

Books & arts



The international oceans are being exploited at a staggering rate.

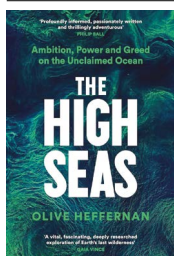
Dumping, pillaging and slavery in the high seas

It's time to manage oceans sustainably, says bold investigative book. **By Diva Amon and Juliano Palacios Abrantes**

The high seas' evokes an image of a final frontier so remote and challenging to reach that people have been privy to only rare glimpses of this extraordinary part of the planet. But this could not be further from the chilling reality.

In her bold investigative book, *The High Seas*, science journalist Olive Heffernan takes the reader on a journey like no other through our planet's largest wilderness – from battling terrifying waves in the Southern Ocean to eavesdropping on majestic whale clicks and songs in the Mediterranean Sea. She also

relates a menagerie of misdeeds, such as the intentional dumping of 108 tonnes of iron dust off the west coast of Canada in 2012 and the splashdown of decommissioned satellites over



The High Seas: Ambition, Power and Greed on the Unclaimed Ocean
Olive Heffernan
Profile Books (2024)

three decades at the farthest point from land; a region in the Pacific Ocean known as Point Nemo, without knowing how this might affect ecosystems. Ultimately, she sounds the alarm about the accelerating rate of exploitation of the high seas.

Covering two-thirds of the world's oceans, the high seas – open waters that lie beyond the jurisdiction of nations – provide more than 95% of the living space on Earth. They encompass a huge diversity of habitats and life, from the plankton responsible for generating most of the oxygen on the planet to black corals that have been alive for millennia.



ALAMY

Activities in the high seas can wreak havoc on marine ecosystems and human lives.

Although far from land, the high seas are intimately connected to national waters and coasts through species migrations and oceanographic processes, forming an integral part of the culture and well-being of communities, be it scientifically, aesthetically, spiritually, emotionally, historically or pedagogically. They also serve crucial roles for the planet's habitability, including regulating the climate by absorbing most of the solar radiation that the planet receives and transporting warm equatorial waters to the poles and cold polar waters to the Equator through a vast network of ocean currents.

Troubled waters

Yet, a few powerful and greedy people are capitalizing on the absence of comprehensive knowledge of, competition over and effective governance of the high seas. Industrial activities such as fishing have been wreaking havoc in these parts for decades, with a variety of terrifying, dystopian projects on the horizon.

These include pillaging the sea bed for minerals across millions of square kilometres and wrangling giant icebergs from the poles to turn them into freshwater resources near the

Equator. Apart from the enormous financial cost, these projects raise many more questions than answers about their potential environmental and social consequences, especially given that we still understand so little about the high seas and how they shape our world.

Heffernan highlights that this dearth of knowledge, leading to a lack of evidence-based

“Progress will be possible only by moving beyond extractivist agendas.”

decision-making, is why countries around the world are calling for a moratorium, pause or ban on the large-scale destructive activities proposed for the high seas, such as deep-sea mining.

The High Seas generates further tidal waves by showcasing how easily unethical – and even criminal – activities operate this far from shore. Open oceans harbour some of the most brutal forms of modern-day slavery, concealed in shell companies and legal loopholes and

protected by tax havens.

The high-seas fishing industry, based largely in powerful countries, often takes advantage of vulnerable individuals, who are often coerced or forced into jobs in which they have to live in inhumane conditions at sea for years, often resulting in exhaustion and sometimes death.

One of the most egregious examples is that of Indonesian seafood company Pusaka Benjina Resources, which trafficked hundreds of young, low-income, uneducated men from southeast Asia to vessels leaving Indonesia for the high seas. They were beaten, tortured and, once unshackled, forced to work up to 24 hours a day for little or no pay. Those who died were buried in mass graves. Big players in the seafood industry often hide behind renamed and reflagged vessels, and usually target international waters. These regions don't fall under any national jurisdiction, making crimes hard to prosecute.

Looking ahead

Heffernan does not mince her words about the future. The next five to ten years will be crucial, she says: there is a lot to gain, but also much to lose. The 2023 United Nations Biodiversity

of Areas Beyond National Jurisdiction (BBNJ) Treaty, which is now undergoing ratification, “is humanity’s first serious attempt to challenge the carnage that pervades the high seas”, she writes, but notes that any ensuing rules must be consistently enforced. The BBNJ Treaty will be a crucial tool for securing the health, productivity and resilience of the high seas. It will enable international cooperation in conjunction with existing bodies to advance equity, conservation and sustainable use of biodiversity beyond national jurisdictions. However, to ensure that the BBNJ Agreement will protect, restore and maintain marine biodiversity efficiently, it must be signed and ratified.

