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Tropical Ecosystems: Structure, Functions and Challenges in the Face of Global Change - Satish Chandra Garkoti 2019-09-24

The book brings together research topics having a broad focus on human and climate change impacts on the terrestrial ecosystems in the tropics in general and more specifically from the most significant and vulnerable Himalayan ecosystem. A total of 16 contributions included in the book cover a diverse range of global change themes such as the impacts of changing temperature and precipitation on soil ecosystems, forest degradation, extent and impacts of invasive species, plant responses to pollution, climate change impacts on biodiversity and tree phenology, environmental changes associated with land use, importance of traditional knowledge in climate change adaptation, timberline ecosystems, and role of integrated landscape modeling for sustainable management of natural resources. The book is a collective endeavour of an international multidisciplinary group of scientists focused on improving our understanding of the impacts of global change on the structure and functioning of tropical ecosystems and addressing the challenges of their future sustainable management. We hope that the book will help researchers working in the areas of ecology and environmental science to update their knowledge. We also expect that natural resource managers and policy planners will find explanations for some of their observations and hypotheses on multiple global change factors impacting tropical ecosystems and especially Himalayan ecosystems.

Polar Auxin Transport - Rujin Chen 2013-04-03

The importance of the plant growth regulator auxin for plant growth has long been recognized, even before the discovery of its chemical structures in the early 20th century. Physiological studies in the decades since have demonstrated that auxin is unidirectionally transported in plants, a process dubbed polar auxin transport. It is the polar auxin transport process that generates a local auxin concentration gradient and regulates a broad array of physiological and developmental processes. The discoveries of auxin transport carrier proteins that mediate auxin influx into and efflux out of transport-competent cells and auxin receptor proteins for auxin signaling in the last few decades represent significant milestones in auxin research and open up opportunities to probe the cellular and molecular processes that regulate auxin transport and integrate environmental cues with signaling processes. Remarkably, components of the polar auxin transport machinery are present in both lower plants such as mosses and higher plants including monocots and eudicots, illustrating the key role of polar auxin transport in plant evolution. This book highlights topics ranging from physiological and genetic studies of polar auxin transport in plant development, to growth responses to the environment and plant-microbe interactions, to hormonal cross-talks with various cellular and molecular regulatory processes essential for polar auxin transport.

Charting the Sustainable Future of ASEAN in Science and Technology - Nurul Zawani Alias 2020-04-23

This book showcases selected conference papers addressing the sustainable future of ASEAN from the perspectives of science and technology disciplines. In addressing the 17 Sustainable Development Goals (SDGs) envisioned by the United Nations in the domains of environment, health and well-being, posing potential means of reducing inequalities globally, the authors target specific issues and challenges confronting the fast-growing region of ASEAN and present suggestions for co-operation and commitment from governments, non-governmental organisations (NGOs) and society at large, in line with the ASEAN Vision 2020. Papers are selected from the 3rd International Conference on the Future of ASEAN (ICoFA) 2019, organised by Universiti Teknologi MARA

in Malaysia, whose conference theme "Charting the Sustainable Future of ASEAN" enables intellectual discourse on sustainability issues from science and technology, as well as business and the social sciences. The selection of papers is published in two books, comprised of scholarly and practical insights on sustainability in ASEAN. This book from science and technology scholars is of interest to researchers and policymakers interested in sustainability developments in the ASEAN region.

Natural Bioactive Products in Sustainable Agriculture - Joginder Singh 2020-05-11

This book discusses various aspects of bioactive natural products employed in the agrochemical and agriculture sectors. It covers the use of plants, microorganisms, and microbial metabolites as eco-friendly, cost-effective, and sustainable alternatives to chemicals in the field of agriculture. Written by active researchers and academics, the book highlights state-of-art products in the field, as well as the gaps, challenges, and obstacles associated with the use of plants, microbes and their products. Given its scope, it is a valuable resource for the scientific community and professionals in enterprises wanting insights into the latest developments and advances in the context of biological products, including their applications, traditional uses, modern practices, and strategies to harness their full potential.

