

ZSL SYMPOSIUM

CHANGING THE SYSTEM – A NEW APPROACH FOR OCEAN CONSERVATION



WEDNESDAY 27TH – THURSDAY 28TH APRIL 2022

ONLINE TWO-DAY SYMPOSIUM

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SYMPOSIUM OVERVIEW

THE CHALLENGE

With growing complex and systemic challenges facing the ocean, there is an urgent need to increase the scale and effectiveness of approaches to marine conservation. This is compounded by the fact that many of our fundamental systems, patterns and habits, are now unfit for the purpose of enabling a sustainable and just world. Without thinking about ‘the bigger picture’ and including factors, causes and influences outside of the direct ecological system or threat we are tackling, conservation efforts become even more challenging, and often only provide a short-term fix.

Recent research points to the need for applying systems change approaches to tackle pressing environmental issues. Systems change involves addressing a problem holistically, to determine root causes, as well barriers to, and opportunities for, change. This allows long-term change to be achieved, through the emergence of a new system – for example towards a more sustainable way of doing things for the future.

THE SYMPOSIUM

Thinking systemically about how to tackle a global environmental threat and major conservation challenge – this event will explore the much talked about, much researched and often polarising topic of ocean plastic pollution. We will review, inform, challenge, and inspire a broad, international audience in a new approach to science, practical conservation, and sustainability.

With a diverse and varied programme of presentations and case studies, this event will include insight from experts and local voices from both the UK and around the world on ocean plastic pollution, its social and ecological impacts, its interaction with other ocean threats, and the solutions being implemented. We will investigate the human values and ‘broken systems’ that have led to this major environmental challenge; and explore the global work underway to address and mitigate it, including emerging systems change approaches and interventions.

“The world is a complex, interconnected, finite, ecological-social-psychological-economic system. We treat it as if it were not, as it were divisible, separable simple and infinite. Our persistent, intractable, global problems arise directly from this mismatch.”

([Donella Meadows, 2000](#))

SYMPOSIUM FORMAT

This two-day symposium will be held entirely online via **Zoom Events**, tickets are free, and registration is required. **You will need to register for a Zoom account (this is free) if you do not already have one, and download the Zoom desktop or mobile client in order to access the event.** The [Zoom Support pages](#) contain helpful information and resources you may require, such as [registering for a Zoom Account](#), [downloading the desktop client](#), and [registering for your Zoom Event ticket](#). Please note: you will have greater functionality for the entire event platform if you use the Zoom desktop client (on a computer) rather than a mobile app, but you will still be able to join individual sessions on the mobile app.

PLATFORM NAVIGATION

Note: Before joining the event on a computer or mobile device, download the Zoom app from [their Download Centre](#). Otherwise, you will be prompted to download and install Zoom when you click a join link. You must sign in to the Zoom desktop client with the same Zoom account used for Zoom Event registration.

On the day of the event, you can access the event lobby by: [signing into 'Zoom Events'](#) using your Zoom account login; *or* by clicking 'View Ticket' in the confirmation email received after registering for your ticket; *or* from your calendar if you synced your event to your calendar; *or* from your Zoom desktop client once signed in. In the lobby, you will be able to see Sessions, your personal Itinerary, Expo and Speakers.

For further instructions on joining and navigating the lobby, visit: <https://bit.ly/3JYOPf>.

There will be opportunities to network with speakers and other delegates in the 'Expo' section on the Zoom Events Lobby. You will be able to join small chat rooms in the 'Booths', or engage in 1:1 chat with other delegates if you have enabled this. Expo will only be open during networking times allocated in the programme.

For further instructions on accessing and navigating Expo, visit: <https://bit.ly/3ECOTpF>.

TIME ZONE:

THE TIMINGS SHOWN IN THIS PROGRAMME ARE IN UK BRITISH SUMMER TIME (GMT + 01:00)

AGENDA & ABSTRACTS

DAY 1: WEDNESDAY 27TH APRIL 2022

09:00 VIRTUAL LOBBY OPEN

09:15 SESSION 1: A SYSTEM CHANGE APPROACH TO CONSERVATION

Chair: Fiona Llewellyn, Zoological Society of London

WELCOME & INTRODUCTION

Fiona Llewellyn, Zoological Society of London

09:25 THE EMERGING SCIENCE AND PRACTICE OF SYSTEMIC CHANGE - AND WHAT IT COULD MEAN FOR CONSERVATION

Dr Anna Birney, School of System Change

As the growing awareness of the interconnected nature of our conservation, environmental and social problems become more and more clear to us we, and as change makers we need to ask ourselves how can we tackle and create the most effective and impactful change. The approach of systems thinking has been gaining traction in how we might start to look and understand these problems, but just taking an analytical approach might not be enough – we also need to look at how we go about catalysing and cultivating change. In this talk Anna will draw on her experience of working across sustainability issues, from working at WWF-UK to bringing a systems change approach to Marine conservation through the Marine CoLAB and Oneless projects – to explore what this growing field of practice might mean for how we both look and work with our changing world.

09:40 #ONELESS - CHANGING AN ENTIRE CITY FOR THE SAKE OF THE OCEAN

Shauna Jordan, Zoological Society of London

Since 2016, the collaborative [#OneLess](#) project has applied an experimental, systems change approach to reducing marine plastic pollution at source, using London as a model. Plastic pollution is one of the most significant and growing threats to ocean health, with at least eight million tonnes of plastic entering the ocean annually from land. Single-use plastic bottles are a major contributor and Londoners are among the highest consumers of bottled water in the UK, estimated to be using over one billion annually citywide. There is increasing recognition that no single solution will solve this issue and that a systems change approach holds the most promise for long lasting impact.

Through a unique combination of values-based and systems change approaches, #OneLess has made demonstrable progress in addressing plastic pollution. Since 2016, the #OneLess project has ignited a pioneering network of 90+ organisations in London who have collectively removed nine million single-use plastic items, including six million single-use plastic water bottles from sale and supply chains. It has also launched London's first modern-day network of drinking fountains in partnership with the London's Mayor, which catalysed a £5 million investment from the Mayor and Thames Water to install a further 100+ fountains across the capital. #OneLess has also played a significant role in the development of new London-wide policies and commitments to reduce single-use plastic and stop unnecessary plastic waste at source in the city.

Inspired by the impact of #OneLess in London, the Zoological Society of London (ZSL) has taken #OneLess to the Chagos Archipelago and the Philippines. We have shown that the approach is highly applicable to a wide range of contexts and cultures. This presentation will share learnings and recommendations from the #OneLess project to empower other change-makers in applying this systems change approach to their own conservation issue.

09:55 THE ART AND CRAFT OF SYSTEMS CHANGE

Shauna Mahajan, WWF

We are all connected and cannot keep working in silos. The solutions we need to tackle society's most pressing problems need to work together to ensure people and nature can thrive in a changing world. This talk introduces the art and craft of systems change which encourages a way of thinking and working in conservation that is inclusive, intentional, and impactful. From the complexities of community-based conservation in coastal Kenya to the drivers and impacts of zoonotic disease spillover, we show how simple but thoughtful tools from systems thinking and systems practice can be used at different stages of planning, implementing and evaluating conservation initiatives to understand divergent perspectives of conservation and navigate towards more inclusive and complex-aware solutions.

10:10 A LIFE LESS ORDINARY: GANGA PRAHARIS FOR RIVER CONSERVATION

Dr Ruchi Badola, Wildlife Institute of India Team and Ganga Praharis

Ganga Praharis were identified through a series of regular site-level consultative meetings and workshops held in select villages located along the banks of the Ganga River and its tributaries. The primary criterion for identification was their passion and zeal to serve the River. Once identified, a complete profile of an individual Ganga Prahari was collected including specific information such as contact details, educational qualification, background, profession, age, area of interest and their identity proof. These volunteers were trained and inducted in the cadre.

