

The background of the entire page is a photograph of a beach covered in plastic pollution. Various pieces of debris are scattered across the sand, including a white plastic bottle, a piece of yellow foam, a piece of pink plastic, a piece of white plastic, and a piece of wood. The image is overlaid with a semi-transparent blue filter.

Aotearoa Plastic Pollution Alliance

End-of-Year Hui

PROGRAMME

Tāmaki Makaurau / Auckland
In-Person & Online
11- 12 December 2022

FOREWORD



Tēnā koutou

Nau mai, haere mai ki te hui mutunga o te tau mō te **Rōpu Whakakore Para Kirihou**. We look forward to seeing you at the third **Aotearoa Plastic Pollution Alliance** (APPA) End-of-Year Hui.

This hui brings together researchers, businesses, policy makers, artists, advocates and all those working to mitigate and prevent plastic pollution in Aotearoa and Oceania. It is a platform for those interested in presenting their research and ideas and a space for collaboration and connection.

2022 has been a momentous year for the fight against plastic pollution. In March, UN Member States agreed to an ambitious mandate for negotiating a global plastic pollution treaty. With the first Intergovernmental Negotiating Committee (INC-1) session having just wrapped up days ago, the global plastics treaty will be a strong theme throughout our hui - including a dedicated discussion session on global issues and the treaty happening on Monday morning, where we'll hear from government officials, academics and activists who attended the very recent INC-1.

There've been significant moves domestically too. The first tranche of bans on single-use and hard-to-recycle plastics kicked in on 1 October, and nearly \$1 million was awarded to The Packaging Forum and Food & Grocery Council to design a product stewardship scheme for plastic packaging. These important - and controversial - moves will also feature prominently at our hui.

This year's programme once again demonstrates the depth and breadth of expertise and experience on plastic pollution among APPA's membership and beyond. We have some of the leading voices in Aotearoa on plastics policy, science and research, kaupapa Māori and community-led solutions, as well as two international experts from the US and Fiji.

On Sunday evening, we're so excited to host a public panel discussion facilitated by TV personality and zero waste hero, Miriama Kamo. This expert panel will answer and discuss all your burning questions about plastics and zero waste - a kōrero not to be missed!

Look forward to seeing you at the hui!

Liam Prince, APPA Chair

AGENDA

The APPA End-of-Year Hui will take place on **Sunday 11th and Monday 12th December 2022**, both online and in person at **The Flagship, Sustainable Coastlines Education Centre, 55 Madden Street, Auckland CBD, 1010**. Join us for two days of presentations and discussion on multiple aspects of plastic pollution.

[Click here to register for the event.](#)

Sunday 11th December

Zoom (Sunday):

<https://canterbury.zoom.us/j/96624288909?pwd=Ym9BYjI6L3RwWlJuOE4wbGxPZE9Fdz09>

passcode: 398229

8:30am – 9:00am: Reception

Sign-in, tea/coffee served

9:00am – 9:30am: Hui Opening

9:30am - 10:30am: Session A

Policy perspectives

10:30am – 11am: Morning tea

11am - 12:30pm: Session B Business and Community insights

12:30pm - 1:30pm: Lunch break*

1:30pm - 3:15pm: Session C Plastics in the Environment (part 1)

3:15pm – 3:45pm: Afternoon tea

3:45pm - 5:30pm: Session D Plastics in the Environment (part 2)

6:30pm - 7:30pm: Panel Discussion with Miriama Kamo (Public Event)

Monday 12th December

Zoom (Monday):

<https://canterbury.zoom.us/j/94587897745?pwd=K1k0eERDM1NaWVMzaHVXT05oMHZJdz09>

passcode: 311066

8:45am – 10.15am: Wānanga A

Global Issues: Featuring MfE plastics team, Global Plastics Treaty by Associate Professor Trisia Farrelly (Massey University)

10:15am – 10:30am: Morning tea

10:30am - 11:30am: Workshop

Street Clean-up & Audit

11:30am - 12:30pm: Wānanga B

Local Issues: Featuring Camden Howitt, Founder - Sustainable Coastlines

12:30pm - 1pm: Closing Comments

[More info on the Panel Discussion with Miriama Kamo available here](#)

*Lunch and dinner costs will not be covered. Morning tea and afternoon tea will be provided on Sunday 11th December and morning tea will be provided on Monday 12th December to attendees.

