

## Summary

A highly skilled and results-oriented Hydrogeologist with over 20 years of experience in groundwater management, modeling, and investigations. Possesses a strong understanding of water resources challenges in arid regions and a proven track record of leading successful projects.

## Academic qualifications

Degree	Institute / Country	Year
Ph.D.	University of Twente, Enschede, the Netherlands	2011
<b>Specialization:</b> Groundwater, Numerical modelling, and Earth observation		
M.Sc. Geo-Information Science and Earth Observation	International institute for Geo-information Science and Earth Observation, Enschede, the Netherlands	2003
<b>Specialization:</b> Watershed Management, Conservation and River Basin Planning		
Post Graduate Diploma and B.Sc., Civil Engineering	Aleppo University, Syria	2000&1997
<b>Specialization:</b> Engineering Management and Construction		

## Career Summary

Job Title	Organization /location	Duration
Team leader -Groundwater Science	Environment Canterbury Christchurch, New Zealand	2022 – Present
<b>Tasks/duties:</b> lead high-performing team of groundwater scientists and analysts, plan, design and conduct groundwater investigation projects, optimize groundwater monitoring program, Provided technical advice to decision-makers and stakeholders.		
Senior Hydrogeologist	Environment Canterbury Christchurch, New Zealand	2012 - 2022
<b>Tasks/duties:</b> design and lead groundwater investigation projects, numerical hydrological modelling, provide technical advice to decision makers re. groundwater resource management.		
Water resources Engineer	Ministry of Water Resources Raqqqa, Syria	2003 - 2005
<b>Tasks/duties:</b> irrigated area mapping using GIS and remote sensing / irrigation applications administration/ water budget calculations		
Groundwater Monitoring Program supervisor	Ministry of Irrigation Raqqqa, Syria	1998 – 2001
<b>Tasks/duties:</b> lead groundwater monitoring program / numerical groundwater table mapping		
Alswydeeyah Irrigation and Drainage Project Manager	Ministry of public works Raqqqa, Syria	1997 - 1998
<b>Tasks/duties:</b> manage the irrigation and drainage project/ ground leveling/ installing drainage and irrigation channels...		

### Career experience, responsibilities, and achievements

- Built & used advanced groundwater models to manage water resources, support planning and strategy, and educate scientific & public audiences.
- Supervised Master students (UT, 2008-2009-2010), and PhD students (UC, 2018-2021)
- Delivered several presentations at national and international conferences.
- Coached and trained new team members and modellers.
- Peer reviewed papers in international journals in hydrogeology and remote sensing
- Reviewed hundreds of aquifer tests, and groundwater related advice.
- Actively participated in formulating science strategy, and the section purpose, vision, and mission.

### Numerical Competencies

- Numerical modelling: *MODFLOW, GMS, MIKE-SHE*
- Heat and water transport in soils: *NOAH, SHAW*
- GIS and remote sensing: *ArcGIS, ILWIS, Google Earth Engine*
- Statistics and Geo-statistics: *SPSS, GS+, Surfer*

### Key skills

- Communicator & Presenter: Captivates audiences with clear, concise messages and builds strong relationships. Adapts communication for diverse teams and goals.
- Multicultural Team Builder: Thrives in diverse environments, fostering inclusion and leveraging unique perspectives to drive innovation.
- Results-Oriented Leader: Holds self-accountable, consistently exceeds expectations, and delivers impactful results.
- Emotionally Intelligent: Builds strong relationships, navigates conflict effectively, and fosters a positive work environment.

### Professional memberships

- New Zealand Hydrological Society

### Field campaigns

- Soil moisture monitoring program lead 2005  
AquiferEx Campaign, European Space Agency, Tunisia
- Soil moisture measurements program lead 2006  
EAGLE Campaign European Space Agency, the Netherlands
- Soil profile and groundwater monitoring 2002, 2007, 2008, 2009  
MSc and PhD field work, Syria

### Major publications

- Alkhaier, F. (2011), Shallow groundwater effect on land surface temperature and surface energy balance: description, modeling and remote sensing application, Enschede, University of Twente Faculty of Geo-Information and Earth Observation ITC, 2011. PhD Dissertation, 198, ISBN: 978-90-6164-322-7.
- Alkhaier, F., Flerchinger G.N., and Su, Z., (2011) The thermodynamic effect of shallow groundwater on temperature and energy balance at bare land surface, In: Heat analysis and thermodynamic effects / ed. by A. Ahsan : InTech, 2011. 394 p. ISBN 978-953-307-585-3. pp. 19-34.
- Alkhaier, F., Flerchinger G.N., and Su, Z., (2011) Shallow groundwater effect on land surface temperature and surface energy balance under bare soil conditions: Modeling and description, Hydrol. Earth Syst. Sci. Discuss., 8, 8639-8670, doi:10.5194/hessd-8-8639-2011.
- Alkhaier, F., Su, Z., and Flerchinger G.N., (2011) Reconnoitering the effect of shallow groundwater on land surface temperature and surface energy balance using MODIS and SEBS, Hydrol. Earth Syst. Sci. Discuss., 8, 8671-8700, doi:10.5194/hessd-8-8671-2011.
- Alkhaier, F., Schotting, R.J. and Su, Z., (2009), A qualitative description of shallow groundwater effect on surface temperature of bare soil, Hydrology and Earth System Sciences (HESS), 13, 1749-1756.
- Alkhaier, F. (2003), Soil salinity detection using satellite remote sensing, MSc. thesis, ITC, Enschede, the Netherlands.