Ganga Praharis were trained in various aspects of river conservation such as ecological monitoring of the River and its biodiversity, rescue of aquatic animals in distress, plantation techniques, community mobilisation, organisation of awareness and cleanliness programmes, socio-economic assessment, water and soil sampling for ecotoxicological analysis and sustainable livelihoods. Select Ganga Praharis were trained in preparation of village level micro-plans for mainstreaming biodiversity conservation in village level development planning. Sustainable livelihood initiatives were introduced to empower Ganga Prahari to secure their livelihood in a manner that is favourable to clean Ganga Basin and impart a sense of ownership towards the River. For this, various skill development trainings in health and wellness, ecotourism guide, tailoring, handicrafts, food processing and preservation and value addition to local products are being imparted at various locations in the Ganga basin.

Trained Ganga Praharis are ensuring protection and conservation of biodiversity in their stretch. They are motivating other members of their community to adopt sustainable practices for resource use. By igniting a social movement for a clean and vibrant freshwater system, these Praharis are ensuring conservation and cleanliness of rivers.

10:25 PANEL SESSION Q&A

(Please note: Shauna Mahajan will join the panel in Session 3 instead, due to time differences)

10:45 RAPID RESEARCH SPOTLIGHT FILM

Alasdair Davies, Arribada Initiative and Dr Emily Duncan, University of Exeter

10:50 MORNING BREAK & VIRTUAL NETWORKING IN EXPO

Further information on networking in Expo on Page 4

11:15 SESSION 2: OCEAN PLASTIC AND WILDLIFE CONSERVATION

Chair: Rachel Jones, Zoological Society of London

11:20 SEAGRASSES TRAPPING PLASTIC - A SURPRISING ECOSYSTEM SERVICE

Anna Sanchez-Vidal, University of Barcelona, Spain

One of the main challenges of present research on plastic pollution is to estimate the amount of plastic debris in the ocean, and understand their origin, fluxes and pathways, and where they ultimately accumulate. There is strong evidence that the seafloor constitutes a final sink for plastics from land sources. There is also evidence that part of the plastics lying on the shallow seafloor are washed up back to the shoreline. However, little is known on the natural trapping processes leading to such landwards return. We have investigated microplastics and larger plastic debris within beached seagrass remains including balls (the so called aegagropilae or Neptune balls) made of natural aggregates of vegetal fibres intertwined by seawater motion. We have found up to 1470 plastic items per kilogram of seagrass, which are essentially filaments and fibres of polyamide and fragments of polyethylene terephthalate, polyethylene, and polypropylene. Our findings show that seagrass meadows ease the accumulation of high-density plastic debris and their entanglement with natural lignocellulosic fibers under relatively calm conditions. Neptune balls are washed ashore during stormy conditions. Our results evidence how a Mediterranean key habitat supporting fisheries, sequestering carbon and providing coastal protection, also counteracts plastic pollution.

11:35 POTENTIAL IMPACTS OF BEACH PLASTICS FOR SEX DETERMINATION OF SEA TURTLE HATCHLINGS

Dr Nicole Esteban, Swansea University, United Kingdom

Recent studies have demonstrated the synergistic effects of ocean plastics and climate change on acceleration of the global warming. The risk of warming temperatures to marine reptiles (i.e. sea turtles, sea snakes, marine iguana and salt-water crocodiles) is much more pronounced as they are closer to their thermal tolerance limits than terrestrial ectotherms. Of particular concern are species that have temperature-dependent sex determination, such as sea turtles, where warmer sand incubation temperatures (typically above 29°C) produce female hatchlings and cooler temperatures produce males. We used a long-term (>200 year) time series of incubation temperatures and primary sex ratios at a Caribbean rookery for three species of sea turtle to show that less than 15.5% leatherback, 36.0% hawksbill and 23.7% green turtle males were produced for each species every year. We applied global warming predictions to estimate extensive impacts for future primary sex ratios, for example only 2.4% of green turtle hatchlings will be male by 2030, 1.0% by 2060 and 0.4% by 2090. When compared with other important nesting sites, high female skews in hatchlings are widely reported with only a few exceptions of remote sites with limited coastal development and intact vegetation shading turtle nests (e.g., remote Indian Ocean islands). Initial findings from current field and laboratory studies show that macro- and microplastics increase heat transfer of sand and likely exacerbate the high female skew reported for hatchlings at most rookeries. My talk concludes with potential local conservation actions to reduce temperatures though any mitigation must be carefully managed.

11:50 ASSESSING THE HEALTH IMPACT OF PLASTIC INGESTION AND EXPOSURE ON THE GALÁPAGOS MARINE IGUANA (*AMBLYRHYNCHUS CRISTATUS*)

Juan Pablo Muñoz-Pérez PhD (c), University of the Sunshine Coast and Galapagos Science Center, Ecuador

The Galápagos marine iguana (*Amblyrhynchus cristatus*) with 11 subspecies is endemic to the archipelago. It is currently listed as vulnerable (VU) by the IUCN. *A. cristatus* was identified as a high-

risk species for plastic pollution (PP). Therefore, PP could pose a severe threat to this species. For this reason, this study investigates for the first time the possible health impact of PP in *A. cristatus*. We evaluated faeces and blood value data to establish current exposure in 98 animals at nine independent sites covering four subspecies across four islands. In the same places, we also carried out standardised beach methods to measure PP and thus then achieve a complete additional comparison.

Health data indicate that the animals sampled were clinically healthy based on standard vital signs, morphometry, and blood value data. No abnormalities were found during physical examination in the field and laboratory. The results indicate a healthy group of marine iguanas of mixed ages and sex. We broke down faeces samples using H₂O₂ + Fe. Filters containing microplastics were examined using a PerkinElmer Spotlight 400 FT-IR imaging system. In total, 75 synthetic fibres and fragments were found in 84 animals. Each sample had between 1 and 4 synthetic particles per sample. The most common type of synthetic particles found was a) Alpha- cellulose (99.5% pure) – likely cotton, e.g., from clothing; b) Nylon – likely from fishing equipment; c) Polyester – likely from clothing, possibly fishing gear; and d) Polyethylene – likely from degraded beach litter. Finally, pressurised liquid extraction (PLE) combined with double shot pyrolysis gas chromatography-mass spectrometry (Pyr-GC/MS) was used for the possible identification and quantification of plastics concentrations. Polypropylene (PP) was the predominant plastic detected in 44 iguanas (mean concentration of 0.11 mg/ g dw sd:0.21). Then polyethylene (PE) in 30 iguanas (mean concentration of 1.37 mg/ g dw sd:1.15).

Our evidence shows PP is present in Galápagos marine iguanas' faeces and that this presence is not affecting the health of these animals; this is the current baseline. The reported non-health impact may be due to relatively low levels of plastic pollution in the iguanas. Considering that marine plastic pollution continues to grow exponentially globally, it is essential to continue these samplings to measure these levels over time. In addition, extend this type of baseline to other key marine vertebrates in the Galápagos.

12:05 PANEL SESSION Q&A

12:25 **RAPID RESEARCH SPOTLIGHT FILM: MICROPLASTICS IN THE GANGES RIVER**

Dr Gawsia Wahidunnessa Chowdhury, Department of Zoology, University of Dhaka, Bangladesh

Rivers play a crucial role in transporting land-based plastic waste to the ocean, with the Ganges reported as the second largest contributing river of plastic pollution globally. To better quantify global plastic pollution transport and effectively reduce the sources and risks imposed, a clear understanding of the origin, transport, fate, and effects of riverine plastic debris is important. A study was conducted that focuses every aspect (socioeconomic, biological, ecological etc.) of plastic pollution from the sea to the sources of the Ganges river to understand the overall plastic pollution scenario in Bangladesh as well as in India along the Ganges. A 'Satellite Bottle Tag' was innovated for this expedition to track individual plastic litter's movements over 2,845km in a period of about 94 days. This study provides the first investigation of microplastics abundance, characteristics and temporal variation along the Ganges river. From 10 sites along a 2,575km stretch of the river, 20 water samples (3600L in total) were filtered (60 samples each from pre- and post-monsoon season). Overall, 140 microplastics particles were identified, with higher concentrations found in the pre-monsoon (71.6%) than in post-monsoon (61.6%) samples. The majority of microplastics were fibres (91%) and the remaining were fragments (9%). We estimate that the Ganges, with the combined flows of the Brahmaputra and Meghna rivers (GBM), could release up to 1-3 billion (10⁹) microplastics into the Bay of Bengal (north-eastern portion of the Indian Ocean) every day. This study documents that fishing gear-related debris represents a substantial proportion of global marine plastic pollution, and can cause significant environmental and socio-economic impacts. Riverbank surveys conducted along the length of the

river, from the coast in Bangladesh to the Himalaya in India, show that derelict fishing gear density increases with proximity to the sea. Fishing nets were the main gear type by volume and all samples examined for polymer type were plastic. Illegal gear types and restricted net mesh sizes were also recorded. This study provides the first step in understanding the connection between people, plastic, the Ganges River, and ultimately the ocean.

