Programme 25 November

nzgsconference2022.co.nz

Contents

Overview of Programme

	Tuesday 22 November	Wednesday 23 November	Thursday 24 November	Friday 25 November
7.45am		Registration desk open	Registration desk open	
8.00am			NZGS Breakfast AGM	
8.20am	Field Trip	Mihi whakatau		Registration desk open
8.40am				
9.00am		Opening	Opening	Panel: Mana wāhine o mātai matawhenua
9.20am		Keynote: Gail Tipa	Keynote: Julian Agyeman	
9.40am				
10.00am				
10.20am		Morning tea	Morning tea	Morning tea
10.40am				
11.00am		Parallel sessions 5	Parallel sessions 5	Parallel sessions 5
11.20am				
11.40am				
12.00pm	Registration desk opens			
12.20pm				
12..40pm		Lunch	Lunch	Lunch (HoD Mtg)
1.00pm	ECRN Event			
1.20pm		Keynote: Katharine McKinnon	Keynote: Rebecca Lave	Parallel sessions 4
1.40pm				
2.00pm				
2.20pm		Parallel sessions 4	Video recording with Cadey Korson	
2.40pm				Panel: Geographies of resilience
3.00pm				
3.20pm			Field Trips	
3.40pm		Afternoon tea		Closing
4.00pm	ECRN Social Event	Parallel Sessions 3		
4.20pm				
4.40pm				
5.00pm		Panel: Teaching Geographies NCEA meets University		
5.20pm				
5.40pm		Mix & Mingle		
6.00pm		NZGS Awards	Dinner: Ilex Café	

Detailed Programme

* Indicates online presentations

Tuesday 22 November		
8.30-6pm	Meet outside Engineering Core Building, 63 Creyke Road	The National Park City and Te Pātaka o Rākaihautū Banks Peninsula Geopark
12.00-4.00	Engineering Core Foyer	Registration desk opens
1.00-4.00	E223 Zoom **E223**	ECRN Event
4.00-6.00	The Foundary Bar on campus	ECRN Social Event

Wednesday 23 November		
7.45	Engineering Core Foyer	Registration desk opens
8.20-9.00	Lecture Theatre E8 Zoom **E8**	Mihi whakatau
9.00-9.20	Lecture Theatre E8 Zoom **E8**	Opening
9.20-10.20	Lecture Theatre E8 Zoom **E8**	Keynote: Gail Tipa: The potential for collaborations between Māori and non-Māori to enhance future environmental management
10.20-11.00	Engineering Core Foyer	Morning tea

	Lecture Theatre E8	Room E5	Room E6	Room E7	Room E12	Room E14	Room E16
	Zoom E8	Zoom E5	Zoom E6	Zoom E7	Zoom E12	Zoom E14	Zoom E16
Session & Chairs	9 Reformed science: the value proposition of social science – Panel **Alison Greenaway**	2 Geographies of the more-than-human (1) **Nikolai Siimes and Kenzi Yee**	18 Urban wellbeing in times of socio-ecological crises (1) **Gradon Diprose**	24 Borders, Boundaries and Transitions **Sarah Edwards**	20 Resilience, Connectivity and Legibility of Cultural Landscapes: Expression of global concepts in Aotearoa New Zealand **Colin Meurk**	10 Transport research, society and policy (1) Active Travel **Lindsey Conrow & Simon Kingham**	1a Resilience & Riverine Communities **Ian Fuller & Martin Thoms**
11.00	Panellists: **Richard Le Heron** **Wendy Larner** **Suzanne Manning** **Susanna Finlay-Smits** **Janet Stephenson** **Nick Lewis**	Plants Make the Place: Decolonising Landscape in Aotearoa New Zealand **Jane Martin***	Relational approaches in managed retreat planning and communication **Martine Barnes**	Global Studies and Human Geography: A view from Aotearoa New Zealand **Jamie Gillen**	National Park Cities – A Disruptive Aspiration for Ōtautahi-Christchurch and Beyond? **Colin Meurk**	Spatio-Temporal patterns of E-Scooter usage in Tempe, Arizona – US **Vanessa Brum-Bastos**	Resilience in riverine landscapes **Ian Fuller & Martin Thoms**
11.20	**James Turner** **Marie McEntee** **Nick Cradock-Henry** **Karen Fisher**	Reciprocal Care in Soil and Human Relations **Alexandra Welch & Emma Sharp**	Coworking Spaces as extended spaces of care **Joke Methorst**	A discourse analysis on narratives of human trafficking from non-governmental organisations and news media organisations in Aotearoa New Zealand. **Grace Morton**	Te Pātaka o Rākaihautū Banks Peninsula Geopark Model: Learning in the Landscape **Sam Hampton**	Towards equity in e-bike access: figuring out what works **Karen Witten**	Redundancy or progress? Resilience thinking and riverine landscapes **Martin Thoms and Ian Fuller**

	Lecture Theatre E8	Room E5	Room E6	Room E7	Room E12	Room E14	Room E16
	Zoom E8	Zoom E5	Zoom E6	Zoom E7	Zoom E12	Zoom E14	Zoom E16
11.40		Fragile Black Gold **Heidi McLeod**	A future for the library, a future for the city? **Salene Schloffel-Armstrong**	Airport futures in a changing climate **Amanda Thomas**	Waitaki Whitestone Geopark - our journey **Sasha Morriss**	Transport lessons from the Netherlands: A comparison of the active travel behaviour of Dutch born vs immigrant residents **Koen Faber**	Restoring rivers in the Anthropocene **Rachel Greene**
12.00		Labouring for resilience: The role of more-than-human soil workers **Bethaney Turner***	Nature orientation and opportunity: A spatial analysis of who values and who has opportunity for satisfactory green spaces in proximity to their place of residence **Mirjam Schindler**	Anticipating Resilience: Understanding green hydrogen in New Zealand's energy transition **Abbi Virens**	Plants of Place: (Re)Planting our natural heritage in urban Aotearoa New Zealand **Maria Rodgers**	Making Active Transport Resilient to Surface Flooding **Emily Ward**	Doing Dams Better; a Lake Onslow in Central Otago Case Study **Garth Cant**
12.20		**Discussion**	Everyday interdependencies: unsettling storying about and within the city **Jule Barth**	Farm borders and biosecurity bordering **Sarah Edwards**	Green Space Environment, the Ombudsman and the Matter of Standing **Christopher Kissling**	**Discussion**	Winner takes all: a history of water allocation and development in the Manuherekia **Vaughan Wood**

12.40-1.20	Engineering Core Foyer	Lunch
1.20-2.20	Lecture Theatre E8 Zoom E8	Keynote: Katharine McKinnon: Resilience in relationship: Curiosity, possibility and Living 'the good life'

	Lecture Theatre E8	Room E5	Room E6	Room E7	Room E12	Room E14	Room E16
	Zoom E8	Zoom E5	Zoom E6	Zoom E7	Zoom E12	Zoom E14	Zoom E16
Session & Chairs	14.Geographies of collective action in Aotearoa New Zealand (1) **Kiely McFarlane**	7.Housing as home: accumulation and decumulation across the lifecourse **Aisling Gallagher & Juliana Mansvelt**	17.Changing communities and the impacts on place (1) **Alyssa Ryan**	5.Critical data studies, data fixation and geography **Matt Henry & Russell Prince**	13 Music, place and resilience (1) **Robin Kearns**	10 Transport research, society and policy (2) Transport research: policy & engagement **Helen Fitt and Angela Curl**	1 Critical physical geography in Aotearoa New Zealand (1) **Brendon Blue**
2.20	Transitioning to caring economies through nurturing collective subjectivities **Kelly Dombroski**	Housing as Home: Divestment and Decisions **Aisling Gallagher and Juliana Mansvelt**	Tourists and Cyclists: The role of the Central Otago Rail-Trail in small-town community resilience in Central Otago **Fraser Purves**	Sheep Units, Stock Units and Ewe Equivalents: Statistical Devices and the Commensuration of Animals, Land and Value in Aotearoa New Zealand **Matt Henry**	Resilience, popular songs and the housing crisis: exploring links in songs by Anthonie Tonnon and Courtney Barnett. **Robin Kearns**	Inter-Agency Collaboration for Active Mode Shift: Challenges and Opportunities **Simon Opit**	A Critical Appraisal of meanings of Anthropocene Riverscapes in Aotearoa New Zealand **Megan Thomas**
2.40	Connecting Crises: Activist Perspectives on Climate Change and Covid-19 **Sylvia Nissen**	Older people as active agents in their neighbourhoods: Moving house can improve quality of life. **Christine Stephens***	'Big Things', Complex Shadows: investigating intersecting stories of place, identity, and erasure through large roadside sculptures in Aotearoa **Maja Zonjić & Chloe Te Moananui**	Mapping digital transformations through hyperscale data centres and cloud services in New Zealand **Angus Dowell**	Waiata for resistance. She sings for the Kaipara. **Vicky Miru and Leane Makey**	Travel behaviour in New Zealand's small towns: what can be done to reduce vehicle-kilometres travelled and green house gas emissions **Alyssa Greaney**	More-than-human relations and ethics in urban stream restoration in Te Whanganui-a-Tara, Aotearoa **Logan Samuelson**

Wednesday 2.20 – 3.40   Parallel Session 2

	Lecture Theatre E8	Room E5	Room E6	Room E7	Room E12	Room E14	Room E16
Wednesday 2.20 – 3.40 Parallel Session 2							
	Zoom E8	Zoom E5	Zoom E6	Zoom E7	Zoom E12	Zoom E14	Zoom E16
3.00	Management by Objective? Catchment groups in an uncertain world **Jim Sinner**	Retirement Living: 'Ma and Pa' actuarial subjects' encounters with global private equity firms. **Laurence Murphy**	Greening Petro-Places in a Climate Changed World **Max Cohen**	Budgeting for growth: remaking the basis of territorial rule with economic statistics in the twentieth century **Russell Prince**	Music and city branding: unpacking experience of Auckland as a 'City of Music'. **Nicolas Lewis**	Tensions along the tracks: Local experiences and responses to a foreign financed and constructed urban railway in Hanoi, Vietnam. **Sarah Turner**	Environmental monitoring as epistemic infrastructure: a frontier for Critical Physical Geography **Marc Tadaki**
3.20	Kindness, complexity, and collective action: transitions toward a just research, science, and innovation system in Aotearoa New Zealand **Aisling Rayne**	Intergenerational relationships around housing and inheritance: Two South Island Case studies, 1860s to 1970s. **Michael Roche**	**Discussion**	Māori Data Sovereignty, the IDI, and the democratisation of data: Tensions and challenges in the development of the OHI Data Navigator **Ben Ritchie**	Place-creation and attendee experience at New Zealand music festivals **Neil Lindsay**	New Zealand's first Emissions Reduction Plan: A missed opportunity **Imran Muhammad**	Interrogating epistemological hierarchies in seismic hazard assessment in Aotearoa/New Zealand **Camilla Penney**

3.40 - 4.00	Engineering Core Foyer	Afternoon tea

	Lecture Theatre E8 Zoom **E8**	Room E5 Zoom **E5**	Room E6 Zoom **E6**	Room E7 Zoom **E7**	Room E12 Zoom **E12**	Room E14 Zoom **E14**	Room E16 Zoom **E16**
Wednesday 4.00 – 5.00 Parallel Session 3							
Session & Chairs	14.Geographies of collective action in Aotearoa New Zealand (2) **Kiely McFarlane**	23.Global management consultancies and extrastate governance - Panel **Nicolas Lewis**	17.Changing communities and the impacts on place (2) **Alyssa Ryan**	16.Resilient and regenerative tourism futures for Aotearoa NZ **Joanna Fountain**	13 Music, place and resilience (2) **Robin Kearns**	10 Transport research, society and policy (3) Transport research: policy & engagement **Helen Fitt and Angela Curl**	1 Critical physical geography in Aotearoa New Zealand (2) **Brendon Blue**
4.00	Social Movements solving the Climate Crisis under te Tiriti? Extinction Rebellion and the Challenges of Decolonising a Movement with Colonial Origins **Kyle Matthews***	Panellists: **Angus Dowell, Russell Prince, Tom Baker, Emma Sharp, John Reid**	Moving Around Te Maunga **Heidi McLeod**	Reshaping natural hazard risk communications [with Chinese] international tourists in New Zealand **Qian (Aviva) Cui**	Home, Land and Sea: A Geographic Exploration of Aotearoa's Record Covers **Luke Kiddle**	Can transport enhance community wellbeing and reduce social inequity in two contrasting communities in Christchurch **Simon Kingham**	The Australian Disaster Resilience Index: a national-scale geography of resilience **Melissa Parsons**
4.20	Catchment groups, supporting agencies, and the challenge of forging collective purpose **Ed Challies**		The tensions between community and primary industry: A case study from Cromwell, Aotearoa New Zealand **Alyssa Ryan**	Tourist resilience to natural hazards in conservation areas of New Zealand **Lydia Michela-Maireriki**	Folk Musician and discussion	Voices of marginalised young people and implications for transport policy **Rosee Hodgson**	Glaciers, peatlands, pastures, & fields: understanding resilient agropastoral systems in the Peruvian Andes **Ramzi Tubbeh***
4.40	The Co-operative Business Model - re-evaluation, relevance and resurgence **Richard Le Heron**		Discussion	We're all in this together? Community resilience in the face of ongoing crises: the case of Kaikōura **Joanna Fountain**		Bypassing the big burly bouncer: Moving beyond texts to communicate geographical research **Helen Fitt**	Critical physical geography in global perspective: a conversation with Rebecca Lave **Marc Tadaki, Rebecca Lave**
5.00 – 5.40	Lecture Theatre E8 Zoom **E8**	Panel: Teaching Geographies NCEA meets University					
5.40-	**Engineering Core Foyer**	Mix & Mingle and NZGS Award Ceremony					

Thursday 24 November		
7.45	Engineering Core Foyer	Registration desk opens
8.00-9.00	LB & Co Espresso Café 136 Ilam Rd	NZGS Breakfast AGM
9.00-9.20	Lecture Theatre E8 Zoom **E8**	Opening
9.20-10.20	Lecture Theatre E8 Zoom **E8**	Keynote: Julian Agyeman Just Sustainabilites in Policy, Planning and Practice
10.20-11.00	Engineering Core Foyer	Morning tea

Thursday 11.00 – 12.40 Parallel Session 1						
	Lecture Theatre E8	Room E5	Room E6	Room E7	Room E12	Room E14	Room E16
	Zoom E8	Zoom E5	Zoom E6	Zoom E7	Zoom **E12**	Zoom E14	Zoom **E16**
Session & Chairs	14.Geographies of collective action in Aotearoa New Zealand (3) **Kiely McFarlane**	2 Geographies of the more-than-human (2) **Alice McSherry and Kenzi Yee**	18 Urban wellbeing in times of socio-ecological crises (2) **Kelly Dombroski**	26. Geographies of Health and Well Being **Angela Curl**	4.Citizen Science, Community Co-design, and Multi-sectoral Participation for Community Resilience (1) **Emma Sharp, Sophia Tsang, Melanie Kah, Victoria Egli**	3. Geographies of subnational governance **Jeff McNeill**	8.Gendered geographies of resistance, resilience and reworking (1) **Lynda Johnston and Sandi Ringham**
11.00	The role of collectives in the process of community resilience **Suzanne Vallance**	Weeds and wastelands: Unsettling our affective relationships with 'out of place' species **Abbi Virens***	Supporting life in disaster-affected places: resident and community wellbeing initiatives **David Conradson**	Living through lockdown in New Zealand: A qualitative study of the impacts of COVID-19 **Kelly Radka**	Including multiple knowledges of soil into a school curriculum context **Sophia Tsang**	Māori wards and the tensions between decolonising and deep colonising. A view from Tauranga Moana. **Sandra des Forges**	Te Ara o Māhinaarangi – understanding resilience through the pathways of our ancestors: reflections from seven Raukawa wāhine. **Naomi Simmonds**

	Lecture Theatre E8	Room E5	Room E6	Room E7	Room E12	Room E14	Room E16
	Zoom E8	Zoom E5	Zoom E6	Zoom E7	Zoom E12	Zoom E14	Zoom E16

	Lecture Theatre E8	Room E5	Room E6	Room E7	Room E12	Room E14	Room E16
11.20	Scaling collective action for biodiversity **Kiely McFarlane**	The social lives of Brettanomyces: deconstructing wine biota **Nikolai Siimes**	Emerging transitions in organic waste infrastructure in Aotearoa New Zealand Cities **Gradon Diprose**	Prison Violence in Aotearoa New Zealand – what we can learn from incident and prisoner population records **Lars Brabyn**	The resilient researcher as a reflective researcher: using critical researcher reflections in Community Research projects. **Victoria Egli**	The reliance on New Zealand's regional government **Jeffrey McNeill**	Mana Wāhine reworking environmental justice: It's all in a taonga name **Sandi Ringham**
11.40	Upending silos? Multidisciplinary student collectives working to make an Impact **Gail Hutcheson**	The untameable biological economy of Aotearoa spat **Georgia McLellan**	Thinking with soils: Approaching urban food resilience through relationships with soils **Sasha Goburdhone,**	Outcomes and experiences of occupationally injured migrants in Aotearoa/New Zealand; A mainstream media review **Kelly Radka**	Co-design with young Aucklanders: restoring the mauri of the Puhinui awa and creating a playground **Penelope Carroll**	'Rise of the regions'? Interrogating and mapping 'post'-pandemic regional community resilience and its implications for regional governments. **Axel Malecki**	Resisting harm, re-forging wellbeing. Strategies for holistic climate adaptation amongst wāhine Māori **Danielle Johnson**
12.00	Discussion: geographies of collective action **Max Harris**	A legal geography of wastewater surveillance and more-than-human assemblages in Singapore **Dhiraj Nainani***	Collaborative planning for ecological and socially equitable revitalisation of urban waterways: the case of St Albans Stream in Abberley Park, Christchurch **Rita Dionisio**	The landscape of on-demand delivery of unhealthy commodities in New Zealand **Angela Curl**	Temporalities of creativity in city-making: DIY urbanism in post-earthquake Christchurch **Rachael Boswell**	Dilemmas For Spatial Planning And Regional Governance In Poland **Jerzy Banski**	Reworking ecologies and materialities of contamination **Karen Fisher**

Thursday 11.00 – 12.40   Parallel Session 1

Thursday 11.00 – 12.40 Parallel Session 1							
	Lecture Theatre E8	Room E5	Room E6	Room E7	Room E12	Room E14	Room E16
	Zoom E8	Zoom E5	Zoom E6	Zoom E7	Zoom E12	Zoom E14	Zoom E16
12.20	**Discussion**	**Discussion**	Inclusive places in Ōtautahi, Aotearoa. Developing & testing an accessibility analysis tool **M Grace-Stent**	**Discussion**	**Discussion**	What if? Planning (reforms) for what really matters **Clare Mouat***	Interfaces between Collective Autoethnography and Embodied Geographies as migrant women: shared spaces of resistance, resilience and solidarity **Marcela Palomino-Schalscha & Maria Teresa Braga Bizarria***

12.40-1.20	Engineering Core Foyer	Lunch
1.20-2.20	Lecture Theatre E8 Zoom **E8**	Keynote: Rebecca Lave Critical physical geography in practice: Our depth perception improves when we combine biophysical and social lenses
2.20-4.00	E128	Record your research, tell your story Cadey Korson recording short videos about delegates research or current projects.
2.20-5.30	In the Field	Field Trips
6.00 -	Ilex Café, Botanical Gardens Location	Conference Dinner: It will be a 'walk and fork' style dinner, with flexible seating options available both indoor and outdoor. One drink is included in the registration and then guests are welcome to purchase further if they wish.

Friday 25 November							
8.20	Engineering Core Foyer	Registration desk opens					
9.00-10.20	Lecture Theatre E8 Zoom **E8**	Panel: Mana Wāhine o Mātai Matawhenua					
10.20-11.00	Engineering Core Foyer	Morning tea					

	Lecture Theatre E8	Room E5	Room E6	Room E7	Room E12	Room E14	Room E16
Friday 11.00 – 12.40 Parallel Session 1							
	Zoom E8	Zoom E5	Zoom E6	Zoom E7	Zoom E12	Zoom E14	Zoom E16
Session & Chairs	19. Honouring Te Tiriti: enabling holistic environmental governance in Aotearoa New Zealand **Nick Kirk, Lara Taylor**	11.Children and young people in changing globalising cities (1) **Claire Freeman**	18 Urban wellbeing in times of socio-ecological crises (3) **Gradon Diprose**	15.Emerging Economic Geographies of Experimentation and Innovation (1) **Angus Dowell**	4.Citizen Science, Community Co-design, and Multi-sectoral Participation for Community Resilience (2) **Emma Sharp, Sophia Tsang, Melanie Kah, Victoria Egli**	21.Negotiating the cross roads of resource use changes and transitioning behaviours: contesting risks and uncertainties **Richard Le Heron**	8.Gendered geographies of resistance, resilience and reworking (2) **Lynda Johnston and Sandi Ringham**
11.00	Partnering or Prohibiting: The barriers to fair and effective representation through Māori wards and constituencies (MWC) **Danielle Lucas**	Mapping the child friendliness of cities for urban planning: Findings from a Public Participation GIS study with children in the Iranian Kurdistan **Soran Mansournia***	Enhancing Social Resilience Through Urban Blue-Green Infrastructure in Ōtautahi-Christchurch **Tyler McNabb**	Promissory presents and iffy futures' reprised **Nicolas Lewis**	Interdisciplinary Approaches to Engaging Public Interest in Soil: Soilsafe Aotearoa as a project of diverse soil values **Emma Sharp**	Why do we argue about risk? The invisibility of Worldviews in marine decision making **Richard Le Heron**	Policing the fossil-fuelled settler-colonial state **Amanda Thomas**

	Lecture Theatre E8	Room E5	Room E6	Room E7	Room E12	Room E14	Room E16
	Zoom E8	Zoom E5	Zoom E6	Zoom E7	Zoom E12	Zoom E14	Zoom E16
Friday 11.00 – 12.40 Parallel Session 1							
11.20	Kia Manawa: Rising to the challenge in cultural impact assessment **Dyanna Jolly**	Navigating choppy waters: conducting a three-generation study around the Pacific Rim **Yvette Buttery**	Housing affordability and post-political silence in New Zealand **Colin McLeay***	Social and cultural innovation in Aotearoa's community housing sector **Jack Barrett**	The Co-Production Project — an action research project **Anjuli Muller**	Expressions of Worldviews in consenting processes: the applications and submissions relating to the Okura subdivision and Chatham Rock Phosphate mining **June Logie**	Feminities, feminism and Instagram: Exploring affective pedagogies of influence(rs) **Octavia Calder-Dawe**
11.40	Walking Through the Doorway: Te Tiriti Partnership in practice **Mereana Berger & Alice McSherry**	Changing childhoods in the Pacific Rim: Preliminary findings from New Zealand-Wellington **Claire Freeman**	An indicator-based system dynamic model to assess road user vulnerability to floods **Shashini Ranabahu**	Farm tourism in Lam Dong, Vietnam: a farmer decision-making in the context of the economic rationality of the tourism enterprise or experimentation of entrepreneurs trying to create value from their properties by accessing the regions tourists? **Thuấn (Nancy) Thị Phương Huỳnh**	He Paa Harakeke - Reflecting thriving communities through co-designed StoryMaps **Corriana Hooker*, Matua Haupai Montgomery, Jesse Whitehead, Moana Rarere**	A guidance framework to expose invisibilities in perception of risk and uncertainty **Erena Le Heron**	"Negotiating with Two Places for A Baby"- Narratives of North Indian Immigrant Women in Aotearoa New Zealand. **Kirti**

	Lecture Theatre E8	Room E5	Room E6	Room E7	Room E12	Room E14	Room E16
	Zoom E8	Zoom E5	Zoom E6	Zoom E7	Zoom E12	Zoom E14	Zoom E16
12.00	Moving towards Te Tiriti in a Crown Research Institute: Reflections from a Māori human geographer **Melanie Mayall-Nahi**	From strict socialism to TikTok troubles: changing childhoods over three generations in urban Vietnam. **Sarah Turner**	Driving forces of population change following the Canterbury Earthquake Sequence, New Zealand **Jessie Colbert***	Utopian Food Experiments - possibility, proliferation and just transitions in Aotearoa **Ingrid Petersen**	Pursuing Plurality: Exploring the Synergies and Challenges of Knowledge Co-production in Multifunctional Landscape Design **Ritodhi Chakraborty**	Risk and Expertise: Fonterra as risk taker and risk manager **Stuart Gray**	Kindness as resistance, resilience and reworking within Aotearoa New Zealand's research system **Bethany Cox**
12.20	**Discussion**	**Discussion**	**Discussion**	**Discussion**	**Discussion**	**Discussion**	Street food pantries as gendered sites of resistance and resilience: reworking visceral geographies of food (in)securities in Kirikiriroa **Lynda Johnston & Gail Adams-Hutcheson**

Friday 11.00 – 12.40   Parallel Session 1

12.40-1.20	Engineering Core Foyer	Lunch
12.40-1.20	E120 Meeting Room	HoD meeting

	Lecture Theatre E8	Room E5	Room E6	Room E7	Room E12	Room E14	Room E16
	Zoom E8	Zoom E5	Zoom E6	Zoom E7		Zoom E14	Zoom E16
Session & Chairs	6.Crisis conservation: New approaches in Anthropocene biodiversity restoration **Ally Palmer and Brendon Blue**	11.Children and young people in changing globalising cities (2) **Claire Freeman**	12.Marine pluralities **Hamish Rennie**	15.Emerging Economic Geographies of Experimentation and Innovation (2) **Salene Schloffel-Armstrong**	Free	22.The Legal Geography of Braided Rivers – The Land the Law Forgot - Panel **Ann Brower**	25.Sustainable Agri-Food Transitions **Sarah Edwards**
1.20	The many faces of Predator Free 2050 **Brendon Blue**	Results and reflections from the Neighbourhoods and Health study with children in Ōtepoti Dunedin and Tāmaki Makaurau Auckland, Aotearoa New Zealand **Tiffany Williams**	Making a blue economy in New Zealand **Nick Lewis**	The philanthro-state: Bloomberg Philanthropies and its program of 'government innovation' **Tom Baker**		Panellists: **Aimee Calkin, Connor Fraher Renate Vosloo**	Applying social science at the farm gate: reflections on a wellbeing approach to resilience in hill country farming **Madison Seymour**
1.40	Labour, land rights, and long shots: Predator Free 2050 and ambitious biodiversity restoration **Ally Palmer**	Play Streets as a tool to foster neighbourhood connections: How street play can be used to improve wellbeing for children and communities in Ōtautahi **Emma Woods**	Kāpiti Marine Reserve 30 years on: how have attitudes and connections to the reserve changed over the past 3 decades? **Stephanie Brenssell**	The Emergence of Aotearoa's Innovation Ecosystem **Aleisha Seagrave**			Just Transitions: A case study of the dairy industry in Aotearoa New Zealand **Milena Bojovic**

Friday 1.20 – 2.40   Parallel Session 2

	Lecture Theatre E8 Zoom E8	Room E5 Zoom E5	Room E6 Zoom E6	Room E7 Zoom E7	Room E12	Room E14 Zoom E14	Room E16 Zoom E16
			Friday 1.20 – 2.40 Parallel Session 2				
2.00	An integrated restoration story: Te Hōnanga a Iwi | Rosedale Park Restoration Project Documentary **Cadey Korson**	COVID-19 and changing neighbourhood environments: Children's perspectives and experiences during lockdown in Aotearoa New Zealand **Melody Smith***	Oil and gas moratoriums in Canada and New Zealand: An intervention into petrocapitalist hegemony through climate justice and time **Sophie Bond**	Environmentally Driven Economies: Assembling novel economy environment relations in New Zealand **Angus Dowell**			Grubs up: How insects are 'becoming food' in Aotearoa, New Zealand **Caitlin Hyde**
2.20	**Discussion**	**Discussion**	Relational ways of oceanic knowing: perspectives from Norway **Nancy Couling***	**Discussion**			Quantifying, mapping and modelling of agricultural pathways to resilience: Example of the arable sector. **Clémence Vannier**

2.40-3.40	Lecture Theatre E8 Zoom **E8**	Panel: Geographies of resilience
3.40 -	Lecture Theatre E8 Zoom **E8**	Closing

Keynote Speakers

Gail Tipa, Kai Tahu

The potential for collaborations between Māori and non-Māori to enhance future environmental management.

