

KISTERS Australia News

July 2017

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From The GM's Desk

By Bill Steen, General Manager, KISTERS Pty Ltd

At the end of June, I attended the farewell of Joe Caruana. As many of you know Joe was the General Manager for Hyquest Solutions [formerly Hydrological Services or commonly referred to as HS]. Joe has been with HS for 42 years and commenced sweeping the factory floor as an apprentice fitter and turner. Over the 42 years Joe has witnessed many changes in the water industry and progressed through HS to eventually become an owner, General Manager and Director.

I remember meeting Joe at the end of 1979 or possibly early 1980 when I started as a young Hydrographic Assistant, which was 38 years ago - boy how time flies! HS is an Australian hydrological equipment manufacturing icon. The original founder of HS, Des Sherlock who also attended Joe's farewell, started the company back in 1968 around the same time Peter Heweston got involved in the management of time series data.

Des originally developed the HS or Sherlock Pressure Sensor using the Forced Balance Principle. I remember these units well. The department I worked for, New South Wales Water Resources Commission [formerly WC&IC], had a lot of the Sherlock systems in the field. As time and technology has progressed the Sherlock Pressure Sensors were replaced by the HS40 Air Force Series II Gas Purge Compressor Constant Bubble System, which eliminated the necessity of carrying down the large dry nitrogen cylinders which could weigh over 70kg.

It was a very emotional farewell for Joe and KISTERS wishes Joe all the best in his retirement.

Bill Steen
General Manager
KISTERS Pty Ltd



KISTERS User Group Meetings

KISTERS Australia User Conference 2017 in Canberra

The Australian KISTERS User Group meeting will be held this year in Canberra on September 13 and 14, at the Hellenic Club in Canberra City where we have held it before. The address is 13 Moore St, Canberra ACT 2601. The cost will be \$638 including GST. A registration form has been distributed with this newsletter, or you can download one from <https://www.dropbox.com/s/p6v3ijizv91b5hf/KUG%202017%20Australia%20Registration.docx?dl=0>.

There will be a couple of themes for this year's conference, for which we are seeking user presentations.

The first is 'Hitting The Target'. Every agency puts together their monitoring program in response to a mix of requirements from government and other interested parties. How do you put the targets together, and how do you measure against them? How do you confirm that subcontractors are delivering what they should? We would be keen to receive presentations on network management, contract management and reporting, limit setting, data auditing, data validation and correction, etc.

The second is 'Data Interchange'. There are many ways in which agencies exchange data, ranging from direct telemetry feeds, file pushes via FTP, web service calls, web scraping, etc. Additionally we often need to exchange site information, ratings, gaugings, sections etc. Formats include WDTF, WaterML, XML, CSV and proprietary formats. Transport mechanisms include FTP, web services, web downloads. Different mechanisms for data provision put the load on different parts of the supply chain - for example providing a web service is to write a blank cheque in terms of potential peak load on the web server. In addition there are many philosophical difficulties when exchanging coded information - let's not even start the debate about quality codes for example!

We will be talking in detail about the release of Hydstra V12, which will be available before the User Group Meeting. In fact you can download a beta test version now - see [below](#) for details.

A representative from the Bureau of Meteorology will outline the release of the new rainfall intensity analyses for the whole of Australia, which you can access at <http://www.bom.gov.au/water/designRainfalls/revised-ifs>.

Please contact Peter Heweston on 02 6154 5218 to discuss your ideas for a presentation, or for suggestions on topics you would like to see addressed.

KISTERS North America User Conference 2017 in Sacramento

The KISTERS North America User Group meeting will be held in Sacramento on August 28 and 29 at the Embassy Suites, Sacramento Riverfront. Please download your copy of the [Invitation](#) and [Registration Form](#). Contact Becca Fong for more details (Becca.Fong@kisters.net).

Water Regulations 2008—March 2017 Amendment

The Australian Bureau of Meteorology has announced more amendments to the Water Regulations 2008. The amendments come under Category 5 (water usage information) and Category 7 (urban water management), and simplify the amount of reporting required. The details of the amendments can be found at <http://www.bom.gov.au/water/regulations/amendments/amendments2017.shtml> but in summary, data needs be submitted to the BOM annually in summary form.

Electricity Market in Australia

By Song Guo, Business Development Manager, KISTERS Energy Portfolio

Australia is currently experiencing an electricity network transformation in order to accommodate more renewable energy and microgrids for a greener and cheaper energy future. On the one hand, this is due to the fast uptake of rooftop solar panels and energy storage systems at residential level. Recent research discovered that 50% of Australian residents (including myself) have the intention to install rooftop solar panels and/or battery storage in their home. On the other hand, to speed up the progress of achieving our carbon reduction target, the grids are also endeavouring to

retire coal-fired power plants, connect more renewable generation, and implement pumped hydro storage and battery systems. Recent statistics released by Australia Clean Energy Council in the picture below have shown that our government and industry have been investing heavily on a clean energy future for Australia since the beginning of 2017.



Moreover, the state of the art microgrid and virtual power plant (VPP) solutions are under discussion and investigation, as they are believed to be key players in any future electricity network in Australia. As one of the most sparsely populated countries with more than 8 million people living away from major capital cities, reliable electricity supply from the main grid is very expensive. Microgrids and VPPs have the potential to resolve this issue effectively. However new market mechanisms and settlement rules have to be developed within the next two years to accommodate these new solutions.

Although the associated policy and new technology applications towards our targets are always a few steps behind here, the direction of the future is certainly very clear. In June, I attended Australian Energy Storage Conference in Sydney. The conference not only included energy storage topics but also covered microgrids, VPP and the enabling data analytics technologies. As a technology enabler, KISTERS is closely monitoring the market and development trends in the Australian energy industry. Apart from communicating with distributors, generators and retailers, we are also actively seeking collaboration with renewable generation companies, pumped hydro storage companies, grid scale battery providers and potential demand response aggregators to expand our local capacity. In addition, we have started working with universities such as Australian National University to identify research opportunities to contribute our knowledge to this energy revolution in Australia.

Hydstra Product News

Hydstra V12 Release Plan

We plan to release Hydstra V12 before the US User Group meeting in late August. In preparation for the release we have started putting Beta Test versions of Hydstra 12 up on our release web site (<http://kisters.com.au/downloads.html>) from time to time:

Latest downloads

Hydstra

v11.00 2017/06/16 [release](#) 439 MB

[patch](#) 145 MB

[change log](#)

[instructions](#)

You MUST always run HYPATCHUP.BAT after patching!

[unblock](#) all downloaded zip files **IMPORTANT!**

Hydstra V12 Beta

If you wish to play with the beta version please contact support for an updated V12 HYACCESS.INI. Please only use the V12 beta for testing purposes, under no circumstances should you go live with it until the final release is announced.

We will be talking in detail about V12 at the US and Australian User Group meetings, but the following points should outline some of the more important changes:

- New Delphi compiler XE6 should mean faster access to SQL Server data
- Support for HTML, PDF, CSV and XLSX outputs from many programs, such as HYDAY and HYFLOW
- Site id extended to 20 characters everywhere
- Time-series data in a single file, no index files any more
- Multiple log offsets in rating tables for US clients
- Help documentation distributed as HTML files
- Web services support CSV returns for some calls
- Synchronising datasource for accessing data from external web APIs
- HYCANVAS framework for processing GoCanvas field data submissions
- Reporting of site-based HYGIENE failures to region or site owners
- Significant refresh of the Hydstra/WEB look and feel. Please contact Denby Angus for assistance in upgrading your Hydstra/WEB site.
- We invite you to explore our demonstration V12 Hydstra/WEB portal at <http://13.55.110.236/web.htm> and give us your feedback, especially about the new flat design style.
- Hundreds of individual program enhancements

It is worth noting that when Hydstra V12 is released, support for Hydstra V10 ceases. If you are still running V10 please plan to upgrade soon. Hydstra 10.04 was released in August 2012, some five years ago, and 10.3 was released in September 2010, some seven years ago. Much has changed since then, both in our world, but more importantly in the Windows hardware and software world. For example Hydstra V9 will not run under 64-bit Windows.

If you have any suggestions for table changes for Hydstra V12, now is a good time to talk to us. Once V12 is released table structures will be largely frozen for the duration of the release.

