

Water Resource Associates

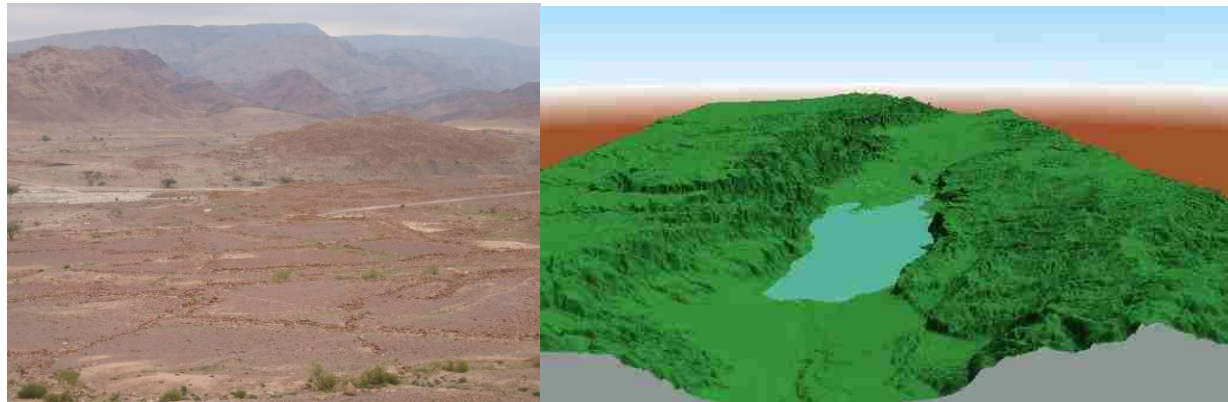
A network of consultants in hydraulics, hydrology, groundwater & environmental issues

Project title: Water Life and Civilization: Climate Change, Past, Present and Future in Jordan

Summary: Hydrological Modelling Studies in the Jordan Valley, the Dead Sea and the Ancient City of Jawa.

Client: Leverhulme Trust	Financed by: Leverhulme Trust
Period of assignment: 2004-09	Location: Jordan
Project Value: £1.2 million	WRA services: £60,000
In co-operation with: University of Reading	

Background: As part of the Water Life and Civilization Project funded by the Leverhulme Trust (see www.waterlifecivilisation.org.uk), Andrew Wade, Paul Whitehead, Nicola Flynn and Ron Manley have developed and applied a range of hydrological models to simulate the hydrology of the Jordan Valley and the Dead Sea. Ron Manley has developed a new version of the HYSIM model that simulates monthly flows whilst Andrew Wade has modified the PITMAN rainfall-runoff model to include aquifer recharge from transmission losses in Wadi Faynan. The application of both models builds on a preliminary assessment of the catchment characteristics and hydrological and hydrogeological data of Faynan by Paul Holmes. The model simulations are being used by the archaeologists to help assess how climate variability influenced the settlement and water technologies used in Faynan from the (pre-pottery) Neolithic to the present day. Nicola Flynn, Paul Whitehead, and Andrew Wade have applied the INCA model to the River Jordan to simulate flows along the Jordan and assess the impacts of abstraction on inflows into the Dead Sea. Paul Whitehead has also studied the water resources of the ancient city of Jawa using a stochastic hydrological modelling approach to assess past impacts of climate change.



Scope of work by Water Resource Associates Ltd Development of hydrological models for the simulation of flows in semi-arid wadi systems, the River Jordan, the Dead sea and the water resources of Jawa.

Results Report to the Leverhulme trust and a set of papers and a book: Contact Andrew Wade, Paul Whitehead or Ron Manley

Project number 174

Directors

Frank A K Farquharson
Paul A C Holmes
Dr A Nick Mandeville

Ronald E Manley
Dr Andrew J Wade
Professor Paul G Whitehead

Head Office:

PO Box 838
Wallingford
Oxon OX10 9XA

Tel: +44 (0) 1491 838190
E-mail: info@watres.com