

[EPUB] Chemical Oceanography And The Marine Carbon Cycle

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Chemical Oceanography and the Marine Carbon Cycle-Steven Emerson 2008-04-24 The principles of chemical oceanography provide insight into the processes regulating the marine carbon cycle. The text offers a background in chemical oceanography and a description of how chemical elements in seawater and ocean sediments are used as tracers of physical, biological, chemical and geological processes in the ocean. The first seven chapters present basic topics of thermodynamics, isotope systematics and carbonate chemistry, and explain the influence of life on ocean chemistry and how it has evolved in the recent (glacial-interglacial) past. This is followed by topics essential to understanding the carbon cycle, including organic geochemistry, air-sea gas exchange, diffusion and reaction kinetics, the marine and atmosphere carbon cycle and diagenesis in marine sediments. Figures are available to download from www.cambridge.org/9780521833134. Ideal as a textbook for upper-level undergraduates and graduates in oceanography, environmental chemistry, geochemistry and earth science and a valuable reference for researchers in oceanography.

Chemical Oceanography-Frank J. Millero 2016-04-19 Over the past ten years, a number of new large-scale oceanographic programs have been initiated. These include the Climate Variability Program (CLIVAR) and the recent initiation of the Geochemical Trace Metal Program (GEOTRACES). These studies and future projects will produce a wealth of information on the biogeochemistry of the world's oceans. Aut

An Introduction to the Chemistry of the Sea-Michael E. Q. Pilson 2012-12-13 Engagingly introduces marine chemistry and the ocean's geochemical interactions with the solid earth and atmosphere, for students of oceanography.

Chemical Oceanography-John Price Riley 1976

Introduction to Marine Biogeochemistry-Susan Libes 2011-08-29 Introduction to Marine Biogeochemistry focuses on the ocean's role in the biogeochemical cycling of selected elements and the impact of humans on the cycling of these elements. Among the topics covered are the chemical composition of seawater from the perspectives of elemental speciation and the impacts of solutes on water's physical behavior; biogeochemical phenomena which control accumulation and preservation of marine sediments; marine chemistry of radioactive and stable isotopes; and seawater pollution. The book contains many examples as well as steady-state models to aid readers in understanding this growing and complex science.. The focus of Introduction to Marine Biogeochemistry is the concept of the ocean as a system, linking land and atmospheric processes The text integrates the most current research, allowing students to learn concepts in context Includes detailed coverage of computational aspects

Surface Ocean-Corinne Le Quéré 2013-05-02 Published by the American Geophysical Union as part of the Geophysical Monograph Series, Volume 187. The focus of Surface Ocean: Lower Atmosphere Processes is biogeochemical interactions between the surface ocean and the lower atmosphere. This volume is an outgrowth of the Surface Ocean-Lower Atmosphere Study (SOLAS) Summer School. The volume is designed to provide graduate students, postdoctoral fellows, and researchers from a wide range of academic backgrounds with a basis for understanding the nature of ocean-atmosphere interactions and the current research issues in this area. The volume highlights include the following: Background material on ocean and atmosphere structure, circulation, and chemistry and on marine ecosystems Integrative chapters on the global carbon cycle and ocean biogeochemistry Issue-oriented chapters on the iron cycle and dimethylsulfide Tool-oriented chapters on biogeochemical modeling and remote sensing A framework of underlying physical/chemical/biological principles, as well as perspectives on current research issues in the field. The readership for this book will include graduate students and/or advanced undergraduate students, postdoctoral researchers, and researchers in the fields of oceanography and atmospheric science. It will also be useful for experienced researchers in specific other disciplines who wish to broaden their perspectives on the complex biogeochemical coupling between ocean and atmosphere and the importance of this coupling to understanding global change.