Māori are particularly sensitive to the use and development of their lands, waters and taonga and hold distinct perspectives concerning their cultural identity and their custodial obligations to manage these resources.

There is enormous potential for the use of mātauranga Māori to enhance our understanding of the environment, to discuss appropriate use and development, and provide a more holistic and integrated perspective to planning and policy. The current resource management reforms provide a significant opportunity for New Zealand to move beyond the status quo and implement innovative approaches that recognise the positive contribution mātauranga Māori can play in management decision-making processes.

This presentation will provide practical examples where Māori and non-Māori have worked together in a number of environmental contexts. A particular focus will be the contribution of geographers to advancing many of these innovations.

Katharine McKinnon, University of Canberra

Resilience in relationship: Curiosity, possibility and Living 'the good life'

Many of our key social institutions are predicated on delivering a good life for citizens. But what is a good life? Whose 'good life' are we talking about? And whose knowledge counts in efforts to shape a good life for others? In the Anthropocene it is increasingly clear that the good life of one is bound up with the good life of many others, human and non-human, with whom we share the Earth. Thus the good life that we share with one-another, and the livelihoods that sustain us, are multi-species and diverse. Unfortunately, our key social institutions tend to offer a narrow range of strategies and solutions that seldom reflect this diverse and interdependent reality.

Drawing on her research in health, education and international development, Professor McKinnon discusses how curiosity-driven research and an ethics of possibility are crucial to efforts to build more-than-human communities that can flourish in the long term.

Julian Agyeman, Tufts University

Just Sustainabilites in Policy, Planning and Practice

In his talk, Julian will outline the concept of just sustainabilities as a response to the 'equity deficit' of much sustainability thinking and practice. He will explore his contention that who can belong in our cities will ultimately determine what our cities can become. He will illustrate his ideas with examples from urban planning and design, food justice and the 'Minneapolis Paradox'.

Rebecca Lave, Indiana University

Critical physical geography in practice: Our depth perception improves when we combine biophysical and social lenses

The widening gap between critical human and physical geography raises concerns about the long-term viability of our field and spurs regular calls for reintegration. Even a brief review of these calls makes two points glaringly clear: this discussion has been going on for a long, long time and, given its regular reoccurrence, it would seem we have little to show for it. I argue here that there is already a strong and growing body of work that draws together critical human and physical geography: critical physical geography (CPG). Individually or in teams, critical physical geographers are bridging the gap, combining insights from climatology, geomorphology, biogeography and remote sensing with approaches from political economy, feminist geography, STS, and environmental justice. The key characteristics that unify this work are 1) its emphasis on treating biophysical processes and unequal social power relations with equal seriousness, 2) its acknowledgement of the politics of knowledge production, and 3) its normative agenda of promoting eco-social transformation. Using examples from CPG research, I argue that combining critical human and physical geography lenses allows us to see eco-social issues differently and more deeply than current environmental narratives.

Plenary Panels

Teaching Geographies: NCEA meets University

Panellists:

Rebecca Sweney-McKee, Head of Faculty, Social Sciences, Rangiora High School; and member of the MoE's Geography Subject Expert Group.

Louise Richards, Assistant Principal, Shirley Boys' High School; MoE's Geography Subject Expert Group and Chair of the New Zealand Board of Geography Teachers.

Assoc Prof Heather Purdie, University of Canterbury; and 2019 National Tertiary Teaching Excellence Award for Sustained Excellence in Tertiary Teaching.

Prof Simon Kingham, University of Canterbury; and UC Teacher Award Winner; and Chief Science Advisor at the Ministry of Transport

This panel will broadly examine and discuss two questions.

What can University staff expect from a student who has studied NCEA Geography at school for the last 2-3 years', and

What awaits geography students at university?

Specifically, it will look at:

How and what is NCEA, and how is it changing?

How is NCEA Geography assessed and what might be changing?

What can students expect in 1st year University geography courses?

What careers are University geography graduates going on to do?

Mana wāhine o mātai matawhenua

Panellists:

Michelle Thompson-Fawcett, Ngāti Whātua, Te Ihowhenua|School of Geography, Te Whare Wānanga o Otago

Sandi Ringham, Ngāti Kuri, Te Whare Wānanga o Waikato, Environmental Planning Programme

Meg Parsons*, Ngā Puhi/Lebanese/Pākehā, Te Kura Mātai Taiao School of Environment, Waipapa Taumata Rau University of Auckland

Karen Fisher, Ngāti Maniapoto, Waikato-Tainui, School of Environment, Waipapa Taumata Rau University of Auckland

Lara Taylor, Ngāti Tahu, Ngāti Whaoa, Ngāti Kahungunu, Ngāi Tahu, Manaaki Whenua Landcare Research

Facilitated by Liz Brown Liz Brown, Ngāi Tahu, Amokapua Pākākano Tuarua | Deputy Assistant Vice Chancellor Māori, Te Whare Wānanga o Waitaha University of Canterbury

This plenary session features Māori women geographers from around the motu. The session includes both established and emerging research leaders and highlights matters of care and concern for the discipline from wahine Māori standpoints.

Themes of this session include:

Resistance and resilience in the academy

Current and future collaborations in research

Mana whenua research agendas

Responsibilities and accountabilities in geographical research

Engaging mātauranga Māori in geographical research

Indigenous environmental justice

Closing Panel: Geographies of Resilience

Panellists:

Corban Te Aika, Ngāi Tahu, Te Whare Wānanga o Waitaha | University of Canterbury

Kelly Dombroski, School of People, Environment and Planning, Te Kunenga ki Pūrehuroa | Massey University

David Conradson, Associate Dean (Academic), Te Whare Wānanga o Waitaha | University of Canterbury

Facilitated by Sarah Edwards Department of Environmental Management, Te Whare Wānaka o Aoraki | Lincoln University

This plenary session reflects on resilient geographies and geographies of resilience in light of our discussions and exchanges, research and experience. Panellists will speak for around 10 minutes, with a facilitated panel discussion to follow. The session brings together a range of perspectives to explore prospects for resilient people and places, and to consider the contributions of geography in Aotearoa and beyond.

Sessions and Abstracts

1. Critical physical geography in Aotearoa New Zealand

Session Convenors: Brendon Blue, Victoria University of Wellington and Marc Tadaki, Cawthron Institute,

A Critical Appraisal of meanings of Anthropocene Riverscapes in Aotearoa New Zealand   Megan Thomas, Gary Brierley, Jon Tunnicliffe, Billie Lythberg, Dan Hikuroa

The Anthropocene is a proposed geological epoch in which human influence on Earth Systems has become so great it has the potential to influence the stratigraphic record. The definition of the Anthropocene in this way suggests humans are now able to act as a planetary force in disequilibrium with the natural world, a notion that contrasts Mātauranga Māori. The beginning of this influence, and thus the Anthropocene, is difficult to define. A tentative start date of ca. 1800 has been suggested due to changes in the stratigraphic record associated with the Industrial Revolution. Acknowledging the Anthropocene as a new paradigm for interpreting the drivers of Earth System trajectory fosters challenges for how we think riverscapes should look and act. Worldwide, many rivers no longer operate as they did during the Holocene, being simplified both physically and ecologically. Resultantly, what is considered a healthy river post 1800 is not clear. This lack of reference point hinders catchment management approaches. Such assertions define the Anthropocene not as a single entity or 'tipping point' upon which a geological age should be stamped, but a lens through which multiple interpretations and ways of knowing occur. Consideration of the Anthropocene by river managers as a combination of approaches allows appreciation of complexity and opens possibilities for epistemologically divergent and multidisciplinary discussions. Anthropocene river management has potential to bring in a new era where riverscapes are represented holistically rather than defined scientifically. Representations of riverscapes as living databases could be a step towards comprehensive management approaches.

Keywords:

More-than-human relations and ethics in urban stream restoration in Te Whanganui-a-Tara, Aotearoa   Logan Samuelson, Brendon Blue, Amanda Thomas

Urban stream environments have been significantly altered through processes of colonisation and urbanisation in pursuit of land for development and control over natural resources. There is growing interest in how to peel back layers of the city to restore what was there before, or what kind of nature might grow. The discipline of river restoration has struggled to deconstruct the human-nature duality embedded in Euro-Western ontologies, and to advance communication between the biophysical sciences, social sciences, and humanities to better define 'restoration' and its objectives. Offering

research that is explicitly concerned with human-environment relations and ethics, more-than-human (MtH) geographies can play a critical role in contributing to these efforts. However, MtH geographies are challenged by methodological questions of how to involve the more-than-human, and critiqued for shallow understandings of colonialism, power and place. My research aims to draw out the interdisciplinary potential of the more-than-human, to explore how people think and act to articulate ethics for and with urban streams. Using the case study of Waimapihi stream, I draw on participatory photography with interviews as a novel method for bringing human-environment relations and ethics to the fore, and to envision futures for and with urban streams. This paper will broadly outline the results of my study and consider implications for critical physical geography.

Keywords:

Environmental monitoring as epistemic infrastructure: a frontier for Critical Physical Geography   Marc Tadaki

Taking responsibility for humanity's imprint on the biosphere requires us to not only understand biophysical changes in the environment, but to also reflexively account for our knowledge about these changes. Long term monitoring of biophysical attributes provides an important foundation for understanding the magnitude, rate, and causes of ecological change, all of which are essential for composing effective environmental governance. Monitoring, however, is often taken for granted as a technical rather than value-laden and social task. Here, I draw on interviews with environmental scientists, regulators, and practitioners in Aotearoa to excavate the logics that shape what is monitored and known about freshwater. Freshwater monitoring is shaped by, inter alia, what is required by legislation, what is easily measurable, what can be measured consistently, what is interesting to specific science staff, what is enforceable, what is statistically sound, and what responds to local political priorities. Collectively, these logics and their metrics constitute the epistemic infrastructure through which knowledge about New Zealand's freshwater estate can be generated. Through this infrastructure, the scope of the freshwater 'problem' is delimited in advance even before biophysical measurements are ever taken. Epistemic infrastructures such as environmental monitoring draw attention to certain parts of the environment over others; they enable authoritative claims to be made about the environment, and, importantly, they possess inertia. By helping to elucidate the goals, values, and makeup of our epistemic infrastructures, geographers can better account for the social and biophysical underpinnings of environmental knowledge in the Anthropocene.

Keywords:

Interrogating epistemological hierarchies in seismic hazard assessment in Aotearoa/New Zealand   Camilla Penney

A significant amount of scientific effort is focussed on improving seismic hazard models for Aotearoa/ New Zealand. However, there is much less focus on interrogating the underlying socio-political and epistemological assumptions which require and define such improvements. In particular, a key area of current research, in which the author is involved, is the possibility of using "physics-based" earthquake simulators in seismic hazard assessments. Two

primary motivations are invoked for the use of such simulators. The first is to reduce reliance on expert opinion in seismic hazard assessment. The second is to expand the range of earthquakes which are recognised as possible beyond those documented in the temporally – and often epistemologically – limited historical record. Both of these aims invite critical reflection. In the first case, since expert opinions are still fundamental to simulators, only veiled in mathematical expressions and parameter choices, a key question is what epistemological hierarchies are involved in, and perpetuated by, the use of apparently objective computational approaches, and how do such models fit into a broader landscape of digital environmental governance? In the second, how should we assess which synthetic earthquakes represent "plausible" futures? More fundamentally, the promise of improving estimates of earthquake magnitude, shaking and frequency is that increased precision allows for a cost-benefit analysis in building construction, supporting particular narratives around safe construction which neglect many examples of indigenous building practices across earthquake-prone regions of the world. This paper will use case studies from seismic hazard assessment to explore how geophysical approaches to understanding the Earth could benefit from the critical, transdisciplinary lens offered by Critical Physical Geography.

Keywords:

The Australian Disaster Resilience Index: a national-scale geography of resilience   **Melissa Parsons**

Australian communities face increasing disruption from natural hazards. Disaster resilience is a protective factor arising from capacities within social, economic and institutional systems to absorb the shocks of natural hazard events and to learn, adapt and transform in anticipation of an uncertain future. The Australian Disaster Resilience Index was used to undertake the first nationally standardised snapshot of disaster resilience in Australia. About 52% of the population (12.3 million people) live in areas assessed as having moderate capacity for disaster resilience, 32% of the population (7.6 million people) live in areas assessed as having high capacity for disaster resilience and 16% of the population (3.8 million people) live in areas assessed as having low capacity for disaster resilience. Disaster resilience in Australia is strongly influenced by a geography of remoteness. Most metropolitan and inner regional areas were assessed as having high capacity for disaster resilience. In contrast, most outer regional and remote areas were assessed as having low capacity for disaster resilience, although areas of low capacity for disaster resilience can occur in metropolitan areas. Juxtaposed onto this distribution, themes of disaster resilience highlight strengths and barriers to the capacity for disaster resilience in different communities. For example, community capital and social cohesion is a barrier in many metropolitan areas, but a strength in outer regional and some remote areas. The strategic intent of a shared responsibility for disaster resilience can benefit from understanding the spatial distribution of disaster resilience, so that policies can address systemic influences on disaster resilience.

Keywords:

Glaciers, peatlands, pastures, and fields: understanding resilient agropastoral systems in the Peruvian Andes   Ramzi Tubbeh

Indigenous alpaca breeders and smallholding farmers in the Peruvian Andes have jointly managed high-altitude Distichia muscoides peatlands since precolonial times. Also known as bofedales, these ecosystems are formed through the slow flow of glacial meltwater over gentle peri-glacial slopes. Whilst alpaca breeders benefit from letting bofedal water spread over their pastures, smallholding farmers dig ditches on bofedales to intercept and channel water into their irrigation canals. These conflicting needs are managed through local rules of seasonal turn-taking. Bofedal water is prioritized for lower-altitude agriculture in the dry season and for highland pasture irrigation in the wet season. The resilience of this social-ecological system rests on the remarkable continuity of kin-based and non-kin-based relations between farmers and higher-altitude alpaca breeders, which have enabled continuous vertical hydro-territorial control, despite the colonial practice of indigenous people resettlement. Today, migration, shifting herd sizes, climate change, and associated glacial retreat, are altering bofedal hydrology and challenging this otherwise resilient system. Using archival research, participant observation, semi-structured interviews, field surveys, and remote sensing, our ongoing research seeks to understand: (a) the political-ecological means whereby certain families of farmers and alpaca breeders gained and maintained vertical control over bofedales, pastures, and agricultural fields over generations; (b) how these forms of control and access, including governance institutions, have changed over time; (c) how land-cover patterns have changed; and (d) whether and how the bofedal management system may remain resilient amid current social-ecological stressors. We seek comparable social-ecological systems in Aotearoa New Zealand for interregional comparative case study research.

Keywords:

Critical physical geography in global perspective: a conversation with Rebecca Lave   Brendon Blue, Marc Tadaki, Rebecca Lave

A facilitated open discussion with session attendees regarding already-happenings, prospects and possibilities for critical physical geography both globally, and for Aotearoa New Zealand.

1a.   Resilience and Riverine Communities

Session Convenors: Ian Fuller, Massey University and Martin Thoms, University of New England

Resilience in riverine landscapes   Ian Fuller & Martin Thoms

To apply resilience thinking to rivers requires a perspective that extends beyond the river channel. However, often river resilience may be over-narrowly conceived. Engineers define a resilient river as one with sufficient structural flood protection to defend against a 500 year flood. Ecologists define a resilient river as one with a robust biology able to adapt to pulse, press and ramp disturbances. Geomorphologists reinvent the wheel and substitute resilience for

terms relating to equilibrium theory and sensitivity. These communities invariably focus on what's happening in the river, but riverine landscapes are complex mosaics comprising and reflecting holistic interactions between physical and human landscapes: they are truly geo-eco-social systems. Resilience thinking must take people in the catchment into account at multiple scales within the riverine landscape. Resilience-thinking recognises the cross-scalar interactions between the landform that is the river and the social-ecological system into which it is nested. A river cannot be conceived as resilient unless these interactions are recognised. A stopbanked-river is shut off from both the human community and its floodplain. Resilience thinking restores these human- and physical connections with the river, which is vital in Aotearoa New Zealand, since for Māori an awa is not just a river – it is an interconnected, living system that for many is ancestral: Ko au te awa, ko te awa ko au "I am the river, the river is me". We argue that resilience in riverine landscapes should be best understood as a geo-eco-social property approached holistically.

Keywords: landscape mosaic, catchment, floodplain, channel, community

Redundancy or progress? Resilience thinking and riverine landscapes   Martin Thoms and Ian Fuller

The concept of resilience acknowledges the ability of societies to live and develop within dynamic environments. River science is an area in which the adoption of resilience thinking is increasing, leading to the proposition that resilience may become a guiding principle of river research and policy. Debate about the role and understanding of resilience and riverine landscapes is part of the scientific method, but disciplinary disunity about the utility and ways to approach resilience thinking in research and policy may leave river science out of the management and policy process. Collaborations, debate, and increased exposure allow attitudes and perceptions towards emerging concepts to be explored constructively. An analysis of attitudes and perceptions around 'river resilience' is analysed from a series of directed workshops that longitudinally track the convergence of ideas, principles and concepts that can be used to advance the resilience of rivers as social ecological systems. Points of difference, reflecting different disciplinary backgrounds, also highlight areas of contention in the application of resilience thinking in river related research. Overall, our results suggest that resilience thinking is an emerging research area that provides a distinctive framework for advancing river research rather than offering a 'conceptual wrapper' of well-established concepts and methods. While important debates remain about the context of resilience in river science, this study touches on many current preoccupations inside and outside of the discipline and it highlights that resilience does provide important focal points for collaborative research, education and innovation.

Keywords: Resilience, river science, social-ecological systems, emergence

Restoring rivers in the Anthropocene   Rachel Greene, Martin Thoms, Melissa Parsons

Rivers are an integral part of society and are valued for their ecosystem services. Despite this, rivers are under stress from activities like land use change and fragmentation. These stressors are characteristic of the Anthropocene, where human disturbances dominate the natural environment. Restoration

activities commonly aim to reverse the impacts of environmental degradation and return a system back to an original, 'pre-disturbance' condition. Is this realistic or unachievable in the Anthropocene? Billions of dollars are invested into river restoration globally each year but there are limited empirical data to evaluate river recovery to restoration. Current response models based on equilibrium and stability assume rivers will return to pre-degraded conditions by removing or ameliorating a stressor. Conceptual frameworks are useful tools to order phenomena and material and understand patterns and processes in data limited situations. A framework for the study of river recovery in the Anthropocene is presented. The framework includes components of river science; resilience thinking; and landscape ecology. It is proposed that rivers in the Anthropocene are in a different basin of attraction that display alternative functions, structures, and interactions. Resilience thinking suggests that once a river moves beyond the Anthropocene tipping point, recovery back to its original state is not possible. Restoration in the Anthropocene must focus on increasing the adaptive capacity of river ecosystems to reduce the potential of crossing further tipping points. Principles of landscape ecology suggest focusing on restoring heterogeneity would enhance the resilience of Anthropocene rivers to current and future disturbances.

Keywords: River restoration, Resilience, Anthropocene, Disturbance

Doing Dams Better; a Lake Onslow in Central Otago Case Study Khemaksone Phetpasak, Edward Challies and Garth Cant

The larger context is Climate Change and Sustainable Development Goal Seven (SDG7) which aims to ensure universal access to affordable, reliable energy services. Hydropower plays a key role but dams have environmental and social consequences. After nine decades of experience with large dams, there is a collective determination to do dams better. One of the instruments designed to ensure that dams and storage lakes are built safely, and potential adverse impacts are understood, is the Hydropower Sustainability Assessment Protocol (HSAP). The intent of this study is to evaluate the effectiveness of the HSAP instrument by means of a case study. The immediate context is the proposed Lake Onslow Pumped Hydro Scheme in Central Otago: a cornerstone of Climate Change and Sustainability policies. Dams would be built and two lakes would be created in an endeavour to create an alternative to coal power generation and overcome dry year problems. There are three prongs to the research reported: interviews with stakeholders and rūnanga; interviews with experts; and an analysis of journal articles about large dams completed between the 1930s and the 2010s. The findings are reported, the effectiveness of the HSAP evaluated, and suggestions made for improvements to the instrument.

Keywords: SDG7, Hydropower, HSAP, Lake Onslow

Winner takes all: a history of water allocation and development in the Manuherekia   Vaughan Wood

Overallocation of surface waters is a key obstacle to the economic and environmental resilience of rural communities in New Zealand. Modern management of surface waters calls for the provision of flows that will sustain a range of values and potentially enable restoration. This paper describes

research on the history of allocation of surface waters in the Manuherekia and Taieri catchments in central Otago, with a view to setting out how the waters in different parts of these catchments came to be overallocated. It also reports on how this (over)allocation was manifest in the character of surface flows at the time.

Keywords: water allocation, Central Otago

2.   Geographies of the More-than-Human

Session Convenors: Nikolai Siimes, Alice McSherry, Kenzi Yee and Emma Sharp, School of Environment, University of Auckland

Plants Make the Place: Decolonising Landscape in Aotearoa New Zealand   Jane Mariefrancis Martin

Place identity is intrinsically tied to a landscape's endemic plants. In New Zealand, naturalised introduced non-native flora has changed the look, feel, and function of native landscapes. This impacts not only how humans relate to place but also how the plants themselves do. In this paper, I propose to present current research into effects of weed management practices from the vantage of plant communities. Through first-hand observations and semi-structured interviews with a range of land carers both on and off-site, my research investigates cultural aspects of managing Tradescantia fluminensis impacting native forest regeneration including the iconic, endemic Silver Fern. Analysing data for evidence of worldviews and connection to the natural environment uncovers points of difference in landscape management approaches and practices. The project seeks to identify potential mechanisms for re-engaging land carers and the public to bolster native plant ecologies while meaningfully re-connecting with place.

Keywords: place identity, landscape, endemic plants, invasive flora, decolonisation

Reciprocal Care in Soil and Human Relations   Alexandra Welch and Emma Sharp

The global state of soil health has experienced a steep decline in recent decades due to environmental exploitation in the name of productivist agriculture, waste sinking, and land development. With this decline in vitality, so too has declined a general acknowledgement of soil as a source of more-than-human knowledge, and, as a more-than-human agent in human-environment relations. Typically capitalocentric world-views mean that soils are largely understood and valued in ways that exclude historic and contemporary Indigenous concepts of soil as an entity worthy of respect, care, and great concern. Modern capitalist values placed on soils to the exclusion of concepts of care and concern, have birthed not only the degradation of soil itself, but the degradation of the human-soil relationship as a whole. This fractured relationship dictates the measurement and mis-management of soils, and any endeavour to right

global soil fertility. This paper explores soil-human relationships in Aotearoa New Zealand, based on rare empirical work that (through questionnaires) asks household soil guardians and stewards about their care and concern for soil in their own backyards, and (through interviews with key informants) makes similar enquiries in policy, science, artistic, community composting, waste management, and diverse other realms of soil engagement.

Keywords: soil, care, concern, reciprocity, more-than-human

Fragile Black Gold   Heidi McLeod

"Those seeking to understand and form concepts about soil health have concentrated on the more inherent biochemical, physical and economic (e.g., productivity) aspects of soils, but not on the human, social or cultural dimensions" (Stronge et al., 2020, p. 1). ***I'm chewing my cud and watching Farmer leaning on his tractor. He's scribbling notes on an old catalogue, "soil + plants + animals = healthy people". I can tell he's thinking hard. He scratches his prickly beard and squints out across his paddocks. The Rural Finance Manager walked across these paddocks last week and Farmer seemed unsure what the future would hold. Farmer said to the Manager, "if I continue this way, I can't run the same number of units on the land". The Manager nodded in agreement. "Things are gonna have to change," Farmer says as he looks at me, "we've got to improve these soils". As a Hereford/Friesian beefie, I'm grass obsessed, and I would definitely say our pasture needs a rev up. Things don't taste as good as they used to. There's not enough variety, and sometimes we get shunted around because of land slips or flooding in our paddocks!*** This presentation discusses the more-than-human elements and ethic of care values found in and above fertile but fragile soils. Stronge et al. calls us to reframe soil health by focusing on wellbeing benefits people gain from nature rather than ecosystem processes that give rise to them. Considering more-than-human elements helps us to do this.

Keywords: ethics of care, more-than-human

Labouring for resilience: The role of more-than-human soil workers   Bethaney Turner

This paper explores how and why some lives and vectors of liveliness come to matter in soil-focused activities designed to support resilient food systems in 2 areas: urban gardening and composting; and, the importation and distribution of dung beetles to mitigate the negative impacts of livestock manure in rural areas. By following emergent more-than-human relations from labs to farms, this work maps the tensions that arise through conflicting approaches to both how and what life is valued by key human stakeholders including gardeners, scientists and food and fibre producers. These values are shown to be shaped by varied understandings of what is natural, native and safe. Through tracing the multiple material and semiotic ways that more-than-human labour is enrolled in the enactment of 'resilient food systems', this paper then investigates what a decolonising probiotic approach might look, feel and smell like.

Keywords: More-than-human, soil, labour, urban agriculture, dung beetles

Weeds and wastelands: Unsettling our affective relationships with 'out of place' species   Abbi Virens

Weeds as introduced, alien or invasive plant species present an interesting opportunity for us to explore how certain non-human bodies become 'othered' through the production of the settler state landscape. A weed can be described simply as 'a plant out of place'. Therefore the discourse which defines belonging is an important mechanism in determining which plants exhibit 'weediness'. Weedy species often share an intimate history with colonization, being unexpected vectors of settlement. For this reason, weeds occupy an interesting niche of being both representations of settler colonization, but also targets of settler eradication. Since the establishment of New Zealand, weeds have been characterized as disorderly and destructive. Their unruly and abounding capacities make them difficult to control and when left to proliferate they transform landscapes into 'wastelands'. These wasted-lands are void in terms of capitalist productivity but also in terms of aesthetic nature. The appearance of weeds and wastelands generate an affective response which signals to its ability for disruption. There are, however, alternative relationships with weeds which challenge the weed discourse. Wastelands also present opportunities for alternative economies to flourish, such as wild food gathering or foraging. Interviews with Dunedin based foragers help to explore the complex and uncomfortable ways that relationships with weeds make us question what settler colonial discourses might formulate our affective responses to introduced biota.

Keywords: more-than-humanism, affect theory, decolonialism, weeds, foraging

The social lives of Brettanomyces: deconstructing wine biota   Nikolai Siimes

Brettanomyces (Brett) can be a dirty word in Aotearoa's wine circles. Despite the widespread domestication of more-than-human wine microbes, Brett remains a shadowy actor that strikes fear in many winemakers through its role in the material transformation of wine. It can be responsible for economically damaging 'off-aromas' (so-called microbial spoilage) and can spread easily between barrels and tanks of wine. Brett levels can be measured analytically but their impact on a wine is embodied and individually perceived. Others claim to enjoy the Brett aromas, as a component of terroir or complexity. Brett is also increasingly co-opted in the production of NZ craft beers. This paper challenges the binary view of wine microbes as good/bad through data gathered from interviews and ethnography with wine producers and their more-than-human others. Through the example of Brett, economic and social alliances between humans and microbes are deconstructed. Further, the stories that producers and intermediaries tell about their microbial companions are compared to the material realities of modern winemaking. This paper asks: What role does Brett play in wine production? How do producers alter their practices to encourage or discourage Brett? What stories are told about Brett? And how does the newfound economic alliance between Brett and craft brewers challenge this?

