

MONDAY 12 DECEMBER

	Soil Judging Competition - Competition Day, kindly sponsored by Ballance Agri-Nutrients
8.00 - 18.00	Field Trips (Depart from the Millennium Hotel) TRIP 1 - Northern Southland farm systems, Kindly Sponsored by AB Lime TRIP 2 - Central Otago Landuse balancing act, Kindly Sponsored by Ballance Agri-Nutrients
17.00 - 18.00	Pre Conference Registrations at the Millennium Hotel
18.30 - 21.00	BBQ Social Function, kindly sponsored by Ravensdown (Queenstown Botanical Gardens)

TUESDAY 13 DECEMBER

7.00	Registration Desk Open
8.30 - 9.00	Conference Opening
9.00 - 9.45	Keynote: Steve Carden (CEO, Landcorp) Title: Future Farming: Challenges and Opportunities Chair: Megan Balks
9.45 - 10.30	Keynote: Steve Wakelin (Scientist, Scion Research) Title: Soil Biology Chair Megan Balks
10.30 - 11.00	Morning Tea

	SOIL CONTAMINATION	BALANCED SOLUTIONS FARM SYSTEMS AND CATCHMENTS	SOIL BIOLOGY
Room	Galaxy I	Galaxy II	Galaxy III
Chair	Jo Cavanagh	Lucy Burkitt	Simeon Smail
11.00 - 11.10	Effect of salinity on the uptake of cadmium by the hyperaccumulator <i>Carpobrotus rossii</i> . Miaomiao Cheng , La Trobe University	Future land evaluation for farm system design. Alec Mackay , AgResearch	Soil nitrification/denitrification kinetics coupled with population dynamics demonstrate diverse life-strategies for different microbial functional groups. Sergio Morales , University of Otago
11.10 - 11.20	Cadmium leaching in New Zealand agricultural soils. Mahdiyeh Salmanzadeh , University of Waikato	Nitrate assimilation capacity of shallow groundwater underlying dairy farms in the Reporoa Basin, New Zealand. Roland Stenger , Lincoln Agritech Limited	Assessing the relationship between soil Cu and Zn levels and urease activity in dairy-grazed pasture. Kamal Prasad Adhikari , Massey University
11.20 - 11.30	Subsurface cadmium loss from a stony soil under a winter forage crop. Colin W Gray , AgResearch	Carbon isotope discrimination as an indicator of pastoral water use efficiency. Jack Pronger , University of Waikato	Ancient Landscapes and the Co-Evolution of Microbial Nitrification. Sasha Jenkins , University of Western Australia
11.30 - 11.40	Cadmium in New Zealand's Agriculture and Food Systems. Ants Roberts , Ravensdown	Farm-scale nutrient flow pathways and their potential attenuation in Rangitikei sand country. Genevieve Smith , Massey University	Soil microbial response to bovine urine. Suzanne Lambie , Landcare Research
11.40 - 11.50	Discussion	Discussion	Discussion
11.50 - 12.00	Understanding the risks of cadmium accumulation in New Zealand Agricultural soils. Jo Cavanagh , Landcare Research	Innovations in Cropping Systems: a step- change towards sustainable soil management. Melissa Cann , Department Of Economic Development, Jobs, Transport And Resources	Exploring the spatial distribution of exotic earthworms in New Zealand, Nicole Schon , AgResearch
12.00 - 12.10	Soil amendments to reduce the Cd uptake by plants. Shamim Al Mamum , Lincoln University	Manuka and kanuka enhance the die-off of pathogens in soils amended with bio- wastes. Minakshi Mishra , Lincoln University	The role of microbial biodiversity in soil carbon stabilization. Jessica Ernakovich , CSIRO
12.10 - 12.20	Arsenic, lead and cadmium bioavailability as influenced by co-contaminant exposure. Cameron Ollson , University of South Australia	Mānuka can influence pathogen survival in soil. Jennifer Prosser , ESR	A case of mistaken identity: fine endophyte (<i>Glomus tenue</i>) phylogenetically align with Mucoromycotina, not Glomeromycota. Suzanne Orchard , University of Western Australia
12.20 - 12.30	Discussion	Discussion	Discussion
12.30 - 13.30	Lunch, kindly sponsored by Irrigation NZ		

