

NZHS 2024 Conference Programme (v15 - 25 Nov)

Monday 25 November 2024			
Workshops + Special Interest Groups			
Tuesday 26 November 2024			
OPENING CEREMONY			
8.15am - 8.35am	Mihi Whakatau - Rangitāne o Wairau Ngāti Toa Ngāti Rārua Mayor Nadine Taylor		
8.35am - 8.55am	Kai Whakanōa		
8.55am-9.00am	Society Welcome: Joseph Thomas + conference housekeeping		
9.00am - 9.45am	Keynote Speaker: Charles Pearson NIWA : History and Evolution of Operational Hydrology in New Zealand Chair: Mike Ede		
9.45-10.15am	Morning Tea: kindly sponsored by Marlborough District Council		
Location	MEC 1	MEC 2	MEC 3
Theme	1) Large-scale Climate Variability: extremes, hazards, impacts of climate change	2) Groundwater Quality and Quantity	3) Gravel-Bed River Exchange Processes
Session Chair	Sarah Mager	Paul White	Peter Davidson
10.20am-10.40am	Flash droughts in Hawke's Bay and their hydrological significance Daniel Kingston <i>University Of Otago</i>	Can metamodels predict groundwater age across New Zealand? Conny Tschirter <i>GNS Science</i>	Re-assessing Groundwater-Surface Water Exchange in Gravel-Bed Rivers Scott Wilson <i>Lincoln Agritech Ltd</i>
10.40am-11.00am	Climate change impacts on hydrological extremes: learnings from Whakahura research programme Christian Zammit <i>NIWA</i>	Assessing transport in groundwater of microbial pathogens from the Hekeao/Hinds managed aquifer recharge scheme Madeline Inglis <i>Pattle Delamore Partners*</i>	Investigating the impact of morphology on spatial patterns of groundwater exchange in the Wairau River Thomas Wöhling <i>TU Dresden / Lincoln Agritech Ltd</i>
11.00am-11.20am	A Storyline Approach to Assess the Impact of Climate Change on the Hydrological Processes Ella Farrugia <i>University Of Canterbury*</i>	GroMBPy: A groundwater model build python package in the pipeline Tara Forstner <i>University Of Canterbury*</i>	Groundwater - surface water interaction at the Kauru River, North Otago Sam Yeo <i>Otago Regional Council</i>
11.20am-11.40am	Incorrect annual exceedance probability calculations are distorting climate change planning Graeme Smart <i>NIWA</i>	Floating Oranges and Fishing for Guppies: Further Musings of a Backyard Hydrogeologist Ross Hector <i>Aqualinc Research Ltd</i>	Variation in groundwater flow within a braidplain aquifer over a 3-year period Alice Sai Louie <i>University Of Canterbury*</i>
11.40am-12.00pm	Climate-change impacted extreme events: are we unknowingly forcing a game-of-chicken between primary industry and rivers? Matt Dumont <i>Kōmanawa Solutions Ltd</i>	Groundwater of the Maniototo Basin, Central Otago Amir Levy <i>Otago Regional Council</i>	
12.00pm-1.30pm			
Lunch + Poster Session			
Location	MEC 1	MEC 2	MEC 3
Theme	4) Rivers: flow and management	5) Surface water quality	6) Wairau Plains Studies
Session Chair	Graeme Smart	Philippa Aitchison-Earl	John Bright
1.30pm-1.50pm	Predicting naturalised hydrology and water allocation status for the Otago Regional Land and Water Plan Michael Friedel <i>Earthquest Consulting Ltd</i>	Decline in water quality and health of the Opuha River Doug Rankin <i>Whitewater NZ</i>	What If? Scenario simulations with the Wairau Plain groundwater model Thomas Wöhling <i>TU Dresden / Lincoln Agritech Ltd</i>
1.50pm-2.10pm	Incorporating climate change into environmental flow setting Jason Alexander <i>NIWA</i>	Modelling of high-frequency pH data from the Waikato River Jungho Park <i>Lincoln Agritech Ltd</i>	The Wairau River Hydrologic System: old-water stores and impact of floods on aquifer dynamics? Uwe Morgenstern <i>GNS Science</i>

