







Ecolego

Modelling software

AFRY
ÅF PÖYRY

SIMULATION MODELLING & RISK ASSESSMENT SOFTWARE

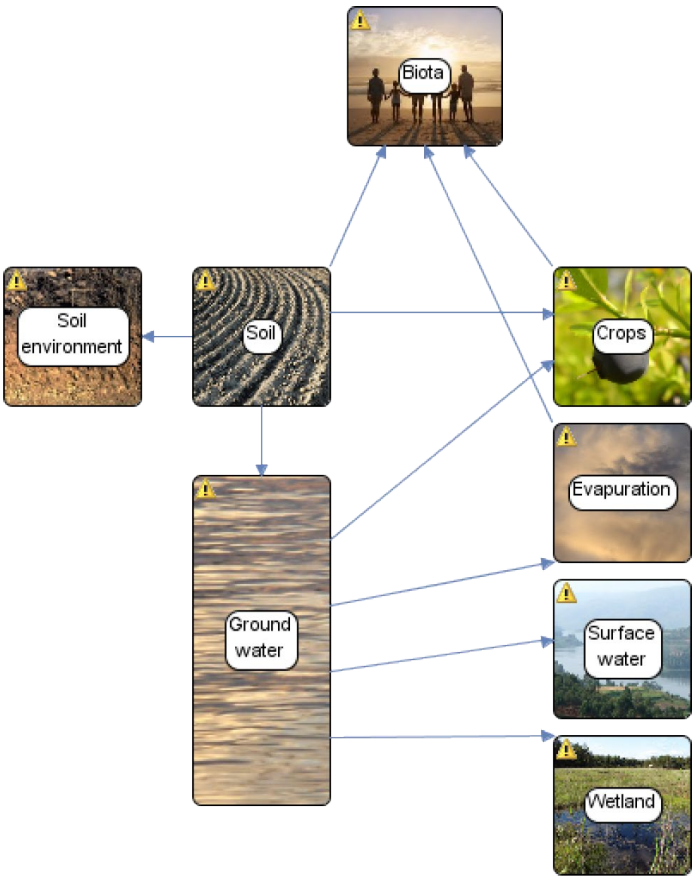
Ecolego is a fast, easy-to-use and powerful software tool for simulating dynamics systems.

Ecolego can be adapted and customized for any specific usage and needs in conducting risk assessments of complex dynamic systems including:

- Transport of chemicals and heavy metals from
- emission to biota uptake
- Water balance simulation
- Comparison of remediation methods

Ecolego is designed with:

- Re-usability and quality assurance, which leads to better models and less work for the user.
- Libraries of model components that are easily created, stored and reused.
- Parameter database with an integrated system for data tracking and quality assurance.
- Ecolego Player, a separate, free of charge, software tool, that allows reviewer to browse the model, inspect equations, and re-run simulations.



GRAPHICAL DISPLAY OF MODEL SUBSYSTEMS

USER INTERFACE

Visualisation

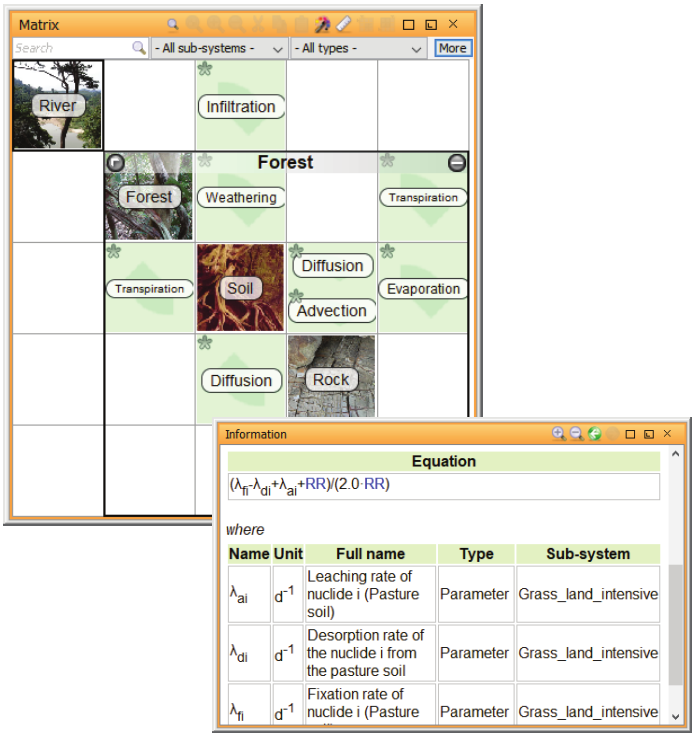
Ecolego is presented in different windows/views:

- The Interaction Matrix View makes complex models easier to overview.
- Model Graph View visualizes the model as boxes and arrows.
- In the Relationship Graph View, interactions between objects can be found.