	EFFECTIVE NUTRIENT MANAGEMENT	PEDOLOGY, SOIL LANDSCAPES AND MAPPING 1	HILL COUNTRY	BIOCHAR
Room	Galaxy I	Galaxy II	Galaxy III	Copthorne Hotel
Chair	David Houlbrooke	Stephen Cattle	Peter Almond	Balwant Singh Marta Camps
13.30 -13.40	A simple 15N tracing model to understand nitrogen mineralisation-immobilisation turnover in the animal urine patch. Diana Selbie , AgResearch	Utilizing model averaging to improve the prediction of agronomic soil properties from vis-NIR and pXRF. Uta Stockmann , The University of Sydney	The physical effect of biological and chemical treatments on water repellent soils. Mary-Anne Lowe , The University of Western Australia	Glyphosate biochar interactions on Australian soils of different composition. Aman Sharma , University of Sydney
13.40 -13.50	Is mining soil nitrogen good or bad? Deli Chen , The University of Melbourne	Developing a global soil data infrastructure - The Open Geospatial Consortium Soil Data Interoperability Experiment. Alistair Ritchie , Landcare Research	Modelling On-farm rainwater harvesting and storage in Hill Country. Jiajia Liu , Massey University	Acidic char decreases denitrification gene abundances and nitrous oxide emissions in a sandy loam soil. Zhongming Lan , Griffith University
13.50 - 14.00	N rate effects on N ₂ O & N leaching losses and pasture production in SE Australia. Warwick Dougherty , NSW Department Of Primary Industries	Weathering in the Critical Zone of the western Southern Alps. Andre Eger , Landcare Research	An assessment of the financial feasibility of irrigation on a hill country farm. Courtney Mitchell , Massey University	Can biochar serve as a low cost sorbent for soil and water remediation? Rai Kookana , CSIRO
14.00 - 14.10	Nitrate Leaching Loss and Crop Recovery of Labelled- ¹⁵ N Urinary Nitrogen Following Simulated Winter Forage Grazing. Peter Carey , Lincoln University	Mapping soil organic carbon Content over New South Wales, Australia Using Local Regression Kriging. Sanjeewani Nimalka Somarathna Pallegedara Dwage , University of Sydney	Soil transport on hillslopes under winter forage crop grazing. Veronica Penny , Lincoln University	Biochar produced from fruit processing wastes contains large amounts of plant nutrient elements. Robert Gilkes , University of Western Australia
14.10 - 14.20	Discussion	Discussion	Discussion	Discussion
14.20 - 14.30	Future expectations of forest soils: increased productivity within environmental limits driven by new knowledge. Peter Clinton , Scion	Properties of Vineyard soils of the Yass Valley, NSW: the role of Aeolian dust accessions. Richard SB Greene , Australian National University	Comparing stream nutrient loads to Overseer estimates for a hill country sub-catchment. Lucy Burkitt , Massey University	Phosphorus leaching from two Swedish organic soils mitigated with Fe coated biochar- A lysimeter study. Matthew Riddle , Swedish University of Agricultural Sciences
14.30 - 14.40	The Impact of Spent Coffee Grounds on Nitrogen Availability in a Short-term Plant Growth Study. Temma Carruthers-Taylor , Monash University	Soils of the Waipa from Norman Taylor to a digital soil map. Scott Fraser , Landcare Research	Wireless Sensor Network Deployment for Soil Moisture Monitoring at Farm Scale in Hill Country. Istvan Hajdu , Massey University	Quantitative review of the effects of biochar application on soil available inorganic nitrogen using meta-analysis. Nhan Nguyen , University of The Sunshine Coast
14.40 - 14.50	Low cost caronaceous amendments to reduce nitrogen fluxes from biosolids. Dharini Paramashivan , Lincoln University	Developments of digital soil morphometrics methods: examples from New Zealand. Pierre Roudier , Landcare Research	Influence of catchment characteristics on soluble inorganic nitrogen in the Manawatu River. Ahmed Elwan , Massey University	Biochar ageing causes an opposite effect on ammonium and phosphate sorption. Shamim Mia , The University of Sydney
14.50 - 15.00	Predicting phosphorus runoff from phosphate fertilizers using fast laboratory assays. Rodrigo da Silva , University of Adelaide	Spatial prediction of soil moisture at any support using observations from different spatial supports. Thomas Bishop , The University of Sydney	Discussion	Cross-sector integration: the key to successful innovation with biochar in agriculture? Lynne Macdonald , CSIRO
15.00 - 15.10	Discussion	Discussion	Discussion	Discussion
15.10 - 15.40	Afternoon Tea			

