

## Predict how ecosystems will respond to changes in water flow.



Eco Modeller is a software tool for answering 'what if' questions – transparently and repeatably – for any natural resource management activity.

Do you need to know how a wetland will respond to watering in summer? Or if a fish population will benefit as much from flooding of a red gum forest as from addition of large woody debris to the river? Eco Modeller can give you guidance – and confidence in your decisions.

Eco Modeller helps you forecast effects that are likely to result from particular management activities with natural resources.

Commonly, when a natural resource is in scarce supply relative to demand, tradeoffs have to be made that must be effective and defensible. This tool helps you make well-founded decisions about how to achieve a desired environmental outcome from the natural resources at hand. Take water as an example. The flow characteristics, temperature and quality of a river all affect its ecosystems and their component biota, such as fish, waterbugs, vegetation and waterbirds.

With Eco Modeller, you can explore how river ecosystems will respond if flow rates are modified, or if water is delivered at a different time. And you will be able to back-up your decision with a rating of model confidence.

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### KEY FEATURE:

Eco Modeller has an internal 'library' that can store ecological models that are relevant to your situations. Link your data for a natural resources management scenario (e.g. flow in relation to fish sustainability) to appropriate models in the library, and Eco Modeller predicts how the scenario will change over time, in response to management actions.

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**Now available**

# Eco Modeller



## How it works

Eco Modeller applies ecological response models to timeseries data (e.g. flow; snag density over time) that you enter for your situation. After you have chosen an appropriate model, Eco Modeller runs your data and produces summary results of the predicted ecological response. Many different computational forms of models can be run and their outputs compared.

When you first use Eco Modeller, its internal library of ecological response models is empty. You put in a particular model or set of models that you want to apply to your data, or you download an appropriate choice from an online repository of ecological response models. For each new project, you check the internal library for suitable models, and create any extra models you need, thus accumulating knowledge in your own Eco Modeller library.

For each model added to the library, provenance information must be added as well, and this feeds into a confidence score that makes this tool much more than a collection of equations.

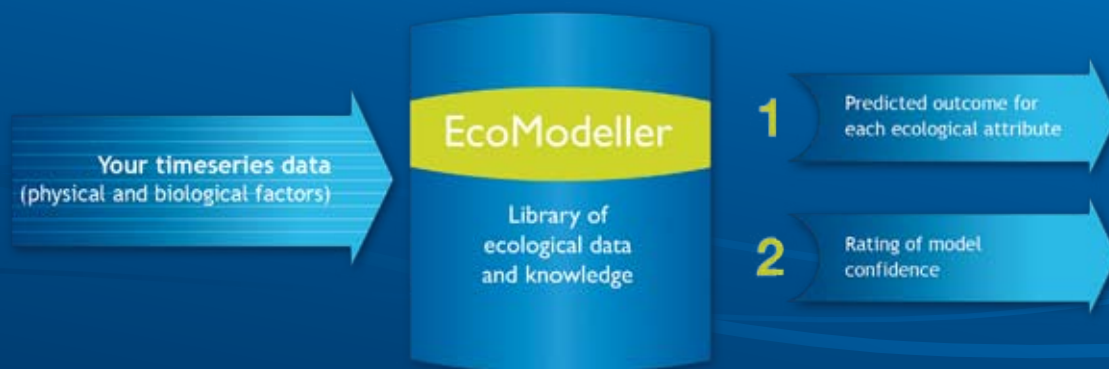
The model confidence is based on factors that traditionally support good science, including:

- the quality of the publication where the scientific information was originally published
- the extent of the data underlying the model
- authorship
- supporting documentation
- geographic area where the model is applicable
- known limitations.

## Partnership

eWater partner organisations are currently applying and refining Eco Modeller around Australia. This work includes testing: the likely consequences of delivering environmental flows to red gum forests on the River Murray (Northern Victoria); impacts on fish in the Onkaparinga River (South Australia) and Yarra River near Melbourne; and stream ecosystems in South East Queensland.

Eco Modeller is part of  
eWater's integrated modelling suite.



## Want to know more?

Go to our website at [www.ewater.com.au](http://www.ewater.com.au)

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