

# Source User Guide 4.9

# What is Source?

Welcome to Source - an application that can be used for both catchment and river modelling. Source provides a flexible structure that allows you to select a level of model complexity appropriate to the problem at hand and within any constraints imposed by your available data and knowledge. You can construct models by selecting and linking component models from a range of available options.

Source is designed to:

- Support the construction and operation of river models that mimic river behaviour. Water resource systems can be analysed for periods that range from days to many years; and
- Allow you to construct and interrogate water and contaminant transport models to assess the impact of future change, on parameters of interest.

You can build various kinds of scenarios, including:

- Basin planning scenarios,
- River Operator scenarios, which are intended to support day-to-day operations; and
- Catchment scenarios, which are intended to model water quality constituents (eg. salinity).

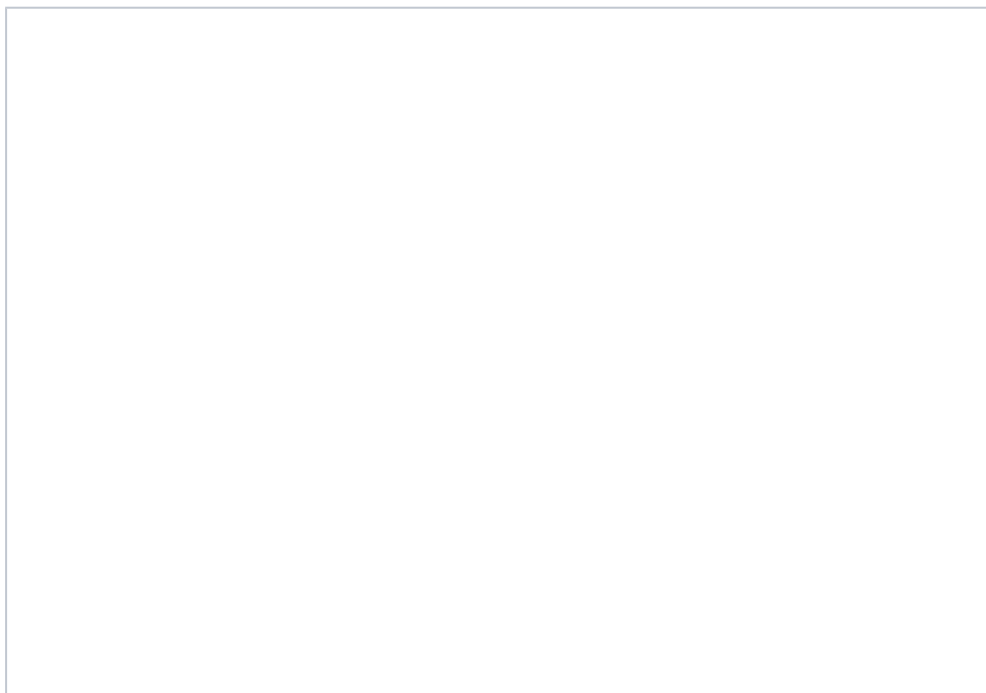
**Note:** There are two versions of Source versions available - a version that allows unrestricted access to all parts of Source, and **Source (public version)**, that provides limited access. Refer to [Source versions](#) for more information on what is available in both.

## Source Training Courses

We deliver Source training packages to provide a structured pathway to proficiency certification in Source Modelling for Industry, Governments and Development Partners. We offers following five tiers of training which will lead towards proficiency certification in the use and customisation of Source:

1. **Fundamentals** in Source Hydrological Modelling
2. **Advanced** Topics in Source Hydrological Modelling
3. Source **Catchment** and Water Quality Modelling Specialist
4. Source **Water Resources** Assessments and Water Sharing Modelling Specialist
5. Source **Customisation** Specialist (for ICT Professionals)

Training can be delivered in a range of formats to suit you, including face to face workshops, online training modules and live webinars. View our [course calendar](#) for upcoming dates,



# Information about Source Training

## Using the Source User Guide

The Source User Guide provides:

- information on operating Source, including specifying catchment geometry, selecting component models, generating river models, running a project and viewing results;
- an overview of the broad concepts underlying Source;
- information on data formats compatible with Source; and
- The Scientific Reference Guide, which provides the scientific background of each component used in Source.

To get started you can choose a topic of interest from the navigation panel on the left, or from the topic links below.

<h3>Getting Started</h3> <p>Information on system requirements, installing and getting support</p> <ul style="list-style-type: none"> <li>• <a href="#">About Source</a></li> <li>• <a href="#">Source versions</a></li> <li>• <a href="#">Download and Installation</a></li> <li>• <a href="#">Fundamental Concepts</a></li> <li>• <a href="#">Acknowledgements</a></li> </ul>	<h3>Scientific and Technical Reference</h3> <p>The Source Scientific Reference Guide (SRG) details the theory behind the software, including scientific provenance, parameters defaults and recommended ranges, relevant algorithms and references.</p>	<h3>Lateral Losses and Gains</h3> <ul style="list-style-type: none"> <li>• <a href="#">Groundwater</a></li> <li>• <a href="#">Loss node</a></li> </ul>
<h3>User Interface</h3> <ul style="list-style-type: none"> <li>• <a href="#">User interface reference</a></li> <li>• <a href="#">Geographic Editor</a></li> <li>• <a href="#">Schematic Editor</a></li> <li>• <a href="#">Tabular Editor</a></li> <li>• <a href="#">Maps</a></li> <li>• <a href="#">Feature Table</a></li> </ul>	<h3>Adding Flow</h3> <ul style="list-style-type: none"> <li>• <a href="#">Inflow node</a></li> <li>• <a href="#">Gauge node</a></li> <li>• <a href="#">Rainfall runoff models</a></li> <li>• <a href="#">Catchment scenarios</a></li> </ul>	<h3>Calibration and Optimisation</h3> <ul style="list-style-type: none"> <li>• <a href="#">Calibration Wizard for catchments</a></li> <li>• <a href="#">Insight: Multi-objective optimisation</a> <ul style="list-style-type: none"> <li>• <a href="#">Configuring an Insight Optimisation Run</a></li> <li>• <a href="#">Running an optimisation and viewing results</a></li> <li>• <a href="#">Using the command line for Insight</a></li> </ul> </li> </ul>