12:30 LUNCH BREAK

13:45 SESSION 3: SOLVING THE PLASTIC CRISIS – NEW APPROACHES TO HUMAN SYSTEMS

Chair: Amy Pryor, Thames Estuary Partnership

13:50 BREAKING THE PLASTIC WAVE - A SMART, SUSTAINABLE, AND CIRCULAR PLASTIC ECONOMY

Simon Reddy, Director, The Pew Charitable Trusts

Plastic has become ubiquitous on store shelves and in our homes. From wrapped food and disposable bottles to microbeads in body washes, it's used widely as packaging or in products because it's versatile, cheap, and convenient. But this convenience comes with a price. Plastic waste is entering the ocean at a rate of about [11 million metric tons](#) a year, where it is harming marine life and damaging habitats.

How did we get here? We have been producing vast quantities of plastic products and have had few measures in place to regulate their use or properly manage their disposal.

"Breaking the Plastic Wave," a global analysis using first-of-its kind modelling, shows that we can cut annual flows of plastic into the ocean by about 80% in the next 20 years by applying existing solutions and technologies. No single solution can achieve this goal; rather, we break the plastic wave only by taking immediate, ambitious, and concerted actions.

14:05 CIRCULAR CITIES IN INDIA: APPROACHES FOR EFFECTIVE SOLID WASTE MANAGEMENT TO REDUCE LEAKAGES

Swati Singh Sambyal, UN-Habitat (United Nations Human Settlements Programme) India Country Office

As of 2016, urban areas in India, representing about 377 million people, generated 62 million metric tonnes (MMT) of municipal solid waste each year. Of this, only about 70% are collected due to insufficient municipal services. About 20% of the collected wastes are treated, and the remaining 50% are disposed in open landfills, without proper treatment or containment. By 2050, it is expected that about 50% of India's population will be urban, and waste generation will grow by 5% per year. Ineffective solid waste management needs attention, especially in urban centres with focus on setting up resource efficient systems in cities. My talk will be on interventions required for cities in developing countries to set up circular solid waste management systems with focus on evidence-based planning and implementation to reduce GHG emissions and create sustainable, carbon-neutral, inclusive cities and towns with examples from cities in India.

14:20 EXPLORING BOTTOM-UP SOLUTIONS FOR PLASTIC POLLUTION

Dr Sonia Dias, Women in Informal Employment: Globalizing and Organizing (WIEGO)

Informal recyclers/reclaimers play a key role in the recycling value chain of ensuring safe and clean urban environments and public spaces. Reclaimers provide a multitude of services: door-to-door recyclable collection, curb-side collection, collection at designated receptacles, and along streets, in

parks and other public areas such as sidewalks and streets. In fact, their collection and recycling of solid waste contributes not only to a clean environment but also to climate change mitigation, by enabling the re-use of products that would otherwise be destroyed, and ensuring clean streets, drains and gutters in the case of floods. They are also at the forefront in curbing plastic pollution. Despite their contributions, reclaimers are often treated poorly by authorities and the public, and ignored within public policy and planning processes. Their livelihoods are threatened as cities privatise solid waste management, aim to “modernise” their waste management practices through investments in capital-intensive machinery, and adopt more expensive and less environmentally friendly approaches to waste disposal, such as incineration. A recent study (Cook et al, 2021) estimates that reclaimers collect 58% of plastics, thus they are playing an important role in curbing plastic pollution. Genuine support from, and alliances with, NGOs, trade unions and other civil society organisations, are often crucial in the development of informal worker organisations, providing resources, technical support, opening doors to those in power, and strengthening campaigns and therefore crucial to improving solid waste management, as some experiences of inclusive recycling systems from the South demonstrates.

14:35 NOT JUST A MATERIAL: HIGHLIGHTING THE SOCIAL RELATIONS OF PLASTIC

Dr Tridibesh Dey, University of Exeter, United Kingdom

Early March in Nairobi, 175 countries signed up on a mandate to negotiate a global plastics treaty. As various stakeholders come together, aiming to get rid of plastic pollution at the planetary scale, how might the 'local' inform the 'global'? What kind of localised claims, needs, politics, and economies linked to plastic and plastic waste might need support across scale, and protection?

Speaking closely to the themes elaborated by co-panelists, my talk will illustrate some of the localised human entanglements of plastic waste. I will share anecdotes from instances of domestic plastic crafts and repurposing, localised networks of plastic object circulation, violence, and values. I will draw on my long-term fieldwork experiences with plastic waste foragers, sorters, aggregators, and recyclers in India to highlight livelihoods, and community futures linked inextricably with the material futures of plastic waste. Through these examples, I shall highlight the social, economic, cultural, and political interdigitations of plastic, and their links to gendered, caste, and racial issues of justice. The other point is to show that these processes - locally entrenched and finely calibrated to localised needs as they are - also tend to be highly effective in sequestering and recirculating used plastic objects. The argument is for these processes to be supported, not just at the local scale, but complemented also at the level of production and product design. What if plastics were not made to be wasted, but to be repurposed/recycled instead? How might policy, industry, and politics care for and support concurrent and overlapping socio-economic goals, I ask.

14:50 PANEL SESSION Q&A

(Please note: Shauna Mahajan (Session 1) will be joining this panel)

15:10 RAPID RESEARCH SPOTLIGHT FILM: PERVASIVE PLASTICS ON A REMOTE ISLAND

Darcy Philpott, Ascension Island Conservation and Fisheries, Ascension Island Government

Ascension Island is an isolated volcanic peak in the South Atlantic Ocean (14°22'W 7°56'S). In 2019, Ascension's entire 445,000km² marine zone was declared a Marine Protected Area (MPA) where no large-scale commercial fishing or seabed mining is permitted. The Ascension Island MPA supports species that are found nowhere else on earth, as well as globally-important populations of breeding turtles and seabirds.

Ascension's marine environment, however, like many other remote islands, suffers pervasive impacts of plastic pollution; both washing up on its shores and generated on the island. Ascension Island

imports most food and drink packaged in single-use plastic (SUP) and there is no infrastructure for recycling this. Domestic waste is incinerated, and leakage of plastic litter into the environment has been identified as a problem. Alternatives to SUPs are limited by cost and practicality, with exported food needing to be preserved to survive the long boat journey to the island.

In recent years the Ascension Island Government has surveyed and cleaned its beaches, however, a lack of capacity and resources has prevented more strategic and regular monitoring, resulting in a limited understanding of the impact of plastic pollution on Ascension. ZSL and AIG aim to co-deliver a targeted programme of work that addresses the threats of plastic pollution to the biodiversity of Ascension while delivering solutions that benefit communities. This project aims to utilise local knowledge and understanding, to identify opportunities and strategies to reduce pervasive plastics on Ascension.

15:15 CLOSING COMMENTS

Fiona Llewellyn, Zoological Society of London

15:25 VIRTUAL NETWORKING IN EXPO

Further information on networking in Expo on Page 4

17:00 VIRTUAL LOBBY CLOSED

END OF DAY 1

DAY 2: THURSDAY 28TH APRIL 2022

09:00 VIRTUAL LOBBY OPEN

09:15 SESSION 4: POLARISING PLASTIC

Chair: Dr Heather Koldewey, Zoological Society of London

WELCOME & INTRODUCTION

Dr Andrew Terry, Director of Conservation & Policy, Zoological Society of London

09:25 OCEAN PLASTIC POLLUTION: A CONVENIENT BUT DISTRACTING TRUTH?

