

TRANSFORMING RISK ANALYSIS AND MITIGATION PLANNING IN AUSTRALIA



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WE HAVE DEVELOPED A DECISION SUPPORT SYSTEM WITH POTENTIAL TO TRANSFORM PLANNING FOR RISK REDUCTION IN AUSTRALIA.

Our system simulates how natural hazard risk will change over the long term, and simulates how risk-reduction options reduce this risk. By quantifying the effect of different risk-reduction options, the system enables decisions to be justified on a rational basis with the best available information.

DSS FUNCTIONALITY

- ▶ Identify areas of risk, now and into the future
- ▶ Understand the implications of this risk, through social, environmental and economic indicators
- ▶ Test different risk reduction options
- ▶ Identify/suggest risk reduction portfolios, through sifting through a large number of options with optimisation.

HOW DO I USE THE SYSTEM?

- ▶ The system is tailored for each case study with end-user interaction
- ▶ The software has an easy to use interface,
- ▶ Users can intuitively select mitigation options and future scenarios
- ▶ Users gain insights into the nature and evolution of risk into the future through animated maps, charts and tables.

- ▶ Can be used for desktop studies, within workshops, or by consultancies
- ▶ For use within planning departments, all hazard organisations, hazard agencies, local government, and others.

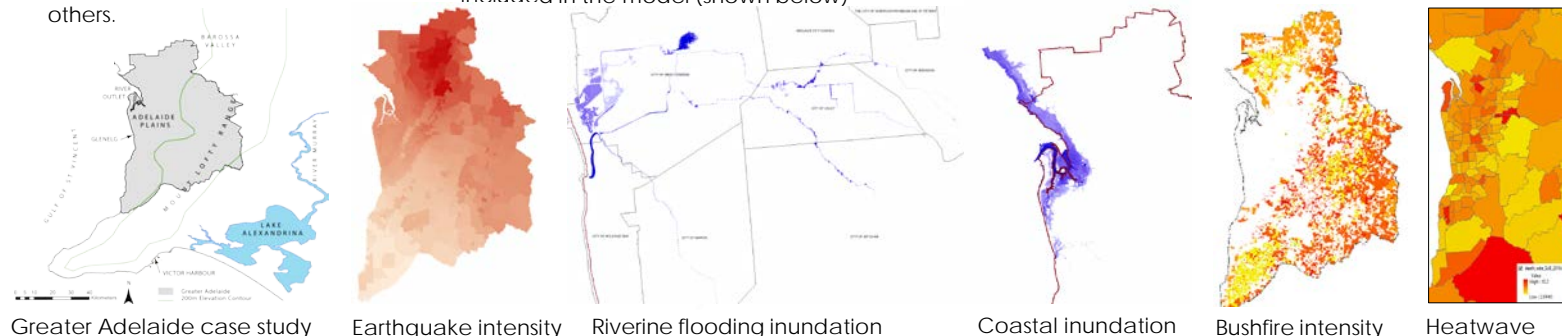
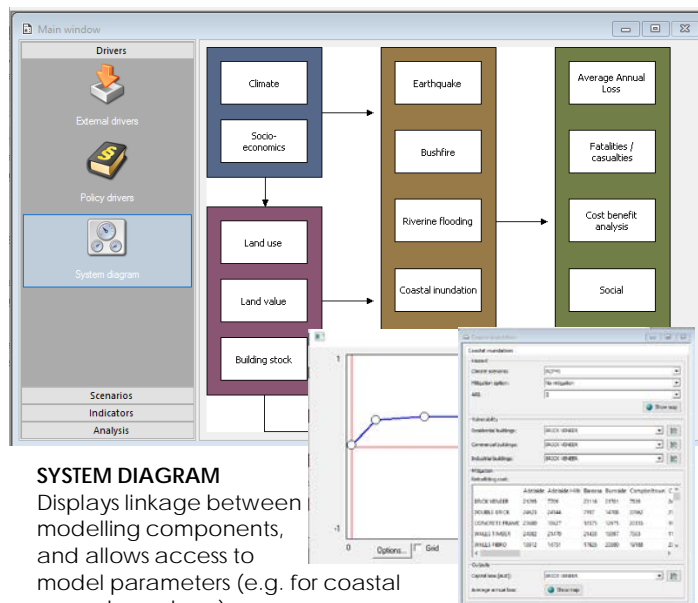
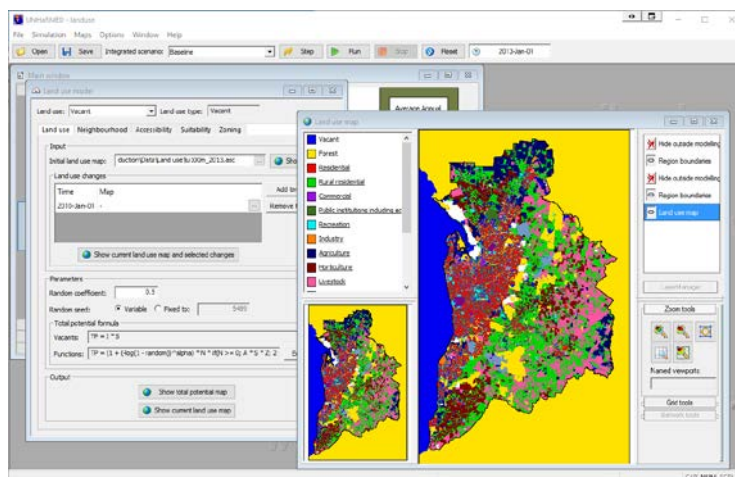
HOW THE DSS WORKS:

- ▶ Calculates risk through spatially explicit hazard and vulnerability models for bushfire, earthquake, flood, coastal surge, and heatwave.
- ▶ Simulation is achieved through integrating these models with land use, land value, and building stock models for calculating exposure. The entire modelling system is driven by climate, demographic and economic inputs.

- ▶ Explores a set of distinct futures scenarios to envision plausible future pathways and to account for critical uncertainties.
- ▶ Impact assessment of policy alternatives, which can be compared to a baseline or business as usual scenario.

INTEGRATED MULTHAZARD PLATFORM

The system is being used for Greater Adelaide and two other case studies. For Greater Adelaide, earthquake, bushfire, riverine flooding, coastal inundation and heatwave hazards are included in the model (shown below)



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