NZHS 2024 Conference Programme (v15 - 25 Nov)

2.10pm-2.30pm	Trend analysis of flow and flood characteristics in North Canterbury and Southland catchments Fraser Philip <i>University Of Otago*</i>		Comparing physics-based and data-driven models to predict groundwater levels in the Wairau Aquifer Thomas Wöhling <i>TU Dresden / Lincoln Agritech Ltd</i>
2.30pm-2.50pm	Seasonal water budget of the upper Rangitata Tim Kerr <i>Rainfall.NZ Ltd</i>		Potential influence of historical land cover change on Wairau Aquifer levels Gemma Clark <i>GNS Science</i>
2.50pm-3.10pm	Replicable methods for region-wide river flow naturalisation to inform environmental flow setting Channa Rajanayaka <i>NiWA</i>		Grape Expectations (the Wairau Plain story) Nicole Calder-Steele <i>Aqualinc Research Ltd</i>
3.10pm-3.30pm	Deep learning in the shallows Alaina Baker <i>University Of Canterbury*</i>		History matching to age in the Wairau Plains Wes Kitlasten <i>GNS Science</i>
3.30pm - 4.00pm	Afternoon Tea		
Location	MEC 1	MEC 2	MEC 3
Theme	7) Groundwater Modelling	Student Function - kindly sponsored by PDP	8) Advances in water resource management in Marlborough over the past 20 years
Session Chair	Amir Levy		Nicole Calder-Steele
4.00pm-4.20pm	Using Bayesian inference to bridge the groundwater age divide: a lightweight data driven technique Matt Dumont <i>Kōmanawa Solutions Ltd</i>	Panel Q&A event followed by drinks and canapes	Water Allocation Framework Development John Bright <i>Aqualinc Research Ltd</i>
4.20pm-4.40pm	Feasibility of Managed Aquifer Recharge on Grand Bahama, The Bahamas Sophia Klausner <i>WGA</i>		Water Allocation Frameworks : Evolution From Conceptual Ideas To Implementation in Marlborough Environment Plan (MEP) Sarah Pearson <i>Marlborough District Council</i>
4.40pm-5.00pm	Utilising 2D Models for Groundwater and Wetland Effects Assessment Clare Houlbrooke <i>WGA</i>		Addressing allocation issues through developing and applying reasonable irrigation water use standards John Bright <i>Aqualinc Research Ltd</i>
5.00pm-5.20pm			Applying Agile Allocation Concepts to the Wairau Aquifer John Bright <i>Aqualinc Research Ltd</i>
5.30pm - 7.30pm	Aqualinc Welcome Function Whitehaven Room, ASB Theatre		

