

**NZFSS Conference Abstract Programme - 10-14th December 2018 - Nelson**

Please note; this is a DRAFT programme, changes may be made

All Concurrent Sessions based on 15 minute talks. (talk 12 min, 3 min Q&A)

\* eligible for Student Prizes

| MONDAY 10 DECEMBER  |                      |   |   |  |  |
|---------------------|----------------------|---|---|--|--|
| 8.30 am             |                      | Registration Desk Open  |   |  |  |
| 10:15 am            |                      | Bus departs Rutherford Hotel for Whakatū marae  |   |  |  |
| 10.30 - 11.10 am    | OPENING              | Pōwhiri/Welcome - Whakatū marae   |   |  |  |
| 11.10 - 11.30am     |                      | MORNING TEA   |   |  |  |
| 11.30 - 12.50 pm    | KEYNOTE 1/2          | Keynote Speaker 1: TBC  | Keynote Speaker 2: Tina Porou   | Chair: TBC   |  |
| 12.50 pm            |                      | Bus returns to Rutherford Hotel   |   |  |  |
| 1:00 - 2:00 pm      |                      | LUNCH   |   |  |  |
|                     | CONCURRENT SESSION 1 | SESSION THEME: SETAC ANZECC<br>ROOM:<br>CHAIR: Jennifer Gadd  | SESSION THEME: Resistance, resilience, restoration<br>ROOM:<br>CHAIR: Elizabeth Graham  | SESSION THEME: Mātauranga Māori shaping freshwater futures<br>ROOM:<br>CHAIR: Joanne Clapcott  | Session theme: Lake snow<br>ROOM:<br>CHAIR: Marc Schallenberg  |
| 2.00 - 2.15         |                      | Key features of the revised Australian and New Zealand Guidelines for Fresh and Marine Water Quality. <i>Rick van Dam</i>           | What is delaying biological recovery after stream restoration? The role of traits as a tool to address negative resistance and resilience. <i>Helen Warburton, University of Canterbury</i> | Mātauranga Māori shaping marine and freshwater futures. <i>Joanne Clapcott, Cawthron Institute</i>   | "Lake snow": mucilaginous planktonic macroaggregates and their effects on lake ecology. <i>Marc Schallenberg, University of Otago</i>  |
| 2.15 - 2.30         |                      |   | Boosting biological recovery in degraded streams: disturbing degraded communities to reverse the effects of environmental filtering. <i>Issie Barrett, University Of Canterbury *</i>       | Whakamanahia te mātauranga o te Māori: empowering Māori knowledge to support Aotearoa's aquatic biological heritage. <i>Gary Garner, Te Tira Whakamātaki</i>         | The value of archived diatom collections: understanding the spread of <i>Lindavia</i> intermedia in New Zealand. <i>Cathy Kilroy, NIWA</i>   |
| 2.30 - 2.45         |                      | Estimation and application of nationwide reference conditions of water quality indicators. <i>Doug Booker, NIWA</i>                 | Helping plants find their feet – restoring macrophytes in lakes. <i>Deborah Hofstra, NIWA</i>   | Māori oral tradition and indigenous freshwater knowledge: What do whakatauki tell us? <i>Hēmi Whaanga, University of Waikato</i>                                     | Local Authorities response to <i>Lindavia</i> incursion in New Zealand. <i>Stephanie Dwyer, Otago Regional Council</i>   |
| 2.45 - 3.00         |                      | Challenges in updating copper and zinc water quality guidelines for Australia and New Zealand. <i>Jennifer Gadd, NIWA</i>           | Stream community recovery trajectories following progressive forest harvesting vary by disturbance frequency and magnitude. <i>Elizabeth Graham, NIWA</i>                                   | Evaluating a traditional Maori harvesting method for sampling koura and toi toi populations. <i>Ian Kusabs, Ian Kusabs and Associates Ltd</i>                        | Taxonomy, provenance, abundance, and activity of <i>Lindavia</i> intermedia as revealed by molecular (and other) methods. <i>Phil Novis, Manaaki Whenua-Landcare Research</i>                      |
| 3.00 - 3.15         |                      | The challenge of deriving default ecosystem protection guideline values for PFOS in freshwater. <i>TBC</i>                          | Is resistance futile? Managing and restoring ecological systems for multiple benefits. <i>Ross Thompson, University of Canberra</i>   | Murihiku Cultural Water Classification System: Enduring partnerships between people, disciplines and knowledge systems. <i>Jane Kitson, Ngā Pae o te Māramatanga</i> | Vibrational Spectroscopic and Multivariate Analysis of New Zealand 'Lake Snow'. <i>Ruth Sales, University of Otago *</i>   |