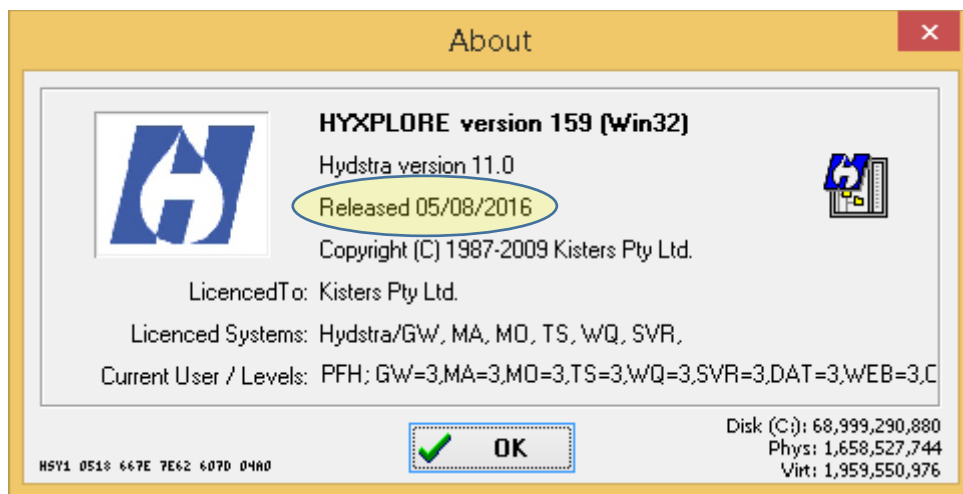
Hydstra V11 Release

Hydstra Version 11 is the current supported stable version of Hydstra, and is available for download from <http://kisters.com.au/downloads.html> . You will need to contact us at support@kisters.com.au for a V11 HYACCESS.INI before you upgrade to it.

A new patch is released every Friday, subject to release procedures completing successfully. An increasing amount of new development is now patched back to the current release, and is explicitly marked in the Change Log as having been patched.

As we slightly relax the rules about what we can and cannot patch, it has become increasingly important that you run HYPATCHUP after installing a new patch. HYPATCHUP is configured to do whatever is necessary, but it may include restructuring and reindexing databases, and without running HYPATCHUP your system may be broken in some areas.

You can find out the date of your current patch by running Help/About from HYPLORE:



The Released date is the date the system was compiled, prior to being tested and packaged up into a patch.

HYPLORE will check if you have run HYPATCHUP and nag you about it if you haven't.

We recommend that you patch your system at least once every few months, as many new features are being continuously released through patches now.

Upgrading from Obsolete Hydstra Versions

Hydstra V9 still continues to run (just), even though it is unsupported. You may have difficulties running the HYDLL on later versions of Windows as it requires registration as an administrator, which is why we introduced HYDLLP.

A more likely problem is that when you upgrade to a 64 bit operating system many old 16 bit utilities in V9 won't run.

However you can put the V9 system on a modern 64 bit Windows 10 machine, on which it won't run, but it doesn't need to run to be upgraded to V10 and then V11.

If you are really stuck in the past you may need to start thinking about creating a 32 bit virtual machine running Windows XP to preserve your favourite legacy apps into the indefinite future.

Open TS files in Offline mode in Data Managers Workbench

There are now two ways in which you can open a TS file in [HYDMWB](#):

Open normally

For work datasources, this opens the file for editing. Other processes and users will not be able to open the file for either reading or editing. SVRIMP will be denied access to the file.

For archive datasources, this opens the file in read-only mode. You will not be able to edit the file, and other users will only be able to open it for reading.

Open offline copy

You will open an offline copy for reading only. You will not be able to edit the copy, and other users will be able to open it for both reading and editing. SVRIMP can continue to update the file while only offline copies are opened.

There is a set of “radio buttons” that control the mode in which you open the file, and a configuration setting that controls the initial startup choice.

This feature will be useful for organisations running a very busy SVRIMP process, where hydrographers frequently use the workbench to check TS files, but only rarely need actually to modify them. Opening a TS file in offline mode will allow SVRIMP to update that file normally.

New CONTEXT output for HYDEBUG

If you send your HYDEBUG output to the special code CONTEXT (instead of a file or “S” for screen), e.g.:

```
Set HYDEBUG=CONTEXT,ALL
```

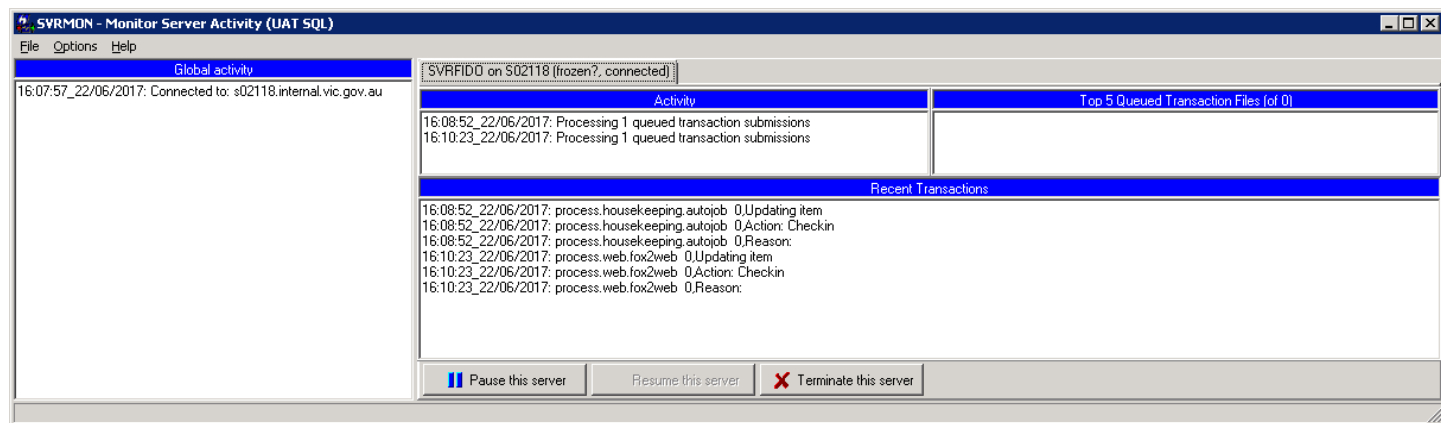
The program will keep an internal list of the 100 most recent HYDEBUG output lines. If that program encounters an exception and terminates, those 100 lines will be written to your HYDLOG file. This may be more useful in cases where you would otherwise produce megabytes of debug output, mostly comprising successful runs, with the “bad” run lost like a needle in a haystack. In particular it can be handy to help debug long-running processes like SVRIMP and SVRUN in the rare situation where they actually crash.

We have also introduced a feature whereby you can turn debugging on and off for the SVRRUN service without stopping and restarting the service. The process involved introducing a file into PTMPPATH called SVRRUN-HYDEBUG.TXT of the form:

```
SVRRUN=debugfile,keywords
TASKS=keywords
```

SVRFIDO runs as a service

SVRFIDO, the process watchdog, can now run as a service just like SVRIMP and SVRRUN, with its output incorporated as another tab in SVRMON.



HYIMPEXP Changes Foreshadowed in V12

In Hydstra V12 we will change the format of files used by HYIMPEXP. In V11 time-series files are moved in native Hydstra/TS file format, and database tables are moved as Foxpro files. In V12 all data will move as text, with TS files in HYEXPORT format, and tables in CSH format.

What this means is that users who exchange data between different systems need to either upgrade together, or take special care. A V12 Hydstra system will not be able to import a V11 export without extra processing.

For the benefit of V11 users who will need to send data to V12 users we have developed a specially patched V11 version of HYIMPEXP, called HYIMPEXP_V12.EXE that produce files in the correct format for V12 to ingest. This is available in patches of V11 after 25/05/2017.

If users are massaging HYIMPEXP files in any way (changing variables, filtering files, etc) during interchange they will need to revisit the processes. Please contact KISTERS for advice.

One by-product of this change is that both the import and export phases of a HYIMPEXP interchange are likely to take somewhat longer because of the conversion back from text to database or TS file format.