SESSIONS

Hui Opening

Sunday 11 December, 9:00am – 9:30am

Zoom (Sunday):

<https://canterbury.zoom.us/j/96624288909?pwd=Ym9BYjl6L3RwWlJuOE4wbGxPZE9Fdz09>

passcode: 398229

Welcome/mihi whakatau

Emma Hunter, APPA Communications Manager: APPA Comms - a year in review

Session A: Policy Perspectives

Sunday 11 December, 9:30am – 10:30am

Warren Fitzgerald, Te Herenga Waka - Victoria University of Wellington: Jevons Paradox: recycling our way to more waste.

Hannah Blumhardt, Institute for Governance and Policy Studies, Te Herenga Waka - Victoria University of Wellington: Turning off the tap or mopping up the mess? What a best practice plastic packaging product stewardship scheme for NZ should look like

Session B: Business and Community Insights

Sunday 11 December, 11am – 12:30pm

Kelli Gerritsen, Litter Intelligence: Analysing Coastal Litter in Southland, New Zealand

Carla Gee, EcoMatters: Radical Collaboration - to Save our Awa

Jackie Nuñez, The Last Plastic Straw; Plastic Pollution Coalition: Envisioning the Future We Want to See Through Words and Action

Session C: Plastics in the environment (1/2)

Sunday 11 December, 1:30pm – 3:15pm

Karin Kvale, GNS Science | Te Pū Ao: Microplastics slowing of faecal pellet sinking has a small total impact on global carbon cycle

Laurent Lebreton, The Ocean Cleanup: Innovative remote sensing technology to observe macroplastics in aquatic environments

Rufino Varea, University of the South Pacific: Bridging the gaps in marine pollution data through innovative research methods for Pacific Island Countries and Territories

Session D: Plastics in the environment (2/2)

Sunday 11 December, 3:45pm – 5:30pm

Kim Renshaw, Beyond the Bin: PFAS in packaging

Helena Ruffell, University of Canterbury: Microplastics contaminate biowastes applied onto land in Aotearoa New Zealand

Manue Martinez, M2M (Maunga to Moana) Consulting: Estimation of plastic pollution from littered single-use face masks in Northland and New Zealand during the Covid-19 pandemic

Public Panel Discussion with Miriama Kamo

Sunday 11 December, 6:30pm – 7:30pm



Miriama Kamo hosts a Panel of Plastic Pollution & Zero Waste Experts - APPA Hui 2022

Sunday 11th December
6:30 - 7:30pm
The Flagship, Sustainable Coastlines Education Centre
Tāmaki Makaurau

Join us on Sunday evening for a public panel discussion with zero waste and plastic pollution experts, facilitated by TV personality and zero waste hero, Miriama Kamo. This will be a chance to ask any burning questions you might have about zero waste and plastic pollution – join us in person or online! For more information about this event, see the links below:

<https://www.eventfinda.co.nz/2022/miriama-kamo-hosts-panel-of-zero-waste-experts-appa/auckland>

<https://www.facebook.com/events/512238157484517>

SPEAKERS

Hui Opening: APPA Communications - a year in review

Emma Hunter, APPA Communications Manager (website); Sustainable Coastlines.



How time flies. As we bid farewell to another year Emma reflects on what has been occurring in APPA's communications channels in 2022. This includes the reveal of APPA's answers to the "10 Questions on Plastic Pollution" which were workshopped earlier in the year.

Emma is on the APPA Committee for 2022 as one of the Communications Managers. Her motivation to work against plastic pollution stems from a love of the ocean and the creatures that call it home. Having worked as a wildlife guide in Aotearoa and Canada and seen what's at stake, she used her MSc research to raise awareness on pre-production pellet/nurdle pollution. Since the start of 2022, Emma has also been raising awareness of marine pollution through her role as Programme Coordinator (Ōtautahi) at Sustainable Coastlines.

Session A: Jevons Paradox: recycling our way to more waste.

Warren Fitzgerald, PhD Candidate, Te Herenga Waka - Victoria University of Wellington



The waste hierarchy clearly lays out a prioritised order of actions to improve the environmental performance of our material economy. But the waste hierarchy does not take into account the dynamics of human behaviour. Our behaviours are based on the stories we tell ourselves, and the story of recycling is better than its reality. In fact, the story is so good that it seems to be providing the justification for making things worse.