Medicinal Plants of South Asia - Muhammad Asif Hanif 2019-09-14

Medicinal Plants of South Asia: Novel Sources for Drug Discovery provides a comprehensive review of medicinal plants of this region, highlighting chemical components of high potential and applying the latest technology to reveal the underlying chemistry and active components of traditionally used medicinal plants. Drawing on the vast experience of its expert editors and authors, the book provides a contemporary guide source on these novel chemical structures, thus making it a useful resource for medicinal chemists, phytochemists, pharmaceutical scientists and everyone involved in the use, sales, discovery and development of drugs from natural sources. Provides comprehensive reviews of 50 medicinal plants and their key properties Examines the background and botany of each source before going on to discuss underlying phytochemistry and chemical compositions Links phytochemical properties with pharmacological activities Supports data with extensive laboratory studies of traditional medicines

Biology For Dummies - Rene Fester Kratz 2017-03-20

The ultimate guide to understanding biology Have you ever wondered how the food you eat becomes the energy your body needs to keep going? The theory of evolution says that humans and chimps descended from a common ancestor, but does it tell us how and why? We humans are insatiably curious creatures who can't help wondering how things work—starting with our own bodies. Wouldn't it be great to have a single source of quick answers to all our questions about how living things work? Now there is. From molecules to animals, cells to ecosystems, Biology For Dummies answers all your questions about how living things work. Written in plain English and packed with dozens of enlightening illustrations, this reference guide covers the most recent developments and discoveries in evolutionary, reproductive, and ecological biology. It's also complemented with lots of practical, up-to-date examples to bring the information to life. Discover how living things work Think like a biologist and use scientific methods Understand lifecycle processes Whether you're enrolled in a biology class or just want to know more about this fascinating and ever-evolving field of study, Biology For Dummies will help you unlock the mysteries of how life works.

Plant Growth Promoting Rhizobacteria for Sustainable Stress Management - R. Z. Sayyed 2019-10-11

Attaining sustainable agricultural production while preserving

environmental quality, agro-ecosystem functions and biodiversity represents a major challenge for current agricultural practices; further, the traditional use of chemical inputs (fertilizers, pesticides, nutrients etc.) poses serious threats to crop productivity, soil fertility and the nutritional value of farm produce. Given these risks, managing pests and diseases, maintaining agro-ecosystem health, and avoiding health issues for humans and animals have now become key priorities. The use of PGPR as biofertilizers, plant growth promoters, biopesticides, and soil and plant health managers has attracted considerable attention among researchers, agriculturists, farmers, policymakers and consumers alike. Using PGPR as bioinoculants can help meet the expected demand for global agricultural productivity to feed the world's booming population, which is predicted to reach roughly 9 billion by 2050. However, to provide effective bioinoculants, PGPR strains must be safe for the environment, offer considerable plant growth promotion and biocontrol potential, be compatible with useful soil rhizobacteria, and be able to withstand various biotic and abiotic stresses. Accordingly, the book also highlights the need for better strains of PGPR to complement increasing agro-productivity.

Molecular and Cell Biology For Dummies - Rene Fester Kratz
2009-06-02

Your hands-on study guide to the inner world of the cell Need to get a handle on molecular and cell biology? This easy-to-understand guide explains the structure and function of the cell and how recombinant DNA technology is changing the face of science and medicine. You discover how fundamental principles and concepts relate to everyday life. Plus, you get plenty of study tips to improve your grades and score higher on exams! Explore the world of the cell — take a tour inside the structure and function of cells and see how viruses attack and destroy them Understand the stuff of life (molecules) — get up to speed on the structure of atoms, types of bonds, carbohydrates, proteins, DNA, RNA, and lipids Watch as cells function and reproduce — see how cells communicate, obtain matter and energy, and copy themselves for growth, repair, and reproduction Make sense of genetics — learn how parental cells organize their DNA during sexual reproduction and how scientists can predict inheritance patterns Decode a cell's underlying programming — examine how DNA is read by cells, how it determines the traits of organisms, and how it's regulated by the cell Harness the power of DNA — discover how scientists use molecular biology to explore genomes and solve current world problems Open the book and find: Easy-to-follow explanations of key topics The life of a cell — what it needs to survive and reproduce Why molecules are so vital to cells Rules that govern cell behavior Laws of thermodynamics and cellular work The principles of Mendelian genetics Useful Web sites Important events in the development of DNA technology Ten great ways to improve your biology grade