Keywords: STS, Politcal Ecology, Wine, Fermentation, Fungi

The untameable biological economy of Aotearoa spat. Georgia McLellan

Aotearoa's kuku (green-lipped mussel) economy is a major export industry, providing over $300 million in value in 2020 and servicing the domestic market (New Zealand Sustainable Aquaculture, 2022). The industry relies heavily on wild-caught spat from an unknown source that intermittently washes up on Te-Oneroa-a-Tōhē (90-mile beach) (Dunphy et al. 2015). There are several vulnerabilities to Aotearoa's spat supply and the kuku industry. The first has to do with the legal institutions surrounding spat collection at Te Oneroa-a-Tōhē. The second is related to the unknown source of the spat, and the industry's complete reliance on environmental systems. The third is associated with the inefficiency of seeding with wild spat on kuku farms; over 80% of spat is lost after seeding (Supono et al., 2020). This high level of vulnerability shows that, at its core, this economy remains fundamentally biological. Despite human intervention, the Aotearoa spat economy can't be pacified, domesticated or managed in typical economic ways; it subverts modern economics. This paper tells the story of Aotearoa's spat economy as a fundamentally biological economy, from which we can draw three main conclusions: a) the biological nature of this economy speaks to Māori perceptions of economy as diverse and inherently environmental; b) new economies are emerging due to the biological nature of this economy, most prominently those forming around spat hatcheries; c) the untameable nature of this economy speaks to fundamental gaps in Aotearoa's legal and economic institutions, economy-environment relations and socio-environmental relationships and in particular Indigenous relationships.

Keywords: Aotearoa Spat, Aotearoa Kuku, More than human economies, Māori economies, biological economies

A legal geography of wastewater surveillance and more-than-human assemblages in Singapore   Dr. Dhiraj Nainani

Amidst the plethora of public health surveillance techniques and technologies that have emerged from the COVID-19 crisis (Couch et al., 2020), wastewater surveillance – the process of testing wastewater in a catchment area to detect certain biomarkers – has come to be considered as an effective and non-intrusive means of regulating disease (Thompson et al., 2020). Although many countries have implemented their own wastewater surveillance networks, questions have also emerged about how these might be deployed after the pandemic recedes. As wastewater surveillance has also been used to detect markers for numerous diseases and health conditions as well as illicit drugs, the increasing 'dataification of wastewater' (Scassa et al., 2021) carries with it distinct possibilities and contestations. Using the work of Philippopoulos-Mihalopoulos (2014) on legal geography, Foucault (2007) on power, and Larkin (2013) on STS and infrastructure, I look at how wastewater surveillance has been deployed in Singapore during the COVID-19 pandemic as a means of investigating how the law uses public health surveillance to capture and enmesh a diverse group of human and non-human bodies in urban space. As a form of 'epidemiological lawscaping', wastewater surveillance in Singapore affects and implicates three interconnected sets of bodies: a) those 'above' ground, such as citizens and migrant workers; b) those 'below' ground, such as pipes and diverse bodies of water; and c) those 'within' and 'without' the human

body (such as viruses and various techno-legal objects of surveillance). This also raises intriguing possibilities for formulating multi-specific public health surveillance strategies in the future.

Keywords: legal geography, biopower, wastewater, surveillance

3. Geographies of subnational governance

Session Convenor: Dr Jeff McNeill School of People, Environment and Planning, Massey University

Māori wards and the tensions between decolonising and deep colonising. A view from Tauranga Moana.   **Sandra des Forges**

Although Māori make up around 16.5 per cent of the population in Aoteoroa, the number of Māori elected to local government is very low. Changes to the Local Electoral Act (LEA) in 2021 to enable the establishment of Māori wards to address this issue is a key step in the current electoral system to ensure Māori representation in local government. Changes taking place to enable elected Māori representation in local government, however, while decolonising in intent, may be deep colonising in effect. Despite attempts to decolonise hegemonic systems and institutional processes, changes often serve to perpetuate colonial systems, ways of thinking and relationships, resulting in entrenching colonisation or 'deep colonising'. The interface between Māori and local government in Aotearoa and Tauranga Moana provides an opportunity to examine the tensions between decolonising and deep colonising. Using the exemplary work of the late Professor Dame Evelyn Stokes, and the geopolitics of belonging and the concept of liminality as a framework, those tensions can be explored. The research draws on media articles and interviews with elected local government representatives and members of Te Rangapū Mana Whenua o Tauranga Moana Partnership (the Tangata Whenua group that works alongside Tauranga City Council) to identify ongoing colonising practices and provide insights for a reimagined Te Tiriti based local government structure.

Keywords: Māori wards, local government, decolonisation, deep colonising, representation

The reliance on New Zealand's regional government   Jeffrey McNeill

The regional level of government has experienced a resurgence over the last decades in many western democracies. New Zealand's highly centralised unitary state has long relied on decentralisation of central government functions, relying on regional offices of the different government departments to implement policy. The 1989 local government reforms considerably strengthened the regional level of devolved governance with the creation of regional councils. These multi-functional special purpose authorities absorbed and expanded the functions of the antecedent united council and catchment boards.

Recent central government initiatives in New Zealand suggest a parallel to this broader trend. The proposed Three-Waters and draft natural and built environment management legislation, among others, all suggest a renewed confidence in the region as an appropriate scale of governance. This paper explores the regional dimension of local government in New Zealand before exploring the implications for local and regional government of these central government initiatives in order to speculate on the future of regional government in New Zealand. It notes that this new regionalisation ignores a long of history of distrust and instability of the meso-level of government and observes New Zealand's ongoing centralisation of many functions undertaken by local government in most other polities. While these recent initiatives may strengthen the meso-level of governance, they represent another form of centralisation by regionalising territorial local government functions rather than from any central government devolution. Paradoxically they can be seen to reduce local decision-making and weaken subnational forms of government.

Keywords: regional government, local government, New Zealand, regions, legislation

'Rise of the regions'? Interrogating and mapping 'post'-pandemic regional community resilience and its implications for regional governments.
Axel Malecki

The Covid 19 pandemic has generated a wide range of consequences for the way regional community resilience may be conceived of in Aotearoa. Routinised population predictions about population growth in Auckland were turned on its head when Stats NZ reported a decline in population growth in 2021 not only because of lack of international migration but also because of (episodic?) changes to internal migration patterns. Elsewhere, pandemic induced population movement from urban to rural areas sparked questions around whether this trend constitutes a 'regional renaissance' (Borsellino et al. 2022), or indeed a 'rise of the regions' (Stewart, 2021) where urban to rural population trends do not only implicate our understanding of livelihood resilience, but have also implications for how regional governments under financial and political duress can contribute to generating and sustaining more equitable resilience. This tentative paper seeks to synthesise findings from grass roots examples and community initiatives to understand particular expressions of regional community resilience as relational and place specific with distinct implications for local government policy configuration.

Keywords: community resilience, local government, regional development

Dilemmas For Spatial Planning And Regional Governance In Poland   Jerzy Banski

Post-War Poland has seen work done on four spatial development concepts. The first – from the late 1940s – had as its task the decentralisation of industry and the strengthening of regions whose development had been lagging behind. The second – drawn up in the 1970s and entitled A Plan for the Physical

Development of the Country up to 1990 – promoted the system of moderate polycentric concentration and a shifting of part of the country's industrial potential to more weakly-developed areas. In turn, the third concept – from the 1990s – entitled A Concept for a National Spatial Management Policy – again concentrated on balancing regional development, albeit through the idea of priority being assigned to efficiency over equality. The current 2030 Concept for the Country's Spatial Organisation contains a similar assumption, so it is hard to anticipate that its pursuit will bring diametric change in the situation as regards regional development. The aim of the present article has been to analyse the aforesaid four concepts as regards the approach taken to the evening out of regional development. The primary thesis here is that the concepts studied strived in their various different ways to reduce regional disparities, but never actually had the ideas they came up with put into effect properly. In consequence, Poland's economic development has continued to be associated with a division into rich and poor regions. Contemporary versions of spatial planning and regional policy see more and more importance attached to individualised approaches to the socioeconomic development of given areas. This entails the identification of functional areas, areas of strategic investment and problem areas, for each of which special development instruments are formulated, inter alia in the form of financial incentives, appropriately-targeted investment policy and special investment streams. It is thus possible to hold out hope.

What if? Planning (reforms) for what really matters   Clare Mouat

This paper deals with the political geographies of planning system reforms. It outlines how performances of homogenizing reform agendas seen in settler-colonial contexts stifle practical wisdom, threaten progressive legacies and trajectories, and undermine the role of professional planning. The paper narrates an opportunity to engage with two critical questions – raised by independent British planning academics in assessing the English planning reforms – that are the 'right questions' asked regarding planning systems reforms: What can planning do for us? And how can we plan for a better future? Addressing these questions across comparative jurisdictions prompts me to propose a paradigm shift alongside critical issues challenging planning futures based on a third question: what would planning (reforms) look like if we planned for what really matters? Constructive possibilities and outstanding issues are revealed by diffracting the reform agenda beyond correcting conventional instrumental essentialisms of planning whereby we braid radical knowledges and aspirations for flourishing futures amid crises (economic, health, climate) and righting past injustices into functional governance frameworks. I conclude with reflections on how the political geographical approach to planning invites transformative agendas, provokes constructive reform questions and tensions, and raises value-rational insights as to how we might better do/teach/imagine contemporary planning regime reforms as if we were planning for what really mattered.

4. Citizen Science, Community Co-design, and Multi-sectoral Participation for Community Resilience

Session Convenors: Emma Sharp[1] [3], Sophia Tsang[1] [3], Melanie Kah[1], Victoria Egli[2], [1] School of Environment, University of Auckland, [2]School of Nursing, University of Auckland, [3]GNS Science, Lower Hutt, Wellington

Including multiple knowledges of soil into a school curriculum context   Sophia Tsang, Victoria Egli, Emma Sharp

Soilsafe Kids is an engagement and educational project of soil knowledge co-production, providing interdisciplinary and multicultural teaching and learning about the everyday relevance of soil's scientific and societal values. It engages harder-to-reach school students with scientists, not-for-profit school gardening programmes, with Māori soil mātauranga and artists, and brings their learning to whānau and community, art galleries and public libraries across the Tāmaki Makarau region. The project levers existing community science projects on soil metal contamination and worm surveys, offers embodied learning through gardening and soil art, and offers students the opportunity to use novel and varied technologies and assessment methods, and co-design ways to communicate diverse soil knowledges. We discuss this project's aspirations to: 1) promote the relevance of soil's importance everyday - its diverse and multicultural 'values' and knowledge forms (diversely: western scientific, mātauranga Māori, artistic, embodied); 2) give students experience with scientific methods of measurement, technology, and co-design of communication; 3) improve the experience/capacity for teachers to teach soil science; 4) improve accessibility of soil education resources for schools and community; 5) evaluate the learning outcomes of this design of teaching and learning in schools.

Keywords: schools; whānau, community, soil, teaching and learning

The resilient researcher as a reflective researcher: using critical researcher reflections in Community Research projects.   Dr Victoria Egli, Dr Sophia Tsang, Dr Emma Sharp

Critical reflections are commonly conducted by health professionals and teachers via professional development and formal process evaluations. While critical reflections are often part of the enquiry process in community research, they are often informal and constrained by limited funding and an academic environment that favours publishable outputs. The theory that led us to incorporate formal critical researcher reflections into the SoilSafe Kids community outreach and research project will be presented. We will describe how we went about training researchers to do critical reflection, most of whom were geographers, physical scientists, and social scientists. We will detail how the reflections were analysed using a phenomenographic approach. How the findings from the researcher reflections can be applied to the future of the SoilSafe Kids project will also be discussed. We will also present a reflection on the reflection, where our experience using researcher reflections in community research projects could be improved for future use, applied to other community research projects and contribute to a more resilient community research space. There is evidence to suggest that health professionals

and teachers who engage in critical reflective practice are more resilient than those who don't. We will discuss if/how this principal can be applied to community researchers as well.

Keywords: community research; critical reflection; researcher reflection

Co-design with young Aucklanders: restoring the mauri of the Puhinui awa and creating a playground   **Penelope Carroll & Karen Witten**

A major challenge for resiliency in the 21st century is to ensure the social sustainability of our cities. This requires child-friendly cities which take into account the needs and rights of the children who live in them: needs to play and make meaning of their physical environment for health and wellbeing; and rights, as citizens, to feel safe and welcome in public spaces and to contribute to their design. Four workshops conducted with 24 students (9-11 years) at Wiri Central School provided input for Panuku Development Auckland plans to restore the mauri of the Puhinui awa and create an adjacent playground. Workshops included site visits to the Puhinui awa and reserve and up-stream Auckland Botanic Gardens and the videoing of workshop segments to produce a 'children's participation toolkit' for urban planners and designers. In a fifth workshop, Panuku and planners reported back to children on how their ideas were being incorporated in designs. Researchers were 'change-agents' in ways outside the immediate brief of facilitating children's input and developing the tool kit:

• Children experienced authentic learning and developed a sense of kaitiakitanga for the awa – along with expressing their rights as 'citizen kids' to have input into public space design;
• Panuku was introduced to consultation with children and a model for moving forward with their Puhinui community consultation;
• Local mana whenua ties strengthened with the school; and
• School-community engagement has led to on-going participation of Wiri children and whanau in playground construction and the regeneration of the awa and reserve.

Keywords: co-design, children, public space, change agents

Temporalities of creativity in city-making: DIY urbanism in post-earthquake Christchurch   **Rachael Boswell**

After the 2011-12 earthquakes in Christchurch, New Zealand, and the subsequent large-scale demolition of the CBD, a host of creative projects sprang up in the vacant spaces left by demolition. This widespread DIY urbanism brought back life and energy to the city and demonstrated how citizens can be involved in the (re-) making of a city through projects that experiment with ideas about what it means to be urban and what is possible in urban space. These projects inhabit a different temporality than the central government's more orthodox planning response. Rather than treating time (and space) as an empty vessel to be filled, this temporality treats the future as open-ended and time as an active force in the becoming of things. Understanding the

temporality of such ways of operating in the city holds significance for understanding the value of open experimentation in cities and the importance of process to urban learning.

Keywords: DIY urbanism, temporalities, creativity, Gap Filler, Christchurch earthquake

Interdisciplinary Approaches to Engaging Public Interest in Soil: Soilsafe Aotearoa as a project of diverse soil values   Dr Emma Sharp, Dr Melanie Kah

Developing a research programme that engenders a sense of ownership and meaning for public participants requires time commitment and effort in getting to know participants' values and contexts. Further, researchers have a responsibility to examine aspects of our world that have meaning for society, and to communicate this in ways that serve public interests. Soilsafe Aotearoa (launched 2021) is a research programme with multiple goals of: 1) involving public in a project of knowledge making to (co-) produce an account of New Zealand's diverse soil values/ knowledges; 2) educating New Zealand public about, and engaging them in testing for metal contamination that might exist in domestic soils; and, 3) teaching and learning about diverse soil values and knowledges in schools, with teachers, children and their whānau (families) and communities. Values of soil are bound up in our participants' geographic, demographic and cultural contexts, increasing the importance of our attention to aspects of our work that intersect with Indigenous knowledge, data sovereignty, and ways that we communicate our research and results. Soilsafe Kids (launched 2022) is an engagement and educational project of soil knowledge co-production, engaging harder-to-reach school students with scientists, not-for-profit school gardening programmes, with Māori soil mātauranga and artists, and brings learning to whānau and community across Tāmaki Makarau. The project levers existing community science projects on soil metal contamination and biodiversity, and offers embodied learning through gardening and soil art, novel and varied technologies and assessment, and co-designs ways to communicate diverse soil knowledges. We discuss this project's aspirations to: 1) promote the relevance of soil's importance everyday - its diverse and multicultural 'values' and knowledge forms (diversely: dominant scientific, mātauranga Māori, artistic, embodied); 2) give students experience with scientific methods of measurement, technology, and co-design of communication; 3) improve the experience/capacity for teachers to teach soil science; 4) improve accessibility of soil education resources for schools and community; 5) evaluate the learning outcomes of this design of teaching and learning in schools. While still early in our journey, we share our learning and and our range of programme activities.

Keywords: Citizen science; soil; diverse values; knowledge making; making

The Co-Production Project — an action research project   Anjuli Muller & Professor Anna Brown

Co-production is built on principles of sharing power, prioritising relationships, using participatory means, and building capability. The model (McKercher, 2020) has four stages: co-planning, co-design, co-delivery and co-evaluation and a requirement that the people who will benefit from, or may be affected

by, the research and are integral to all parts of the process. Co-production can be beneficial because it is community led, centres lived experience and strives for inclusivity. Considering the places and spaces where co-production research is carried out is needed, as this will influence realising the benefits. Going slow and developing relationships built on reciprocity is key. However this often does not align with funding and academic timelines. Belief in the benefits of co-production potentially blinds researchers to unintentional reinforcing of existing power differentials. Other challenges include inconsistent evaluation of co-production initiatives, especially as funding frequently precludes this. Community co-design, engagement and co-production is not always well used, so communities may be hesitant to engage, especially if other experiences of research have not been positive or beneficial.There is little women's health research that considers the issues most important to them, and this existing research often does not highlight women's lived experiences. Our project seeks to explore this topic and amplify these frequently invisible stories. Participants are experts of their own lived experiences, and have an innate resilience that co-production helps support and make visible. Here we outline our progress to date, challenges from previous projects, how we have adapted and grown and our next steps."

Keywords: co-production, community engagement, participatory approaches, co-design, women's health

He Paa Harakeke - Reflecting thriving communities through co-designed StoryMaps   Corriana Hooker, Matua Haupai Montgomery, Jesse Whitehead, Moana Rarere

He Paa Harakeke: Thriving Regions is a programme of the Building Better Homes, Towns & Cities National Science Challenge that focuses on supporting and enhancing Maaori perspectives in regional regeneration. This includes examining the emergent, diverse and interacting factors re-shaping "regional" New Zealand and how they are impacting Maaori. This is observed through one of our case-study sites, Pookeno, where community researchers have been closely engaging with Te Haukainga me ngaa Mana Whenua o Pookeno to understand and support their moemoeaa/aspirations as well as those of the community. Together we have developed StoryMaps that are co-designed to tell the story of Te Haukainga and mana whenua in Pookeno, and act as a tool that can be utilised to support community aspirations - including making the case for a marae within the Pookeno township. Through this process we recognise that geography is a practice intimately tied to historic and ongoing colonisation, and in particular the alienation and control of Indigenous lands. Through our work we attempt to use the tools of modern geography - such as Geographic Information Systems and in particular 'StoryMaps' - to support Hau kainga and mana whenua narratives and aspirations.

Keywords: Community co-design; Aspirations (moemoeaa); StoryMaps

Pursuing Plurality: Exploring the Synergies and Challenges of Knowledge Co-production in Multifunctional Landscape Design   Ritodhi Chakraborty, Sadeepa Jayathunga, Hirini Paerangi Matunga, Shannon Davis, Lizzie Matunga, James Eggers and Pablo Gregorini

Knowledge co-production has emerged as an important conceptual and processual tool in sustainability research addressing the needs of equity and inclusion. Indigenous communities and local people (IPLC) have engaged with the process of knowledge production, foregrounding their historical relationships with landscapes, based on their unique world-views and knowledges. However, knowledge co-production, especially for multi-functional landscapes remains a contentious and complicated affair with enduring issues of power-sharing related to the different socio-political positions of stakeholders. This work explores the synergies and challenges in knowledge co-production for landscape re-design in the south Island of Aotearoa NZ through an assessment of the work done at the Centre for Excellence, Lincoln University. This work explores the various stages of the co-production process, analysing the exchanges between various members as they prepare for co-production, the knowledge produced through this engagement, and how this knowledge is being utilised to further the goal of sustainability. Our results show that significant gaps remain between co-production theory and co-production practice which are a result of the mismanagement of the co-production process, the mismatch in the time and spatial scales of project goals, and the differences in the values and objectives of the different stakeholders. However, the process of co-production, though flawed, leads to the building of more open relationships between the stakeholders, and leads to some very meaningful knowledge products, while contributing to the broader scholarship on co-production in sustainability. Finally, both synergies and challenges prove meaningful, by clearly highlighting the places of engagement and why they were made possible.

Keywords: co-production, multi-functionality, indigenous cartography, sustainability, landscapes

5. Critical data studies, data fixation and geography

Session Convenors: Associate Professor Matt Henry & Associated Professor Russell Prince Massey University

Sheep Units, Stock Units and Ewe Equivalents: Statistical Devices and the Commensuration of Animals, Land and Value in Aotearoa New Zealand
      Matt Henry

In 1929 the farm economists EJ Fawcett and WN Paton published a review of live stock production in New Zealand in that year's Year Book. In the review they outlined their method of rendering production quantities comparable by using ratios to covert disparate animal numbers into common Sheep Units. In 1965 Professor IE Coop could argue that the stock unit system had been widely used for decades, and by the 1990s complaints were being made about the widespread use and misuse of stock units as indicators of comparative returns. This paper examines the assemblage of the stock unit system, and the generative effects of that system in creating relationships between animals, land and economic value. The paper argues that the stock unit can be framed as a statistical device that translates the messy heterogenity of animals and land into abstract forms which has the effect of rendering those relationships calculably knowable within the modernist agricultural ontology identified by Campbell (2021). By tracing the assemblage and generative effects of devices such as stock units the paper contributes to ongoing work to understand the deep ontological and epistemological infrastructure of contemporary datafication practices and projects, and the ways in which the temporal roots of data infrastructures channels possibilities within those projects.

Mapping digital transformations through hyperscale data centres and cloud services in New Zealand Angus Dowell

Brought on the back of big four technology companies and heralded as a milestone in New Zealand's digital history, hyperscale data centres are coming to New Zealand. Soon, we will host multi-billion dollar server-farms where different organisations can house their data and access a growing list of cloud services including artificial intelligence, machine learning, Internet of things, big-data analytics and much more. The kinds of capabilities they are said to enable are limitless, as are the futures they promise to unleash, and centre around what organisations can do online and with their data. In short, these centres enable one or another's data do things it hasn't done before; allowing ministries and corporations to access new insights from their data, enabling new ways of codifying data to integrate different technologies with one another (i.e., Internet of things, smart cities, digital twinning), predicting futures through algorithms and AI models, and so on. Beyond the hype these changes have implications for many parts of New Zealand society including new modes of governance for New Zealand environments and social spheres, the implications of digitial transformation for New Zealand labour, the geo-political alliances formed between the state and tech companies, to name a few. As part of an emerging Phd project, I map out some of the key developments of hyperscale data centres and their material and relational organisation to date in the global and New Zealand context. I aim to bring the literatures on Science and Technology Studies, Critical Digital Studies and Economisation to help open up conceptual entry points on the project and welcome feedback to help inform its direction.

Budgeting for growth: remaking the basis of territorial rule with economic statistics in the twentieth century Russell Prince

The construction and circulation of statistical knowledge has been central to embedding modern forms of territorial rule. This is achieved through the construction of statistical regions and networks. Regions are described and made governable through policy actions. Networks are constructed across regional boundaries through which statistical techniques and records are circulated and authorized. The first half of the twentieth century saw the emergence of a new kind of statistical knowledge, what we now call economic statistics. By the middle of the twentieth century they would be central to governmental knowledge and policy-making in New Zealand. The paper explores the way that statistical forms of economic knowledge changed the way the annual government budget was conceived and delivered. As new ways of understanding what a government budget is for, reflected in the economic statistics that support budget decisions, transformed networks of statistical knowledge would shift the basis of territorial rule. Policy knowledge would circulate on new and different international circuits just as, with the advent of the Bretton Woods Agreement, the currency that pays for the budget would have a new international monetary system behind it.

Māori Data Sovereignty, the IDI, and the democratisation of data: Tensions and challenges in the development of the OHI Data Navigator
     Ben Ritchie

OHI Data Navigator is a free, interactive tool that provides insights into the experiences of young people in Aotearoa, with a focus on care and protection, justice, education, and employment for 12 to 25 year-olds. Drawing from the Integrated Data Infrastructure (IDI), the purpose of the tool is to democratise data by putting government administrative data in the hands of communities and others working directly with young people. Ben Ritchie (Kāi Tahu, Kāti Mamoe), led the IDI analysis and app development for Nicholson Consulting in partnership with Te Rourou - the Vodafone Aotearoa Foundation, Centre for Social Impact, and Deloitte. This session will discuss the tensions and challenges inherent in an undertaking that seeks to make use of deficit data collected by government agencies for administrative purposes, and present this in a context of strength-based positive youth development. Further, the session will discuss the practical application of Māori Data Sovereignty principles (Rangatiratanga, Whanaungatanga, Whakapapa, Manaakitanga, Kotahitanga, and Kaitiakitanga) to address these challenges over the course of the development of the OHI Data Navigator."

6.   Crisis conservation: New approaches in Anthropocene biodiversity restoration

Session Convenors: Alexandra (Ally) Palmer School of Biological Sciences & School of Social Sciences, University of Auckland School of Geography and Brendon Blue, Environment and Earth Sciences, Victoria University of Wellington

The many faces of Predator Free 2050   Brendon Blue

In 2016, the erstwhile National-led government announced an ambitious campaign to eliminate all rats, possums and mustelids from Aotearoa New Zealand by 2050. Or did it? Based on 19 interviews with a range of more-or-less public figures involved in the advocacy for, delivery of, and opposition to Predator Free 2050 (PF2050), this paper considers the many faces of this seemingly unambiguous large-scale conservation project. PF2050 figures in participants' talk in a multitude of ways: from response to ecological crisis to a means for rebuilding national identity, from a practice of kaitiakitanga/environmental care to a platform for technological innovation with commercial potential. Exploring these different faces of PF2050, I offer reflections on what we can learn from these overlapping and sometimes-competing constructions of what it is, and what it is for, and who is responsible for doing it.

Labour, land rights, and long shots: Predator Free 2050 and ambitious biodiversity restoration   **Ally Palmer**

Predator Free 2050 – Aotearoa New Zealand's bid to rid itself of rats, possums, and mustelids by 2050 – was described by the late Sir Paul Callaghan as the nation's 'moonshot'. In this paper, I consider some potential risks of PF2050's ambitious character. First, I consider the problem of labour. PF2050 aims to mobilise a volunteer workforce across the nation. This responsibilisation of citizens will not be enough on its own given the scale of the ambition, and yet the trapping profession – while requiring considerable personal risk and skill – arguably remains a form of underappreciated 'dirty work'. Second, I discuss the problem of individual land rights. Short of a miraculous new technology such as gene drives, PF2050 will require controlling predators on all private property across the country—at least to eradicate rats, which can have small home ranges. Will the PF2050 mission be viewed as a sufficient collective good to override the land rights of dissenters? Finally, I explore visions of what failure would mean for PF2050. Conservationists frequently highlight that NZ's native species would still be better off, even if we only get partway to PF2050. Yet critics counter that failure could undermine trust in conservation, and would render the cost- and harm-benefit analyses undertaken at the outset false. The question is, would the money and animal life spent have been justified? To conclude, I reflect on what restoration 'moonshots' do compared with more modest goals.

An integrated restoration story: Te Hōnanga a Iwi | Rosedale Park Restoration Project Documentary   **Cadey Korson**

The Te Hōnanga a Iwi | Rosedale Park Restoration Project, a small business-led community restoration pilot project that aims to restore an area of urban bush while: "1) increasing the wellbeing of the people who contribute to the Project, 2) increasing the social use of Rosedale Park, 3) increasing the ecological value of the land and stream associated with the Project, and 4) promoting increased financial resilience of local business contributors" (Rosedale Restoration Project Plan 2022). As one stakeholder or partner on the project, my role is to capture and examine the social impact of project involvement through documentary film, video interviews, reflection and participant observation. This presentation will outline the progress of the project thus far, including a discussion of the role of various partners and stakeholders, and comment on the process and challenges associated with documentary filmmaking as a method of research.

7.   Housing as home: accumulation and decumulation across the lifecourse

Session Convenors: Dr. Aisling Gallagher and Prof. Juliana Mansvelt Massey University

Housing as Home: Divestment and Decisions   Aisling Gallagher and Juliana Mansvelt

It has been well established that property ownership and related wealth accrual has become particularly uneven within Aotearoa New Zealand over the last three decades (Irwin and Irwin, 2018). Changes in demographic composition of the population, and the role of structural ageing has long been recognised as a key factor driving housing supply, demand and suitability (Statistics New Zealand, 2021). Years of rising house prices have given many retirees an asset with a value they never expected to have. The current 'baby boomer' generation has a much higher home ownership rate than any of the subsequent generations, and their decision making around their home-as-asset as they transition to retirement is of considerable importance for government, policy makers and society more generally. This paper provides the background for a study of the housing biographies of older home owners with a view to understanding the economic and social factors which influence, enable and constrain choices around housing decumulation in New Zealand. The proposed research uses both qualitative and quantitative methods to bring together the housing trajectories and experiences of older homeowners and the actors and agencies which shape the political, economic and socio-spatial context in which decumulation decisions and choices are made. Following the work of Australian urban geographers Power and Gillon (2021), we aspire to reinstate the role of housing-as-home in public narratives abut housing, moving the discourse away from a house as merely an investment asset to an understanding of the lived and felt experience of home.

