

## Encyclopedia Of Ocean Sciences

This thorough revision of the classic Encyclopedia of Marine Mammals brings this authoritative book right up-to-date. Articles describe every species in detail, based on the very latest taxonomy, and a host of biological, ecological and sociological aspects relating to marine mammals. The latest information on the biology, ecology, anatomy, behavior and interactions with man is provided by a cast of expert authors – all presented in such detail and clarity to support both marine mammal specialists and the serious naturalist. Fully referenced throughout and with a fresh selection of the best color photographs available, the long-awaited second edition remains at the forefront as the go-to reference on marine mammals. More than 20% NEW MATERIAL includes articles on Climate Change, Pacific White-sided Dolphins, Sociobiology, Habitat Use, Feeding Morphology and more Over 260 articles on the individual species with topics ranging from anatomy and behavior, to conservation, exploitation and the impact of global climate change on marine mammals New color illustrations show every species and document topical articles FROM THE FIRST EDITION "This book is so good...a bargain, full of riches...packed with fascinating up to date information. I recommend it unreservedly to individuals, students, and researchers, as well as libraries." --Richard M. Laws, MARINE MAMMALS SCIENCE "...establishes a solid and satisfying foundation for current study and future exploration" --Ronald J. Shusterman, SCIENCE

Globally growing demand of energy and mineral resources, reliable future projection of climate processes and the protection of coasts to mitigate the threats of disasters and hazards require a comprehensive understanding of the structure, ongoing processes and genesis of the marine geosphere. Beyond the "classical" research fields in marine geology in current time more general concepts have been evolved integrating marine geophysics, hydrography, marine biology, climatology and ecology. As an umbrella the term "marine geosciences" has been broadly accepted for this new complex field of research and the solutions of practical tasks in the marine realm. The "Encyclopedia of Marine Geosciences" comprises the current knowledge in marine geosciences whereby not only basic but also applied and technical sciences are covered. Through this concept a broad scale of users in the field of marine sciences and techniques is addressed from students and scholars in academia to engineers and decision makers in industry and politics.

There is a growing crisis in our oceans: mysterious outbreaks of infectious disease are on the rise. Marine epidemics can cause mass die-offs of wildlife from the bottom to the top of food chains, impacting the health of ocean ecosystems as well as lives on land. Portending global environmental disaster, ocean outbreaks are fueled by warming seas, sewage dumping, unregulated aquaculture, and drifting plastic. Ocean Outbreak follows renowned scientist Drew Harvell and her colleagues into the field as they investigate how four iconic marine animals--corals, abalone, salmon, and starfish--have been devastated by disease. Based on over twenty years of research, this firsthand account of the sometimes gradual, sometimes exploding impact of disease on our ocean's biodiversity ends with solutions and a call to action. Only through policy changes and the implementation of innovative solutions from nature can we reduce major outbreaks, save some ocean ecosystems, and protect our fragile environment.

One of Springer's Major Reference Works, this book gives the reader a truly global perspective. It is the first major reference work in its field. Paleoclimate topics covered in the encyclopedia give the reader the capability to place the observations of recent global warming in the context of longer-term natural climate fluctuations. Significant elements of the encyclopedia include recent developments in paleoclimate modeling, paleo-ocean circulation, as well as the influence of geological processes and biological feedbacks on global climate change. The encyclopedia gives the reader an entry point into the literature on these and many other groundbreaking topics.

Oceans and Human Health highlights an unprecedented collaboration of environmental scientists, ecologists and physicians working together on this important new discipline, to the benefit of human health and ocean environmental integrity alike. Oceanography, toxicology, natural products chemistry, environmental microbiology, comparative animal physiology, epidemiology and public health are all long established areas of research in their own right and all contribute data and expertise to an integrated understanding of the ways in which ocean biology and chemistry affect human health for better or worse. This book introduces this topic to researchers and advanced students interested in this emerging field, enabling them to see how their research fits into the broader interactions between the aquatic environment and human health. Color illustrations of aquatic life and oceanic phenomena such as hurricanes and algal blooms Numerous case studies Socio-economic and Ethical Analyses place the science in a broader context Study questions for each chapter to assist students and instructors Risks and remedies sections to help define course modules for instruction

This title is a derivative of the 'Encyclopedia of Ocean Sciences' and serves as an important reference on coastal oceanography in one convenient and accessible source.