Wednesday 27 November 2024			
9.00 - 9.45am	Keynote Speaker: Leanne Morgan <i>University of Canterbury Waterways Centre</i> : Impacts of Sea-Level Rise on Coastal Aquifers Chair: Scott Wilson		
9.45am - 10.15am	Morning Tea: kindly sponsored by Marlborough District Council		
Location	MEC 1	MEC 2	MEC 3
Theme	9) Flooding and Flood Modelling	10) Geophysics and Aquifer Mapping	11) Coastal Aquifer response to Sea Level Rise
Session Chair	Tim Kerr	Rogier Westerhoff	Helen Rutter
10.20am-10.40am	Defining Resilience: performance standards for a Flood Monitoring Network Carrie Hopkirk <i>Stantec</i>	Characterising shallow groundwater systems using state of the art geophysical techniques Nick Dudley Ward <i>Aqualinc Research Ltd</i>	Vulnerability of Coastal Groundwater Supplies from Saline Intrusion – A Case Study in Hahei, Coromandel Louise Soltau <i>WSP</i>
10.40am-11.00am	The curious case of Markov, Monte, the 2023 floods and the missing recorders Ben Throssell <i>Pattle Delamore Partners</i>	Visualising aquifer parameter data across Canterbury Kate Bailue <i>Environment Canterbury</i>	Sea-level rise effects on coastal shallow groundwater: Perspectives of practitioners Amandine Bosserelle <i>University of Canterbury</i>
11.00am - 11.20am	Integrated Coastal and Riverine Flood Modelling for Effective Hazard Management Rasool Porhemmat <i>NIWA</i>	Groundwater facies beneath the coastal Wairau Plain, Marlborough Martin Crundwell <i>GNS Science</i>	The Christchurch Coastal Aquifer System: Geological setting and groundwater occurrence in the onshore-offshore quaternary sequence Carlos Rosado de Palacio <i>Environment Canterbury</i>
11.20am-11.40am	Waikato Hydro Scheme – Flood Modelling Lennie Palmer <i>Riley Consultants Ltd</i>	National hydrogeological-unit map: update on the facis mapping Magali Moreau <i>GNS Science</i>	Effect of alluvial aquifer heterogeneity on seawater intrusion Connor Cleary <i>University Of Canterbury*</i>
11.40am-12.00pm	A first set of 1% AEP flood maps for Aotearoa Alice Harang <i>NIWA</i>		Seawater Intrusion In Aotearoa: insights from groundwater level observations and projections of sea level rise Andy Pearson <i>ESR</i>
12.00pm-12.20pm	When it rains it pours, but does it also surge? Joint probability of Christchurch flooding Guus Rongen <i>Pattle Delamore Partners</i>		Groundwater Dynamics in Kaituna, Bay of Plenty, New Zealand: Assessing RSLR Impacts on Groundwater Shoaling Patrick Durney <i>Kōmanawa Solutions Ltd</i>
12.20 - 1.30pm	Lunch and monitoring display at the Taylor River - <i>details on the app</i>		
Location	MEC 1	MEC 2	MEC 3
Theme	12) Data: monitoring, visualisation and management	13) Water Quantity Accounting	14) Groundwater Ecosystems
Session Chair:	Christian Zammit	Channa Rajanayaka	Murray Close
1.30pm-1.50pm	Insights into snow water storage in the central Southern Alps from satellite photogrammetric mapping Jono Conway <i>NIWA</i>	Diving Into Water Use: creating a splashy dashboard for Canterbury's water abstraction data Courtenay Bremner <i>Environment Canterbury</i>	Molecular library of groundwater macrofauna Louise Weaver <i>ESR</i>
1.50pm-2.10pm	What is non-stationarity and how do we recognise it in environmental data? Shailesh Singh <i>NIWA</i>	Trialling a live water balance model for the Rakaia River using telemetered abstraction data. Dan Clark <i>Environment Canterbury</i>	Predictive models for identifying contaminant sources in groundwater using biological diversity Louise Weaver <i>ESR</i>
2.10pm-2.30pm	Progressing groundwater quality monitoring optimisation – Waikato pilot study Nicki Wilson <i>Waikato Regional Council</i>	Rakitata/Rangitata River – understanding the historic flow and the impact Jen Dodson <i>Environment Canterbury</i>	Effects of saltwater intrusion on microbial communities in an aquifer transect Karen Houghton <i>GNS Science</i>

NZHS 2024 Conference Programme (v15 - 25 Nov)

