US and UK yet to show support for global treaty to tackle plastic pollution

More than two-thirds of UN member states have declared they are open to a new agreement to stem the rising tide of plastic waste

The flow of plastic into the ocean is expected to triple by 2040 if current trends continue, up to 29m tonnes a year. Photograph: Taiwan Academia Sinica Handout/EPA

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About this content

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Support is growing internationally for a new global treaty to tackle the plastic pollution crisis, it has emerged, though so far without the two biggest per capita waste producers – the US and the UK – which have yet to signal their participation.

A UN working group on marine litter and microplastics met at a virtual conference last week to discuss the issue. More than two-thirds of UN member states, including African, Baltic, Caribbean, Nordic and Pacific states, as well as

the EU, have declared they are open to considering the option of a new agreement.

The treaty would be akin to the Paris climate agreement or the Montreal protocol to prevent ozone depletion. Neither the UK nor the US have declared their desire for a new agreement.

Britain, which leaves the EU at the end of the year, is considering one of two options: to support increasing calls for negotiating a new global treaty, or to strengthen existing agreements to reduce plastic waste. A decision by Zac Goldsmith, a minister for the environment, is understood to be imminent. The US has so far opposed an international agreement on plastic waste.

The UN environment assembly, which set up the ad hoc working group (AHEG) on marine plastics in 2017, concluded that the existing international legal framework governing plastic pollution, including the Stockholm and the Basel conventions, is fragmented and ineffective.

The flow of plastic into the ocean is expected to triple by 2040 if current trends continue, up to 29m tonnes a year – the equivalent of 50kg for every metre of coastline in the world. All efforts made and announced so far to curb plastic waste are expected to reduce the volume by only 7%. Once in the sea, it breaks down into microplastics, to be ingested by marine life.

Political momentum for a global agreement to address the full lifecycle of plastic has been growing, with several high-level ministerial declarations in favour.

A huge ball of old nets and plastic waste in the North Pacific subtropical convergence zone – more commonly known as the Great Pacific garbage patch. Photograph: Ocean Voyages Institute/ZUMA Wire/REX/Shutterstock

Earlier this month, a resolution calling for the world community to agree to a binding global agreement was adopted by International Union for the Conservation of Nature members, and 2 million people have signed a petition calling for one to be adopted.

At last week's fourth and final meeting of the AHEG group, which will feed into UNEA's 5th conference in 2021 and 2022, many delegates expressed concern that the crisis was being exacerbated by excess plastic pollution linked to personal protective equipment necessary to fight the coronavirus pandemic.

Several delegations voiced support of a new global agreement, although there was no consensus on whether it would only address marine plastic litter or go further to tackle plastics pollution as a whole and if it would be legally binding.

Ayub Macharia, the director of the National Environment Agency in Kenya, said the world required a global agreement to protect a "common heritage, our planet Earth". He told delegates: "Kenya is on record in issuing a ban on

polythene bags in 2017 and in single use plastic bags in protected areas in 2019."

Without international backup, however, Kenya's actions alone did not reduce waste, Macharia said, declaring that "because of our porous borders which allow the illegal trafficking of plastic," it was merely pushed across Kenya's borders to other countries.

Some industries that manufactured plastic bags in Kenya simply migrated to neighbouring countries, he said.

Roxanne Blesam, chief executive officer of Palau's environmental quality protection board, said the republic joined the "overwhelming majority of AHEG experts who have indicated support for a binding global agreement", and supported a proposition put forward by the EU for an intergovernmental negotiating committee to start work on it.

Hugo-Maria Schally, head of the multilateral environmental cooperation unit at the European commission, claimed the EU had been a proponent of a stronger global framework to address marine litter and marine plastic pollution for some time, and that the lack of participation so far by the US remained a huge obstacle.

"We see moves by the US to come to some kind of understanding, but I'm not sure that the difficulties can be bridged," Schally said.

Many NGOs believe that an international agreement is the only viable option to tackle plastic waste. One model for such a treaty, drawn by the Environmental Investigations Agency (EIA), involves four key pillars: monitoring and reporting, to examine the extent of the problem; prevention; coordination; and technical and financial support, for example aid to developing countries.

"Maintaining the status quo is not only untenable, it would have catastrophic implications for planet Earth," said Christina Dixon, senior ocean campaigner at EIA. "It's therefore heartening to see such growing convergence around a global and legally binding treaty to combat plastic pollution."

