

NZHS 2024 Conference Programme (v8 - 24 Oct)

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		
9.45-10.15am	Morning Tea: kindly sponsored by Marlborough District Council		
Location	MEC 1	MEC 2	MEC 3
Theme	<b>1) Large-scale Climate Variability: extremes, hazards, impacts of climate change</b>	<b>2) Groundwater Quality and Quantity</b>	<b>3) Gravel-Bed River Exchange Processes</b>
Session Chair	Sarah Mager	Paul White	Peter Davidson
10.20am-10.40am	Flash droughts in Hawke's Bay and their hydrological significance <b>Daniel Kingston</b>   <i>University Of Otago</i>	Can metamodels predict groundwater age across New Zealand? <b>Conny Tschirter</b>   <i>GNS Science</i>	Re-assessing Groundwater-Surface Water Exchange in Gravel-Bed Rivers <b>Scott Wilson</b>   <i>Lincoln Agritech Ltd</i>
10.40am-11.00am	Climate change impacts on hydrological extremes: learnings from Whakahura research programme <b>Christian Zammit</b>   <i>NIWA</i>	Assessing transport in groundwater of microbial pathogens from the Hekeao/Hinds managed aquifer recharge scheme <b>Madeline Inglis</b>   <i>Pattle Delamore Partners*</i>	Investigating the impact of morphology on spatial patterns of groundwater exchange in the Wairau River <b>Thomas Wöhling</b>   <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 <b>Ella Farrugia</b>   <i>University Of Canterbury*</i>	GroMBPy: A groundwater model build python package in the pipeline <b>Tara Forstner</b>   <i>University Of Canterbury*</i>	Groundwater - surface water interaction at the Kauru River, North Otago <b>Sam Yeo</b>   <i>Otago Regional Council</i>
11.20am-11.40am	Incorrect annual exceedance probability calculations are distorting climate change planning <b>Graeme Smart</b>   <i>NIWA</i>	Floating Oranges and Fishing for Guppies: Further Musings of a Backyard Hydrogeologist <b>Ross Hector</b>   <i>Aqualinc Research Ltd</i>	Impact of Changes in Flow on Fine Sediment Deposition in Gravel-Bed Rivers <b>Arman Haddadchi</b>   <i>NIWA</i>
11.40am-12.00pm	Climate-change impacted extreme events: are we unknowingly forcing a game-of-chicken between primary industry and rivers? <b>Matt Dumont</b>   <i>Kōmanawa Solutions Ltd</i>	Groundwater of the Maniototo Basin, Central Otago <b>Amir Levy</b>   <i>Otago Regional Council</i>	Variation in groundwater flow within a braidplain aquifer over a 3-year period <b>Alice Sai Louie</b>   <i>University Of Canterbury*</i>
12.00pm-1.30pm Lunch + Poster Session			
Location	MEC 1	MEC 2	MEC 3
Theme	<b>4) Rivers: flow and management</b>	<b>5) Surface water quality</b>	<b>6) Wairau Plains Studies</b>
Session Chair	Graeme Smart	Phillippa Aitchison-Earl	John Bright
1.30pm-1.50pm	Predicting naturalised hydrology and water allocation status for the Otago Regional Land and Water Plan <b>Michael Friedel</b>   <i>Earthquest Consulting Ltd</i>	Monitoring of metals in the Opuha River using conventional grab sampling and passive sampling <b>Jared Panther</b>   <i>Opuha Water Limited</i>	What If? Scenario simulations with the Wairau Plain groundwater model <b>Thomas Wöhling</b>   <i>TU Dresden / Lincoln Agritech Ltd</i>
1.50pm-2.10pm	Incorporating climate change into environmental flow setting <b>Jason Alexander</b>   <i>NIWA</i>	Decline in water quality and health of the Opuha River <b>Doug Rankin</b>   <i>Whitewater NZ</i>	The Wairau River Hydrologic System: old-water stores and impact of floods on aquifer dynamics? <b>Uwe Morgenstern</b>   <i>GNS Science</i>

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

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

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

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

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2.50pm-3.20pm	Afternoon Tea		
Location	MEC 1	MEC 2	MEC 3
Theme	<b>24) Groundwater-Surfacewater interaction</b>	<b>25) Te Waikoropupū Springs</b>	<b>26) Groundwater Contaminants &amp; Transport (cont'd)</b>
Session Chair	Hilary Lough	Joseph Thomas	Lee Burbery
3.25pm-3.45pm	Groundwater recharge from ephemeral rivers of the Canterbury Plains: Historical reconstruction using satellite imagery <b>Guin Knight</b>   <i>Lincoln Agritech Ltd</i>	Review of monitoring for the Water Conservation Order on the Te Waikoropupū springs <b>Murray Close</b>   <i>ESR</i>	2022 National Survey of Emerging Organic Contaminants in Groundwater <b>Laura Banasiak</b>   <i>ESR</i>
3.45pm-4.05pm	Determining radon equilibrium concentrations from core samples <b>Linda Robb</b>   <i>Lincoln Agritech Ltd</i>	Two water components feed Te Waikoropupū main spring (pt 1) <b>Mike Stewart</b>   <i>Aquifer Dynamics Ltd / GNS Science</i>	Emerging organic contaminants in New Zealand groundwaters: Taranaki's regional assessment <b>Magali Moreau</b>   <i>GNS Science</i>
4.05pm-4.25pm	Temporal variation of river water mean transit times and hydrological pathway contributions in Waikato catchments <b>Roland Stenger</b>   <i>Lincoln Agritech Ltd</i>	Two water components feed Te Waikoropupū main spring (pt 2) <b>Mike Stewart</b>   <i>Aquifer Dynamics Ltd / GNS Science</i>	Predictive models for identifying contaminant sources in groundwater using biological diversity <b>Louise Weaver</b>   <i>ESR</i>
4.30pm-4.45pm	<b>Conference Close - in MEC 1</b>		
6.30pm-11.30pm	Conference Dinner - Pernod Ricard Winery		
<b>Friday 29 November 2024</b>			
Conference Field Trips			

\*denotes student presenter