



# [MOBI] Marine Mammal Ecotoxicology: Impacts Of Multiple Stressors On Population Health

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**Marine Mammal Ecotoxicology**-Maria Cristina Fossi 2018-08-06 Marine Mammal Ecotoxicology: Impacts of Multiple Stressors on Population Health provides tactics on how to develop a comprehensive methodology for the study of existing threats to marine mammals. By presenting a conservation-biology approach and new and emerging technologies, this work helps provide crucial knowledge on the status of marine mammal populations that not only helps readers understand the ecosystem's health, but also instigate mitigation measures. This volume provides information that helps investigators unravel the relationships between exposure to environmental stressors (e.g., climate change, pollutants, marine litter, pathogens and biotoxins) and a range of endpoints in marine mammal species. The application of robust examination procedures and biochemical, immunological, and molecular techniques, combined with pathological examination and feeding ecology, has led to the development of health assessment methods at the individual and population levels in wild marine mammals. Provides a comprehensive, worldwide update and state of knowledge on current research and topics on marine mammal ecotoxicology Includes coverage of both new and emerging technologies Features a multidisciplinary approach that gives readers a broad, updated overview of the threats facing marine mammals and related conservation measures

**Toxicology of Marine Mammals**-Joseph G. Vos 2002-12-05 The activities of modern society have unleashed a range of toxic chemicals into the global environment. Many of these toxicants are now being detected in increasing quantities in the tissues of marine mammals, most notably in top predators who acquire relatively large amounts of toxic chemicals by ingesting contaminated prey. Toxicology of M

**CRC Handbook of Marine Mammal Medicine**-Leslie Dierauf 2001-06-27 CRC Handbook of Marine Mammal Medicine, Second Edition is the only handbook specifically devoted to marine mammal medicine and health. With 66 contributors working together to craft 45 scientifically-based chapters, the text has been completely revised and updated to contain all the latest developments in this field. Building upon the solid foundation of the previous edition, the contents of this book are light-years ahead of the topics presented in the first edition. See what's new in the Second Edition: Marine mammals as sentinels of ocean health Emerging and resurging diseases Thorough revision of the Immunology chapter Diagnostic imaging chapters to illustrate new techniques Quick reference for venipuncture sites in many marine mammals Unusual mortality events and mass strandings

New topics such as a chapter on careers Wider scope of coverage including species outside of the United States and Canada Filled with captivating illustrations and photographs, the Handbook guides you through the natural history of cetaceans, pinnipeds, manatees, sea otters, and polar bears. Prepared in a convenient, easy-to-use format, it is designed specifically for use in the field. Covering more than 40 topics, this one-of-a-kind reference is packed with data. The comprehensive compilation of information includes medicine, surgery, pathology, physiology, husbandry, feeding and housing, with special attention to strandings and rehabilitation. The CRC Handbook of Marine Mammal Medicine, Second Edition is still a must for anyone interested in marine mammals.

**Approaches to Understanding the Cumulative Effects of Stressors on Marine Mammals**-National Academies of Sciences, Engineering, and Medicine 2017-05-04 Marine mammals face a large array of stressors, including loss of habitat, chemical and noise pollution, and bycatch in fishing, which alone kills hundreds of thousands of marine mammals per year globally. To discern the factors contributing to population trends, scientists must consider the full complement of threats faced by marine mammals. Once populations or ecosystems are found to be at risk of adverse impacts, it is critical to decide which combination of stressors to reduce to bring the population or ecosystem into a more favorable state. Assessing all stressors facing a marine mammal population also provides the environmental context for evaluating whether an additional activity could threaten it. Approaches to Understanding the Cumulative Effects of Stressors on Marine Mammals builds upon previous reports to assess current methodologies used for evaluating cumulative effects and identify new approaches that could improve these assessments. This review focuses on ways to quantify exposure-related changes in the behavior, health, or body condition of individual marine mammals and makes recommendations for future research initiatives.