| 3.15 - 3.30         |                      | Considerations for water quality guidelines for emerging contaminants. <i>Louis Tremblay, Cawthron Institute</i>                    | Does the past matter? The influence of disturbance history on community resistance to future disturbance. <i>Roland Eveleens, University of Canterbury</i>                                  | He tohu o te wā - Hangarau pūtaiao; Signs of our time - Fusing technology and science to connect people to place. <i>Yvonne Taura</i>                                | Determining the Polysaccharide Composition of the New Zealand Freshwater Biofouler Lake Snow. <i>Cara Luiten, University of Wellington *</i>   |
| 3.30 - 3.45         |                      | New guidelines and existing freshwater policy: using the best tool for the job. <i>Jennifer Price, Ministry for the Environment</i> | Farmer-led water quality mitigation measures. <i>Liana Climo, CRL Energy Ltd *</i>  | Bicultural lake models to support tāngata whenua in freshwater management. <i>Mereana Wilson-Rooy, QEII Trust</i>  | Discussion   |
| 3.45 - 4.15         |                      | AFTERNOON TEA   |   |  |  |
|                     | CONCURRENT SESSION 2 | SESSION THEME: SETAC ANZECC cont<br>ROOM:<br>CHAIR: Jennifer Gadd   | SESSION THEME: Restoration methods<br>ROOM:<br>CHAIR: Deborah Hoffstra  | SESSION THEME: Indigenous knowledge<br>ROOM:<br>CHAIR: Jane Kitson   | SESSION THEME: Natural history of freshwater biota<br>ROOM:<br>CHAIR: Brian Sorrell  |
| 4.15 - 4.30         |                      | Issues with using water quality guidelines in management: developing decision-support frameworks. <i>Chris Hickey, NIWA</i>         | Sediment traps as mechanisms for reducing E. coli concentrations in dairy farm streams. <i>Megan Devane, ESR</i>  | Collaborating with mana whenua. <i>Kathryn Gale, Aukaha</i>  | Elucidating climate change effects on longfin and shortfin eels using multi-decadal otolith growth reconstructions. <i>Eimer Egan, NIWA</i>  |
| 4.30 - 4.45         |                      | EPA use of Australian and New Zealand guidelines for fresh and marine water quality. <i>Richard Mohan, EPA</i>                      | Trialling stream rehabilitation tools to attenuate high nitrate loads in agricultural headwaters. <i>Brandon Goeller, NIWA *</i>  | Tieki wai in the Waiapu. <i>Pia Pohatu, Hīkurangi Takiwā Trust</i>   | Bergmann's rule and whitebait: differences in size, age and growth of whitebait across New Zealand. <i>Mike Hickford, University of Canterbury</i>   |
| 4.45 - 5.15         |                      | Q+A   | Elucidating stream shade effects on instream plants and comparing shade measurement methods in the Piako River catchment. <i>Fleur Matheson, NIWA</i>                                       | Me pēhea te whakarauora i ngā repo o Maniapoto - how do we go about restoring the wetlands of Maniapoto? <i>Kelly Ratana, NIWA</i>                                   | Ninjas in NZ: Red-eared slider turtles are breeding in New Zealand. <i>Nicholas Ling, Waikato University</i>   |
| 5.15 - 5.30         |                      | Q+A   | Stream shade restoration: are canopy shape or channel orientation important? <i>Kit Rutherford, NIWA</i>  | Ngā Pou Mataara: A Māori framework to monitor mauri in the Tukituki Awa. <i>Kate McArthur, Catalyst Group</i>  | Environmental factors affecting the Irrawaddy dolphin ( <i>Orcaella brevirostris</i> ) distribution in the Mahakam River, East Kalimantan. <i>Februanty Suyatiningsih, University Of Waikato *</i> |
| CLOSE OF DAY ONE    |                      |   |   |  |  |
| 5.30 - 7.00         |                      | WELCOME FUNCTION // Rutherford Hotel  |   |  |  |
| TUESDAY 11 DECEMBER |                      |   |   |  |  |
| 7.30                |                      | Registration Desk Open  |   |  |  |
| 8.45 - 10.15        | PLENARY 3/4          | Housekeeping: (10 mins)   |   |  |  |
|                     |                      | Plenary Speaker 3: Russell Death  | Plenary Speaker 4: Jonathan Tonkin  | Chair: TBC   |  |