My research is based in the systems sciences and is aimed at identifying the drivers of waste generation. It uses cause and effect logic to expose feedback loops, and simulation modelling to try and replicate observed behaviours. One of my key findings is related to the effect of time delays within the system. The difference in the time it takes to observe the output of our actions, compared to the time it takes to assume what

those outputs will be, leads to several undesirable behaviours.

Warren is a PhD candidate at Te Herenga Waka, Victoria University of Wellington. He has a background in energy studies from Otago University and has applied this to international shipping, refrigerated transportation, housing, and food systems. He is currently using systems thinking methods to try and understand why we create waste and how the system is structured to encourage these types of behaviours. His research investigates physical material flows, as well as the dynamics behind business decisions, harm creation, and human perceptions.

Session A: Turning off the tap or eternally mopping up the mess?: what a best-practice plastic packaging product stewardship scheme for NZ should look like

Hannah Blumhardt, Senior Associate, Institute for Governance and Policy Studies, Te Herenga Waka - Victoria University of Wellington



Product stewardship is a critical policy tool for the circular economy. It makes those involved in the life of a product, particularly producers, responsible for ensuring effective reduction, reuse, recycling, and recovery of the product, and for managing the environmental harm a product might cause when it becomes waste.

Plastic packaging was declared a priority product in NZ in 2020, earmarking it for a product stewardship scheme. In September 2022, Minister David Parker announced that two industry groups - The Packaging Forum and the NZ Food and Grocery Council - will lead the design of New Zealand's plastic packaging product stewardship scheme. These industry groups have since indicated that the scheme will focus on ensuring collection or recovery of plastic packaging.

This presentation will outline the risks and tensions involved when vested industry groups are charged with designing the rules that will ultimately regulate them. It will also imagine what effective reduction, reuse, recycling and recovery of plastic packaging looks like, and how best to manage the impact of plastic packaging once it becomes waste, with particular reference to trends in overseas product regulation policies and the discourse surrounding the Global Plastics Treaty negotiation. This imagining will be contrasted with the current scheme scope ambition that focuses on collection and recovery of plastic packaging. Recommendations for a more robust scheme design process, and appropriate policy demands and expectations for plastic pollution mitigation advocates to proffer will be traversed.

Hannah is a Senior Associate at the Institute of Governance and Policy Studies at Te Herenga Waka Victoria University of Wellington. Her research focuses on the policy and practice of zero waste and the circular economy, from the grassroots right through to Government. She has a background in law, policy, history and international relations, and professional experience working in all branches of government, as well as social justice NGOs and academia. Hannah is also a part of New Zealand's zero waste movement, having lived without a rubbish bin since the beginning of 2015. She co-founded The Rubbish Trip, Takeaway Throwaways and Reuse Aotearoa, she is Coordinator of the New Zealand Product Stewardship Council, and a researcher for the Zero Waste Network and for Āmiomio Aotearoa, a multi-partner research project into the circular economy, hosted by the University of Waikato.

Session B: Analysing Coastal Litter in Southland, New Zealand

Kelli Gerritsen, Litter Intelligence



Coastal litter is a widespread issue around Aotearoa, which citizen-science initiative Litter Intelligence (LI) is aiming to describe through volunteer-led surveys. Survey sites are chosen by the volunteers, creating a risk that data collected is biased towards frequently visited sites or those with a higher perceived litter density. This research investigated whether the 13 existing LI monitoring sites in Southland provide a reliable overall picture of coastal litter in the region.

To achieve the aim of the research, 13 additional survey sites were randomly selected in computer mapping programme ArcGIS. Sites were then surveyed using the LI methodology over a two month period in mid-2021. The data from each dataset was statistically compared, and displayed visually in a map overlay of Southland's coastline.

The results from the randomized sites confirmed what the LI sites depict: there was litter at all sites on Southland's coastline. The mean count and weight of items at Litter Intelligence sites were higher than that of research sites, but the difference was not statistically significant enough to discredit the data shown by LI. The most common material of litter found was plastic, and the most common litter item found was hard plastic fragments.

Litter on Southland's beaches poses a direct risk to the unique flora and fauna found in the region, key regional industries, and social and cultural values provided by healthy, high-functioning coastal ecosystems. Reporting on coastal litter at the regional level could create motivation for local policy and behaviour change, which is necessary for lasting change.