Marine Chemistry and Geochemistry-John H. Steele 2010 Marine Chemistry and Geochemistry 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: chemistry of sea water, tracers in the sea, natural radioactive species in the ocean, cycles of the nuclides, marine deposits and air sea exchanges. Marine Chemistry and Geochemistry serves as an ideal reference for topical research. References related articles on marine chemistry and geochemistry to facilitate further research Richly illustrated with figures and tables that aid in understanding key concepts Includes an introductory overview of marine chemistry and geochemistry and then explores each topic in detail, making it useful to experts and graduate-level researchers Topical arrangement makes it the perfect desk reference

Chemical Oceanography, Second Edition-Frank J. Millero 1996-06-25 From Harvard University to the University of Miami, the first edition of Chemical Oceanography was a great success as a textbook. Now you can own the fully updated second edition. Each chapter has been expanded and/or updated in accordance with the current state of knowledge about the chemistry of oceans.

Modeling Methods for Marine Science-David M. Glover 2011-06-02 This advanced textbook on modeling, data analysis and numerical techniques for marine science has been developed from a course taught by the authors for many years at the Woods Hole Oceanographic Institute. The first part covers statistics: singular value decomposition, error propagation, least squares regression, principal component analysis, time series analysis and objective interpolation. The second part deals with modeling techniques: finite differences, stability analysis and optimization. The third part describes case studies of actual ocean models of ever increasing dimensionality and complexity, starting with zero-dimensional models and finishing with three-dimensional general circulation models. Throughout the book hands-on computational examples are introduced using the MATLAB programming language and the principles of scientific visualization are emphasised. Ideal as a textbook for advanced students of oceanography on courses in data analysis and numerical modeling, the book is also an invaluable resource for a broad range of scientists undertaking modeling in chemical, biological, geological and physical oceanography.

Chemical Oceanography-Wallace S. Broecker 1974

Marine Chemical Ecology-James B. McClintock 2001-06-13 The interdisciplinary field of marine chemical ecology is an expanding and dynamic science. It is no surprise that the breadth of marine organisms studied expanded in concert with developments in underwater technology. With its up-to-date subject reviews by experts, Marine Chemical Ecology is the most current, comprehensive book on the subject. The

Marine Organic Chemistry-E.K. Duursma 2011-09-22 Marine Organic Chemistry

Oceanography and Marine Environment in the Basque Country-A. Borja 2004-03-03 Against a background of extensive multi-disciplinary oceanographic investigations over a number of years, together with the long-term establishment of a Society and Institute, extensive information is available from studies undertaken in the estuarine and coastal waters of the Basque Country. The present authors gained access to unpublished literature and reports which, together with a synthesis of internationally-refereed papers, provide a series of scientific overviews of particular subject areas. Teams of researchers (from Basque Institutes and Universities) combine to present the present 'state of knowledge', within a global context, of processes ranging from sub-seabed to air-sea interaction - incorporating data on the associated biology (including fisheries) and pollutant sources and levels. The latter are compared with regional, national and European legislation. The volume is divided into various sections: Introduction; Geography and Oceanography; Chemical Oceanography and Water Quality; Sediment Characteristics, Quality and Chemistry; Biomonitoring; Communities and Ecology; and Overall Assessment. The topics covered include: an historical review of marine research; the impact of human activities, during past centuries; geology, geomorphology and sediments; climate and meteorology; marine dynamics; hydrography; water mass characteristics; contaminants in the waters; microbiological quality; sedimentological characteristics; contaminants in sediments; biomonitoring of heavy metals and organic components, at tissue organism level and using cellular and molecular biomarkers; bacterioplankton and phytoplankton communities; zooplankton communities; benthic communities; seabirds; biodiversity and conservation; recovery of benthic communities; the polluted systems; and assessment of human impacts. On the basis of these syntheses, future challenges for marine research in the Basque Country are identified, in terms of a 'Research Agenda'. This comprehensive text, relating to estuarine, coastal and oceanographic processes at wide-ranging spatial and temporal scales in the southern Bay of Biscay, will be of interest to researchers, engineers and legislators - on a regional basis and within a world-wide perspective.

