



Surface Water



Water Quality



Hydrology



Dam/Hydropower



Ecology



Meteorology

accessing innovative calculation and visualization tools for faster, efficient analysis and collaboration

Water data managers are optimizing their analytical capabilities to identify insights, produce compliance reports, and make actionable recommendations from the volume and complexity of information.

They can quickly evaluate the accuracy and consistency of data collected over long periods of time more conveniently with KISTERS' data analytics platform.

Pre-programmed functions calculate an array of trend analyses using a variety of methods like linear, polynomial, exponential, sigmoidal -- allowing mean changes to be determined for any user-defined period of time. Run any operation for a specific time period on a given time series or set of time series. Any point in time can be selected as a reference point in addition to the start and end of the period of investigation.

"OCWA staff find WISKI 7 extremely easy to use. We are impressed with its outstanding graphing and calculating engines. It has more than satisfied our needs, and I look forward to a continued collaboration with KISTERS."

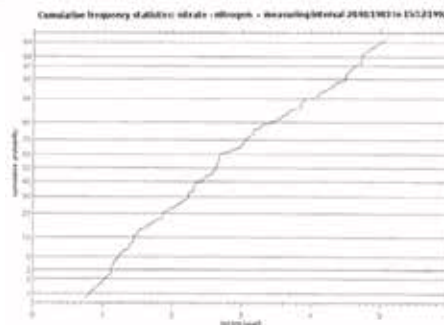
-- **Cindy Spencer**, Special Projects Manager
Ontario Clean Water Agency

Frequent Operations

- Cumulative Frequency Analysis
- Double Mass Analysis
- Duration Curve Analysis
- Frequency Distribution
- Long-Term Statistics Ranking
- Overlaid Plot

Cumulative Frequency Analysis

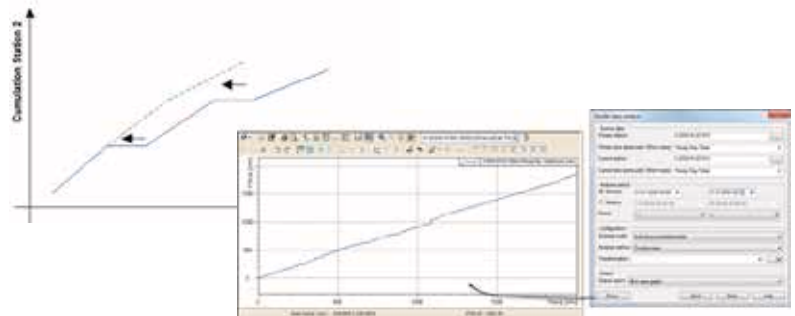
Visualize how often a certain phenomenon occurs below or exceeds a certain value. Determine how likely an event might occur in the future based on past frequency.



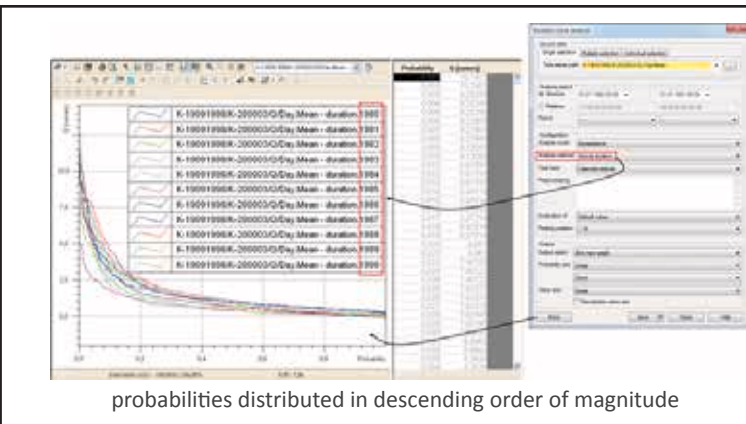
probability of nitrate concentration falling below a certain value

Double Mass Analysis

Check measured values for consistency and homogeneity. Account for changes in data collection protocol by comparing observations from different sensors assigned to the same GIS coordinates or information from neighboring gauges. Double mass plots validate data when monitoring procedures are modified. A straight line indicates that both time series are affected to the same extent by the same trends.



Plateaus in the graph reveal a need for correction to the data.



probabilities distributed in descending order of magnitude

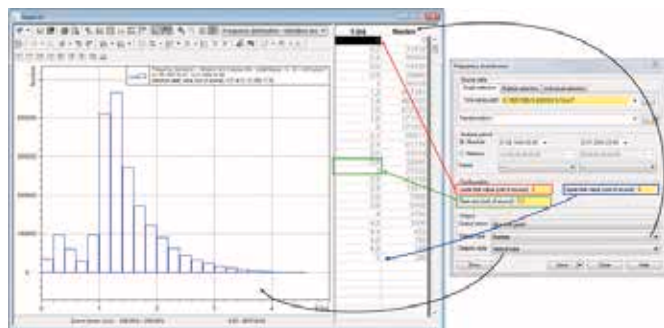
Duration Curve Analysis

Graphically presenting the distribution of time series values efficiently reveals the probabilities for exceedance or non-exceedance of a particular value. Data managers can evaluate the return period of extreme events using a variety of methods:

- Annual Duration - line calculated for every year
- Long Term - probabilities calculated for a full data set
- Mean Annual - average of the annual duration lines is estimated

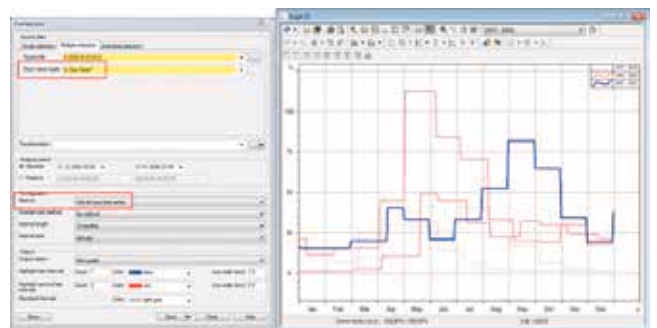
Frequency Distribution

Partition the value range from the source time series into classes, to calculate the number or percentage of values in respective classes. Users can specify upper and lower limits as well as class size.



Overlaid Plot

Visually compare observations such as discharge measurements by simultaneously overlaying time periods of a time series. For example, analyze rainfall or snowpack from every January within a time range of 10 years.



Long-Term Statistics Ranking

Sort values of any parameter in ascending or descending order. Determine percentage deviations when comparing ranked and long-term values. Commonly reported metrics:

- Highest instantaneous flows for the last 10 years
- Highest daily mean flows for the last 5 years
- Highest flow peaks above a threshold for the last 30 years



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