WISKI Product News

Release Management and Client Base

The KISTERS customers in Australia/NZ and SE Asia are mainly using the WISKI version 7.4.5 with the latest service release SR10. With that service release the 7.4.5 version is now in the WISKI Vintage stream which means a longer release cycle of every 3 months for further service releases. KISTERS is planning with some customers an update to SR11.

The KISTERS team in Australia started the test of the 7.4.7 WISKI version which especially brings many further functional developments for the water ecology package KiEco and performance improvements for WISKI server. The version will be presented with the new key functions at the user group meeting in September.

In the last month many councils in NZ installed KiEco to replace the existing Ecobase system. With the migration projects training and migration strategies were discussed with each councils. The migration also lead to interest by councils which were not using a DB-based system for their water ecology. The worldwide interest in KiEco also shows that there is not such a system exiting in the water community. The system will be present at the user group meeting in more detail.

Also the KISTERS water portal is gaining more and more interest by our users. We recently started a project with Seqwater utilising the water portal for the tailored usage of dam operation and management. Additionally, KISTERS is doing a proof of concept for Yarra Valley Water integrating different data streams from SCADA, GIS and operational data for an intelligent alarming portal application. The water portal update will also be part of our user group this year.

Support Email, Help Desk and Bugzilla

Contacts for the WISKI team at KISTERS in Australia:

- Vicky, Chris, Markus and Callum (web developments) for specialised support for the KISTERS products WISKI, KiWQM, KiEco, KiDSM, KiALM, WISKI Web and KiWIS.
- Phone number for support is +61 2 6154-5200, and the email address is wiski-support@kisters.com.au.

If you are engaging in a particular dialog with Chris, Vicky, Markus or Callum please cc the support box so a central register of issues can be maintained.

Access download portal:

- Download portal can be found under <http://kisters.com.au/downloadswiski.html> , or can be accessed by navigating through to the support page from <http://kisters.com.au> .
- To acquire a username and password to access the download portal please contact the KISTERS support team over the phone at (02) 6154 5200 or email at Wiski-Support@kisters.com.au.

Our download portal is received very well by our customers and is now used by all our clients to download the recent software releases and further information regarding our software.

Water Data Online and what's happening on the web front

Water Data Online (WDO) is our key project utilising our web technology in Australia. In June this year BOM released a new version of WDO. The WDO project is aiming to publish the water regulation data collected by BoM for all agencies and continuously measured parameters. With the new release the water course discharge and storage data for over 30 agencies across Australia is published. The new release includes enhanced functionality like:

- Storage level and volume reports and downloads were added, including a download of the time series shown on the Water Information Dashboard.
- Watercourse Discharge 9am - 9am daily mean time series were made available for download.
- A function was added to download the station list shown on the main window's table tab.
- Rating and Gauging reports were improved: time was added to the Gauging table, quality F data was excluded.
- Daily, Monthly and Yearly summary reports were adjusted to show zero values.

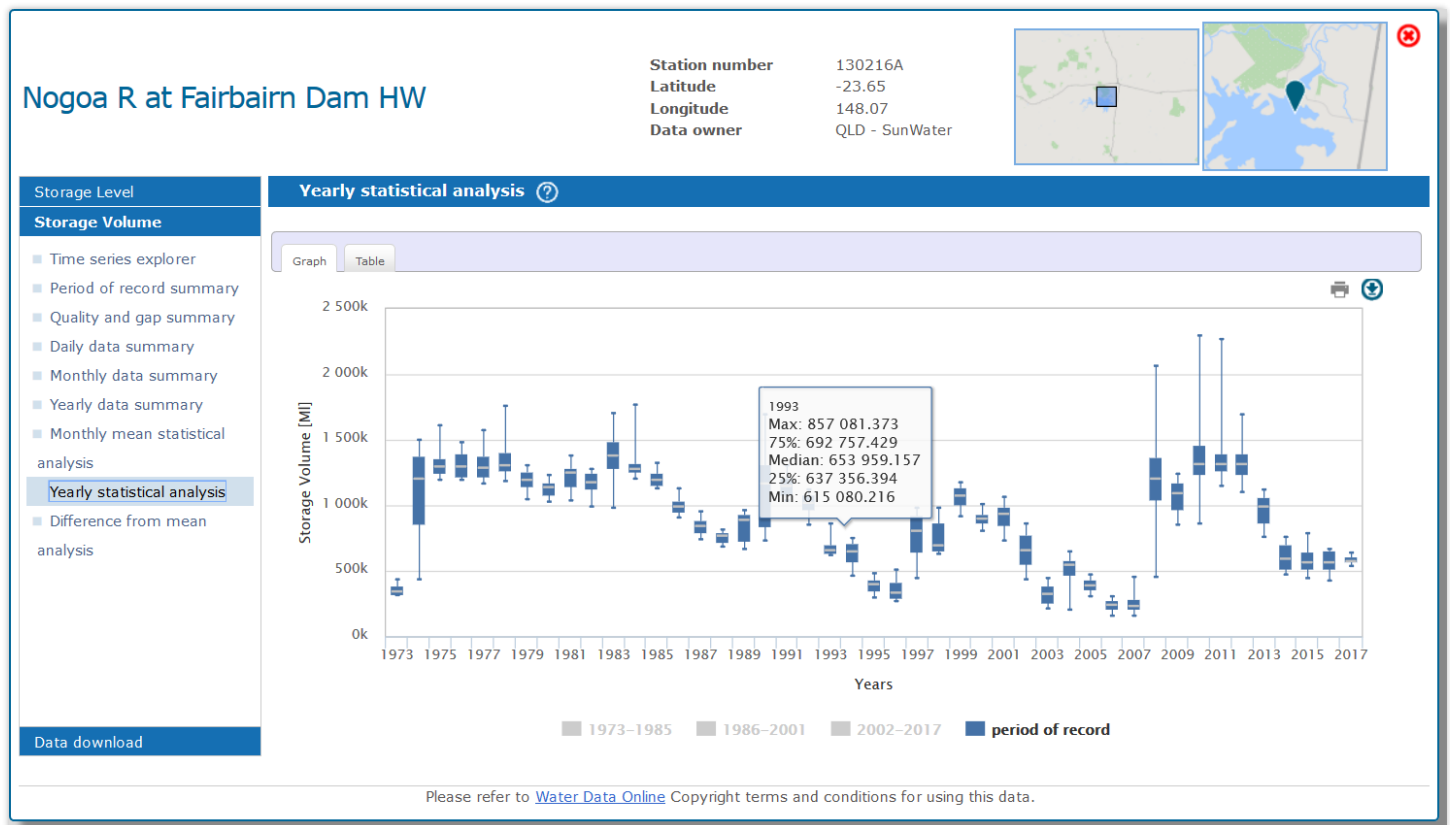
- WDTF download was stabilised.
- The interface for iPad Safari users was improved.

One central comfort function which was included is a download option on the landing page (see blue arrow on the right in the station list below) to easily download the station data of the selected stations. This allows the users very quickly to download the station information for a specific provider, specific parameters or any combination which the data search allows.

The screenshot displays the 'Water Data Online' (WDO) website. The header includes the Australian Government Bureau of Meteorology logo and navigation links. The main content area features a search bar and filter options on the left, and a table of water stations on the right. A download icon in the table header triggers a Firefox dialog box asking how to open the 'TableData.csv' file.

Station name	Station number	Data owner	Latitude	Longitude
Balonne R at Beardmore Dam HW	422212B	QLD - SunWater	-27.91	148.65
Balonne R at Jack Taylor Weir HW				
Barambah Ck at Joe Sippel Weir HW				
Barambah Ck at Silverleaf Weir HW				
Barker Ck at Bjelke-Petersen Dam HW				
Boyne R at Boondooma Dam HW				
Broken R at Eungella Dam HW				
Burdekin R at Burdekin Falls Dam HW				
Burnett R at Claude Wharton Weir HW				
Burnett R at John Goleby Weir HW	136120A	QLD - SunWater	-25.26	151.15

Also, several reports were published for the storage level and storage volume data for over 300 reservoirs in Australia. The storage data in WDO and WISKI is also the underlying data for new Water Information Dashboard BoM released this year.