Phytoplankton Pigments-Suzanne Roy 2011-10-27 Pigments act as tracers to elucidate the fate of phytoplankton in the world's oceans and are often associated with important biogeochemical cycles related to carbon dynamics in the oceans. They are increasingly used in in situ and remote-sensing applications, detecting algal biomass and major taxa through changes in water colour. This book is a follow-up to the 1997 volume Phytoplankton Pigments in Oceanography (UNESCO Press). Since then, there have been many advances concerning phytoplankton pigments. This book includes recent discoveries on several new algal classes particularly for the picoplankton, and on new pigments. It also includes many advances in methodologies, including liquid chromatography-mass spectrometry (LC-MS) and developments and updates on the mathematical methods used to exploit pigment information and extract the composition of phytoplankton communities. The book is invaluable primarily as a reference for students, researchers and professionals in aquatic science, biogeochemistry and remote sensing.

Oceanography and Marine Biology-S. J. Hawkins 2019-08-02 Oceanography and Marine Biology: An Annual Review remains one of the most cited sources in marine science and oceanography. The ever increasing interest in work in oceanography and marine biology and its relevance to global environmental issues, especially global climate change and its impacts, creates a demand for authoritative reviews summarizing the results of recent research. This volume covers topics that include resting cysts from coastal marine plankton, facilitation cascades in marine ecosystems, and the way that human activities are rapidly altering the sensory landscape and behaviour of marine animals. Guidelines for contributors, including information on illustration requirements, can be downloaded on the Downloads/Updates tab on the books webpage. For more than 50 years, OMBAR has been an essential reference for research workers and students in all fields of marine science. From Volume 57 a new international Editorial Board ensures global relevance, with editors from the UK, Ireland, Canada, Australia and Singapore. The series volumes find a place in the libraries of not only marine laboratories and institutes, but also universities. Chapters 3, 4, 5 and 7 of this book are freely available as a downloadable Open Access PDF under a Creative Commons Attribution-Non Commercial-No Derivatives 4.0 license. The links can be found on the book's Routledge web page at <https://www.routledge.com//9780367134150>

Biogeochemistry of Marine Dissolved Organic Matter-Dennis A. Hansell 2014-10-02 Marine dissolved organic matter (DOM) is a complex mixture of molecules found throughout the world's oceans. It plays a key role in the export, distribution, and sequestration of carbon in the oceanic water column, posited to be a source of atmospheric climate regulation. Biogeochemistry of Marine Dissolved Organic Matter, Second Edition, focuses on the chemical constituents of DOM and its biogeochemical, biological, and ecological significance in the global ocean, and provides a single, unique source for the references, information, and informed judgments of the community of marine biogeochemists. Presented by some of the world's leading scientists, this revised edition reports on the major advances in this area and includes new chapters covering the role of DOM in ancient ocean carbon cycles, the long term stability of marine DOM, the biophysical dynamics of DOM, fluvial DOM qualities and fate, and the Mediterranean Sea. Biogeochemistry of Marine Dissolved Organic Matter, Second Edition, is an extremely useful resource that helps people interested in the largest pool of active carbon on the planet (DOC) get a firm grounding on the general paradigms and many of the relevant references on this topic. Features up-to-date knowledge of DOM, including five new chapters The only published work to synthesize recent research on dissolved organic carbon in the Mediterranean Sea Includes chapters that address inputs from freshwater terrestrial DOM