| 10.15 - 10.45                                       |                      | MORNING TEA   |   |   |  |
|---|----------------------|---|---|---|--|
|   | CONCURRENT SESSION 3 | SESSION THEME: Environmental flows<br>ROOM: CHAIR: Martin Neale   | SESSION THEME: Population ecology and climate<br>ROOM: CHAIR: Travis Ingram   | SESSION THEME: Nutrient modelling<br>ROOM: CHAIR: Hans Eikaas   | SESSION THEME: Community ecology<br>ROOM: CHAIR: Brent King  |
| 10.45 - 11.00                                       |                      | Advancing the assessment of environmental flows for estuaries. <i>Eleanor Gee, NIWA</i>   | Rapid genetic adaptation offsets plastic increases in body growth rate under warming. <i>David Fryxell, University Of Auckland</i>  | Dynamic catchment modelling of a New Zealand dairy farming catchment. <i>Linh Hoang, NIWA</i>   | Intra-guild predation by alien species on the Common Bully. <i>Marine Richarson, University of Otago *</i>   |
| 11.00 - 11.15                                       |                      | Drift transport capacity: what do we know and what does it mean for flow management? <i>John Hayes, Cawthron Institute</i>  | Altering the flow and thermal regimes of river basins changes the growth dynamics of long-lived fishes. <i>Rick Staffels, NIWA</i>  | Dairy Typologies: A means to Quantifying the N and P Footprint across Spatial Scales. From Farm to Nation. <i>Hans Eikaas, DairyNZ</i>                      | Are rare macroinvertebrate assemblages driven by distinct environmental factors? <i>Dimitros Rados, Massey University *</i>  |
| 11.15 - 11.30                                       |                      | A new approach to substrate mapping that enables high resolution habitat suitability assessments when designing environmental flows. <i>Jo Hoyle, NIWA</i>              | Thermal adaptation alters the ecological role of consumers. <i>Emma Moffett, University Of Auckland *</i>   | A Catchment Accounting Framework for tracing contaminants and calculating loads throughout New Zealand's surface waters. <i>Christophe Thiange, DairyNZ</i> | Invertebrates associated with macrophytes bought from aquarium stores in Canada and New Zealand. <i>Ian Duggan, Waikato University</i>   |
| 11.30 - 11.45                                       |                      | SESSION THEME CHANGE: SOE<br>Using stationary and aerial red-green-blue and multispectral camera imagery for stream periphyton monitoring. <i>Anika Kuczynski, NIWA</i> | Can we find a fingerprint? Detecting recent range shifts among Japan's freshwater-associated species. <i>Kylie Park, Tonkin + Taylor Ltd</i>  | Nutrient load limit setting for estuaries - the New Zealand Estuary Trophic Index approach. <i>David Plew, NIWA</i>   | SESSION THEME CHANGE: Freshwater science, management and policy<br>Freshwater trends for the Asia-Pacific Region and the importance of training early-career scholars in science-policy. <i>Catherine Febria, University of Canterbury</i> |
| 11.45 - 12.00                                       |                      | The influence of macroscale and microscale factors on invertebrate communities: implications for SoE monitoring. <i>Alastair Suren, Bay of Plenty Regional Council</i>  | Kōwaro (Canterbury mudfish) food webs across a gradient of drought intensity. <i>Christopher Meijer, University Of Canterbury *</i>   | Can I Trust that Model? eSource Catchment Model Validation, a learning process. <i>Paul Scholes, Bay Of Plenty Regional Council</i>                         | Eight research areas that could foster the uptake of ecosystem-based management in fresh waters. <i>Simone Langhans, University of Otago</i>   |
| 12.15 - 12.30                                       |                      | Improving the cost-effectiveness of macroinvertebrate state of the environment monitoring. <i>John Stark, Stark Consultants Ltd</i>                                     | Carryover effects of larval environment on individual niche variation of adult common bullies. <i>Travis Ingram, University of Otago</i>  | On the need for more rigorous adoption of best practices in environmental modelling. <i>Deniz Özkundakci, Waikato Regional Council</i>                      | Development of the LUCI model for nature-based water resources management in the Vietnam Mekong Delta. <i>Anh Nguyet Dang, University of Wellington</i>  |
| 12.30 - 1.30  |                      | LUNCH   |   |   |  |
|   | CONCURRENT SESSION 4 | WORKSHOP: Art for freshwaters' sake<br>ROOM: CHAIR: Charlotte Sunde   | SESSION THEME: Swimmability<br>ROOM: CHAIR: Andrew Hughes   | WORKSHOP: Freshwater collaboration<br>ROOM: CHAIR: Jim Sinner   | WORKSHOP: Freshwater management in urban catchments<br>ROOM: CHAIR: Jonathan Moores  |
| 1.30 - 1.45   |                      |   | Revisiting New Zealand's recreational water quality guidelines. <i>Elaine Moriarty, ESR</i>   |   |  |
| 1.45 - 2.00   |                      |   | Public Health Recreational Freshwater Quality Guidelines: What's the story overseas? <i>Beverly Horn, ESR</i>   |   |  |
| 2.00 - 2.15   |                      |   | Recreational water quality investigation: sources of faecal contaminants in four Coromandel catchments in the Waikato region, New Zealand. <i>Eloise Ryan, Waikato Regional Council</i>                       |   |  |
| 2.15 - 2.30   |                      |   | Casting a net over the river: Bayesian networks as a real-time prediction tool for swimmability. <i>Sarah Pirikahu, ESR</i>   |   |  |
| 2.30 - 2.45   |                      |   | Near real-time monitoring of microbial water quality in contrasting New Zealand rivers using ColiMinder. <i>Rebecca Stot, NIWA</i>  |   |  |
| 2.45 - 3.00   |                      |   | Suitability of Brazilian freshwaters for contact recreation. Assessment by a water quality index. <i>Frederico Azevedo Lopes, Universidade Federal de Minas Gerais Brazil</i>                                 |   |  |
| 3.15 - 3.30   |                      |   | A toxic puzzle – unravelling the relationship between anatoxin production & strain dominance in <i>Microcoleus autumnalis</i> ( <i>Phormidium autumnale</i> ). <i>Laura Kelly, University Of Wellington *</i> |   |  |
| 3.30 - 5.00 POSTER SESSION (including refreshments) |                      |   |   |   |  |
| CLOSE OF DAY TWO                                    |                      |   |   |   |  |