Kelli grew up in the North Island, and moved to Invercargill about five years ago for study. As someone who has always been curious and interested in the natural environment, Kelli pursued a bachelor of environmental management at the Southern Institute of Technology. It was while studying that Kelli became involved with Litter Intelligence, eventually becoming a lead litter data collector, facilitating surveys and teaching other students the data collection methodology. In the third year of her degree, Kelli undertook a year-long research project investigating coastal litter throughout the Southland region and potential bias in the site selection for litter intelligence surveys.

Session B: Radical Collaboration to Save our Awa - EcoMatters 2022

Carla Gee, CEO, EcoMatters



Carla (Ngāti Kahungunu) is the wonderful CEO of EcoMatters and leads a team of passionate and talented ecowarriors and environmental experts. Born and raised in West Auckland, Carla loves working with such an amazing team of talented and dedicated people and feels reinvigorated to be exposed to, learning about, and caring for our environment on a daily basis. Outside of work, Carla is kept busy with her two sons, who love soccer, kung fu, motorbike riding, swimming, and fighting zombies!

Session B: The Last Plastic Straw & Plastic Pollution Coalition: Envisioning the Future We Want to See Through Words and Action

Jackie Nuñez, Founder, The Last Plastic Straw; Advocacy & Engagement Manager, Plastic Pollution Coalition



Jackie Nuñez will discuss her journey as an activist to full-time advocate for solutions to plastic pollution. She will highlight the importance of communication in art, advocacy, and the latest solutions-based projects from Plastic Pollution Coalition.

Jackie created the No Plastic Straws movement when she founded The Last Plastic Straw in 2011 as a volunteer project for Save Our Shores, and now a program of Plastic Pollution Coalition since 2016. Her goal is to help educate the public about the absurdity of single-use plastic, its effects on our health, environment and oceans. Eliminating single-use plastic pollution from the source, while using the plastic straw as a gateway issue towards eliminating our single-use plastic habit. Jackie is also a keen kayak guide / gardener / instigator / activist / traveler / world citizen.

Session C: Microplastics slowing of faecal pellet sinking has a small total impact on global carbon cycle

Karin Kvale, Carbon Cycle Modeller, GNS Science | Te Pū Ao



Microplastic is a ubiquitous marine pollutant whose small dimensions make it biologically available to phytoplankton and zooplankton. These organisms are crucial as the basis of the marine food web and for the export of organic material in the form of faecal pellets from the surface to deeper in the water column, forming a long-term carbon sink. Previous laboratory studies have demonstrated that ingestion of low density microplastics reduces the sinking speed of zooplankton faecal pellets. We use a complex earth system model to analyse this effect and assess its wider impacts in a changing climate. Results show that the slowing of faecal pellet sinking stimulates changes to ecosystems regionally which reduce ocean carbon uptake by about 4.4 Pg C between the years 1950-2100, 0.24% of anthropogenic emissions over this time. However, ecological impacts are significant, especially in gyres, and to the order of climate change impacts over the same time period. We calculate a plastics carbon impact on ecosystems 3 orders of magnitude greater than atmospheric carbon. Thus, while the total impact of microplastic on carbon cycling is tiny relative to that of fossil fuel use, its greater ecological potency points to the necessity of urgent regulation and mitigation of impacts.

Karin is an ocean carbon cycle modeller with an interest in microplastics and their interaction with ecosystems and climate. Originally from the US, her career has taken her to Canada, Australia, and Germany. She currently works as a government scientist at GNS Science in Lower Hutt.

Session C: Innovative remote sensing technology to observe macroplastics in aquatic environments

Laurent Lebreton, Head of Research, The Ocean Cleanup



Systematic monitoring is critical to quantify plastic pollution accumulation in the environment. Particularly, continuous observations are necessary to understand temporal trends and assess the efficacy of mitigation measures and policies. However, in-situ sampling for plastic pollution, particularly in the ocean, is costly and time-consuming, making continuous monitoring challenging for scientists.

In this presentation, I will showcase new remote-sensing technology for detecting and quantifying macroplastics in marine and freshwater environments. This technology is based on lightweight and low-cost optical cameras combined with deep-learning artificial intelligence techniques. A vast camera network, deployed from bridges over rivers and from sea-going vessels, has the potential to revolutionize the monitoring of macroplastics at a global scale.