Professor Richard Stafford, Bournemouth University, United Kingdom

There is no doubt that there is too much plastic in our seas and oceans, and no doubt that the consequences of this plastic will be negative for nature. However, the last decade saw a disproportionate response to ocean plastic, as well as a suite of ineffective 'market-based' solutions to the problems, which still exist today – something we coined as 'plastic distraction'. The biggest threats to our seas (and the planet as a whole) come from climate change and biodiversity loss. While plastic is a problem, and bigger in some parts of the world than others, the evidence for how much harm it causes is very limited. Individual animals do suffer from entanglement and ingestion of plastic, but toxicity is limited, and there are very few studies indicating population effects of plastic pollution. However, 'solutions' proposed for plastic pollution were often consumer driven, market-based options. Re-usable coffee cups or water bottles are marketed as 'saving the planet', despite having very limited benefits to the environment. While the IPCC reports and groups such as Extinction Rebellion have alerted the public to the threat of climate change over the last five years, the majority of people still consider market-based options (such as buying lower carbon products) the most effective solution to addressing it, rather than wider system change. A move away from a political and economic system obsessed with economic growth, to one which legislates and taxes environmentally harmful products, and reduces consumption of unnecessary goods will result in a just transition to a system which protects the environment, including mass reduction of plastic waste.

09:40 PLASTIC POLLUTION: A GATEWAY TO OTHER OCEAN THREATS

Clare Brook, Blue Marine Foundation

Blue Marine Foundation's origins lie in the book, 'The End of the Line' by Charles Clover, and the film of the same name which came out in 2009. Both drew the world's attention to the crisis of overfishing, which was then and remains an underappreciated threat. Around five years ago, as ocean plastic began to capture the public imagination, we questioned whether we should expand Blue Marine's brief to include plastics. Yet when we re-examined scientific papers on the main threats to ocean health, consensus listed these as warming, overfishing and habitat destruction, acidification and deoxygenation, all even more pressing than plastic pollution. Indeed, other forms of pollution – sewage, agricultural, chemical, pharmaceutical and personal care – as well as noise pollution and invasive species – were posing an even greater threat to marine life than plastic.

So Blue Marine has stuck to its knitting on tackling overfishing and pressing for more/better marine protected areas. But there's no doubt that this is a harder message with which to capture the public imagination. Is this because human beings have little affinity with fish, seeing them as food rather than sentient beings? Is it because plastic in the context of nature is very photo-visual and very shocking (the seahorse round the ear bud or the seal trapped in the beer can ring)? It's harder to capture acidic or warmer water on film. We will continue to draw the world's attention to the crisis of overfishing, including on the complex relationship between habitat destruction and climate change.

It's a difficult message to convey. But if people first start caring about ocean health because of plastics and then expand their understanding to include other threats, then we can work with that.

09:55 THE PLASTICS DISCOURSE AS CATALYST FOR BIGGER INITIATIVES TO SAVE THE OCEAN

Amado Blanco, Co-founder and COO of Coast 4C

In the hierarchy of issues impacting our ocean, plastics pollution is not going to be at the top. Overfishing, habitat degradation, and climate change will be higher in the ladder and localised and global initiatives along these lines are credited with more significance. Overwhelmed by our overmagnified view of these issues, we seem to struggle with how to start addressing them, especially organisations that are promoting local and community-based actions. There is a chasm between translating high level science-informed board room conversations to concrete local, national, and regional actions.

While plastics pollution is not the biggest issue that is impacting our ocean, our experience suggests that it can help catalyse larger, coordinated initiatives that directly address the bigger issues. For people who have minimal day-to-day interactions with the ocean, the bigger issues of overfishing, degradation, and climate change can be abstract. Most people can easily relate with plastics pollution, regardless of their location in relation to the coasts. If nestled in the right narrative and social infrastructures, the plastics issue does not polarise. If we have to start somewhere, plastics offer a good starting point and can open to inroads to addressing these bigger issues. The award-winning Net-Works project considers the initiative on ocean plastics as our ground zero and now we are evolving into Coast4C, which approaches the issues of poverty in the coastlines, sustainability of conservation actions, commercial sector engagement, and climate change in an integrated manner.

10:10 THE RISE IN MEDIA ATTENTION ON THE ISSUE OF OCEAN PLASTIC POLLUTION

Karen McVeigh, The Guardian

In recent years plastic has become the visible face of humankind's dying relationship with nature. We've seen massive gyres of pollution in the middle of the Pacific Ocean in the form of the great Pacific garbage patch. We've been inundated with images of seals and turtles with plastic frisbees embedded in their flesh and heard stories of whales found dead with plastic bags in their stomachs. David Attenborough's Blue Planet in 2017 was shocking and showed the world how ubiquitous plastic is in the ocean. It no doubt created thousands of activists and helped donations to charities but did it make a difference to our behaviour? When does the wave of public revulsion lead to change?

Human beings as a rule, and policy makers in particular, don't act until they have to, or they see it affects them directly. I will be talking about the increase in awareness of plastic pollution, the role of the media and what leads to change. I'll cover the 'Blue Planet effect' and the rise in the study of micro plastics - now found in the bodies of animals, in our food and, according to a study in 2020, to have crossed the placenta into the blood of unborn babies. And I'll touch on the ground breaking decision by over 170 countries this year to begin to tackle the mountain of plastic we have created.

10:25 PANEL SESSION Q&A

10:45 RAPID RESEARCH SPOTLIGHT FILM: SOLVING PLASTIC POLLUTION TO TACKLE BIGGER ISSUES OF OCEAN HEALTH FOR BLUE COMMUNITIES

Sabine Pahl, University of Vienna, Austria and GCRF Blue Communities

Marine plastic pollution is entirely due to humans. Throughout the whole life cycle of plastic, from production via consumption to disposal, it is human decisions and behaviours that ultimately lead to plastic ending up in ocean environments. This presentation will briefly summarise some key questions on the human dimension in ocean plastic pollution. Using a social and behavioural sciences

perspective, I will focus on the role of risk perception, communication and behaviour change in the context of the existing plastic 'system' and its drivers and constraints. The presentation will refer to both macro- and microplastics and highlight the many benefits but also challenges of international, interdisciplinary and integrative research, by drawing on recent research including the GCRF Blue Communities project that connects case study sites in the UK and in Southeast Asia. The core message is that humans are the cause of environmental problems such as plastic pollution but that they are also a crucial part to enable solutions.

10:50 MORNING BREAK & VIRTUAL NETWORKING IN EXPO

Further information on networking in Expo on Page 4

11:15 SESSION 5: CLIMATE AND PLANETARY BOUNDARIES

Chair: Dr Anna Birney, School of System Change

11:20 CLIMATE AND PLASTIC - THE FORGOTTEN LINK

Helen Ford, Operation Wallacea and University of Nottingham, United Kingdom

Plastic pollution and climate change have commonly been treated as two separate issues and sometimes are even seen as competing. However, plastic contributes to greenhouse gas emissions from the beginning to the end of its life cycle. While climate change is predicted to exacerbate the spread of plastic pollution in the natural environment. We also show that these two issues co-occur within the marine environment and can compound as multiple stressors on vulnerable species and ecosystems. But how the effects of climate change and marine plastic pollution will interact into the future is largely unknown. A Web of Science search showed climate change and plastic pollution studies in the ocean are often siloed, with only 0.4% of the articles examining both stressors simultaneously. We also present that the solutions can be beneficial to mitigate both issues simultaneously. Integrated approaches include conserving blue carbon and a circular economy. The root cause of both crises is the same, the overconsumption of finite resources. So rather than debate over the relative importance of climate change or marine plastic pollution, a more productive course would be to determine the linking factors between the two and identify solutions to combat both crises.

11:35 BEYOND COP26 – WHAT DOES THIS MEAN FOR OCEAN BIODIVERSITY, PLASTIC POLLUTION AND THE CLIMATE CRISIS?