Keywords: home, decumulation, older people, New Zealand

Older people as active agents in their neighbourhoods: Moving house can improve quality of life.   Christine Stephens and Joanne Allen

Neighbourhood environments are an important aspect of wellbeing for older people. Development of the general ecological model includes recognition of older people as active agents who can adapt their environments to fit their changing needs. We provide empirical support for a model suggested by Wahl et al., by examining interactions between neighbourhood environments, personal situations, relocation, and quality of life among older people. These relationships were tested with a sample of community dwelling participants (aged 55-89) in the New Zealand Health, Work and Retirement longitudinal surveys conducted in 2016 and 2018. We used Multiple Regression to assess the relationships of people's perceptions of their housing and neighbourhood with their quality of life (QoL) in 2016 (n = 3682). QoL was associated with housing satisfaction, and neighbourhood satisfaction, accessibility, and trust (controlling for age, gender, marital status, home ownership, SES, physical health and mental health). Mixed ANOVA showed that those who moved house between 2016-2018 reported lower housing and neighbourhood satisfaction than non-movers. Over the two years, movers reported less decline in housing satisfaction, and more positive change in all neighbourhood perceptions, with higher perceptions of neighbourhood accessibility than non-movers

in 2018. These findings support the theoretical model and provide impetus for more detailed study of the effects of the local environment on wellbeing in older age. Housing and neighbourhood environments are a very practical focus for social policy change at local and national levels.

Keywords: housing, neighbourhood, ageing, quality of life

Retirement Living: 'Ma and Pa' actuarial subjects' encounters with global private equity firms.   **Laurence Murphy**

Asset based welfare policies, centred on housing, have tended to privilege homeowners as sovereign investor subjects. Moreover, the popular ideology of homeownership in Aotearoa New Zealand has elevated homeownership as a strategic individual/familial investment that addresses the financial exigencies of old age. It is assumed that the financial benefits of housing can be mobilised by individuals to downsize or move to a retirement village. These narratives position aged homeowners as empowered 'actuarial subjects' (Murphy and Rehm, 2016). However, increasingly residential property assets have become subject to global investment flows and the attention of international investment agents. In this paper, I reflect on the activities of the global private investment funds Blackstone and EQT which, through the respective purchases of Arena Living and Metlifecare, have inserted New Zealand based retirement village residents into the 'tactical investment' imperatives of global investors. In effect, these emerging investment trajectories mark a re-scaling of the housing investment logics and risks surrounding retirement housing; from the individual and the local, to the corporate and the global.

Keywords: Actuarial Subject, Retirement Villages, Private Equity Firms, Blackstone

Intergenerational relationships around housing and inheritance: Two South Island Case studies, 1860s to 1970s.   **Michael Roche**

The paper presents two case studies drawn from four South Island families from the 1860s to the 1970s. One study explores a rural to urban move over three generations, the other inter and intra-urban moves over four generations. A system of symbolic representation for tracking movements between successive houses and generations is developed. The discussion is augmented by photographs, legal documents, and other material artifacts. In one case business and home were one and the same with significant implication on retirement. In both cases the rarity of intergenerational transfer of houses is notable. Shifts from home ownership to rental accommodation and its longer-term impact and rural to urban moves are explored. These vignettes are placed against the long-term trajectory of home ownership in New Zealand.

Keywords: intergenerational, case studies, South Island, housing

8.   Gendered geographies of resistance, resilience and reworking

Session Convenors: Lynda Johnston and Sandi Ringham Te Whare Wānanga o Waikato

Te Ara o Māhinaarangi – understanding resilience through the pathways of our ancestors: reflections from seven Raukawa wāhine.   Naomi Simmonds, Arahia Moeke, Ngahuia Kopa, Kyea Watene-Hakaria, Lisa Begbie, Tyra Begbie, KLee Begbie.

This paper sets out the physical and conceptual pathways of resistance and resilience that can be found in ancestral journeys, specifically the journey of Māhinaarangi. At the end of 2020 a group of seven Raukawa women spent 23 days retracing the 400km journey that Māhinaarangi took from the Hawkes Bay on the East Coast of Aotearoa across to Rangiātea not far from Te Awamutu. Te Ara o Māhinaarangi, the pathway of Māhinaarangi reaffirms the powerful relationship between women and the land and considers the way that this relationship can be activated to transform the lived realities of Māori women and their whānau. Activating the tangible relationship to places our ancestors journeyed has provided new ways of understanding ancient knowledges and brings to contemporary mana wahine solutions that are embedded deeply within the land. In this paper, we, the seven wāhine who retraced this epic and magical journey, reflect on what Te Ara o Māhinaarangi teaches us about ourselves as wāhine Māori, about the politics of hīkoi and about the collective power of mana wahine that grows from the land.

Keywords: Mana wahine, Hīkoi, Ancestral Pathways, whenua

Mana Wāhine reworking environmental justice: It's all in a taonga name   Sandi Ringham

The capacity of Indigenous peoples to officially name taonga species (flora and fauna) within taxonomy signifies resilience and a reworking of western scientific processes and institutions. This presentation explores the ways in which Ngāti Kuri women contribute to environmental justice through the naming of taonga species. Ngāti Kuri were the first tribe in the world to install a tribal name into the co-authorship of a nomenclature. The Code of Nomenclature is a set of international rules that govern the scientific naming of all organisms. There is an ongoing global debate around the application of Indigenous names within a nomenclature. In Aotearoa New Zealand there is a lack of integrity that continues in the scientific naming of taonga species. Challenges, exclusion and marginalisation may occur, however, when Māori taxon given to taonga species are misinterpreted, mistranslated and misrepresented. I present Ngāti Kuri women as leaders and drivers of change, disrupting and dismantling patriarchal and colonial systems through naming taonga. Reclaiming the power to name taonga species is a form of decolonisation that provides a pathway to environmental justice. This presentation explores the ways in which Ngāti Kuri women, both past and present, rework environmental relationships and knowledge in both tribal and non-tribal spaces in order to remain resilient.

Resisting harm, re-forging wellbeing. Strategies for holistic climate adaptation amongst wāhine Māori   Danielle Johnson

Drawing on ethnographic fieldwork in Te Tai Tokerau, this paper examines how wāhine Māori resist the myriad harms of settler colonialism through the lens of climate adaptation. Climate change hazards like drought, pests, and diseases will intensify existing pressures Māori youth face in connecting with their whenua and whakapapa and maintaining the relationships necessary for health and wellbeing. Re-occupying their traditional role as leaders, healers, and knowledge keepers, wāhine Māori facilitate embodied connections between youth and whenua that re-forges and strengthens relational wellbeing in spite of historical and ongoing loss associated with land alienation, urbanisation, cultural assimilation, resource extraction, and socio-political marginalisation. Through the use of creative strategies that emplace youth within whenua and whakapapa, wāhine mediate the formation and re-assertion of identity, roles, and responsibilities integral to wellbeing. These generative acts go far beyond normative technological or infrastructural forms of climate adaptation. Instead, they rework and transform multiple types of social, cultural, and spiritual loss, reformulating relational wellbeing for current and future generations, whilst also challenging heteropatriarchy and demonstrating the agency of Indigenous women.

Reworking ecologies and materialities of contamination   Karen Fisher

We live in a toxic and permanently polluted world. The violence of contamination arising from anthropogenic activities has permanently altered land, water, air, and bodies in ways that are not entirely clear, along with the conditions in which humans (and more-than-humans) strive to live well. The realities of "forever chemicals" such as PFAS (per- and polyfluoroalkyl substances), so-called because they resist natural processes of degradation and some never fully break down, have largely been conceived in terms of toxicity and risks to human health and 'the environment' as object, with less attention given to the ontological risks to socionatural relations and interactions connecting humans and more-than-humans coalescing as/in toxic events. PFAS are a group of >9,000 chemical compounds that have been incorporated into a wide range of products (from food packaging to carpets). The prevalence of PFAS, the multiple sources of PFAS, the mobility of PFAS and the persistence of PFAS raise questions about possibilities for remediation and repair, as well as the ethics of how to act when faced with the seemingly impossible. In this paper, I bring feminist and Indigenous theories to interrogate the (potential) emergence of PFAS toxic events in Aotearoa New Zealand and seek to rework futurities by exploring the more-than-human and more-than-material.

Interfaces between Collective Autoethnography and Embodied Geographies as migrant women: shared spaces of resistance, resilience and solidarity
Maria Teresa Braga Bizarria; Marcela Palomino-Schalscha; Isabella Sánchez-Bolívar

Geographical studies have increased the use of autoethnography (AE) as a methodological approach. AE is a valuable tool to ground theory in lived experiences, and provides the researchers-participants with a space to reflect on them while addressing their positionalities and socio-spatial contexts. As a group of three Latina migrants in Aotearoa New Zealand, we engaged with Collective Autoethnography (CAE) in a research project about our experiences in urban agriculture in Wellington. We collected our data using discursive and visual/tactile methods, immersing ourselves in an iterative process of (co)becoming. Combined with Critical Race Theory's tradition of counter-storytelling, CAE helped us make sense of our shared experiences without essentialising them. A feminist approach became crucial to unpack this process that wove together our emotions, bodies and subjectivities. In this presentation, our aims are: (a) to review some procedural steps in implementing this methodology and framework; (b) to reflect on challenges and negotiations that permeated our decision-making; and (c) to endorse the importance of innovative and embodied methodologies for unpacking subjective experiences and amplifying the voices of minorities. We argue that AE/CAE are relevant methodological approaches to exploring the body politics and the multiscalarity of everyday socio-spatial practices, which are particularly relevant when dealing with race and gender. Additionally, through CAE, we created and cherished a safe space for ourselves. The active listening of each other while we exposed our vulnerabilities and distressing feelings helped us to feel reassured and find a place of resistance and solidarity.

Keywords: Collective Autoethnography, creative methods, embodied geographies, migrants, Critical Race Theory

Policing the fossil- fuelled settler-colonial state   **Amanda Thomas, Sophie Bond, Gradon Diprose**

Four years ago, new offshore oil and gas exploration was banned by the Aotearoa New Zealand Government after sustained pressure from climate justice and Māori sovereignty activists. During that campaign, policing was aggressive, unevenly targeted, costly, and on occasion supported by the military. Policing is embedded in the colonial history of Aotearoa New Zealand (Aikman 2017). The police force was formed out of the armed constabulary who were a tool for the colonial state, used to dispossess Māori of land and resources, including minerals. Today, police practices continue to be racist across the organisation. As a consequence, many Pākehā / white activists have very different experiences of the police and policing than Māori and Pasifika. Roznawska (2019) describes a "culture of security" in much of Aotearoa New Zealand in which public responses to extreme policing emphasise that the targets must have, somehow, 'deserved it'. Such a culture of security generates a social licence to police for the fossil fuel industry. Taking a feminist political geography approach, one that explores power at every scale and works towards justice, we examine how policing continues to work to protect and control the boundaries of what is sayable and doable within the colonial extractivist state, as well as the ways these boundaries are contested."

Keywords: policing, fossil fuels, feminist political geography; activism

Feminities, feminism and Instagram: Exploring affective pedagogies of influence(rs)   Octavia Calder-Dawe, Ella Eagar

Feminist scholars and activists challenge inequalities and advance equity by illuminating the intersectional politics of everyday practices. In this tradition, our paper explores Instagram as a space where contemporary femininities are produced and reformulated. What visions of, and pathways towards, "feminine wellbeing" circulate through Instagram? What do these visions suggest about the wider psychosocial terrain young women are negotiating? To address these questions, we draw on interviews with local Instagram influencers, as well as findings from nine case studies conducted collaboratively with young women who identified as regular Instagram users. Our analysis approaches Instagram feeds as sites of affective pedagogy: spaces where culturally favoured emotional or affective states are taught and modelled for others. Our analysis foregrounds the pedagogies that influencers – as well as some regular users – mobilise to teach followers how to adopt the right kind of mindset, usually in pursuit of setting and achieving goals, such as attaining the 'ideal' body, or the 'good life'. Positivity is a hallmark of such pedagogies: upbeat emotional management is routinely modelled by influencers for their audiences. We conclude with some reflections on feminism's many pasts, presents and futures, considering the postfeminist politics of the contemporary affective pedagogies we identify and their relationship to conscientizing pedagogies associated with the feminist and liberation movements of the 1960s.

Keywords: femininity, Instagram, affective pedagogy, feminism

"Negotiating with Two Places for A Baby"- Narratives of North Indian Immigrant Women in Aotearoa New Zealand.   Kirti

Feminist geographers have significantly forefronted the emotional dimensions of gendered mobilities, transnational identities, and lived experiences of women and other marginalised migrants. However, within the feminist geographical scholarship, often women migrants' reproductive lives and reproductive decision-making within the influences of two geographical locations (home and host) are not fully understood. Therefore, with a focus on migrant women's navigation and negotiations with multi-sited influences in their reproductive life sphere, this paper will unpack the ways immigrant women develop inventive tactics to mobilise their agency in family planning decisions by taking the case study of North Indian Immigrant Women in Aotearoa New Zealand. Drawing on my doctoral research involving multiple in-depth interviews with twenty-five North Indian immigrant women living in different cities in Aotearoa New Zealand during 2021-2022, this paper discusses three emerging themes: "immediate motherhood: travelling with migration", "immigration status: a challenge and negotiation for informed reproductive choices", and "more modern: embracing the autonomous decisions". The findings of the paper highlight the multi-sited influences and multifaceted challenges faced by migrant women as they navigate their reproductive choices in a new country. I argue that it is important to better understand the traces of places (and cultures) within women's sexual and reproductive health. Without this knowledge migrant women's abilities to access the essential human right that is a reproductive choice may be impeded in their new place of residence.

Keywords: Feminist geography, women migrants, family planning, tactics

Kindness as resistance, resilience and reworking within Aotearoa New Zealand's research system Bethany Cox, Aisling Rayne, Emma Sharp, Tammy Steeves, Leilani Walker, Priscilla Wehi, Shaun Hendy

In this paper, we take up MacLeavy, Fannin and Larner's (2021) provocation of a different feminist future to destabilise the apparent fixity of the 'research system monolith'. We see this conventional figure of the research system as embodied in research organisations: Aotearoa New Zealand's Universities, Crown Research Institutes, National Science Challenges, Independent Research Organisations, and Centres of Research Excellence as well as research policy spaces and funding agencies. It is within these organisations, built on colonial and patriarchal values, that experiences of marginalisation, oppression, and harassment prevail. Despite policies such as Vision Mātauranga and MBIE's Diversity in Science Statement, the research system has been slow to realise equity, justice and kindness for the diverse communities that it allegedly serves. We provoke that resistance, resilience and reworking are hidden in sites, acts, and actors involved in feminist modes of practice; in the everyday, mundane practices of rebuilding the research system. We name these disruptions as 'kindness' in academia, or the commitment to deliberate and sustained action to create an academic system that is accessible, inclusive and equitable (Kindness in Science, 2022). We outline the early stages of our research mission, our aspirations and inspirations, and our hopefulness for a system that centres people and relationships.

Keywords: Kindness, feminist futures, reworking the research system, equitable, just

Street food pantries as gendered sites of resistance and resilience: reworking visceral geographies of food (in)securities in Kirikiriroa Lynda Johnston and Gail Adams-Hutcheson

Open street food pantries / pātaka kai are appearing in many Aotearoa suburbs. The concept started in Tāmaki Makaurau and quickly spread to other cities and regions. The giving and taking of free food is a community led response to food insecurity, food waste, poverty and climate action. Street food pantries are at the centre of a dynamic interplay of material, cultural, spatial and embodied relations. Emotional and affective experiences of donating, replenishing, connecting and being supported by street food pantries allows us to think through food pantries as gendered sites of resistance and resilience. Multisensory encounters at street food pantries rework visceral geographies of shame and gratitude, stigma and acceptance, moral judgement and support. We draw on interviews with pantry guardians / kaitiaki and with other community leaders, as well as our own participant sensing, to highlight: our process-oriented and multisensory approach to understanding gender, power and street food pantries; pantry guardians / kaitiaki emphasis on self-organising as part of community-led, ground-up initiatives; and, suburban geographies that resist and rework food poverty, food waste, and climate action. The deeply felt experiences in and of suburban street food pantries create visceral geographies of food, gender and place in Kirikiriroa.

Keywords: Gender; resistance; resilience; food insecurity; visceral geographies

9.   Reformed science: the value proposition of social science – Panel

Session Convenors: Alison Greenaway Manaaki Whenua Landcare Research and Richard Le Heron University of Auckland

Panellists: Wendy Larner, Victoria University Of Wellington; Suzanne Manning, ESR; Susanna Finlay-Smits, Agresearch; Janet Stephenson, Centre For Sustainability, University Of Otago; Nicolas Lewis, University Of Auckland; James Turner, University of Canberra; Marie McEntee, University Of Auckland and Nick Cradock-Henry, GNS Science - Te Pū Ao; Karen Fisher, University of Auckland

The recent call for submissions on the Te Ara Paerangi – Future Pathways Green Paper (an open, deliberative and wide-ranging discussion on the future of New Zealand's public research system) saw at least two submissions from networked social scientists actively shaping 'science'. These submissions presented insights about science grounded in different but also overlapping knowledge domains and institutions. One shared social science perspectives from across the CRIs and Cawthron, the other from the socio-ecological research network based in the School of Environment, University of Auckland. That social scientists were proactive in preparing submissions suggests an unprecedented degree of critical perspective and political intervention. This observation is furthered by the assessment of Duncan et al. (2020) of the outcomes spaces created through the National Science Challenges. This special interactive session seeks to generate forward looking critical and reflective dialogue about the value of social science practices for science. The aim is to strengthen the capacities and capabilities of social science in possible new research spaces that may flow from the Te Ara Paerangi review.

10. Transport research, society and policy

Session Convenors: Simon Kingham, Lindsey Conrow, University of Canterbury and Helen Fitt, Angela Curl, University of Otago

Spatio-Temporal patterns of E-Scooter usage in Tempe, Arizona – US Vanessa Brum-Bastos

In 2018, more than 85.000 dockless electric scooters (e-scooters) were deployed in 100 US cities and accounted for 40 million trips. Since then, cities around the world have been challenged to create a policy that would safely integrate e-scooters into transportation networks. Yet, measures to appropriately accommodate e-scooters remain limited, mostly because their impact on the transportation system is still unclear. The knowledge of who, when and why rides e-scooters is crucial for planning appropriate infrastructure and safety measures. As the use of e-scooters continues to grow, so does the need for further understanding its spatio-temporal mobility patterns. In order to better understand such spatio-temporal patterns we collected data on origin-destination (OD) and battery levels for Bird e-scooters in Tempe, Arizona – US, from October 2019 to January 2020. We further investigate the spatial and temporal distribution, duration, euclidean distance, shortest network distance, battery recharging and purpose of e-scooter trips. We also

extracted and visualized descriptive spatio-temporal metrics for weekdays and weekend, such as: volume of trips per hour of the day, density of ODs per hour of the day, distribution of trip purpose across days of the week and weekend. Trip purpose was inferred by matching OD data to categories of points of interest from Open Street Maps. We observed a difference in volume, purpose and spatio-temporal patterns between weekdays and weekends. We believe this study can showcase how local authorities might extract information from these datasets to guide policymaking and planning for safely integrating e-scooters into urban transportation networks.

Keywords: micromobilities, e-scooters, electric scooters, transportation planning, policymaking

Towards equity in e-bike access: figuring out what works   Karen Witten, Hamish Mackie, Simon Opit, Ali Raja

For e-bikes to be part of a just transition to a low carbon future, barriers to access in lower-income neighbourhoods need addressing. International evidence indicates that trialling an e-bike is a powerful strategy for encouraging uptake. However, in lower-income areas opportunities to ride an e-bike are limited: ride share companies' business models favour inner city and higher income locations; e-bike retailers locate in similar areas, and access via friends and family networks can be limited. In 2021, Time-to-Thrive, a community bike promotion group from Māngere, Tamaki Makaurau, ran a Give-it-a-go e-bike trial in partnership with us, researchers affiliated with a National Science Challenge-funded research programme, ACTIVATION. Riding e-bikes loaned by retailers, ride share companies and colleagues, Māngere residents received skills training and had opportunities to try a range of e-bikes. An appetite for e-bike use was clear, but so were barriers to uptake, including cost, bike safety and storage, and road safety. A stage 2 trial is now underway, funded by Auckland Council's Climate Action Fund. Sixty Māngere residents will have personalised access to an ebike for two months and we will investigate: if, and how, an ebike is integrated into participant's household travel; the potential for mode shift; and ways barriers to uptake could be resolved. In addition to presenting Stage 1 trial findings, we will report on the evolving collaboration between Time-to-Thrive, local government, bike retailers and our research team as we seek a viable model for enabling e-bike access in lower-income communities.

Keywords: equity, access, e-bikes, trial

Transport lessons from the Netherlands: A comparison of the active travel behaviour of Dutch born vs immigrant residents   Koen Faber, Simon Kingham, Lindsey Conrow and Dea van Lierop

Active travel is encouraged in the Netherlands for its many benefits, and, as a result, the country has among the highest rates of cycling in the world. This is partially attributed to investments in cycle infrastructure. Yet few countries have followed the Netherlands lead, and arguments are made that the Dutch are 'different'. To examine the influence of culture on active travel behaviour, this study assesses differences in the walking and cycling among residents in the Netherlands by comparing professional immigrants (i.e. immigrants who have sufficient means to afford a range of transport options) and

a socio-demographically comparable sample born and raised in the Netherlands. The study found both similarities and differences in walking and cycling between professional immigrants and Dutch natives, with immigrants actually walking and cycling more. Socio-demographic characteristics, car and bicycle access and trip purpose all have a significant effect on active travel behaviour. Furthermore, walking and cycling behaviour can significantly change due to the presence of facilitating factors in the built environment, supportive social networks and the normalisation of walking and cycling as modes of transport. People who have grown up and lived in places with little tradition of walking and cycling, can change their travel behaviour if the environment, both physical and social, makes walking and cycling an attractive transport option instead of using motorised transportation. This finding has significant policy implications in countries like New Zealand, where active travel is still low, but government is seeking to encourage mode shift.

Keywords: Travel behaviour, Walking, Cycling, Immigrants, The Netherlands

Making Active Transport Resilient to Surface Flooding   Emily Ward

The changing climate poses a risk of further exacerbating transport inequalities and revealing new barriers to mode-shift away from cars. Sea level rise and more intense rainfall are expected to create larger and more frequent flooding as well as more widespread surface flooding, which public transport systems will need to adapt to. Research on how surface flooding impacts transport typically focuses on vehicle use, overlooking the experiences of those without the protection of a vehicle. In this research, interviews are conducted with disabled and elderly people, the people who are most reliant on active transport and who have the highest access needs. The aim of this study is to better understand how increased surface flooding will impact the journeys of those who cannot drive and identify mitigations in Ōtautahi. These learnings will make non-car-based journeys more resilient to the changing climate, especially for Aotearoa's aging population. Failing to consider water on the streets for pedestrians could further exacerbate transport inequalities and impede goals of transitioning away from cars and carbon emissions. The research is in partnership with Christchurch City Council and sponsored by Waka Kotahi (New Zealand Transport Agency), New Zealand Transportation Group and the HOPE Foundation for Aging Research.

Keywords: Climate change, Public Transport, Flooding, Disability, Accessibility

Inter-Agency Collaboration for Active Mode Shift: Challenges and Opportunities   Simon Opit & Karen Witten

Kāinga Ora are delivering large-scale neighbourhood redevelopments across Aotearoa/New Zealand. The agency is committed to delivering more houses and creating 'thriving communities' through higher density neighbourhood designs. A critical aspect of creating environmentally sustainable higher density neighbourhoods will be reducing residents' reliance on cars and encouraging mode shift toward active and public transport. The agency has made this goal clear in various strategy documents, including their Sustainable Transport Strategy. Delivering neighbourhood infrastructure that supports active travel necessitates effective inter-agency collaboration between Kāinga Ora and local councils and transport agencies. Using Kāinga Ora's redevelopment

in Māngere West as a case study site, our research investigates inter-agency collaboration to encourage greater walking and cycling. We draw on interviews with staff from the three key organisations involved in collaboration, Kāinga Ora, Auckland Council and Auckland Transport and with consultants involved in Māngere West transport projects. Our analysis reveals the complexity of inter-agency collaboration, making even minor infrastructure changes and upgrades potentially resource intensive and time consuming. While there is strategic alignment, delivery remains less coordinated. Tangled expectations over ownership, implementation and funding responsibilities are aggravated by tight budgets, staff turnover and complex organisational structures. Collaboration requires trust, and attempts so far have drawn heavily on informal agreements and inter-personal relationships, pre-existing and those fostered through regular 'round table' meetings. However, there are signs that the demands of creating more sustainable neighbourhoods with better integration of land use and transport planning are pushing organisations into new ways of working and collaborating.

Keywords: Inter-agency, collaboration, active travel, mode shift, socio-technical transitions

Travel behaviour in New Zealand's small towns: what can be done to reduce vehicle-kilometres travelled and green house gas emissions   Alyssa Greaney, Breanna Greaney, Lindsey Conrow, Simon Kingham

The New Zealand Government has set a goal of net zero carbon emissions by 2050, and the new Emissions Reduction Plan is aiming to reduce light fleet (i.e., passenger vehicles like cars and utes) kilometres travelled by 20% as part of achieving that goal. Light vehicle travel generates nearly 70% of transport's greenhouse gas emissions, so understanding how to effectively support mode shift and reduce the number of trips taken is key to realising actual emissions reductions. While we have strategies to improve and incentivise active and public transport in urban areas, less is known about approaches that might work in smaller towns where traffic congestion and public transport demand, for example, are more difficult to leverage mode shift. This study examined travel behaviour among school students to identify potential solutions for low carbon transport in a small town (Ōamaru NZ). Our results show that safety, convenience and travel time are important aspects of commuting for parents/caregivers transporting children to school. Distance to school was a notable barrier to active transport, though safer routes and crossings - including separated cycling infrastructure and less/slower traffic - would encourage more walking and cycling. We conclude that focusing on transport policy and interventions that support active modes (e.g., slower speeds, cycleways, traffic calming) rather than disincentivising driving may be more effective in small towns. Adapting established active and school travel plans provides a starting point to implement change in these areas. Targeting school travel in particular may encourage life-long sustainable travel habits, and improve population health from younger ages.

Keywords: active transport, emissions reduction, small towns

Tensions along the tracks: Local experiences and responses to a foreign financed and constructed urban railway in Hanoi, Vietnam.   Sarah Turner

In their drive to 'modernize' and 'globalize' Hanoi, the municipal authorities of Vietnam's capital have turned their attention to the urban development and transportation strategies of neighbouring cities such as Singapore and Seoul. This has resulted in the enthusiastic adoption of a number of strategies that will, in theory, increase Hanoi's relative international standing and create a modern, 'liveable' urban oasis. One such strategy aims to build 318km of urban railway as part of the 'Hanoi Capital Transport Master Plan'. The construction of Line 2A, the first line of this 8-line railway, took ten years to build, including eight years of delays, and finally opened in November 2021. Yet, the Line encountered more than just construction setbacks, being riddled with controversy and public skepticism since its inception regarding contractor choice, accidents, and accessibility concerns. Sowing further seeds of doubt in the minds of many Hanoi residents is the fact that two-thirds of the original financing came from preferential loans from China, conditional on the contractor and most materials being sourced from China. In this paper, rooted in conceptual debates regarding mobility (in)justice and infrastructural violence, I analyse how Hanoi residents perceived, experienced, and negotiated the construction of this Chinese-Vietnamese transportation project. This includes a brief case study of how motorbike taxi drivers, whose livelihoods are already being directly affected by the railway, are responding. Among residents in general, and motorbike taxi drivers more specifically, innovative tactics are already emerging to navigate this new infrastructure and the tensions it has raised.