**Effective Monitoring to Evaluate Ecological Restoration in the Gulf of Mexico**-National Academies of Sciences, Engineering, and Medicine 2017-03-16 Gulf Coast communities and natural resources suffered

extensive direct and indirect damage as a result of the largest accidental oil spill in US history, referred to as the Deepwater Horizon (DWH) oil spill. Notably, natural resources affected by this major spill include wetlands, coastal beaches and barrier islands, coastal and marine wildlife, seagrass beds, oyster reefs, commercial fisheries, deep benthos, and coral reefs, among other habitats and species. Losses include an estimated 20% reduction in commercial fishery landings across the Gulf of Mexico and damage to as much as 1,100 linear miles of coastal salt marsh wetlands. This historic spill is being followed by a restoration effort unparalleled in complexity and magnitude in U.S. history. Legal settlements in the wake of DWH led to the establishment of a set of programs tasked with administering and supporting DWH-related restoration in the Gulf of Mexico. In order to ensure that restoration goals are met and money is well spent, restoration monitoring and evaluation should be an integral part of those programs. However, evaluations of past restoration efforts have shown that monitoring is often inadequate or even absent. Effective Monitoring to Evaluate Ecological Restoration in the Gulf of Mexico identifies best practices for monitoring and evaluating restoration activities to improve the performance of restoration programs and increase the effectiveness and longevity of restoration projects. This report provides general guidance for restoration monitoring, assessment, and synthesis that can be applied to most ecological restoration supported by these major programs given their similarities in restoration goals. It also offers specific guidance for a subset of habitats and taxa to be restored in the Gulf including oyster reefs, tidal wetlands, and seagrass habitats, as well as a variety of birds, sea turtles, and marine mammals.

**The Accumulation and Impact of Organotins on Marine Mammals, Seabirds and Fish for Human Consumption**-Guy Linley-Adams 1999

**Marine Mammal Welfare**-Andy Butterworth 2017-06-19 Marine mammals attract human interest - sometimes this interest is benign or positive - whale watching, conservation programmes for whales, seals, otters, and efforts to clear beaches of marine debris are seen as proactive steps to support these animals. However, there are many forces operating to affect

adversely the lives of whales, seals, manatees, otters and polar bears - and this book explores how the welfare of marine mammals has been affected and how they have adapted, moved, responded and sometimes suffered as a result of the changing marine and human world around them. Marine mammal welfare addresses the welfare effects of marine debris, of human traffic in the oceans, of noise, of hunting, of whale watching and tourism, and of some of the less obvious impacts on marine mammals - on their social structures, on their behaviours and migration, and also of the effects on captivity for animals kept in zoos and aquaria. There is much to think and talk about - how marine mammals respond in a world dramatically influenced by man, how are their social structures affected and how is their welfare impacted?

**European Whales, Dolphins, and Porpoises**-Peter G. H. Evans  
2019-12-04 *European Whales, Dolphins, and Porpoises: Marine Mammal Conservation in Practice* presents an intimate view of the workings of international conservation agreements to protect marine mammals, detailing achievements over the last 25 years, identifying weaknesses and making recommendations that governments, scientists, marine stakeholders and the public can take to improve conservation efforts. The book is written by an experienced marine mammal scientist and award-winning conservationist, providing a unique synthesis on their status, distribution and ecology. In addition, it presents information on various conservation threats, including fisheries by catch, contaminants, noise disturbance, plastic ingestion and climate change. This comprehensive resource will appeal to marine mammal conservationists and researchers, as well as environmental and wildlife practitioners at all levels. Offers an accessible review on how scientists study this challenging group of mammals to gather necessary evidence for conservation action Illustrates, with striking images, all recorded regional species, including distribution maps, key threats and specific research methods Includes contributions from leading scientists, conservationists, and members of government and international bodies, like IWC and UNEP