	IMPROVED DECISION MAKING	ORGANIC INPUTS	CHEMISTRY	SOIL CARBON
Room	Galaxy I	Galaxy II	Galaxy III	Copthorne Hotel
Chair	Alison Collins	David Horne	Richard McDowell	Louis Schipper
15.40 - 15.50	Using multi-year remote sensing to Assess Impact of Soil Sodicity on Wheat Yield. Yunru Lai , The University of Queensland	A balancing act: using biowastes for rehabilitation of degraded land. Robyn Simcock , Landcare Research	Improving growth in Zn deficient soils: Role of leaf trichomes in foliar-uptake of Zn fertiliser. Cui Li , The University of Queensland	Carbon saturation and translocation in intensified no-till soils. Charles Rice , Kansas State University
15.50 - 16.00	Developing a risk assessment framework for managing greenhouse gas emissions on farm. Cecile De Klein , AgResearch	Rebalancing our soils with biowastes: challenges and prospects. Brett Robinson , Lincoln University	Oxidation of elemental sulfur in granular fertilizers – model and measurements. Fien Degryse , The University of Adelaide	Accelerated soil C sequestration through targeted use of full inversion tillage when renewing permanent pastures. Mike Beare , Plant & Food Research
16.00 - 16.10	Soil quality indicators to monitor recovery and assess functionality of degraded soils in semi-arid ecosystems. Miriam Munoz-rojas , University of Western Australia	Biowastes to augment essential oil production by <i>Leptospermum scoparium</i> and <i>Kunzea robusta</i> . Salome Seyedalikhani , Lincoln University	How to tailor nano hydroxyapatite as a kind of potential P fertilisers. Lei Xiong , University of Queensland	Evidence for soil carbon enhancement through deeper ploughing at pasture renovation on a Pallic soil. Roberto Calvelo Pereira , Massey University
16.10 - 16.20	Effects of soil heterogeneity on the uncertainty in modelling the fate of urinary nitrogen. Iris Vogeler , AgResearch	Using a land application approach for managing dairy cattle waste products in China. Dave Houlbrooke , AgResearch	Liming effects on trace element bioavailability in acid soils. Niklas Lehto , Lincoln University	Costs of deep, mouldboard ploughing at pasture renewal-to accelerate carbon sequestration and decrease contaminant bioavailability. Mike Hedley , Massey University
16.20 - 16.30	Discussion	Discussion	Discussion	Discussion
16.30 - 16.40	New Horizons; increasing agricultural production by applying organic matter and/or clay to sands in SA. David Davenport , PIRSA Rural Solutions	Spatial distribution of macro and micro elements and soil fertility of a land treatment site. Raghupathi Matheyarasu , University of South Australia	Modeling temporal variations in adsorption of applied zinc and phosphorus in alkaline-calcareous soils. Muhammad Imran , Bahauddin Zakariya University, Multan, Pakistan	Spatial and Seasonal Variability of $\delta^{13}C$ of Soil CO ₂ and Flux in Complex Terrain. Liyin Liang , University of Waikato
16.40 - 16.50	Predicting profile characteristics with proximal sensors and a spectral soil inference system. Edward Jones , University of Sydney	Effect of dairy farm management practices on hydraulic properties of Dermosols. Abdur Rab , Victorian Government Department of Economic Development, Jobs, Transport and Resources	Potential phosphorus loss from a low ASC soil to groundwater. Wayne Worth , AgResearch	Changes in soil organic carbon fractions following remediation of a degraded coastal floodplain wetland. Vanessa Wong , Monash University
16.50 - 17.00	Plant P uptake from organic amendments: understanding soil chemical and biological processes for better management. Jessica Mackay , Adelaide University	Phosphorus removal from wastewaters using andesitic tephra soil filters and its reuse for plant growth. Sasikunya (May) Cheuyglintase , Massey University	Impacts of swidden cultivation on the soil fertility in the Highlands, Papua New Guinea. Ryosuke Fujinuma , The University of Queensland	Seeking Evidence of Preservation and Accumulation of Soil Organic Matter – A Pyrolysis GC/MS Study. Qinhua Shen , Massey University
17.00 - 17.10	Raster modelling of land and soil capability in NSW. Steps towards sustainable soil management? Greg Chapman , Land And Soil Capability	Yield response of sweet-potato varieties to selected organic amendments in a calcareous soil of Samoa. Danilo Guinto , Ballance Agri-Nutrients	Long-term effects of harvest removals and fertiliser on soil nutrients and productivity in planted forests. Loretta Garrett , Scion Research	Canonical redundancy analyses quantifying land-use, compost addition, correlated soil organic carbon and other soil properties. Jane Aiken , Consulting & Environmental Services
17.10 - 17.20	Discussion	Discussion	Discussion	Discussion
17.30 - 18.00	Soil Science Australia Pre AGM Drinks & Nibbles			NZSSS Pre AGM Drinks & Nibbles
18.00 - 19.00	Soil Science Australia AGM			NZSSS AGM
19.00 - 21.00	Student Function, kindly sponsored by Plant & Food Research (Bowling Club Queenstown Botanical Gardens)			

