FEH Method

Estimating QMED from catchment descriptors

QMED is used as the index flood in the Flood Estimation Handbook. "QMED is formally defined as the middle ranking value in the series of annual maximum floods, where the annual maximum series comprises the largest flow observed in each year."

The FEH catchment descriptor methods are applicable to catchments no smaller than 0.5 kms (50 ha).

The accuracy of QMED calculated from the above catchment descriptors may be significantly improved through data transfer from donor catchments. This technique is described in detail in FEH volume 3, chapter 4.

Input Variables

Site Location

Click the dotted button to import the FEH rainfall details. The Open FEH Details box will appear. Find the file which was exported from the FEH CD and open it.

Area

Catchment Area (km²) (Converted to ha)

SAAR

Standard average annual rainfall 1961-1990 (mm). This can be loaded in by selecting the Map button and choosing the Site location.

SPRHOST

Standard percentage runoff derived from HOST soils data.

BFIHOST

Baseflow index derived from Hydrology of Soil Types (HOST) soils data.

URBEXT

The extent of urban and suburban cover. Either select the 1990 or 2000 values if available or simply enter a user-defined value. Please note that the year 2000 values are only available if using the FEH CD-ROM Version 2. If values for 1990 or 2000 are zero, please check the values as they may not be available from the FEH data.

FARL

Index of flood attenuation due to reservoirs and lakes.

> *Note that these values are also imported from the details from a .csv file as created by the FEH CD-ROM software package.*

Output Variables

QMED rural (l/s)

The median annual maximum flood in the as-rural state is calculated using the following formula (equation yields m³/s):

QMED urban (l/s)

The median annual maximum flood is calculated using the formula below (equation yields m³/s):

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Note if the urbanisation is to be increased and this is measured manually in accordance with the FSR (method 1 above) then the proposed URBEXT can be estimated from: