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KEMP OCONNOR

Let's Investigate Plastic Pollution Patagonia Wildlife in a Changing World presents an analysis of the 2008 IUCN Red List of Threatened Species. Beginning with an explanation of the IUCN Red List as a key conservation tool, it goes on to discuss the state of the world's species and provides the latest information on the patterns of species facing

extinction in some of the most important ecosystems in the world, highlighting the reasons behind their declining status. Areas of focus in the report include: freshwater biodiversity, the status of the world's marine species, species susceptibility to climate change impacts, the Mediterranean biodiversity hot spot, and broadening the coverage of biodiversity assessments.

Say No to Pollution and Yes to Solution! Protecting the Oceans Oceans, which are crucial to us and the planet, are under threat from plastics. This guide presents the problem and how it can be addressed. The objective of this guide is to raise awareness about the oceans' crucial importance to us and to the planet, and the growing threats posed by plastics discharged into and accumulating in the oceans. The guide outlines the key problems and challenges and how these can be addressed. The guide is promoting circular solutions to the ocean plastic pollution, and intends to inspire impactful action and change.

Modern Treatment Strategies for Marine Pollution MIT Press

A refreshing take on an all-too-important topic. Neo spends all his time playing his favorite video game, joining forces with other Earth-bots to defend the planet against invading aliens. But when his sea creature neighbors

won’t stop pleading with him to help them clean up the plastic that’s ruining the ocean, Neo reluctantly agrees to check it out, and he’s shocked by what he discovers. There’s an actual invasion taking place right outside his door — a plastic invasion! And it’s too big to handle on his own! Sure to inspire real Earth-bots — er, children — everywhere to heed Neo’s call to protect the oceans from plastic!

Kids Vs. Plastic

Springer Nature

The thesis proposes a large-scale self-sustaining water filtration system that alleviate two urgent environmental problems: plastic ocean and sea level rises. While microplastic ingestion at the bottom of our food chain is destroying the whole ecosystem, up to 10 percent of world's projected population is expected to face relocation due to climate change by the year 2050. The proposed system takes a form of modular islands not only clean the ocean but also provide a new habitat for the ones who lost their home.

Freshwater Microplastics

Hatherleigh Press

Management of Marine Plastic Debris gives a thorough and detailed presentation of the global problem of marine plastics debris, covering every aspect of its management from tracking, collecting, treating and commercial exploitation for

handing this anthropogenic waste. The book is a unique, essential source of information on current and future technologies aimed at reducing the impact of plastics waste in the oceans. This is a practical book designed to enable engineers to tackle this problem—both in stopping plastics from getting into the ocean in the first place, as well as providing viable options for the reuse and recycling of plastics debris once it has been recovered. The book is essential reading not only for materials scientists and engineers, but also other scientists involved in this area seeking to know more about the impact of marine plastics debris on the environment, the mechanisms by which plastics degrade in water and potential solutions. While much research has been undertaken into the different approaches to the increasing problem of plastics marine debris, this is the first book to present, evaluate and compare all of the available techniques and practices, and then make suggestions for future developments. The book also includes a detailed discussion of the regulatory environment, including international conventions and standards and national policies. Reviews all available processes and techniques for recovering, cleaning and recycling marine plastic debris Presents and evaluates viable options for engineers

to tackle this growing problem, including the use of alternative polymers Investigates a wide range of possible applications of marine plastics debris and opportunities for businesses to make a positive environmental impact Includes a detailed discussion of the regulatory environment, including international conventions and standards and national policies

An Earth-Bot's Solution to Plastic Pollution GRIN Verlag This report presents both short- and long-term approaches to the problem of marine plastic debris and micro plastics. It provides an overview of the latest science and experiences, identifies priority areas of action, and points out areas requiring more research. Improved waste management is urgently needed to reduce the flow of plastic into our oceans.

Fish Springer Most people have heard of the massive collection of debris in the Pacific Ocean or the damaging effects of oil spills on ocean ecosystems. But there are many other ways the world's oceans are being affected by pollution. This important title examines the sources of ocean pollution and the action being taken around the world to prevent pollution. Get inspired to take action in your community!

Wildlife in a Changing World Plastic OceansBy 2050, the world's oceans will have more plastic than fish with

potentially catastrophic consequences on sea life and the health of the ocean. Economically, countries with coastal boundaries will be heavily impacted as plastic pollution has already generated a 13 billion dollars in monetary losses. Considering that this is an extreme problem that we are currently facing the current solution is not enough in curbing our plastic pollution. While, recycling programs have been beneficial in reclaiming some plastic our mass consumption of plastic has outpaced the capabilities of recycling efforts. If we are to find a solution in our plastic pollution problem, we must first start at the source of plastic pollution; consumers. One organization in Oahu is doing exactly that, Sustainable Coastlines Hawaii for the past five years has worked within the island chain of Hawaii to educate the public through community based clean-ups and their traveling education station in order to change consumer habits away from plastic and to a more sustainable form of consumerism. The solution that Sustainable Coastlines Hawaii is trying to implement is daunting, as this paper will explore the history of plastic to understand how a product that is dangerous to the environment has become such a staple part of our society. The paper will also utilize Ulrich Beck's "Risk Society" to explain why

recycling programs were first seen as a solution to our plastic waste as well as to why we are returning back to the conversation of plastic pollution. Finally this paper explores the dangers plastic pollution has had on the oceans to explain why a model such as Sustainable Coastlines Hawaii is needed in solving our ocean plastic pollution.Plastic SoupPlastics have transformed every aspect of our lives. Yet the very properties that make them attractive--they are cheap to make, light, and durable--spell disaster when trash makes its way into the environment. Plastic Soup: An Atlas of Ocean Pollution is a beautifully-illustrated survey of the plastics clogging our seas, their impacts on wildlife and people around the world, and inspirational initiatives designed to tackle the problem. With striking photography and graphics, Plastic Soup brings plastic pollution to brilliant life for readers. According to some estimates, if we continue on our current path, the oceans will contain more plastic than fish by the year 2050. Created to inform and inspire readers, Plastic Soup is a critical tool in the fight to reverse this trend.The impacts of plastic pollution in the North Pacific Ocean and possible solutions • New York Times bestseller • The 100 most substantive solutions to reverse global warming, based on meticulous research by leading scientists

and policymakers around the world “At this point in time, the Drawdown book is exactly what is needed; a credible, conservative solution-by-solution narrative that we can do it. Reading it is an effective inoculation against the widespread perception of doom that humanity cannot and will not solve the climate crisis. Reported by-effects include increased determination and a sense of grounded hope.” —Per Espen Stoknes, Author, What We Think About When We Try Not To Think About Global Warming “There’s been no real way for ordinary people to get an understanding of what they can do and what impact it can have. There remains no single, comprehensive, reliable compendium of carbon-reduction solutions across sectors. At least until now. . . . The public is hungry for this kind of practical wisdom.” —David Roberts, Vox “This is the ideal environmental sciences textbook—only it is too interesting and inspiring to be called a textbook.” —Peter Kareiva, Director of the Institute of the Environment and Sustainability, UCLA In the face of widespread fear and apathy, an international coalition of researchers, professionals, and scientists have come together to offer a set of realistic and bold solutions to climate change. One hundred techniques and practices are described here—some are well

known; some you may have never heard of. They range from clean energy to educating girls in lower-income countries to land use practices that pull carbon out of the air. The solutions exist, are economically viable, and communities throughout the world are currently enacting them with skill and determination. If deployed collectively on a global scale over the next thirty years, they represent a credible path forward, not just to slow the earth's warming but to reach drawdown, that point in time when greenhouse gases in the atmosphere peak and begin to decline. These measures promise cascading benefits to human health, security, prosperity, and well-being—giving us every reason to see this planetary crisis as an opportunity to create a just and livable world.

National Marine Pollution Program Plan, Federal Plan for Ocean Pollution Research, Development & Monitoring Academic Press

"Turning the Tide on Trash ... is an interdisciplinary guide designed to provide maximum flexibility in the classroom." The curriculum guide is designed for use either as a primary tool, or to supplement work in other subject areas. Three teaching units develop concepts on 1) The definition, characteristics, and sources of marine debris; 2) The effects of marine debris; and 3) Developing solutions and spreading the

word. Units contain questions regarding the concepts, background information, 'Facts from the Deep', objectives, instructions on activities, vocabulary, materials, learning skills, duration (typically 40 minutes), necessary reproducibles, and procedures. Academic subject areas encompass art, language arts, mathematics, music, science and social studies. Guide appears to be directed to teachers of upper elementary and middle school students. Microplastic in the Environment: Pattern and Process Springer This open access book examines global plastic pollution, an issue that has become a critical societal challenge with implications for environmental and public health. This volume provides a comprehensive, holistic analysis on the plastic cycle and its subsequent effects on biota, food security, and human exposure. Importantly, global environmental change and its associated, systems-level processes, including atmospheric deposition, ecosystem complexity, UV exposure, wind patterns, water stratification, ocean circulation, etc., are all important direct and indirect factors governing the fate, transport and biotic and abiotic processing of plastic particles across ecosystem types. Furthermore, the distribution of plastic in the ocean is