WEDNESDAY 14 DECEMBER

7.30	Registration Desk Open		
8.30 - 9.15	Keynote: Mike McLaughlin (Scientist, CSIRO & Uni of Adelaide) Title: Nutrient Management Chair: Jock Churchman		
9.15 - 10.00	Keynote: Jeff Baldock (Scientist, CSIRO) Title: Minimising Greenhouse Gases Chair: Jock Churchman		
10.00 - 10.30	Morning Tea		
	PEDOLOGY, SOIL LANDSCAPES AND MAPPING 2	CLIMATE CHANGE	WATER MANAGEMENT
Room	Galaxy I	Galaxy II	Galaxy III
Chair	Andrew Hammond	Mike Beare	Seth Laurenson
10.30 - 10.40	Comparative taxonomy between the Australian Soil Classification System and the USDA Soil Taxonomy at the great group level. Philip Hughes , University of Sydney	Effect of Sampling Frequency on Estimates of Annual Nitrous Oxide Fluxes. Louise Barton , The University of Western Australia	Inflection point on water retention curve of sandy soils indicates onset of plant hydraulic stress. Cameron Grant , University of Adelaide
10.40 - 10.50	Dust down under I: Hunting for parna pellets. Stephen Cattle , The University of Sydney	Geophagy-a possible soil-based solution for reducing enteric methane emissions? Kevin Tate , Landcare Research, Palmerston North (Research Associate)	Using geoelectrical methods (EMI and ERT) to better understand soil moisture characteristics of gilgai soils under native vegetation. Mark Crawford , Department Of Natural Resources And Mines - Qld Government
10.50 - 11.00	Dust down under II: provenance and pedogenesis for selected loess soils in New Zealand. Carol Smith , Lincoln University	Phosphorus addition and plant presence effects on N ₂ O emission and nitrogen leaching. Kazi Mehnaz , University of Sydney	Studying root water uptake of wheat genotypes in different soils using water δ ¹⁸ O stable isotopes. Paola Elisa Corneo , University of Sydney
11.00 - 11.10	A New Paradigm of Soil Formation. Marta Camps Arbestain , Massey University	Survey of potential nitrification inhibitors to replace DCD for targeted application to urine patches. Peter Andrew Bishop , Massey University	Understanding spatio-temporal variability of soil moisture measurement with aquaflex and time domain Reflectometry. Birendra K.C. Lincoln University
11.10 - 11.20	Discussion	Discussion	Discussion
11.20 - 11.30	Farm Scale Soil Mapping: old problems for new soil surveys. Alan Palmer , Massey University	Enhanced decomposition and nitrogen mineralisation sustain rapid growth of Eucalyptus regnans after wildfire. Feike Dijkstra , The University of Sydney	Effects of irrigation frequency on solute leaching through a stony soil. Sam Carrick , Landcare Research
11.30 - 11.40	Digital Soil Mapping in the NZ context: Hawke's Bay, North Island, New Zealand. Sharn Hainsworth , Landcare Research	Sugarcane plantations decreased soil nitrogen availability and the abundance of nitrogen cycling functional genes. Chengrong Chen , Griffith University	Irrigating grazed pasture decreases soil carbon and nitrogen stocks. Paul Mudge , Landcare Research
11.40 - 11.50	Lithology and soil relationships for soil modelling and mapping. Jonathan Gray , NSW Office of Environment and Heritage	Naturally occurring compounds in animal urine that may inhibit nitrous oxide emissions from soils. Sheree Balvert , University of Waikato	The Available Water Holding Capacity of Soils Under Pasture. Dave Horne , Massey University
11.50 - 12.00	Does gilgai size affect stable isotope profiles in Vertosols? Andrew Biggs , University of Queensland	Effects of aridity and plant community change on soil organic matter chemistry and nitrogen fluxes. Mark Farrell , CSIRO	Space-Time Observation System for Soil Moisture. Niranjan Acharige , The University of Sydney
12.00 - 12.10	Discussion	Discussion	Discussion
12.10 - 13.10	Lunch, kind sponsored by Environment Southland		
13.10 - 14.45	Poster Session (Millennium Hotel), kindly sponsored by Ballance Agri-Nutrients i-Poster system, kindly sponsored by Lincoln University		