**Marine Mammals and Persistent Ocean Contaminants**-United States. Marine Mammal Commission 1999

## **Environmental Toxicology and Chemistry**- 2005

**Marine Ecotoxicology**-Julián Blasco 2016-08-05 *Marine Ecotoxicology: Current Knowledge and Future Issues* is the first unified resource to cover issues related to contamination, responses, and testing techniques of saltwater from a toxicological perspective. With its unprecedented focus on marine environments and logical chapter progression, this book is useful to graduate students, ecotoxicologists, risk assessors, and regulators involved or interested in marine waters. As human interaction with these environments increases, understanding of the pollutants and toxins introduced into the oceans becomes ever more critical, and this book builds a foundation of knowledge to assist scientists in studying, monitoring, and making decisions that affect both marine environments and human health. A team of world renowned experts provide detailed analyses of the most common contaminants in marine environments and explain the design and purpose of toxicity testing methods, while exploring the future of ecotoxicology studies in relation to the world's oceans. As the threat of increasing pollution in marine environments becomes an ever more tangible reality, *Marine Ecotoxicology* offers insights and guidance to mitigate that threat. Provides practical tools and methods for assessing and monitoring the accumulation and effects of contaminants in marine environments Unites world renowned experts in marine ecotoxicology to deliver thorough and diverse perspectives Builds the foundation required for risk assessors and regulators to adequately assess and monitor the impact of pollution in marine environments Offers helpful insights and guidance to graduate students, ecotoxicologists, risk assessors, and regulators interested in mitigating threats to marine waters

## **The science of the total environment**- 1994

**A Framework to Guide Selection of Chemical Alternatives**-National Research Council 2014-10-29 Historically, regulations governing chemical

use have often focused on widely used chemicals and acute human health effects of exposure to them, as well as their potential to cause cancer and other adverse health effects. As scientific knowledge has expanded there has been an increased awareness of the mechanisms through which chemicals may exert harmful effects on human health, as well as their effects on other species and ecosystems. Identification of high-priority chemicals and other chemicals of concern has prompted a growing number of state and local governments, as well as major companies, to take steps beyond existing hazardous chemical federal legislation. Interest in approaches and policies that ensure that any new substances substituted for chemicals of concern are assessed as carefully and thoroughly as possible has also burgeoned. The overarching goal of these approaches is to avoid regrettable substitutions, which occur when a toxic chemical is replaced by another chemical that later proved unsuitable because of persistence, bioaccumulation, toxicity, or other concerns. Chemical alternative assessments are tools designed to facilitate consideration of these factors to assist stakeholders in identifying chemicals that may have the greatest likelihood of harm to human and ecological health, and to provide guidance on how the industry may develop and adopt safer alternatives. A Framework to Guide Selection of Chemical Alternatives develops and demonstrates a decision framework for evaluating potentially safer substitute chemicals as primarily determined by human health and ecological risks. This new framework is informed by previous efforts by regulatory agencies, academic institutions, and others to develop alternative assessment frameworks that could be operationalized. In addition to hazard assessments, the framework incorporates steps for life-cycle thinking - which considers possible impacts of a chemical at all stages including production, use, and disposal - as well as steps for performance and economic assessments. The report also highlights how modern information sources such as computational modeling can supplement traditional toxicology data in the assessment process. This new framework allows the evaluation of the full range of benefits and shortcomings of substitutes, and examination of tradeoffs between these risks and factors such as product functionality, product efficacy, process safety, and resource use. Through case studies, this report demonstrates how different users in contrasting decision contexts with diverse priorities can apply the framework. This report will be an essential resource to the chemical industry, environmentalists, ecologists, and state and local governments.

### **Impacts of Marine Litter**-Luisa Galgani 2019-08-15

**Handbook of Oil Spill Science and Technology**-Merv Fingas 2015-02-02  
Risk analysis and prevention. Oil properties oil physical properties. Oil composition and properties. Oil analysis. oil behavior. Modeling. oil spill on land. Effects of oil. Natural dispersion. Cold region spills. Case studies.

### **MICRO 2016: Fate and Impact of Microplastics in Marine**

**Ecosystems**-Juan Baztan 2016-11-29 Fate and Impact of Microplastics in Marine Ecosystems: From the Coastline to the Open Sea brings together highlights from the conference proceedings for MICRO 2016: Fate and Impact of Microplastics in Marine Ecosystems: From the Coastline to the Open Sea. While the presence of microplastics in ecosystems has been reported in the scientific literature since the 1970's, many pressing questions regarding their impacts remain unresolved. This short format title draws from the shared scientific and technical material and summarizes the current research and future outlook. Includes a range of topics, from macro- to microplastics Presents data from source to sink, including occurrence and distribution of microplastics in freshwater bodies, coastal zones, and the open ocean Presents the impacts of microplastics on marine life as well as microplastics as vectors of biological and chemical contaminants Provides important analysis on solutions and next steps