On the administration side a web-based JSON editor was developed which fully allows to configure the java script configurations of WDO. The configuration includes:

- Selection of the published parameters and reports.
- Configuration of all reports including data and display options.
- Specific data download configuration to define what WISKI time series are published.
- Selection what parameters of a specific provider will or will not be published.

The JSON editor is used by BoM administration staff and allows an intuitive configuration option of the WDO system.

Save changes
Submit

Configuration
Collapse

Station Viewer
Expand

Timeseries Client
Expand

Gap and Quality Mappings
Expand

Data Download
Expand

Data Owner Parameter Exclusions
Collapse
Add item
Delete Last item
Delete All

VIC - Barwon Region Water Corporation (Barwon Water)
QLD - Cairns Regional Council
TAS - TasWater
NSW - Hunter Water
VIC - North East Region Water Corporation (North East Water)
NT - Power and Water Corporation (Power and Water)
QLD - Queensland Bulk Water Supply Authority (Seqwater)

VIC - Barwon Region Water Corporation (Barwon Water)
Collapse
Delete item
Move down

Data Owner Name
VIC - Barwon Region Water Corporation (Barwon Water)

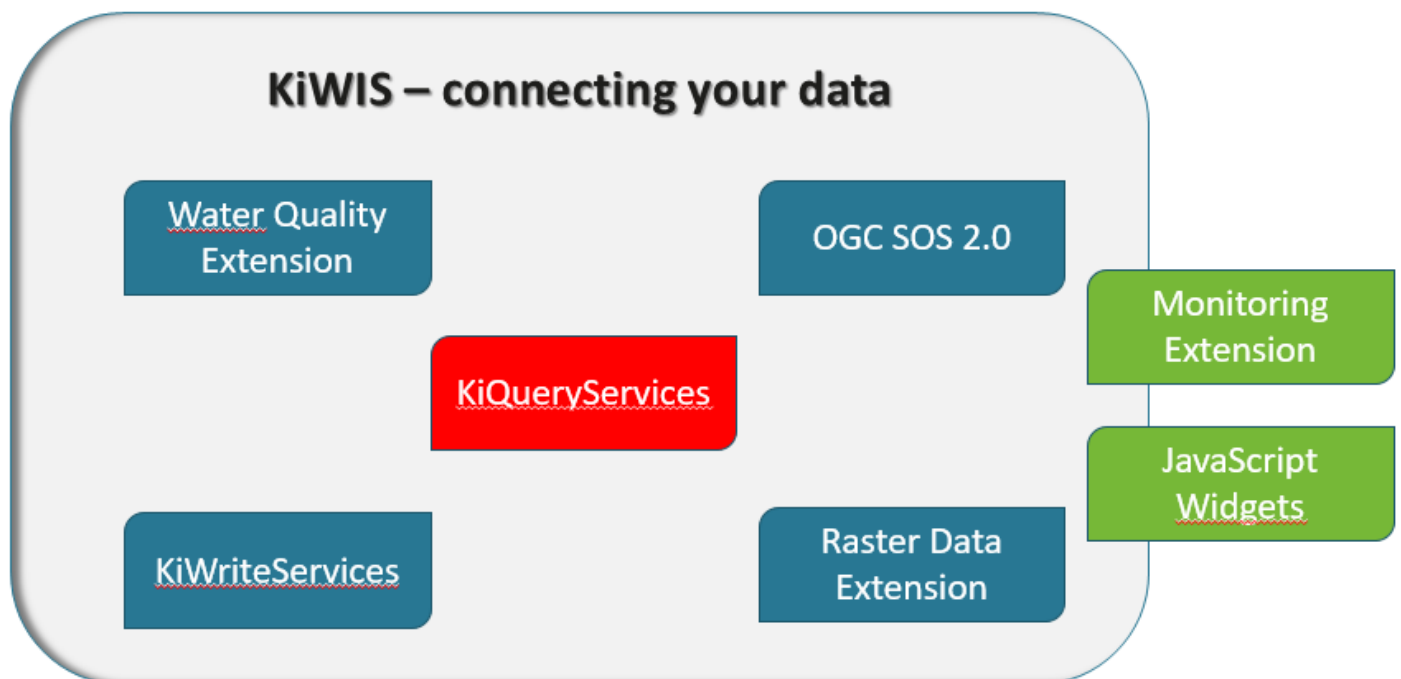
Parameter Type Name
Collapse

row		
	Water Course Level	Delete Move down
	Water Course Discharge	Delete Move up

The WDO concept and the KISTERS widget development emerged over the last year into the water portal development. A first project using the water portal was initiated with Seqwater and will be demonstrated at the user group meeting.

KiWIS – Connecting Your Data

KiWIS is known and used by many of our clients to extract data from our water solutions and as interface to write code against our software. KiWIS often builds in our client environments the internal service layer to feed third party applications or is used in the DMZ to feed data and information to our web applications (like Water data Online at BOM). It is also an important component to connect the KISTERS Water Portal to the KISTERS Water Information Systems. The advantage of using KiWIS is that it is tailored to our Water Products WISKI and Hydstra and manages user authentication and authorisation and offers several caching mechanisms for high performance data requests. There are also additional KISTERS applications build on top of KiWIS like the ‘Java Script Widgets’ and the ‘Monitoring extension. The KiWIS standard version, the additional extensions and the on-top products are introduced below (see overview below).



KiWIS standard version and Open Standards (both available for WISKI and Hydstra):

The standard KiWIS exists of the KISTERS Query Services and works as plain URL calls in the browser to access basic data and time series data from WISKI and Hydstra. The data is retrieved in different formats and different filters are used to customise the responses. It also offers the functionality to dynamically build time series graph images.

The Open Standards extension enhances the standard version with encodings and formats of the Open Geospatial Consortium (OGC) including the Sensor Observation Service as public standard, full support of the OGC Hydrology Profile and time series data in the WaterML2 format. The standard supports SOAP, HTTP POST/XML and HTTP GET/Key-Value-Pair access and plays an important role in national and international data standards like in Australia, in NZ, in the WMO and in the European INSPIRE guidelines.

KiWIS extensions for water quality (sample data) and raster data (available for WISKI):

The water quality and raster data extensions are tailored to the KISTERS water quality and raster data solutions and are enhancing the KiWIS services to integrate time series, sample and raster data (in the future also biological observations) in one solution.

The water quality extension provides additional commands to access sample values and their metadata. It uses an add-on ElasticSearch database as part of the WISKI server distribution to address high performance access to vertical structured data. The extension includes grouping of sample values into virtual time series or histograms, provides filterable virtual water quality station lists and utilises the WISKI time series algorithms library to execute transformations on sample values.

The raster data extension (similar to the WQ extension) gives additional commands and services to access raster time series data. In the case of raster data a harvester is used to move and process WISKI data in a local cache for high performance. The extension provides raster time series via Web Map Service (WMS), uses WISKI colour classifications and provides algorithms to calculate point time series from raster time series.

Write Extension (available for WISKI)

The KiWIS write extension is a recent development and was driven by the requirement to import data from third party systems into WISKI by having the comfort of using the KiWIS framework (user authentication and direct link to the WISKI data structure). Key user are coming from the modelling and forecasting community. Also the write extension allows direct HTTP POST requests over a client or browser extension to harvest data in WISKI. Over the extension data is imported into WISKI time series. The extension supports observation and forecast and ensemble data and uses the same data array JSON format as returned by KiWIS standard and the other extensions.