<h2>User Preferences and Settings</h2> <ul style="list-style-type: none"> <li>• Application settings</li> <li>• Project Options</li> <li>• Scenario Options</li> <li>• Improving Performance</li> </ul>	<h2>Connectors</h2> <ul style="list-style-type: none"> <li>• Confluence node</li> <li>• Splitter node</li> <li>• Link Routing</li> <li>• Pipe Junction node</li> </ul>	<h2>Forecasting and Operations</h2>
<h2>Import and Export of Data</h2> <ul style="list-style-type: none"> <li>• Specifying data inputs <ul style="list-style-type: none"> <li>• General requirements for data</li> </ul> </li> <li>• Data file formats <ul style="list-style-type: none"> <li>• Res.csv File Format</li> <li>• Source Database .SDB File Format</li> </ul> </li> <li>• Data preparation</li> <li>• Climate data import tool</li> <li>• Analysis tools</li> </ul>	<h2>Constituents</h2>	<h2>Water Governance</h2> <ul style="list-style-type: none"> <li>• Ownership - Source public version</li> <li>• Resource assessment - Source public version</li> <li>• Restriction Curves</li> </ul>
<h2>Running Scenarios</h2> <ul style="list-style-type: none"> <li>• Configuring Scenarios</li> <li>• Command Line Runner</li> <li>• Connecting Models</li> <li>• Stochastic Analysis Tool</li> <li>• Advanced Service Interface</li> <li>• Scenario Input Sets</li> </ul>	<h2>Storage</h2> <ul style="list-style-type: none"> <li>• Storage node</li> <li>• Weirs</li> <li>• Wetlands</li> </ul>	<h2>Troubleshooting and Debugging</h2> <ul style="list-style-type: none"> <li>• Assurance Rules</li> <li>• NetLP debugging</li> <li>• Regression testing</li> <li>• Scenario Difference Tool</li> </ul>
<h2>Results</h2> <ul style="list-style-type: none"> <li>• Results Manager</li> <li>• Statistics in Source</li> <li>• Recording Manager</li> <li>• Catchment Map Results Analysis</li> </ul>	<h2>Water Demands</h2> <ul style="list-style-type: none"> <li>• Water user node</li> <li>• Supply point node</li> <li>• Minimum Flow Requirement node</li> <li>• Ordering</li> <li>• Environmental Flows</li> </ul>	<h2>Customising Source</h2> <ul style="list-style-type: none"> <li>• Functions</li> <li>• Plugins</li> </ul>

## Guidelines for water management modelling

**Note:** To access some sections of the user guide, including some sections *Scientific and Technical Reference* section you will need an eWater account ID, which can be created for free on the [Toolkit](#) website. Use your eWater account ID and password to login to Confluence, Toolkit and Source. If you have trouble logging into Confluence please [contact us](#).

We welcome comments on how the quality and effectiveness of the User Guide can be improved. To add comments you will need to be logged into Confluence, and a comments field will appear at the bottom of each page. All comments will be viewed by the Documentation Team.

### Accessing the online documents

You can access the *Source User Guide* online in one of two ways:

- By following the links within the Source software. The Help menu or the feature editors (nodes or links) contain links to the user guide and scientific reference guide; or
- By navigating to [wiki.ewater.org.au](http://wiki.ewater.org.au), and select **Source User Guide 4.9** from the menu on the left.

Refer to [Source revision history](#) for the release notes.

#### Features:

- This guide has been designed so that it is best viewed electronically. Many features of this guide, such as hyperlinks, will not be available if printed;
- Navigation aids present in the guides indicate the section you are currently viewing;
- You can search for content within this guide using the search box in the top left hand corner of the blue navigation bar.
- To search for content within a page, press Ctrl+F, and enter the search term.

# Troubleshooting and FAQs

Please see the [Troubleshooting and Debugging](#) section of the user guide. If this does not answer your question, please contact us here: <https://support.ewater.org.au/>

## Related information sources

### [Guidelines for water management modelling](#)

As a major provider of modelling products, eWater is responsible for ensuring they are well used. To this end, a set of generic guidelines have been published to promote a best practice, quality assured approach for:

- The application of modelling tools, primarily to address water management problems; and
- The provision of decision support to end-users of model results.

These guidelines cover risk assessment, decision support, and communication and interaction between you and end-users of model results, as well as technical aspects of modelling. They also provide a framework for a series of guidelines relevant to the application of certain functionality in Source, such as modelling storages and wetlands, modelling water sharing rules and uncertainty analysis.



This "key" symbol is associated with recommendations and guidelines for best practice modelling provided by a panel of experienced Source users. However, they are not necessarily appropriate in every situation. You should always rely on your own judgement and experience to decide whether to incorporate a particular recommendation or guideline into your model.

It is highly recommend that you read "Guidelines for water management modelling" before selecting a modelling platform for your application. Following these guidelines is a critical aspect of developing robust, reliable and defensible models. They can be accessed from eWater's [Toolkit](#).