



HowLeaky?—a tool for exploring the impact of land use on water quality and water balance

What is HowLeaky?

HowLeaky? is a tool for exploring the impact of land use on water quality and water balance. Water balance refers to the movement of water in different parts of the landscape, e.g. via run-off, evaporation, transpiration and deep drainage.

The primary purpose of HowLeaky? is to explore implications of:

- different land uses (including crops, pasture and trees)
- climates
- soil types
- management of water balance (evapotranspiration, run-off, deep drainage)
- erosion
- sediment
- pesticide movement.

This will lead to better understanding of landscape water dynamics and implications of management, and better connection between science and community.

Where does it fit in?

Simulation methodologies have much to offer in the debate on impacts of land use changes. Land managers can explore the implications of alternative land uses for a range of locations and soil types.

Currently, access to easy-to-use simulation models is poor. However, HowLeaky? is a new interface that will allow more people to explore the power of computer simulation.

It is expected that HowLeaky? will provide a pathway to—or at least a better understanding of—the use of more flexible or complex models such as APSIM, GRASP and PERFECT. It can also be used as a training aid and tool for land use system analysis.

Typical applications

Key questions that can be asked include:

- How much water is lost as run-off and what is the subsequent erosion?

- How much water leaks below the root zone, creating potential salinity risks under different lands uses?
- What is the risk of pesticide loss off farm?

Outputs

A range of views of data can be attained with one to two clicks, and responses to changed conditions can be viewed instantly.

Tables, graphs and customised reports provide insight into how systems perform, allowing users to explore interactions between climate, vegetation water use and management. A pseudo animation allows the user to visualise the system dynamics. HowLeaky? also creates data in a format suitable to use in the 2CSalt salinity model.



HowLeaky? offers a range of ways to analyse and view data under different scenarios.

Further information

A copy of HowLeaky? can be downloaded from <www.apsru.gov.au> (products).

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