NeWater

REFERENCE INFORMATION SYSTEM

THEORETICAL AND METHODOLOGICAL ADVANCES IN UNDERSTANDING AND MANAGING RIVER BASIN ADAPTIVE CAPACITY AND RESILIENCE

Deliverable of the NeWater project -
New Approaches to Adaptive Water Management under Uncertainty

www.newater.info

Title	Reference Information System: Theoretical and methodological advances in understanding and managing river basin adaptive capacity and resilience.
Purpose	Database accessible through Internet to support scholars working on these issues and enhance the collaboration between them.
Internet Address	http://crs.org.pl/newater/
Editors	Piotr Magnuszewski (IIASA), Jan Sendzimir (IIASA)
Current version	Final
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Reference Information System

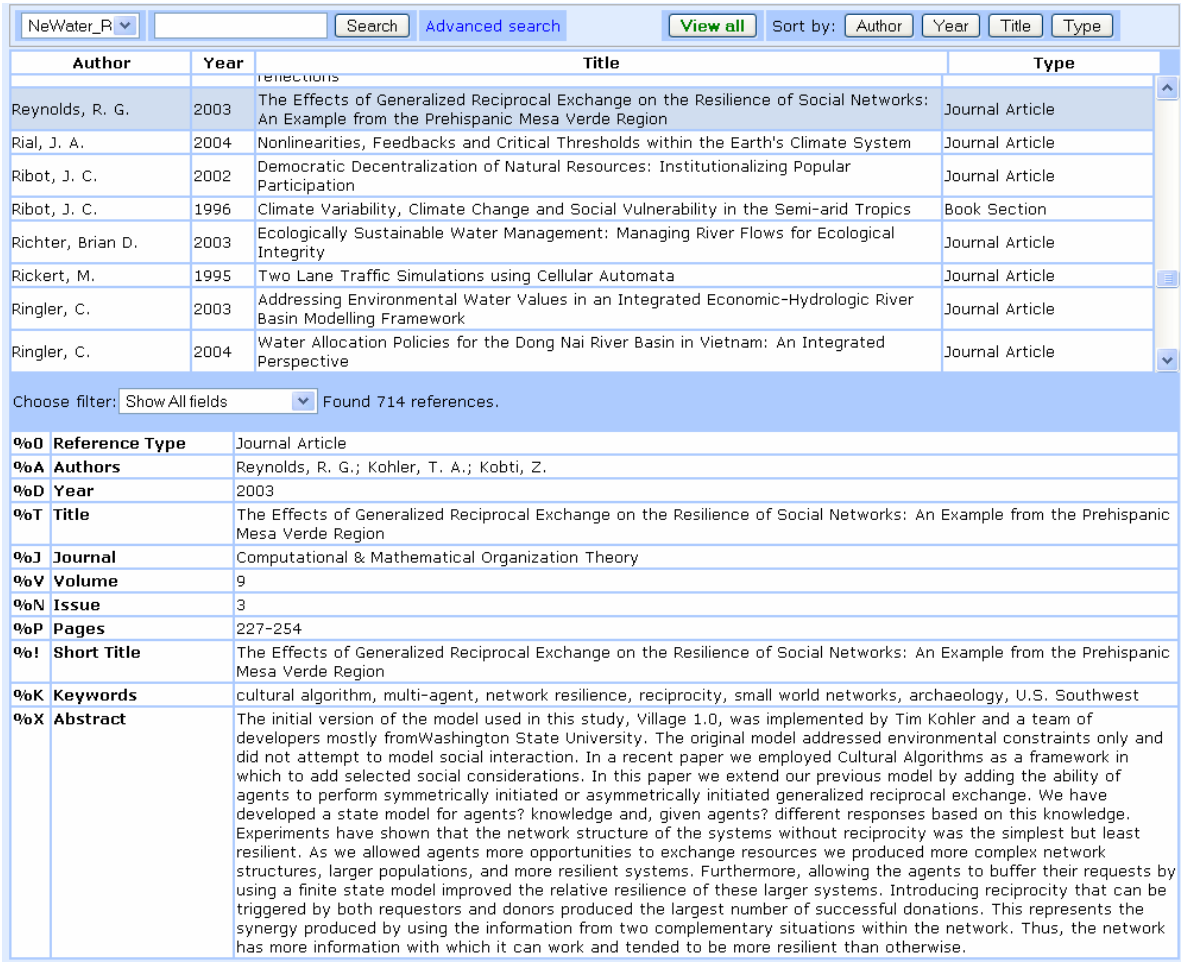
Theoretical and methodological advances in understanding and managing river basin adaptive capacity and resilience

The burgeoning literature on adaptation, resilience and vulnerability reflects widespread interest in adaptive management of complex socio-ecological systems. However, much of the literature is embedded in specific historical traditions, rarely bridges between core concepts, and often fails to take advantage of progress from related domains. The goal of this website is to contribute to the integration of the three core traditions that underpin adaptive management of water systems. This will be achieved by bringing together several contributions both from the NeWater project and other efforts, reflecting on the boundaries between the three domains and suggesting ways forward. This website is a continuous work-in-progress and further working papers, journal articles and case study materials are expected in the future to progress a robust dialog.

