

# 16 KFlows Display

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## KFlows Display

KFlows is a very specific module that is applied to monitor target flows over a water day at a specified site. In NFFS the model is applied only for Thames region. The KFlows display is the front end (user interface) of the KFlows module. The KFlows module may be run without an active connection to the network or even a Master Controller.

In principle the KFlows module in NFFS replicates the behaviour of the KFlows module set up in CASCADE (Thames region) with the following minor differences:

- the running mean excluding tidal influence has not been implemented in the NFFS version.
- the NFFS version will perform the calculations if less than two hours worth of data is available. A warning message will be issued if this happens

KFlows can be used in two working modes:

- *Current day mode*  
This is the 'forecasting mode'
- *Historical mode*  
This mode allows the user to view flows and trends of previous water days

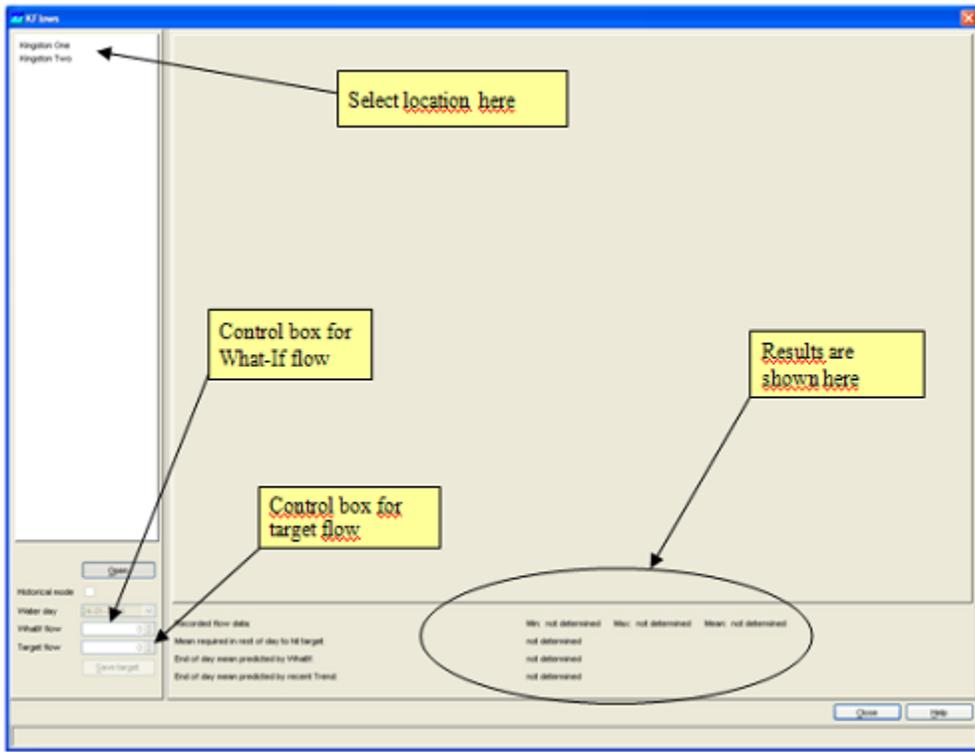
## KFlows Calculations

The KFlows module performs the following calculations:

- First the average of the last 8 observed values (last 2 hours) is determined.
- This average (the current trend) is used to extrapolate the observed timeseries for the whole water day
- From this time series a running mean is determined that is displayed in the graph
- The end of day mean is determined and (in case of the workflow) stored in a daily timestep series
- The display can also use a what-if scenario for the rest of day flow. It then determines the amount of water needed to reach the target flow

## Current day mode

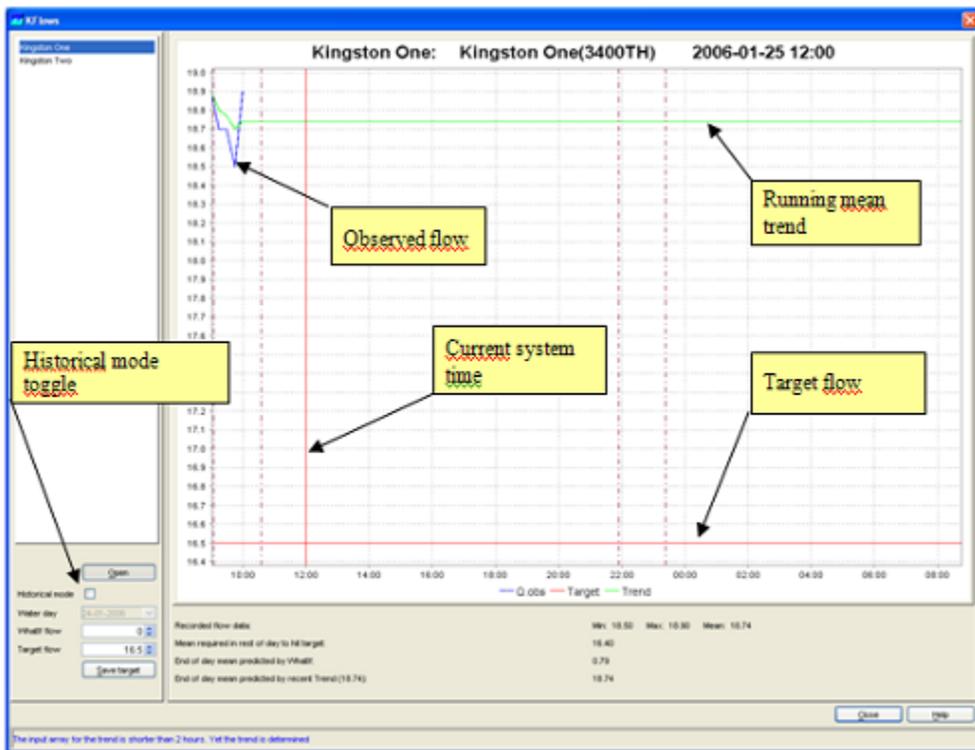
After opening the selected gauge the module will get the data and perform the calculations. If not enough data points (the number of points used is presently fixed at 8) are present between the current time and the configured start of the water day the calculation will use less points and a warning message will be printed in the status bar.



Using the controls on the bottom left part the target flow and the what-if flow for the rest of the day may be adjusted. After adjusting any of these, the calculations will be updated immediately.

The periods with tidal influence (these are based on the Astronomical Highs and Lows) are shown as fine dashed vertical lines.

The save target button allows the user to save the target flow for that day. Saved target flows are used in the historical mode of the display.



Historical mode

The historical mode can be selected using the historical model toggle. After selecting this toggle the drop down box can be used to select a specific water day. The display will show recorded flow, target flow and the running mean trend for that day.

