

# APPA 2023 END-OF-YEAR HUI

KAI & KŌRERO • PRESENTATIONS • SITE VISIT TO XTREME ZERO WASTE • BEACH CLEAN UP

Whāingaroa | Raglan & Online | 7-8 December 2023

## PROGRAMME



Aotearoa  
Plastic  
Pollution  
Alliance

# AGENDA

The **Aotearoa Plastic Pollution Alliance** (APPA) hui will bring together researchers, businesses, policy makers, artists, educators and all those interested in mitigating and preventing plastic pollution in Aotearoa. Our hui provides a platform for those interested in presenting their research and ideas and a space for collaboration and connection.

The event will take place on Thursday 7<sup>th</sup> and Friday 8<sup>th</sup> of December 2023, both online and in person at **The Town Hall, 41 Bow Street, in Whāingaroa/Raglan**. Join us for two days of presentations and discussion on multiple aspects of plastic pollution:

## Thursday 7 December

### 9 – 10 am: Town Hall Welcome

Meet at the Town Hall for mihi whakatau, karakia, registration & carpool to Xtreme Zero Waste

### 10 – 12 pm: Xtreme Zero Waste visit

Xtreme Zero Waste, 186 Te Hutewai Rd

### 12 – 1.30 pm: Lunch break\*

### 1.30 – 3 pm: Town Hall Session A:

Global issues and UN Global plastics Treaty

### 3.30 – 5 pm: Town Hall Session B:

Plastic pollution prevention and innovative solutions

### 6pm onwards: Dinner\* & Science Night

Panel discussion of Whāingaroa residents working towards zero waste  
Harbour View Hotel, 14 Bow Street

## Friday 8 December

### 8.30 – 11 am: Town Hall Session C:

Monitoring and modeling plastics in the environment

### 11.30 -1 pm: Town Hall Session D:

Plastic free and zero waste businesses and communities

### 1 – 2.30 pm: Lunch break\*

### 2.30 – 4.30 pm: Beach cleanup

Two groups starting from Town Hall or Wainamu beach and meeting halfway

### 5 pm onwards: Raglan Growers Market

Locally grown, fresh, seasonal produce  
~ directly from the grower, 1 Stewart St

\*Lunch and dinner costs will not be covered by the registration. Morning tea will be provided on both days of the conference to attendees.

# TOWN HALL SESSIONS

## A: Global issues and UN Global plastics Treaty

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Thursday 7 December, 1.30pm – 3.00pm

**Trisia Farrelly, Massey University & Matt Peryman, Tāngata Whenua Coalition for an Effective Plastics Treaty:** Update from INC-3 in Nairobi and panel discussion

## B: Plastic pollution prevention and innovative solutions

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Thursday 7 December, 3.30pm – 5.00pm

**Bianca Lilley & Simon Wilkinson, Auckland Council:** Working with industry to prevent plastic pollution.

**Ali Kirkpatrick & Polly Griffiths, Sustainability Trust (online):** Washing Up Welly.

**Lorella Doherty, Rethinking Plastics Revolution:** Turning Sadness into Beauty - The 100 Days of Beach Cleans Kaupapa.

## C: Monitoring and modeling plastics in the environment

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Friday 8 December, 8.30am – 11.00am

**Jonathon Hannon, Massey University:** The 'Palmy' Plastic Pollution Challenge – where to from here?

**Warren Fitzgerald, Victoria University of Wellington (online):** A Pyrrhic Victory: The case of recycling.

**Laurent Lebreton, The Ocean Cleanup:** Seven years into the Great Pacific Garbage Patch: a baseline update.

**Karin Kvale, GNS Science (online):** Aggressive reduction of marine plastic pollution is required to reduce contamination.

**Joel Rindelaub, University of Waikato:** Airborne microplastics in Aotearoa.

**Alex Aves, Laura Revell & Sally Gaw, University of Canterbury:** Airborne microplastics in the polar regions.

## D: Plastic free and zero waste businesses and communities

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Friday 8 December, 11.30am – 1.00pm

**Latesha Randall, Raglan Food Co Limited:** Engaging Customers in Plastic Awareness and Activism.

**Polly Stupples & Heather Pickard, Victoria University of Wellington (online):** Seeding transition: encouraging growth.

**Hannah Blumhardt, Reuse Aotearoa & Āmiomio Aotearoa:** From talking about reuse/refill to actually doing it: where we're at in Aotearoa New Zealand.