| WEDNESDAY 12 DECEMBER |             |   |  |  |   |
|-----------------------|-------------|---|--|--|---|
| 7.30                  |             | Registration Desk Open  |  |  |   |
| 8.45 - 10.15          | PLENARY 5/6 | Housekeeping (10 mins)  |  |  |   |
|                       |             | Plenary Speaker 5: Emily Bernhardt Plenary Speaker 6: Yvonne Vadeboncouer Chair: TBC          |  |  |   |
| 10.15 - 10.45         |             | MORNING TEA   |  |  |   |
|                       |             | SESSION THEME: Community ecology and biological interactions<br>ROOM: CHAIR: Catherine Febria | SESSION THEME: Environmental indicators<br>ROOM: CHAIR: Richard McDowell | SESSION THEME: Aquatic plants and water quality<br>ROOM: CHAIR: Fleur Matheson | SESSION THEME: Waterscapes<br>ROOM: CHAIR: Sarah Pirikahu |

|               |                      |   |  |  |   |
|---------------|----------------------|---|--|--|---|
| 10.45 - 11.00 | CONCURRENT SESSION 5 | How could inverted biomass pyramids of rain forest pools be maintained – extremophile fish feeding from the forest or other fish? <i>Angus McIntosh, University of Canterbury</i>             | Combating in-stream ecological health – from bad to good by picking the low hanging fruit. <i>Duncan Law, Tonkin + Taylor Ltd</i>  | Nutrient attenuation in gravel bed rivers: an ecosystem service or a eutrophication symptom? Ngā tohu o te Tukituki. <i>John Quinn, NIWA</i>                 | Tracking groundwater contamination using DNA tracers. <i>Liping Pang, ESR</i>   |
| 11.00 - 11.15 |                      | Modelling network structure and temporal connectivity in freshwater metacommunities. <i>Finnabar Lee, University Of Auckland *</i>  | Ecological health monitoring of large river systems: Establishing a Waikato region network. <i>Alicia Caitlin, Waikato Regional Council</i>                              | Stimulation of river periphyton growth by ammoniacal-N vs. nitrate-N: is there a difference? <i>Logan Brown, Horizons Regional Council</i>                   | Predicting groundwater contamination using next generation sequencing. <i>Judith Webber, ESR</i>  |
| 11.15 - 11.30 |                      | Spatial heterogeneity in flow-disturbance influences abundance and temporal stability in native–invasive species co-occurrence in riverscapes. <i>Nixie Boddy, University of Canterbury *</i> | Deconstructing individual chemical stressors in two contrasting catchments. <i>Michael Stewart, Streamlined Environmental Ltd</i>  | Water we do to - Periphyton and relationships to water quality in the Horizons region. <i>Tom Stephens, Auckland Council</i>                                 | Management in the dark: what is the current state of knowledge of groundwater ecosystem functioning, values and threats? <i>Michelle Greenwood, NIWA</i>  |
| 11.30 - 11.45 |                      | Invasive macrophyte presence and growth form influence plankton communities. <i>Heremrose Matutes, Visayas State University-alangalang</i>  | Natural Dispersion of Mercury from Puhipuhi, Northland – Revisited. <i>Andrew Rumsby, Pattle Delamore Partners Ltd</i>   | Improving our understanding of Southern slime. <i>Roger Hodson, Environment Southland</i>  | Water balance and groundwater capture zone assessment of Pukepuke Lagoon. <i>Catherine Sturgeon, Jacobs New Zealand Limited</i>   |
| 11.45 - 12.00 |                      | Consumption of kōura in Lake Rotoiti by brown bullhead catfish: a risk assessment. <i>Laura Francis, Waikato University *</i>   | Changes in the water chemistry of Cannel Creek following remedial works at Bellvue Mine. <i>Marlese Fairgray, University Of Canterbury *</i>                             | Water quality and periphyton modelling of point source discharge effects. <i>Olivier Ausseil, Aquanet Consulting Ltd</i>                                     | Water source and contaminant pathways in the Waiokura catchment, Taranaki. <i>Rob van der Raaij, GNS Science</i>  |