2.30pm-2.50pm	Open-access gauge-corrected gridded precipitation dataset in New Zealand Michael Kittridge <i>Headwaters Hydrology</i>	Modelling Streamflows in Ashburton for resources management Jing Yang <i>NiWA</i>	Nitrate tolerances of Canterbury stygofauna Matt Close <i>ESR*</i>
2.50pm-3.10pm		Challenges, demonstration, and recommendations for water quantity accounting Rachel Smith <i>NiWA</i>	Biological diversity in uncommon aquifers Judith Webber <i>ESR</i>
3.15pm-3.45pm	Afternoon Tea		
Location	MEC 1	MEC 2	MEC 3
Theme	15) Rainfall and runoff processes	16) Catchments, communities and integrated management	17) Coastal Aquifer response to Sea Level Rise - continued
Session Chair	Daniel Kingston	Nicki Wilson	Lee Burbery
3.50pm-4.10pm	A new webtool to estimate possible maximum precipitation in New Zealand Oscar Barrett-Garnier <i>Riley Consultants Ltd</i>	Community driven flood mitigation in the Waitohu stream catchment Caitlin Meister <i>Stantec</i>	Rising Waters: Groundwater hazard exposure in the Waimakariri District of Canterbury, New Zealand Desmond McCloy <i>Pattle Delamore Partners</i>
4.10pm-4.30pm	Evaluating the influence of atmospheric moisture transport on runoff variability in New Zealand Nithin Krishna <i>University Of Otago*</i>	Life and death in floods – Mortality and damage probabilities in floods Raphael Menke <i>Beca Ltd</i>	Urban shallow groundwater, climate change and urban karst Helen Rutter <i>Lincoln Agritech Ltd</i>
4.30pm-4.50pm	Improvement to the large area long duration method: possible maximum precipitation in New Zealand Oscar Barrett-Garnier <i>Riley Consultants Ltd</i>	Analysis of narratives and resonances to support integrated water management decisions Maria Estefania Santamaria Cerrutti <i>GNS Science</i>	High-Resolution Groundwater Depth Modelling in New Zealand: Assessing Shallow Water Table Probabilities for Coastal Management Patrick Durney <i>Kōmanawa Solutions Ltd</i>
4.50pm-5.10pm	Advances in precipitation isotope modeling for NZ: Open access models and a call for data Bruce Dudley <i>NiWA</i>	Narratives and biocultural drivers: cross-cultural frameworks for managing water and social-ecological systems Pierre Glynn <i>Arizona State University</i>	Simplified but robust coastal boundary condition representation for groundwater model predictions Lee Chambers <i>GNS Science</i>
5.30pm-6.30pm	NZHS AGM		
from 7.00pm	ENVCO Social Function 5 Tapped		

NZHS 2024 Conference Programme (v15 - 25 Nov)