### Conference papers

- Scott, D.M., and Alkhaier, F. (2018) RMA plan review as hypothesis testing – a socio-hydrology perspective, 2018 Water Symposium, Christchurch, New Zealand.
- Alkhaier, F. (2016) Satellite Remote Sensing and GIS for Water Resources Management, Water Infrastructure & The Environment, Hydrological Society Conference, Queenstown, New Zealand.
- Etheridge, Z., Steyl, G., Burberry, L., van der Raaij, R. and Alkhaier, F., (2016) Investigation of nitrogen sources, fate and transport in the Kaiapoi river catchment, Water Infrastructure & The Environment, HydroSoc Conference, Queenstown, New Zealand.
- Alkhaier, F., Zarour, H., and Etheridge, Z., (2015) Supporting Groundwater Model Calibration with Highly Parameterized Simulation of Recharge, Water Symposium, Hamilton, New Zealand.
- Etheridge, Z., and Alkhaier, F., (2015) Investigation of offshore coastal discharge in the Waimakariri zone, Canterbury, Water Symposium, Hamilton, New Zealand.
- Aitchison-Earl, P. and Alkhaier, F., (2014) Where's My Water? What is Causing a Declining Trend in Shallow Groundwater of The Pareora Valley, South Canterbury?, 2014 Water Symposium, Marlborough, New Zealand.
- Alkhaier, F., Druzynski, A., and Scott, D., (2014) Representing New Zealand soils in integrated hydrological models: challenges and solutions, Water Symposium, Marlborough, New Zealand.

- Druzynski, A., Durney, P., and Alkhaier, F., (2014) Integrated modelling with MIKE SHE: Successfully building sub-regional scale models in Canterbury, 21st Century Watershed Technology Conference and Workshop, The University of Waikato, Hamilton, New Zealand.
- Alkhaier, F. and Su, Z., (2009) The effect of shallow groundwater on soil temperature and soil heat flux near land surface, Geophysical Research Abstracts, 11, European Geosciences Union General Assembly 2009, Vienna, Austria.
- Alkhaier, F., (2007) Soil moisture field observations over the Cabauw grassland, EAGLE Campaign Final Workshop, European Space Agency (ESA) center, Noordwijk, the Netherlands.

#### Technical reports and memoranda

- Alkhaier, F., Hanson, M., and Zarour, H., (2019), Trends in groundwater levels in the Central Plains of Canterbury, Report No. R19/18, ISBN. 978-1-98-852044-5.
- Aitchison-Earl, P., Alkhaier, F., Trewartha, M., (2018), Interpretation of results from Aqualinc report 'Earthquake effects on Groundwater – Groundwater modelling results. Environment Canterbury technical memorandum, C18C/86858.
- Alkhaier, F., and Scott M., (2017), Risk maps of nitrate in Canterbury groundwater, Environment Canterbury Report No. R17/46, ISBN 978-1-98-852077-3.
- Alkhaier, F. (2016), Land Surface Recharge Calculations for Waimakariri hydrological model, Technical Report, Report No. R16/10, ISBN. 978-0-947507-47-3.
- Durney, P., Ritson, J., Druzynski, A., Alkhaier, F., Tutulic, D., and Sharma, M., (2014), Integrated catchment modelling of the Hinds Plains: Model development and scenario testing, Report No. R14/64 ISBN 978-1-927314-06-7 (print), 978-1-927314-07-4 (web).
- Durney, P., Alkhaier, F., and Shaw, H., (2013), Irrigated area and related data requirements, Environment Canterbury technical memorandum, Oct 2013, C16C/112776.

#### Presentations

- Alkhaier, F., Canterbury Water Cycle and the role of Environment Canterbury in managing Canterbury water resources, Probus club talk, Christchurch, New Zealand, July 2019.
- Alkhaier, F., Available Groundwater and GIS Data at Canterbury Regional Council, University of Canterbury, Christchurch, New Zealand, February 2018.
- Alkhaier, F., Understanding the Groundwater System and its drivers, West Melton, New Zealand, November 2017.
- Alkhaier, F., Using water temperature in observation groundwater level fluctuations in shallow groundwater systems, ITC PhD day, Enschede, the Netherlands, June 2010.
- Alkhaier, F., Using soil temperature to retrieve useful hydrological parameters, ITC PhD day, Enschede, the Netherlands, June 2008.
- Alkhaier, F., The Unique Opportunities of Remote Sensing in Water Management of River Basins, in front of His Royal Highness: Willem Alexander, Prince of Orange, during his working visit to ITC, Enschede, the Netherlands, October 2002.