I will show examples of test deployment, preliminary results, and challenges on the road to scaling up.

Laurent started his research on ocean plastics in 2010 where he attempted to predict the formation of ocean garbage patches using numerical models on his computer at his home office in Raglan, Waikato. Laurent is now Head of Research at The Ocean Cleanup, a non-for-profit organisation that develops technology to rid the ocean of plastic. His research group focuses on understanding the sources, the transport and the fate of ocean plastics by leading large scale field expeditions, developing advanced numerical models and investing in remote sensing technology.

Session C: Bridging the gaps in marine pollution data through innovative research methods for Pacific Island Countries and Territories

Rufino Varea, PhD Candidate, University of the South Pacific



The Pacific Island Countries and Territories (PICTs) are heavily dependent on marine resources for food security, employment, government revenue and economic development, hence the concern about the potential exposure of these resources to pollutants. The main goal is to identify pollution-related studies published that were done in PICTs. Four significant gaps identified include:

- [i] A quantitative gap, with a low number of studies published on the PICTs.
- [ii] A geographic gap where pollution-related studies have unevenly covered the different PICTs.
- [iii] A temporal gap, as no biological effect monitoring study has been published for the PICTs.
- [iv] A pollutants gap, as all PICTs studies focused mainly on environmental monitoring, studying on average two types of pollutants (heavy metals and pesticides) per PICT only.

The research suggests that the potential risk to the marine environment is to be estimated by assessing the fate of pollutants via chemical and biological effect monitoring.

Rufino is a PhD candidate researching in the field of Marine Pollution, specifically Ecotoxicology. His research is aimed at establishing the first biomonitoring scientific approach of pollution effects in seafood fish and shellfish using biomarkers in Fiji. He is also engaged in local and national efforts to form a collaborative network around scientific pollution research and advocacy with NGOs, Government entities and local communities. He has an interest in advancing the way in which science can better inform policy and action. This work involves conducting pollution assessments for project work to establish baseline environmental data aimed at improving community livelihoods, and fisheries resource dependence.

Session D: PFAS in packaging

Kim Renshaw, Founder, Beyond the Bin



Per and polyfluoroalkyl substances (PFAS) are a family of almost 10,000 man-made chemicals that are added to a wide range of consumer products including packaging. They are so dispersed globally that they are considered to be ubiquitous. Some PFAS have been proven to be harmful to humans and the environment.

PFAS have three main characteristics:

- all consist of at least one carbon-fluorine bond,
- high mobility, difficult to contain
- bioaccumulative and biomagnify.

PFAS are hydro and lipophobic, they repel oil and moisture. Thus, they are added to fibre packaging to perform that function. However, PFAS are also added to plastic packaging as processing aids and less

is known about this process, or the quantity of PFAS added. PFAS are also a common minor subcomponent used in inks and wax, affecting a wide range of packaging and also other products such as laminate flooring and printed products.

The GOES institute makes the case for PFAS accumulating in the ocean's micro surface layer, alongside micro/nanoplastics, and contributing to increased water vapour, and PFAS cycling through the atmosphere to be rained back on land.

Due to the persistent nature of the carbon-fluorine bond, all PFAS ever produced are expected to remain in the environment. Around the globe, PFAS are being legislated out of food packaging, or voluntary commitments are being made, but in Aotearoa we are slow to act. The time is now to establish safe and suitable alternatives, or encourage the shift to reusable packaging systems.

Kim founded Beyond the Bin in 2015 and is responsible for driving the organisation, developing strategy and key partnerships. Kim is passionate about ensuring the business is operating in line with its values and promoting solutions at the top of the waste hierarchy. Kim is passionate about a reduction of toxicity in packaging and holds technical expertise in per and polyfluoroalkyl substances (PFAS) in packaging. Kim loves working with the waste and packaging sectors to improve systems for waste producers to utilise. Kim believes communication is the key to success and Beyond the Bin is in a unique position to communicate with all waste stakeholders.

Session D: Microplastics contaminate biowastes applied onto land in Aotearoa New Zealand

Helena Ruffell, PhD Candidate, University of Canterbury



Previous microplastics research has been focused in the aquatic environment, primarily in the ocean and coastlines. Land based microplastic research comprises only 5% of microplastics-related studies globally. As a result, little is known about the sources and impacts of microplastics in soil environments.