Tim Grabiel, senior lawyer at EIA, said: “Support for a global treaty on plastic pollution is a critical action that the Biden administration can take to correct the wrongs of the Trump era. Over the last four years, we have continually encountered opposition from the Trump administration to truly address plastic pollution, slowing down progress and watering down international efforts. We are hopeful that, with a change in leadership at the top, the US will join its allies and support a global treaty on plastic pollution at UNEA-5.”

In the UK, a DDepartment for Environment, Food and Rural Affairs spokesperson said: “We are working with partners across the Commonwealth to prevent plastic waste from reaching the ocean, and have committed to establishing a £500m ‘Blue Planet Fund’ that will support developing nations to protect the marine environment and reduce poverty.”

Plastic superhighway: the awful truth of our hidden ocean waste

Solving the issue of waste in our seas turned out to be more complex than scrounging for bottles off the beach, Laura Trethewey found

Plastic debris litters the beach on the Soko Islands in Hong Kong. Photograph: Reuters

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We called the competition Who Found the Weirdest Thing? So far, the entries that day were a motorcycle helmet, a lithium battery covered with scary stickers asking that we return it to the military, and a toy dinosaur.

The dinosaur was warm from the sun and starting to degrade. The ocean had smoothed and worn down its edges. Rocks and sand had crosshatched its skin. It was missing a hind leg. On one side it was dark grey; the sun had bleached its opposite flank white.

It was the second morning of a trip with Ocean Legacy, a group in Canada that collects and recycles plastic pollution from the ocean. We'd spent the first day trudging along Mquqwin beach in British Columbia, plucking bottles and buoys from the driftwood and branches – and it seemed to me the pollution was not as devastating as expected.

Online, I had seen pictures of remote Polynesian atolls covered in plastic. I assumed I would break down crying at the sight of branches tangled with detergent bottles, like some apocalyptic Christmas tree. But it was not like that; it was more diffuse, more diluted by nature.

More than 50% of what Ocean Legacy collects along the west coast of North and Central America is foam, a puffed plastic made mostly of air and polystyrene – a liquid hydrocarbon that is likely carcinogenic. A lightweight, bulky piece of foam sits top heavy above the waterline and has a greater sail area that the wind can push to shore. Plastic bottles are one of the next most common finds. Made of polyethylene terephthalate (PET), a plastic bottle is denser than seawater and sinks as soon as it's punctured. In Ocean Legacy's experience, people are strangely good at screwing caps back on, so more bottles float to land intact than you might expect.

What we were collecting on the beach that morning was the lightweight cream of the crop: single-use items such as straws, plastic bags, cups, bottles. Cities around the world are drafting plastic-bag bans and encouraging reusable cups instead of disposable ones; it is such single-use items that are visibly washing ashore or floating on the ocean's surface. It made me wonder what else we might ban or regulate if we could see all the heavier plastics and materials that never make it to land.

But the beach was by no means covered in plastic, and by midday the toy dinosaur was still the weirdest find.

It was possible, Chloé Dubois of Ocean Legacy told me, that the dinosaur belonged to a victim of the 20 metre-high tsunami that struck Japan in March 2011. The retreating wave sucked 5m metric tons of debris into the water: more than half the annual amount of plastic debris that ends up in the ocean went into the Pacific in a single day.

Tsunami debris from Japan on display at Vancouver Aquarium. Photograph: Xinhua/Alamy

A year passed, and that debris started to wash up along the west coast of North America: a football, a volleyball, then a Harley-Davidson motorcycle, still intact inside a styrofoam container. Miraculously, the owner of the motorcycle was found by tracing the rusted licence plate, and the Harley was shipped back to Japan. North American beachcombers have since travelled to Japan to meet other people who had lost everything but these prized possessions; the Japan Love Project posts pictures online of items in an attempt to return them to their owners. I wondered if Japan Love might reunite the dinosaur with its owner.

Ocean Legacy estimates that a third of what it collects is from Japan's earthquake; a Japanese grant actually funded their expedition to Mquqwin. But to qualify as official tsunami debris, the material has to come with something traceable, such as serial numbers or place names – a tall order for something that has spent months or years at sea. "An almost judicial level of evidence," as one volunteer put it.

