عنوان مقاله:

A Bayesian model decision support system: dryland salinity management application

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خلاصه مقاله:

Addressing environmental management problems at catchment scales requires an integrated modelling approach, in which key bio-physical and socio-economic drivers, processes and impacts are all considered. Development of Decision Support Systems (DSSs) for environmental management is rapidly progressing. This paper describes the integration of physical, ecological, and socio-economic components in a Bayesian Decision Network (BDN) and its implementation in the Interactive Component Modelling System (ICMS) software to build a prototype DSS for salinity management in the Little River catchment in the upper Macquarie River basin, NSW Australia. Salinity is a major environmental problem in the country. This integrated model implemented in a DSS has been developed to co-ordinate the various disciplines involved in salinity problems, integrate data and information available, and allow the investigation of the potential outcomes arising from implementing salinity management options at the catchment scale. The analysis of the trade-offs presented in this study shows that there is no single or ultimate solution to salinity management problems for the catchment, but the Little River catchment BDN decision support system, as a decision toolbox, does clarify the impacts of management options. It assists users to reach their own conclusions on the basis of their improved understanding of the system and of the trade-offs among various outcomes arising from implementing salinity management scenarios

کلمات کلیدی:

Bayesian networks, Decision support system, Salinity management, The Little River catchmen