Keywords: Vietnam, urban railway, transport, infrastructure, urban livelihoods

New Zealand's first Emissions Reduction Plan: A missed opportunity   Imran Muhammad

Aotearoa New Zealand's Emissions Reduction Plan (Te Hau Mārohi Ki Anamata) is the first document providing a strategic direction for de-carbonising the country over the next 15 years. The plan aspires to radically de-carbonise transport in the country by promoting electric vehicles, increasing public and active transport use, upgrading heavy transport and freight, and introducing low-carbon urban planning measures to reduce transport-related carbon emissions. This paper critically reviews the transport strategies proposed by the plan. It shows that the plan's transport strategies have existed in one form or another in several transport, energy, environment and urban planning documents over the last 20 years. However, these proposals have suffered from slow or no uptake at the city level because of a range of barriers, especially the absence of a sustained and innovative funding framework to support a comprehensive and integrated public and active transport network. The plan estimated through increasing the density in urban areas and promoting public and active transport, the average vehicle-kilometres travelled (VKT) could be reduced by 20% by 2035. In spite of the reliance on high density land use to reduce VKT, value capture for funding low carbon transport did not receive attention. The plan adopted the traditional balanced transport approach of promoting cars (in this case, electric cars), public transport and active transport projects rather than prioritising active and collective transport. The approach, accompanied by allocating substantial funding to encourage electric car uptake, endorses the use of private vehicles and is inconsistent with reducing VKT. This paper suspects VKT may increase as the cost of travel becomes lower if the plan fails to enable congestion charges. Overall, transport policy and planning will continue delivering the necessary roading infrastructure to support EV use despite a high threshold for new investment in roads. These contradictions raise questions about the plan's capacity to drive a transformational shift in achieving the country's climate

change targets. The paper concludes that the transport component of the plan has good ambitions; however, it missed an opportunity to discourage car usage and failed to produce innovations in low-carbon transport funding and set a pathway to accountability to achieve VKT targets. Therefore, it is recommended that the government aggressively adopt methods that discourage car-based transport (even by electric cars) in large cities and investigate value capture as an innovative way of funding low-carbon transport to achieve emission reduction targets.

Keywords: New Zealand's first Emissions Reduction Plan, Transport, Funding

Can transport enhance community wellbeing and reduce social inequity in two contrasting communities in Christchurch Simon Kingham, Helen Fitt, Angela Curl, Cushla Dares, Els Russell, Christina McKerchar, Lindsey Conrow, Karen Banwell, James Berghan and Jonathan Williman

Transport can be a key determinant of wellbeing and be used as a policy tool to reduce societal inequities. Public and active transport are well known and established ways to reduce our reliance of private motor vehicles and reduce greenhouse emissions. But in many cases they are not ideal, for example for those less physically able, vulnerable or physically and/or socially isolated. One possible solution for these groups is shared mobility. Shared mobility has the potential to enhance wellbeing. It can lower per-trip costs, increase options, and promote active modes. Research suggests this should lead to benefits in physical activity, access, and wellbeing, particularly for those without pre-existing access to good, affordable transport. There is, however, little evidence of how this impacts different types of community. The ACTIVATION Christchurch project is examining the transport experience of two different communities; a social housing complex, and a retirement village. They are both located in Christchurch, are relatively high density developments with reasonable central city access and both have access to shared mobility schemes, albeit with different operation models. However, they have very different demographics. This longitudinal study explores the transport experience of both communities, and seeks to identify the impact of transport on their wellbeing. This paper will introduce the study and some early results, and examine the impact of transport on wellbeing.

Keywords: Transport, equity, wellbeing, shared mobility

Voices of marginalised young people and implications for transport policy Rosee Hodgson, Alex Macmillan, Antoni Moore, Lee Thompson, Jennie Connor, Helen Fitt

Young people who have experienced exclusion from education, employment, or training. Teams of Peer Interviewers were recruited in the communities of Aranui and Hornby (Ōtautahi/Christchurch), and Papakura and Ranui/Massey (Tāmaki Makaurau/Auckland). They refined the interview guide, recruited, and interviewed 52 young people aged 15-24. Three kinds of analysis were undertaken: thematic, spatial and critical. Barriers to daily mobility included the uncertainty associated with transport modes, racism and cultural exclusion across modes and place, and social discomfort. The young people's perceptions of and relationships with place were also influential to where and how they travelled in their cities. Their experiences also shaped how they

perceived themselves, their citizenship and sense of belonging. Despite the barriers they faced, the young people offered a creative and resistant voice against the injustices of their context. This presentation will highlight some of the policy implications of the work, which includes access, as well as improving how young people relate to their society through transport and mobility.

Keywords: transport, mobility, youth, access, inclusion

Bypassing the big burly bouncer: Moving beyond texts to communicate geographical research   Helen Fitt, Simon Kingham, Angela Curl

Most researchers (us included) are relatively privileged; most of the people we work with are too. Collectively (if unintentionally) we recursively recreate a body of research that serves the privileged more effectively than it serves anyone else. Although many researchers are trying to address equity concerns in research, it can be challenging to include a wide range of people when so much of what we do involves complicated written texts that seem inextricably tied to academic norms. The ACTIVATION project's South Island case study explores the travel needs of residents of a social housing development and a retirement village. Using the experiences of researchers working on the project, this presentation tells the story of attempts to communicate with research participants in different ways. The story starts from the idea that written research information sheets and ethics forms are like a big burly bouncer standing at the door of research saying 'if you can't or don't want to read this, you're not welcome here'; the story then wends its way to visual methods, and an illustrated research report. The story isn't finished, it's a work in progress (incomplete at every stage), but we're looking forward to sharing our experiences and we hope to hear yours. This presentation seeks to open a conversation about how we can collectively (intentionally) work towards including a wider range of perspectives in geographical research through better communication practices, from participant recruitment to communication of results.

Keywords: Research, Written Communication, Illustration, Ethics, Participation

11. Children and young people in changing globalising cities

Session Convenor: Claire Freeman University of Otago Children's Geographies

Mapping the child friendliness of cities for urban planning: Findings from a Public Participation GIS study with children in the Iranian Kurdistan
      Soran Mansournia, Frans J. Sijtsma, Femke Niekerk, Claire Freeman, Christina Ergler

For years, urban professionals have written about the child-friendly planning importance. However, on-the-ground planners have rarely included children in the planning which can be considered as one of the most significant steps towards creating child-friendly environments. This study aims to test a PPGIS (Public Participation GIS) platform to let children map their favorite urban spaces to enable them to contribute to the planning. We developed an easy-to-understand PPGIS approach for children with short-texts and images while we embedded it in school class activities guided by teachers. Children mapped areas in the city, not points and answered questions about the visiting frequency, their transport mode and activities they undertook. Children, also, could upload pictures that visualized the qualities of a mapped-area. In this first large-scale research to test our approach, we mapped the favourite places of over 420 children residing in Marivan/Iran. We asked children to mark four favourite spaces divided into two categories of outdoor places at the neighborhood-scale and at the city-level-scale. Children mapped 1680 spaces in the form of polygons. Spatial-analysis shows most of the favorite places are spread over the entire city. We identify several hotspots where children preferably go to and the qualities these places have. In general, we observe that the children's mapping reveals an understanding at a city-wide-scale and their answers to the open questions show they can describe their idea about different aspects of the city. The interpretation of the results shows children's spatial-knowledge is a valuable resource to inform the work of on-the-ground urban planners.

Keywords: Urban planning, child-friendly cities, Public Participation GIS (PPGIS), Urban spaces, children

Navigating choppy waters: conducting a three-generation study around the Pacific Rim　　　　**Yvette Buttery, Claire Freeman, Sarah Turner, Helen Woolley**

Multigenerational families and multigenerational living have grown in recent decades yet there is limited research involving multiple generations of families and still less guidance for researchers embarking on such studies. The Negotiating Childhood around the Pacific Rim is a current study that sets out to explore changing childhoods in five countries (New Zealand, Vietnam, Samoa, Indonesia and China). Its objectives include identifying gains and losses, identifying characteristics that endure through time to make an environment a good one for children to grow up in, and examining the similarities and difference across countries and cultures. Its approach is qualitative and mixed methods are used to gain the insights of grandparents, parents and children through interviews, photo elicitation, and family focus groups. The study involves personnel from seven countries; three lead investigators located in New Zealand, Canada and the United Kingdom and multiple research assistants located in the five study countries; all working in the context of an ongoing pandemic. This makes conducting the study particularly challenging. Every element of the research process is complicated by its context. The usual challenges of participant recruitment and development of fieldwork tools are amplified whilst a 'pedantic' level of communication and meticulous organisation and administration become critical. Conducting fieldwork with three generations in their homes is an innovative research technique, demanding that learning occurs 'on the job' with adjustments being made accordingly. This paper will share some of the challenges of 'doing' this research in the real-world context and how the challenges were overcome. It will thereby give practical insights to others coming new to the field.

Keywords: three generations, childhood, multiple countries, qualitative, research process challenges

Changing childhoods in the Pacific Rim: Preliminary findings from New Zealand-Wellington   Claire Freeman, Yvette Buttery, Sarah Turner, Helen Woolley

Our study asks: Is the 21st century a good time to be a child? Given that childhood has changed enormously in the last three generations for many children in the Pacific-Rim what should be priorities for governments and planners whose actions shape the places where children live? This paper reports on a multi-country study with multi-generational families living in major cities in five Pacific Rim countries. These are New Zealand (Wellington), Samoa (Apia), Vietnam (Hanoi), China (Shanghai), and Indonesia (Yogyakarta). All are major national or capital cities experiencing substantive physical, environmental, and social changes; notably, physical expansion and associated changing urban forms, demographic change, and lifestyle changes related to fluctuating socio-economic pressures and demands. The study uses interviews, childhood photos and family group discussions with multi-generational families who comprise grandparents, parents and children living close to each other in these major cities. The paper focuses on findings from Wellington, and identifies key changes in childhood over three generations, the differences and commonalities between generations and countries, the primary concerns of the different generations for children's lives and the reasons for these concerns. Preliminary findings indicate the following have been pivotal in changing children's lives, technology-social media, more material goods, denser cities, loss of freedom, societal changes, and greater opportunities. Through collective data gathering and story sharing, we hope to empower families, and professionals to identify and understand ways children's lives have changed at family and neighbourhood levels.

Keywords: Childhood, change, multi generation study, Pacific-Rim

From strict socialism to TikTok troubles: changing childhoods over three generations in urban Vietnam.   Sarah Turner and Hanh Ngo

In the space of three generations, Hanoi, the capital of Vietnam, has rapidly changed from being a small city whose population was often struggling to feed itself during a strictly enforced socialist subsidy era, to a large sprawling metropolis with numerous gated communities, shopping malls, and a rising wealth divide. The impacts of such socio-economic, political, and urban form changes on what it means to be a child growing up in the city are enormous. Changing educational expectations and pressures, concerns over safety, freedom of movement, and new technology are having important implications on childhood experiences, play, and mobility. Taking a child-centered, multi-generational family approach, as an innovative methodology designed as part of a Marsden Grant (PI Freeman 2020), in this paper we report on preliminary fieldwork completed in Hanoi in 2022. Working with ten families, we interviewed members of three generations – children, parents, and grandparents – about their own childhoods in Hanoi. We also included a photo elicitation exercise and family focus groups. From grandparents not having shoes in winter yet being free to play and roam wherever they wanted, to parents with relatively few educational demands on their time when young, to children today having access to modern technology and globalised consumer goods but being restricted

in their movement because of traffic safety concerns, risk of kidnapping, fear of being tempted by 'social evils', and relentless educational demands, we tease out key generational similarities and differences, and consider when was the best time to be a child?

Keywords: Vietnam, children, youth, urban change, innovative qualitative methods

Results and reflections from the Neighbourhoods and Health study with children in Ōtepoti Dunedin and Tāmaki Makaurau Auckland, Aotearoa New Zealand **Tiffany Williams, Kim Ward, Melody Smith**

Important research has been – and continues to be – undertaken with children and young people globally to seek their ideas regarding health and healthy environments. The challenge of translating children's ideas to tangible outcomes is not unique to the field of environment and health research, but is especially pertinent due to the pervasive marginalisation of young people's perspectives in the context of growing urban populations. The Neighbourhoods and Health study aimed to gather children's perspectives on health and wellbeing in urban neighbourhood environments in Aotearoa New Zealand using participatory and child-centred approaches. The purposes of this presentation are to 1) share the children's perspectives of neighbourhoods and health, and 2) reflect on issues that arise in the tension between children's ideas and implementation in practice, drawing on study results. Data were collected with 93 primary school aged children from two schools in Ōtepoti Dunedin and two schools in Tāmaki Makaurau Auckland, from June 2020 to August 2021. Critical researcher reflections were completed at the end of each data collection session. Topic summaries have been developed from children's written and drawn data using content coding, and researcher reflections were integrated into the data using the topic summaries as a framework for analysis. Our results demonstrate that children's perspectives on health and neighbourhoods address a wide range of topics, with interesting emerging findings around both helping others and the environment. Children's perspectives are nuanced, situated, insightful, and at times ambiguous, which present unique challenges for knowledge translation to real-world scenarios.

Keywords: urban design, healthy environments, participatory approaches, child voice, knowledge translation

Play Streets as a tool to foster neighbourhood connections: How street play can be used to improve wellbeing for children and communities in Ōtautah **Emma Woods**

Globally, children's range within neighbourhoods and opportunities for play is decreasing, resulting in health, wellbeing, and social issues. New Zealand is not exempt from this, with the presence of unsupervised children increasingly rare on neighbourhood streets. There are many, interconnected, environmental and social reasons for this decline and although there is no one-fits-all solution, many countries are using Play Streets to address issues related to sense of safety and social cohesion. Play Streets are short-term events created by a temporary road closure or traffic exclusion, which opens the street outside children's homes to be used as a public space, creating opportunity for play and residents to connect. Christchurch has recently trialled Play

Streets through Waka Kotahi's Innovating Streets for People pilot fund, a national initiative showcasing the benefits for streets inclusive to all users. The Ōtautahi Play Streets pilot has been a collaboration between Sport Canterbury/Healthy Families Ōtautahi Christchurch and Christchurch City. The methods include observations at the events, surveys, and interviews to explore how well Play Streets are attended and received by participants, how effective they are at connecting residents and what factors enable or hinder play and independent mobility for children. The findings support key recommendations, advocating for Play Streets to be seen as a valuable tool for increasing wellbeing in New Zealand neighbourhoods. Overall, this research shows that play can contribute to community resilience, by connecting communities to their streets.

Keywords: children, community, wellbeing, streets, resilience

COVID-19 and changing neighbourhood environments: Children's perspectives and experiences during lockdown in Aotearoa New Zealand   Melody Smith, Niamh Donnellan, Jinfeng Zhao, Victoria Egli, Catherine Ma, Terryann Clark, Carol Green

Neighbourhood environments can have substantial and pervasive impacts on child wellbeing. Lockdowns imposed as part of COVID-19 responses changed the way neighbourhoods functioned, and children's daily activities. The research aim was to explore what worked well for children during COVID-19 lockdown in Aotearoa New Zealand (NZ), focusing in particular on the neighbourhood environment. An online survey link was shared through social media and networks. Information on walking and wheeling and what children liked about their neighbourhood during lockdown was collected. Text-based and image data were coded and quantitative data were analysed descriptively and presented visually. Children (n = 192) aged between 5 and 13 years from across NZ participated. Overall, 68% of participants reported walking, biking, or scootering more than usual. Car-less neighbourhoods, community activities, natural environments, being home, spending time with family, and simple activities were all liked by participants. Continuing to celebrate events such as birthdays, Easter, and ANZAC day both within families and with the wider community were appreciated by children. Social connections were important contributors to wellbeing. Seeing people out and about imbued a sense of safety and connection with others. Connections with family and friends were important to children, but often required access to, and sufficient skills in using, technology such as Zoom, Skype, and FaceTime. Neighbourhood environments were important for supporting child wellbeing during COVID-19 lockdowns in NZ. Findings can help inform initiatives to support child wellbeing in the face of potential future lockdowns or new pandemics.

Keywords: Active travel, walking, biking, built environment, social environment

12.   Marine pluralities
Session Convenor: Hamish Rennie Lincoln University

Making a blue economy in New Zealand   **Nick Lewis**

Economies do not emerge spontaneously. They are achievements and must be worked at. In this paper I examine the making of a blue economy in New Zealand against the background of increasing global interest in the idea of a blue economy. The paper uses the work of Michel Callon and his interprets in economic geography to examine the work of the Sustainable Seas National Science Challenge in creating a blue economy. The paper focuses on both the discursive and calculative dimensions of the project, emphasising the difference that place makes. It directs attention to the work of geographers in this project, using post-structuralist political economy (PSPE) sensitivities to experimentation and enactive research to highlight and make sense of the category-building at the core of the project.

Keywords: Economisation, Blue Economy, post-structuralist political economy, experimentation

Kāpiti Marine Reserve 30 years on: how have attitudes and connections to the reserve changed over the past 3 decades?   **Stephanie Brenssell**

Kāpiti Marine Reserve, a no-take reserve, was established in 1992, and is the fourth oldest marine reserve in Aotearoa New Zealand. While seen as an important addition to New Zealand's marine reserves, there is limited social science research on this reserve to date. Indeed, biological studies tend to dominate the marine reserves literature in Aotearoa New Zealand. This research, therefore, investigates how the existence of Kāpiti Marine Reserve over the past 30 years has reinforced or changed people's attitudes and attachment to the reserve as a meaningful 'place'. Although place attachment is a widely researched concept for people-place relationships, there is a lack of research about place attachment in relation to ocean spaces in general, and marine reserves in particular. This presentation will present findings from two phases of research. Firstly, it presents an analysis of the original 1990/1991 submissions for and against the reserve, to establish core approaches (forms of connection) to the reserve; and secondly, it presents preliminary findings from qualitative interviews with a small number of those original submitters. In doing so, it explores the different experiences and practices that influence people's attitudes to, and connections to, this marine reserve over time.

Keywords: Place attachment, Kāpiti Marine Reserve, Marine Reserves

Oil and gas moratoriums in Canada and New Zealand: An intervention into petrocapitalist hegemony through climate justice and time **Sophie Bond, Dawn Hoogeveen, Raven Cretney and Sonja Bohn**

Moratoriums and legal bans on extraction are significant devices for managing ocean spaces. Contestations around these devices expose different imaginaries associated with marine spaces. They open up debate about the dominance of petrocapitalism and extractivism, and in so doing allow greater space for the plurality of ways in which ocean spaces are imagined, valued and known. Such devices also invoke a range of temporalities that highlight often conflicting values, ethics and visions for the future. This presentation explores various temporalities within ocean imaginaries that are exposed through the discourses surrounding two moratoriums in two countries, Canada and Aotearoa New Zealand. The first and more established moratorium in British Columbia, on the west coast of Canada, has prevented oil and gas exploration, drilling, and shipping on a segment of the coast since 1972. In Aotearoa New Zealand, a change in government and an active campaign against offshore drilling resulted in changes to legislation in 2018 that banned new exploration and drilling permits for oil and gas in the Exclusive Economic Zone. Both regulatory interventions into petrocapitalist settler colonial contexts have been highly contested, and the dominance of short-term neoliberal political temporalities could see them overturned. However, the moratoriums also invoke societal debates that render visible arguments underpinned by longer temporalities, including those that juxtapose petrocapitalist neoliberal time with the long timeframes associated with geological formations and atmospheric greenhouse gas emissions, non-Western non-linear conceptualisations of time, and long-term visions of sustainability. We argue that the moratoriums or oil and gas bans pose challenges to the dominance of petrocapitalism and carve out spaces in which to envision alternative low carbon futures with longer temporalities that centre climate justice.

Keywords: Oil and gas bans, temporalities, climate justice, New Zealand, Canada

Relational ways of oceanic knowing: perspectives from Norway   Nancy Couling

This paper explores the multiple relationships with the marine environment through developing ocean literacy with architecture students exploring the space of the Norwegian Sea and its more-than-human inhabitants. How could the perspective of the "last (wild) salmon", a coral reef, a bird colony or an amalgamation of ocean myths open up the understanding of ocean pluralities? It can be argued that the long tradition of planning ocean space- has always been approached from a colonial, exploitative, anthropocene perspective. Despite the accredited success of ecosystem-based marine spatial planning in Norway, the oil industry is diversifying its investment interests, and is well-equipped to move into new ocean industries of deep-sea mining and offshore wind. The Norwegian Sea's deep spaces along the Mid-Atlantic ridge – replete with valuable minerals, have not yet been fully investigated as a rare and fragile ecosystem of which we still know little about. The second part discusses the voices of indigenous Sea Sami in northern Norway, their specific ways of understanding an integrated sea space, and which methods can be used to promote this fluid, holistic worldview in the face of planned and unplanned transformations to the natural environment in the local fjords and beyond, on which their traditional livelihoods are based.

Keywords: more-than-human, indigenous perspectives, anthropocene, deep-sea mining

13. Music, place and resilience

Session Convenor: Robin Kearns

Resilience, popular songs and the housing crisis: exploring links in songs by Anthonie Tonnon and Courtney Barnett.   Robin Kearns, Simon Opit and Tara Coleman

In psychological terms, resilience is said to be expressed when people use thought processes and behaviours in the quest to protect themselves from the potential negative effects of stressors. What role can popular music play in expressing or promoting resilience? We explore examples of songs as resistance to the crisis of housing affordability. Our focus is on two songs: New Zealander Anthonie Tonnon's (2012) 'Marion Bates Realty' and Australian Courtney Barnett's (2015) 'Depreston'. Perhaps significantly, theses lyricists both wrote the songs in their 20s, a decade in which the unaffordability of housing in larger cities in their respective countries becomes starkly apparent. Themes of irony, compromise and resignation are identified as contours of the emotional landscapes sketched in the songs through their words, tonal qualities and visual accompaniment. In sum, the themes and popularity of the songs themselves suggest they contribute to resilience through offering solidarity and irony. We conclude that understandings of youthful housing aspirations and experience can be expanded through moving beyond conventional social scientific approaches and embracing domains of artistic expression.

Keywords: music, place, resilience, housing affordability, urban change

Waiata for resistance. She sings for the Kaipara.   Vicky Miru and Leane Makey

Music, politics and resistance movements is a theme that is highly situated and rooted in place. Furthermore, it is a theme wrapped up with sex, power and violence, justice, bodily and human rights. U2's Sunday Bloody Sunday is ostensibly about the turmoil in Northern Ireland when in 1972 British troops shot and killed unarmed civilian protesters. But the lyrics, call for an end to violence in general, "and the battle's just begun/ There's many lost, but tell me who has won." Midnight Oil's politically charged song Beds are Burning was a plea to the Australian federal government to allow the Aboriginal tribe, Pintupi, to return to their homelands, "It belongs to them/Let's give it back". The three-and-a-half-minute pop song, I Am Woman by Helen Reddy mobilised many women and gender rights groups such as the 1989 abortion rights rally, "I am woman, hear me roar." The significant Redemption Song by Bob Marley and the Wailer's, known as a song of freedom and protest against all wars, "emancipate yourselves from mental slavery/None but ourselves can free our minds. Waiata (song, chant, psalm) is also used for times of resistance and protest. Waiata is fundamental to understanding, experiencing and identifying with te Ao Māori, the Māori worldview. Waiata is taonga tuku iho, ancient and sacred gifts passed through whakapapa, as they retain connections and knowledge related to significant events, relationships, natural features and ecosystems such as waterfalls, rivers, mountains and seas. I Went Walking is a waiata that has featured in times of environmental activism and resistance to incompatible development and use. It was played for the placement of the aukati

(political) rahui at Tinopai, to halt the eco-degrading expansion of pine tree plantations and again to protest the deployment of 200 underwater marine turbines in the entrance to the Kaipara moana. Importantly, I Went Walking is an Indigenous woman's standpoint of eco-degradation and slow violence to her most sacred taonga the Kaipara moana, her mind, wairua (spiritual essence) and body. Through waiata, her place in the world and her lived reality can be told, sensed and shown.

Keywords: waiata, resistance, embodied geo-creative practices, place, rahui

Music and city branding: unpacking experience of Auckland as a 'City of Music'.   **Hanju Kim, Nicolas Lewis and Robin Kearns**

In November 2017 Auckland was formally announced as a UNESCO city of music. The title afforded Auckland entry into the UNESCO Creative Cities Network (UCCN), a UNESCO project founded in 2004, that seeks to network cities together based on respective creative excellence. A year later, at a lavish event hosted at the Civic Theatre, with local industry stakeholders and the Prime Minister in attendance, the Auckland Music Strategy (AMS)/ Te Rautaki Puoro o Tamaki Makaurau 2018-2021 was announced, detailing how the city would manoeuvre itself moving forward with the newfound title. Drawing on interviews with Auckland music industry stakeholders (musicians, promoters, managers, journalists, label and public sector employees), we examine the degree to which the AMS strategy aligns or departs from the complexities and lived realities of spatial relations in the music industry. In doing so, we ask how policy can be moulded to support music in cities. In seeking to understand how music in Auckland can be supported and made resilient in uncertain times, lessons can be learned moving forward for branding exercises such as the UNESCO initiative. Our case will contribute to the literatures on place branding and branding in Geography.

Keywords: place branding, music industry, cities, cultural economy

Place-creation and attendee experience at New Zealand music festivals   **Neil Lindsay, Robin Kearns, Tara Coleman**

Music festival organisation, management, and design are influential in shaping the experience of festival attendees and encouraging or curtailing behavioural practices. Drawing on the concepts of affect and affective atmospheres, we examine how music festival design influences the experience of attendees at selected New Zealand music festivals. Employing documentary data analysis and interviews with attendees and organisers, we highlight ways that organisers configure festival atmospheres to provoke affective dispositions. We explore the politics behind design decisions, highlighting the methods employed by festival organisers to knowingly (and unknowingly) construct and shape the conditions of experience. We also highlight how festivalgoers actively conform particular festival-going identities that are purposefully curated by organisers. We conclude that festivals are inherently political and value-laden spaces where design plays a key role in shaping the thoughts, feelings, and behaviours of attendees. Music and design, we contend, are ultimately inter-related in the festival experience.

Home, Land and Sea: A Geographic Exploration of Aotearoa's Record Covers   **Luke Kiddle**

New Zealand record covers – and their art – are enduring. Record covers represent the music within and mediate our listening experience (Vad, 2021). Record covers also tell us something about geography. They explore and affirm place attachment and group identity. They showcase a changing Aotearoa New Zealand. Like music has done for generations, record covers also exemplify protest and resistance. 'Whats' Be Happen', for example, released by Herbs just ahead of the Springbok tour in 1981, its cover showing the final day of the Bastion Point occupation in Ōrākei, Auckland in May 1978, is regarded as a turning point in the history of popular music in Aotearoa (Turner, 2019). This paper, through a visual, personal interpretation will explore New Zealand record cover art through a geographical lens.

14.   Geographies of collective action in Aotearoa New Zealand
Session Convenor: Kiely McFarlane, Cawthron Institute

Transitioning to caring economies through nurturing collective subjectivities   **Kelly Dombroski**

How to transition to more just and sustainable economies has become an even more urgent research problem for human geographers in these times of climate crisis, pandemic, environmental degradation and global inequalities. For many economic geographers, political economists and feminist economic geographers, critical interrogation of the foundations of our economies has been the method of inquiry. These critiques have highlighted the damage caused by Western modes of abstract reasoning, separation of self and nature, and individualist figures such as 'rational economic man', who still dominates economic modelling. Some wellbeing-led frameworks are beginning to emerge in Aotearoa New Zealand's Living Standards Framework, Just Transition, and wellbeing budgets, and the UN's Sustainable Development Goals. Increasingly, social movements led by community organisations, iwi and young people are led by an interest in collective wellbeing: low carbon economies, housing reform, universal basic incomes, taxes for generational inequities, compensation and reconciliation for Te Tiriti o Waitangi claims, and constitutional reform. A more collective, care-full economic figure haunts these demands. Yet in economic geography, little work has been done on how such 'care-full' economic subjects emerge, and how such subjectivities are nurtured. What role can such subjects play in widespread economic change? How do we account for and model the pathways for action for economic

subjectivities based on care and justice? In this paper, I lay out a research programme that seeks to a) sketch out these more collective economic subjects, their actions and institutions, and b) transform understandings of economic transition in Aotearoa New Zealand and beyond.

