explanation of the data. The other 2 files contain basin average PRISM precipitation statistics for each of the 438 MOPEX basins. One file contains monthly average values in mm for each month of the year. The other contains only the annual value in mm. The data are derived from data sets acquired from: http://www.ocs.orst.edu/prism/

1.12 SAC Parameters

This directory contains 2 files. The readme file has a brief explanation of the data. The other file contains values of default parameters that can be used with the Sacramento Model. See NWSRFS user manual available at http://www.nws.noaa.gov/oh/hrl/nwsrfs/users_manual/htm/xrfsdocpdf.php.

1.13 Soils

This directory contains a readme file as well as several files giving the distribution of soils texture classes in each of the 438 MOPEX basins. The readme file lists the contents of the individual files and includes a table of the soils texture classes.

1.14 Vegetation

The fractional coverage of vegetation type was compiled using two different vegetation classification systems IGBP and UMD

1.14.1 IGBP

This directory contains 2 files. The readme file has a brief explanation of the data. The other file contains fractional coverage of each vegetation type for each of the 438 MOPEX basins.

1.14.2 Umd

This directory contains 2 files. The readme file has a brief explanation of the data. The other file contains fractional coverage of each vegetation type for each of the 438 MOPEX basins.

2 Daily Q 1800

This directory contains a file of daily Streamflow values for each of 1841 USGS gages. Units are cubic feet per second.

3 Documentation

This directory contains a copy of the paper "US MOPEX Data Set" and this file.

4 Hourly_MAP

This directory contains hourly MAP data on a local 24hr clock in the following directory.

4.1 24hr_local

This directory contains a file for each of 438 MOPEX basins with hourly precipitation data in mm. There is a record for each day containing the year, month and day as well as 24 hourly precipitation values in mm. The data are on a local 24hr clock

5 US_438_Daily

This directory contains a file of daily data for each of 438 MOPEX basins. There is a record for each day in each file. The readme file explains the record contents.