Practical Handbook of Marine Science-Michael J. Kennish 2019-07-12 The heavily-revised Practical Handbook of Marine Science, Fourth Edition continues its tradition as a state-of-the-art reference that updates the field of marine science to meet the interdisciplinary research needs of physical oceanographers, marine biologists, marine chemists, and marine geologists. This edition adds an entirely new section devoted to Climate Change and Climate Change Effects. It also adds new sections on Estuaries, Beaches, Barrier Islands, Shellfish, Macroalgae, Food Chains, Food Webs, Trophic Dynamics, System Productivity, Physical-Chemical-Biological Alteration, and Coastal Resource Management. The Handbook assembles an extensive international collection of marine science data throughout, with approximately 1,000 tables and illustrations. It provides comprehensive coverage of anthropogenic impacts in estuarine and marine ecosystems from local, regional, and global perspectives. Maintaining its user-friendly, multi-sectional format, this comprehensive resource will also be of value to undergraduate and graduate students, research scientists, administrators, and other professionals who deal with the management of marine resources. Now published in full color, the new edition offers extensive illustrative and tabular reference material covering all the major disciplines related to the sea.

Ocean Biogeochemical Dynamics-Jorge L. Sarmiento 2013-07-17 Ocean Biogeochemical Dynamics provides a broad theoretical framework upon which graduate students and upper-level undergraduates can formulate an understanding of the processes that control the mean concentration and distribution of biologically utilized elements and compounds in the ocean. Though it is written as a textbook, it will also be of interest to more advanced scientists as a wide-ranging synthesis of our present understanding of ocean biogeochemical processes. The first two chapters of the book provide an introductory overview of biogeochemical and physical oceanography. The next four chapters concentrate on processes at the air-sea interface, the production of organic matter in the upper ocean, the remineralization of organic matter in the water column, and the processing of organic matter in the sediments. The focus of these chapters is on analyzing the cycles of organic carbon, oxygen, and nutrients. The next three chapters round out the authors' coverage of ocean biogeochemical cycles with discussions of silica, dissolved inorganic carbon and alkalinity, and CaCO3. The final chapter discusses applications of ocean biogeochemistry to our understanding of the role of the ocean carbon cycle in interannual to decadal variability, paleoclimatology, and the anthropogenic carbon budget. The problem sets included at the end of each chapter encourage students to ask critical questions in this exciting new field. While much of the approach is mathematical, the math is at a level that should be accessible to students with a year or two of college level mathematics and/or physics.

Oceanography and Marine Biology-David W. Townsend 2012 Oceanography and Marine Biology preserves the basic elements of the physical, chemical, and geological aspects of the marine sciences, and merges those fundamentals into a broader framework of marine biology and ecology. I have found that this approach works: my class of 350 students fills every semester it is offered, with students on waiting lists to get in. But existing textbooks on oceanography or marine biology address the companion field only cursorily: very few pages in oceanography texts are devoted to marine biology, and vice versa. This new book overcomes that imbalance, bringing these disparate marine science text formats closer together, giving them more equal weight, and introducing more effectively the physical sciences by showing students with everyday examples how such concepts form the foundation upon which to build a better understanding of the marine environment in a changing world.

Marine Geochemistry-Roy Chester 2012-12-06 The past two or three decades have seen many important advances in our knowledge of the chemistry, physics, geology and biology of the oceans. It has also become apparent that in order to understand the manner in which the oceans work as a 'chemical system', it is necessary to use a framework which takes account of these interdisciplinary advances. Marine geochemistry has been written in response to the need for a single state-of-the-art text that addresses the subject of treating the sea water, sediment and rock reservoirs as a unified system. In taking this approach, a process-orientated framework has been adopted in which the emphasis is placed on identifying key processes operating within the 'unified ocean'. In doing this, particular attention has been paid to making the text accessible to students from all disciplines in such a way that future advances can readily be understood. I would like to express my thanks to those people who have helped with the writing of this volume. In particular, I wish to put on record my sincere appreciation of extremely helpful suggestions made by Professor John Edmond, FRS. In addition, I thank Dr S. Rowlatt for his comments on the sections covering the geochemistry of oceanic sediments, and Dr G. Wolff for his invaluable advice on the organic geochemistry of biota, water and sediments. It is a great pleasure to acknowledge the help of Dr K. J. T.

