



OPPORTUNITIES FOR IMPROVED FARM AND CATCHMENT OUTCOMES

Day 1 - Tuesday 13th February 2024

10:10 am Welcome and Opening - Professor Chris Anderson, Director, Farmed Landscapes Research Centre

10:20 am Professor Paul Kenyon, Head of School of Agriculture and Environment

Session 1: Learning from our Neighbours

10:30 am Jeff Kraak AUSTRALIAN NITROGEN POLICY RECOMMENDATIONS BASED ON ASSESSMENT OF FERTILISER INPUTS, USE EFFICIENCIES AND GASEOUS LOSSES (Keynote Speaker)

11:00 am Jacqueline Rowarth FINANCIAL IMPLICATIONS WITHIN AN ENVIRONMENTAL CONTEXT SUBTITLED "SHOW THEM THE MONEY"

11:15 am Discussion

Session 2: Diverse pastures and opportunities for regenerative practices

11:25 am Lucy Burkitt EXPLORING THE IMPACT OF DIVERSE PASTURES AND REGENERATIVE MANAGEMENT ON SOIL AND ENVIRONMENTAL PARAMETERS UNDER DAIRY AND SHEEP GRAZING

11:35 am Kaloni Arena Alu OPTIMIZING TRACE ELEMENT PROVISION IN DIVERSE PASTURE MANAGEMENT

11:45 am Jeff Brown CONTINUED PERFORMANCE OF MULTISPECIES PASTURES WITH ACTIVE BIOLOGICS ENHANCES DRY MATTER PRODUCTION AND NUTRIENT UPTAKE

11:55 am Dan Bloomer CARBON POSITIVE – TRIALING REGENERATIVE AGRICULTURE FOR INTENSIVE PROCESS CROP PRODUCTION

12:05 pm William Talbot ORGANIC AGRICULTURAL PRODUCTION SYSTEMS

12:15 pm Kyle Wills OPPORTUNITY FOR AGROFORESTRY IN THE DRYLAND CORNERS OF CANTERBURY DAIRY FARMS

12:25 pm Scott Hobson EFFECTS OF A MICROBIAL-BASED SOIL CONDITIONER ON NITRATE LEACHING IN COMPARISON TO HISTORIC NITRIFICATION INHIBITOR DICYANDIAMIDE (DCD) RESPONSES.

12:35 pm Discussion

Lunch: 12:50 pm - 1:50 pm

Session 3: Opportunities for Land Use Change and the Whitiwhiti Ora project

1:55 pm Robyn Dynes WHITIWHITI ORA LAND USE OPPORTUNITIES, A DATA SUPERMARKET TO INFORM LAND USE CHANGE

2:05 pm Rogerio Cichota MODELLING NITRATE LOSS RISK FOR NEW ZEALAND CROPPING ROTATIONS

2:15 pm Chris Smith CO-BENEFITS AND TRADE-OFFS OF WATER QUALITY MITIGATIONS ON GREENHOUSE GAS EMISSIONS FROM NEW ZEALAND DAIRY SYSTEMS

2:25 pm Chris Depree COMMUNITY CO-DESIGN IN CONSIDERING LAND USE CHANGE: A CASE STUDY

2:35 pm Ton Snelder COMPARISON OF CURRENT STATE TO NATIONAL BOTTOM LINES OF FOUR CONTAMINANTS IN NEW ZEALAND'S AQUATIC RECEIVING ENVIRONMENTS

2:45 pm Discussion

Afternoon tea: 3:00 pm - 3:30 pm

Session 4: Opportunities for the Accounting and mitigation of GHGs from farms

| | | |
|---------|-----------------|---|
| 3:35 pm | Kelly Forster | CENTRE FOR CLIMATE ACTION ON AGRICULTURAL EMISSIONS' – OVERVIEW AND UPDATE |
| 3:45 pm | Peter Almond | A NEW ZEALAND AGRICULTURAL GHG INVENTORY METHODOLOGY FOR ENHANCED ROCK WEATHERING |
| 3:55 pm | Andrew Cooke | USE OF FARM RECORDS AT SCALE FOR EMISSIONS MONITORING AND EFFICIENCY IMPROVEMENT |
| 4:05 pm | Surinder Saggar | SIGNIFICANCE OF INHIBITOR VOLUME IN ON-FARM MITIGATION OF NITROUS OXIDE EMISSION FROM DAIRY CATTLE URINE PATCHES |
| 4:15 pm | Maggie Wuerz | REGULATION OF ENVIRONMENTAL INHIBITORS UNDER THE AGRICULTURAL COMPOUNDS AND VETERINARY MEDICINES (ACVM) ACT AND INCLUSION IN THE GREENHOUSE GAS INVENTORY |
| 4:25 pm | Grace Chibuike | DOES PLANTAIN REDUCE N ₂ O EMISSIONS FROM A PASTURE SOIL PREVIOUSLY EXPOSED TO ELEVATED ATMOSPHERIC CO ₂ ? |
| 4:35 pm | Andrew Boot | ASSESSING SOIL CARBON STOCKS AND SEQUESTRATION OPPORTUNITIES ON A TARANAKI DAIRY FARM |
| 4:45 pm | Nick Donald | ON FARM EMISSIONS CALCULATION METHODOLOGY |
| 5:00 pm | Discussion | |

