

Selected Projects

America and Caribbean

Dominican Rep	Montegrando Dam	Operation of multiple-use dams
Canada	L Simcoe, Ontario MOE	INCA lake nutrient modelling
Jamaica	IWM-DSS-GIS	Yallahs & Hope River Basins

Africa

Tanzania	Dar-es-Salaam WS	Water Supply hydrological studies
Rwanda	Kagera River Basin	Climate change project
East Africa	Lake Victoria LVBC	Lake operational curves
Guinee	Simandou mine	Hydrology and weir design
Angola	INARH, Luanda	TA, database, hydrometrics
Ethiopia	River AWASH	Water Quality Modelling and CC

Asia

Sabah	Nova Beta Energy	Small Hydro schemes
Sarawak	Pelagus y Belaga	Hydrology for HEP projects
Brunei	Temburong	Water supply dams
Sumatra	Central Batu Raja	River Ogan modelling
Java	BMJ Karawang	Flood modelling / GIS-2D
Bintan	Bintan Resorts	Hydrometric services
India	National hydrology	Hydrology for HEP project
Nepal	Tamakoshi	Small Hydro schemes

Middle East

Turkey	Yesilirmak	River basin climate change
Jordan	Jordan Valley	Palaeo-climate modelling
Lebanon	Lebanon, Wassani	Water resources
Azerbaijan	BP Sangachal	Oil Terminal Flood studies
Oman	Khazzan Gasfield	Hydrological studies
UAE	NCMS & MOEW	Dam inspections
Yemen	Sayhut, Socotra	Dam feasibility studies
Somaliland	Berbera, Hargeisa	Groundwater and Dams

Europe

France	Nice, Villa Maryland	Groundwater and soil drainage
Romania	R Aries and Mures	Modelling of gold mine discharge
Norway	SEALINK project	Nutrient flux modelling
Kent/UK	Eynsford	Groundwater flooding
Hants/UK	Silbury Hill	Climate change Palaeo-modelling
Beds/UK	Woburn	Water resource strategy/developmt
Hants/UK	Hampshire Avon	INCA nutrient modelling
E Anglia	Lugg Sediments	River sediment modelling
England	P life cycle	INCA phosphate modelling
Thames	REFRESH Thames	Eutrophication modelling
Scotland	Inverness& Nairn	AQUATOR optimisation
Scotland	Bonar Bridge WS	Hydrological modelling

For more information and to discuss your project requirements, please contact one of the Partners:

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Business Collaboration

AquaCyan Consultants Ltd
Aquascope Solutions Ltd
AquaTres Database
ASEDA Aquatic Ecology
CC Hydrodynamics Ltd
GEOINDO Survey Services
Groundwater Monitoring & Drilling Ltd
H2EA sarl
Hydro-GIS Ltd
Irrigation Engineers Ltd
Ntek Design Services Inc
Oxford Molecular Biosensors
TUIL Solutions Ltd

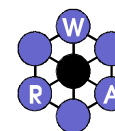
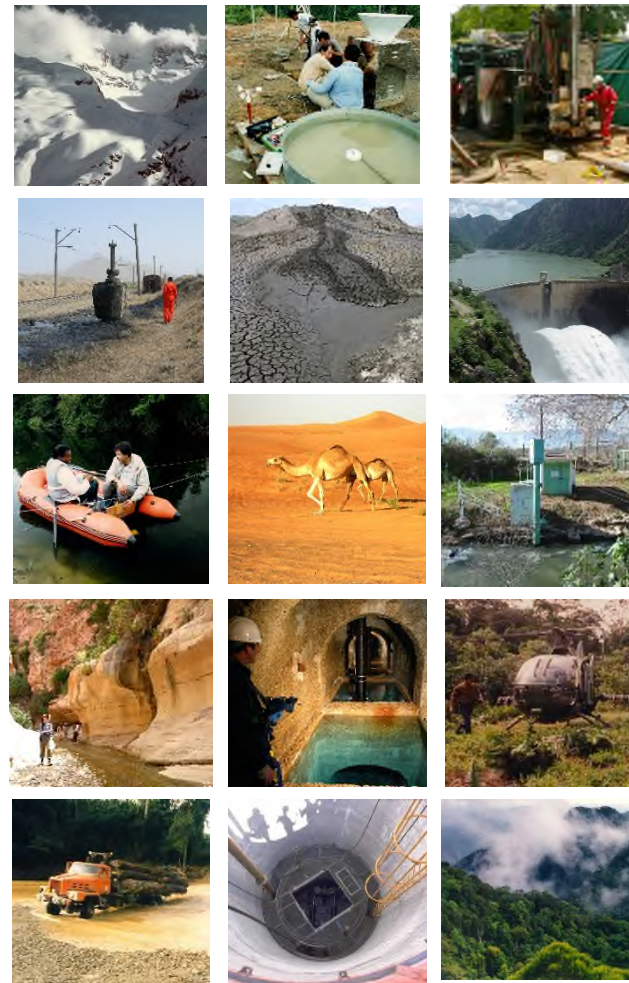
WRA Websites

www.watres.com
www.climatedata.info

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Water Resource Associates

A Network of Consultants in Water Resources,
Hydrology, Hydrogeology, Water Quality,
Modelling, GIS, Hydro-Ecology & Climate Change