This new edition of Ocean has been updated with fresh graphics, images, and type styling throughout, and includes new coverage of major events such as Hurricane Sandy and the Japan tsunami. DK's Ocean is a highly illustrated encyclopedia of the marine environment. It not only covers marine life and physical oceanography, from the geology of the seafloor to the chemistry of seawater, but also includes an atlas of the world's oceans and seas compiled using satellite data. Visual catalogs throughout the book contain profiles of living organisms and key locations. With comprehensively updated text, artwork, and images, the second edition of DK's exhaustive guide to the underwater world is the most definitive visual guide to the world's oceans on the market.

The quaternary sciences constitute a dynamic, multidisciplinary field of research that has been growing in scientific and societal importance in recent years. This branch of the Earth sciences links ancient prehistory to modern environments. Quaternary terrestrial sediments contain the fossil remains of existing species of flora and fauna, and their immediate predecessors.

Quaternary science plays an integral part in such important issues for modern society as groundwater resources and contamination, sea level change, geologic hazards (earthquakes, volcanic eruptions, tsunamis), and soil erosion. With over 360 articles and 2,600 pages, many in full-color, the Encyclopedia of Quaternary Science provides broad ranging, up-to-date articles on all of the major topics in the field. Written by a team of leading experts and under the guidance of an international editorial board, the articles are at a level that allows undergraduate students to understand the material, while providing active researchers with the latest information in the field. Also available online via ScienceDirect (2006) – featuring extensive browsing, searching, and

internal cross-referencing between articles in the work, plus dynamic linking to journal articles and abstract databases, making navigation flexible and easy. For more information, pricing options and availability visit [www.info.sciencedirect.com](http://www.info.sciencedirect.com). 360 individual articles written by prominent international authorities, encompassing all important aspects of quaternary science Each entry provides comprehensive, in-depth treatment of an overview topic and presented in a functional, clear and uniform layout Reference section provides guidance for further research on the topic Article text supported by full-color photos, drawings, tables, and other visual material Writing level is suited to both the expert and non-expert

Dive into our planet's largest and least explored world in this stunning encyclopedia of everything ocean - including whales, waves, wrecks, wind farms, and more! Using 3D computer illustrations to show cross-section views and a level of detail you can't find in other books, this children's ocean encyclopedia takes you on a world tour of the waters that cover 70 percent of our planet. Including sharks, jellyfish, turtles, dolphins, octopuses, penguins, and seahorses, you will see the fish, invertebrates, and other animals that call the ocean home and learn how their anatomy and behaviour is adapted to deal with a watery habitat. Discover the geography, geology, and ecology that lies beneath the waves - from the dramatic landscapes of the deepest trench and the longest mountain range on Earth, to coastal coral reefs and kelp forests teeming with life. Find out, too, about the science behind the seas. How do islands form? What are tsunamis? How can you help with marine conservation? Beautifully illustrated and packed full of facts, Knowledge Encyclopedia Ocean is the ultimate reference book for children curious about our planet's watery world.

Presents an illustrated, A-Z encyclopedia with more than 600 entries providing information on topics related to marine science.

Climate and Oceans is a derivative of the Encyclopedia of Ocean Sciences, 2nd Edition and serves as an important reference on current knowledge and expertise in one convenient and accessible source. The selected articles—all written by experts in their field—fall into several categories, including: ocean circulation, heat and water balance, the cryosphere, the marine record of paleoclimate, and the carbon system. Climate and Oceans serves as an ideal reference for topical research. References related articles on climate and oceans to facilitate further research Richly illustrated with figures and tables that aid in understanding key concepts Includes an introductory overview of climate-related oceanography and then explores each topic in detail, making it useful to experts and graduate-level researchers Topical arrangement makes it the perfect desk reference

