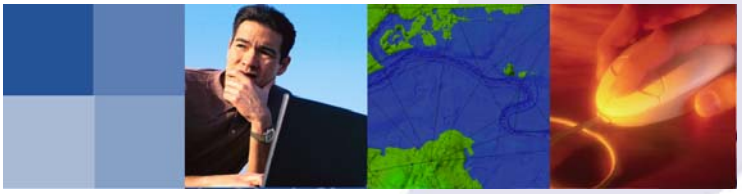
AquilaDSF

Decision support for river basin development



The Aquila Decision Support Framework (AquilaDSF) is a software system providing users with the capability to investigate the environmental and socio-economic impacts of changes in the quantity and the quality of flows in a river system brought about by changing circumstances within the river basin.

AquilaDSF provides a powerful analytical basis to understanding the behaviour of the river basin and thus to making appropriate planning decisions on how best to manage its water and related natural resources.

The AquilaDSF system is designed to support multiple users on a LAN through use of a shared database, the Knowledge Base, which can accept a wide variety of data formats. It facilitates managing and sharing of observed and modelled datasets for the river basin and provides advanced time-series analysis tools for hydrological analysis. Currently the available tools are as follows:

The AquilaDSF provides links to other software including:

- SWAT
- IQQM
- ISIS
- MDSF
- DeltaMapper
- ESRI products
- Microsoft Office

Recent projects using AquilaDSF include:

- Mekong Water Utilisation Project
- River Lee broad scale modelling

Time Series Plotting

- Viewing of time series data
- Calculation of temporal means, moving averages and residual plots
- Overlaying and lagging of datasets
- Data quality reviews

Probability Exceedence

- Production of multiple probability-exceedence (e.g., flow-duration) curves.
- Production of multiple percentile distribution curves.

Low Flow Analysis

- Extraction and analysis of discrete low flow events, flow reversal events or steady flow (stagnation) events within a temporal record

Flood Event Analysis

- Extraction and analysis of discrete flood events within a temporal record
- 'Annual Flood Frequency' analysis, using GEV and EV1 distributions with a variety of plotting positions

Unit Hydrograph Derivation

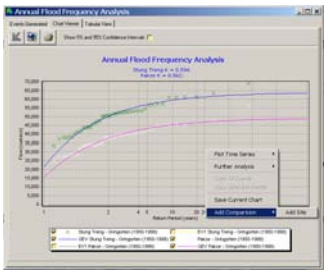
- Generation of a unit hydrograph from observed / catchment average rainfall and observed flow data

MQUAD

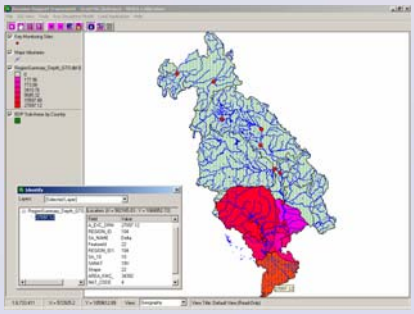
- Calculates catchment averaged rainfall

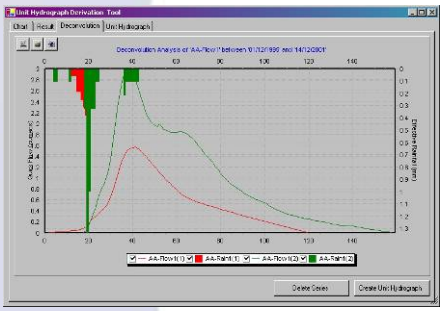
Spatial Analysis

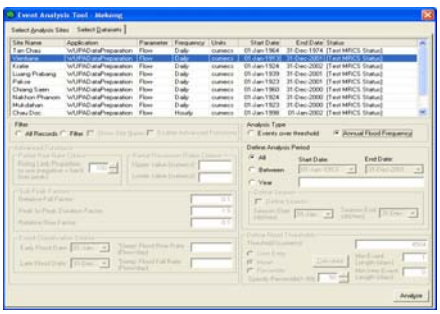
- Flood depth and duration
- Salinity contours and duration grids



Data within the AquilaDSF and its associated analysis tools can be displayed spatially, as XY charts or in tabular format.







All of the AquilaDSF analysis tools enable the comparison of multiple records and the production of charts suitable for use in report writing. The AquilaDSF main map view also enables basic analysis of spatial datasets. Further spatial analysis can be provided through direct links with the Halcrow DeltaMapper software module or via easy export to GIS systems such as ArcGIS.

The AquilaDSF has been designed as a modular suite of tools that is readily extendable through the development of additional time-series and spatial impact analysis tools

For further information about the AquilaDSF please contact:
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