| 12.15 - 12.30 |                      | Macrophytes in an ICOLL: an open and shut case? <i>Mary de Winton, NIWA</i>   | Trapping methods: evaluating soak time, fish density, predator presence, and baiting for ĭnanga population assessments. <i>Andrew Watson, University of Canterbury *</i> | Eutrophication Risk Assessment: Linking Across Freshwater Environments. <i>Sandy Elliot, NIWA</i>  | Using sediment fingerprinting to determine the contribution of bank erosion to stream sediment yields. <i>Manawa Huirama, Waikato University *</i>  |
| 12.30 - 1.30  |                      | <b>LUNCH</b>  |  |  |   |
|               | CONCURRENT SESSION 6 | <b>SESSION THEME: Freshwater citizen science</b><br><b>ROOM:</b><br><b>CHAIR: Richard Storey</b>  | <b>SESSION THEME: Characterising lake communities</b><br><b>ROOM:</b><br><b>CHAIR: Susie Wood</b>  | <b>SESSION THEME: Land use and freshwater</b><br><b>ROOM:</b><br><b>CHAIR: Scott Larned</b>  | <b>SESSION THEME: Constructed wetlands</b><br><b>ROOM:</b><br><b>CHAIR: Rebecca Eivers</b>  |
| 1.30 - 1.45   |                      | Resourcing and coordinating freshwater citizen science across New Zealand. <i>Richard Storey, NIWA</i>  | Understanding toxin production in bloom-forming cyanobacteria from New Zealand lakes. <i>Jonathan Puddick, Cawthron Institute</i>  | Big picture stuff. <i>Ken Taylor, Our Land and Water NSC</i>   | CTW's for dairy run-off: are they working? <i>Suzanne Lambie, Manaaki Whenua - Landcare Research</i>  |
| 1.45 - 2.00   |                      | Engage, advise, support – helping communities own their research. <i>Sheryl Miller, Greater Wellington Regional Council</i>   | Shifts in the bacterial communities associated with the formation and breakdown of a toxic cyanobacterial scum. <i>Konstanze Steiner, Cawthron Institute</i>             | From big picture stuff to small stuff: land use practices that have created a legacy of phosphorus leaching. <i>Richard McDowell, Our Land and Water NSC</i> | Accelerating uptake of constructed wetlands through improving certainty of performance, and accounting of their contribution to contaminant reductions in the limit setting process. <i>Aslan Wright-</i> |
| 2.00 - 2.15   |                      | Citizen Science and Freshwater Monitoring in Aotearoa from an NGO Perspective. <i>Liz Gibson, Mountains To Sea Wellington</i>   | Development and implementation of a robust, regionally representative water quality monitoring network for lakes. <i>Mark Hamer, Waikato Regional Council</i>            | The land use suitability concept: a Southland case study. <i>Amy Whitehead, NIWA</i>   | Constructed wetlands to reduce contaminant losses from agriculture: what don't we know? <i>Chris Tanner, NIWA</i>   |
| 2.15 - 2.30   |                      | Empowering the community; volunteers monitor hutt River 'swimmability'. <i>Juliet Milne, NIWA</i>   | Are non-indigenous fishes exploiting empty niches in lacustrine environments? <i>Alton Perrie, Greater Wellington Regional Council *</i>                                 | The efficiency of sediment delivery from erosion source to catchment outlet – where should erosion-management be focussed? <i>Arman Haddadchi, NIWA</i>      | Design considerations for constructed treatment wetlands mitigating diffuse pollution from intensive agricultural catchments. <i>Rebecca Eivers, Streamlined Environmental Ltd</i>                        |