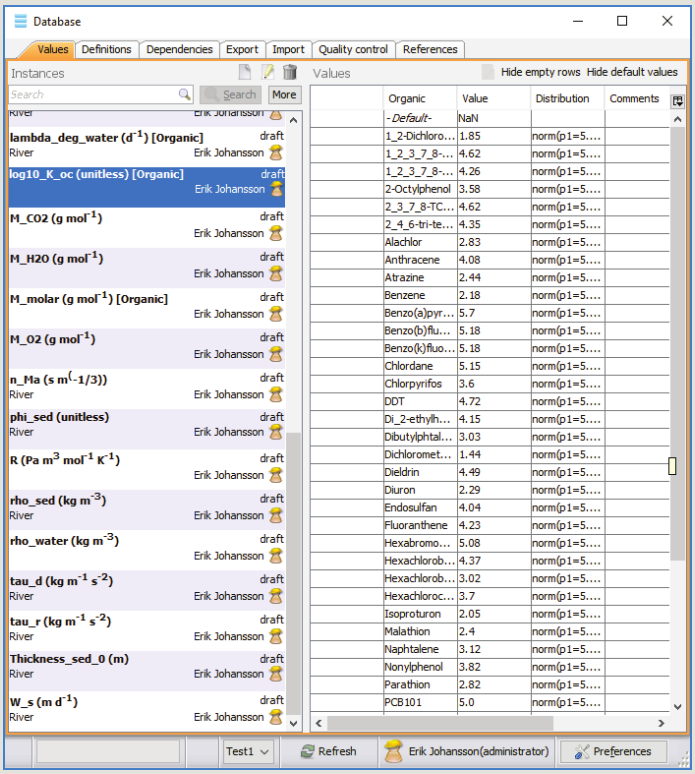
Documentation

Objects can be assigned comments, images, units, and hyperlinks. Ecolego provides the possibility to generate customized reports containing relevant data from the model.

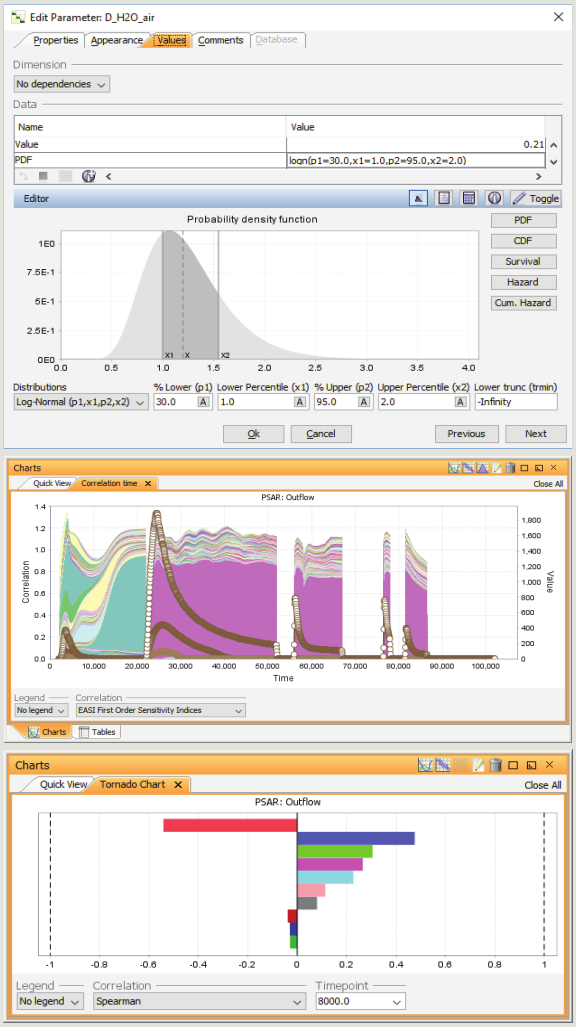
Results can be exported in a form of various charts and tables, and used in reports.