Ocean Currents is a derivative of the Encyclopedia of Ocean Sciences, 2nd Edition and serves as an important reference on current ocean current knowledge and expertise in one convenient and accessible source. Its selection of articles—all written by experts in their field—focuses on key ocean current concepts. Its topics include ocean currents, the circulation of deep water, the contrasting circulations of the seas, the circulation in fjords, estuaries and the effects of rivers, and the intermittency and variability of the oceans. Ocean Currents serves as an ideal reference for topical research. References related articles on ocean currents to facilitate further research Richly illustrated with figures and tables that aid in understanding key concepts Includes an introductory overview of ocean currents and then explores each topic in detail, making it useful to experts and graduate-level researchers Topical arrangement makes it the perfect desk reference

Coral reefs are the largest landforms built by plants and animals. Their study therefore incorporates a wide range of disciplines. This encyclopedia approaches coral reefs from an earth science perspective, concentrating especially on modern reefs. Currently coral reefs are under high stress, most prominently from climate change with changes to water temperature, sea level and ocean acidification particularly damaging. Modern reefs have evolved through the massive environmental changes of the Quaternary with long periods of exposure during glacially lowered sea level periods and short periods of interglacial growth. The entries in this encyclopedia condense the large amount of work carried out since Charles Darwin first attempted to understand reef evolution. Leading authorities from many countries have contributed to the entries covering areas of geology, geography and ecology, providing comprehensive access to the most up-to-date research on the structure, form and processes operating on Quaternary coral reefs.

The multidisciplinary nature of marine sciences (Geology, Biology, Physics, Chemistry, and Oceanography) is reflected in this references 1,980 up-to-date, alphabetically listed keywords with illustrations. These keywords provide valuable time-saving assistance when studying marine scientific literature. The brief explanation of the concepts, terminology, and methods makes this book more valuable than a pure glossary or dictionary.

The Encyclopedia of Life Sciences volumes 1-26 comprises the original 20 volumes of ELS (published in 2002) plus six supplementary volumes (published in 2007). Volumes 21-26 collates all the information that has been added to the online version on WileyIntersciences since the publication of the first 20-volume set. Together, they provide the reader with the most comprehensive and the up-to-date information in Life Sciences. Spanning the entire spectrum of life sciences, the Encyclopedia of Life Sciences (ELS) features more than 4,000 specially commissioned and peer-reviewed articles, making it an essential read for life scientists and a valuable resource for teaching. Aimed at researchers, students and teachers, articles provide comprehensive and authoritative coverage, written by leaders in the field. Colour illustrations and tables accompany articles, with appendix and glossary material providing essential information for the non-specialist, including biochemical and taxonomic information, acronyms, synonyms, units and other technical data. Importantly, all articles have been peer-reviewed to ensure a balanced representation of the literature. Articles are divided into three different categories indicating their level of complexity: Introductory, Advanced and Keynote. Introductory articles have been written primarily for undergraduate and non-specialists requiring the basic concepts of a particular subject. Advanced articles provide a more detailed discussion of specialist subjects, equivalent to that found in graduate level texts. Keynote articles provide a platform for debate where controversial issues and 'hot topics' can be discussed. Coverage includes: Biochemistry Cell Biology Developmental Biology Ecology Evolution and Diversity of Life Functional and Comparative Morphology Genetics and Disease Genetics and Molecular Biology Immunology Microbiology Neuroscience Plant Science Science and Society Structural Biology Virology

Encyclopedia of Ocean Sciences 2e is a new 6-volume online reference work, pulling together all the key information in one source from the leading publisher in the field. This second edition is online, offering the user greater flexibility, accessibility, and most importantly, usability with 24 hour access, multi-user access, remote access and excellent search functionality. Structured for success, each article contains a glossary, an introduction, a reference section and a wealth of cross-referenced links to premium and related material all accessible in a mouse-click,

making complicated, time consuming research a thing of the past. \*Approximately 500 articles covering the breadth and depth of the field with over 30% new and updated content reflecting the latest research \*Greater coverage of climate, remote sensing, and data modeling, with greater consideration of economic and political aspects provides a broad view of the field \*Structured for success, each article contains an introduction, a reference section, a glossary and a wealth of cross references to premium related journal and book content

In *Monsters of the Sea*, Richard Ellis casts his net wide in search of the most unusual aquatic creatures, from mermaids to manatees to the Loch Ness Monster and the mythical sea serpent for whom the giant squid has frequently been mistaken. Ellis examines the literary sources of sea-monster lore, from *The Odyssey* to Jules Verne to Peter Benchley. Highly entertaining, packed with curiosities, and backed by the author's impeccable scientific credentials.