| 2.30 - 2.45   |                      | Florida LAKEWATCH: Citizen Scientists protecting Florida's aquatic systems. <i>Mark Hoyer, University Of Florida</i>  | Improving lake marginal habitat for native fish using structure. <i>David Kelly, Cawthron Institute</i>  | Land-use effects on aquatic ecosystems: strengthening the evidence-base. <i>Scott Larned, NIWA</i>   | Constructed wetlands – the good, the bad and the ugly. <i>James Sukias, NIWA</i>  |
| 2.45 - 3.00   |                      | What were we swimming in? Citizen study of the water quality in Lake Wanaka, NZ. <i>Chris Arbuckle, Aspiring Environmental</i>  | Changes at the edge: food web impacts of degradation of littoral habitats. <i>Simon Stewart, Cawthron Institute</i>  | Recent advances in reporting and interpreting water quality trends. <i>Ton Snelder, LWP Ltd</i>  | <b>THEME CHANGE: WATER MODELS</b><br>Update on the New Zealand water model-hydrology project. <i>Christian Zammit, NIWA</i>   |
| 3.15 - 3.30   |                      | Nature Agents of Change – Participatory Science for Environmental Improvement. <i>Kirsty Brennan, EOS Ecology</i>   | Learning from the past to identify lake resilience and enhance restoration. <i>Marcus Vandergoes, GNS Science</i>  | Investigation of Methods to Predict Groundwater Redox Status Using Limited Sample Data. <i>Scott Wilson, Lincoln Agritech</i>                                | Adaptive transport modelling of Orari Plains water quality. <i>Patrick Durney, Dhi Water And Environment Ltd</i>  |
| 3.30 - 3.45   |                      | <b>AFTERNOON TEA</b>  |  |  |   |
|               | CONCURRENT SESSION 7 | <b>SESSION THEME: Freshwater citizen science continued</b><br><b>ROOM:</b><br><b>CHAIR: Richard Storey</b>  | <b>SESSION THEME: Characterising lake communities continued</b><br><b>ROOM:</b><br><b>CHAIR: Susie Wood</b>  | <b>SESSION THEME: Land use and freshwater continues</b><br><b>ROOM:</b><br><b>CHAIR: Scott Larned</b>  | <b>SESSION THEME: Freshwater mussels</b><br><b>ROOM:</b><br><b>CHAIR: Ian Duggan</b>  |
| 3.45 - 4.00   |                      | Citizen science invertebrate monitoring provides similar assessments of ecological health as professional monitoring  | Ecosystem services at Lake Wairarapa: insights into its past, present, and future. <i>Sky Halford, University of Wellington *</i>  | CLUES calibration – can we use CLUES to estimate attenuation? <i>Annette Semadeni-Davies, NIWA</i>   | Characterising the fish fauna associated with freshwater mussels in Waikato streams. <i>Nicole Hanrahan, NIWA *</i>   |
| 4.00 - 4.15   |                      | Assuring quality of community-based water monitoring data   | Tracking historical cyanobacterial communities in five contrasting shallow New Zealand lakes. <i>Mailys Picard, Cawthron Institute *</i>                                 | A regional council application of tools – taking the road less travelled. <i>Graham Sevicke-Jones, Environment Southland</i>                                 | Temporal partitioning of reproductive strategies in two sympatric Echyridella freshwater mussel species in Waikato streams. <i>Michele Melchior, Waikato University *</i>                                 |
| 4.15 - 4.30   |                      | Project Baseline Lake Pupuke Initiative, a case study for effective citizen science. <i>Ebrahim Hussein, Auckland Council</i>   | One shakey lake: Impacts from 1000 years of natural tectonic disturbance on in-lake communities. <i>Katie Brasell, Cawthron Institute *</i>                              | Measuring actual denitrification to understand nitrogen attenuation. <i>Heather Martindale, GNS Science</i>  | Glochidial development of the New Zealand freshwater mussel (Echyridella menziesii) on non-indigenous fish. <i>Tom Moore, Waikato University *</i>  |