Dubois felt that minimising the amount of "official" tsunami debris in this way also minimised the larger issue of ocean plastic – and fitted a larger narrative that

developing countries far away caused plastic pollution. As many as 167,000 plastic fragments swirl in just one sq km of water, and a 2015 landmark study published in the journal Science showed that China, Indonesia and a few other south-east Asian countries are responsible for releasing the vast majority of it. The US, with its long coastline population and high plastic consumption, was the only developed country in the top 20.

Globally, however, our plastic is interconnected. Until recently, developed countries shipped most of their waste to China for recycling. Developing nations are only now starting to reach western levels of plastic demand.

The average person swallows a credit-card-sized amount of plastic each week

The ocean is like a superhighway for plastic debris, and every nation with a shoreline has a sliproad on to it. Regardless of where it comes from, once plastic enters the ocean, it's everyone's problem.

Temperature plays the biggest role in breaking down plastic, and in cold underwater trenches the ocean will actually preserve the plastic indefinitely. But when it reaches land, plastic shatters on rocks or shreds across exfoliating sand, breaking into fragments. The sun warms these small pieces, making them more brittle until they break into even smaller chips and chunks. This is when the toxins inside plastic have a higher chance of leaching out into the environment. Studies show that toxins from degraded foam are one to four orders of magnitude higher in the sand than in the surrounding water.

Out at sea, cross currents meet and spin and slowly draw plastic into gyres. Travelling on currents, plastic can work its way from the east coast of the US to the Arctic. Some ocean travellers report coming across great chains of plastic drifting on the surface; others see nothing at all. Ocean plastic can be so minute that it hangs suspended in the water column and is visible only under a microscope. How do we deal with a problem that can seem invisible or changes by the day or the hour? That shifting quality gives the impression that ocean plastic is not such a serious problem after all.

Some also dismiss the severity of the problem because they still think of plastic as chemically inert. We drink out of plastic cups, heat up food in plastic, and we store all kinds of chemicals in plastic. If plastic still retains its shape under heat and

doesn't dissolve when it touches other chemicals, it must not be harmful in the ocean, right? When animals eat small pieces of plastic, won't they just harmlessly excrete the plastic and continue on their way?

This posits that ocean plastic is mainly a litter issue rather than a threat to the ecosystem.

- A sea star caught in a plastic cup in Brentwood Bay, Saanich Peninsula, Vancouver Island. Photograph: Bill Gozansky/Alamy

Labs around the world, however, are studying the giant, uncontrolled plastic experiment we've unleashed on the ocean. In the environment and over time, plastic starts to weaken, and its chainlike bonds break apart, releasing hazardous additives. Things such as flame retardants, softeners, stabilisers and thousands of other additives that help plastic items fulfill their purpose. On land, plastics and their additives are mostly non-toxic, except when we find out they're not. One additive, bisphenol A, has become well known to new parents, who now buy baby bottles free of this oestrogen-mimicking industrial chemical. Bisphenol A also has links to cardiovascular diseases and type-2 diabetes.

Pollutants such as PCBs, which have been banned for years, are still out in the water column, where they latch on to ocean plastic. When animals eat the plastic because it's covered in delicious nutrients, the plastic works its way into the food chain. Eventually, that will come back to humans. One study concluded that humans eat 37 pieces of man-made particles each year from salt, most of them as big as a coarse grain of sand. A 2019 report from the University of Newcastle in Australia calculated that the average person swallowed a credit-card-sized amount of plastic each week, mainly through drinking water.

"Plastic knows no borders," said Dubois.

By noon, my progress had slowed to a stumble. The sun was relentless, and every patch of exposed skin felt like it had been aged and dry-rubbed like a prime piece of meat. Mackenzie Brunsch, another volunteer for Ocean Legacy, called out to me. “This way.”

I followed her up a towering pile of driftwood, and we dropped down into a quiet, lush swamp bordered by waist-high reeds. The boom and hiss of the surf receded; the dazzling sunshine was gone. There was only the quiet, green shade – and it was absolutely covered in plastic.

Here was the destruction I had imagined finding when I first arrived in Mquqwin. I was standing in nature’s cathedral, beautiful sunlight filtering down through a green canopy, surrounded by ferns and sala berry bushes and trees covered in electric-green moss. Plastic carpeted the ground. Plastic bottles, plastic buoys, styrofoam everywhere, like someone had Photoshopped a rubbish dump on to the forest.