14.45 - 15.30	Afternoon Tea		
	LABORATORY AND RAPID TESTING	PEDOLOGY, SOIL LANDSCAPES AND MAPPING 3	BALANCED SOLUTIONS FARM SYSTEMS AND CATCHMENTS 2
Room	Galaxy I	Galaxy II	Galaxy III
Chair	Mike Hedley	Carol Smith	Deborah Pritchard
15.30 - 15.40	Using rapid soil nitrate tests to inform N management in smallholder farming systems of Africa. Stuart Irvine-Brown , QAAFI	Pale Siliceous Layers in Colluvium of Tasmania's Tyenna Valley: E Horizons or Aeolian? Bernard Walker , University of Tasmania	Components of Nitrogen Loss from a Hybrid Dairy Grazing/Housing System. Khadija Malik , Massey University
15.40 - 15.50	Rapid assays to predict nitrogen mineralisation potential of agricultural soils. Denis Curtin , Plant And Food Research	Siliceous Horizons Within Quaternary Aged Soils In Hawkes Bay, New Zealand. Andrew Hammond , Central Queensland University	The effectiveness of some selected management strategies for reducing nitrogen leaching risk from dairy grazing systems in southern New Zealand. Ross Monaghan , AgResearch
15.50 - 16.00	Motivation for using 1M KCl exchangeable Al in New Zealand. Hendrik Venter , Analytical Research Laboratories	How variable is Australian Soil Texture: A multiscale fractal analysis. Stacey Paterson , Sydney University	Effects of tree spacing and species composition in cacao plantations. Shahla Hosseini Bai , University of The Sunshine Coast
16.00 - 16.10	Rapid laboratory measurement of the temperature dependence of soil respiration. Jasmine Robinson , University of Waikato	Legacy soil map disaggregation to derive subsoil constraints on cropping in the Whitsunday region, Queensland. Lauren O'Brien , Queensland Dept of Science, IT and Innovation	Effective Management of Nutrient Flow Pathways and their Attenuation in NZ Agricultural Catchments. Ranvir Singh , Massey University
16.10 - 16.20	Discussion	Discussion	Discussion
16.20 - 16.30	Quantifying the supply of plant available nitrogen from dairy effluents using a laboratory assay approach. Moira Dexter , AgResearch	Identifying arable soils from soil profile classes, going back to the future in northern Australia. Ian Hollingsworth , Horizon	Securing Tasmanian Agricultural Soils. Damien Field , The University of Sydney
16.30 - 16.40	Predicting the supply of plant-available nitrogen from dairy effluents using APSIM. Joanna Sharp , Plant And Food Research	Soil Erodibility mapping of the Fitzroy River Basin. Luke Finn , Department Of Science, Information Technology And Innovation, Queensland Government	Soil properties assessment on Cassava growing farmer's field in Toga district in Rewa province, Fiji. Deeksha Krishna , Caff, fiji National University
16.40 - 16.50	Evaluation of the performance of field infrared instruments for the prediction of soil analytes. Leslie J Janik , CSIRO / University of Adelaide	Regional variations in soil geochemistry across southern New Zealand. Rose Turnbull , GNS Science	Impact Of Soil Carbonates On Surface Soil Carbon Mineralisation In Response To Tillage. Promil Mehra , University of South Australia
16.50 - 17.00	Slakes: A soil aggregate stability test in your pocket. Mario Fajardo , University of Sydney	Trends in soil quality for sites monitored 4 times from 2000 to 2015. Matthew Taylor , Waikato Regional Council	Beneficial use of Coal Seam Gas produced water – challenges and opportunities. Danny Rattray , Horizon Soil Science And Engineering
17.00 - 17.10	Discussion	Discussion	Discussion
18.00	Social Touch Rugby (Memorial Park) Registrations at the conference registration desk		