*Elements of Physical Oceanography* is a derivative of the *Encyclopedia of Ocean Sciences*, 2nd Edition and serves as an important reference on current physical oceanography knowledge and expertise in one convenient and accessible source. Its selection of articles—all written by experts in their field—focuses on ocean physics, air-sea transfers, waves, mixing, ice, and the processes of transfer of properties such as heat, salinity, momentum and dissolved gases, within and into the ocean. *Elements of Physical Oceanography* serves as an ideal reference for topical research. References related articles in physical oceanography to facilitate further research Richly illustrated with figures and tables that aid in understanding key concepts Includes an introductory overview and then explores each topic in detail, making it useful to experts and graduate-level researchers Topical arrangement makes it the perfect desk reference

The hadal zone represents one of the last great frontiers in marine science, accounting for 45% of the total ocean depth range. Despite very little research effort since the 1950s, the last ten years has seen a renaissance in hadal exploration, almost certainly as a result of technological advances that have made this otherwise largely inaccessible frontier, a viable subject for research. Providing an overview of the geology involved in trench formation, the hydrography and food supply, this book details all that is currently known about organisms at hadal depths and linkages to the better known abyssal and bathyal depths. New insights on how, where and what really survives and thrives in the deepest biozone are provided, allowing this region to be considered when dealing with sustainability and conservation issues in the marine environment.

This major new volume is an indispensable resource, and an endlessly fascinating work of reference. Clearly structured in two parts, dealing with the physical nature of oceans and the evolution and distribution of marine life, it covers all the major fields of oceanographic research. Its accessible treatment offers a wealth of up-to-date information on topics ranging from oceanic ridge formation and hydrothermal vents, to the rhythm and patterns of tides, currents, and weather systems, to the astonishing diversity and complex interactions of marine communities. The impact of humankind on the oceans is also discussed: with increasing demand for resources, the world's oceans are set to become the 'final frontier' for intensive scientific research. However, the seas are not inexhaustible, nor are they infinitely resilient; disasters such as Exxon Valdez have brought home the enormous costs of marine pollution. The *Encyclopedia of the Oceans* considers the options and looks at the sustainable use of resources and conservation of marine life. The stunning photographs - many of them illustrating exciting new underwater research projects, brilliant explanatory artworks and maps, together with the clear, authoritative text combine to make this an invaluable work of reference on a unique, vital, but little understood component of our planet.

*Encyclopedia of Geology*, Second Edition presents in six volumes state-of-the-art reviews on the various aspects of geologic research, all of which have moved on considerably since the writing of the first edition. New areas of discussion include extinctions, origins of life, plate tectonics and its influence on faunal provinces, new types of mineral and hydrocarbon deposits, new methods of dating rocks, and geological processes. Users will find this to be a fundamental resource for teachers and students of geology, as well as researchers and non-geology professionals seeking up-to-date reviews of geologic research. Provides a comprehensive and accessible one-stop shop for information on the subject of geology, explaining methodologies and technical jargon used in the field Highlights connections between geology and other physical and biological sciences, tackling research problems that span multiple fields Fills a critical gap of information in a field that has seen significant progress in past years Presents an ideal reference for a wide range of scientists in earth and environmental areas of study

This book integrates a wide range of subjects into a coherent purview of the status of coastal marine science. Designed for the professional or specialist in coastal science, oceanography, and related disciplines, this work will appeal to workers in multidisciplinary fields that strive for practical solutions to environmental problems in coastal marine settings around the world. Examples are drawn from many different geographic areas, including the Black Sea region. Subject areas covered include aspects of coastal marine geology, physics, chemistry, biology, and history. These subject areas were selected because they form the basis for integrative investigation of salient environmental problems or perspective solutions or interpretation of historical context.