### **Population Biology of the Indo-Pacific Hump-backed Dolphin in Hong Kong Waters**-Thomas A. Jefferson 2000

**Tropical Pinnipeds**-Juan J. Alava 2017-07-12 Pinnipeds are a fascinating group of marine mammals that play a crucial role as apex predators and sentinels of the functioning and health of marine ecosystems. They are found in the most extreme environments from the Polar regions to the tropics. Pinnipeds are comprised of about 34 species, and of those at least



25% live permanently in tropical zones. This book reviews and updates current research on the biology, marine ecology, bio-monitoring, and conservation of tropical pinniped populations, including their behavior, anthropogenic stressors, and health. It also looks at challenges to be faced for the conservation of tropical pinnipeds, many of which are threatened species.

#### **Revista de biología tropical- 2001**

**The Effects of UV Radiation in the Marine Environment**-Stephen De Mora 2000-03-09 This book, first published in 2000, provides a comprehensive review of UV radiation effects in the marine environment. A multidisciplinary approach is adopted to discuss all aspects from a physical, chemical and biological perspective. The book begins by describing the attenuation of UV radiation in the atmosphere and sea water, outlining the photochemical reactions involved and highlighting the role that such chemistry can play in influencing the biogeochemical cycling of various elements. The deleterious consequences of such radiation on organisms and strategies adopted to mitigate these harmful repercussions are discussed. The organisms considered range from virus and bacteria through phytoplankton and zooplankton to fish and mammals. The book is aimed at researchers and graduate students in photobiology, photochemistry and environmental science. It will also be useful as a supplementary text for courses in oceanography, climatology and ecology.

**Toxicology**-Marcelo Larramendy 2016-10-26 This edited book, Toxicology - New Aspects to This Scientific Conundrum, is intended to provide an overview on the different xenobiotics employed every day in our anthropogenic activities. We hope that this book will continue to meet the expectations and needs of all interested in the implications for the living species of known and new toxicants and to guide them in the future investigations.

**Review of Small Cetaceans**-Boris M. Culik 2004 Publication of the UN Convention on Migratory Species covering cetacea, their behavior, distribution, and migration patterns.

**Marine Anthropogenic Litter**-Melanie Bergmann 2015-06-01 This book describes how man-made litter, primarily plastic, has spread into the remotest parts of the oceans and covers all aspects of this pollution problem from the impacts on wildlife and human health to socio-economic and political issues. Marine litter is a prime threat to marine wildlife, habitats and food webs worldwide. The book illustrates how advanced technologies from deep-sea research, microbiology and mathematic modelling as well as classic beach litter counts by volunteers contributed to the broad awareness of marine litter as a problem of global significance. The authors summarise more than five decades of marine litter research, which receives growing attention after the recent discovery of great oceanic garbage patches and the ubiquity of microscopic plastic particles in marine organisms and habitats. In 16 chapters, authors from all over the world have created a universal view on the diverse field of marine litter pollution, the biological impacts, dedicated research activities, and the various national and international legislative efforts to combat this environmental problem. They recommend future research directions necessary for a comprehensive understanding of this environmental issue and the development of efficient management strategies. This book addresses scientists, and it provides a solid knowledge base for policy makers, NGOs, and the broader public.

**Emerging Pollutants in the Environment**-Marcelo Larramendy 2015-09-02 This edited book, Emerging Pollutants in the Environment Current and Further Implications, includes overviews by significant researchers on the topic of emerging pollutants toxicology, which covers the hazardous effects of common emerging xenobiotics employed in our every day anthropogenic activities. We hope that this book will meet the expectations and needs of all those who are interested in the negative implications of several emerging pollutants on living species.

**Environmental Contaminants in Biota**-W. Nelson Beyer 2011-02-23  
Discussing the interpretation of tissue concentrations of contaminants in wildlife, this updated edition of a bestseller draws on current scientific research and includes new chapters and greater emphasis on aquatic organisms. Each chapter provides a summary and review of a specific chemical along with direction on research methods and the interpretation of conflicting or insufficient data. Chapters include a comprehensive history of contaminant interpretation in wildlife and fish, the use of tissue residues in ecological risk assessment, and detailed coverage of all bioaccumulative contaminants and their physiologic affects.