Connecting Crises: Activist Perspectives on Climate Change and Covid-19   Sylvia Nissen and Raven Cretney

The onset of the Covid-19 pandemic prompted drastic changes to everyday life spurring debate about the connections to, and implications for, collective responses to the climate crisis. This paper explores these debates by drawing on in-depth interviews with climate activists in Aotearoa New Zealand. Our analysis considers the ways that Covid-19 disrupted existing activist practices, presenting distinct challenges while also opening space to reimagine climate action. We trace the contours of these tensions: the distinct temporalities of relatively sudden-onset and slower-moving crises; new forms of connection and understanding of crisis, while confronting isolation, political polarisation and disinformation. In doing so we explore expanded imaginaries of what is possible collectively in sustaining collective responses to the climate crisis.

Management by Objective? Catchment groups in an uncertain world   Jim Sinner, Marc Tadaki, Ed Challies, Margaret Kilvington, Paratene Tane, Christina Robb

"Alice: "Would you tell me, please, which way I ought to go from here?"

Cat: "That depends a good deal on where you want to get to."

Alice: "I don't much care where–"

Cat: "Then it doesn't matter which way you go."

Alice: "–so long as I get SOMEWHERE!"

Cat: "Oh, you're sure to do that, if you only walk long enough."

Environmental challenges such as freshwater degradation require collective and coordinated action, but what drives collective action when the effects of action are delayed, uncertain and mostly benefit others? Should groups be challenged to achieve objectives set by the wider community? In Aotearoa New Zealand, as farmers have come under increasing pressure about freshwater degradation, catchment groups have formed all around the country. Officials

see catchment groups as a hopeful new approach to achieving societal objectives without intrusive and controversial regulation. With a learning forum of catchment leaders, we explored the proposition that catchment groups need clear and measurable objectives to address complex collective action problems. In this paper, we report perspectives of farmers and tangata whenua on this question, and we consider the arguments for and against catchment groups adopting specific objectives and targets.

Keywords: collective action, catchment plans, objectives, accountability

Kindness, complexity, and collective action: transitions toward a just research, science, and innovation system in Aotearoa New Zealand

Aisling Rayne, Bethany Cox, Shaun Hendy, Anna Matheson, Emma Sharp, Tammy Steeves, Leilani Walker, Priscilla Wehi

The science community in Aotearoa New Zealand (NZ) urgently needs to develop and embed a culture of kindness to rebuild a just research, science and innovation (RSI) system (Kindness in Science, 2022). But what is kindness in this context? How can we build such a complex system anew? When birds flock together in flight, they ease their collective journey by moving from individuals into an ordered state. The flock that emerges, and its critical features (e.g., feedback loops, emergence, phase transitions), offers an example of a complex adaptive system. In this paper, we draw from public health and policy systems research to extend complexity theory to Aotearoa NZ's RSI system. Applying a lens of care, we identify critical features of the RSI system, and explore how kindness might be defined as a property of a complex system. We use reflexive thematic analysis and social network analysis to examine Te Pūnaha Matatini, a national Centre of Research Excellence, as an exemplar of a research community that actively practises kindness. We anticipate that care-full application of complexity theory to the RSI system will bring attention to the policies, practices, and relationships that (dis)enable accessibility, inclusivity, and equity; and identify effective collective action for transforming the RSI system.

Keywords: care, collective action, complexity, kindness in science, social justice

Social Movements solving the Climate Crisis under te Tiriti? Extinction Rebellion and the Challenges of Decolonising a Movement with Colonial Origins

Kyle Matthews

Extinction Rebellion (XR), a movement with origins in the United Kingdom, has spread globally with an easily transferrable model of social change. This model combines a sense of urgency that calls for radical civil disobedience with social scientific evidence to argue that averting mass climate extinction is possible. However the model did not critique colonisation or capitalism, and therefore Indigenous activists and allies who were on the front lines of climate resistance may be less inclined to take up the XR model. XR expanded to Aotearoa New Zealand in late 2018 and grew to consist of over twenty local groups. However when those groups came together in October 2019 for their first national action a small Māori caucus challenged the movement to consider the relationship of XR to te Tiriti and colonisation. This challenge was both in terms of climate change as a phenomena which is caused by and impacts

communities differently, breaching te Tiriti, but also XR as an organisation which should consider how it's structures, decision-making processes, and messaging perpetuates colonisation. In this session I will explore how XR in Aotearoa New Zealand responded to this challenge through faltering and incomplete steps to incorporate te Tiriti and decolonisation as part of the work to address global climate change.

Keywords: social movements, extinction rebellion, decolonisation, te tiriti, activism

Catchment groups, supporting agencies, and the challenge of forging collective purpose   Ed Challies, Marc Tadaki, Jim Sinner, Margaret Kilvington, Paratene Tane, Christina Robb

Catchment groups – collectives of farmers, tangata whenua, landowners, and community members – are emerging across Aotearoa to improve the health of land and water. These groups are highly diverse in their motivations and goals, and span multiple stages of development. Recently, there has been a surge in activity from central and local government, primary industry sector groups, NGOs and local communities to enact and support these forms of collective action. However, the aims of catchment groups and their would-be supporters are not always directly aligned, which can jeopardise clarity of purpose for catchment groups and thwart success. Here we explore the challenge of forging collective purpose within catchment groups and consider how different types of support can facilitate or complicate this task. Drawing on action research with farmers and tangata whenua, and with national and regional policy experts, we examine how collective purpose is being constructed in four very different catchments across the country. Given the complexity of the issues faced, and the place-based relationships between farmers, tangata whenua, catchment groups and councils, as well as mounting policy pressures on the farming sector, finding common purpose and alignment is challenging, and support needs to be nuanced. If collective action for healthy land and waterways is to be sustained into the long term, catchment groups need clarity on their collective purpose and objectives, while supporting agencies need to consider their own motivations and work to find common ground with diverse catchment groups.

Keywords: collective action, catchment groups, freshwater, support

The Co-operative Business Model - re-evaluation, relevance and resurgence   Richard LeHeron and Stuart Gray

Co-operatives and Mutuals are a common organisational structure in Aotearoa New Zealand. The top 30 Co-operatives alone make up at least 13% of GDP and employ 41,000 people. They range from the largest businesses to the smallest and operate across many sectors of the economy. We review the state of Co-operatives, present a typology based on purpose and consider why such an historically well established and tested enterprise model is still subject to mis- understanding and commonly treated as non-mainstream in comparison to limited company structures. Areas for consideration include how co-ops are realigning goals in emerging societal contexts, how regulatory changes are impacting future pathways, and revealed behaviours arising from changes in market power, adjustments in distribution arrangements, Board composition and the acceptance of a broad social role, declared or otherwise, in Aotearoa

NZ and consequent strategic positioning in key policy areas such as climate change, the cost of living and workforce employment. We conclude that in a world where social enterprises are becoming mainstream the co-operative business model can offer many advantages, including engaged shareholders, an ability to focus on the longer term, a sense of belonging and ownership and deep learned experience engaging with domestic society and economy as well as internationally.

Keywords: Co-operatives, relevance, resurgence, strategic alignment

The role of collectives in the process of community resilience   Ashley Rudkevitch, Suzanne Vallance, Emma Stewart

Räsänen et al. (2020) outlined three types of community that exist in disaster risk management and resilience: place-based communities; interaction-based communities; and communities of practice and interest. However, resilience research is often weighted towards place-based communities rather than interaction-based communities or communities of practice and interest. This has resulted in limited research on collectives as they are often a feature of communities of practice and interest (Wenger, 2011), yet they are maintained through interaction-based community and exist within place-based community. Collectives can be defined as people interacting with one another to engage in a shared interest or purpose, either formally such as faith-based groups, government departments, and non-government organisations, or less formally as weekly 'stich n' bitch' meetings, community gardens, and recreational sports leagues. The important role collectives have in everyday life has been widely acknowledged (Gilchrist, 2019; Sztompka, 2008), however their role during unexpected life events has only begun to be explored (Marquet, 2015; Rudkevitch, 2022; Vallance, 2015). Using qualitative methods in an exploratory approach, this research examined collectives following a major disruptive event -a 7.8Mw earthquake- in Kaikōura Aotearoa to interrogate current understandings of community resilience. This research has revealed that while community is conceptually complex, its use in community resilience is often relegated to understanding 'the' community as an entity (place-based community), rather than the various processes within community that emerge from collectives (interaction-based communities or communities of practice and interest).

Keywords: collectives, community, resilience, disaster

Scaling collective action for biodiversity   Kiely McFarlane

Restoration ecologists have argued for the scaling of ecosystem protection and restoration initiatives to landscape scales to reverse current declines in biodiversity. The socio-political implications of this ecological re-scaling remain undertheorised, especially with respect to community restoration. Some scholars promote the widespread uptake of restoration activities (e.g. wildlife gardening, backyard trapping) by civil society, while others critique the effectiveness and efficiency of citizen conservation due to its emphasis on simplistic plantings. There is also growing attention to the need for restoration to be attuned to its socio-cultural context and enhance local livelihoods and wellbeing, necessitating place-based and community-centric approaches.

Research to date therefore highlights very different scales of civic participation in restoration, mirroring the diverse concepts of scale embedded in collective action scholarship (e.g. mass movements, commons management) more generally. This presentation engages with collective action literature and three case studies of collective restoration in Aotearoa to explore key socio-political dimensions of scale shaping collective action for biodiversity. While this research is in its early stages, initial insights indicate how socio-political fit can enable, limit, or even undermine ecologically-effective scaling of restoration. Based on these insights, opportunities for collective action scholarship to contribute more effectively to debates over socio-ecological scaling are suggested.

Keywords: collective action, environment, restoration

Upending silos? Multidisciplinary student collectives working to make an Impact   **Gail Hutcheson**

The sustainability challenge requires universities to create spaces in which the disciplinary mould can be substituted for transformational learning (Pretorius & Fairhurst 2015). Here, transformative learning implies emphasis on new ways of "being" and of thinking about the environment to address contemporary social and ecological issues. Despite decades of discussion about the necessity of interdisciplinary teaching and learning, substantial barriers to its implementation remain (Kezar 2005). Although there are opportunities for students to learn across different modes of collective action, divisional silos and institutional processes are not readily malleable. The idea here is to critically discuss collective action, student collaboration and alternative ways of learning. The integration of a multitude of disciplines at the University of Waikato, has culminated in Impact Lab. Multidivisional student collectives come together in teams to collaborate on solving 'wicked problems' posed by external organisations and/or the university. Impact Lab challenges and successes will be analysed to gauge how collective action may upend or reinforce silos.

Keywords: multidisciplinarity; collectivities; collaboration; transformation; sustainability

Discussion: geographies of collective action   **Max Harris**

Discussant

15.   Emerging Economic Geographies of Experimentation and Innovation

Session Convenors: Angus Dowell, Ingrid Peterson, Aleisha Seagrave, Salene Schloffel-Armstrong, University of Auckland

Promissory presents and iffy futures' reprised   **Nicolas Lewis**

From the early 1990s, Aotearoa/NZ's government has sought to assemble an innovation economy around capitalist techno-scientific rationalities. Alongside industry and other actors it has presented innovation as the solution to the apparently intractable problem of adding value in a stubbornly commodity-dependent economy. In so-doing it has experimented widely with a particular technoscientific national future, potentially foreclosing on others. In this paper, I revive an unsuccessful funding bid to ask what progress has been made in reformatting New Zealand's economy in the ten years since the formation of Callaghan Innovation (CI). The agency has been charged with assembling promissory science, state and private venture capital, and the entrepreneurialism of a new generation into brave new national futures. The paper treats CI as an experiment in repositioning economic development responsibilities within a quasi-government, extrastate agency responsible with a remit for innovation. What has this experiment with state agency and the zeitgeist of innovation yielded?

Keywords: innovation, experiment, economic geography, Callaghan, future

Social and cultural innovation in Aotearoa's community housing sector   **Jack Barrett**

This presentation acknowledges that innovation, in large, exists within a capitalist-colonial paradigm, privileging 'for profit' processes and erasing Indigenous notions of innovation and entrepreneurship (Vunibola and Scobie, 2022). Seeking to draw attention to the forms and dynamics of Indigenous Innovation in Aotearoa's community housing sector, this presentation explores preliminary findings from a case study within my PhD research, 'Whareora' a hapu-led and whanau-centric housing project, run by an Indigenous community enterprise Hikurangi Enterprises based in Turanga Gisborne and the wider Waiapu Valley. It will draw on the diverse economies framework to highlight the diverse forms of economic processes, activity and decision making that have given way to a form of housing innovation that is uniquely Indigenous and economically diverse. Further, it will employ a critical Indigenous lens to situate Hikurangi Enterprise's housing mahi within housing's current political economy. This will allow considerations to be drawn as to how 'innovation' within Aotearoa's community housing sector may be approached to serve wider social, cultural and environmental goals, whilst inviting emerging notions of Indigenous Innovation to speak to calls for emancipatory geographies of housing provision (Fields and Raymond, 2020)

Keywords: Indigenous housing, innovation, self-detrmination, diverse economies, community economies

Farm tourism in Lam Dong, Vietnam: a farmer decision-making in the context of the economic rationality of the tourism enterprise or experimentation of entrepreneurs trying to create value from their properties by accessing the regions tourists?Christopher Rosin; Thuấn (Nancy) Thị Phương Huỳnh

Most conventional research on farm tourism addresses farmer decision-making in the context of the economic rationality of the tourism enterprise. The experiences of farm tourism operators in Lam Dong, Vietnam suggest, however, that the activity is better understood as the experimentation of entrepreneurs trying to create value from their properties by accessing the regions tourists. This experimentation is examined using inductive analysis of in-depth interviews conducted with farmers who have been involved in farm tourism. The purpose was to discover why farm tourism was promoted, who its targeted participants and those actually involved were, and what lessons should be learnt. The results show that while participants seemed to have sufficient resources, strong motivation and excitement to be involved in farm tourism, there were factors they did not take into account that made them failed to stay with the business. Two factors came from the relationship of customers and local authorities. Specifically, one farmer withdrew when she realized the farm tourism business required more of her presence and direct contact than she expected and another farmer stopped the farm tourism business since he was not happy with the local authorities' complaints. Those factors had become significant because they conflicted with the farmers' self-identity. Farm tourism is therefore not only a fixed, pure economic form but is dynamic in nature. This suggests that there are no concrete formulas which ensure the success of a farm tourism business, and that unexpected elements contribute to the success or failure of a farm tourism entrepreneur.

Keywords: farm tourism, experimentation, Lam Dong - Vietnam

Utopian Food Experiments - possibility, proliferation and just transitions in Aotearoa   Ingrid Petersen

Unsustainable, industrial, and intensive food production has had negative consequences for social, cultural, economic and ecological systems. The urgency of climate change – top of mind in this century – alongside geopolitical unrest has made it necessary to examine this food system and its impacts, resulting in a call for more sustainable, ethical and just food practices. This is creating a space for food initiatives that practice food in unconventional and sometimes previously unimagined ways. The recent rise of utopian food movements shows the importance of experimentation and seeking the wildness - doing differently to think differently. Utopian thinking gives us the space to imagine an ideal, against which we can measure normalized conventions, and through experimentation we can reimagine better worlds. Through the lens of a community based case located in Tāmaki Makaurau, Aotearoa this presentation explores the potential for experiments in food utopias to work in ways that promote transitions to just food futures; asking what can be learned from food practices and actors that sit differently in the food system and how they can contribute to a more equitable, sustainable, just food future.

Keywords: food, utopian thinking, experimentation, community economies, just food futures

The philanthro-state: Bloomberg Philanthropies and its program of 'government innovation'   Alistair Sisson (University of Sydney), Tom Baker (University of Auckland), Pauline McGuirk (University of Wollongong), Robyn Dowling (University of Sydney), Sophia Maalsen (University of Sydney)

In the eyes of many large philanthropic organisations, government needs help. Even in well resourced settings in the global North, governments are said to be tending toward inertia in the face of evolving challenges, dealing with significant capacity constraints, and relying on skills and systems fit for times gone by. Breaking from the idealised 'separation' of private and public powers, several philanthropic organisations have turned their attention, directly, to the task of 'innovating' government. The most notable, Bloomberg Philanthropies, has funded and promoted the uptake of innovation units within the public sector, prize-based 'challenges' as a procurement technique, and a 'what works' certification program which encourages the prioritisation of evidence-based decisions within city government. Critical literature focuses on philanthropies as a governing force in and of themselves, separate from government. Philanthropic organisations influence government spending indirectly via 'thought leadership' and leveraging private donations, but rarely are they understood to directly 'teach' the state how to govern. This shift from indirect influence to direct engagement raises questions about how the world-view and priorities of philanthropic organisations come to constitute the state: its will to govern and the techniques and objects of government intervention. This paper explores these questions through analysis of Bloomberg Philanthropies' government innovation program and reflects on the form and implications of a nascent philanthro-state.

Keywords: philanthropy, government, governance, innovation

The Emergence of Aotearoa's Innovation Ecosystem   Aleisha Seagrave (University of Auckland)

Influenced largely by international policy trends, multiple actors in Aotearoa are working to assemble a national innovation network using the metaphor of an innovation ecosystem (IE). This metaphor has captured the imagination of policymakers internationally as an economic development initiative that encourages and directs the production of commercially viable knowledge by fostering a sharing economy between research, commercial expertise, and businesses. Picking up the concept of IEs from a policy-supportive and business-orientated literature, a more technical economic geography literature interested in geographies of competitiveness has questioned how these networks establish, how the IE is institutionalised, and how they shape economic landscapes (Brydges & Pugh, 2021; Malecki, 2018; Rallet & Torre, 2017). This suggests that we need to think more deeply about how IEs are assembled and held together, how such configurations are made to do economic work, and what part they play in broader processes of social and economic change. In Aotearoa, an IE is emerging through a heterogeneous network of dynamic social relations between economic actors to facilitate innovation and knowledge flows, bringing renewed focus to the role of a techno-science driven knowledge-economy in Aotearoa's economic future. These relations are generative; they produce specific normative visions of the future which affect social change in ways that have not yet been subjected to critical examination. Now is the time. This study seeks to begin this work by applying a critical lens to Aotearoa's IE to ask how it is emerging and explore what kind of economic future it might promise.

Keywords: innovation ecosystem, innovation economy, economic futures

Environmentally Driven Economies: Assembling novel economy environment relations in New Zealand   Angus Dowell, Nick Lewis, Ryan Jones

It is widely argued that we need new radically new economic arrangements that address our myriad socio-environmental challenges and enable just and sustainable transitions. Yet little progress is being made in imagining the new environment-economy relations around which resources, actors, and ethics might be configured to enact the novel economic forms needed. This paper brings the Social Studies of Economisation and Marketisation to a suite of diverse environmentally-focused economic development initiatives in New Zealand to explore how they have assembled a cross-section of actors and investment projects into experimental forms of economy. We argue that these differently scaled and structured initiatives register an experimentation-led agenda for transitioning to more environmentally and economically just futures, and asks whether the approach offers a better way forward than either top-down policy arrangements or abstract transitioning models. We argue that our focus on experimentation allows us to decouple notions of 'just transitions' from both the strictures of 'pathways' and the critique of those who would insist instead on radical 'transformations'; and release the potentiality of rethinking environment-economy relations from the grip of 'sustainability'. Instead we aim to open-up a language for a progressively critical politics of environmental economy – one that is argued to be missing in Geography. Finally, in reporting diverse efforts to establish experimental forms of environmental economy in New Zealand, we argue that not only is experimentation a pivotal mode of economisation, but it can cohere into an experimentation infrastructure that has a wider collective potentiality, offering us other ways to stimulate processes of transitioning.

Keywords: Economisation, Marketisation, Experimentation, Environmental Economy, Infrastructure, Assemblage

16.   Resilient and regenerative tourism futures for Aotearoa NZ

Session Convenor: Joanna Fountain Lincoln University

Reshaping natural hazard risk communications [with Chinese] international tourists in New Zealand   Qian (Aviva) Cui, Joanna Fountain, Stephen Espiner

Recent natural hazard events in New Zealand have significantly impacted the tourism system, causing loss of life, injury and disruption, such as the 2020 Whakaari/White island eruption and the 2016 Kaikōura earthquake (Mw 7.8). These events highlight the impact that natural hazards can have on tourist experiences in New Zealand, ranging from mild inconvenience to loss of life. Previous studies have shown that risk communication can increase tourists' natural hazard preparedness, which can reduce their vulnerability to unanticipated events. Before the COVID-19 pandemic, the Chinese market was New Zealand's second largest, therefore understanding their risk perceptions and awareness of natural hazards, as well as their preparedness behaviour before and during their travel to New Zealand is a critical part of any future risk communication strategy. Drawing on a case study of Glacier Country, on the West Coast of New Zealand's South Island, this study sought to explore Chinese visitor hazard awareness, alongside perspectives of relevant tourism stakeholders.

To this end, semi-structured interviews were conducted with tourism stakeholders and governmental representatives with involvement with the Chinese market. Data from interviews was supported by a small-scale survey of Chinese tourists who had previously visited New Zealand. Results showed Chinese tourists have limited knowledge about local natural hazards while they perceive themselves as having sufficient hazard awareness and preparedness. This might be explained in part by the cultural background of Chinese visitors, but interviews reveal that there are also communication gaps within the tourism sector, and between the tourism sector and the emergency sector, compromising natural hazard communication effectiveness. These insights have led to the suggestion of a number of possible solutions to enhance risk communication and reduce Chinese tourist vulnerability during their visits to New Zealand.

Keywords: Natural hazard awareness; risk communication; Chinese tourists; West Coast

Tourist resilience to natural hazards in conservation areas of New Zealand   **Lydia Michela-Maireriki, Joanna Fountain, Stephen Espiner, Nicholas Cradock-Henry**

New Zealand's public conservation lands and waters– including its 13 national parks and other protected natural resource areas – represent a complex social-ecological system, involving interplay between people and places. Many parks and protected areas are dynamic biophysical environments with multiple, naturally occurring hazards, but they are also highly valued as settings for outdoor recreation and tourism. This intersection between recreational use and natural hazard potential raises an important research question, as well as a management challenge: To what extent are visitors to these conservation areas aware of and appropriately prepared for the hazards they may encounter? This study adopts a resilience lens to interpret data collected via a nation-wide online survey of outdoor recreationists' preparedness for, and responses to natural hazards in New Zealand's conservation areas. Implications for increasing the resilience of tourists and the broader tourism social-ecological system are discussed.

Keywords: tourist, conservation, recreation, resilience

We're all in this together? Community resilience in the face of ongoing crises: the case of Kaikōura   **Joanna Fountain & Nicholas Cradock-Henry**

The COVID-19 pandemic represents the second major crisis facing Kaikōura in the past decade. The pandemic was preceded by a large magnitude earthquake in November 2016 that damaged critical infrastructure and lifelines essential to the tourism industry, resulting in tourism expenditure and visitor numbers plummeting in this town reliant on the tourism industry. On the surface, the township bounced back remarkably well; the community mobilised its collective resources to cope with the crisis, and the earthquake provided opportunities for new collaborative initiatives and potential for transformation of the industry. Recovery marketing efforts were by most accounts a success, thanks to significant government support for the district, and within two years the tourists had returned, and visitor expenditure had surpassed pre-earthquake figures. Numerous accounts in popular media and academic research described how the tourism and hospitality sector and community seemed to have emerged from the crisis with greater resilience. While

the rhetoric for greater community resilience in Kaikōura was strong in the aftermath of the earthquake, the reality seems somewhat different, and the town's adaptive capacity to new crises has been challenged by the pandemic. Drawing on in-depth qualitative research, this paper presents a reflexive analysis of Kaikōura community's response to their second crisis in five years. We argue that to understand community resilience in Kaikōura we need to consider the uncomfortable economic realities, systemic inequalities and governance structures resistant to change, including community members' differing access to social networks and other resources which act as barriers to a more resilient future for the district.

Keywords: community resilience; earthquake; COVID-19, Kaikōura

17.   Changing communities and the impacts on place
Session Convenor: Alyssa Ryan School of Geography, University of Otago

Tourists and Cyclists: The role of the Central Otago Rail-Trail in small-town community resilience in Central Otago   Fraser Purves, Etienne Nel

Tourism has become essential to the economies of many small towns in New Zealand. This is particularly true of Central Otago. In the wake of structural economic change during the late 20th Century, it became clear that small regional communities would need to find alternative industries to support their small-town communities or risk population shrinkage due to a lack of viable industry. In Central Otago, structural changes and closure of the Otago Central Railway had the potential to lead to significant change. Instead, with the involvement of government and with support of local business, the design and implementation of the Otago Central Rail-Trail, and the rise in tourism numbers associated with this, has since meant that tourism has become a viable industry in towns in the region and has led to a degree of economic recovery or continuity that might not otherwise have been experienced. While the 20-year-long history and impact of the Rail Trail have been previously investigated, in more recent times, the construction of an extension to the cycling trail between Clyde and Cromwell has the potential to significantly alter the role of tourism in the area to greater exploit the business opportunities that the trail has created. This presentation details the impacts of the closure of the original railway and structural changes on the economy and communities of Central Otago before investigating the degree to which tourism and the Central Otago Rail Trail has impacted the region. Thereafter details about the new extension and its potential to alter the tourism-based economy of the region are investigated.

Keywords: trail tourism, small towns, regional economy, tourism development, Central Otago

'Big Things', Complex Shadows: investigating intersecting stories of place, identity, and erasure through large roadside sculptures in Aotearoa Maja Zonjić and Chloe Te Moananui

The first 'Big Things', or monumental roadside sculptures, were built in California in the 1920s to advertise roadside businesses and attract passing motorists. There are currently hundreds of such sculptures peppered across North America and Australia, and an additional two dozen in Aotearoa New Zealand. Similar to their Californian predecessors, in Aotearoa, local Big Things were built by struggling small towns during the economic recession of the 1980s to sell unique Kiwiana provincial identities. As such, they contribute to the production, performance, and tourism marketing of particular places and identities across the country. But whose stories do these novelty structures tell? And which narratives are obscured by their literal and proverbial shadows? Adopting a transformative epistemology, this emerging project attends to the ways in which Big Things can be an apparatus of forgetting settler-colonial histories to provoke a new way of thinking about hegemonic constructions of colonial objects and the way these obscure land dispossession. Weaving together feminist, participatory, and filmic geographies, this project seeks to re-centre alternative stories of place currently hidden in the Big Things' shadows. By amplifying counter-colonial narratives, this research examines how Aotearoa Big Things insidiously perpetuate silencing and erasure, for it is precisely their levity which makes them both excitingly visible as tourism markers and distinctly marginal as subjects of critical scholarly research. Internationally, this research provides a timely Antipodean contribution to contemporary scholarship examining the complex negotiations of decolonising public spaces, and the role that statues, however frivolous they may seem, occupy within them.

Keywords: Colonial statues; Film; tourism; identity

Greening Petro-Places in a Climate Changed World   Max Cohen

This paper considers the dynamics of "petro-places" – places and communities dependent on fossil fuels – in a climate changed world. Petro-places are conventionally characterized as experiencing instability - with booms and busts along the "resource rollercoaster" of volatile oil prices and living beside pollutive activities. As fossil fuel industries are adapting to a climate changed world through winding down operations, shifting investments into clean-tech, and/or expanding extractive activities in defiance of climate obligations, communities dependent on fossil fuel industries for local jobs, revenues, and supply-chains face uncertain futures. However, many communities are engaging with "just transition" policy processes to move into greener industries and/or receive compensation for their losses of industry. The paper specifically focuses on petro-places in Shetland, Scotland and Taranaki, New Zealand where both governments have engaged in dialogue and instituted official just transition commissions. As well as being home to significant oil and gas reserves primarily for export, both places are blessed with ample renewable resources like wind and marine energy. The paper compares the implications of renewable economies unfolding within petro-places for oil-dependent communities, resilience, and sustainability more broadly.

