

CHAPTER 1

PARADISE LOST

Imagine you're in a small boat, in the middle of the ocean hundreds of miles from land. The water is deep, churning and seemingly bottomless. It's also teeming with life. There's a whole ecosystem thriving underneath you. One that has been evolving for millions of years, perfectly balanced to serve all the species that form part of it.

Weird and wonderful underwater landscapes stretch out beneath you: steep submarine canyons, soaring seamounts, and deep-sea cold-water coral reefs. Each of these strange worlds attracts abundantly diverse creatures that cohabit below the surface; from microscopic zooplankton to shrimp, sea cucumbers, octopuses, turtles, dolphins, whales and every kind of fish imaginable. The ocean is home to an incredible spectrum of biodiversity, much of which remains hidden in the depths, yet to be discovered.

When you pictured yourself on your little boat enjoying the beautiful, wild ocean landscape, did you remember to include an array of multi-colored discarded plastic debris bobbing on the waves in front of you? An accurate snapshot of life at sea today would contain plastic bottles, food wrappers, bags, toothbrushes, cutlery, lighters, flip-flops, and fishing rope; just a small sample of the banal, everyday human waste that makes its way into our magnificent oceans, where it is destined to stay forever.

Even worse than the immediately visible litter are the innumerable smaller plastic fragments, shredded by waves, currents, and sunlight until they are just the right size for a mother bird to feed her young. Mistaking small pieces of brightly colored plastic for fish or squid, she'll stuff her babies' stomachs so full of our synthetic waste that they'll starve to death on their unwholesome plastic diet.

Even if you optimistically pictured a pristine seascape, with not a scrap of marine litter in sight, that view would, in reality, be plastic-tainted too. Samples of seawater would reveal the presence of microplastics (plastic pieces measuring less than the width of a grain of rice) because scientists have found them everywhere they have looked, from Arctic sea ice¹ to deep-sea sediment² thousands of meters beneath the surface.

Simply put, we use too much plastic. And because of its longevity, and because there is no way to get rid of it, our actions are permanently changing the natural world. We welcomed plastic into our lives, but we didn't think things through. Plastic might be convenient in the short term, but its accumulation in our environment is proving to be massively inconvenient in the longer term. More than just an eyesore, it is threatening our planet's finely balanced ecosystems and ultimately threatening human health too.

While it's painful to acknowledge that plastic pollution has contaminated every corner of our amazing blue planet, we must take action to prevent the situation from worsening, by snapping out of our unconscious trance. We still share this world with an abundance of majestic creatures, on

¹ <https://www.theguardian.com/environment/2018/apr/24/record-levels-of-plastic-discovered-in-arctic-sea-ice>

² <https://www.theguardian.com/environment/2014/dec/17/microplastic-deposits-found-deep-in-worlds-oceans-and-seas26>

land, in the air, and in the sea. When you pause for a moment to appreciate the many wonders of nature, you'll see they're working very hard to survive and thrive despite everything humans throw at them.

Of course, when the scales fall from our eyes, and we see the absurdity of our throwaway culture - that exalts speed, convenience and short-term profit to the detriment of looking after our planet - the realization is deeply depressing. However, feeling hopeless won't address the urgent task of preventing further plastic pollution.

Instead, by taking responsibility for this human-induced crisis through significantly reducing the plastic we use and discard in our daily lives, we will feel better from doing something meaningful to tackle the issue, while adding our positive actions to those of many other like-minded people, so that together we can make a significant difference. Because we've all caused this mess, which means we all have a responsibility to do everything in our power to fix it; by deciding to stop being part of the problem and choosing to become part of the solution.

CAUSE FOR HOPE

I don't want you to feel discouraged by the state of the world today, because despair leads to inaction. Instead, I want you to see that among the distressing stories, there is genuine cause for hope. Humans have faced and overcome enormous challenges in the past; in fact, we thrive on them. When we put our minds to it, we are capable of amazing things.

“Railway Mania” in Britain led to the laying of an unprecedented 6,220 miles of track, in the years between 1844 and 1846, much of which remains an important part of the total 11,000 miles that currently exist today.³ The new railway provided a faster, cheaper, more comfortable transport system and became one of the primary drivers of the industrial revolution. Meanwhile, in the US in 1962, President John F. Kennedy's rousing speech “We choose to go to the moon” launched the Apollo Space Program,⁴ which achieved its audacious goal when Neil Armstrong took his first lunar steps, just seven years later in 1969. We must believe we can rise to today's most pressing challenges: operating sustainably within the limits of the natural world. Because the stakes are higher now than ever before.

We can also take heart from how we dealt with the hole in the ozone layer in the mid-1980s. When we discovered that CFCs were causing damage to the protective layer in Earth's atmosphere, the international community acted quickly, binding world governments to reduce and phase out the harmful chemicals. The Montreal Protocol was ratified in 1987, and ultimately 197 countries signed up.⁵ As a result of this coherent response, the ozone layer is beginning to restore itself, with projections that it will be fully healed by 2060.⁶ The Montreal Protocol has since been dubbed “the world's most successful environmental agreement.” Since we managed it before, we can do it again.