James Smith, International Marine Environment, Department for Environment, Food & Rural Affairs, United Kingdom

With 2021 dubbed 'marine super-year' and high ambition on ocean action raised through the UK, Presidencies of the G7 and UNFCCC COP26 in Glasgow, 2022 promises to be even more important to deliver the global agreements needed to tackle the three interlinked planetary crises of biodiversity loss, climate change and marine pollution. International negotiations started this year with a historic moment at the fifth session of the United Nations Environment Assembly (UNEA-5), when members agreed to start international negotiations on a new legally binding instrument to tackle plastic pollution. They continue under the Convention on Biological Diversity to secure agreement on a new Global Biodiversity Framework that will succeed the Aichi Targets, whilst in parallel, a recurring annual Ocean dialogue commencing this summer, aims to strengthen integration of the ocean within the UNFCCC framework.

The UK continues to be at the heart of these negotiations, pressing for high ambition and concrete action to drive global change, underpinned by science and evidence. Through the UK's £500 million

Blue Planet Fund, financed through the UK Official Development Assistance budget, the UK is scaling up the provision of technical and financial support to developing countries to help protect the marine environment and reduce poverty – targeted through action to address marine pollution, biodiversity loss and the impacts of climate change, and to support progress towards sustainable seafood.

During this session we will look at the global frameworks that offer long term global solutions - the UK's priorities for a decade of ocean action across policy, research and science - and case studies that exemplify how UK support overseas is making a real difference on the ground.

11:50 'THE HIDDEN COSTS OF A PLASTIC PLANET': LESSONS FROM A SYSTEMIC APPROACH TO THE PLASTICS POLLUTION CRISIS

Lisa Anne Hamilton, Attorney and Regulatory Consultant

In May 2019, the Center for International Environmental Law (CIEL) published a [report](#) in cooperation with the Environmental Integrity Project, FrackTracker, GAIA, and 5Gyres with the research assistance of Dr Sarah Royer and economist Dr Jeffrey Morris to address the environmental and climate impacts of plastics across its lifecycle and the global value chain. By taking a systems approach and pinpointing the sources of greenhouse gas emissions throughout the plastic life cycle, the report illustrates the underrepresented contributions to the global emissions profile that is projected to increase with the global growth in demand for plastic products and increased investment in plastic production to meet that demand.

Lisa Anne Hamilton will provide an overview of the key findings of the report through the lens of academic research on the value of intersectional approaches to environmental crises. The discussion will address (1) why plastic pollution is a climate change issue; (2) examples of intersectional challenges to transformative solutions including how proposed solutions to the downstream plastic waste management may undermine national emission reduction goals; and (3) an update and next steps for the recently announced UN resolution to address the full lifecycle of plastics.

12:05 'ECOBOATS' - A CIRCULAR ECONOMY APPROACH TO CLIMATE CHANGE ADAPTATION

Ismael Essome, Madiba & Nature

Madiba & Nature is a not-for-profit with the aim to tackle the marine and urban plastic waste. Through a vision of smart management of plastic waste relying on City Halls, with the use of Ecobins in the cities of Douala, Yaoundé and Kribi, the organisation has set up the first selective waste sorting system in Cameroon. The populations are sensitised through the media, door-to-door campaigns and the use at home of the application #Madiba&Nature of waste management - already downloadable on playstore - to acquire the Ecobins at home and get their plastic waste regularly collected by the Madiba & Nature. Moreover, thanks to its tips for recycling plastic waste into ecological dugouts, furniture and Ecobins, Madiba & Nature promotes the circular economy by training community groups, youth and women in recycling and environmental management.

Ecoboats are an exciting innovation for ecotourism; the organisation promotes their implementation in fisheries as well as on beaches, developing at the same time nautical leisure activities to revive this new form of income generating activities. The sale of Ecoboats at affordable prices to fishing communities through the outreach programme with village associations lead fishermen to use them regularly.

12:20 PANEL SESSION Q&A

12:40 LUNCH BREAK

14:15 SESSION 6: FROM SCIENCE, TO POLICY, TO IMPACT

Chair: Dr Matthew Gollock, Zoological Society of London

14:20 JNCC AND MARINE PLASTICS: USING EVIDENCE TO PROVIDE POLICY ADVICE FOR GOVERNMENTS

Gemma Harper and Professor Jason Weeks, Joint Nature Conservation Committee (JNCC)

JNCC is the public body that advises the UK Government and devolved administrations on UK-wide and international nature conservation and recovery. We are closely involved in evaluating policy-related aspects of marine plastics in the UK and internationally. Our Litter Sensitivity Project reviewed literature on the sensitivity of designated marine protected area (MPA) features to marine plastic pollution, identifying adverse impacts and knowledge gaps, then applying this to JNCC's sensitivity work that is re-developing the pressure benchmark for marine litter. This was complemented by the JNCC Litter Imagery Project in the UK's offshore marine zone, which collected data to assess the extent and distribution of marine litter using seabed imagery collected on surveys within the UK's offshore MPA network. These projects inform our conservation advice on designated features sensitive to litter. Internationally, JNCC has worked with Cefas on the Commonwealth Litter Programme (CLiP), which aims to develop international partnerships and assist Commonwealth countries in mitigating the impacts of marine litter entering the marine environment. The work focusses on identifying terrestrial and marine litter sources, removal of litter from marine environments, and provision of education and engagement through scientific outreach. As part of our UK role in Multilateral Environmental Agreements we are involved in developing the CBD indicator on marine debris.

14:35 A SUPPLY CHAIN APPROACH TO TACKLING PELLET LOSS

Tanya Cox, Fauna and Flora International

Tackling marine plastic pollution is a vast and complicated global challenge driven by a broad array of sources and requiring a complex interaction of measures and solutions. Fauna & Flora International's (FFI) approach is to focus on tackling plastic – particularly microplastic pollution at source, working with a wide range of stakeholders to develop and promote practicable, upstream solutions that effectively turn off the plastic tap.

A core aspect of FFI's plastic programme has been our focus on tackling pellet pollution across global value chains, taking a systematic approach to understanding drivers of the problem and working with industry and decision-makers to promote solutions. Plastic pellets – or nurdles – are the building blocks of the plastic industry; small, cheap, and produced in their billions then transported around the world between plastic manufacturing plants. Careless handling results in both chronic and acute losses of pellets from supply chains and the resulting pollution can have a significant impact on marine biodiversity.

In this talk, we present the scale of the challenge, why it's an issue for marine biodiversity and some of the practical steps that can be taken to eliminate this source of pollution. We conclude by exploring the role that different stakeholders can play in reversing the trend and highlight policy options that would level the playing field to ensure joined up action across global value chains.

14:50 IMPACTFUL CAMPAIGNS TO INFLUENCE CHANGE

James Wakibia, Eco-Rethink Organization

Plastic pollution is everywhere, it is in the food we eat, the water we drink and the soil in which we grow our food. A recent study by Dutch scientists found microplastics in human blood. It may not be surprising but we should be worried. It's just a matter of time before another study links plastic pollution in our blood as a cause of a disease. On March 2nd 2022 in Nairobi, Kenya Capital, 175 UN

member countries passed a landmark resolution to establish a global plastics treaty in 2024 to stop plastic pollution. The announcement was received with jubilation from many delegates attending the conference. Initially Rwanda and Peru proposed a draft resolution with a 'full life cycle' approach to address the issue of plastic pollution; that is from plastic production, how it is designed, used disposed and recycled. The other drafts mainly looked the plastic waste problem especially marine plastics. The Rwanda/Peru draft won the day. It is hoped that once the treaty is ready, it will, in the spirit of the 'full life cycle' approach, suggest caps on production of virgin plastics, bans on single use plastics, better designs to promote circularity, while removing toxic chemical additives, more investments in recycling infrastructure and of course in solid waste management. Will the treaty be the silver bullet? Only time will tell, but there is a general agreement by most people that we need to stop plastic pollution, before it stops us. As an activist, I shall continue calling out my government and other governments to do more to reduce plastic pollution before the global treaty takes effect, which might take some time. It is our responsibility as citizens of this planet to keep our environment clean. Thankfully, unlike some few years back, today we are able to campaign better and more efficiently, to demand change. Social media has done away with mainstream media censorship and government control, now we are able to directly address duty bearers using our social media accounts. During my campaigns I relied on available scientific data to ask the government of Kenya to ban plastic bags. I worked with bloggers, journalists and environmentalists to suggest policy change, something I believe other people can use and bring change in their areas. My digital campaigns for a clean environment will continue. We need governments to do more, we need the plastic industry to be accountable and we need to continue spreading awareness to our people.

