Water Resource Associates

A network of consultants in hydraulics, hydrology, groundwater & environmental issues

Project title: **Calculation of Potential Evapotranspiration in SE England**

Summary: Long term records of potential evaporation (PE) are needed to run water resource simulation models of catchment hydrology. This project involved use of published data to generate long series of key climate data and develop a method of predicting monthly PE sequences from 1918 onwards at any site in SE England.

Client: Environment Agency (Southern Region) and South East Water Ltd.

Financed by: Client

Period of assignment: 1997 - 1998

Location: South East England

Project Value: £ 9,000

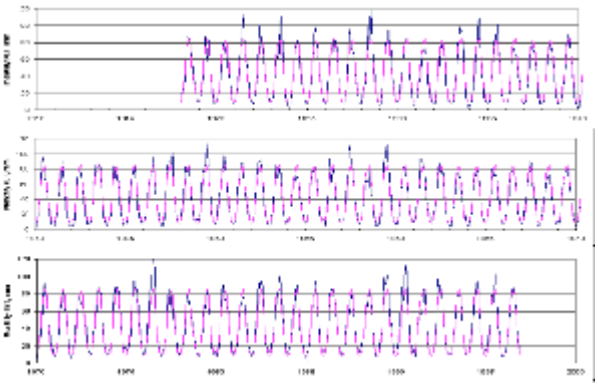
WRA services: £ 9,000

In co-operation with:

Project Area

Background

Assessment of water resources requires understanding of how water is made available, in streams or underground, for abstraction. Key to this understanding are the processes by which water, having arrived as rain or snow, is used by plants or evaporated directly. When mathematical models of these processes are used to reproduce long term records of river flow, they need equally long term records of the climatic variables affecting evaporation. The clients wished to develop a consistent method of using such data to create a synthetic record of monthly potential evaporation at any location in their region.



PET at Tunbridge Wells

monthly totals (blue) and long term average (purple)

Scope of work by Water Resource Associates Ltd

The work involved:

- transcription (to computer spreadsheet from the published 'Monthly Weather Report') of temperature, sunshine, humidity and wind data for stations in the region (1918 to date)
- checks for consistency between sites and for problems with measurement
- establishment of relationships, for each month of the year, between each variable and two location parameters (altitude, distance from coast)
- using such relationships, together with long records at key sites, to generate long records at any site
- produce a computer program for the above and to compute, using Met Office MORECS 2 principles, potential evaporation sequences

Results

The study resulted in the hand over of long term records at 10 key sites and in a computer program (PENSE) for generating the same at any site.

Project Number 000008

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