Biology For Dummies - Rene Fester Kratz 2010-05-18

An updated edition of the ultimate guide to understanding biology Ever wondered how the food you eat becomes the energy your body needs to keep going? The theory of evolution says that humans and chimps descended from a common ancestor, but does it tell us how and why? We humans are insatiably curious creatures who can't help wondering how things work — starting with our own bodies. Wouldn't it be great to have a single source of quick answers to all our questions about how living things work? Now there is. From molecules to animals, cells to ecosystems, *Biology For Dummies*, 2nd Edition answers all your questions about how living things work. Written in plain English and packed with dozens of illustrations, quick-reference Cheat Sheets, and helpful tables and diagrams, it cuts right to the chase with fast-paced, easy-to-absorb explanations of the life processes common to all organisms. More than 20% new and updated content, including a substantial overhaul to the organization of topics to make it a friendly classroom supplement Coverage of the most recent developments and discoveries in evolutionary, reproductive, and ecological biology Includes practical, up-to-date examples Whether you're currently enrolled in a biology class or just want to know more about this fascinating and ever-evolving field of study, this engaging guide will give you a grip on complex biology concepts and unlock the mysteries of how life works in no time.

Biological Diversity: Current Status and Conservation Policies - Vinod Kumar 2021-10-25

The present book has been designed to bind prime knowledge of climate change-induced impacts on various aspects of our environment and its biological diversity. The book also contains updated information, methods and tools for the monitoring and conservation of impacted

biological diversity.

Edible Insects - Arnold van Huis 2013

Edible insects have always been a part of human diets, but in some societies there remains a degree of disdain and disgust for their consumption. Insects offer a significant opportunity to merge traditional knowledge and modern science to improve human food security worldwide. This publication describes the contribution of insects to food security and examines future prospects for raising insects at a commercial scale to improve food and feed production, diversify diets, and support livelihoods in both developing and developed countries. Edible insects are a promising alternative to the conventional production of meat, either for direct human consumption or for indirect use as feedstock. This publication will boost awareness of the many valuable roles that insects play in sustaining nature and human life, and it will stimulate debate on the expansion of the use of insects as food and feed.

Microbe Hunters - Paul De Kruif 1926

Paul de Kruif's *Microbe Hunters* is a timeless dramatization of the scientists, bacteriologists, doctors, and medical technicians who discovered microbes and invented the vaccines to counter them. De Kruif reveals the now seemingly simple but really fundamental discoveries of science - for instance, how a microbe was first viewed in a clear drop of rain water, and when, for the first time ever, Louis Pasteur discovered that a simple vaccine could save a man from the ravages of rabies by attacking the microbes that cause it.

Current Developments in Biotechnology and Bioengineering - Suresh Kumar Dubey 2016-09-17

Current Developments in Biotechnology and Bioengineering: Crop Modification, Nutrition, and Food Production provides extensive coverage of new developments, state-of-the-art technologies, and potential future trends, presenting data-based scientific knowledge on agribiotechnology and describing world agriculture and the role biotechnology can play in ensuring food security over the next fifty years. The book discusses the effects of climate change in agriculture and the resultant emergence of new crops, including drought tolerant and more nutritious plants. In addition, the book discusses insect and virus resistance in plants and outlines plant metabolic engineering for agriculture, genetically engineered plants, and microbial diseases. Highlights recent developments in agriculture due to biotechnology Relates the effect of climate change in agriculture to the development of new crops Describes the application of metabolic engineering in the development of new genetically modified plants

Aboveground-Belowground Linkages - Richard D. Bardgett
2010-07-29

Aboveground-Belowground Linkages provides the most up-to-date and comprehensive synthesis of recent advances in our understanding of the roles that interactions between aboveground and belowground communities play in regulating the structure and function of terrestrial ecosystems, and their responses to global change. It charts the historical development of this field of ecology and evaluates what can be learned from the recent proliferation of studies on the ecological and biogeochemical significance of aboveground-belowground linkages. The book is structured around four key topics: biotic interactions in the soil; plant community effects; the role of aboveground consumers; and the influence of species gains and losses. A concluding chapter draws together this information and identifies a number of cross-cutting themes, including consideration of aboveground-belowground feedbacks that occur at different spatial and temporal scales, the consequences of these feedbacks for ecosystem processes, and how aboveground-belowground interactions link to human-induced global change.