KISTERS applications build on top of KiWIS (available for WISKI and Hydstra):

Java Script Widgets

Java script widgets are used over KiWIS in many of KISTERS web applications. This can be done over direct KiWIS calls, over KiWIS calls which integrate REST calls (example WDO) or directly over the KISTERS portal framework

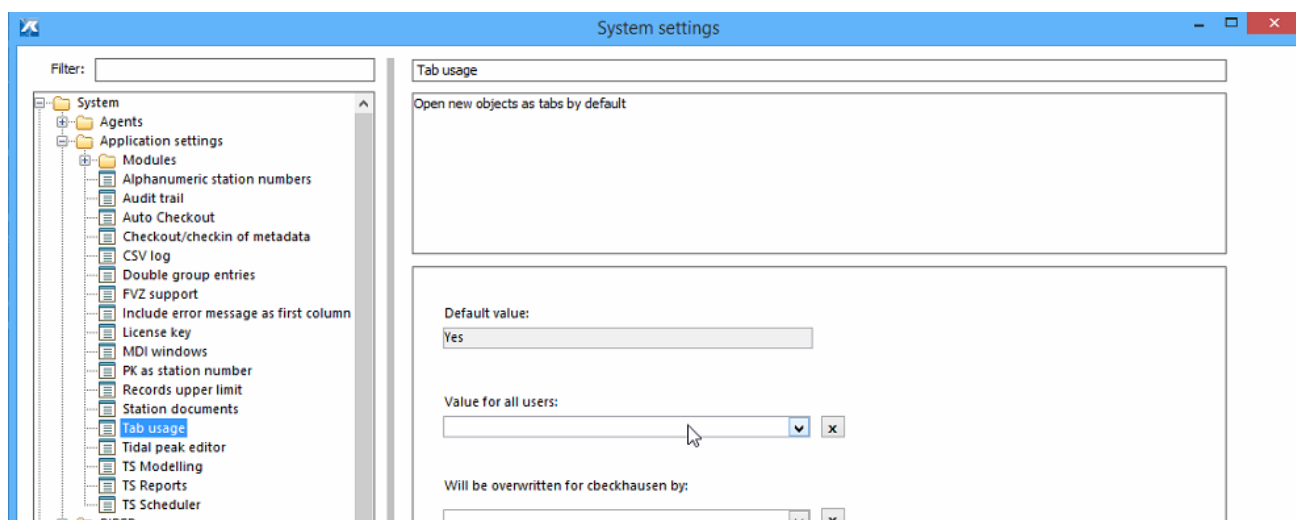
Monitoring extension

The monitor extension was developed to regulate KiWIS API access from users within the internal network or over the internet. The extension logs all incoming requests with specific metadata about the source, the exact call and any KiWIS specific parameters. This allows to completely monitor all incoming and outgoing requests and to restrict these. For the usage and blocking of certain sources a credit system is used.

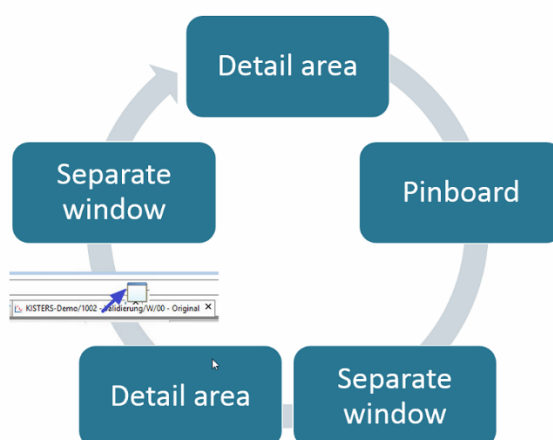
To manage and monitor the request two frontend applications, the ApiManager and the ApiMonitor were developed as part of the KISTERS portal framework. Both have an integrated ElasticSearch backend for high performance. The ApiManager manages individual access types and limits. It registers all clients and referrers by IP and assigns a token based access to KiWIS. The ApiMonitor visualises the individual access types and limits and allows an easy detection of sources that abuse the system. The monitor tracks all load on the system from registered clients or any other accesses.

Graphing – round trip and how to use the graph window

WISKI allows you to specify if a new window (like a graph window) is opened in a new tab or a separate window. That is defined in the system settings (see below).

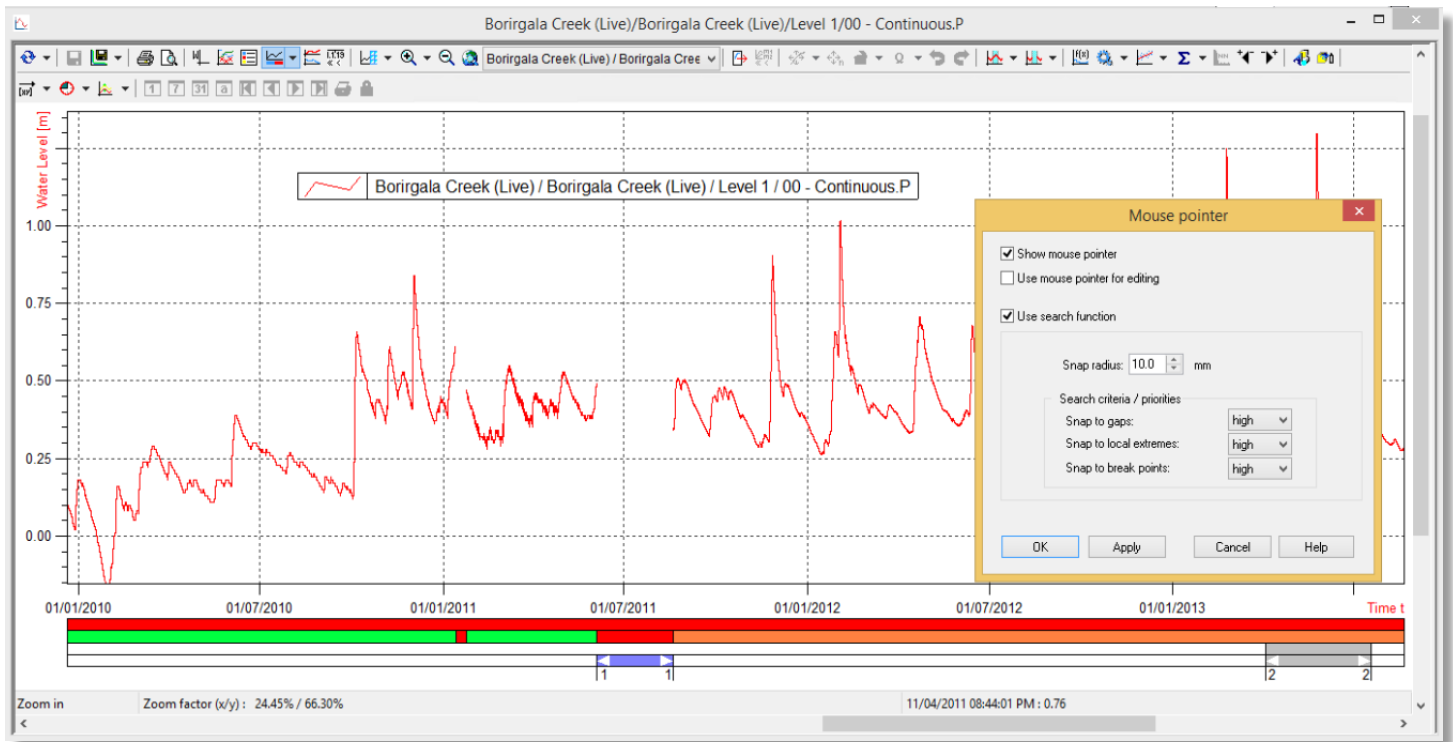


Based on the system setting a new graph will be created in a tab (detailed area) or a separate new window. Nevertheless, how that is configured WISKI always allows you to move a graph from a detailed area into a pin board or a separate window and back (see roundtrip of a graph below).



