



INTEGRATING ECONOMIC VALUES INTO CATCHMENT MODELLING

PhD Project



WHAT

The aim of this study is to assess the economic and environmental impacts of changed catchment management activities. The study will focus on management actions designed to improve river water quality as implemented by land-holders and management organisations.

The study will evaluate the costs associated with the implementation and maintenance of on-site activities by land holders, as well as the opportunity costs that may arise when land is taken out of production. The study will also include an assessment of the impacts of changes in water quality on industries operating in estuaries and on human welfare through changes in market and non-market environmental values.

HOW

Existing catchment management activities will be analysed through a literature review, an assessment of existing policies and interviews with stakeholders.

- Quantitative cost data about on-site activities will be collected by means of a farmers' survey.
- Existing hydrological and bio-physical models will be used to obtain quantitative measures of the ecosystem effects of water quality changes. Where such data are not available, expert opinion and literature reviews will be used.
- The economic analysis of environmental values will include an assessment of the direct market effects on industries, using market data analysis and interviews with industry representatives. Changes in non-market values will be estimated using a non-market economic valuation survey approach called 'Choice Modelling'.

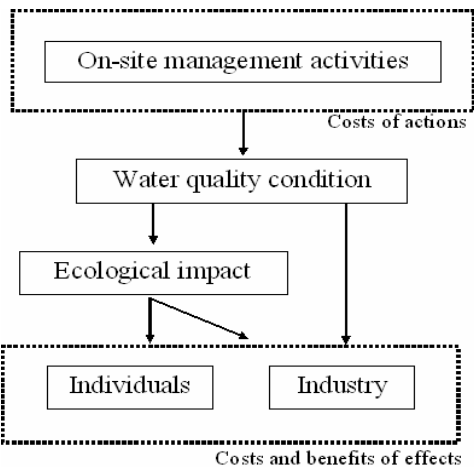
Outcomes for the River in 20 years time

	Your one-off payment	Native fish	Riverside vegetation	Native waterbirds and animals	Recreation opportunities
Option 1 No new initiatives	\$0				
Option 2	\$20				
Option 3	\$50				

WHO

PhD student: Marit Kragt (Australian National University)

Supervisory panel: Jeff Bennett - Crawford School of Economics and Government (ANU), Tony Jakeman – The Fenner School of Environment and Society (ANU), Lachlan Newham - The Fenner School of Environment and Society (ANU)



BRINGING IT ALL TOGETHER

The study will demonstrate a process for integrating bio-physical modelling and economic valuation techniques. Results of the cost analysis of catchment management activities will provide direct inputs into existing hydrological models. The economic valuation will be used to develop an economic model that can be linked to existing biophysical models.

An integrated, interdisciplinary model of the bio-physical and socio-economic consequences of changed management activities will be developed for a case-study area in Tasmania. The research contributes to the Landscape Logic project objectives by increasing understanding of responses to management activities. The model can benefit decision makers by supporting them in evaluating the economic trade-offs presented by alternative catchment management options.