Horticulture: Plants for People and Places, Volume 2 - Geoffrey R. Dixon
2014-06-10

This Trilogy explains "What is Horticulture?". Volume two of *Horticulture: Plants for People and Places* analyses in depth the scientific, managerial and ecological concepts which underpin Environmental Horticulture. Chapters describe: Horticulture and the Environment, Woody Ornamentals, Herbs and Pharmaceuticals, Urban Greening, Rural Trees, Urban Trees, Turfgrass Science, Interior and External Landscaping, Biodiversity, Climate Change and Organic Production. Each is written by leading international experts. Sustainable use of resources and careful conservation are critically essential for the continuation of life on this Planet. Achieving this is where horticulture, natural flora and fauna and the environment interact in achieving sustainable development. Horticulture is the fundamental partner of ecological and environmental science and provides an understanding of eco-system services. Live plant networks are essential for rural and

urban life. They are integral parts of natural communities, the context of historic and modern architecture and a means for rejuvenating cities and uniting communities. Plants provide urban, peri-urban and rural employment, business and tourism opportunities, leisure, rest and relaxation. These facets of Environmental Horticulture are clearly described in this book.

Plant-pathogen Interactions - Nicholas J. Talbot 2004

Plant diseases are destructive and threaten virtually any crop grown on a commercial scale. They are kept in check by plant breeding strategies that have introgressed disease resistance genes into many important crops, and by the deployment of costly control measures, such as antibiotics and fungicides. However, the capacity for the agents of plant disease - viruses, bacteria, fungi, and oomycetes - to adapt to new conditions, overcoming disease resistance and becoming resistant to pesticides, is very great. For these reasons, understanding the biology of plant diseases is essential for the development of durable control strategies. Plant-Pathogen Interactions provides an overview of our current knowledge of plant-pathogen interactions and the establishment of plant disease, drawing together fundamental new information on plant infection mechanisms and host responses. The role of molecular signals, gene regulation, and the physiology of pathogenic organisms are emphasized, but the role of the prevailing environment in the conditioning of disease is also discussed. Emphasizing the broader understanding that has emerged from the use of molecular genetics and genomics, Plant-Pathogen Interactions highlights those interactions that have been most widely studied and those in which genome information has provided a new level of understanding.

Application of Microalgae in Wastewater Treatment - Sanjay Kumar Gupta 2020-10-28

This two-volume work presents comprehensive, accurate information on the present status and contemporary development in phycoremediation of various types of domestic and industrial wastewaters. The volume covers a mechanistic understanding of microalgae based treatment of wastewaters, including current challenges in the treatment of various organic and inorganic pollutants, and future opportunities of bioremediation of wastewater and industrial effluents on an algal platform. The editors compile the work of authors from around the globe, providing insight on key issues and state-of-the-art developments in algal bioremediation that is missing from the currently available body of literature. The volume hopes to serve as a much needed resource for professors, researchers and scientists interested in microalgae applications for wastewater treatment. Volume 1 focuses on the different aspects of domestic and industrial wastewater treatment by microalgae. The case studies include examples such as genetic technologies as well as the development and efficient use of designer consortia for enhanced utilization of microalgae. This volume provides thorough and comprehensive information on removal of persistent and highly toxic contaminants such as heavy metals, organic pesticides, polycyclic aromatic hydrocarbons, endocrine disruptors, pharmaceutical compounds, and dyes from wastewater by microalgae, diatoms, and blue-green algae. Design considerations for algal ponds and efficient use of photobioreactors and HRAPs for wastewater treatment are some other highlights. This volume addresses the applications, potentials, and future opportunities for these various considerations in water pollution mitigation using algal technologies.

Microbial Biotechnology in Agriculture and Aquaculture, Vol. 2 - R C Ray 2005

Provides a new and authoritative account of the complex patterns of development, teaching and practice in the religions of Asia. With individual chapters written by specialists, this volume provides clear, non-technical insight.