15:05 NEGLECTED: ENVIRONMENTAL JUSTICE IMPACTS OF PLASTIC POLLUTION

Marce Guti rrez-Graudi s, Azul

Plastic pollution, particularly in the marine environment, has been a persistent global problem for years. While this phenomenon has been widely studied in terms of impacts to the marine environment, the justice implications have historically been ignored. This timely session, given the United Nations (UN) mandate to negotiate a plastics treaty, will provide a 15-minute overview on a recent UN Environment Programme (UNEP) report exploring the marine plastics pollution problem at a global scale from an environmental justice perspective, from raw materials extraction to consumption and disposal.

15:20 PANEL SESSION Q&A

15:40 CLOSING COMMENTS

Dr Matthew Gollock, Zoological Society of London

15:50 VIRTUAL NETWORKING IN EXPO

Further information on networking in Expo on Page 4

17:00 VIRTUAL LOBBY CLOSED

END OF SYMPOSIUM

SPEAKER & CHAIR BIOGRAPHIES

DR RUCHI BADOLA

WILDLIFE INSTITUTE OF INDIA

Dr Badola has been conducting applied research in wildlife management. She has developed and implemented pioneer training programmes dealing with human dimensions in wildlife conservation through stakeholder involvement and community mobilisation. For the past five years she has been investigating the biodiversity conservation and Ganga Rejuvenation project funded by NMCG under the Ministry of Jal Shakti, Government of India. Under this project she has successfully mobilised a cadre of trained volunteers, the Ganga Praharis, to assist various organisations in restoring aquatic biodiversity of freshwater ecosystems in the Ganga River basin.

DR ANNA BIRNEY

SCHOOL OF SYSTEM CHANGE

Anna is passionate about designing and facilitating systems change programmes that support people, communities and organisations transform their practice. In 2016, she launched the School of System Change, which is seeking to build an international learning community of change makers using systemic practices to address the complex challenges of our times. In addition, Anna works on and coaches on a wide number of projects and initiatives across sectors and systems – for example the Marine CoLab and #Oneless project, Unilever's theory of systems change, Bosch Foundation strategies, Scottish Climate Assembly and Boundless Roots Community. Anna is the author of *Cultivating System Change: A Practitioner's Companion* which is based on her PhD.

AMADO BLANCO

CO-FOUNDER AND COO OF COAST 4C

Amado P. Blanco is co-founder and chief operating officer of Coast4C, and, concurrently, Net-Works Regional Manager – Southeast Asia for the Zoological Society of London. He was finalist of the Ocean Awards 2017 for innovation, which is handled by a UK-based award giving organisation recognizing exemplary works ocean conservation around the world, and he was awarded as one of the 2017 Outstanding Southern Leyteno for his marine conservation advocacy. Amado has been involved in community-based and collaborative marine and coastal resource management for nearly two decades. He was the former national director of Project Seahorse Foundation for Marine Conservation, where he led a team of field biologists and community development specialists in creating and strengthening community-managed marine protected areas in central Philippines. He was project lead of a big Darwin Initiative-funded project, which catalysed the legal creation of a new generation of large, more habitat diverse, and socially inclusive marine protected areas in central Philippines. He is now leading the progression of these MPAs into financially self-reliant social and ecological systems with regenerative seaweed farming and used nets supply chains as income centres.

CLARE BROOK

CEO, BLUE MARINE FOUNDATION

Clare Brook joined Blue Marine: www.bluemarinefoundation.com in 2014 as CFO and became CEO in 2015. Prior to that she worked for 24 years in environmental and sustainable investing, managing funds at Jupiter, Henderson and Aviva. She set up the sustainable investing division of Aviva and co-founded WHEB Asset Management. She is interested in understanding how the NGO and financial worlds can work together more effectively and has established BLUE Economics, a division of Blue Marine to explore how finance can be mobilised at scale to support marine conservation.

DR GAWSIA WAHIDUNNESSA CHOWDHURY

DEPARTMENT OF ZOOLOGY, UNIVERSITY OF DHAKA, BANGLADESH

Gawsia Wahidunnessa Chowdhury is a professor at the Department of Zoology, University of Dhaka. She is a 2019 National Geographic Society's Expedition team member (Bangladesh team leader). She is a researcher, published

author and received her PhD in Zoology (wetland ecology) from the University of Cambridge. Dr Chowdhury has more than 14 years of experience in teaching animal diversity, wetland ecology and relevant topics in Zoology. She has received many awards and grants, including a Commonwealth Scholarship (academic staff) and a Wildlife Conservation Society Fellowship. She works with Government, non-Government and international organisations and is currently working with threatened species and habitat conservation in Bangladesh. In addition to being a board member of the renowned conservation organization WildTeam, she is a member of international technical groups including the Commission of Education Communication (CEC), the Species Survival Commission (SSC) and also the regional co-chair of the Invertebrates Specialist Group of the International Union for Conservation of Nature (IUCN). This year she has been awarded the 2022 OWSD-Elsevier Foundation Award for early-career women scientists in the developing world.

TANYA COX

FAUNA AND FLORA INTERNATIONAL

Tanya is a Marine Plastics Senior Technical Specialist at FFI with responsibility for helping develop FFI's programme of work addressing the extent and impact of marine plastic pollution, with the goal of developing pragmatic solutions and upstream interventions. With a master's degree in Oceanography, Tanya has a broad understanding of oceanic and atmospheric systems and a keen interest in corporate sustainability and CSR policies, circular economies for sustainable resource use, marine conservation issues, behaviour change campaigning and environmental policy. She has worked in Europe, Africa and the Middle East in roles spanning project management, research and monitoring, environmental education and the design of community outreach programmes and conservation initiatives.

DR TRIDIBESH DEY

UNIVERSITY OF EXETER, UNITED KINGDOM

Dr Tridibesh Dey is a South Asian anthropologist of science and technology and a plastic theorist. Previously a complex systems engineer, Dr Dey is interested in plastics across object-forms, processes, and incarnations, mindful of the various localised realities generated by these complex global materials. His previous and ongoing research includes fieldwork-based analyses of neoliberal infrastructures of plastic waste management, small-scale localised processes of plastic re-use and repurposing, waste-recycling, product design and engineering, supply chain, plastic in retail and consumption, plastic politics during COVID-19, and the materialities of facemasks.

DR SONIA DIAS

GLOBAL WASTE SPECIALIST, WOMEN IN INFORMAL EMPLOYMENT: GLOBALIZING AND ORGANIZING (WIEGO)

Dr Sonia Dias is a global waste specialist at WIEGO, Women in Informal Employment. She has extensive experience as a public officer in her country, Brazil - most notably in empowerment of sector unions and informal sector integration. She held a 2-year visiting Professorship at the Political Science Department, Federal University of Minas Gerais. Sonia has extensive knowledge of the conditions under which informal sectors may successfully be integrated in the waste management sector to raise recycling rates and save costs for municipalities and end-users. She is a member of the Observatory for Inclusive Recycling, the Waste & Citizenship Forum, and an Eisenhower Fellow. She was a policy unit expert for UN-Habitat 3.