THURSDAY 15 DECEMBER

7.30	Registration Desk Open		
8.30 - 9.15	Keynote: Julian Cribb (Consultant, Australia) Title: The Age of Food Chair: Tim Overheu		
9.15 - 9:30	Plenary 1: The generation game: managing New Zealand's soil resource to meet current and future needs. Alison Collins , Landcare Research Chair: Tim Overheu		
9.30- 9:45	Plenary 2: Dynamic changes in soil carbon challenge the concept of 'premanence' in a semiarid agricultural system. Frances Hoyle , The University of Western Australia Chair: Tim Overheu		
9.45 - 10.00	Plenary 3: The Seven Soil Wonders of the Central Otago basins. Sam Carrick , Landcare Research Chair: Tim Overheu		
10.00 - 10.10	Discussion		
10.10 - 10.40	Morning Tea		
	SOIL BIOLOGY - STUDENTS	FATE OF NITROGEN IN DIFFERENT SYSTEMS	IMPROVED DECISION MAKING 2
Room	Galaxy I	Galaxy II	Galaxy III
Chair	Loretta Garrett	Ross Monaghan	Vanessa Wong
10.40 - 10.50	Temperature and Moisture Sensitivity of Soil Microbes in Adjacent Irrigated and Non-Irrigated Soil. Olivia Petrie , University of Waikato	Using late summer/autumn duration controlled grazing of dairy cows to reduce nitrate loss to water. Jay Howes , Massey University	Creating an Australian Virtual Soil Archive using ANZSoilML data exchange standards. Peter Wilson , CSIRO Australia
10.50 - 11.00	Bacterial communities and taxa as emerging indicators of soil condition. Syrie Hermans , The University of Auckland	Environmental impacts of the dairy sheep industry in New Zealand. Natalie Watkins , AgResearch	Liberating soil data for profitable agriculture and catchment health in the Corangamite region, Australia. Peter Dahlhaus , Federation University Australia
11.00 - 11.10	Mine Spoil, Microbes and Rehabilitation of an Endangered Ecological Community. Kate Newman , University of Newcastle	How could plants help us to reduce nitrogen losses from dairy farms? Roshean Woods , Lincoln University	The odds are stacked against versatile soil: can we change them? Laura Buckthought , Auckland Council
11.10 - 11.20	Soil pH, land use and soil classification account for changes in prokaryotic communities at a broad geographic scale. Rachel Kaminsky , University of Otago	Brown coal-urea blend: a green option for improving nitrogen use efficiency, yield and soil health. Biplob Kumar Saha , Monash University	Urban expansion and the loss of agricultural land in Uganda: a challenge to soil protection. Ronald Muchelo , University of Sydney
11.20 - 11.30	Discussion	Discussion	Discussion
11.30 - 11.40	Responses of soil ammonia oxidizers to a nitrification inhibitor, 3,4-dimethylpyrazole phosphate (DMPP). Xiuzhen Shi , The University of Melbourne	Reducing nitrogen losses from winter grazed forage through crop selection and tillage practices. Gina van der Klei , Plant and Food Research	Seen As Different, Soil Clays Become More Important To Soils And Also Beyond Soils. Jock Churchman , University of Adelaide
11.40 - 11.50	Inhibition of soil nitrification by root exudates from Australian native plant species. Chelsea Stroppiana , University of Queensland	Nitrogen leaching from cut-and-carry lucerne. Jackie Aislabie , Landcare Research	The how's and whys of soil information used in OVERSEER. David Wheeler , AgResearch
11.50 - 12.00	Dissimilatory nitrate reduction to ammonium, denitrification and anaerobic ammonium oxidation in paddy soil. Arjun Pandey , University of Melbourne	Increasing the spread of urine to reduce nitrogen leaching risk. Emma Bagley , AgResearch	A Universal protocol for farm scale auditing of soil carbon. Brendan Malone , University of Sydney
12.00 - 12.10	Soil chemistry has a greater impact than climate on fungal community attributes and their interaction. Jieyun Wu , The University of Auckland	Fate of fertiliser nitrogen in a rainfed dairy pasture on a Tenosol in South Australia. Helen Suter , The University of Melbourne	Accounting for nature: a regional soil condition assessment. Roxane Blackley , Queensland Murray-Darling Committee Inc
12.10 - 12.20	Discussion	Discussion	Discussion