Biological Oceanography-Charles B. Miller 2012-05-21 This new edition of Biological Oceanography has been greatly updated and expanded since its initial publication in 2004. It presents current understanding of ocean ecology emphasizing the character of marine organisms from viruses to fish and worms, together with their significance to their habitats and to each other. The book initially emphasizes pelagic organisms and processes, but benthos, hydrothermal vents, climate-change effects, and fisheries all receive attention. The chapter on oceanic biomes has been greatly expanded and a new chapter reviewing approaches to pelagic food webs has been added. Throughout, the book has been revised to account for recent advances in this rapidly changing field. The increased importance of molecular genetic data across the field is evident in most of the chapters. As with the previous edition, the book is primarily written for senior undergraduate and graduate students of ocean ecology and professional marine ecologists. Visit www.wiley.com/go/miller/oceanography to access the artwork from the book.

An Introduction to Marine Biogeochemistry-Susan M. Libes 1992-01-20 Focuses on the ocean's role in the global biogeochemical cycling of selected elements and the impact of humans on the transport of these elements. Among the topics covered are the chemical composition of seawater from the perspectives of elemental speciation and the impact of solutes on water's physical behavior; biogeochemical phenomena which control accumulation and preservation of marine sediments; marine chemistry of radioactive and stable isotopes; seawater pollution. Contains many examples as well as steady-state models to aid readers in understanding this relatively young, growing and complex science.

Marine Geochemistry-Roy Chester 2012-08-24 Marine Geochemistry offers a fully comprehensive and integrated treatment of the chemistry of the oceans, their sediments and biota. The first edition of the book received strong critical acclaim and was described as 'a standard text for years to come.' This third edition of Marine Geochemistry has been written at a time when the role of the oceans in the Earth System is becoming increasingly apparent. Following the successful format adopted previously, this new edition treats the oceans as a unified entity, and addresses the question 'how do the oceans work as a chemical system?' To address this question, the text has been updated to cover recent advances in our understanding of topics such as the carbon chemistry of the oceans, nutrient cycling and its effect on marine chemistry, the acidification of sea water, and the role of the oceans in climate change. In addition, the importance of shelf seas in oceanic cycles has been re-evaluated in the light of new research. Marine Geochemistry offers both undergraduate and graduate students and research workers an integrated approach to one of the most important reservoirs in the Earth System. Additional resources for this book can be found at: <http://www.wiley.com/go/chester/marinegeochemistry> www.wiley.com/go/chester/marinegeochemistry/a.

CO₂ in Seawater: Equilibrium, Kinetics, Isotopes-R.E. Zeebe 2001-10-15 Carbon dioxide is the most important greenhouse gas after water vapor in the atmosphere of the earth. More than 98% of the carbon of the atmosphere-ocean system is stored in the oceans as dissolved inorganic carbon. The key for understanding critical processes of the marine carbon cycle is a sound knowledge of the seawater carbonate chemistry, including equilibrium and nonequilibrium properties as well as stable isotope fractionation. Presenting the first coherent text describing equilibrium and nonequilibrium properties and stable isotope fractionation among the elements of the carbonate system. This volume presents an overview and a synthesis of these subjects which should be useful for graduate students and researchers in various fields such as biogeochemistry, chemical oceanography, paleoceanography, marine biology, marine chemistry, marine geology, and others. The volume includes an introduction to the equilibrium properties of the carbonate system in which basic concepts such as equilibrium constants, alkalinity, pH scales, and buffering are discussed. It also deals with the nonequilibrium properties of the seawater carbonate chemistry. Whereas principles of chemical kinetics are recapitulated, reaction rates and relaxation times of the carbonate system are considered in detail. The book also provides a general introduction to stable isotope fractionation and describes the partitioning of carbon, oxygen, and boron isotopes between the species of the carbonate system. The appendix contains formulas for the equilibrium constants of the carbonate system, mathematical expressions to calculate carbonate system parameters, answers to exercises and more.