ISMAEL ESSOME

MADIBA & NATURE

Ismael Essome has over 5 years of experience in Environment Management and Recycling, and is an environmentalist engineer, a change maker, mentor, and entrepreneur from Cameroon. Currently, Ismael is the founder President of Madiba & Nature, a non-profit organisation that addresses the issue of pollution. He is the genius behind the plastic boat commonly known as "ECOBOAT" that promotes the circular economy and the ecotourism in Kribi and reduces plastic pollution through utilising recycled plastic bottles. Ismael is passionate about uplifting the lives of marginalised groups of people while conserving the environment. With Madiba & Nature he empowers communities to protect the environment whilst tackling the marine plastic pollution and recycling plastic waste into Ecoboats. Ismael is a Mandela Washington Fellow from the Young Africa Leader

initiative, Sustainable Development Goals Advocate, One Young World Ambassador, and Member of the UN Global Partnership on Marine Litter and USADF Reward 2020. Ismael works with a team of more than 50 people to inspire a positive change around the world and promote the circular economy in Cameroon in order to mitigate and boost adaptation to climate change.

DR NICOLE ESTEBAN

SWANSEA UNIVERSITY, UNITED KINGDOM

A marine ecologist with focus on tropical marine ecosystems, Nicole has 20 years' experience of working in coastal zone management with research institutes, NGOs and government agencies in the UK and overseas in the Caribbean, Red Sea and Indian Ocean. Nicole has a BSc in Marine Biology from Swansea University, MSc in Tropical Coastal Management and PhD in sea turtle ecology from Swansea University. Nicole spent 8 years managing a Caribbean marine and national park and is currently an Associate Professor at Swansea University with ongoing research projects including sea turtle conservation research in the Western Indian Ocean.

HELEN FORD

OPERATION WALLACEA AND UNIVERSITY OF NOTTINGHAM, UNITED KINGDOM

Helen recently completed her PhD with Bangor University on the spatial ecology of coral reefs. She has begun a post-doc position with Operation Wallacea and the University of Nottingham. During her PhD she interned with Dr Heather Koldewey (ZSL) and first authored an opinion piece on the links between climate change and marine plastic pollution.

MARCE GUTIÉRREZ-GRAUDIÑŠ

AZUL

Marce Gutiérrez-Graudiñš is the Founder and Executive Director of Azul, a San Francisco-based grassroots organization that works with Latinxs throughout the Americas to protect the ocean and coasts. Azul interweaves deep cultural fluency and grassroots organising to secure policy outcomes that helped shape California coastal conservation policy with people at the core, and continue to move justice-driven policy nationally – it launched in 2011 as the first U.S. organization devoted to elevating Latinx voices in marine conservation. Marce is also one of five women founders of the Ocean Justice Forum, launched in 2021. She works alongside community and coalition partners, as well as international ocean-climate activists, to ensure the health and safety of the ocean that sustains us and of the people in proximity to environmental injustices in their coastal and inland communities. She serves as a member of the California Coastal Conservancy's governing board, is an expert advisory group member for the United Nation's Environment Program on Marine Litter and Microplastics and is a member of the International Union for Conservation of Nature's California Expert Assessment Group for the Green List. A native of Tijuana, Mexico; Marce now makes Southern California home with her family.

LISA ANNE HAMILTON

ATTORNEY AND REGULATORY CONSULTANT

Lisa Anne Hamilton is an attorney and regulatory consultant who collaborates with a global network of environmental, energy and climate advocates to further equity in law and policy. She draws upon her experiences as the former Adaptation program director for the Georgetown Climate Center and as the former Director of the Climate and Energy Program for the Center for International Environmental Law (CIEL), among other institutions. At CIEL, she led a consortium of organisations to produce the 2019 report 'Plastic & Climate: The Hidden Costs of a Plastic Planet' that has informed global regulatory policies to address the plastic pollution crisis.

SHAUNA JORDAN

ZOOLOGICAL SOCIETY OF LONDON

Shauna joined ZSL's Marine and Freshwater team at the start of 2021, as the Project Manager for #OneLess London – a collaborative project to turn the tide against single-use plastic within a complex urban setting. This year Shauna will be working with international partners to take the #OneLess systems change approach to the UK Overseas Territories of Ascension and St Helena in the Atlantic Ocean, looking to mitigate the impact of plastic on

key marine wildlife species in these remote locations. Having worked across multiple sectors including waste management and social impact investing, Shauna brings a wide range of experience and a passion for integrating environmental and social change through a systemic change approach.

FIONA LLEWELLYN

ZOOLOGICAL SOCIETY OF LONDON

Fiona is a Senior Project Manager in the Marine and Freshwater Conservation teams at ZSL. She is an ocean conservationist with 15 years' experience working for environmental NGOs on marine scientific research, policy, practical conservation, and campaigns. Having joined ZSL in 2012, Fiona has led and worked on a range of projects, including the [Great British Oceans](#) campaign, which has been instrumental in achieving marine protected areas in the UK Overseas Territories; [Project Ocean](#) - ZSL's innovative ocean partnership with Selfridges; and more recently, studying and mitigating the effects of plastic on sea turtles in the Chagos Archipelago. Since helping to co-found its launch in 2016, Fiona has managed the [#OneLess](#) project. #OneLess is a collaborative and values-based movement, using a systems-change approach to transform London into a city that is free of single-use plastic water bottles and reduce the amount of plastic entering the ocean. Fiona is particularly interested and experienced in UK and international marine policy, cross-sector collaborations, innovative approaches to conservation challenges, and corporate social responsibility.

SHAUNA MAHAJAN

WWF

Shauna is a conservation social scientist committed to developing inclusive and holistic solutions to conservation problems. With an interdisciplinary background in resilience thinking, environment, and development, her work and research focuses broadly on the social dimensions of conservation, with a special focus on coastal communities. At WWF, Shauna develops and tests methods for conservation strategy development and evaluation, while also researching the science of decision-making, and the natural resource governance systems that enable positive social and ecological outcomes from conservation. She has a geographic focus in Coastal East Africa. Shauna has over a decade of experience researching and working on integrated social and ecological issues: Her past work has taken her to explore the agriculture landscapes of Quebec, river basins and coastlines in the eastern United States, and fishing communities in the Indian Ocean. Outside of WWF, Shauna is a hatha yoga teacher and folk singer-songwriter, where her passion for mindfulness and storytelling intersect with her desire to create a more sustainable and just future.

KAREN MCVEIGH

THE GUARDIAN

Karen is a senior journalist at the Guardian, specialising in Global development, environment and ocean issues. Over the last three years, she has specialised in oceans, covering topics from human rights at sea, illegal and overfishing, which often spills over into human rights abuses and criminal activities, to the plague of abandonment at sea when ship owners ignore the rights of seafarers. She has highlighted issues including the lack of proper marine protected areas, in the UK and beyond, and the scourge of plastic pollution, which ends up as micro and nanoplastics in the ocean.

JUAN PABLO MUÑOZ-PÉREZ

UNIVERSITY OF THE SUNSHINE COAST, AUSTRALIA AND GALÁPAGOS SCIENCE CENTER, ECUADOR

Juan Pablo is a PhD Candidate in the School of Science, Technology & Engineering at the University of the Sunshine Coast, Australia: <https://www.youtube.com/watch?v=O9uCOGIbbqU>, and an occasional lecturer and Research Scientist at the University San Francisco of Quito and University of North Carolina Chapel Hill Galápagos Science Center (GSC), Ecuador. He has more than 20 years' experience in diving and surfing in the Galápagos Islands, then ten years doing research, which focuses on animal movement and ecology, especially sea turtles and other marine animals such as whales and dolphins, as well as animal health. Since 2014 he has been a pioneer and very actively investigating plastic pollution in the Galápagos with the primary objective of using science to find solutions. Juan Pablo is a co-founder of: the EquilibrioAzul Sea Turtle Conservation Program

(www.equilibrioazul.org); the GSC Sea Turtle Conservation Program "TortugaNegra-Galápagos" (www.tortuganegra.org) the GSC Plastic Pollution Research Program; the Galapagos DPNG-GSC Annual Research and Conservation Symposium (www.galapagossience.org) and the biannual music festival to raise awareness of ocean conservation 'IslaViva' (<https://www.islaviva.org/juan-pablo-munoz>).