12.20 - 13.20	Lunch						
	SOIL PHYSICS	SOIL CARBON 2	SOIL RESOURCE				
Room	Galaxy I	Galaxy II	Galaxy III				
Chair	James Hanly	Frances Hoyle	Peter Wilson				
13.20 - 13.30	Dispersive Potential a tool for soil specific structural management under irrigation with saline sodic water. Aaditi Dang , The University of Southern Queensland	Effect of plant species, part and rate of application on the extent of litter decomposition. Helen Walker , Massey University	Modernizing soil science education producing more capable decision makers. Damien Field , The University of Sydney				
13.30 - 13.40	The effect of stones and gravel on soil hydraulic properties. Mina Lee , Lincoln University	Effects of Addition of plant-derived dissolved organic matter (DOM) on decomposition of soil organic matter. Lan-fang Wu , Institute of Geographical Sciences and Natural Resources Research, Chinese Academy of Sciences	Is there a role for soil testing by farmers in soil health management? Lisa Lobry de Bruyn , University of New England				
13.40 - 13.50	Changes in Enzyme Activities and Soil Properties in Soils With Changing Soil Water Repellency. Robert Simpson , Plant & Food Research	Biosolids application enhances soil carbon sequestration: A Meta-Analysis. Hasintha Wijesekara , University of Newcastle	Improved decision making for the treatment of acid soils in South Australia. Andrew Harding , Department Of Primary Industries And Regions South Australia				
13.50 - 14.00	A national geochemical baseline survey of New Zealand soils. Mark Rattenbury GNS Science	Soil carbon stocks related to grazing pressure, pasture heterogeneity and environmental factors. Helen King , Australian National University	Mapping acidity changes in acid sulfate soils following remediation, East Trinity, Cairns. Daniel Brough , Department Of Science, Information Technology And Innovation				
14.00 - 14.10	Discussion	Discussion	Discussion				
14.10 - 14.20	Efficacy of delaying defoliation to mitigate the soil compaction risk at cotton harvest. Stirling Robertson , University of Southern Queensland	Do Soils Gain Carbon Following Conversion of Ryegrass/Clover to a Moderately Diverse Pasture? Aaron Wall , University of Waikato	Design and Construction of Anthrosols for Sydney's Barangaroo Development. Simon Leake , Simon W Leake				
14.20 - 14.30	Land development by flipping and hump & hollowing – updated guide for West Coast farmers. Abie Horrocks , Plant & Food Research	$\delta^{13}C$ Abundance and Distribution in Soil Fractions under Vetiver and Native Pastures. Bezaye Tessema , University of New England	Indigenous soil knowledge for agricultural resilience in the Fly River delta, Papua New Guinea. Claire Docherty , Australian Centre for International Agricultural Research				
14.30 - 14.40	Predictive modelling of the soil water retention curve for soils in New Zealand. Linda Lilburne , Landcare Research	Carbon saturation deficit of soils in relation to the C loading: influence of soil Order. Sam McNally , Plant and Food Research	Understanding the soil resource to effectively manage and build a healthy soil, not degrade it. Mandy Coulson , North Central Catchment Management Authority				
14.40 - 14.50	Soil water decomposition for downscaling soil water and understanding its controls. Wei Hu , Plant And Food Research, New Zealand	Adding a microbial dimension to the management of planted forests. Simeon Smail , Scion Research	Effectiveness of combined organic amendments and lime in ameliorating acid soils. Clayton Butterly , La Trobe University				
14.50 - 15.00	Discussion	Discussion	Discussion				
15.00 - 15:30	Afternoon Tea						
15.30 - 17.00	<p align="center">Panel Discussion - Chair: Reece Hill, NZSSS President</p> <p><i>Facilitated by:</i> Kim Hill Radio NZ</p> <p><i>Panel Members:</i></p> <table border="0" style="width:100%; text-align:center;"> <tr> <td>Bob Gilkes Emeritus Professor, University of Western Australia</td> <td>Susie McKeague Consultant, McKeague Consultancy Ltd</td> <td>Andy Macfarlane Consultant, Macfarlane Rural Business & AgResearch director</td> <td>Jacqueline Rowarth Chief Scientist for the Environmental Protection Authority</td> </tr> </table> <div style="display: flex; justify-content: space-around; margin-top: 10px;">      </div>			Bob Gilkes Emeritus Professor, University of Western Australia	Susie McKeague Consultant, McKeague Consultancy Ltd	Andy Macfarlane Consultant, Macfarlane Rural Business & AgResearch director	Jacqueline Rowarth Chief Scientist for the Environmental Protection Authority
Bob Gilkes Emeritus Professor, University of Western Australia	Susie McKeague Consultant, McKeague Consultancy Ltd	Andy Macfarlane Consultant, Macfarlane Rural Business & AgResearch director	Jacqueline Rowarth Chief Scientist for the Environmental Protection Authority				
18.30 - 24.00	Conference Dinner, kindly sponsored by Landcare Research (Skyline Gondola)						