not independent of terrestrial ecosystem dynamics, since much of the plastic in marine ecosystems originates from land and should therefore be evaluated in the context of the larger plastic cycle. Changes in species size, distribution, habitat, and food web complexity, due to global environmental change, will likely alter trophic transfer dynamics and the ecological effects of nano- and microplastics. The fate and transport dynamics of plastic particles are influenced by their size, form, shape, polymer type, additives, and overall ecosystem conditions. In addition to the risks that plastics pose to the total environment, the potential impacts on human health and exposure routes, including seafood consumption, and air and drinking water need to be assessed in a comprehensive and quantitative manner. Here I present a holistic and interdisciplinary book volume designed to advance the understanding of plastic cycling in the environment with an emphasis on sources, fate and transport, ecotoxicology, climate change effects, food security, microbiology, sustainability, human exposure and public policy.

Preventive Methods for Coastal Protection Springer This book addresses a broad range of issues concerning microplastic pollution, including microplastic pollution in various

environments (freshwater, marine, air and soil); the sources, fate and effects of microplastics; detection systems for microplastic pollution monitoring; green approaches for the synthesis of environmentally friendly polymers; recovery and recycling of marine plastics; wastewater treatment plants as a microplastic entrance route; nanoplastics as emerging pollutants; degradation of plastics in the marine environment; impacts of microplastics on marine life; microplastics: from marine pollution to the human food chain; mitigation of microplastic impacts and innovative solutions; sampling, extraction, purification and identification approaches for microplastics; adsorption and transport of pollutants on and in microplastics; and lastly, the socio-economic and environmental impacts: assessment and risk analysis. In addition to presenting cutting-edge information and highlighting current trends and issues, the book proposes concrete solutions to help face this significant environmental threat. It is chiefly intended for researchers and industry decision-makers; international, national and local institutions; and NGOs, providing them with comprehensive information on the origin of the problem;

its effects on marine environments, with a particular focus on the Mediterranean Sea and coasts; and recent and ongoing research activities and projects aimed at finding technical solutions to mitigate the phenomenon.

New Jersey's Coastal Ocean Springer Nature

Jam-packed with surprising information about plastic's effect on the environment, plus loads of practical ways kids can cut down on their plastic footprint, this is the kids guide to being part of the pollution solution! It's in your toothbrush ... your clothes ... your earbuds. Chances are, you're touching it right now. We're talking about plastic! Plastic is absolutely everywhere and in practically everything we touch, from pens to water bottles to sports equipment. And a lot of it is used once and then thrown away. Unfortunately, it takes a REALLY long time for plastic to break down and it can be harmful to our environment, especially wildlife. But why and when did we start using it in so much stuff? And how do we stop? Discover shocking stats and surprising facts; inspirational interviews with National Geographic explorers and leading researchers who are working tirelessly to protect the planet; tons of simple suggestions for sustainable swaps; and more eco-friendly choices and smart action steps. This book answers all of your burning questions

about plastic and offers tangible ways to get involved, reduce plastic use, and create a more plastic-free future!

Plastic Oceans Simon and Schuster

Plastic Waste and Recycling: Environmental Impact, Societal Issues, Prevention, and Solutions begins with an introduction to the different types of plastic materials, their uses, and the concepts of reduce, reuse and recycle before examining plastic types, chemistry and degradation patterns that are organized by non-degradable plastic, degradable and biodegradable plastics, biopolymers and bioplastics. Other sections cover current challenges relating to plastic waste, explain the sources of waste and their routes into the environment, and provide systematic coverage of plastic waste treatment methods, including mechanical processing, monomerization, blast furnace feedstocks, gasification, thermal recycling, and conversion to fuel. This is an essential guide for anyone involved in plastic waste or recycling, including researchers and advanced students across plastics engineering, polymer science, polymer chemistry, environmental science, and sustainable materials. Presents actionable solutions for reducing plastic waste, with a focus on the concepts of collection, re-use, recycling and replacement Considers

major societal and environmental issues, providing the reader with a broader understanding and supporting effective implementation
Includes detailed case studies from across the globe, offering unique insights into different solutions and approaches
Discard Studies William Andrew
A simple and powerful book educating people about the epidemic of plastic use and solutions for a plastic-free future. If you've heard of the plastic-free lifestyle, but think you don't have time for it in your busy life, prepare to be delightfully wrong. Say Goodbye to Plastic shows you how, whether you're seeking to knock plastic out of your life or just try out a few novel eco-hacks in your kitchen, bathroom, office or dining room. Plastic pollution activist and entrepreneur Sandra Ann Harris invites us to say goodbye to plastic, room by room. Opportunities abound to simplify our lives by re-thinking our wasteful habits--we just need to learn to recognize them.
Plastic-Free Springer Nature
Marine debris is a global pollution problem affecting marine life, maritime commerce and environmental quality. Scientists, policymakers and the public must be knowledgeable about the source, impact and control efforts if effective solutions are to be developed. Marine Debris

addresses the origin of persistent solid waste in the ocean, from urban and rural discharges to waste from ships and the recreational use of oceans. The book identifies key issues from biological, technological, economic and legal perspectives, and gives a framework for controlling each of the main sources of marine debris.