|             |            |   |   |   |
|-------------|------------|---|---|---|
| 4.30 - 4.45 | Discussion | Reconstructing lake diatom community change: comparing novel DNA metabarcoding with traditional morphological techniques. <i>Rose Gregersen, University of Auckland *</i>   | Variability of <i>E. coli</i> in rivers: implications for interpretation of grab samples. <i>Richard Muirhead, Agresearch</i> | Can kākahi (Bivalvia: Hyriidae) prey on non-indigenous <i>Daphnia</i> ? <i>Anita Pearson, Waikato University *</i>                                  |
| 4.45 - 5.00 | Discussion | Lake sediment as sentinels of historical food web dynamics: A case study of two eutrophic lakes in Central Otago, New Zealand. <i>Samiullah Khan, University Of Otago *</i> | The Illinois River Watershed, USA – The Convergence of Science and Policy. <i>Brian Haggard, Our Land and Water NSC</i>       | The biology of kākahi a taonga species, insights into restoration across waterways in Canterbury. <i>Channell Thoms, University Of Canterbury *</i> |

AGM (5:00 - 6:30 pm including drinks)

CLOSE OF DAY THREE

## THURSDAY 13 DECEMBER

|               |                      |   |   |   |   |
|---------------|----------------------|---|---|---|---|
| 7.30          |                      | Registration Desk Open  |   |   |   |
| 8.45 - 10.15  | PLENARY 7/8          | Housekeeping: (10 mins)<br>Plenary Speaker 7: Neil Deans<br>Plenary Speaker 8: Hon David Parker Chair: TBC  |   |   |   |
| 10.15 - 10.45 |                      | MORNING TEA   |   |   |   |
|               | CONCURRENT SESSION 8 | SESSION THEME: Wetlands and lakes<br>ROOM: Kelly<br>CHAIR: David Kelly  | SESSION THEME: Fish and fisheries<br>ROOM: Kati Doehring<br>CHAIR: Kati Doehring  | SESSION THEME: Urban streams<br>ROOM: Timothy Hopley<br>CHAIR: Timothy Hopley   | SESSION THEME: Water quality<br>ROOM: Olivier Ausseil<br>CHAIR: Olivier Ausseil   |
| 10.45 - 11.00 |                      | Wetlands Must Be Wet: Paludiculture for the Climate and the Future. <i>Brian Sorrell, Aarhus University</i>   | The New Zealand Whitebait Fishery - current knowledge and research gaps. <i>Jane Goodman, Department of Conservation</i>  | Environmental Education for Auckland's Industry - Industrial Pollution Prevention Programme. <i>Rhianna Drury, Auckland Council</i>   | Fire Water: The effect of the 2017 wildfires on the streams of the Port Hills, Canterbury. <i>Jenny Webster-Brown, Waterways Centre For Freshwater Management</i> |
| 11.00 - 11.15 |                      | Spatial abundance and diversity of picocyanobacteria in two lakes with contrasting geomorphology and trophic status. <i>Lena Schallenberg, University of Otago *</i>  | Whitebait wizardry: modelling the composition of a mixed species fishery. <i>Bridget Armstrong, University Of Canterbury *</i>  | Assessing flow and nutrient contributions from rheocene springs and groundwater seepage in two urban waterways. <i>Belinda Margetts, Christchurch City Council</i>                        | Stream and sediment chemistry interact to control dissolved reactive phosphorus concentrations at baseflow. <i>Zach Simpson, Lincoln University *</i>             |
| 11.15 - 11.30 |                      | Nutrient thresholds for protecting wetland ecological integrity. <i>Hugh Robertson, Department of Conservation</i>  | New Zealand Whitebait – Assessment of Ecosystem Services. <i>Hannah Mueller, Tonkin + Taylor Ltd</i>  | Lifting the lid on piped streams. <i>Alex James, EOS Ecology</i>  | A case study: linking catchment land use management to lake water quality. <i>Keryn Roberts, Environment Southland</i>  |
| 11.30 - 11.45 |                      | Similar Soil Strength Losses in Fresh Marshes with Variable Increase in N and P Loading. <i>Eugene Turner, Louisiana State University</i>                             | Behavioural response of Taupo anglers to new liberal fishing regulations. <i>Michel Dedual, Department Of Conservation</i>  | Understanding what's left: assessing the ecological health of Wellington's urban streams to inform Whaitua Te Whanganui-a-Tara. <i>Evan Harrison, Greater Wellington Regional Council</i> | Land-use and Waterway Quality at Mt. Grand Station, New Zealand. <i>Shyam Provost, Lincoln University *</i>   |