# ABOUT

In the 1950's a landfill was established in Whāingaroa beside Te Hutewai stream valley. In 1992 a group of locals concerned about erosion and other environmental problems in, and around this harbour got together and formed The Whāingaroa Environment Network Group. The group drafted the Whāingaroa Catchment Plan and as part of the catchment plan, they created **Te Pokapū Taiao o Whāingaroa/Whāingaroa Environment Centre** in 1997. The next year, the landfill was permanently closed and a refuse and transfer station was established. In 1999, Local Educational Trust, Whakamaua-te-Aio began diverting greenwaste from the transfer station to make compost, and taking over paper and cardboard recycling collection from the Raglan Lions Club. After only three years, they were already reaching a diversion from landfill of 74%. Whakamaua-te-Aio established **Xtreme Zero Waste** in 2000 on the site of the old landfill on Te Hutewai Road. On 1 July 2023, Whāingaroa Environment Centre and Xtreme Zero Waste merged organisations and sit under the Xtreme Zero Waste Board.



Te Pokapū Taiao o Whāingaroa  
Whāingaroa Environment Centre

Our vision for Whāingaroa is that it flourishes with natural biodiversity and our mission is to take action to connect our community to the natural environment. With our Centre Hub based in the Raglan Town Hall, for the past 26 years we have had a strong focus on the protection of our marine life, the Whāingaroa Harbour Catchment and of our Community's Resilience. Our Centre Hub has been based in the Raglan Town Hall for the past 22 years with a Tool Library, free seed bank, Repair Cafe, Beach Cleans, gardening in schools, Community Garden, Raglan Growers Market, Community Orchard, Fresh Water Restoration, Marine Conservation, Māui Dolphin Day & the Recycled Raft Race, Science Nights and Sustainability Tours. [whaingaroa.org.nz](http://whaingaroa.org.nz)

The Whāingaroa community zero waste programme has been working hard for the last 23 years to achieve a 75-80% diversion of waste from landfill. Our vision is a world without waste and our mission is to see Whāingaroa achieving zero waste and inspiring communities to act and work collectively to achieve the last 20-25% of landfill diversion.

[xtremezerowaste.org.nz](http://xtremezerowaste.org.nz)



# ABSTRACTS

By alphabetical order of speakers

**Alex Aves, Laura Revell & Sally Gaw, University of Canterbury: Airborne microplastics in the polar regions. Session C.**

The presence of microplastics in the air uncovers new challenges to understand their movement through environmental matrices, potential impacts on global climate processes and the increased risk to health. Atmospheric transport allows microplastics to reach remote and sensitive regions, with polar regions also being impacted by anthropogenic pollution. Polar regions have consistently played a vital role in expanding our understanding of the world yet current remote observations of microplastics in these regions are limited. This presentation aims to highlight the work being undertaken to further our understanding of airborne microplastics, with a focus on the polar regions. The current state and challenges of airborne microplastic research will be discussed, as well as field campaigns in both the Arctic and Antarctic and method developments for the analysis of microplastics in environmental samples.

**Ali Kirkpatrick & Polly Griffiths, Sustainability Trust: Washing Up Welly. Session A.**

Washing Up Wellington (WUW) is a non for profit collaborative project initiating a city-wide reusable serviceware system for food and drink at commercial and community-run events in Wellington. Events are an ideal setting to trial circular reuse models that move serviceware up the waste hierarchy to reduce plastic imports and waste. WUW is harnessing this opportunity by initiating a fully serviced reusable serviceware system that all Wellington event holders can book and use, with ring-fenced capacity for community events, including: reusable vessels; washing infrastructure and logistics; and accompanying communications, marketing and branding. WUW is working within a network structure that can be added to over time with new nodes that may feature additional pieces of washing infrastructure and reusable fleets to service a wider range of events across the region, or for different contexts (e.g. hospitality, catering, home delivery etc.). Compared to one piece of large infrastructure, our proposed multi-nodal network reduces risk and offers more flexibility, scalability, resilience and opportunity to innovate, expand and upgrade over time. The long-term goal is to replace all single use serviceware. This initial proposal would enable: 80-90% of large events to transition to reusable cups for cold drinks in Wellington; expanded capacity to operate well-run trials of food and drink in reusables at outdoor events; testing to prove the system's viability and further innovate to meet the city's needs.



**Bianca Lilley & Simon Wilkinson, Auckland Council: Working with industry to prevent plastic pollution. Session A.**

Auckland Council is piloting new ways to work with industry to prevent plastic pollution from entering waterways. The Healthy Waters department of Auckland Council is collaborating with the plastics manufacturing industry, the freight & distribution sector, and the supermarket sector to stop plastic from entering stormwater systems. A team of specialists from Wilkinson Environmental Ltd is delivering the programmes. Accidental spillages of plastic pellets (aka nurdles) from plastics manufacturing sites, recycling sites, logistics warehouses and distribution centres have been identified as a significant risk to waterways in Auckland. As well as this, high customer turnover businesses like supermarkets are a continual source of plastic litter into the environment. Healthy Waters and Wilkinson Environmental Ltd have designed programmes that engage with these business sectors to educate them on the impact their plastic pollution can have on local waterways. The work involves large numbers of site visits, pollution risk identification, assistance to implement change, connection of the businesses to their local waterways, and, as a last step, using regulatory authority and enforcement to tackle non-compliance. The project team is working closely with business sector associations such as the National Road Carriers Association, Plastics NZ and others, to ensure the programme is relevant to each sector. Initial results have been positive and show how Council and the business community can work together to create behaviour change.