Meanwhile, we are only just beginning to understand nature's incredible capacity to heal, regenerate and restore itself, when humans leave it alone. Even in exceptionally polluted cases, nature can bounce back when we let it. An extreme example is the exclusion zone around

³ <http://www.thebubblebubble.com/railway-mania/>

⁴ https://en.wikipedia.org/wiki/We_choose_to_go_to_the_Moon

⁵ https://en.wikipedia.org/wiki/Montreal_Protocol

⁶ <https://www.theguardian.com/environment/2018/nov/05/ozone-layer-healing-after-aerosols-un-northern-hemisphere>

Chernobyl, in Ukraine. Following the catastrophic nuclear reactor explosion in 1986, a thirty-kilometer area was evacuated, and it became one of the most desolate and polluted places on Earth. Thirty years later, it looks like a nature reserve.⁷ Natural ecological processes appear to have restored it, and the region is now home to some of the world's richest biodiversity. Radiation levels remain too high for human habitation and it is unclear whether any of the plants or wildlife are suffering from genetic mutations, but on the surface, nature is thriving because we have left it alone and let it run wild.

In most cases, it's not realistic for us to remove humans entirely from the equation, to restore natural balance; but we will make significant progress when we recognize that nature is an integral part of ourselves that we need to look after, rather than a separate resource we want to exploit. Much as we are in the habit of thinking otherwise, a thriving natural world is fundamental for human health and survival. We would be wise to start reporting the nature-enhancing measures we take on our annual reports, to wean ourselves off our untenable desire for perpetual growth.

One brilliant way we have helped restore ecosystems in the sea is through the designation of large Marine Protected Areas (MPAs). Studies from around the world have demonstrated that prohibiting fishing, drilling, extracting and dumping provides marine species with vital refuge from harmful human activities, allowing them time and space to recover and re-establish, restoring biodiversity, and bringing benefits to the ocean and beyond. Unfortunately, in 2015 only 4% of the world's oceans were officially protected, and only 0.5% were no-take zones, the gold-standard of marine conservation.⁸ We urgently need to expand these crucial conservation zones – called “Hope Spots” by the legendary oceanographer, Sylvia Earle – because as she reminds us, the ocean is our life support system:

“With every drop of water you drink, every breath you take, you're connected to the sea. No matter where on Earth you live. Most of the oxygen in the atmosphere is generated by the sea.”

One of the most encouraging stories featured in the 2016 film, *A Plastic Ocean*, was the restoration of a filthy, biologically dead canal by the Pasig River Rehabilitation Commission, in Manila, in the Philippines, which they achieved by harnessing the power of nature.⁹ First, they attempted to clear the rubbish, but the layers of plastic waste went too deep. So instead they laid coconut husks and fresh soil over the plastic waste. Next, they planted vetiver grass, to enhance the quality and strength of the soil, and filter impurities from the soil and water, a practice called phytoremediation. The project also used bioremediation, the use of microbes in mud to clean up contaminated water and soil by secreting enzymes that break down contaminants into smaller, less harmful pieces. Since the introduction of these groundbreaking natural solutions, fish, turtles, and many other species of wildlife have returned to the river. There is a constant battle to keep solid plastic waste out of the river, but the project offers a significant ray of hope: if we humans can change our behavior by stemming the flow of plastic waste, then nature is capable of recovering and restoring balance, especially when we give it a helping hand.

We are still in the very early stages of understanding the extent of the damage we've inflicted on species, ecosystems and food chains with our plastic pollution worldwide. However, it's common sense that nature will have a much better chance of recovering if we turn off the plastic production tap, instead of relying only on clean-up solutions. Simply put, if your kitchen sink was overflowing

⁷ <http://www.bbc.com/earth/story/20160421-the-chernobyl-exclusion-zone-is-arguably-a-nature-reserve>

⁸ <https://news.ubc.ca/2015/10/26/only-four-per-cent-of-the-ocean-is-protected-ubc-research/>

⁹ https://en.wikipedia.org/wiki/Pasig_River_Rehabilitation_Commission

and water was flooding the floor, you wouldn't tackle it by going straight for the mop; you would turn off the tap first. Likewise, if we only address the plastic crisis by focusing on cleaning up, we will always be cleaning up, and we will barely scrape the surface of the ever-growing mountains of plastic waste.

The only real solution is to stop plastic production at source.

I'd love to see the oil and gas industries recognizing the problems their fossil-based products have created and halting plastic production immediately, but I won't hold my breath. I'd love to see governments around the world step up with effective legislation to ban, restrict or tax virgin plastic production, but even if it's on their agenda, their response is too slow.

Which leaves the urgent task of turning off the plastic production tap to the rest of us and this provides yet another cause for hope. Millions of ordinary people around the world care about plastic pollution. Awareness is sky-rocketing, and the issue appeals to people from all sides of the political spectrum. Most people don't like to see a plastic mess in nature, and once they know about the damage plastic causes, most people want to help prevent it from permanently and irreparably polluting our planet.

A large part of our power, as individuals and within our organizations, lies with our purchasing choices. If we vote with our wallet, by only purchasing products that reflect our values, we reduce demand for products we don't like and eventually force suppliers to change, to keep their offering commercially viable. We can speed things up by speaking to suppliers and requesting that they make sustainable changes more quickly, but in the end, the combined choices of many Plastic Game Changers around the world will facilitate the transition to a system that doesn't create plastic waste.

If you enjoyed reading Chapter One of *Plastic Game Changer*, you can order the complete Kindle or Paperback here: www.lessplastic.co.uk/book

Read on to discover how YOU can make a difference to plastic pollution by reducing plastic waste in your organization.

The book features:

- a practical framework to accelerate plastic reductions in your workplace
- invaluable tips such as "navigating the alternatives" and "how to get your boss on board"
- and inspirational case studies from companies already leading the way...

#PlasticGameChanger