(TOP) INTERACTION MATRIX
(BOTTOM) MODEL COMPONENT INFORMATION



THE PARAMETER DATABASE CLIENT



(TOP) ASSIGNING PROBABILITY DENSITY FUNCTIONS
(MIDDLE) PLOTTING CORRELATIONS OVER TIME
(BOTTOM) TORNADO PLOTS USED IN SENSITIVITY ANALYSES

DATABASE

The parameter database can be set up to collect, review, track and distribute input data for Ecolego models. The free database client allows team members to access and update the data.

Librairies

Ecolego features a powerful and simple-to-use library where model components can be stored and later inserted into other models.

Parameters, time series & equations

Data from any model can be exported or imported from or to the database. Simulation results and model data can be exported to and imported from Excel.

SIMULATION

Ecolego has everything needed for advanced probabilistic analysis, including:

- Probability Density Functions (PDFs)
- Monte Carlo and Latin Hypercube sampling
- Parameter correlation settings.

Sensitivity analysis

Ecolego offers a wide range of methods for screening, regression-correlation analysis and variance based analysis that gives a better understanding of the behavior and uncertainty contribution.

Solvers

Ecolego is equipped with fast, variable step size solvers that handle linear and non-linear transfers. Large systems can be automatically split up into smaller, independent or sequential batches to simulate multiple scenarios.

Discrete events

Discrete events can be defned to handle instantaneous changes in the system.

External models

Your own code can be incorporated into Ecolego models.

NUCLEAR APPLICATIONS

Models for radioactive risk assessment

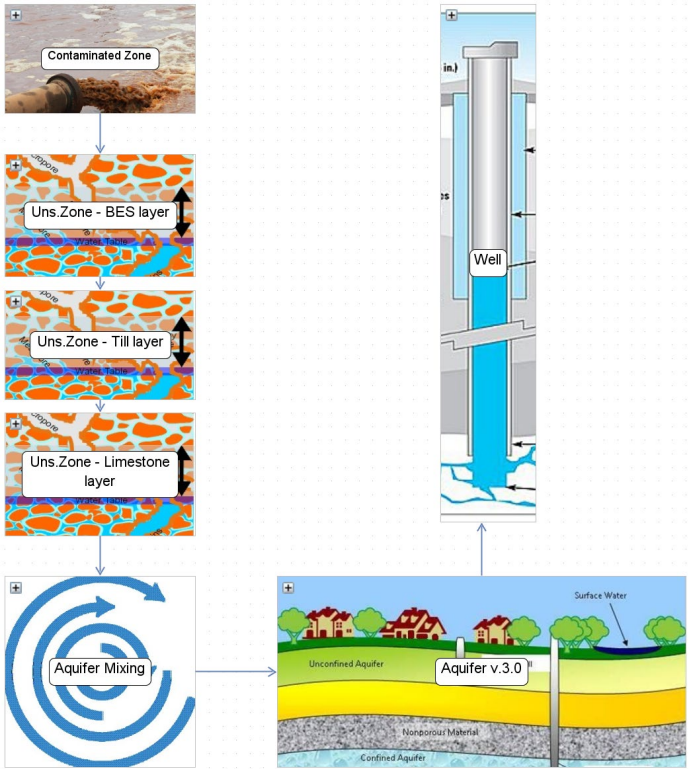
— Transport models for estimation of movement of radionuclides in air, water and groundwater.
— Dose calculations to workers, public and the environment.

Operational and planned releases

Models have been used and approved for

— Nuclear power stations
— Research facilities
— NORM-legacy sites
— Radioactive waste disposal.

At all stages of the facility life-cycle, from site selection to decommissioning, and beyond.



(TOP RIGHT) POWER STATION
(RIGHT) CONTAMINATED GROUNDWATER FLOW MODEL

SYSTEM REQUIREMENTS

Ecolego is platform-independent and runs on Windows 7/8/10, MacOSX, Linux and Unix.

OUR OFFER

Ecolego is a license-based commercial modelling software that can be used for any dynamic system. Our developers and user experts are constantly improving Ecolego and can offer:

— Support and consultation in adaptation of Ecolego
— Customized training for our customers and users.

We offer a 30-day trial version of Ecolego, free of charge, with all toolboxes included.

Please sign up for more information at https://www.ecolego.se/ or contact us at ecolego@afry.com

Contact

ecolego@afry.com

ÅF-Industry AB
Frösundaleden 2A
SE-169 99 Stockholm
Sweden

+46 10 505 00 00
afry.com

AFRY
ÅF PÖYRY

Ecolego