The website consists of two parts:

- Reports and synthesis papers providing broad overviews in the subjects related to adaptive capacity and resilience of water systems
- Database of references to articles and reports on the subject

Sample Screenshots:



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Author	Year	Title	Type
Reynolds, R. G.	2003	The Effects of Generalized Reciprocal Exchange on the Resilience of Social Networks: An Example from the Prehispanic Mesa Verde Region	Journal Article
Rial, J. A.	2004	Nonlinearities, Feedbacks and Critical Thresholds within the Earth's Climate System	Journal Article
Ribot, J. C.	2002	Democratic Decentralization of Natural Resources: Institutionalizing Popular Participation	Journal Article
Ribot, J. C.	1996	Climate Variability, Climate Change and Social Vulnerability in the Semi-arid Tropics	Book Section
Richter, Brian D.	2003	Ecologically Sustainable Water Management: Managing River Flows for Ecological Integrity	Journal Article
Rickert, M.	1995	Two Lane Traffic Simulations using Cellular Automata	Journal Article
Ringler, C.	2003	Addressing Environmental Water Values in an Integrated Economic-Hydrologic River Basin Modelling Framework	Journal Article
Ringler, C.	2004	Water Allocation Policies for the Dong Nai River Basin in Vietnam: An Integrated Perspective	Journal Article

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%0	Reference Type	Journal Article
%A	Authors	Reynolds, R. G.; Kohler, T. A.; Kobti, Z.
%D	Year	2003
%T	Title	The Effects of Generalized Reciprocal Exchange on the Resilience of Social Networks: An Example from the Prehispanic Mesa Verde Region
%J	Journal	Computational & Mathematical Organization Theory
%V	Volume	9
%N	Issue	3
%P	Pages	227-254
%!	Short Title	The Effects of Generalized Reciprocal Exchange on the Resilience of Social Networks: An Example from the Prehispanic Mesa Verde Region
%K	Keywords	cultural algorithm, multi-agent, network resilience, reciprocity, small world networks, archaeology, U.S. Southwest
%X	Abstract	The initial version of the model used in this study, Village 1.0, was implemented by Tim Kohler and a team of developers mostly fromWashington State University. The original model addressed environmental constraints only and did not attempt to model social interaction. In a recent paper we employed Cultural Algorithms as a framework in which to add selected social considerations. In this paper we extend our previous model by adding the ability of agents to perform symmetrically initiated or asymmetrically initiated generalized reciprocal exchange. We have developed a state model for agents? knowledge and, given agents? different responses based on this knowledge. Experiments have shown that the network structure of the systems without reciprocity was the simplest but least resilient. As we allowed agents more opportunities to exchange resources we produced more complex network structures, larger populations, and more resilient systems. Furthermore, allowing the agents to buffer their requests by using a finite state model improved the relative resilience of these larger systems. Introducing reciprocity that can be triggered by both requestors and donors produced the largest number of successful donations. This represents the synergy produced by using the information from two complementary situations within the network. Thus, the network has more information with which it can work and tended to be more resilient than otherwise.

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Author	Return articles written by		
Date	Return articles published between	1970 – 2008	
Publication	Return articles published in		
Keywords	with keywords		

Author	Year	Title	Type
	2004	Compendium on Methods and Tools to Evaluate Impacts of Vulnerability and Adaptation to Climate Change	Book
Adger, W. N.	1999	Social Vulnerability to Climate Change and Extremes in Coastal Vietnam	Journal Article
Adger, W. N.	2004	New Indicators of Vulnerability and Adaptive Capacity	Book
Alwang, J.	2001	Vulnerability: A View From Different Disciplines	Journal Article
Alwang, J.	2002	Vulnerability as Viewed from Different Disciplines	Book
Brooks, Nick	2003	Vulnerability, Risk and Adaptation: A Conceptual Framework	Book
Brooks, N.	2005	The determinants of vulnerability and adaptive capacity at the national level and the implications for adaptation	Journal Article
	2000	Estabilishing Correlation between Vulnerability and Damage Survey for Churches	Book
Dickson, Nancy	2001	Vulnerability and Resilience for Coupled Human-Environment Systems: Research and Assessment Systems for Sustainability Program 2001Summer Study	Report
Dilley, M.	2000	Reducing Vulnerability to Climate Variability in Southern Africa: The Growing Role of	Journal Article

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