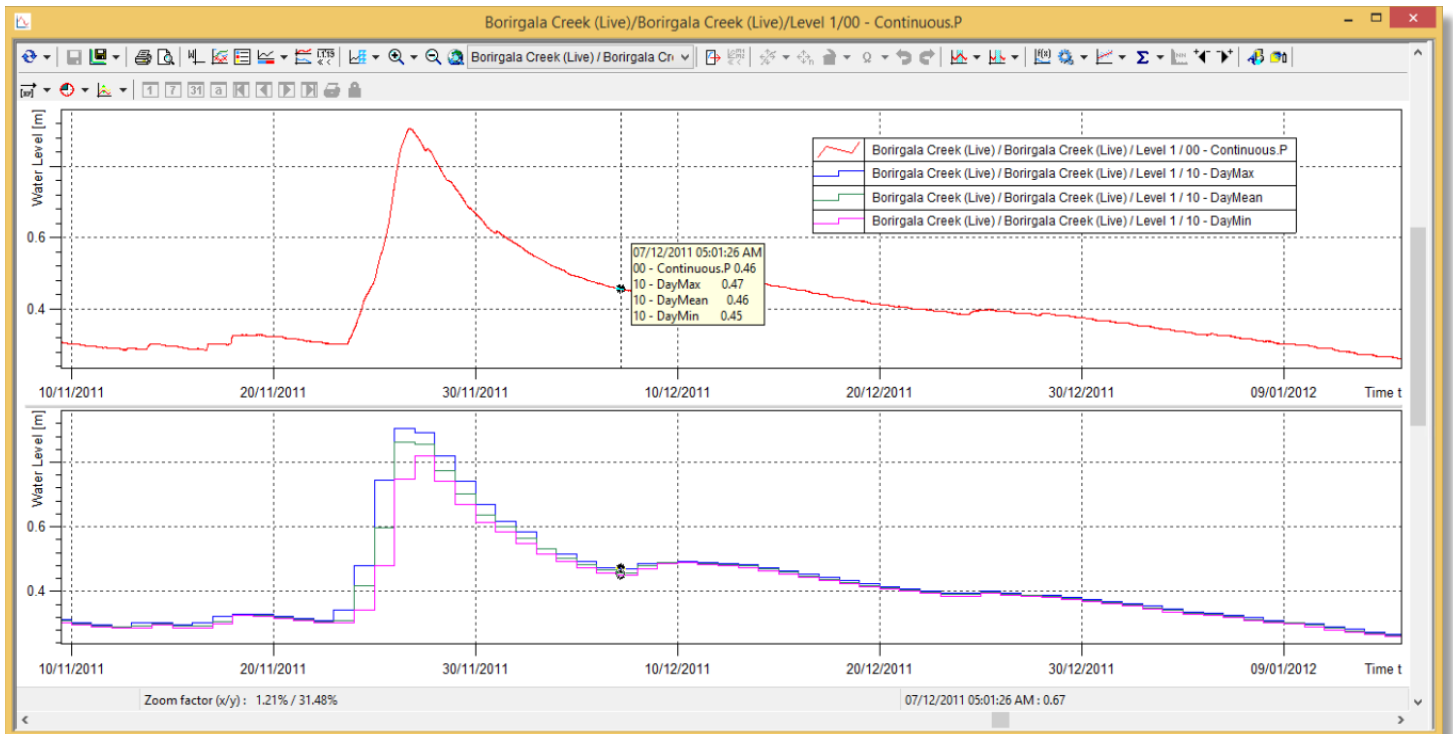
Graphing – using mouse pointer to identify gaps, local extremes and break point easily

The graph settings have a function 'mouse pointer' which can be activated by choosing 'Show mouse pointer'. If the function is selected the 'Use search function' gives the option to define a snap radius to snap to the beginning and end of a gap, to a local extreme (like a min or max value) or to a break point. See activation of settings in screen shot below.



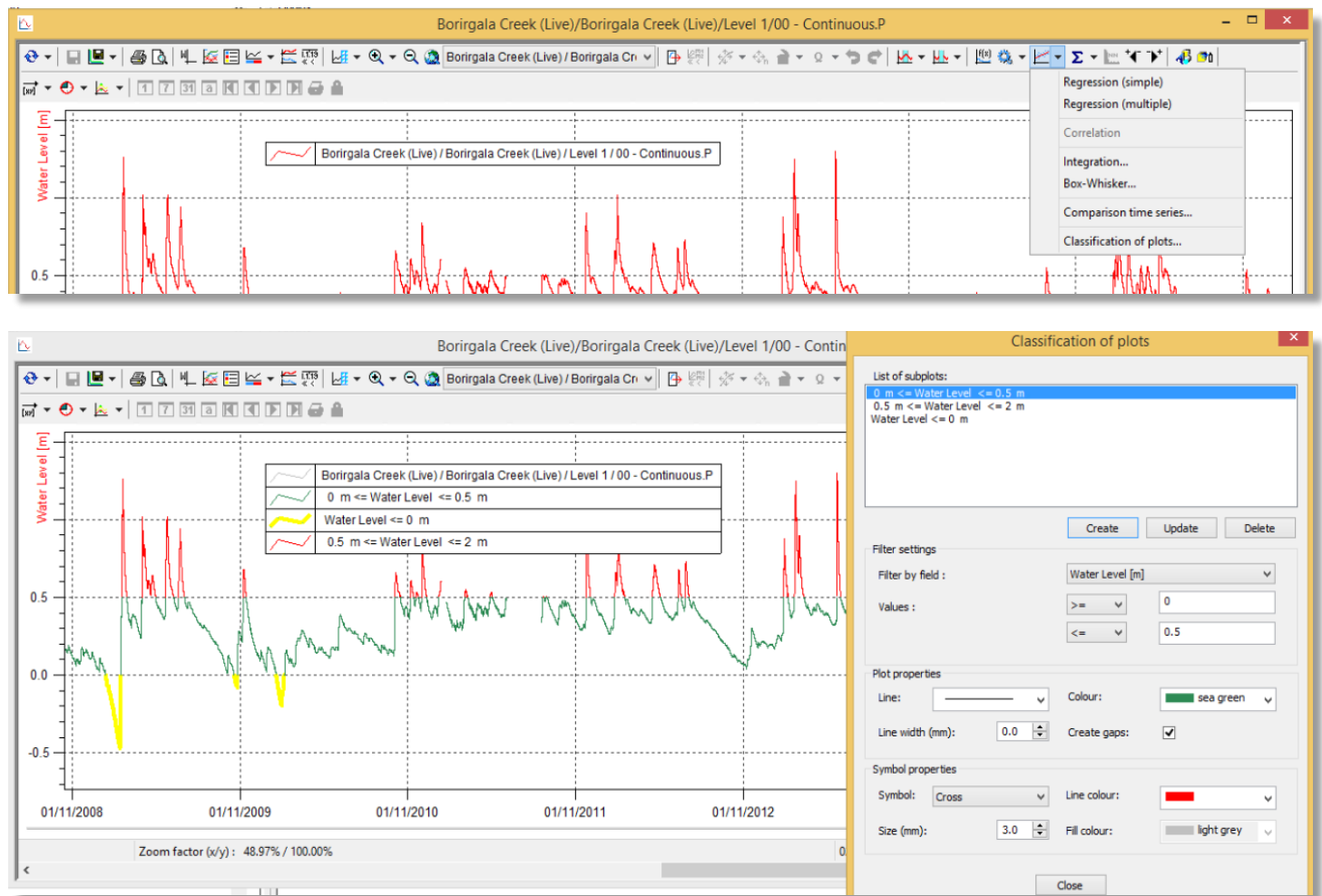
Graphing – activate fly-over

The WISKI graph has the fly-over functionality. This can be activated when you are in the WISKI graph by pressing the <Ctrl> key. The fly-over helps especially in a multi-graph window to identify daily max, min and average values easier. The values are also selected in the graph by a dotted vertical line and marked by the standard symbol.



Graphing – classification of plots

The analysis of time series allows with the functionality 'Classification of plots' an easy way to classify time series and sample data in the graph window (see below).