Networking hour in AgHort Foyer: 5 pm - 6 pm

Day 2 - Wednesday 14th February 2024

Session 5: Developments and Opportunities with OVERSEER

| | | |
|---------|--------------------|--|
| 9:00 am | Mark-John Bruwer | SCIENCE REVIEW AND THE DEVELOPMENT PROGRAM |
| 9:10 am | Jean-Paul Tavernet | FARM-SPECIFIC MODELLING OF NITROUS OXIDE EMISSION FACTORS FROM ANIMAL URINE |
| 9:20 am | Jean-Paul Tavernet | OVERSEER ASSESSMENT OF MODELLING N LEACHING UNDER PASTURE |
| 9:30 am | Andrew Revill | DETERMINING THE ALIGNMENT BETWEEN OVERSEER AND THE NATIONAL INVENTORY MODELS |
| 9:40 am | Discussion | |

Morning tea: 9:50 am - 10:20 am

Session 6: Opportunities to improve quality of our soils

| | | |
|----------|-------------------------------------|---|
| 10:25 am | Erina Wehi-Barton and Clare Bradley | ENHANCING THE MANA AND MAURI OF SOIL FROM A MĀTAURANGA MĀORI PERSPECTIVE |
| 10:35 am | Matthew Taylor | LESSONS FROM TWENTY YEARS OF SOIL QUALITY MONITORING: WHAT HAPPENS WHEN LAND USE CHANGES? |
| 10:45 am | Alex Dickson | SOIL RECOVERY AFTER CYCLONE GABRIELLE – “BUILDING BACK BETTER” |
| 10:55 am | Geoffrey Bates | DRY MATTER RESPONSES OF URINE PATCHES SUBJECT TO TARGETED TREATMENT |
| 11:05 am | Feiko Van Zadelhoff | USING DIGITAL SOIL MAPPING TO IDENTIFY WHERE BEST TO STORE SOIL CARBON |
| 11:15 am | Nicola Wilson | RESPONSES OF LABILE CARBON AND NITROGEN TO TOPOGRAPHICAL VARIATION AND PHOSPHORUS INPUTS |
| 11:25 am | Sam Wilson | AN INEXPENSIVE AND EFFECTIVE METHOD FOR SIMULATING CATTLE TREADING DAMAGE ON PASTURE |
| 11:35 am | Matt Norris | SOIL TESTING FOR INFORMING NITROGEN MANAGEMENT IN NEW ZEALAND CROPPING SYSTEMS |
| 11:45 am | Discussion | |

Lunch: 12:00 pm - 1:00 pm

Session 7: Opportunities for Contaminant Attenuation: Edge-of-field practices

| | | |
|---------|--------------------|---|
| 1:05 pm | Rebecca Eivers | ENHANCING NUTRIENT ATTENUATION AND INDIGENOUS BIODIVERSITY ON A WAIKATO DAIRY FARM: LESSONS LEARNED FROM REWETTING AND RECONNECTING A RESTORED RIPARIAN WETLAND |
| 1:15 pm | Brandon Goeller | PERFORMANCE OF A CONSTRUCTED WETLAND TREATING TILE DRAIN AND GROUNDWATER FLOWS FROM A TARANAKI DAIRY FARM |
| 1:25 pm | Harizah Hariz | FIELD TRIALS OF FILAMENTOUS ALGAE NUTRIENT SCRUBBER (FANS) OPERATION MODES TREATING AGRICULTURAL DRAINAGE |
| 1:35 pm | Andrew Hughes | THE EFFECTIVENESS OF DETAINMENT BUNDS PS120 AS POLLUTANT MITIGATION TOOLS AT SITES WITH POORLY DRAINED SOILS |
| 1:45 pm | John Paterson | THE MARRIAGE OF MITIGATIONS: COULD DETAINMENT BUNDS PS120 AND CONSTRUCTED WETLANDS BE A MATCH MADE IN HEAVEN? |
| 1:55 pm | Sarah de Bruin | WHAT'S COMING OUT OF TILE DRAINS? |
| 2:05 pm | Christophe Thiange | EDGE OF FIELD MITIGATION POTENTIAL IN THE UPPER PIAKO CATCHMENT |
| 2:15 pm | Discussion | |