Swimming with sharks sounds a terrifying prospect, but not when it is from the comfort of your living room. This comprehensive visual encyclopedia takes you deep into the world's waters to meet the deadliest ocean predators - without you even getting wet! Do you know which creature has tentacles longer than a bus? Or what was the largest shark that ever lived? Where does the tiger shark get its name? Which fish has the deadliest venom? And which fish has the strongest bite of anything on Earth? *Sharks and Other Deadly Ocean Creatures* answers all these questions and many, many more. More than 200 fierce fish from the past and present are featured in fact-packed profiles. You'll come face to face with great white sharks, manta rays, saltwater crocodiles, giant squid, biting barracudas, and predatory piranhas all shown with exciting CGI technology and stunning photography. You'll learn about shark anatomy, behaviour, and habitats alongside fun, factual text presented in an easily accessible format.?? Whether you're a water baby or simply studying for a school project, this is your one-stop shop for sharks and other deadly ocean creatures.

This single-volume resource explores the five major oceans of the world, addressing current issues such as sea rise and climate change and explaining the significance of the oceans from historical, geographic, and cultural perspectives. • Introduces readers to the five major oceans of the world and provides ready-reference entries relating to geography, the environment, science, history, and culture • Entries are engaging and accessible to all readers from high school to university students to general readers • Includes sidebars of "fun facts" throughout the text that highlight interesting oceanic subtopics This book is a collection of the contribution of many international authors on a very interesting biological field - marine biology. It contains the topics that describe the human and aquatic animals' interaction as well as some of the key issues related to marine biology. Also included in this book is a detailed discussion of the impact of chemicals on aquatic organisms and their environment. The book aims to shed light on some of the unexplored aspects of marine biology and the recent researches in this field.

The *Encyclopedia of Ocean Sciences* is the most current, authoritative, and comprehensive resource on the science of the oceans. This ambitious work includes contributions from leading scientists around the world on the physical processes that drive the oceans and the chemical, biological, and geological disciplines. The *Encyclopedia* also covers ancillary topics such as ocean technology, law of the oceans, global programs, marine policy, the use of the oceans for food and energy, and the impact of pollution and climate changes. The many different methods used to study the oceans are covered, from ship-based systems to satellite remote sensing. Users will enjoy easy access to more than 400 articles, each approximately 3000-4000 words in length with further reading lists and extensive cross referencing. Each article provides comprehensive coverage of a particular topic, and is designed for a wide audience of students, academics, researchers, and professionals. The articles are written at a level that allows

undergraduate students to understand the material, while providing active researchers with the latest technical information. Also available online on ScienceDirect. For online version information, please visit [http://www.info.sciencedirect.com/reference\\_works](http://www.info.sciencedirect.com/reference_works) Presents 402 original articles covering all the physical, chemical and biological aspects of ocean science Brings together classic scientific theories with the newest discoveries, technologies, and applications Written by the world's leading researchers and developed by a prestigious editorial board Makes information easy to find with an intuitive format, extensive cross references, further reading lists, and complete index Illustrated with more than 1900 figures and full color throughout Developed alongside each other, the Encyclopedia of Ocean Sciences together with the Encyclopedia of Atmospheric Sciences provide readers a with comprehensive resource, and a link between these two fields.