**Hannah Blumhardt, Reuse Aotearoa & Āmiomio Aotearoa: From talking about reuse/refill to actually doing it: where we're at in Aotearoa New Zealand. Session D.**

Reuse/Refill is commonly put forward by NGOs and scientists as a critical strategy for reducing the production and consumption of plastic and stemming upstream and downstream plastic pollution. However, what are the pathways to achieving this in practice and what progress are we making in Aotearoa towards this goal? Hannah is Lead Researcher of Reuse Aotearoa - an independent organisation dedicated to investigating reusable packaging in New Zealand - and a researcher with a focus on source reduction strategies at Āmiomio Aotearoa, a multi-partner inter-disciplinary research project into the circular economy hosted by the University of Waikato. In this presentation she'll share some insights from research she has undertaken this year into circular business models in New Zealand, including reuse/refill, and put out a call to action for plastic pollution researchers to keep pushing to implement reuse/refill strategies in their lives and communities, as well as in their mahi.

**Joel Rindelaub, University of Waikato: Airborne microplastics in Aotearoa. Session C.**

Atmospheric transport has helped microplastics reach the ends of the earth, from the tops of mountains to the snowfall in Antarctica. Even here in Aotearoa, microplastics are falling from the sky. Joel Rindelaub is interested in the airborne transport of microplastics, investigating their presence in Aotearoa and how they get into the air that we breathe.

**Jonathon Hannon, Massey University: The 'Palmy' Plastic Pollution Challenge – where to from here? Session C.**

The 'Palmy' Plastic Pollution Challenge (PPC) is a Living Labs project which draws on citizen science and community engagement to monitor and develop solutions to the issue of plastic pollution, which degrades the Mauri (life essence) of the Manawatu River. The PPC involves collaboration between Massey staff and students, Environmental Network Manawatu, the PNCC, Rangitāne o Manawatu, the Manawatu River Leaders Accord and a range of local businesses, community organisations and schools. The PPC team has worked with the community to begin scientifically quantifying all aspects of the complex issue plastic pollution impacting the urban waterways. The monitoring commenced in Palmerston North City in 2017 and has created an extensive baseline data-set, which now extends beyond just Palmy to include other towns across the regional catchment. This data has informed the development of a series of community-based plastic pollution strategies / action plans, which are being implemented by local groups. Over its lifecycle the PPC has involved over 2000 participants, 41 monitoring sites, and thousands of items of litter being extracted and quantified from waterways, numerous public events and the development and communication of numerous information resources. This presentation will cover two main project cycles: respectively the 2019 PPC project report and the 2021 PPC project report. Having since completed a series of follow-on programme actions, and navigating a period of significant change, the PPC team are now looking to the future and asking the question where to from here?

**Karin Kvale, GNS Science: Aggressive reduction of marine plastic pollution is required to reduce contamination. Session C.**

The United Nations Environment Assembly's aspiration to "end plastic pollution" requires the setting of global reduction targets for both plastics production and pollution. We simulate idealised pollution reduction trajectories from the year 2026 using an Earth System Model to understand the impacts of these trajectories on ocean microplastic contamination. We find that a minimum of 10% reduction per year is required in order to stabilise whole-ocean microplastic pollution inventories this century. However, any target less than complete cessation of pollution in year 2026 still results in worsening contamination. With a 10% per year reduction, ocean surface microplastic contamination starts to decline around the year 2035. This microplastic is slowly removed from the surface ocean by biological activity and physical mixing. It is transported into the ocean twilight zone, where contamination continues to increase throughout the end of the century (to the year 2100 and beyond). Crucially, we find that surface microplastic concentrations never reach zero, even after complete cessation of plastic pollution. This is because biological activity 'traps' microplastics in a biofouling-defouling loop in the upper ocean. Our results indicate that aggressive plastic pollution reduction measures will be required to reduce microplastics contamination of the open ocean, and that even with aggressive pollution reduction sensitive ecosystems and the biological food web will remain at-risk of impacts for decades to centuries.