Stuff You Should Know

Kids Can Press Ltd

This book is open access under a CC BY 4.0 license. This volume focuses on microscopic plastic debris, also referred to as microplastics, which have been detected in aquatic environments around the globe and have accordingly raised serious concerns. The book explores whether microplastics represent emerging contaminants in freshwater systems, an area that remains underrepresented to date. Given the complexity of the issue, the book covers the current state-of-research on microplastics in rivers and lakes, including analytical aspects, environmental concentrations and sources, modelling approaches, interactions with biota, and ecological implications. To provide a broader perspective, the book also discusses lessons learned from nanomaterials and the implications of plastic debris for regulation, politics, economy, and society. In a research field that is rapidly

evolving, it offers a solid overview for environmental chemists, engineers, and toxicologists, as well as water managers and policy-makers.

Microplastics and Me

Springer Science & Business Media

Plastics have transformed every aspect of our lives. Yet the very properties that make them attractive--they are cheap to make, light, and durable--spell disaster when trash makes its way into the environment. Plastic Soup: An Atlas of Ocean Pollution is a beautifully-illustrated survey of the plastics clogging our seas, their impacts on wildlife and people around the world, and inspirational initiatives designed to tackle the problem. With striking photography and graphics, Plastic Soup brings plastic pollution to brilliant life for readers. According to some estimates, if we continue on our current path, the oceans will contain more plastic than fish by the year 2050. Created to inform and inspire readers, Plastic Soup is a critical tool in the fight to reverse this trend.

Implications of the Emerging Law of the Sea to the U.S. Navy

Penguin

Modern Treatment Strategies for Marine Pollution provides an overview of assessment tools that identify contaminants in marine water, also discussing the latest technologies for removing these contaminants. Through

templated and consistently structured chapters, the author explores the importance of seawater to our marine ecosystems and the devastating effects pollutants are causing. Sections cover the emission of toxic pollutants from industries, wastewater discharge, oil spills from boarding ships, ballast water emission, abnormal growth of algal blooms, and more. Techniques explored include huge diameter pipelines erected for removing floating debris from seawater, which is denoted as a primary idea for cleaning contaminants. The book includes numerous case studies that demonstrate how these tools can be successfully used. It is an essential read for marine ecologists and oceanographers at the graduate level and above, but is also ideal for those looking to incorporate these techniques into their own work. Presents and discusses advanced technologies used in the treatment of marine water Includes case studies to show what techniques have been successful Provides new information on contamination assessment and analytical protocols for identifying pollutants, which is essential for readers to use in their own work

Neoterra Penguin

This book addresses the emergent need to act on reducing or getting rid of micro plastic pollution, to achieve a sustainable

environment. Microplastics are small plastic pieces, which are less than five millimeters long which can be harmful to our oceans and aquatic life. These predominantly include microfibers from clothing, microbeads, and plastic pellets. Microplastics impact aquatic creatures, turtles and birds. According to the first study on estimation of human ingestion of microplastic, on average a person consumes at least 50,000 particles of microplastic a year and breathes a similar quantity. Ingested microplastic particles can physically damage organs and also compromise immune function and stymie growth and reproduction. This book presents six informative chapters in order to alleviate the above mentioned issues.

Marine Debris

Elsevier

Research Paper (postgraduate) from the year 2010 in the subject Environmental Sciences, grade: A, Central European University Budapest (-), course: -, language: English, abstract: Rapid population growth and enormous urban and coastal developments have increased the anthropogenic pollution into the oceans. Human activities may responsible for the decline in biodiversity and productivity of marine ecosystems, resulting in the depletion of human marine food resources (Jenssen, 2003).

Furthermore, the marine environment is an important resource for human welfare and health and fortunately in recent years awareness of its intrinsic value has increased (Derraik, 2002). One particular type of threat to marine ecosystems is the pollution from plastics. These particles are a serious treat to the marine biota and human life and entail significant economic and social costs. Further, they reduce the aesthetic and perhaps intrinsic value of the marine environment (Jenssen, 2003). The aim of this paper is to examine the threats from plastic pollution and introduce an interesting case study from the North Pacific Ocean. The paper will describe the current policies and propose market based instruments which can provide solution to the issue.