This thoroughly revised and expanded edition of the much acclaimed Encyclopedia of Coastal Science edited by M. Schwarz (Springer 2005), presents an interdisciplinary approach that includes biology, ecology, engineering, geology, geomorphology, oceanography, remote sensing, technological advances, and anthropogenic impacts on coasts. Within its covers the Encyclopedia of Coastal Science, 2nd ed. brings together and coordinates many aspects of coastal and related sciences that are widely dispersed in the scientific literature. The broadly interdisciplinary subject matter of this volume features contributions by over 280 well-known international specialists in their respective fields and provides an abundance of figures in full-color with line drawings and photographs, and other illustrations such as satellite images. Not only does this volume offer a large number of new and revised entries, it also includes an illustrated glossary of coastal geomorphology, extensive bibliographic citations, and cross-references. It provides a comprehensive reference work for students, scientific and technical professionals as well as administrators, managers, and informed lay readers. Reviews from the first edition: Awarded for Excellence in Scholarly and Professional Publishing: "Honorable Mention", in the category Single Volume/Science from the Association of American Publishers (AAP) 2005. "The contents and approach are interdisciplinary and, under a single cover, one finds subjects normally scattered throughout scientific literature." "The topics cover a broad spectrum, so does the geographic range of the contributors. ... besides geomorphologists, biologists, ecologists, engineers, geographers, geologists, oceanographers and technologists will find information related to their respective fields ... . Inclusion of appendices ... is very useful. The illustrated glossary of geomorphology will prove very useful for many of us ... ." Roger H. Charlier, Journal of Coastal Research, Volume 21, Issue 4, Page 866, July 2005. "It is an excellent work that should be included in any carefully selected list of best science reference books of the year "Summing Up: Highly recommended. " M.L. Larsgaard, Choice, Volume 43, Issue 6, Page 989, February 2006. "This volume is a comprehensive collection of articles covering all aspects of the subject: social and economic, engineering, coastal processes, habitats, erosion, geological features, research and observation." ... "As with similar works reviewed, I chose to read articles on familiar topics to see if they covered the expected, and some on unfamiliar topics to see if they could be readily understood. The book passed both tests, but the style is denser and more fact-filled than most of the encyclopedias I have reviewed." John Goodier, Reference Reviews, Volume 20, Issue 2, pages 35-36, 2006

This title is an important reference on current knowledge and expertise in one convenient and accessible source. The selected articles - all written by experts in their field - fall into several categories. Encyclopedia of the World's Biomes is a unique, five volume reference that provides a global synthesis of biomes, including the latest science. All of the book's chapters follow a common thematic order that spans biodiversity importance, principal anthropogenic stressors and trends, changing climatic conditions, and conservation strategies for maintaining biomes in an increasingly human-dominated world. This work is a one-stop shop that gives users access to up-to-date, informative articles that go deeper in content than any currently available publication. Offers students and researchers a one-stop shop for information currently only available in scattered or non-technical sources Authored and edited by top scientists in the field Concisely written to guide the reader though the topic Includes meaningful illustrations and suggests further reading for those needing more specific information

Based on the research findings of 60 years, the author describes the origins of the Agulhas Current, its behaviour, its influence on the adjacent continental shelf, its effect on local weather and its role in linking the Indian and Atlantic Oceans. The text is well-illustrated and includes asides on the history of research on the Current. An exhaustive bibliography gives easy access to present knowledge on this important current system.

"This 12 volume encyclopedia contains 160 chapters covering a broad range of topics related to marine biology"--

The Encyclopedia of Food and Health provides users with a solid bridge of current and accurate information spanning food production and processing, from distribution and consumption to health effects. The Encyclopedia comprises five volumes, each containing comprehensive, thorough coverage, and a writing style that is succinct and straightforward. Users will find this to be a meticulously organized resource of the best available summary and conclusions on each topic. Written from a truly international perspective, and covering of all areas of food science and health in over 550 articles, with extensive cross-referencing and further reading at the end of each chapter, this updated encyclopedia is an invaluable resource for both research and educational needs. Identifies the essential nutrients and how to avoid their deficiencies Explores the use of diet to reduce disease risk and optimize health Compiles methods for detection and quantitation of food constituents, food additives and nutrients, and contaminants Contains coverage of all areas of food science and health in nearly 700 articles, with extensive cross-referencing and further reading at the end of each chapter

Ocean life.