FRIDAY 16 DECEMBER

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8.00 - 9.00	Registration Desk Open		
	SOIL RESOURCES, CONTAMINANTS AND MANAGEMENT	NUTRIENTS & ROOTS	SOIL PHYSICS/SOIL WATER
Room	Galaxy I	Galaxy II	Galaxy III
Chair	Tim Overheu	Alister Metherell	Sam Carrick
9.00 - 9.10	Heavy metal-induced selection for antibiotic resistance: evidence from high-throughput profiling of resistome in nickel-contaminated soils. Hangwei Hu , The University of Melbourne	Investigations into the soil microbiology associated with subsoil manuring. Corinne Celestina , La Trobe University	Properties of sand tracks for greyhound racing. Declan McDonald , SESL Australia
9.10 - 9.20	Using crowdsourcing to connect people with soil in the creation of a soil map art installation. Rebecca Mitchell , Department of Economic Development, Jobs, Transport and Resources	Rhizosphere chemistry of pasture species grown in Allophanic soils influences the stability of organo-Al complexes? Ritha Kov , Massey University	The effect of synthetic and organic amendments on water storage of an arable soil. Dirk Wallace , Lincoln University
9.20 - 9.30	Management zone approach to assist commercial decision making and balanced management. Catherine Botta , PCB Consulting	Effect of poultry litter application depths on wheat growth in an acid Dermosol. Clayton Butterly , La Trobe University	Monitoring & modelling soil change in a semi-arid landscape with distinctly contrasting landuses. Patrick Filippi , The University of Sydney
9.30 - 9.40	Temporal-spatial features of soil salinity in coastal soil of East China over 3 years. Lai Jianbin Chinese Academy of Sciences	Root carbon inputs into soil from a C4 root system. Ivanah Oliver , University of New England	Soil management options to improve irrigation water use of row crops. Karin Mueller , Plant & Food Research
9.40 - 9.50	Influence of covariates upon heavy metal distribution in Sydney, Australia. Liana Johnson , University of Sydney	Allocation of carbon and nitrogen in size-fractions of New Zealand pasture soils. Roberto Calvelo Pereira , Massey University	Heavy machinery: The cancer of soil health? John Bennet , University of Southern Queensland
9.50 - 10.00	Investigation of lead desorption from Pomelo peel amended in the soil after water treatment. Namfon Tongtavee , Kasetsart University Kamphaeng Saen Campus	Rhizosphere priming effect on soil organic carbon decomposition under plant species differing in soil acidification. Xiaojuan Wang , La Trobe University	The Puggometer: a new tool for quanti- fying and spatially recording pugging damage in grazed pastures. James Hanly , Massey University
10.00 - 10.10	Discussion	Discussion	Discussion
10.10 - 10.40	Morning Tea		
10.40 - 11.40	The Norman Taylor Memorial Lecture Speaker: Louis Schipper Title: Carbon, nitrogen, energy storage in organic matter of pasture soils - and cake		
11.40 - 12.20	Official Conference Closing		
12.20 - 13.00	Lunch & Conference Concludes		