The steps to create specific classifications are:

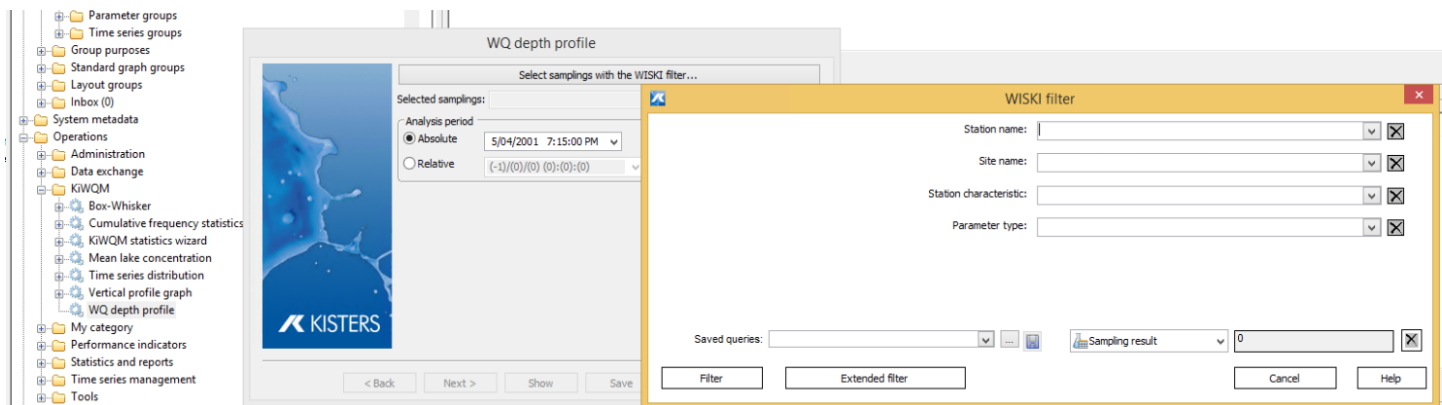
- Define interval (filter settings)
- Define plot properties for filtered interval (also symbol properties are available)
- Select function to create, update and delete a classification

The 'Create gaps' option treats a selection as one time series. The same functionality is available for water quality data.

Graphing – 2D plotting functionality

The operation 'WQ depth profile' allows to create 2D plotting profiles including a time series, tabular and depth profile view. The views can be configured individually and are interactively. The set-up and some use case will be demonstrated at user group.

See below the configuration of the operation and the 2D depth profile of an example.

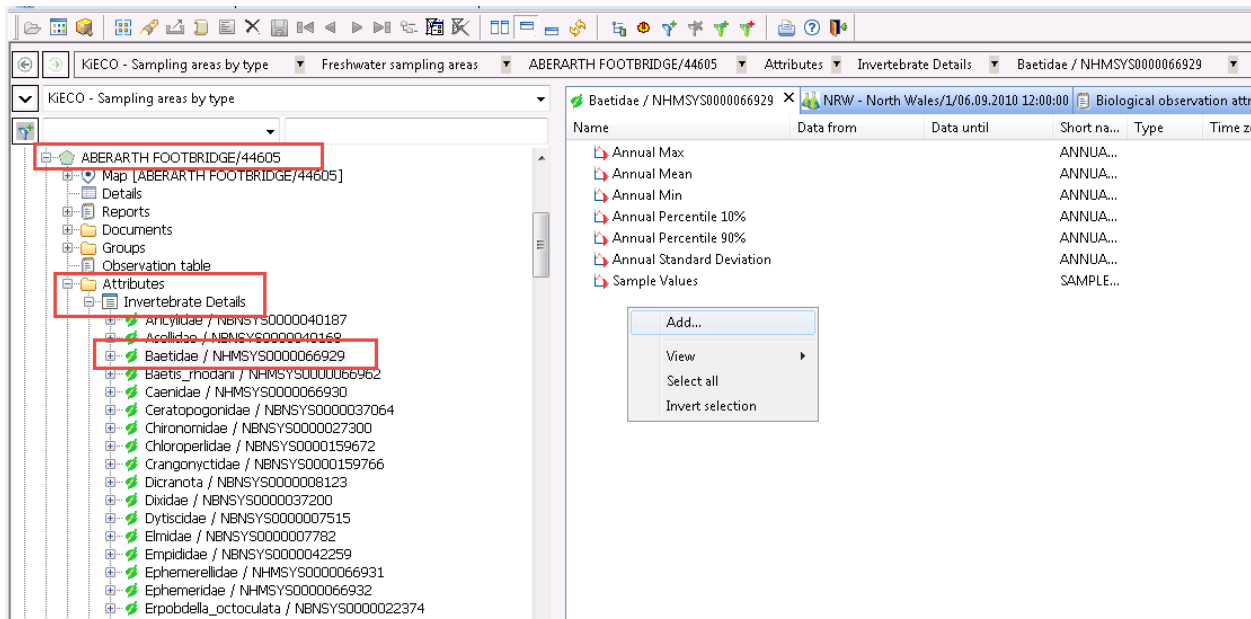


Time Series for Biological Data in KiEco

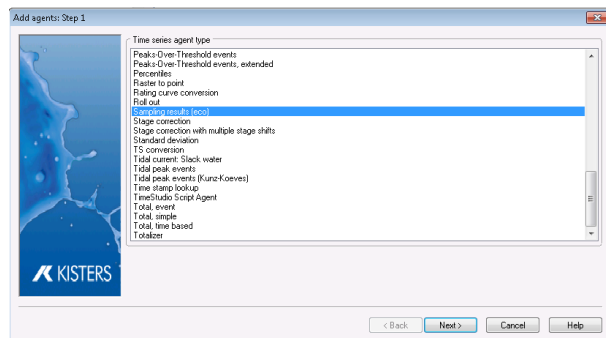
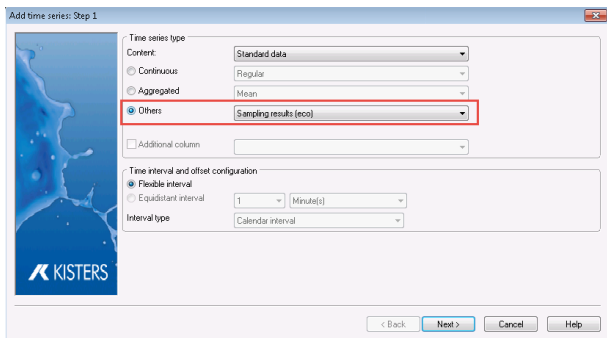
Sampling results (eco) time series

WISKI 7.4.7 SR7 will see the introduction of a dedicated KiEco time series type and agent to give you the ability to create time series from numerical biological observation data. This can be done for simple and complex observation attributes.

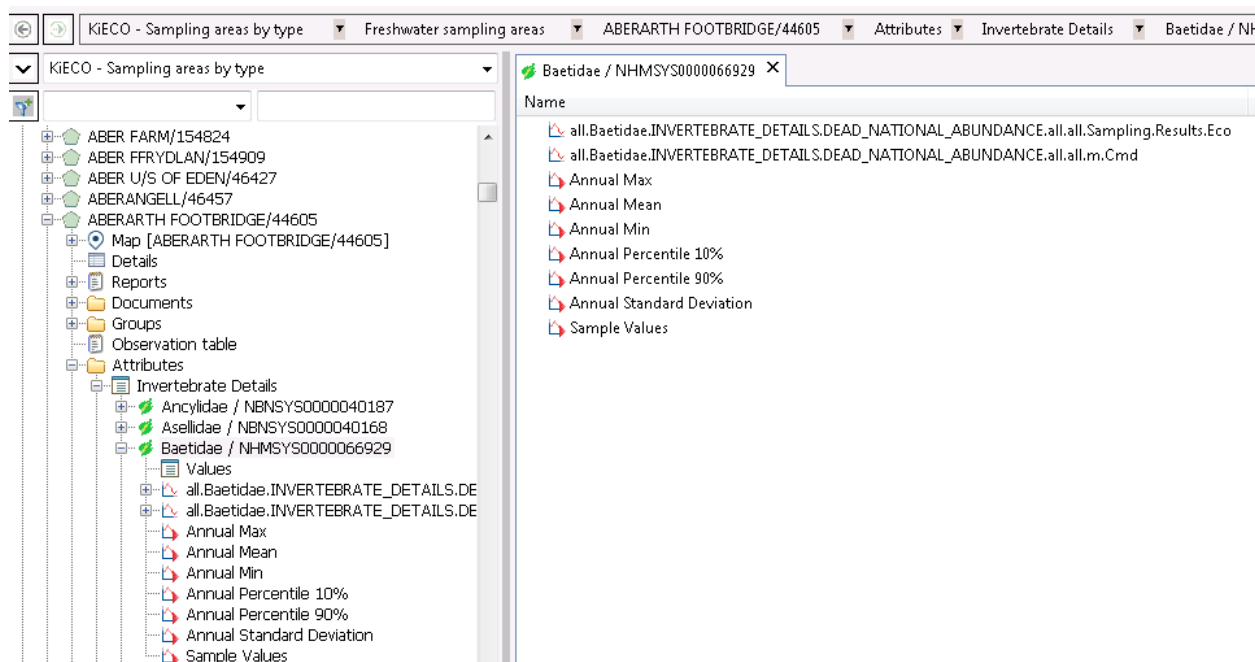
To create a biological time series simply go to a sampling area in the explorer tree and then to the attribute list. Select the observation attribute and observable (taxon) that you wish to create a time series from and right click in the details area and select Add, as shown below:



In the time series wizard select the new Time series type **Sampling results (eco)** and Agent type: **Sampling Results (eco)**



Your newly created time series will then be listed under your selected attribute and taxon and can be viewed and utilised as you would any other time series in a graph or as source for derived time series.