Insects As Food and Feed - Arnold van Huis 2017-09-15

Alternative protein sources are urgently required as the available land area is not sufficient to satisfy the growing demand for meat. Insects have a high potential of becoming a new sector in the food and feed industry, mainly because of the many environmental benefits when compared to meat production. This will be outlined in the book, as well as the whole process from rearing to marketing. The rearing involves large scale and small scale production, facility design, the management of diseases, and how to assure that the insects will be of high quality (genetics). The nutrient content of insects will be discussed and how this is influenced by life stage, diet, the environment and processing. Technological processing requires decontamination, preservation, and ensuring microbial safety. The prevention of health risks (e.g. allergies) will be discussed as well as labelling, certification and legislative

frameworks. Additional issues are: insect welfare, the creation of an enabling environment, how to deal with consumers, gastronomy and marketing strategies. Examples of production systems will be given both from the tropics (palm weevils, grasshoppers, crickets) and from temperate zones (black soldier flies and house flies as feed and mealworms and crickets as food).

Nature Across Cultures - Helaine Selin 2013-04-17

Nature Across Cultures: Views of Nature and the Environment in Non-Western Cultures consists of about 25 essays dealing with the environmental knowledge and beliefs of cultures outside of the United States and Europe. In addition to articles surveying Islamic, Chinese, Native American, Aboriginal Australian, Indian, Thai, and Andean views of nature and the environment, among others, the book includes essays on Environmentalism and Images of the Other, Traditional Ecological Knowledge, Worldviews and Ecology, Rethinking the Western/non-Western Divide, and Landscape, Nature, and Culture. The essays address the connections between nature and culture and relate the environmental practices to the cultures which produced them. Each essay contains an extensive bibliography. Because the geographic range is global, the book fills a gap in both environmental history and in cultural studies. It should find a place on the bookshelves of advanced undergraduate students, graduate students, and scholars, as well as in libraries serving those groups.

The Solar Corridor Crop System - C. LeRoy Deichman 2019-06-12

The Solar Corridor Crop System: Implementation and Impacts presents a case-study format on the planning and implementation of alternative cropping systems designed to maximize incident sunlight and bio-support of all crops in a rotation system. The book describes the basic component of the system, an increased access point of incident sunlight between each row or pairs of rows that enables a more uniform vertical distribution of incident sunlight to chloroplasts within the entire corn leaf canopy. While the production environment and environment specific genetics determine the performance potential of this principle, by maximizing the principles that light is basic to crop yield, a solar corridor ultimately contributes to increased grain yield. Written by experts who were integral in the development of solar corridor systems, and providing real-world examples of the methods, challenges and future prospects, this book will be valuable for those seeking to increase yield-per-acre through both primary and cover-crops. Introduces readers to the concept of alternative row-cropping and its implementation Presents real-world experience, including challenges and solutions Encourages research in maximizing photosynthesis impact on crop yield

Inquiry Skills Development - Holt Rinehart & Winston 1998-01-27

Leather and Footwear Sustainability - Subramanian Senthilkannan Muthu 2020-08-05

This book examines the manufacturing, supply chain and product-level sustainability of leather and footwear products. This book deals with the environmental and chemical sustainability aspects pertaining to the tanning supply chain and the related mitigation measures. The book also explores interesting areas of leather and footwear sustainability, such as waste & the 3R's and their certification for sustainability. At the product level, the book covers advanced topics like the circular economy and blockchain technology for leather and footwear products and addresses innovation development and eco-material use in footwear by investigating environmental sustainability and the use of bacterial cellulose, a potential sustainable alternative for footwear and leather products.

Medicinal and Aromatic Plants - Tariq Aftab 2021-03-27

Before the concept of history began, humans undoubtedly acquired life benefits by discovering medicinal and aromatic plants (MAPs) that were food and medicine. Today, a variety of available herbs and spices are used and enjoyed throughout the world and continue to promote good health. The international market is also quite welcoming for MAPs and essential oils. The increasing environment and nature conscious buyers encourage producers to produce high quality essential oils. These consumer choices lead to growing preference for organic and herbal based products in the world market. As the benefits of medicinal and aromatic plants are recognized, these plants will have a special role for humans in the future. Until last century, the production of botanicals relies to a large degree on wild-collection. However, the increasing commercial collection, largely unmonitored trade, and habitat loss lead to an incomparably growing pressure on plant populations in the wild. Therefore, medicinal and aromatic plants are of high priority for conservation. Given the above, we bring forth a comprehensive volume,

“Medicinal and Aromatic Plants: Healthcare and Industrial Applications”, highlighting the various healthcare, industrial and pharmaceutical applications that are being used on these immensely important MAPs and its future prospects. This collection of chapters from the different areas dealing with MAPs caters to the need of all those who are working or have interest in the above topic.