Polar Oceanography-Walker O. Smith, Jr. 2013-10-22 Polar Oceanography is an integrated synthesis of the biological, physical, geological, and chemical processes that occur in the polar oceans. The book represents the first modern interdisciplinary synthesis of this field.

Marine Geochemistry-Mathieu Roy-Barman 2016-11-03 Marine geochemistry uses chemical elements and their isotopes to study how the ocean works in terms of ocean circulation, chemical composition, biological activity and atmospheric CO₂ regulation. This rapidly growing field is at a crossroad for many disciplines (physical, chemical and biological oceanography, geology, climatology, ecology, etc.). It provides important quantitative answers to questions such as: What is the deep ocean mixing rate? How much atmospheric CO₂ is pumped by the ocean? How fast are pollutants removed from the ocean? How do ecosystems react to anthropogenic pressure? This text gives a simple introduction to the concepts, the methods and the applications of marine geochemistry with a particular emphasis on isotopic tracers. Overall introducing a very large number of topics (physical oceanography, ocean chemistry, isotopes, gas exchange, modelling, biogeochemical cycles), with a balance of didactic and in-depth information, it provides an outline and a complete course in marine geochemistry. Throughout, the book uses a hands-on approach with worked out exercises and problems (with answers provided at the end of the book), to help the students work through the concepts presented. A broad scale approach is taken including ocean physics, marine biology, ocean-climate relations, remote sensing, pollution and ecology, so that the reader acquires a global perspective of the ocean. It also includes new topics arising from ongoing research programs. This textbook is essential reading for students, scholars, researchers and other professionals.

Oceanography and Marine Biology-R. N. Gibson 2012-06-05 Ever-increasing interest in oceanography and marine biology and their relevance to global environmental issues creates a demand for authoritative reviews summarising the results of recent research. Oceanography and Marine Biology: An Annual Review has catered to this demand since its founding by the late Harold Barnes fifty years ago. Its objectives are to consider, annually, the basic areas of marine research, returning to them when appropriate in future volumes; to deal with subjects of special and topical importance; and to add new subjects as they arise. The favourable reception accorded to all the volumes shows that the series is fulfilling a very real need: reviews and sales have been gratifying. A milestone in the history of the series, the fiftieth volume follows closely the objectives and style of the earlier volumes, continuing to regard the marine sciences—with all their various aspects—as a unity. Physical, chemical, and biological aspects of marine science are dealt with by experts actively engaged in these fields. The series is an essential reference text for researchers and students in all fields of marine science and related subjects, and it finds a place in libraries of not only marine stations and institutes, but also universities. It is consistently among the highest ranking impact factors for the marine biology category of the citation indices compiled by the Institute for Scientific Information.

Chemical Oceanography, Third Edition-Frank J. Millero 2005-09-09 Chemical Oceanography, Third Edition, is a survey of essential concepts that contains a wealth of new data and maps, resulting in a more in-depth examination of oceanic biogeochemical processes. The most up-to-date compilation of essential concepts and data available on the subject, this book responds to the need for a thorough, yet straightforward approach to the subject for students, researchers, and other professionals in marine science, geochemistry, and environmental chemistry. The third edition of Chemical Oceanography incorporates significant findings on the properties of oceans from recent, large-scale oceanographic programs and valuable new data derived from additional experiments. It also discusses the interactions of metals with inorganic and natural organic ligands and the effect of speciation of metals on bioavailability and toxicity. The section on carbonate systems now examines the input of fossil fuel CO₂ into the ocean and its effect on the pH of the world oceans. Frank J. Millero, a world-renowned marine researcher and professor of undergraduate and graduate courses at the University of Miami for nearly 40 years, presents a time-tested and user-friendly resource specifically designed for both classroom use and self-study.