Afternoon tea: 2:30 pm - 3:00 pm

Session 8: Opportunities for Solutions at Catchment Scale

| | | |
|---------|--------------|---|
| 3:05 pm | Laura Keenan | CATCHMENT SCALE CONTAMINANT FOOTPRINT: A RANGITIKEI EXAMPLE |
| 3:15 pm | Scott Kusabs | THE ROLE OF NUTRIENT BUDGETING IN MEETING FARM NITROGEN TARGETS |
| 3:25 pm | Steve Holdem | FARMING WITHIN PC10 ROTORUA |

| | | |
|---------|--------------------------|--|
| 3:35 pm | Alastair Cole | THE RISE OF COMMUNITY LED CATCHMENT MANAGEMENT ACROSS NZ AND MAINTAINING THE MOMENTUM WITH CATCHMENT GROUPS |
| 3:45 pm | Ranvir Singh | CATCHMENT SOLUTIONS - A COLLABORATIVE APPROACH ENHANCING RURAL CAPABILITY TO ACHIEVE ESSENTIAL FRESHWATER OUTCOMES |
| 3:55 pm | Discussion | |
| 4:05 pm | Invited Panel Discussion | Mark Chrystall, RRCC; Adam Duker, DairyNZ; Andrew Wood, ANZ; Janine Alfeld, MPI (<i>TBC</i>); Corina Jordan, Fish & Game (<i>TBC</i>); Shelley Dew-Hopkins, MRCC (<i>TBC</i>). |

Dinner at The Refectory: 6:30 pm

Day 3 - Thursday 15th February 2024

Session 9: Freshwater Farm Planning

| | | |
|----------|--------------------|---|
| 9:00 am | David Nash | DISSOLVED P LOSSES FROM LEGACY SOURCES IN PASTURES - THE LIMITS OF SOIL TESTS AND SMALL-SCALE RAINFALL SIMULATORS |
| 9:15 am | Rich McDowell | A RISK INDEX TOOL TO MINIMISE THE RISK OF NITROGEN LOSS FROM LAND TO WATER |
| 9:30 am | Millie Taylor | USING HIGH-RESOLUTION LIDAR TO DELINEATE SLOPE BOUNDARIES FOR FARM PLANS AND CRITICAL SOURCE AREAS |
| 9:40 am | John Triantafyllis | SCOPE TO PREDICT TOPSOIL CARBON AND NITROGEN ACROSS AN AOTEAROA NEW ZEALAND DAIRY FARM |
| 9:50 am | Duy Tran | QUANTIFYING THE IMPACTS OF LAND COVER DATA SOURCES ON MAPPING FARM-SCALE VEGETATION ECOSYSTEM SERVICES |
| 10:00 am | Hamish Lowe | WHAT ABOUT THE LANDSCAPE? - HOW LUC IS CONSIDERED IN FWFPS |
| 10:10 am | Discussion | |

Morning tea: 10:25 am - 10:55 am

Session 10: Freshwater Farm Planning continued...

| | | |
|----------|----------------|--|
| 11:00 am | | |
| 11:10 am | Courtney Stone | FARMER PREFERENCES AND DRIVERS OF DECISION-MAKING RELATED TO WATER QUALITY ACTIONS AND LAND USE CHANGE IN TUKITUKI |
| 11:20 am | Chris Tanner | EVALUATING THE COST-EFFECTIVENESS OF COMBINATIONS OF INTERCEPTIVE MITIGATIONS |
| 11:30 am | Hamish Lowe | WHAT'S IN A FARM PLAN – HOW CAN WE WORK TOGETHER TO DELIVER THE NEEDED CONTENT? |
| 11:40 am | Todd White | FRESHWATER FARM PLANS MADE EASY |
| 11:50 am | Vera Power | CERTIFICATION OF NUTRIENT MANAGEMENT ADVISERS – TEN YEARS ON |
| 12:00 pm | Discussion | |

Lunch: 12:15 pm - 1:15 pm

Session 11: Opportunities for managing nutrient inputs and their use efficiency

| | | |
|---------|--------------------|---|
| 1:20 pm | Sam Morris | HEALTHY WATERWAYS VS THE AVOIDANCE OF CLIMATE CHANGE – BOTH, NEITHER OR SOMEWHERE IN THE MIDDLE? – THE CONUNDRUM |
| 1:30 pm | Allister Holmes | UNIFORMITY OF GROUND SPREADING OF COMMON NEW ZEALAND FERTILISER BLENDS |
| 1:40 pm | Jeff Morton | WHAT IS THE EXTENT OF MOLYBDENUM DEFICIENCY IN CLOVER IN NEW ZEALAND PASTURES |
| 1:50 pm | Col Gray | WINCHMORE: THE WORLD'S OLDEST GRAZED AND IRRIGATED PASTURE TRIALS |
| 2:00 pm | Rowland Tsimba | OPTIMISING NITROGEN APPLICATION FOR MAIZE PRODUCTION: EFFECTS ON CROP BIOMASS, NITROGEN UPTAKE, AND SOIL NITROGEN DYNAMICS. |
| 2:10 pm | Col Gray | PHOSPHORUS LEACHING FROM GRAZED PASTURE SYSTEMS IN AOTEAROA NEW ZEALAND: SOURCES, FORMS, EXTENT AND RISK FACTORS |
| 2:20 pm | Janani Palihakkara | REDOX-INDUCED PHOSPHORUS RELEASE IN DIFFERENT SOILS UNDER SHORT-TERM SUBMERGENCE |
| 2:30 pm | Discussion | |

Closing Remarks: 2:40 pm - 2:55 pm

Thank you to our sponsors for their generosity and support