Biology For Dummies - Donna Rae Siegfried 2001-09-29

Ever wondered how the food you eat becomes the energy your body needs to keep going? If DNA is a set of instructions in your cells, how does it tell your cells what to do? How does your brain know what your feet are doing? The theory of evolution says that humans and chimps descended from a common ancestor, but does it tell us how and why? We humans are insatiably curious creatures who can't help wondering how things work - starting with our own bodies. Wouldn't it be great to have a single source of quick answers to all our questions about how living things work? Now there is. From molecules to animals, cells to ecosystems, *Biology For Dummies* answers all your questions about how living things work. Written in plain English and packed with dozens of illustrations, quick-reference “Cheat Sheets” and helpful tables and diagrams, it can get you quickly up to speed on what you need to know to: Understand how cells work Get a handle on the chemistry of life Find out how food becomes energy Get to know your body's systems Decode the secrets of DNA Find out what evolution is and isn't and how it works Take a peek into the lives of bacteria Explore how viruses do their thing Most basic biology books take a very round about approach, dividing things up according to different types of organisms. *Biology For Dummies* cuts right to the chase with fast-paced, easy-to-absorb explanations of the life processes common to all organisms. Topics covered include: How plants and animals get nutrients How organisms transport nutrients and expel waste How nutrients are transformed into energy How energy is used to sustain life How organisms breathe How organisms reproduce How organisms evolve into new life-forms How organisms create ecosystems With this engaging guide in your corner, you'll get a grip on complex biology concepts and unlock the mysteries of how life works in no time - no advanced degrees required.

Composting for Sustainable Agriculture - Dinesh K. Maheshwari 2014-10-21

The dramatic worldwide increase in agricultural and industrial productivity has created severe environmental problems. Soil and groundwater reservoirs have been polluted with pesticides, xenobiotics and agro-chemicals. The global consensus to reduce inputs of chemical pesticides and agrochemical fertilizers, which are perceived as being hazardous by some consumers, has provided opportunities for the development of novel, benign sustainable crop management strategies. The future of agriculture depends upon our ability to enhance the productivity without damage to their long-term production potential. One of the strategies is the application of effective microbial products beneficial for both farmers and ecosystems. This kind of approach can ensure both ecological and economic sustainability. Soil microbial populations are immersed in framework of interactions, which are known to affect plant fitness and soil quality. For betterment of life of human being, improved quality and variety of products are formed due to versatile action of different group of microorganisms, Microbes are able to degrade solid waste material into compost which is a mixture of decayed organic matter, manure etc. Incomplete microbial degradation of organic waste where the microbial process varies aerobic to anaerobic form is stated as compost, if added to soil improves plant growth and development. The biological activities and microbial metabolism in the soil contribute to alter its mixture and fertility. Incorporation of organic remain in the form of compost is known to influence favourably the physio-chemical and biological properties of soil. The beneficial activities bestowed upon plants by compost utilization are multifaceted, hence most promising alternatives for achieving sustainable agricultural production. An increased awareness on compost has led to their use in agricultural concern. Contents in the present book will comprised various chapters on the role of beneficial bacteria in the composting process. The application is depicted to achieve the attainable productivity besides, in disease management and suppressiveness of organisms of phytopathogenic in nature. Significance of the compost elicits certain responses e.g. soil reclamation, soil fertility, soil health and disease management exhibit due to quality compost amendment in soil. It serves as low cost prospective option for sustainable crop production and protection.