Chemistry in the Marine Environment-R E Hester 2007-10-31 The oceans cover more than 70% of the earth's surface to an average depth of almost 4000 metres. It is therefore not surprising that exchanges that occur between ocean and atmosphere exert major influences on the global climate. In addition, there is great variety within the expanses of the ocean, including large temperature differences, and enormous biodiversity brought about by the great chemical diversity within the marine environment. Written by international experts in the field, Chemistry in the Marine Environment offers a multidisciplinary and authoritative review of this important topic. Included is a review of the opportunities and challenges in developing new pharmaceuticals from the sea and an examination of contamination and pollution in the marine environment, which is a cause of great concern world-wide. The international perspective of this book will engage the interest and attention of a wide readership, from chemical oceanographers to policymakers, from students in environmental science to those in oceanography programmes.

Oceanography and Marine Biology-R. N. Gibson 2007-06-20 Reflecting increased interest in the field and its relevance in global environmental issues, Oceanography and Marine Biology: An Annual Review, Volume 45 provides authoritative reviews that summarize results of recent research in basic areas of marine research, exploring topics of special and topical importance while adding to new areas as they arise. This volume, part of a series that regards the all marine sciences as a complete unit, features contributions from experts involved in biological, chemical, geological, and physical aspects of marine science. These features along with the inclusion of a full color insert and an extensive reference list, make the text an essential reference for researchers and students in all fields of marine science.

Ocean Circulation in Three Dimensions-Barry A. Klinger 2019-03-31 An innovative survey of large-scale ocean circulation that links observations, conceptual models, numerical models, and theories.

Oceanography and Marine Biology-R. N. Gibson 2005-06-24 Ever-increasing interest in oceanography and marine biology and its relevance to global environmental issues creates a demand for authoritative reviews summarizing the results of recent research. Oceanography and Marine Biology: An Annual Review has answered this demand since its founding by the late Harold Barnes more than forty years ago. Its objective is an annual consideration of basic areas of marine research, dealing with subjects of special or immediate importance, adding new subjects as they arise. The volumes maintain a unified perspective on the marine sciences. Physical, chemical, and biological aspects of marine science are dealt with by experts actively engaged in these fields. This essential reference text for researchers and students in all fields of marine science finds a place in libraries of marine stations and institutes, as well as universities. It consistently ranks among the highest in impact factors for the marine biology category of the citation indices compiled by the Institute for Scientific Information. Volume 43 contains analysis on cold seep sediments, unburnt coal in the marine environment, biofiltration and biofouling on artificial structures in Europe, ecology of rafting in marine ecosystems, effects of globalisation in marine environments, and much more.

Ocean Dynamics and the Carbon Cycle-Richard G. Williams 2011-07-14 This textbook for advanced undergraduate and graduate students presents a multidisciplinary approach to understanding ocean circulation and how it drives and controls marine biogeochemistry and biological productivity at a global scale. Background chapters on ocean physics, chemistry and biology provide students with the tools to examine the range of large-scale physical and dynamic phenomena that control the ocean carbon cycle and its interaction with the atmosphere. Throughout the text observational data is integrated with basic physical theory to address cutting-edge research questions in ocean biogeochemistry. Simple theoretical models, data plots and schematic illustrations summarise key results and connect the physical theory to real observations. Advanced mathematics is provided in boxes and appendices where it can be drawn on to assist with the worked examples and homework exercises available online. Further reading lists for each chapter and a comprehensive glossary provide students and instructors with a complete learning package.