SABINE PAHL

UNIVERSITY OF VIENNA AND GCRF BLUE COMMUNITIES

Sabine Pahl is Full Professor of Urban and Environmental Psychology at the University of Vienna since 2020. Before that she spent 14 years at the University of Plymouth where she was part of the International Marine Litter Unit. Her research focuses on the human dimension in environmental issues and takes place in the context of large interdisciplinary projects. She investigates perceptions and behaviour change, particularly in the area of plastic pollution and microplastics. She has provided science advice and input into policy at national (UK), European and international levels, always contributing psychological and behavioural science perspectives.

DARCY PHILPOTT

ASCENSION ISLAND CONSERVATION AND FISHERIES, ASCENSION ISLAND GOVERNMENT

Darcy completed an MSc in Ecosystem-based Management of Marine Systems which propelled her towards a career in monitoring and management of Marine Protected Area's (MPAs) in locations in the Caribbean and the Indian Ocean. She became a Marine Scientist with the Ascension Island Conservation team in 2020, where she is involved with the monitoring and research of one of the world's largest MPAs. She is particularly interested in marine ecosystem interactions and the use of new technologies and methods to monitor the environment.

AMY PRYOR

THAMES ESTUARY PARTNERSHIP

Amy Pryor is a marine and estuarine scientist with over 20 years of experience in marine and coastal management. With a foundation in Marine Biology and Aquatic Science, Amy is a lifelong ocean lover, a founding member of the [Marine CoLABoration](#) seeking to embed a values based approach to messaging on ocean health, was part of the [#OneLess](#) collaborative project team and is striving to contribute to the enhancement of the health of the ocean locally and nationally through connecting across sectors, borders, land and sea to enable a whole system approach to management of our estuaries and coasts. Amy is the Technical Director at the [Thames Estuary Partnership](#) responsible for developing ideas and managing a team to design and deliver a robust programme of cross disciplinary projects and research to tackle the main issues effecting the Thames Estuary. Amy also Chairs the UK [Coastal Partnerships Network](#) (CPN), which exists to facilitate knowledge exchange and sharing best practice across 57 Coastal and Estuary Partnerships and 30 + wider coastal initiatives and provide a national voice for coastal issues.

SIMON REDDY

DIRECTOR, THE PEW CHARITABLE TRUSTS

Simon Reddy directs Pew's 'Protecting Coastal Wetlands and Coral Reefs' project, along with the 'Preventing Ocean Plastics' initiative. Previously, he led the Pew Bertarelli Ocean Legacy Project's work in the United Kingdom, part of a larger initiative with the goal of increasing the number of fully protected parks in the sea from nine to 15 by 2022. Before joining Pew, Reddy worked in senior positions in international policy and advocacy, including executive director of the Global Ocean Commission, an independent initiative made up of 17 leaders from around the world. He was also executive director of the C40 Cities Climate Leadership Group, where his efforts focused on building a global network of cities committed to addressing climate change. Earlier in his career, he worked for Greenpeace in a variety of roles. Reddy holds a Bachelor's degree in Ecology from City of London Polytechnic and a Master's in Marine and Fisheries Biology from the University of Aberdeen.

SWATI SINGH SAMBYAL

UN-HABITAT (UNITED NATIONS HUMAN SETTLEMENTS PROGRAMME), INDIA COUNTRY OFFICE

Swati Singh Sambyal is presently associated as the Waste Management Specialist with UN-Habitat India. She has worked in South Asia and the Global South on development issues concerning integrated waste management and circular economy for over 11 years. She has contributed significantly to the India's Waste Management Rules 2016, especially on solid, plastic and e-waste, and has been a part of several high-level committees constituted on waste management in the country. She has worked as the Head of a programme on Waste Management at Centre for Science and Environment (CSE), New Delhi, for over 9 years. Swati has trained at the Swedish Environmental Protection Agency (EPA) in Stockholm, and the Norwegian EPA in Oslo on Environmental Governance and Planning and is a graduate in Energy and Environmental Engineering.

ANNA SANCHEZ-VIDAL

UNIVERSITY OF BARCELONA, SPAIN

Anna is an Associate Professor at the Department of Marine and Earth Sciences of the University of Barcelona, in Catalonia, Spain. Anna's research career has been centred on the role that particles play in the biogeochemical cycling of major and minor elements in the ocean. Based on a detailed geochemical characterisation of marine snow and the seabed (bulk geochemical composition and stable isotopes, lipid biomarkers, major and trace elements), and the understanding of the external (climatic) and internal (oceanographic) forcing conditions, her major research achievement has been the understanding of the natural drivers that control sediment transfer and the functioning of marine ecosystems in deep environments from the Southern Ocean to the Arctic. In addition, during the last decade she also focused on the study of the impact of anthropogenic activity on marine ecosystems, including persistent organic pollutants, plastic pollution and climate change. This has allowed her to understand the magnitude of this new deep sea forcing which is related to humans.

JAMES SMITH

INTERNATIONAL MARINE ENVIRONMENT, DEPARTMENT FOR ENVIRONMENT, FOOD & RURAL AFFAIRS, UNITED KINGDOM

James Smith is Deputy Director, International Marine Environment at the UK's Department for Environment, Food and Rural Affairs (Defra) and the UK Commissioner to the International Whaling Commission. He is responsible for the UK's policy on biodiversity, climate change and pollution as it relates to the ocean environment. He also oversees Defra's component of the UK's Blue Planet Fund, financed through the UK's Official Development Assistance budget, a fund that supports developing countries to protect the marine environment and reduce poverty. James has been at the heart of policy making in UK Government for over two decades, and has continued his studies through a Masters in Biodiversity and Ecosystem Health, alongside research expeditions to Namibia and Kyrgyzstan.

PROFESSOR RICHARD STAFFORD

BOURNEMOUTH UNIVERSITY, UNITED KINGDOM

Richard is actively involved in environmental policy, and was the lead editor of the British Ecological Society's report on Nature-based Solutions for Climate Change, and lead author of the marine and coastal chapter of the report. He was also a member of the nature-based solutions team for the 2021 Universities CoP Network and an expert witness for the recent House of Lords inquiry into Nature-based Solutions. Richard is interested in the political and economic solutions to climate change and other ocean threats, and has developed predictive models to evaluate different solutions, combining natural sciences, social sciences and socio-economic aspects. The good news from this research is, while there is a huge challenge to address the risks of climate change and biodiversity loss, the solutions which work best will also have a positive effect on the majority of society, both in the UK and around the world. We now need to political will to make these changes.

JAMES WAKIBIA

ECO-RETHINK ORGANIZATION

James Wakibia is activist against plastic pollution and a photojournalist in Kenya. He is the executive director of a non-profit Community Based Organization called Eco-Rethink which is involved with environmental conservation and awareness. Between 2011 and 2017, after being unhappy with the state of his home town environment which was polluted with plastic bags, he begun campaigns calling for a ban on single-use plastics bags. The bags were banned in 2017 partly because of his work. As a photojournalist, he has documented environmental pollution for over 5 years and his pictures have been published by many international media outlets. He believes that if citizens came together they can influence change. His slogan is 'Less Plastic is fantastic' and is greatly inspired by Margaret Mead's quote "Never doubt that a small group of thoughtful committed individuals can change the world. In fact, it's the only thing that ever has".

PROFESSOR JASON WEEKS

JOINT NATURE CONSERVATION COMMITTEE (JNCC)

Jason Weeks is JNCC's Head of Business Development & Marketing and was recently appointed as Chair of the Hazardous Substances Advisory Committee. He has extensive experience as an ecotoxicologist in the environmental, food and aquaculture sectors. Jason has been instrumental in the successful delivery of significant international aid-funded projects across UK Government organisations, UN and the World Bank. Jason is an internationally recognised expert on ecological and environmental risk assessment and environmental monitoring, with over 120 publications. Jason was formerly Professor of Environmental Risk Analysis at Cranfield University and at Cefas was responsible for aquaculture therapeutants, to ensure sustainable and healthy aquatic food chains.

THANK YOU FOR JOINING

Your participation in the symposium is incredibly important to us. Thank you for taking the time to share, listen, interact and help spread this message of systems change for ocean conservation. If you can, please take part in our exit survey which will appear when the symposium finishes on Zoom - we really value and appreciate your feedback for our evaluation of this event.