Biodiversity for Sustainable Development - K.P. Laladhas 2016-11-15
Divided into three sections, this book explores the three main pillars of

sustainable development, namely economy, environment and society, and their interlinkages at the regional level. The first section, Access and Benefit Sharing (ABS) for sustainable development, focuses on international agreements and national legislation, as well as the challenges in implementing ABS in e.g. India. In turn, the second section examines the process of forming Biodiversity Management Committees (BMCs) at the Local Self Government (LSG) level to promote environmental sustainability, highlighting local and community-level conservation initiatives that have led to the conservation of habitats and species. The third section addresses poverty eradication and food security. The case studies included demonstrate how the combination of traditional knowledge and modern techniques can enhance the productivity of traditional crop varieties, yielding greater benefits for communities. The aim of this volume is to disseminate the lessons learned from these case studies, as well as the findings from projects already in place, which can offer recommendations that can be applied to similar problems elsewhere in an attempt to find environmental solutions for sustainable development. Further, it introduces readers to new approaches to inclusive development, demonstrating that participation and grass root empowerment are key drivers of equitable and sustainable development.

Concepts of Biology - Samantha Fowler 2018-01-07

Concepts of Biology is designed for the single-semester introduction to biology course for non-science majors, which for many students is their only college-level science course. As such, this course represents an important opportunity for students to develop the necessary knowledge, tools, and skills to make informed decisions as they continue with their lives. Rather than being mired down with facts and vocabulary, the typical non-science major student needs information presented in a way that is easy to read and understand. Even more importantly, the content should be meaningful. Students do much better when they understand why biology is relevant to their everyday lives. For these reasons, *Concepts of Biology* is grounded on an evolutionary basis and includes exciting features that highlight careers in the biological sciences and everyday applications of the concepts at hand. We also strive to show the interconnectedness of topics within this extremely broad discipline. In order to meet the needs of today's instructors and students, we maintain the overall organization and coverage found in most syllabi for this course. A strength of *Concepts of Biology* is that instructors can customize the book, adapting it to the approach that works best in their classroom. *Concepts of Biology* also includes an innovative art program that incorporates critical thinking and clicker questions to help students understand--and apply--key concepts.

Mainstreaming Biodiversity for Sustainable Development - OECD 2018-07-10

Drawing on experiences and insights from 16 megadiverse countries, this report examines how biodiversity is being mainstreamed in four key areas.

Ecological Engineering - Patrick Kangas 2003-09-25

Less expensive and more environmentally appropriate than conventional engineering approaches, constructed ecosystems are a promising technology for environmental problem solving. Undergraduates, graduate students, and working professionals need an introductory text that details the biology and ecology of this rapidly developing discipline, known as

Ecology and Evolution of Communities - Martin L. Cody 1975

The evolution of species abundance and diversity; Competitive strategies of resource allocation; Community structure; Outlook.

Essentials of Marine Biotechnology - Se-Kwon Kim 2019-08-31

This textbook introduces marine biotechnology by collecting the key knowledge on genetics, fish breeding, genetic diversity, seaweed production and microalgae biotechnology, and explores marine biomaterials and how they can benefit human health. Covering the latest applications of marine biotechnology in natural product development, genomics, transgenic technology, cosmeceuticals, nutraceuticals, and pharmaceutical development, it particularly focuses on future biological resources, developing functional materials from marine life, production of marine bioenergy and marine microbial resources and biotechnology. The author explains the structure of the book in an introductory note, and each chapter offers a detailed overview and conclusion to help readers better grasp the acquired knowledge. Lastly, the final part provides a comprehensive glossary with brief explanations of the key concepts in marine biotechnology. Written by a leading expert in the field with more than 30 years of teaching experience, this book broadens students' understanding of the basics and recent developments in marine

biotechnology.

Forest Hydrology and Biogeochemistry - Delphis F. Levia 2011-06-15

This international rigorously peer-reviewed volume critically synthesizes current knowledge in forest hydrology and biogeochemistry. It is a one-stop comprehensive reference tool for researchers and practitioners in the fields of hydrology, biogeoscience, ecology, forestry, boundary-layer meteorology, and geography. Following an introductory chapter tracing the historical roots of the subject, the book is divided into the following main sections: · Sampling and Novel Approaches · Forest Hydrology and Biogeochemistry by Ecoregion and Forest Type · Hydrologic and Biogeochemical Fluxes from the Canopy to the Phreatic Surface · Hydrologic and Biogeochemical Fluxes in Forest Ecosystems: Effects of Time, Stressors, and Humans The volume concludes with a final chapter that reflects on the current state of knowledge and identifies some areas in need of further research.