Children's Encyclopedia Ocean is packed with amazing facts about the world's oceans and beyond! Children aged 7+ will dive into this highly visual encyclopedia, which includes detailed information about coral reefs, seashores and marine life. With captivating images, fun illustrations and expert information, Children's Encyclopedia Ocean is the ultimate guide to ocean life. Children can discover how coral reefs grow, which whale can sing and what are the most famous shipwrecks found at the bottom of the ocean. Learning is encouraged through quizzes, fun cartoons and simple projects that can be done at home. This is a great ocean encyclopedia for kids aged 7+. Essential topics covered in Children's Encyclopedia Ocean: Seashore: Land meets sea, Estuaries and lagoons, and Seaside adventures Coral Reefs: Coral animals, The Great Barrier Reef, and Underwater explorers Deep Ocean: In deep water, Monsters of the deep, and Glow in the dark Whales and Dolphins: Inside whales and dolphins, Fast and sleek, and Getting together Shipwrecks: Diving discoveries, Pirate wrecks, and Shipwreck mysteries Examples of 'I don't believe it' fascinating facts: Coral reefs are very slow growers. A reef can grow about 10 centimetres a year if conditions are just right how much have you grown in the last year? The seabed of the Antarctic Ocean had some mega-sized animals. Scientists found giant spiders and worms, and fish with huge eyes and body parts that scientists described as 'dangly bits'. The sperm whale has the biggest brain in the world. It weighs about 8 kilograms - that's over five times the size of a human brain. But its large brain does not mean that it is the cleverest anima

Encyclopedia of Atmospheric Sciences, 2nd Edition is an authoritative resource covering all aspects of atmospheric sciences, including both theory and applications. With more

than 320 articles and 1,600 figures and photographs, this revised version of the award-winning first edition offers comprehensive coverage of this important field. The six volumes in this set contain broad-ranging articles on topics such as atmospheric chemistry, biogeochemical cycles, boundary layers, clouds, general circulation, global change, mesoscale meteorology, ozone, radar, satellite remote sensing, and weather prediction. The Encyclopedia is an ideal resource for academia, government, and industry in the fields of atmospheric, ocean, and environmental sciences. It is written at a level that allows undergraduate students to understand the material, while providing active researchers with the latest information in the field. Covers all aspects of atmospheric sciences—including both theory and applications Presents more than 320 articles and more than 1,600 figures and photographs Broad-ranging articles include topics such as atmospheric chemistry, biogeochemical cycles, boundary layers, clouds, general circulation, global change, mesoscale meteorology, ozone, radar, satellite remote sensing, and weather prediction An ideal resource for academia, government, and industry in the fields of atmospheric, ocean, and environmental sciences

The oceans cover 70% of the Earth's surface, and are critical components of Earth's climate system. This new edition of Encyclopedia of Ocean Sciences summarizes the breadth of knowledge about them, providing revised, up to date entries as well coverage of new topics in the field. New and expanded sections include microbial ecology, high latitude systems and the cryosphere, climate and climate change, hydrothermal and cold seep systems. The structure of the work provides a modern presentation of the field, reflecting the input and different perspective of chemical, physical and biological oceanography, the specialized area of expertise of each of the three Editors-in-Chief. In this framework maximum attention has been devoted to making this an organic and unified reference. Represents a one-stop. organic information resource on the breadth of ocean science research Reflects the input and different perspective of chemical, physical and biological oceanography, the specialized area of expertise of each of the three Editors-in-Chief New and expanded sections include microbial ecology, high latitude systems and climate change Provides scientifically reliable information at a foundational level, making this work a resource for students as well as active researches

Since the publication of Jerlov's classic volume on optical oceanography in 1968, the ability to predict or model the submarine light field, given measurements of the inherent optical properties of the ocean, has improved to the point that model fields are very close to measured fields. In the last three decades, remote sensing capabilities have fostered powerful models that can be inverted to estimate the inherent optical properties closely related to substances important for understanding global biological productivity, environmental quality, and most nearshore geophysical processes. This volume presents an eclectic blend of information on the theories, experiments, and instrumentation that now characterize the ways in which optical oceanography is studied. Through the course of this interdisciplinary work, the reader is led from the physical concepts of radiative transfer to the experimental techniques used in the lab and at sea, to process-oriented discussions of the biochemical mechanisms responsible for oceanic optical variability. The text will be of interest to researchers and students in physical and biological oceanography, biology, geophysics, limnology, atmospheric optics, and remote sensing of ocean and global climate change.

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