Keywords: Fossil-fuels, climate, energy, just transition

Moving Around Te Maunga   Heidi McLeod

Pressures of the pandemic, war, and climate change are forcing communities to reconsider the resilience of their food system. In some cases, people are opting for enhanced local supply chains. Recent research into small-scale growers in Taranaki identified the collaborative yet autonomous nature of this food sector. This presentation discusses a proposed initiative to increase access and equity in Taranaki's food system by establishing a mobile food service within the region. This could assist the flow of healthy, environmentally-friendly, locally-grown/produced food around the region. Communities are scattered around Maunga Taranaki, which creates some access challenges for consumers who are looking for affordable fresh fruit and vegetables produced locally. Understandably it is lower income, vulnerable and marginalised communities that suffer from this the most. Difficulty in accessing food contributes to their food insecurity. A mobile food service increases distribution and retail options for small-scale growers who are constrained ethically or logistically in their distribution of produce. It provides increased opportunities for small-scale growers to enter the market space with minimal barriers to retailing (little limit to scale of production, variety of produce, or frequency of production) that enables small-scale growers to benefit from the opportunity to grow and sell produce. The concept of food security through a mobile food service can be explored through three theoretical perspectives: meshwork theory (a relational networking theory), diverse economy theory (recognising alternative and diverse economic arrangements), and care economies theory (recognising the capacity of systems to create social benefits through networks of care.

Keywords: local, resilience, food security

The tensions between community and primary industry: A case study from Cromwell, Aotearoa New Zealand   Alyssa Ryan, Sean Connelly, Etienne Nel, Mike Mackay

In Aotearoa New Zealand, there is growing academic interest in the development of "the regions" and their small towns and settlements. The New Zealand government has also renewed its interest, as evident through the establishment of new regionally focused policies, programmes and investments. Consistent with this theme, this presentation reports the progress of a PhD study looking at the development of Cromwell (Central Otago, South Island), one of the fastest growing districts in Aotearoa New Zealand. Today Cromwell is best characterised as a multifunctional rural space where horticulture and fruit growing drive the local economy. This is further supported by wine, agriculture, commercial recreation, domestic tourism and, prior to the arrival of Covid-19, international tourism. The town is perhaps best known for fruit production as represented by an iconic 'big fruit sculpture', strategically located in the heart of the town, although, it's also gaining an international reputation for producing high-quality pinot noir wine. This research focuses on how changing land-uses, such as converting vineyard blocks to housing subdivisions, have created new opportunities and development for residents and newcomers. This also generated debate in the community about land-use change, as well as the district's reliance on seasonal workers, and local housing supply and affordability issues. It also points to how primary sector actors are helping to solve these problems while working with the local community. Findings are drawn from qualitative interviews with key representatives from the Cromwell district, including residents and primary producers.

Keywords: Community, regional development, small towns, primary industry

18.   Urban wellbeing in times of socio-ecological crises

Session Convenors: Gradon Diprose - Manaaki Whenua - Landcare Research; Amanda Yates - AUT; Kelly Dombroski – Massey University

Relational approaches in managed retreat planning and communication   Martine Barnes, Dr Deirdre Hart, Dr Kelly Dombroski

Managed retreat and other climate adaptations have become a focus of multiple branches of government in Aotearoa, New Zealand. The central government released a draft national adaptation plan and in Ōtautahi Christchurch the local council has begun community consultation in some areas. This has made it increasingly important for research into the planning and communication of proposed retreat schemes. My research focuses on building relationships to improve community engagement, which in turn can improve the planning of climate adaptations. This was done by bringing youth and experts together in an online forum where they could ask one another questions. These questions were related to managed retreat and youth engagement. This forum allowed both parties to learn and grow together, which is the basis for transformational relationships. This focus on relationship building and strengthening is known as relational approaches. Relational approaches can also lead to improved relationship dynamics, such as increased trust. Increased trust between community and government can improve engagement and public support for decisions. When work is done to encourage transformational relationships, collaborative work can also be encouraged. A transformational relationship is necessary for the collaboration required to address and adapt to climate change.

Keywords: Managed Retreat, Youth Engagement, Transformational relationships, Relational approaches, Climate adaptations

Coworking Spaces as extended spaces of care   Joke Methorst

This presentation explores how coworking space operators in Aotearoa New Zealand create places that can foster social change. Coworking spaces have become increasingly important sites for collaboration, innovation and networking, as the digitalisation of work leads to a reconfiguration of work, workplace and workers. The disruptions of the COVID-19 pandemic have further intensified and normalised the concept of remote working. The digital geographies of work, however, are largely driven by a hegemonic and techno-capitalist stance that marginalises feminist voices and devalues principles of care, affect and emotion under a capitalist neoliberal society. This presentation will use a feminist ethics of care perspective to look at affective principles and everyday practices of care shaping embodied experiences in the context of (sub)urban coworking spaces. By drawing on interviews with operators and ethnographic accounts of eleven coworking spaces visited in Aotearoa from March – June 2021, I explore the disruptive nature of coworking spaces as

places of care. In an increasingly digitalised and individualised world, this presentation aims to contribute to existing research by exploring everyday practices of care in coworking spaces as extended spaces of care.

Keywords: Coworking spaces, feminist ethics of care, remote work, spaces of care

A future for the library, a future for the city?   Salene Schloffel-Armstrong

As an institution whose potential future has been reasonably tenuous until recently, the public library now appears to be understood as an enduring material presence within the cities of Aotearoa. Libraries globally are increasingly celebrated as flexible, responsive sites that make up vital infrastructures of information and sociality. Additionally, libraries are becoming ever present in the experience, response to, and planning in the face of escalating crises relating to uncertain futures. The exact role the library may play in the ensuing decades may not be known, but it is increasingly likely to be present in that future, in some form. This paper engages with infrastructural and urban care research to analyse how the changing role and responsibility of the public library is being understood by library users. This research uses the library as a conduit through which broader ideas about urban living, care, and ambitious, alternative futures can be expressed. By drawing on a City Council submission process around the Wellington central library building in New Zealand, this research interrogates how futures are being imagined, both for public library services, and for cities themselves.

Keywords: urban futures, care, cities, libraries

Nature orientation and opportunity: A spatial analysis of who values and who has opportunity for satisfactory green spaces in proximity to their place of residence   Mirjam Schindler

Urban green spaces (UGS) provide important contributions to people and especially their wellbeing in times of crises such as the COVID-19 pandemic. Yet, UGS planning requires better understanding of by whom and where such contributions are being valued or missed. Based on a mixed-methods online survey and choice experiment with residents of Wellington in Aotearoa New Zealand, I analyse how much and why residents value UGS and their benefits when deciding where to live and how socio-economic and spatial factors might impact nature orientation and opportunity for satisfactory local UGS. Findings suggest that local UGS are an important residential choice criterion for most respondents, especially in the context of Wellington's intensification plans. However, the study shows that socio-economic and spatial factors significantly impact whether someone values and is satisfied with UGS in proximity to their place of residence. Findings call for careful scoping of a city's population and spatial structure when planning for equitable UGS provision. More holistic approaches to green space planning are needed to address contextualities and the complex interdependencies between nature orientation and opportunity and to plan for green space distributions that provide opportunities now and help shaping nature orientation for future generations.

Everyday interdependencies: unsettling storying about and within the city   Jule Barth and Sophie Bond

In this article, we ask who is re-imagining the city, and for whom? Cities are places that are created by everyday storying. Stories are generative, relational, living beings that meet in space and time to make place. Doreen Massey calls this a 'simultaneity of stories-so-far'. As such, the city is its people and their stories. We draw on ethnographic field work in South Dunedin, an area comprising several diverse suburbs in Ōtepoti Dunedin, Aotearoa New Zealand to explore the everyday stories as the already-existing imaginaries of the city, by the city. We offer stories of everyday interdependencies and care in the city, as people co-exist in their messy, uncertain, always-already interdependent lives. In centering these everyday stories and interdependencies, we trouble the critical academic impulse to story about and imagine the radical as an assumed good. At the same time, we recognize the need to avoid romanticising everyday stories from within the city when they reflect experiences of struggle and inequality, or even perpetuate injustices. How can the right to self-determination within the city be affirmed within this context? In this paper we explore the tensions between and within both storying about cities that re-imagines them and storying within cities in everyday life.

Supporting life in disaster-affected places: resident and community wellbeing initiatives   David Conradson

Amidst intersecting processes of environmental and economic disruption, and the ongoing effects of the Covid-19 pandemic, an increasing number of places in Australia and New Zealand might be considered disaster-affected. This paper develops a theorisation of such places, drawing on the interdisciplinary disaster studies literature, while also giving attention to the influence of mediatisation and collective trauma. A selection of resident and community wellbeing initiatives in these places is then examined, with a particular focus on Ōtautahi Christchurch. Some of these initiatives seem capable of enhancing wellbeing for humans and other species. Questions regarding their scalability and durability nevertheless arise, not least given the wider socio-political context in which they operate. As many of these initiatives develop within the interstices of the prevailing social and economic system, their ability to effect change on that system also appears quite variable. Some initiatives do seem to have wider political and social resonance, however, and the practices and relations which constitute them might usefully inform the creation of more sustainable and just forms of collective life.

Emerging transitions in organic waste infrastructure in Aotearoa New Zealand Cities   Gradon Diprose, Kelly Dombroski, Amanda Yates

Aotearoa New Zealand is at a critical juncture in reducing and managing waste. Organic waste in particular, has become an increasing matter of concern. Research and public awareness campaigns have highlighted the significant proportion of organic waste (primarily food waste) that has been, and continues to be sent to landfills, and the adverse effects in terms of greenhouse gas emissions, loss of valuable organic matter, and poor utilisation of finite landfill space. Concerns about organic waste also touch on wider issues, including how to repair and rebuild urban soils for food production, nature and people's wellbeing, and honouring Te Tiriti o Waitangi. Given these concerns, there is debate about what kinds of practices and infrastructure to invest in. In this article we explore some of the diversity of existing and proposed organic waste practices and infrastructures, focusing on three case studies; Auckland, Wellington and Christchurch. We show how debates about organic waste practices and infrastructure cut across three connected themes: collective action in place (that includes the non-human), shifting waste subjectivities (including growing new knowledgeable subjects and fostering agency), and language (including organic material as waste or resource). In this paper we document existing organic waste practices across the country that tend to 'fly under the radar', identify the rationalities that are shaping investment decisions, and contribute to wider theorising about the transitions needed for practices in place to respond to the Anthropocene.

Keywords: organic waste, mauri, transition, rationalities, subjectivity

Enhancing Social Resilience Through Urban Blue-Green Infrastructure in Ōtautahi-Christchurch Tyler McNabb

With the impacts of climate change and COVID-19 being felt worldwide, there has been a recent focus on the ways in which social resilience can be enhanced. It has been hypothesised by multiple scholars that there is a need for a paradigm shift in urban design towards multi-functional urban blue-green infrastructure (BGI), as the continued use of traditional urban planning is likely to exacerbate the risks, vulnerabilities, and inequalities associated with these hazards. However, this shift is yet to fully take place. This is due to key research gaps surrounding the existing lack of knowledge of the wider socio-ecological co-benefits of urban BGI amongst city-making actors, as these can span numerous scientific fields, while the societal benefits are often understudied and undervalued. As such, the overarching aim of this research is to identify the key benefits of urban BGI and highlight the ways in which these can contribute to enhancing social resilience. This will be discussed through two Ōtautahi-Christchurch-based BGI projects to highlight these relationships in practice. This research will contribute to the wider field of urban planning by highlighting the need for a paradigm shift in urban design towards multi-functional urban BGI to truly enhance resilience despite the multitude of hazards faced by communities.

Keywords: Social resilience, urban blue-green infrastructure, climate change mitigation, socio-ecological benefits, urban design and planning

Thinking with soils: Approaching urban food resilience through relationships with soils   **Sasha Goburdhone, Kelly Dombroski, Rita Dionisio**

This paper explores connections with soil in an urban environment as a way to think about food resilience. While previous literature has explored food resilience as exemplified by various community-led projects, this paper thinks specifically with soil to inform urban planning for food resilience, contending that the city is not just a human-made environment. This paper draws from ethnographic data gathered from an urban farm in Ōtautahi Christchurch, Aotearoa New Zealand. This research explores the way in which farmers and research participants relate to plants, compost, and soil. Here, thinking with soil is not just thinking about how much food is produced but largely how we relate to the lives in the soil. Thus planning for food resilience requires ethical engagement with wider socio-ecological systems that acknowledge biodiversity and sees plants, soils and people connected in multitudes of meaningful ways that are more than food production. Thinking with soils, then, radically includes the more-than-human in the urban environment as lives that matter for wider urban wellbeing and resilience, signalling towards ways of living with the more-than-human that move away from (indivi)dualisms and towards pluralisms. This can contribute to more holistic and inclusive ways of planning urban environments, especially as they relate to food resilience and urban soils.

Keywords: Soils, Urban Planning, Food, Resilience, more-than-human

Collaborative planning for ecological and socially equitable revitalisation of urban waterways: the case of St Albans Stream in Abberley Park, Christchurch   Dionisio R, Schindler M, Challies E, & A Yates

St Albans Stream traverses Abberley Park, a Christchurch heritage park, playing a vital role in local urban ecological networks. However, the stream shows declining water quality and low visibility in the park and neighbourhood. The social and organisational networks 'caring for' the stream are complex, sometimes clashing or intersecting, including residents, volunteers, associations and boards, various council teams and subcontractors. The ecological and social diversity, history, and inclusive designs seen at Abberley Park provide the basis for its conviviality, rich in multicultural, intergenerational and multi-species interactions. Along St Albans Stream, Abberley Park is the home of native species including birds and insects, and connects to various public spaces and ecological corridors through the local waterways. Such connections, however, remain largely unknown to residents and invisible to visitors, channelled underground through the stormwater network. The community is invested in finding best practices for collaborative approaches to revitalise More-than-human dimensions in the park and enhance their visibility in the urban fabric. This research takes a community partnership approach to incorporate local knowledge and aspirations in the aims and methodological design. The research investigates collaborative networks in place, interfacing management, volunteering, recreational and social activities in Abberley Park, relating to St Albans Stream. The main question is how this network of collaborative efforts can be strengthened for equitable outcomes with/in the local community, and with/for More-than-human and wider communities? This study contributes with key recommendations to advance collaborative planning focused on ecological and socially equitable revitalisation, supporting More-than-human representations in the city.

Keywords: collaborative, water ways, urban revitalisation, community-partnered, More-than-human

Inclusive places in Ōtautahi, Aotearoa. Developing and testing an accessibility analysis tool   **M Grace-Stent**

Accessibility should be at the core of any attempts to make places inclusive. 'Inclusiveness is both spatial and social, and including diverse people in community places and spaces is key to urban vitality. Accessibility research often focuses on single aspects of peoples lives that have an impact on how they engage with their communities and what places they are able to move through or visit. However, this singular focus can often miss the ways that peoples' lives are impacted by a variety of accessibility barriers. It is also important to look beyond the physical infrastructure and also the social and cultural environments that impact the ability and willingness for people to visit various places. Identifying and removing key barriers to accessibility is important when designing public spaces people move through and spend time in. Barriers, like accessbility needs, are intersectional and diverse. Recognising this intersectionality and the different ways that these issues can be addressed is important to creating solutions that work for everyone. This project focused on creating a accessibility analysis tool that could be used to better understand places in Ōtautahi. Using a range of different accessibility issues and the ways they they compound with each other to impact people's experience of places.

Keywords: Accessibility, Inclusivity, Inclusive places, place-making

Housing affordability and post-political silence in New Zealand Colin McLeay

By 2007, media accounts of isolated housing emergencies in regions around New Zealand had expanded to become reports on the existence of a national 'housing affordability crisis'. Media coverage, coupled with evidence of increases both in property prices and in the ratio between house prices and median incomes, were a catalyst for government engagement with concerns about housing affordability in New Zealand. Between 2008 and 2022, both centre-left and centre-right governments introduced policies designed to improve housing affordability, with legislative resolution being focused on the efficiency of planning processes and limitations of land supply. In engaging with 'solutions to affordability, politicians tended to avoid direct identification of problems. Rather than being identified with clear names, housing problems were referenced in oblique terms, being left as undefined signifiers. Thus, such terms as 'affordable housing' and 'housing crisis' remained untethered. Viewed through a post-political lens, the absence of proper names signals a loss of democracy. This is because it is only through naming problems that people, places or problems can 'have a voice' and be part of participatory democracy. Drawing on parliamentary debates and speeches (Hansard), this paper explores definitional absences in the (post-) political discourses that framed central government engagement with the 'housing crisis'.

Keywords: post-politics, housing, New Zealand, naming

An indicator-based system dynamic model to assess road user vulnerability to floods   **Shashini Ranabahu, John Lowry, Imran Muhammad**

There is extensive research that assesses the vulnerability of road transportation worldwide. However, research focusing on road user vulnerability is rare in developed and developing countries. Moreover, the vulnerability studies that attempt to forecast the future vulnerability dynamics as the contributing factors change are even rarer. Therefore, this paper uses a system dynamics model to assess road-user vulnerability to flooding. This study uses an indicator-based method because of its practicality and accessibility, especially in the case of developing countries. Indicators consist of the ability to illustrate the status or level of a study property or a variable. In this model, the Vulnerability Index (VI) is a Stock determined by a combination of variables, including road users' socio-economic and travel aspects. The Stock Flow Diagram (SFD) quantitatively estimates the final VI. And the Causal Loop Diagram (CLD) demonstrates the interaction between the socio-economic variables to form the VI. Taking the Western Province of Sri Lanka as a case study, this research uses data from the JICA Comtrans Project 2013, the Sri Lankan census data and the data from Road Development Authority. We apply the system dynamics models to three different urban, suburban, and rural traffic zones. The model simulates the evolution of VI from 2012 to 2050 based on changes in the growth rates of each variable. This type of model with a temporal dimension can help the policy planners to understand the trends of social dynamics of the road transport system.

Keywords: Flood, vulnerability, road users, System Dynamics Modelling, temporal

Conceptual advances and insights from the Special Issue 'Enhancing Disaster Risk Reduction and Community Resilience for Sustainable Development'
     Angelo Jonas Imperiale

Drawing on the papers that were selected for the Special Issue 'Enhancing Disaster Risk Reduction and Community Resilience for Sustainable Development', we will present and share new conceptual advances and insights on community resilience and community resilience-building strategies for disaster risk reduction (DRR) and sustainable development. This Special Issue, which we guest edited for Sustainable Development, collected theoretical and empirical research on the social dimensions of risk and resilience; and on the likely governance and assessment strategies to enhance DRR, community resilience and sustainable development in localities and across multiple governance levels. We will share these conceptual advances and insights, together with those evidence-based reflections on lessons learned from past failures and from good governance and development practice that were presented and discussed in our Special Issue.

Keywords: community resilience, disaster risk reduction, social learning, sustainability transformation, community engagement

Driving forces of population change following the Canterbury Earthquake Sequence, New Zealand   **Jessie Colbert, Katarzyna Sila-Nowicka, Jing Yao**

In 2010 and 2011 Christchurch was hit by two of the deadliest and most damaging earthquakes in New Zealand history, collectively known as the Canterbury Earthquake Sequence (CES). Many people were displaced from their homes following the CES and as a result there was an out-migration of people from the areas most damaged by the earthquakes, and changes to places of residence. This research project aims to investigate the spatial changes in population following the CES, using a multiscale geographically weighted regression (MGWR) analysis approach to assess if there is a relationship between population change within the Canterbury region, and potential driving forces. This is assessed across two time periods: 2006-2013 and 2013-2018. The results of this research could be used to inform future policy and planning decision making regarding earthquake events, and to develop more effective land use policy for post-disaster recovery in New Zealand.

Keywords: Canterbury Earthquake Sequence (CES), New Zealand, population change, spatial analysis

19. Honouring Te Tiriti: enabling holistic environmental governance in Aotearoa New Zealand

Session Convenors: Nick Kirk, Lara Taylor (Ngāti Tahu, Ngāti Whaoa, Ngāti Pāhauwera, Ngai Tahu ki Murihiku) (Manaaki Whenua Landcare Research)

Partnering or Prohibiting: The barriers to fair and effective representation through Māori wards and constituencies (MWC)   Danielle Lucas

In 2022 local government will have more Māori wards and constituencies (MWC) than ever before. Although the number of representatives for Māori will increase, questions remain whether this representation upholds Te Tiriti principles and therefore if it enables holistic environmental governance by local councils. This research combines insights from interviews, literature, and local government data to assess barriers to fair and effective representation through three phases, the establishment, implementation and the use of MWC. It discusses how Māori communities face racism and a lack of consultation through a backdrop of exclusion and low representation at the establishment phase. How, during the implementation phase, calculations in the Local Electoral Act 2001 limit the amount of representation possible, while when MWC are in use, Māori members confront issues that limit their effectiveness. Combined, these barriers show that there is an immediate need to reform MWC to provide fair and effective representation on local government for tangata Māori and highlights further research questions to adjusting the structure of MWC. "Kua tawhiti kē to haerenga mai, kia kore e haere tonu. He nui rawa o mahi, kia kore e mahi tonu."" ""You have come too far not to go further, you have done too much not to do more" – Ta Himi Henare"

Keywords: Local Councils, Māori representation, Te Tiriti Principles

Kia Manawa: Rising to the challenge in cultural impact assessment   Dyanna Jolly and Michelle Thompson-Fawcett

Cultural impact assessments (CIA) are a well-established part of the environmental management system in Aotearoa New Zealand. They provide a process and framework for mana whenua to identify effects of an activity or plan themselves. The widespread use is motivation to consider accomplishments: how far do CIAs go in terms of delivering outcomes mana whenua define as substantially positive? More specifically, to what extent are CIAs supporting environmental decision-making that reflects and honours Te Tiriti o Waitangi? These questions are important because mana whenua are questioning the merit of continuing to invest significant time and resources into a tool that produces highly variable outcomes. In this presentation we discuss recent research undertaking a critical assessment of CIA effectiveness. Research findings show that while there is institutional space for iwi and hapū to generate their own assessments, implementation lags behind practice. As a result, the tool has limited efficacy to reliably or substantially enable mana whenua to contribute to decisions on how, where or if development happens in their takiwā. As a way forward, we show how honouring Te Tiriti is the pathway to reconceptualise CIA as Indigenous impact assessment, and to rise to the challenge of a Te Tiriti-centred planning system that enables co-design and co-production of impact assessment processes and knowledge."

Keywords: Cultural impact asssessment, Indigenous planning

Walking Through the Doorway: Te Tiriti Partnership in practice   **Mereana Berger & Alice McSherry**

Over recent years, there has been an increased need and desire for movements that foster co-governance arrangements and realities. These movements seek to redress power imbalances in environmental management in Aotearoa New Zealand. The founding agreement of Aotearoa as set out in Te Tiriti o Waitangi is often conceived of as a doorway to collaboration and partnership between mana whenua and tangata tiriti. However, there is a gap between policy and practice when it comes to the co-management of te taiao (the environment). This gap is created by inequitable power relations within exclusively top-down governance structures, which see Te Tiriti partnership as a relationship exclusively between mandated Iwi entities and Government. The spirit of Te Tiriti partnership, however, must also be felt at a local, emplaced level in order for genuinely meaningful ecological relationships to be realised and actualised in practice. In this presentation, we share insights and reflections from the Waiheke Marine Project that aims to bring ahu moana to life around the coastlines of Waiheke Island, to embody the spirit of te tiriti partnership at a grassroots level and facilitate generative socio-ecological change. This project explores the tangible (ie. ensuring ongoing tino rangatiratanga for iwi and hapū) and intangible ways (ie. ensuring the ability for plural worldviews – e.g. to understand and therefore respond to concepts like mauri) so that mana whenua and local community can work together and walk through the Te Tiriti doorway towards the regeneration of te taiao in a way that leaves no one behind.

Keywords: Te Tiriti o Waitangi; partnership; collaborative environmental management

Moving towards Te Tiriti in a Crown Research Institute: Reflections from a Māori human geographer   **Melanie Mayall-Nahi**

Māori are significantly under-represented in Crown Research Institutes (CRI's). Research by McAllister et al., (2022) highlighted the inequities that exist for Māori within the CRI system. Although research policies are being put in place to better honour Te Tiriti, this can come at a cost for Māori researchers expected to uphold the integrity of Māori research in the science sector. This presentation shares some reflections from a Māori social scientist working in a CRI, involved in the shift towards better fulfilling obligations to Te Tiriti. The speaker will reflect on personal experiences as an early career researcher, and the journey from academia to a CRI. Further reflections will be made on the field of social science and its place within a CRI. And finally, the speaker will share reflections on navigating the science sector as a Māori researcher.

Keywords: Māori Research, Crown Research Institutes, Social Science, Science Sector, Early Career Researcher

20. Resilience, Connectivity and Legibility of Cultural Landscapes: Expression of global concepts in Aotearoa New Zealand
Session Convenor: Colin Meurk

National Park Cities – A Disruptive Aspiration for Ōtautahi-Christchurch and Beyond?   Colin D Meurk and Kamala Hayman

There have been Garden cities, Biophilic cities, Eco-cities, and ecological emergency declarations! Three years ago, London declared itself a National Park City (NPC). This was nothing to do with a seizure of land, colonialism, or interference with people's rights and freedoms. On the contrary, it was specifically to reference and celebrate a city's natural assets that collectively are of national significance - with abundant green space, gardens, trees, and biodiversity embedded in the urban landscape, and more particularly in the peoples' consciousness, their daily lives, identity, culture, eco-literacy, sense of stewardship, and wellbeing across all dimensions. In NZ, this might translate to the whenua, taiao, mauri and kaitiaki. It purports to promote socio-cultural cohesion in policy, planning and implementation, and moreover an eco-friendly, resilient, and welcoming brand that could be marketed - as a place to be and visit. In a sense it is about restoring the village in which everyone is contentedly working together for nature and the common good. It is also about attracting attention by disrupting cherished and conventional notions of nature separated and remote from people – in some distant mountains enjoyed only by a privileged few. As Waiariki-BOP have demonstrated, it won't go anywhere without leadership from Mana Whenua, the local Councils, and the citizens. Ōtautahi-Christchurch has over 16 identified credits towards the NPC Charter. We have started the process which we will describe, providing a model for any NZ city that wishes to follow suit. All would be eligible; all can be legible.

Keywords: Greening cities, Nature, National Park City

Te Pātaka o Rākaihautū Banks Peninsula Geopark Model: Learning in the Landscape   Sam Hampton

2018 saw UNESCONZ recognition that Geoparks have a place within the Aotearoa. Internationally Geoparks develop their own model dependent on their locality and purpose. Te Pātaka o Rākaihautū Banks Peninsula Geopark is over a decade in development. This time has enabled investigation, community engagement, collaboration, and hui, and has led to the designing of a holistic learning Geopark model. Te Pātaka o Rākaihautū Banks Peninsula Geopark model looks to: connect New Zealanders with the places and stories of Banks Peninsula; create kaitiaki (guardians) for the region's geology, landscape, flora, fauna, history, and communities; promote the unique landscape to national and international prominence; and attract visitors to spend more time in the region (high value, slow tourism). On ground the Geopark is formed by Geosites, where linked interpretation panels (up to 12) share intertwined stories (past, present, and future) at places of connection. These Geosites then provide open-air place-based learning opportunities, and are linked to further online resources and information.

Keywords: Geopark, learning, education, holistic, stories

Waitaki Whitestone Geopark - our journey   Sasha Morriss

The Vanished World Centre in Duntroon was established over 20 years ago by local volunteers. This centre showcases the geology and paleontological highlights of the area. The Vanished World Fossil Trail booklet was published, and accompanying Heritage Trail developed. Together, these give insight into the ancient formation of various geological features and landscapes throughout North Otago.