This presentation will discuss the sources of microplastics to soil, including their impact and fate. Different biowastes including bulk and bagged composts, vermicasts, biosolids, and pasture irrigated with effluent were collected from sites throughout Aotearoa. Microplastics were extracted from these samples and characterised by their shape, size, and polymer type. The findings

of this study will be discussed along with potential implications of continual inputs of microplastics to productive soils.

This study is part of the Aotearoa Impacts and Mitigation of Microplastics (AIM2) MBIE Endeavour-funded study.

Helena is a PhD student at the University of Canterbury, investigating the impact of microplastics to productive soils. Helena completed her MSc in 2019, where she focused on wastewater treatment plants as a significant source of microplastics to the environment in Aotearoa. Helena is also a keen member of the zero waste community.

Session D: Estimation of plastic pollution from littered single-use face masks in Northland and New Zealand during the Covid-19 pandemic

Manue Martinez, Chief Research Scientists, M2M (Maunga to Moana) Consulting



To reduce the spread of COVID-19, face masks (FM) were mandated in New Zealand (NZ) on 18/08/2021. This led to an extensive use of FMs. Unfortunately, their improper and indiscriminate disposal has created a new environmental issue in NZ. Single-use surgical FMs are composed of various non-recyclable plastic material and can release micro- (MPs) and nano-plastics (NPs). Consequently, plastic pollution, especially in aquatic ecosystems, likely increased until the end of the mandate on 12/09/2022. Between September 2021 and September 2022,

Te Tai Tokerau Debris Monitoring project (TTTDMP) recorded 5,152 littered FMs in Northland (93.2% single-use FMs). Surveys were also conducted in Whangārei to estimate compliance levels. Following published literature, the annual generation of FMs was estimated based on different usage scenarios. Furthermore, using mismanaged waste levels, the amount of plastic pollution (MPs and NPs) generated by discarded FMs was also estimated. Results were then extrapolated for NZ based on Northland data. Under a single-use scenario (1 FM/day), approximately 31.5 million FMs (105.4Mt) were used in urban Northland and 807.7 million (2,705Mt) in NZ in a year. Assuming a 2% mismanaged waste, 629,546 FMs would have been discarded in the environment in Northland and 16.2 million in NZ. This would equate to $1,117.4 \times 10^6$ MPs and $1,408.6 \times 10^{12}$ NPs released in the environment in Northland and $28,671.4 \times 10^6$ MPs and $36,142.1 \times 10^{12}$ NPs in NZ. Should FMs be mandated again in NZ, better waste management solutions and education regarding the disposal of FMs are needed to reduce the impacts of FMs on our environment.

Manue is a marine biologist with a research interest on the effects of human activities on marine wildlife. Her postgraduate and a large part of her postdoctoral research has focused on marine mammals, in particular cetaceans, in various parts of the world (New Zealand, Hawai'i, Australia, Tonga). Upon her return to New Zealand at the end of 2015, Manue has shifted her focus on marine litter in Northland, where she is based. In 2019, Manue co-initiated the Te Tai Tokerau Debris Monitoring Project (TTTDMP) with Nick Bamford (Northland Regional Council), which is a collaboration between local governments, education providers, and citizen-scientists. The primary aim of the TTTDMP is to collate data on litter in the region to increase our understanding on the quantity, type, and location of litter in order to better prevent and mitigate its adverse effects on our ecosystems, wildlife, and human health.

WĀNANGA

Zoom (Monday):

<https://canterbury.zoom.us/j/94587897745?pwd=K1k0eERDM1NaWVMzaHVXT05oMHZJdz09>

passcode: 311066

Wānanga A: Global issues surrounding plastic pollution

Ministry for the Environment update on plastics work programme

Daisy Croft, Senior Policy Analyst, MfE.



Daisy Croft will provide an update on the Government's plastics work programme, including insights from recently attending the first meeting of the Intergovernmental Negotiating Committee for a global plastics treaty in Uruguay.

Update on INC #1 in Uruguay for the Global Plastics Treaty

Associate Professor Trisia Farrelly



Wānanga B: Local issues surrounding plastic pollution

Camden Howitt, Founder - Sustainable Coastlines





Aotearoa Plastic Pollution Alliance