Thursday 28 November 2024			
9.00am-9.45pm	Keynote Speaker: Andrew Fenemor Manaaki Whenua Landcare Research : Integrated Catchment Management - Its Evolution from Science to Practice Chair: Joseph Thomas		
9.45am - 10.15am	Morning Tea		
Location	MEC 1	MEC 2	MEC 3
Theme	18) Groundwater/Water in Infrastructure	19) Translation of science to policy, planning and management	20) Nitrates
Session Chair	Sarah Innes	Clare Houlbrooke	Roland Stenger
10.20am-10.40am	Waterview Tunnel - Calcite Mitigation Approach Louise Soltau WSP	A review of freshwater models to support water regulation and management - part 1 Rogier Westerhoff GNS Science	Characterisation of groundwater nitrate contamination to support mitigation actions in the Parkvale catchment, Wairarapa Rob van der Raaij Greater Wellington
10.40am-11.00am	Can MAR Infiltration Basin Design Concepts be used to Improve Stormwater Management? Cameron Jasper WGA	A review of freshwater models to support water regulation and management - part 2 Rogier Westerhoff GNS Science	A lighter shade of grey – the nitrate footprint of Canterbury dairy Lee Burberry DairyNZ
11.00am - 11.20am	Advancing dewatering methods for enhanced mining efficiency in Pilbara, Western Australia Hakan Paker Rio Tinto	Impacts of Climate Cycles and Trends on Selwyn District Council Assets Andrew Dark Aqualinc Research Ltd	Insights from the past: a new source of historical groundwater quality data in Canterbury Philippa Aitchison-Earl Environment Canterbury
11.20am-11.40am	Spatio-temporal variability in inflow and infiltration into sewer networks under different soils Birendra KC Rangitikei District Council	Water allocation system efficiency: Concepts, metrics and implementation Paul White GNS Science	Variability of nitrate in groundwater: Trends, lags and pulses Helen Rutter Lincoln Agritech Ltd
11.40am-12.00pm	Investigating and managing the risks to groundwater from onsite wastewater systems Andy Pearson ESR	Water Management and Governance: A Knowledge Base and Interpretive Model Pierre Glynn Arizona State University	NitrateWatch - The state of nitrates in New Zealand's rural drinking water Karyne Rogers GNS Science
12.00pm-12.20pm		New groundwater limits for the Bay Of Plenty – Benefits of a simple approach Blair Thornburrow Pattle Delamore Partners	Nitrate nitrogen response domains following a large-scale rainfall event on the Hekeao Plains Justin Legg MHV Water Ltd
12.20-1.30pm	Lunch		
Location	MEC 1	MEC 2	MEC 3
Theme	21) Large-scale data and tools	22) Catchment modelling	23) Groundwater Contaminants & Transport
Session Chair	Channa Rajanayaka	Jing Yang	Magali Moreau
1.30pm-1.50pm	Developing a national-scale snowmelt forecast system for New Zealand Jono Conway NIWA	Coupled catchment-lake modelling for Lake Wānaka Linh Hoang NIWA	An inadvertent tracer test Neil Thomas Pattle Delamore Partners
1.50pm-2.10pm	Pilot CMIP5-CMIP6 hydrological projections intercomparison study Christian Zammit NIWA	Enhancing decision support in New Zealand with SWAT models and the SWATOnline platform Thanh Dang NIWA	Evaluation of transport characteristics in an alluvial gravel aquifer using solute and synthetic dna tracers Michael Hayford ESR
2.10pm-2.30pm	Generation of multi-purpose digital river networks Doug Booker NIWA	SWAT modelling for Hauraki Gulf catchment Linh Hoang NIWA	Numerical Delineation of Source Water Risk Management Areas in Heterogeneous Alluvial Aquifers: Guidelines and Recommendations Allannah Kenny ESR
2.30pm-2.50pm		Modelling the supply-demand balance of NZ's largest water supply system Sarah Innes Watercare Services Ltd	Guidelines for delineating Source Water Risk Management Areas Hilary Lough Pattle Delamore Partners

NZHS 2024 Conference Programme (v15 - 25 Nov)

2.50pm-3.20pm	Afternoon Tea		
Location	MEC 1	MEC 2	MEC 3
Theme	24) Groundwater-Surfacewater interaction	25) Te Waikoropupū Springs	26) Groundwater Contaminants & Transport (cont'd)
Session Chair	Hilary Lough	Joseph Thomas	Nicole Calder-Steele
3.25pm-3.45pm	Groundwater recharge from ephemeral rivers of the Canterbury Plains: Historical reconstruction using satellite imagery Guin Knight <i>Lincoln Agritech Ltd</i>	Review of monitoring for the Water Conservation Order on the Te Waikoropupū springs Murray Close <i>ESR</i>	2022 National Survey of Emerging Organic Contaminants in Groundwater Laura Banasiak <i>ESR</i>
3.45pm-4.05pm	Determining radon equilibrium concentrations from core samples Linda Robb <i>Lincoln Agritech Ltd</i>	Two water components feed Te Waikoropupū main spring (pt 1) Mike Stewart <i>Aquifer Dynamics Ltd / GNS Science</i>	Moderate salinisation extends survival of faecal indicator organisms and campylobacter jejuni in groundwater Andy Pearson <i>ESR</i>
4.05pm-4.25pm	Temporal variation of river water mean transit times and hydrological pathway contributions in Waikato catchments Roland Stenger <i>Lincoln Agritech Ltd</i>	Two water components feed Te Waikoropupū main spring (pt 2) Mike Stewart <i>Aquifer Dynamics Ltd / GNS Science</i>	
4.30pm-4.45pm	Karakia Whakakapi Conference Close - in MEC 1		
6.30pm-11.30pm	Conference Dinner - Pernod Ricard Winery - Buses depart MEC at 6.15pm		
Friday 29 November 2024			
meet at 8.45am	Conference Field Trips - both trips depart from the Marlborough Events Centre (conference venue) at 9am sharp		

*denotes student presenter