Encyclopedia of Ocean Sciences- 2019-04-12 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 researchers

Oceanography and Marine Biology-R. N. Gibson 2011-06-22 Increasing interest in oceanography and marine biology and its relevance to global environmental issues continues to create a demand for authoritative reviews summarizing recent research. Now in its 49th volume, Oceanography and Marine Biology has addressed this demand for almost 50 years. This annual review considers the basics of marine research, special topics, and emerging new areas. Regarding the marine sciences as a unified field, the text features contributors who are actively engaged in biological, chemical, geological, and physical aspects of marine science. This year's chapters include, "The marine invasive alien species in European Seas that have the most impact," "Threats to the diversity of coral-dwelling invertebrates due to climate change and induced coral bleaching," and "Burrowing shrimps as ecosystem engineers," among others. Including color inserts and extensive reference lists, this series is essential for researchers and students in all fields of marine science.

Oceanography and Marine Biology-R. N. Gibson 2010-05-12 Description

Memoir II-A. P. Vinogradov 2018-10-23 This reference summarizes and tabulates most of the published knowledge of its time, providing a comprehensive presentation of more than 60 elements found in marine organisms. Extensive data, including 327 tables, on various marine groups from planktonic and nonplanktonic algae through fishes should be particularly valuable to investigators in biochemistry and physiology, geology, chemical oceanography, and nutrition. This edition, translated from the original Russian publications by Julia Efron and Jane K. Setlow, contains additional data and observations, not previously published elsewhere, which were added by Vinogradov in the preparation of the translation. The extensive bibliography of more than 2,000 titles was prepared by Virginia Odum.

Oceanography and Marine Biology-R.N. Hughes 2016-11-25 Ever-increasing interest in oceanography and marine biology and their relevance to global environmental issues create a demand for authoritative reviews summarizing the results of recent research. Oceanography and Marine Biology: An Annual Review has catered to this demand since its founding by the late Harold Barnes more than 50 years ago. Its objectives are to consider, annually, the basic areas of marine research, returning to them when appropriate in future volumes; to deal with subjects of special and topical importance; and to add new subjects as they arise. The favourable reception and complimentary reviews accorded to all the volumes shows that the series is fulfilling a very real need. Volume 54 follows closely the objectives and style of the earlier volumes, continuing to regard the marine sciences—with all their various aspects—as a unity. Physical, chemical, and biological aspects of marine science are dealt with by experts actively engaged in these fields. The series is an essential reference text for researchers and students in all fields of marine science and related subjects, and it finds a place in libraries of universities, marine laboratories, research institutes and government departments. It is consistently among the highest ranking series in terms of impact factor in the marine biology category of the citation indices compiled by the Institute for Scientific Information/Web of Science.

Chemical Processes in Marine Environments-Antonio Gianguzza 2013-06-29 This book discusses recent developments in the study of chemical processes and equilibria in the marine environment and in the air/water and water/sediment interfaces. The chemical cycle of carbon as well as the effect of organic substances on the speciation and distribution of inorganic and organometallic substances are extensively discussed. Much of the recent progress in the area is the direct result of advanced analytical technologies and chemometric applications which are highlighted in the book.

Oceanography and Marine Biology-R.N. Hughes 2014-09-02 Ever-increasing interest in oceanography and marine biology and their relevance to global environmental issues creates a demand for authoritative reviews summarising the results of recent research. Oceanography and Marine Biology: An Annual Review has catered to this demand since its founding by the late Harold Barnes fifty years ago. Its objectives are to consider, annually, the basic areas of marine research, returning to them when appropriate in future volumes; to deal with subjects of special and topical importance; and to add new subjects as they arise. The favourable reception accorded to all the volumes shows that the series is fulfilling a very real need: reviews and sales have been gratifying. The fifty-second volume follows closely the objectives and style of the earlier volumes, continuing to regard the marine sciences—with all their various aspects—as a unity. Physical, chemical, and biological aspects of marine science are dealt with by experts actively engaged in these fields. The series is an essential reference text for researchers and students in all fields of marine science and related subjects, and it finds a place in libraries of not only marine stations and institutes, but also universities. It is consistently among the highest ranking impact factors for the marine biology category of the citation indices compiled by the Institute for Scientific Information.

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