**Levels of Organochlorine Contaminants in Milk Relative to Health of Bottlenose Dolphins (Tursiops Truncatus) from Sarasota, Florida**-Jocelyn Marie Vedder 1996

**Deep Oil Spills**-Steven A. Murawski 2019-06-29 The demand for oil and gas has brought exploration and production to unprecedented depths of the world's oceans. Currently, over 50% of the oil from the Gulf of Mexico now comes from waters in excess of 1,500 meters (one mile) deep, where no oil was produced just 20 years ago. The Deepwater Horizon oil spill blowout did much to change the perception of oil spills as coming just from tanker accidents, train derailments, and pipeline ruptures. In fact, beginning with the Ixtoc 1 spill off Campeche, Mexico in 1979-1980, there have been a series of large spill events originating at the sea bottom and creating a myriad of new environmental and well control challenges. This volume explores the physics, chemistry, sub-surface oil deposition and environmental impacts of deep oil spills. Key lessons learned from the responses to previous deep spills, as well as unresolved scientific questions for additional research are highlighted, all of which are appropriate for governmental regulators, politicians, industry decision-makers, first responders, researchers and students wanting an incisive overview of issues surrounding deep-water oil and gas production.

**Marine Mammal Ecology and Conservation**-Ian L. Boyd 2010-08-12

Much of our knowledge about marine mammals is derived from a long-term and dedicated research effort that is evolving rapidly due to the introduction and invention of new methods. This book reflects the inventiveness of marine researchers as they try to find ways around the problems presented to them by these unusual and challenging animals.

**Handbook of Ecotoxicology**-David J. Hoffman 1995 The handbook provides comprehensive coverage of the following general areas of ecotoxicology: -- Methods of quantifying and measuring ecotoxicological effects-- Effects of environmental contaminants and other ecological perturbations-- Case histories involving environmental contaminant disruption of natural ecosystems-- Methods used for estimating, predicting, and modeling in ecotoxicology studies

**Marine Mammals: Fisheries, Tourism and Management Issues**-Nicholas Gales 2003-10-22 Marine Mammals: Fisheries, Tourism and Management Issues brings together contributions from 68 leading scientists from 12 countries to provide a comprehensive, up-to-date review on the way we manage our interactions with whales, dolphins, seals and dugongs. The book examines how we have fared conserving the world's marine mammal populations, with a focus on the key issues of fisheries and tourism. From a unique southern hemisphere perspective, the authors consider how science informs the culling debate, how wild fisheries and aquaculture interact with marine mammal populations and how we might manage the effects of whale, dolphin and seal watching industries. The authors also address other issues such as the way in which ethics, genetics, acoustics, ecosystem models and pollution influence the management and conservation of marine mammals. Marine Mammals is an invaluable and accessible resource for all those involved with marine mammals, including scientists, managers, policy makers, industry representatives and students. Winner of a 2004 Whitley Award.

**The Galapagos Marine Reserve**-Judith Denkinger 2014-01-24 This book focuses on how marine systems respond to natural and anthropogenic

perturbations (ENSO, overfishing, pollution, tourism, invasive species, climate-change). Authors explain in their chapters how this information can guide management and conservation actions to help orient and better manage, restore and sustain the ecosystems services and goods that are derived from the ocean, while considering the complex issues that affect the delicate nature of the Islands. This book will contribute to a new understanding of the Galapagos Islands and marine ecosystems.

**Bulletin Van Het Koninklijk Belgisch Instituut Voor Natuurwetenschappen**-Institut royal des sciences naturelles de Belgique 1997

**Persistent organic contaminants and contaminant-induced immune and health alterations in the harbor seal, Phoca vitulina**-Jennifer Carroll Carpenter Neale 2004