Progress will be possible only by moving beyond extractivist agendas, prioritizing sustainability over – or at least as much as – economic gain and rethinking how the ocean commons can be used in ways that benefit the most people. Crucial to this endeavour is valuing all knowledge systems and perspectives.

Heffernan serves as an adept guide, breaking down complex topics – from physical oceanography to ecological processes and international governance – into accessible and compelling explanations. At the same time, we wish that the book had avoided perpetuating one of the main issues plaguing discourse surrounding the high seas: a lack of representation and inclusion. As two scientists from lower-income countries, we could not help but notice an absence of diversity in the perspectives conveyed.

The high seas are the largest part of the global commons – which every member of humankind, present and future, relies on. Yet, these regions have been accessed mostly by powerful individuals and high-income countries. This has resulted in a status quo of exploitation, and many questions remain unresolved. How can the equity issues played out at sea – including who benefits from the high seas and who carries the burdens of their exploitation – be remedied? These moral and ethical dilemmas, only alluded to in the book, are more relevant and urgent than ever.

The High Seas is a must-read book that will speak to everyone. From students and negotiators to anyone with an interest in planet Earth, Heffernan takes even the most landlocked out to sea. Even as scientists who work on high-seas issues, we encountered mind-blowing facts and anecdotes in nearly every chapter. Our hope is that this book serves as an invitation to move beyond the ‘out of sight, out of mind’ attitude to our remotest ocean realms.

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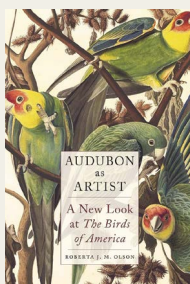
Books in brief



Purified

Peter Annin *Island* (2024)

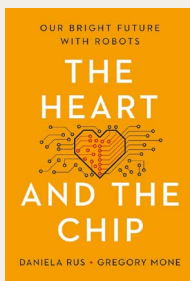
The cover of this revolutionary book shows a recycling symbol, with arrows of clear blue water. Yet the subject is sewage. Environmental and water journalist Peter Annin is satisfied that recycled sewage is drinkable, after studying water recycling for two decades. “In the climate change era, water cannot be taken for granted anymore – and that includes sewage,” he says. Recycling technology could, he argues, relieve the US water crisis, especially in the west, where water diversions have desolated the Colorado River Delta.



Audubon as Artist

Roberta J. M. Olson *Reaktion* (2024)

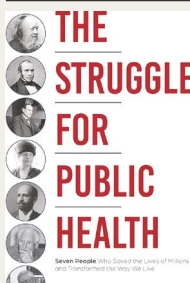
As a museum curator in New York City, art historian Roberta Olson looked after 474 watercolours painted by John James Audubon for his classic book *The Birds of America* (1827–38). Gazing at his birds, she writes, “one wonders whether they might momentarily fly off the page”. Glorious reproductions fill this intriguing book. She regards Audubon as an “American Leonardo da Vinci”, fusing art and science, but focuses more on his art than his naturalism. A gripping self-portrait painted before he found success hints at Audubon’s difficult life.



The Heart and the Chip

Daniela Rus & Gregory Mone *Norton* (2024)

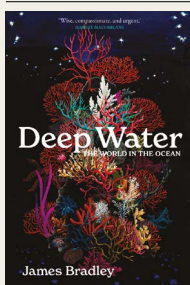
Computer scientist Daniela Rus has dreamt about robots since she was a child, and has developed them for years at the Massachusetts Institute of Technology in Cambridge. She is convinced they will not steal our jobs, as is often feared, but will make humans “more capable, productive, precise”. Her engaging book, co-written with science writer Gregory Mone, focuses on combining human and robotic strengths to pair “the heart and the chip” in three interlinked fields: robotics, artificial intelligence and machine learning.



The Struggle for Public Health

Fred C. Pampel *John Hopkins Univ. Press* (2024)

Rates of death from communicable diseases fell hugely in the late nineteenth century; by 49% for respiratory tuberculosis (TB), for example. But much of the fall had less to do with medical advances – the TB vaccine was not in widespread use until 1954 – than with “rising standards of living, better nutrition, and a strengthening public health movement”, writes sociologist Fred Pampel. His book explores this complexity clearly in seven chapters, each devoted to a public-health pioneer, from epidemiologist John Snow to nurse Lillian Wald.



Deep Water

James Bradley *Scribe UK* (2024)

“How inappropriate to call this planet ‘Earth’, when clearly it is ‘Ocean’,” said science-fiction author Arthur C. Clarke. His comment opens this meditation by science writer James Bradley. He stands on the Australian coast in 2020, witnessing record bush fires that accompanied record oceanic heating. The ocean, where life began, “is the memory of the world”, he writes, given its pivotal role in evolution, migration, capitalism and climate change. Unless we protect it better, we are heading for catastrophe. **Andrew Robinson**