I no longer needed to scrounge for plastic. I squatted, stretched out my hands, and raked plastic into my arms. That was only the first layer. When I moved aside a log, I found yet another layer of plastic and then another, all of it slowly disintegrating into the morass beneath. I pulled out muddy, sodden clumps of styrofoam, slimy bottles and slippery buoys. One teenage volunteer had followed Mackenzie and me into the brush and disappeared into the undergrowth. He returned with five rubbish bags crammed full.

We can continue to dump plastic for centuries before we’ll run out of space. That’s how good the ocean is at hiding our secrets

Mackenzie told me this wasn’t even close to the worst she had seen on the trip. A few days before I arrived, she cleaned a beach littered with tiny plastic pieces. Much of the visible plastic pollution that Ocean Legacy collects in Mquqwin washes up in whole chunks that are at least recognisable as a milk jug or a soft-drink bottle. But this beach was covered in pieces no bigger than a fingernail. Ocean Legacy follows the National Oceanic and Atmospheric Administration’s cleanup guidelines and collects anything bigger than the size of a bottle cap, so Mackenzie crouched down and started sieving plastic from sand. Three hours later, she was still in the exact same spot.

I stopped to pull a crumbling piece of foam from the forest floor, only to realise that a sapling had taken root in the foam pellets. One volunteer told me about a thicket he had found full of mushrooms sprouting through plastic mulch. Another emerged from the forest holding aloft a piece of foam covered with deep claw marks – a bear cub's scratching post, perhaps. Dubois told me about a wolves' nest she found built from foam, a first-rate insulator. But those were the happy exceptions. So often the interactions between plastic and animals ended badly – for the animals. After watching a now infamous video of a sea turtle with a plastic straw jammed up its nose, she was never able to look at straws the same way again.

- Bags of plastic recovered by Ocean Cleanup on display in Vancouver in December 2019. Photograph: Darryl Dyck/AP

Straws are relatively minor compared to the damage done by so-called ghost gear. It's believed that about 10% of plastic in the ocean is abandoned or lost fishing equipment that, long after any fisherman has finished with it, continues to collect bounty. All types of animals, from birds to sea turtles and invertebrates big and small, are snared in drifting nets or caught and killed in abandoned traps. When that animal dies, it sets off a truly depressing cycle of events, as its carcass lures in more animals looking for an easy meal.

In 2014, World Animal Protection estimated, conservatively, that ghost gear killed 136,000 seals, sea lions, and whales every year.

I hauled out my final bulging rubbish bag, knowing that so much more plastic was spread out across the 40,000 hectares of Mquqwin Peninsula, and that there were many tons of plastic along coastlines and in waterways around the world. I felt deeply tired.

In the age of climate change denial, many scientists and activists often confront a wilful disbelief about the threatened state of the ocean today. Scientists initially doubted the British sailor Charles Moore, who reported his discovery of the Great Pacific Garbage Patch in the mid-1990s. Chris Jordan, a Seattle photographer famous for his images of dissected albatrosses with stomachs full of bottle caps and plastic chunks, has been accused of staging his work, and now he posts start-to-finish videos of the dissections. Environmental damage is often too slow, too scattered, too distant to instill any sense of urgency in the sceptical or disengaged. Even when those impacts are condensed into hard statistics and diagrams or communicated through rigorously documented studies and video evidence, people can simply choose to believe their own particular truth.

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In the month after I visited, the Ocean Legacy team would transport more than 25 tonnes of plastic debris back to the mainland. Many cleanup operations put most of what they find in landfill, but Dubois' team was going to recycle and repurpose the entire haul. The process would take months of planning and coordination, not to mention the six weeks of collecting and the labour of more than two dozen people to

untangle plastic from the shoreline. Every day, that same amount of plastic and more was dumped back into the ocean – about 20 dump trucks' worth. How depressing to realise that your work is being undone before you finish it. Did she ever feel frustrated that all her efforts might not save the ocean?

"I don't get frustrated by it," she said, "but the thought is daunting. It becomes more daunting when you think of the scope of the planet. There are probably millions of beaches around the world going through the same thing as Mquqwin Peninsula."

We can continue to dump plastic for centuries before we'll run out of space, she pointed out. That's how good the ocean is at hiding our secrets. Compared to acidification and warming, plastic pollution is one of the more visible problems facing the ocean today because almost everyone, every day, throws away some piece of plastic. This makes it hard to eliminate, but also more visible and accessible. We have a greater chance of confronting this problem – because the plastic is in everyone's hands.

I slipped the toy dinosaur into my pocket.

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