EcoSampleValues data source

Data sources are light weight, non-persistent time series that can either be generated via an operation – or integrated into the explorer and to which you can instantly apply transformations e.g. Mean(Day), Maximum(Month) etc.

There is a KiEco data source that can be used to visualise numeric observation time series. It has the following format:

```
ECOSampleValues(bymeasprog,<measuringprogramshortname>,[<studyareano/samplingareano>],<parametertypeshortname>,<attrshortname>[/<attributecolumnshortname>],[<areano>,<spotno>])
ECOSampleValues(all,[<studyareano/samplingareano>],<parametertypeshortname>,<attrshortname>[/<attributecolumnshortname>],[<areano>,<spotno>])
```

For example:

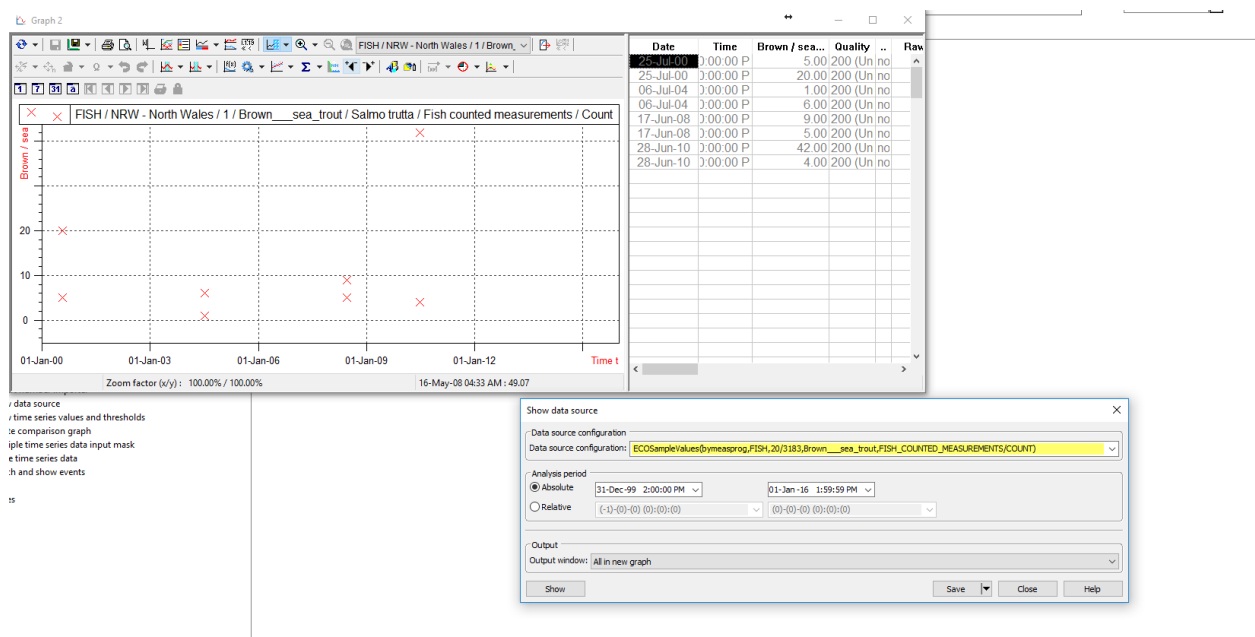
```
ECOSampleValues(bymeasprog,FISH,20/13897,Brown_sea_trout,FISH_COUNTED_MEASUREMENTS/COUNT)
```

Will produce a time series for the Measuring Program: FISH, Study Area: 20, Sampling Area: 13897, Attribute: FISH_COUNTED_MEASUREMENTS, Value column: COUNT for all spots and all attributes.

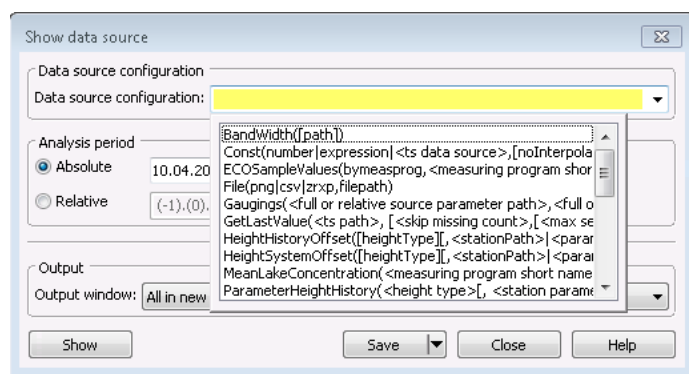
To produce a time series from a data source go to :

System View > Operations > Tools > Show data source

Enter your data source configuration, select your time range and select either: All in new graph or All in new Table and click on Show



TIP: to show all available data sources simply press <CTRL><ENTER> in the data source configuration field:



Please contact WISKI support if you require any further information about configuring KiEco time series.

Worldwide KISTERS News

You can keep up to date with all the news from KISTERS worldwide through the following links:

<http://www.kisters.eu/news.html>

<https://www.kisters.net/NA/news/>

KISTERS On the Web

KISTERS technology is at the heart of an increasing number of customer web sites, whether they be based on Hydstra or WISKI web technology or their own web developers. You can visit a selection of client web sites via the link page at <http://kisters.com.au/webpublishing.html>.

If your web site uses KISTERS software please contact us with the URL and we'll add it to the list.

Staff News

By Peter Heweston

Over the last few years my mobility had been gradually getting worse and worse as osteoarthritis ate away at my knees, to the extent that even traversing a major airport was a painful ordeal.

In late March I bit the bullet and signed up for a dual total knee replacement. After some minor initial setbacks the final outcome has been nothing short of amazing. I can walk significant distances without pain, and have even purchased a bicycle (with electric assist I confess) to take in some of the wonderful bike paths that Canberra has to offer. Truly I have received a new lease of life, with the only downside being more annoyance passing through airport security!



KISTERS Training

Training Courses

We are happy to provide training courses on any aspect of KISTERS software provided there are sufficient people interested in attending. Please contact us at support@kisters.com.au with expressions of interest for any training requirements you have. We can provide training at your office or here in Canberra. Training in Canberra is based on a per-person per-day cost, provided we have sufficient people attending (typically six), alternatively we charge our consulting rate divided by the number of attendees, allowing for preparation time and meal costs. Training at your office will be charged at our standard consulting rates per day for the trainer, plus preparation days, travel and accommodation at cost. Courses we can offer include:

- Basic Hydstra
- Basic WISKI
- Advanced Hydstra
- Advanced WISKI
- Hydstra Administration
- WISKI Administration
- Administering Hydstra/WEB
- Hydstra Modelling with MODSYN
- Hydstra/SVR Server
- Ratings and Gaugings with Hydstra
- Exporting data to the BOM using HYWDTF_OUT
- Using Perl with Hydstra
- Groundwater Data Management with Hydstra
- Water Quality Data Management with Hydstra
- KiWQM (WISKI Water Quality Module)
- KiEco (WISKI Biology Module)

Please contact us via support@kisters.com.au if you wish to attend. We will register your interest and notify you when the next course is planned.

Training Schedule for 2017

Upcoming training courses are now published on the KISTERS website at <http://kisters.com.au/training.html>.

The following training courses are currently scheduled for 2017:

Course	Duration	Dates
Basic Hydstra	2 days	17 - 18 October, 2017
Administering Hydstra	2 days	21 - 22 November, 2017

If you are interested in other training or other dates, please email your interest to support@kisters.com.au.

Courses will be held at the KISTERS Canberra office. If you are interested in attending a course please contact us via support@kisters.com.au

Information

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