**Oceanic Abstracts**- 1996-10

**Consequences of Range Expansion in Laysan Albatrosses**-Robert W. Henry 2011

**Bioassays**-Donat Hader 2017-10-27 Bioassays: Advanced Methods and Applications provides a thorough understanding of the applications of bioassays in monitoring toxicity in aquatic ecosystems. It reviews the newest tests and applications in discovering compounds and toxins in the environment, covering all suitable organisms, from bacteria, to microorganisms, to higher plants, including invertebrates and vertebrates. By learning about newer tests, water pollution control testing can be less time and labor consuming, and less expensive. This book will be helpful for anyone working in aquatic environments or those who need an introduction to ecotoxicology or bioassays, from investigators, to technicians and students. Features chapters written by internationally renowned

researchers in the field, all actively involved in the development and application of bioassays Gives the reader an understanding of the advantages and deficiencies of available tests Addresses the problem of understanding the impact of toxins in an aquatic environment and how to assess them

**Oil in the Sea III**-National Research Council 2003-03-14 Since the early 1970s, experts have recognized that petroleum pollutants were being discharged in marine waters worldwide, from oil spills, vessel operations, and land-based sources. Public attention to oil spills has forced improvements. Still, a considerable amount of oil is discharged yearly into sensitive coastal environments. Oil in the Sea provides the best available estimate of oil pollutant discharge into marine waters, including an evaluation of the methods for assessing petroleum load and a discussion about the concerns these loads represent. Featuring close-up looks at the Exxon Valdez spill and other notable events, the book identifies important research questions and makes recommendations for better analysis of "and more effective measures against" pollutant discharge. The book discusses: Input "where the discharges come from, including the role of two-stroke engines used on recreational craft. Behavior or fate "how oil is affected by processes such as evaporation as it moves through the marine environment. Effects "what we know about the effects of petroleum hydrocarbons on marine organisms and ecosystems. Providing a needed update on a problem of international importance, this book will be of interest to energy policy makers, industry officials and managers, engineers and researchers, and advocates for the marine environment.

**Effects of Anthropogenic Noise on Animals**-Hans Slabbekoorn 2018-08-20 Over the past several years, many investigators interested in the effects of man-made sounds on animals have come to realize that there is much to gain from studying the broader literature on hearing sound and the effects of sound as well as data from the effects on humans. It has also become clear that knowledge of the effects of sound on one group of animals (e.g., birds or frogs) can guide studies on other groups (e.g., marine mammals or fishes) and that a review of all such studies together would be very useful to get a better understanding of the general principles and



underlying cochlear and cognitive mechanisms that explain damage, disturbance, and deterrence across taxa. The purpose of this volume, then, is to provide a comprehensive review of the effects of man-made sounds on animals, with the goal of fulfilling two major needs. First, it was thought to be important to bring together data on sound and bioacoustics that have implications across all taxa (including humans) so that such information is generally available to the community of scholars interested in the effects of sound. This is done in Chaps. 2-5. Second, in Chaps. 6-10, the volume brings together what is known about the effects of sound on diverse vertebrate taxa so that investigators with interests in specific groups can learn from the data and experimental approaches from other species. Put another way, having an overview of the similarities and discrepancies among various animal groups and insight into the “how and why” will benefit the overall conceptual understanding, applications in society, and all future research.

#### **Hazard Assessment and Control of Environmental Contaminants**

**(Ecohazard 99)**-Saburo Matsui 2000 The Ecohazard '99 conference brought together scientists, engineers, administrators and policy-makers from around the world who work in the fields of environmental and ecological toxicology to exchange the latest information on hazardous chemicals in the environment. There were a large number of contributions

on endocrine disruption in ecosystems, possibly the hottest issue of the moment, but significant work was also reported on DNA-damaging chemicals, heavy metals and other environmental toxic substances. From the papers presented at the conference 48 have been selected for these proceedings. They focus on the following topics: detection of endocrine disruptors; detection of genotoxic contaminants; heavy metal and radionuclide contamination; PCDDs, PCBs and organochlorine contamination; ecological toxicity assessment; environmental risk assessment; hazardous contaminants in wastewaters; physico-chemical treatment of hazardous contaminants; biological treatment of environmental contaminants; and advanced analytical methods.

#### **Marine Mammal Observer and Passive Acoustic Monitoring**

**Handbook**-Victoria Todd 2015-03-18 Marine Mammal Observer and Passive Acoustic Monitoring Handbook is the ultimate instruction manual for mitigation measures to minimise man-made acoustical and physical disturbances to marine mammals from industrial and defence activities.