**Laurent Lebreton, The Ocean Cleanup: Seven years into the Great Pacific Garbage Patch: a baseline update. Session C.**

The Great Pacific Garbage Patch, located halfway between Hawai'i and California, has accumulated floating plastics from different origins across the Pacific Ocean for decades. Following two major expeditions in 2015 and 2016, a baseline study quantifying and characterizing the plastic marine debris accumulation was published in 2018 by The Ocean Cleanup, a not-for-profit organization developing technology to rid the ocean of plastics. Since 2018 and while testing open ocean collection systems for marine debris, the organization has systematically collected observations on floating plastics using Manta trawls (0.9 m opening), Mega trawls (6 m opening), cleanup systems (of varying sizes, in the order of several hundreds of meters), visual surveys from observers onboard vessels and cameras attached to ships and to unmanned aerial vehicles (UAVs). The systematic data collection conducted between 2018 and 2022 allows the formulation of trends of floating plastic pollution in this remote region and a comparison with the previous baseline for all sizes of plastics, including microplastics (0.5 – 5 mm), mesoplastics (5 – 50 mm), macroplastics (50 – 500 mm) and megaplastics (>500 mm). In this presentation, we will explore how the quantity and composition of floating plastics have evolved over these past seven years and discuss the implications of these findings on our understanding of the sources and long-term fate of plastic pollution in the Great Pacific Garbage Patch.

**Latesha Randall, Raglan Food Co Limited: Engaging Customers in Plastic Awareness and Activism. Session D.**

We have been working towards cleaning up 1,000,000 pieces of plastic from beaches around Aotearoa. Our 1 Million Pieces Project was launched in 2018. We wanted to create a fun, engaging, motivating reason for people to get out there and clean up their local beach. So we offered free yoghurt to anyone who did a clean up and reported back with photos and their tally of plastic collected. We've also supported larger groups by providing gloves and compostable bags. We are now nearly at our goal, with over 941,000 pieces collected. I can share this initiative with a video and photos, as an example of ways companies can engage their customers in solving the plastic pollution problem. You can read more about the program here: <https://raglanfoodco.com/for-good/1-million-pieces/>

**Lorella Doherty, Rethinking Plastics Revolution: Turning Sadness into Beauty - The 100 Days of Beach Cleans Kaupapa. Session A.**

APPA Member Lorella Doherty talks about her 100 Days of Beach Cleans Exhibition, presented in Taranaki over July this year. Hear of how every piece of the 100 days of collected plastic from Taranaki beaches over 2021 was turned into artworks, story and installation, how that was showcased and how people received it. She will talk about the heart of the kaupapa and why she believes truly feeling the depth of sadness, combined with beauty is such an integral part of behaviour change.



**Polly Stupples & Heather Pickard, Victoria University of Wellington (online): Seeding transition: encouraging growth. Session D.**

A wide range of governance institutions and policies, across multiple scales, articulate aspirations for transition to a circular economy (CE), to move away from the linear trajectory of take, make and dispose. In these aspirations, different conceptualisations of the CE exist, from a technocentric focus on efficiencies in material flows, to degrowth agendas for radical social, cultural and economic transformation.

Degrowth and transitions writers describe a necessary shift in the scale of social action, from 'seeds, small-scale experiments and lived experiences' towards the 'emergence of collaborations, coalitions and mutual reinforcement between seeds' (Pereira, 2018). This process shifts social action from the micro scale to the meso scale, which in turn supports the articulation and consolidation of emerging large-scale narratives and values. In Aotearoa, high-level CE articulations are common (e.g. in government and Council websites and some policy documents), and many innovative grassroots initiatives exist, however a gap between these has been identified.

Responding to this gap between grassroots innovation and large-scale aspirations, in this presentation we describe our efforts to identify sites and practices of the CE where 'collaborations, coalitions, and mutual reinforcement between seeds' is taking place, and where CE social action is scaling up, or out. This preliminary mapping work aims to identify particular sites or places, diverse actors, and mechanisms that seems to enable the coalescing and mutual reinforcement of CE initiatives.

**Warren Fitzgerald, Victoria University of Wellington (online): A Pyrrhic Victory: The case of recycling. Session C.**

The waste hierarchy clearly lays out a prioritised order of actions to improve the environmental performance of our material economy. However, one of the terms receives a greater proportion of available resources than its position on the hierarchy would imply – recycling. The output of recycling systems is also highly variable, so the promotion of these schemes often entails a large amount of ambiguity. Life Cycle Assessment (LCA) studies have been used to help quantify the benefits of recycling; however, these studies are themselves subject to a set of underlying assumptions and system boundaries, which can be used – intentionally or not – to bias their findings.

This presentation combines LCA data with dynamic modelling techniques to create an interactive platform for testing key variables. These variables represent the assumptions behind the act of recycling, and how it is applied in a New Zealand context. Several scenarios suggest that little, or negative, benefits accrue from the large amount of resources being dedicated towards recycling systems. Any benefits that do accrue from recycling improvements are quickly nullified when situated within a growth paradigm. These are early-stage findings with many limitations; however, they do help question the relevance of the goals being pursued.



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