The opportunity arose in 2018 to apply for UNESCO Global Geopark status. It became apparent that the Waitaki District has a range of potential geosites outside of the original geographic extent of the Vanished World Trail. This resulted in the recognition that the rich geodiverse heritage throughout the entire Waitaki District adds to the story of the formation of our continent Zealandia, and this, along with our cultural and social stories is what makes the entire Waitaki District a geopark. In 2019 the Waitaki Whitestone Geopark Trust submitted its dossier to UNESCO to become New Zealand's first UNESCO Global Geopark. In July 2022, an in-person UNESCO evaluation assessment was carried out. Find out about our journey seeking to become a UNESCO Global Geopark where we aim to deliver our vision - 'where people come together as kaitiaki [guardians] of the land and its stories'.

Keywords: geopark, geology, landscapes, heritage, community

Plants of Place: (Re)Planting our natural heritage in urban Aotearoa New Zealand   Maria Rodgers, Maibritt Pedersen Zari

Globally, the threat of climate change has led to urgent calls for environmental action which is likely to lead to increased greening of cities. In Aotearoa New Zealand the benefits of this planting could go beyond climate adaptation and mitigation and contribute to decolonisation, environmental and spatial justice, and human wellbeing. Past and ongoing injustices have disconnected Māori from their land. Natural heritage is part of Māori identity, but has mostly been

erased from urban areas, where a high proportion of Māori live, through the process of colonisation. Many plants growing in urban areas represent the colonial situation rather than natural heritage. Many of the native plants that have been planted are from other parts of Aotearoa and are not, as termed here, 'plants of place'; they were not naturally occurring in the past and are not part of the natural heritage of the place. This paper discusses how global concepts to respond to climate change can be adapted to have other positive impacts in Aotearoa New Zealand. It establishes reasons for further research to determine the benefits, and opportunities of celebrating natural heritage and of planting 'plants of place' in our urban areas through landscape architecture and planting design. The research suggests that making pre-colonial natural heritage visible, and so providing opportunities for people to engage with their natural heritage, is likely to have multiple positive benefits in addition to climate change mitigation and adaptation.

Keywords: Climate change, natural heritage, plants, place identity, landscape architecture

Green Space Environment, the Ombudsman and the Matter of Standing   Christopher Kissling, Anne Dingwall

This paper concerns the subject of environmental advocacy on behalf of public green spaces, including the matter of standing with respect to complaints to an Ombudsman, as set out in section 17 (1) (e) of the Ombudsmen Act 1975. The issue of speaking on behalf of the environment was considered by the UK Supreme Court in 2012. The case provides insight as to how New Zealand might adopt a similar approach to protecting and conserving our environment when reviewing the relevant New Zealand legislation. We cover specific concerns regarding Christchurch's heritage-listed Hagley Park and its management plan required under the Reserves Act 1977. With urban residential intensification pressure, the need to protect and provide for associated public urban green space is a contemporary issue that cannot be ignored.

Keywords: Environmental advocacy, Green spaces, Standing, Ombudsmen Act

21.Negotiating the cross roads of resource use changes and transitioning behaviours: contesting risks and uncertainties

Session Convenors: Richard Le Heron

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The two workstreams (Social science and Matauranga Maori) from the Risk and Uncertainty programme of Sustainable Seas National Science Challenge Phase 2 that have collaborated to organise the session extend a warm welcome to anyone who would like to attend the session. The session ends with open discussion – an opportunity to critique the findings and suggest other directions of action! Contemporary Aotearoa New Zealand is a unique socio-ecological site to examine contestation over risk and uncertainty as understood from personal positioning in decision making situations, the enduring influences of disciplinary and professional body training and three highly influential World Views (Dominant social paradigm, New environmental paradigm and Te Ao Maori). Recent calls for natural resource use changes and the adoption of transitioning behaviours question existing 'development processes and management practices' of land, coast and sea. The societal problem is viewed by many as clashes across private and public interests and Maori interests and Treaty obligations. We ask why are investment patterns and investor attitudes towards present resource uses so stable in the face of mounting pressures for alternative futures? This situation is a new order of magnitude and complexity for decision makers. But what do we know about the socio-ecological origins, directions and outcomes of the increasing tensions? How adequate are existing local and national frameworks and available knowledge for any resetting of an entrenched system of natural resource management? Who might be involved and on what terms? What capacities and collective imagining are needed to devise, create and engage in the monumental rethink of decision-making at all levels and scales implied by the calls? Our Sustainable Seas National Science Challenge Phase 2 research on risk and uncertainty identifies two especially troubling concerns: little is known about how the existing worlds of legislation, formal and informal policy settings and decision-making processes actually work, and, this situation makes it difficult to make progress on framing and forging new kinds of 'development' futures. Perceptions of risk and uncertainty are the way changes to something are valued or a desired future outcome are understood and expected to be experienced. Yet in decision situations the chances are the risks are argued about, a lot. Why so, we ask? From the literature and our research, we can point to three 'big' concepts or influences that suggest that others think differently. It isn't very clear how visible the influences are or how consciously they are recognized. The influences are – personal positioning, academic disciplines and professional bodies and a background of worldviews. Our aim is to provide pre-conditions and some first steps for cross learnings about and across the three influences.

Why do we argue about risk? The invisibility of Worldviews in marine decision making   Richard Le Heron

Little is known about the role of World Views (WVs) in shaping individual, group, and societal behaviours. Yet they are so important because they do hidden work in providing justifications for patterns of investment and behaviour in land, coastal and marine settings. They give 'invisible' permission to behave in the world in certain ways and to work on the world guided by hidden assumptions. The paper draws on findings from the Sustainable Seas Phase 2 'Risk and Uncertainty' project where we have been exploring the influences of positionalities, WVs and disciplinary framings on decision making. We explore in this paper the ordering principles of three broadly acknowledged WVs – a Dominant Social Paradigm WV, New Environmental Paradigm WV and a Te Ao Maori

WV and the nature of interplays and evolving pluralities that might result from their co-existence. This is a first comparative of the three influential worldviews in Aotearoa.

Expressions of Worldviews in consenting processes: the applications and submissions relating to   the Okura subdivision and Chatham Rock Phosphate mining   June Logie

A pioneering methodology was designed to examine consenting processes embedded in the Resource Management Act 1991 and Exclusive Economic Zone Act 2012 where risk and uncertainty perceptions are expressed and contested as part of legal deliberations. The methodology makes visible three interacting and intersecting influences: the positionings of those involved in consenting decision processes, the role of disciplinary backgrounds in circumscribing responses in decision processes and the largely unknown filtering of environmental and economic options that come from three worldviews (dominant social paradigm, new environmental paradigm, Te Ao Maori) held in Aotearoa New Zealand. How submitters selectively deploy evidence to influence decision makers in the consent processes provides a preliminary and 'first look' framing and interrogation of WVs being put to work. This window on how consenting 'really' works is a first in the Aotearoa New Zealand context.

A guidance framework to expose invisibilities in perception of risk and uncertainty   Erena Le Heron

The paper outlines the procedures followed in developing a Guidance Tool to facilitate in-depth understanding when assessing how World Views intrude on and shape choices and decision making processes in coastal and marine spaces. Our research shows that many decision-making processes are influenced in a variety of ways. We unpack the invisibilities that influence decision-making through the following key themes: What is evidence? How are treaty partnerships enacted? What are tools? How does process constrain content? What framing occurs? What balance of individual versus collective rights are supported? What is the underling conflict about? The approach taken is aimed at resourcing decision makers in any contested situation where reflective and critical dialogue is difficult to achieve.

Risk and Expertise: Fonterra as risk taker and risk manager   Stuart Gray and Richard Le Heron

In May 2022 Fonterra's CEO announced a record milk price forecast for its farmers but with a wide possible range, explaining this by saying "the company was operating in an increasingly volatile global environment and is managing a wider range of risks than usual". Our contention is that over the past decade or more Fonterra's expertise was continuously challenged by disruptive events and developments in its overseas and domestic operating sphere. Internationalisation of the business, political disruption, natural disasters, changes in strategy by senior management, ongoing competitive challenges by

country, continent and product offerings, environmental pressures, production pressure from growth in milk supply, global supply chain consolidation, cross-border regulatory changes and not least a number of food safety failures all severely tested the cooperative's adeptness at responding, repositioning expertise where needed and raised questions about Fonterra's level of risk management capability for such a complex global food business. We examine two pivotal food safety failures (San Lu and melamine, whey products and a mouse) that gave rise to deep reflection within Fonterra and critical reviews by government and others and led to consequent embedding in the business of extensive risk management strategies and frameworks. We conclude by suggesting that Fonterra's experiences points to the need for economic geographers to openly acknowledge the role of risk in its many forms and to encourage a risk-aware approach when debating the future direction and growth of dairying and the wider agri-food sector in New Zealand.

Keywords: Risk Management, Fonterra, Dairy, Agri-food, Economic

22.The Legal Geography of Braided Rivers – The Land the Law Forgot - Panel

Session Convenor: Ann Brower

Panellists: Aimee Calkin, Connor Fraher and Renate Vosloo; University of Canterbury

Braided rivers are quintessentially Aotearoa New Zealand, yet visible from space. They are globally rare, yet capricious in nature. They are topologically, geomorphologically, ecologically, economically, and legally complex. Changing land use and ownership on the margins of braided rivers are allowing creeping, yet measurable, declines in the resilience of New Zealand's braided rivers. Physical geography offers a strong understanding of physical forces that interact to shape braided rivers; yet climate models suggest our understanding might be waning in the face of climatic change.

This session proposes to explore the legal, economic, cultural, and social factors that shape braided rivers' ever-shifting bed, banks, and margins. In other words, we propose to start a legal geography of braided rivers. Critical to this is understanding how changes in land use and ownership on the 'dry', ever-shifting margins of the braidplains of braided rivers affect the dynamics of the 'wet' parts of the braidbeds, and how small changes in the wet-dry intersection affect the landscape.

Our session will include explorations of the following:

The contemporary legal geography of Canterbury's braided rivers – the Dewhirst decision

Climate change adaptation, braided rivers, and community engagement

National survey of intensification and encroachment into the braidplain

Case studies of change in the Waimakariri River

23.Global management consultancies and extrastate governance - Panel

Session Organiser: Nicolas Lewis University of Auckland Economic Geography

Panellists: Angus Dowell, The University of Auckland; Russell Prince, Massey University; Tom Baker, University of Auckland; Emma Sharp, University of Auckland and John Reid, Ngai Tahu Research Centre, University Of Canterbury

Propelled by globalisation and the privatisation of state administrative and problem-solving functions, global management consultancies (GMCs) have become a dominant force in contemporary 'extrastate' governance. In this panel session, we ask what geographers might make of the prominence, size, technical capabilities, and global reach of GMCs. What does it mean and how does it matter that they have expanded their remit from auditing accounts to advising on corporate organisation, evaluating investment proposals, producing strategic analyses of social change for corporate and state actors, and launching think-pieces that envisage and frame corporate and social futures. What are the implications for Aotearoa that these firms have come to 'imagineer' our futures under taglines such as 'solving the toughest challenges' and building 'a better working world for all'. What is the geography of the distinctive techno-political power they exercise, and what conceptual metaphors can we imagine to capture that geography?"

Keywords: Global management consultancies; governmental formations; extrastate; knowledge infrastructure; imagineering futures

24.Borders, Boundaries and Transitions

Session Organiser: Sarah Edwards Lincoln University

Global Studies and Human Geography: A view from Aotearoa New Zealand   Jamie Gillen

This article introduces global studies to an Aotearoa New Zealand audience with the goal of thinking through what human geographers might learn by comparing elements of global studies with their own discipline. It begins by reviewing global studies and its establishment at the University of Auckland and then considers how global studies relates to human geography. A number of areas of mutual benefit are identified. The relationship between global studies and human geography is important to consider during a time of change within higher education in Aotearoa, a point discussed in the conclusion.

Keywords: global studies, human geography, disciplines, higher education

A discourse analysis on narratives of human trafficking from non-governmental organisations and news media organisations in Aotearoa New Zealand.
   Grace Morton

Two prosecutions of human trafficking in 2016 and 2020 highlighted the occurrence of the human rights abuse in Aotearoa, fuelling an increase in discussion and research. When examining human trafficking, it is important to dissect the discourses around it that are promoted by key groups. Discourse is a tool that is utilised to validate approaches to development, rationalising actions through the promotion of societal norms such as the framing of human trafficking as a foreign rather than local issue. However, research into the discourses of two public-facing institutions - non-governmental organisations (NGOs) and news media organisations (NMOs) - is lacking. As NGOs and NMOs in Aotearoa play an important role in contributing to public awareness of human rights abuses, it is critical to analyse the spatio-temporal contexts and power structures reflected in their narratives, and whether they may be perpetuating norms around human trafficking that negatively impact how the issue is perceived. The discourse analysis will be based on four events relating to human trafficking in Aotearoa: the convictions of Faroz Ali in 2016 and Joseph Matamata in 2020, the petition for modern slavery legislation in 2021, and the consultation on modern slavery legislation in 2022. Utilising a human rights-based approach - which promotes participation, accountability, non-discrimination, empowerment, and legality - the research will examine how discourses may have changed throughout the four events. Through this analysis, this research project aims to encourage conversations about NGOs' and NMOs' discourses, and a reflection on whether increased exposure to an issue shifts narratives and vice versa.

Keywords: Human trafficking, Discourse analysis, Non-governmental organisations, News media organisations, Aotearoa New Zealand

Airport futures in a changing climate   Amanda Thomas, Annie Te One, Maria Bargh

Airports provide critical infrastructure for connecting island nations with the world, are spaces where borders are negotiated, and also enable the carbon intensive aviation industry. At least three international airports in Aotearoa New Zealand are planning expansions, and raising question of environmental justice – who benefits from expanded airports, at what cost to whom? Underpinning all of these issues are questions of tino rangatiratanga and sovereignty: how did the land come to be held by airport companies? What are mana whenua aspirations for that land, but also for how borders are negotiated, and climate change mitigated? This presentation draws together ideas about spaces of climate change contradiction and environmental justice through a feminist political geography framework. Stuart et al (2020) describe the way solutions to climate change are constrained within the dominant paradigm of capitalism. This contradiction makes it hard to imagine how things might be different. Maintaining the status quo means luxury carbon emissions (e.g. flights to resort holidays) are rarely debated, while the mundane effects of these emissions and their enabling infrastructure are experienced unevenly. Feminist political geography is concerned with the way power plays out at multiple scales, from global through to bodies. Through this approach we will explore airports as spaces of contradiction, (in)justice and bordering.

Keywords: airports, climate justice, political geography, borders, sovereignty

Anticipating Resilience: Understanding green hydrogen in New Zealand's energy transition   Abbi Virens, Lydia Le Gros

As a renewable energy vector, green hydrogen and its technology are associated with a wider discussion involving New Zealand's carbon zero energy transition. As an emergent technology, green hydrogen's potential can only be understood through the claims which are ascribed to it. To help us explore the claims and critiques associated with this technology we conducted interviews with green hydrogen 'experts' within New Zealand. How participants anticipated the potential role of green hydrogen resulted in divergent ways of envisioning socio-ecological resiliency. Anticipation is an important element in understanding climate change, both in its ability to gather hopefulness and possibility but also create doubt and apprehension. Exploring the anticipation of green hydrogen technology helps us to understand the ways in which technologies can direct our understandings of future energy transitions. Taking a critical approach, this paper acknowledges that energy transitions (both past and potential) are a result of technological, social and political change. Thus, how social relations are seen to interact with technology can reveal how these socio-techno relations are anticipated to continue into the future. Discussions surrounding green hydrogen offer a unique place from which to discuss the divergent ways of understanding the future of energy resiliency in New Zealand.

Keywords: energy, green hydrogen, anticipation, science and technology studies (STS), climate change

Farm borders and biosecurity bordering   Sarah Edwards

Aotearoa New Zealand's "team of 5 million" is frequently mobilised to defend the nation's borders from the biological threats posed by pests, pathogens and weeds. While this need for a team approach has been central to the recent Covid-19 pandemic response, it has been evident in biosecurity policy for some years, as exemplified by the Biosecurity 2025 strategy: Ko Tātou/This is us. As such, the border is everywhere, and its integrity involves everyone. These observations resonate with Critical Border Studies (CBS), particularly research that interrogates how "bordering" is increasingly integrated into the practices of everyday life. While this area of scholarship tends to focus on studies of human migration, in this paper I will consider how insights from CBS can inform critical biosecurity studies through an examination of the National Animal Identification and Tracing (NAIT) scheme. As part of a broader biosecurity surveillance system, NAIT acts as a filtering technology, separating healthy from unhealthy bodies and enabling or disabling movement accordingly. These practices of "firewall bordering" are themselves spatially distributed across sites that extend inwards and outwards from the farm gate. By following animal movements across these sites I will highlight the emergence of "grey zones", and the consequences of mis-identification at the "biometric border". The insights and questions raised through this analysis suggest that critical biosecurity scholarship would benefit from more direct dialogue with CBS, particularly by attending to the everyday practices, and intimate experiences, of biosecurity bordering.

Keywords: biosecurity, bordering, animal traceability, agriculture, disease

25.Sustainable Agri-Food Transitions

Session Organiser: Sarah Edwards Lincoln University

Applying social science at the farm gate: reflections on a wellbeing approach to resilience in hill country farming   **Katherine Dixon, Ange McFertidge, Madison Seymour**

New Zealand agriculture is facing large-scale transitions to become a more sustainable industry as a result of climate, market and regulatory pressures. To date, there has been a focus on economic and ecological metrics to measure such sustainability transitions, for example through monitoring of animal production efficiency, greenhouse gas emissions, soil health and water quality. We identify and address a major gap in these metrics: the health and wellbeing of farmers, or in other words, those who are at the coal-face of this agricultural transition. As part of the social science team of the Hill Country Futures Partnership Programme, a 5-year co-funded research programme, we created a wellbeing assessment tool that uses farmer wellbeing as a lens to view the resilience of the farm environment, business and the farmer themselves. Based on subjective measurements, it was designed to help meet the need of integrating farmer health into core conversations of resilience and sustainability transition in the industry. In this paper we reflect on our collaborative journey to co-create such a tool with farmers and industry leaders and the challenges of calving out a place for subjective metrics to be valued alongside traditionally objective economic and ecological metrics. In discussion of this applied research journey and its outcomes, we reflect on the role of social science more widely in the sustainability transition of hill country farming.

Keywords: wellbeing, resilience, farming, collaboration, social science

Just Transitions: A case study of the dairy industry in Aotearoa New Zealand   **Milena Bojovic**

This paper, part of my PhD thesis, explores how the South Island of Aotearoa New Zealand can transition to more just and sustainable dairying futures. Dairy in Aotearoa is one of the nations most prized commodities and contributes a significant share to world dairy production and trade. Dairy milk from Aotearoa is enmeshed in extensive global trade networks, supplying to major industrial food producers such as Nestle. One of my key research questions explores the opportunities for Aotearoa's food production systems to transition away from intensive animal farming towards alternative protein production with a focus on plant-based (such as Oat milk) and synthetic/cultured proteins. The research questions are set against the backdrop of the environmental impacts of intensive livestock industries which are unprecedented in terms of the scale and effects from GHG emissions, pollution of waterways and biodiversity loss. To explore these issues, I engage in qualitative research methods to identify mutli-stakeholder perspectives to map out transitions

pathways for environmental and social sustainability for human and non-human others. Bringing non-human entities into the analysis is a key part of my project, particularly as existing transitions studies literature tends to focus on human interests (social, economic and environmental justice) with limited focus on how justice can be applied towards non-human others. The aim of my research is to identify possible policy interventions that can facilitate moving beyond intensive animal agricultural food production amidst the imminent challenges of our uncertain environmental future.

Keywords: just transitions, dairy, alternative proteins, agriculture, climate change

Grubs up: How insects are 'becoming food' in Aotearoa, New Zealand   **Caitlin Hyde, Roslyn Kerr, Sarah Edwards, Susanna Finlay-Smits**

A growing tide of environmental concern and a steadily increasing and hungrier world population has led to calls for innovative food solutions. One idea gaining traction is edible insects. Championed by researchers and entrepreneurs as a more sustainable alternative to traditional agricultural livestock, insects are thought to be highly nutritious, with proteins, minerals, and vitamins similar to or better than beef. Nevertheless, the edible insect sector in New Zealand is struggling to expand. This research explores the current practices around edible insects in New Zealand in order to understand how insects 'become food' (or not). We trace the materiality of foodstuff to the point where it is eaten, allowing a spotlight to be turned on the actual practices of insect eating. This approach is useful for exploring novel or uncommon foods such as edible insects. Drawing on 26 interviews with those immersed in the sector including researchers, farmers, retailers, chefs, and insect eaters and one year of observations of an edible insect research group, the insights from this study contribute to the geographical literature on 'becoming food', highlighting the complexity and situatedness of edibility.

Keywords: insects, food, practices, materiality, sustainability

Quantifying, mapping and modelling of agricultural pathways to resilience: Example of the arable sector.   **Clémence Vannier, Thomas A. Cochrane, Ivan Lawrie, Larry Bellamy, Peyman Zawar Reza**

Agriculture in New Zealand has entered a period of significant disruption due to impacts from change drivers, such as climate, increasingly stringent environmental regulations and emerging technologies. Government and industry are developing strategies to respond to the risks and opportunities associated with these disruptors to transform and strengthen the agricultural sector to achieve economic and environmental objectives. To this end, there is a need to develop an assessment tool to explore pathways and interventions for increasing the resilience, sustainability, and profitability of agriculture in New Zealand over the next 5-30 years. This work aimed to develop scenarios at the national scale for assessing pathways and interventions to underpin strategy initiatives related to arable agriculture. Working closely with stakeholders from the arable sector, we have developed three scenarios related to food security, climate change mitigation and alternative protein production. A decision support tool (DST), using a combination of systems dynamic modelling and map storytelling, was then developed and applied using national quantitative data and GIS databases. The disruptive effect of the scenarios

were than quantified and mapped to understand the effects on land use resilience, sustainability and profitability. Initial results suggest great opportunities for the arable sector to grow in the country, in particular through 1) enhancing food security opportunity in response to recent unexpected global events; and 2) by complementing dairy production to allow carbon emission reductions and sequestration improvements. Finally, our interactive DST has improved stakeholder engagement, which is directly beneficial to future land planning and policy formulation.

Keywords: Future of agriculture, climate mitigation, sustainability, profitable agriculture, Decision Support Tool.

26.Geographies of Health and Wellbeing
Session Organiser: Angela Curl

Living through lockdown in New Zealand: A qualitative study of the impacts of COVID-19　　　　　　**Kelly Radka, Emma H. Wyeth, Sarah Derrett**

The COVID-19 pandemic poses ongoing public health challenges internationally and in Aotearoa/New Zealand (NZ). COVID-19 lockdowns are frequently portrayed in terms of limitations and losses. Nevertheless, our findings suggest the COVID-19 lockdown and 'bubble' environment in NZ could be reimagined as facilitative of certain aspects of a 'therapeutic landscape' (Gesler, 1992). Underpinned by Gibson's theory of affordances (1979), we explored the unexpected identification of a counter-narrative of positive aspects and outcomes experienced during the initial Alert Level 4 lockdown in 2020 in NZ. We draw on findings from thematic analyses of free-text responses collected during 141 telephone interviews occurring as part of paired studies being undertaken as the COVID-19 pandemic unfolded in 2020, the 'Prospective Outcomes of Injury Study: 10 years on' (POIS-10; HRC19/ 344) (Derrett et al., 2021). As anticipated, many participants experienced losses and limitations. Nevertheless, for some, this environment facilitated affordances, including positive experiences with work, supporting others, and being supported, family dynamics changing for the better and more free time. Positive reflections included feelings of unity, closeness to others and a sense of gratefulness. Many participants experienced a complexity of views, with positive reflections and outcomes alongside the negative. We contend reimagining the lockdown environment as facilitative of certain affordances for health and wellbeing has implications for future pandemic response management. These may be able to be leveraged by policymakers, health care practitioners and individuals, to potentially achieve more favourable outcomes in the event of future lockdowns, for COVID-19 or other pandemics.

Keywords: COVID-19, Injury outcomes, Lockdown, Affordances

Prison Violence in Aotearoa New Zealand – what we can learn from incident and prisoner population records   Lars Brabyn

Prison violence is a major safety issue for prisoners, prison staff, and family and friends of prisoners. The New Zealand Department of Corrections (Ara Poutama Aotearoa) COBRA database keeps records of all prison incidents (violent and non-violent) as well as details of the prisoner population. Our research provides an initial exploratory dive into how this information can be used for understanding prison violence and the social environment within prisons. This is first demonstrated using descriptive statistics derived from data from 2011 to 2020 (approximately 1.4 million records), providing an overview of prison violence within Aotearoa New Zealand. A prison will often have a range of separate units that differ in security classification, size, function, and prisoner population characteristics such as gang affiliation and age. An analysis of prison violence at the unit level is applied using machine learning (CatBoost and SHapley Additive exPlanations – SHAP) to provide a prediction model of prison violence as well as identify the important factors (positive and negative) associated with violence. Gang affiliation and security class are important predictors of violence in prison, but there are complex interactions with unit size and the lead offence of the prisoner.

Keywords: prison violence, prison unit, security, gangs

Outcomes and experiences of occupationally injured migrants in Aotearoa/New Zealand; A mainstream media review Kelly Radka, Emma H. Wyeth, Christina Ergler, Sarah Derrett

Occupational injuries are common in Aotearoa/New Zealand (NZ), with approximately 200,000 claims registered by the Accident Compensation Corporation in 2020. Media analyses undertaken overseas highlight the social construction of occupational injuries, noting these potentially shape views surrounding what qualifies as a work-related injury and who is at risk. Thus far, little appears to be known regarding mainstream media (MSM) representations of migrants' occupational injuries in NZ. A review of 10 NZ MSM news sources (in alignment with New Zealanders' news-seeking preferences) was undertaken to identify and explore representations of migrants' work-related injury experiences and outcomes (2007- 2021). Eligible articles were analysed thematically. A total of 26 eligible news articles were identified, reflecting a paucity of MSM attention to migrant work-related injuries during this period. These representations included 'normalisation' of work-related injuries and migrant worker exploitation as 'a hidden problem'. Few articles reported occupational injuries from migrants' perspectives, and none referenced female migrants. Numerous accounts portrayed an intertwining of migrants' occupational injury experiences with the work environment experienced by migrants, at various spheres of influence. From these findings, we argue through the absent voices of migrants, and women specifically, MSM is not facilitating attention to the occupational injury experiences of these groups. Further, despite the relative lack of media attention to migrants' occupational injuries to date, we contend MSM representations have potential as a tool for enhancing public awareness of migrants' occupational injuries as consequences of various and interacting forces, actors, and events, thereby potentially increasing avenues for addressing the issue.

Keywords: Occupational injuries, NZ migrants, mainstream media representations

The landscape of on-demand delivery of unhealthy commodities in New Zealand   **Angela Curl, Rose Crossin, Christina McKerchar, Brylie Appeldoorn, Hannah Miles , Dru Norris.**

The nature of the food and alcohol environment is changing through the rise of on-demand app-based delivery platforms, which have the potential to impact individual and population health and health equity. Given that distance acts as a spatial deterrent to accessing unhealthy commodities, along with strong evidence that increased neighbourhood availability of unhealthy food and alcohol is associated with adverse outcomes, we are concerned by the rise in on-demand delivery of food and alcohol and the implications in terms of widening access to unhealthy commodities. However, there is limited research to support an understanding of how app-based ordering of unhealthy commodities affects health on an individual level or from a public health perspective. Furthermore, new apps and delivery services have been introduced during the recent COVID-19 lockdowns, potentially increasing availability of unhealthy commodities. Fast-food outlets, licensed bars, pubs, clubs and off-licence liquor stores cluster in more deprived communities. Existing international evidence suggests that similar patterns may be true for on-demand services. However, our recent scoping review of on-demand access revealed that the health equity implications of these services is poorly understood. On-demand access to unhealthy commodities may therefore present a health risk to those living in more deprived areas, who are disproportionally Māori, and who already experience poorer health outcomes. This paper will present emerging findings mapping the availability of on-demand delivery of alcohol, tobacco and food in New Zealand, compared to traditional measures of geographic access to outlets.

Keywords: food environment; on-demand access; alcohol environment;