| 11.45 - 12.00 |                      | Denitrification and burial of N and P in lakes derived from N:P ratios explain seasonality of algal growth limitation. <i>Piet Verburg, NIWA</i>                      | Brown trout natal homing at the catchment of large New Zealand river estimated by otolith microchemistry. <i>Pavel Mikheev, University Of Otago *</i>                                 | Heavy metal contamination from storm water in a industrial catchment and the relationship with antecedent dry periods. <i>Timothy Hopley, University Of Auckland</i>                      | Comparison of traditional and emerging methods of trend analysis and load calculation in Lake Rotorua streams. <i>James Dare, Bay Of Plenty Regional Council</i>  |
| 12.15 - 12.30 |                      | Plans to restore the ecological function of a Manawatu lake catchment. <i>Phillipe Gerbeaux, Department of Conservation</i>   | DOC's freshwater fish monitoring – what, why, when, where and how? <i>Natasha Petgrove, Department of Conservation</i>  | Monitoring and salvage of kākahi ( <i>Echydella menziesii</i> ) in a non-wadeable lowland river subject to dredging. <i>Greg Burrell, Instream</i>  | What's to blame for low oxygen in streams – effluent, stream flow, macrophytes or groundwater? <i>Thomas Wilding, Hawkes Bay Regional Council</i>                 |
| 12.30 - 1.30  |                      |   | LUNCH   |   |   |
|               | CONCURRENT SESSION 9 | SESSION THEME: Lakes and wetlands continued<br>ROOM: Kelly<br>CHAIR: David Kelly  | SESSION THEME: Contaminants and nuisance plants<br>ROOM: Cathry Kilroy<br>CHAIR: Cathry Kilroy  | WORKSHOP: Fish passage guidelines<br>ROOM: Eleanor Gee<br>CHAIR: Eleanor Gee  | WORKSHOP: Multi-Criteria Decision Analysis<br>ROOM: Simone Langhans<br>CHAIR: Simone Langhans   |
| 1.30 - 1.45   |                      | Valuing rural riparian zones and wetland areas. <i>Carla Muller, NIWA</i>   | Towards more realistic ecotoxicology: evaluating chronic effects of neonicotinoids using a ubiquitous New Zealand mayfly. <i>Sam Macaulay, University Of Otago *</i>                  |   |   |
| 1.45 - 2.00   |                      | Long-term trends in water quality of Canterbury's high country lakes. <i>Tina Bayer, Environment Canterbury</i>   | PFAS in New Zealand Fish: Is this the next threat to our aquatic ecosystems? <i>Nerena Rhodes, Pattle Delamore Partners Ltd</i>   |   |   |
| 2.00 - 2.15   |                      | SESSION THEME CHANGE: MfE Policy update<br>CHAIR: James King<br>Key policy priorities in Water and Climate Change. <i>Cheryl Barnes, Ministry for the Environment</i> | Stressor dominance and sensitivity-dependent antagonism: Disentangling freshwater insecticide and agricultural stressor effects. <i>Jon Bray, University Of Canberra</i>              |   |   |
| 2.15 - 2.30   |                      | The Water policy work programme and the 'machinery of government'. <i>Martin Workman, Ministry for the Environment</i>  | Pesticides in New Zealand's running waters: a survey of agricultural streams. <i>Christoph Matthaei, University Of Otago</i>  |   |   |
| 2.30 - 2.45   |                      | Science in contested places: principles and roles. <i>Alison Collins, Ministry for the Environment</i>  | Efficacy of a phycocyanin sensor as a surrogate measure of cyanobacterial bloom. <i>Ngairé Phillips, Streamlined Environmental Ltd</i>  |   |   |
| 2.45 - 3.00   |                      | The science and policy interface 'on the front lines'. <i>Nic Andic, Ministry for the Environment</i>   | Environmental drivers of Microcoleus ( <i>Phormidium</i> ) blooms in the Maitai River, Nelson and development of a predictive model. <i>Georgia Thomson-Laing, Cawthron Institute</i> |   |   |
| 3.15 - 3.30   |                      | Ecosystem Health – a new framework to focus our water science and policy. <i>Carl Howath, Ministry for the Environment</i>  | Evaluating effective decontamination techniques for preventing the spread of New Zealand freshwater pests. <i>Tracey Burton, NIWA</i>   |   |   |

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| 3.30 - 3.45     |  | AFTERNOON TEA                        |
| 3.35 - 4.35     |  | PECHA KUCHA presentations            |
| 4.45 - 5.00     |  | Official Conference Close            |
| 6.30 - Midnight |  | CONFERENCE DINNER - TRAFALGAR CENTRE |

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|-----------------------|-------------------|-------------|
|                       | Friday 9 December |             |
| 8.30 - 5.00<br>approx |                   | FIELD TRIPS |