Water Resource Associates

Our Services

Hydrogeology & Groundwater Development
Flood & Drought Hydrology, Extreme Rainfall
Water Resource Management & Systems Simulation
Hydrological Modelling, Database & Software Development
Water Quality Modelling, Pollution modelling and control
Hydrometric Monitoring & Data Acquisition
Hydro-Ecology & Climate Change Analysis
Hydrodynamic modelling, Flood Alleviation & SUDS design
Flood Risk Assessments & Insurance Reports
Environmental Impact Assessment & Expert Witness
GIS Analysis, Digital Terrain Modelling & 3D Visualisation,
Decision Support Systems

Hydrological and Water Resources Expertise

WRA covers hydrometric network design, instrumentation, data capture and processing, flood estimation and forecasting, low flow, yield and drought studies, hydropower assessment, modelling complex conjunctive use water resources systems, arid zone and wetland hydrology, climate change impact, transboundary resources and implementation of the Water Framework Directive.

Groundwater and Wells

WRA is skilled in groundwater development and management in all global geologies. The company has provided advice on centralised management of groundwater for large-scale irrigation and water supply projects, as well as developing frameworks for provision of Rural Water Supply & Sanitation Schemes & installing individual borehole and well supplies. Environmental issues and sustainable water supplies are central to many water resource projects. Support has been given to the British water industry at many levels. Writing and use of specialised software for tackling complex problems include borehole design, pumping test analysis and deployable output assessment. WRA can offer hydrometry as well as drilling, soil and aquifer test services.

Water Quality and Hydro-Ecology

Water quality and hydro-ecological studies are key WRA activities, including modelling, management, and development of software for rivers, lakes and catchments. Capability includes environmental impact assessment, integrated catchment management and investigation of land-use and climate change, assessment of nitrogen balance, movement of metals, acidification and real-time forecasting and control. Services include hydrochemistry, time series analysis, water quality sampling and analysis, liming control software for acid rivers and lakes, aquatic and river corridor surveys.



The Way We Work



The Partners and Associates operate from their own offices, using centralised communications and computing facilities. Common software and fast data exchange ensure that work is carried out efficiently and that a corporate identity and archiving system is maintained. This flexible working plan enables us to be responsive to client needs: there are no long chains of management and no expensive overheads. When necessary, support staff are recruited on contract and supervised directly by the Project Partner or Associate.

The Partners are personally more involved in hands-on processing and analysis of data than is usual with large consultancy firms. By combining extensive professional experience of project execution at senior level with high levels of computer competence (both in using a wide variety of commercial software and in developing new software), WRA can offer unrivalled efficiency in tackling problems in the water environment.

The Associates have a long history of working with the Partnership, which provides further integrity of the WRA team. Work may be commissioned directly by clients, and WRA can also act as specialist sub-contractor to larger firms. WRA personnel have undertaken a wide variety of water resource projects throughout the world. The company offers experience in leading technical development and research programmes for aid donors, for the English Environment Agency and other organisations. WRA can also provide experienced project managers and team leaders for multidisciplinary water resource projects.

WRA and Associated Software

WRA has developed state-of-the-art software that is widely used as the preferred tool for water resource, hydrological & water quality modelling and can provide bespoke software solutions for clients.

AQUASCOPE: Web-based state-of-the-art API platform which enables the integration of robust watershed data into existing software applications or systems in static or real-time. The platform can seamlessly integrate satellite data, models and sampled or sensor data to guide better and more efficient operational tools for watershed management.

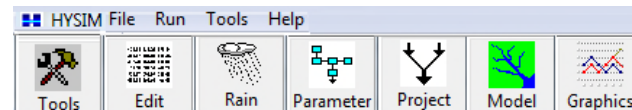
HYSIM-CC: Hydrological modelling package which enables application of IPCC SRES climate scenarios to assess impact anywhere in the world.

AQUATOR: Water Resources System Simulation and Optimisation

INCA: Integrated catchment water quality modelling suite including nutrients, sediment, microplastics, metals, organics and algal dynamics.

BRDA: British Rainfall Digital Archive of extreme historical UK rainfall events.

WRA uses ArcGIS with Spatial Analyst and 3D Analyst extensions and other GIS and mapping software including QGIS.



WRA The Company



Water Resource Associates was formed in 1994 and provides specialist consultancy services, world-wide. The Partners have over 40 years' of experience and have previously worked for a range of organisations including the British Centre for Ecology & Hydrology, firms of consulting engineers, the British water industry and international agencies. They have experience of working on problems in the water environment in over 120 countries across the full spectrum of arid to humid climates. In 2012, WRA became a limited liability partnership, WRA LLP.

Partners

Peter J Baur International development, IWRM and mine hydrology
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Paul A C Holmes Groundwater development, water resource planning
Ben S Piper Water institutions and British water industry
Dr Harvey J E Rodda GIS applications, flood risk and insurance
Prof Paul G Whitehead Water quality modelling, INCA author

Associates and Consultants

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