Biomanagement of Metal-Contaminated Soils - Mohammad Saghir Khan 2011-08-30

Heavy-metal contamination is one of the world's major environmental problems, posing significant risks to agro-ecosystems. Conventional technologies employed for heavy-metal remediation have often been expensive and disruptive. This book provides comprehensive, state-of-the-art coverage of the natural, sustainable alternatives that use a wide range of biological materials in the removal/detoxification of heavy metals, consequently leading to the improvement of crops in these soils. Novel, environmentally friendly and inexpensive solutions are presented based on a sound understanding of metal contamination and the roles of plants and microbes in the management of these toxic soils. Written by worldwide experts, the book provides not only the necessary scientific background but also addresses the challenging questions that require special attention in order to better understand metal toxicity in soils and its management through bioremediation.

Wild Solutions - Beattie, Andrew 2013-05-24

In this fascinating and abundantly illustrated book, two eminent ecologists explain how the millions of species living on Earth -- some microscopic, some obscure, many threatened -- not only help keep us alive but also hold possibilities for previously unimagined products, medicines, and even industries. In an Afterword written especially for this edition, the authors consider the impact of two revolutions now taking place: the increasing rate at which we are discovering new species because of new technology available to us and the accelerating rate at which we are losing biological diversity. Also reviewed and summarized are many "new" wild solutions, such as innovative approaches to the discovery of pharmaceuticals, the "lotus effect", the ever-growing importance of bacteria, molecular biomimetics, ecological restoration, and robotics. "An easy read, generating a momentum of energy and excitement about the potential of the natural world to solve many of the problems that face us." E. J. Milner-Gulland, *Nature* "An engaging book clearly intended to impress upon a lay audience the practical value of biological diversity ... An outstanding work." *Ecology*

Anthropology - Robert H. Lavenda 2020-03-16

The most current and comprehensive Canadian introduction that shows students the relevance of anthropology in today's world. This streamlined second edition of *Anthropology* asks what it means to be human, incorporating answers from all four major subfields of anthropology -

biological anthropology, archaeology, linguistic anthropology, and cultural anthropology - as well as applied anthropology. Reorganized to enhance accessibility, this engaging introduction continues to illuminate the major concepts in the field while helping students see the relevance of anthropology in today's world.

Handbook of Fisheries and Aquaculture - 2006

With reference to India.

Microplastic in the Environment: Pattern and Process - Michael S. Bank 2021-10-09

This open access book examines global plastic pollution, an issue that has become a critical societal challenge with implications for environmental and public health. This volume provides a comprehensive, holistic analysis on the plastic cycle and its subsequent effects on biota, food security, and human exposure. Importantly, global environmental change and its associated, systems-level processes, including atmospheric deposition, ecosystem complexity, UV exposure, wind patterns, water stratification, ocean circulation, etc., are all important direct and indirect factors governing the fate, transport and biotic and abiotic processing of plastic particles across ecosystem types. Furthermore, the distribution of plastic in the ocean is not independent of terrestrial ecosystem dynamics, since much of the plastic in marine ecosystems originates from land and should therefore be evaluated in the context of the larger plastic cycle. Changes in species size, distribution, habitat, and food web complexity, due to global environmental change, will likely alter trophic transfer dynamics and the ecological effects of nano- and microplastics. The fate and transport dynamics of plastic particles are influenced by their size, form, shape, polymer type, additives, and overall ecosystem conditions. In addition to the risks that plastics pose to the total environment, the potential impacts on human health and exposure routes, including seafood consumption, and air and drinking water need to be assessed in a comprehensive and quantitative manner. Here I present a holistic and interdisciplinary book volume designed to advance the understanding of plastic cycling in the environment with an emphasis on sources, fate and transport, ecotoxicology, climate change effects, food security, microbiology, sustainability, human exposure and public policy.

Pedodiversity by Juan José Ibáñez 2013-04-08

Soil diversity (pedodiversity) is part of our natural and cultural heritage. The preservation of the pedosphere is essential for the protection of the biosphere and the Earth's systems, the regulation of climate, and for world food security. In this book, reputed international experts discuss the state of the art of pedodiversity analysis—analyzing the relationships among biodiversity, pedodiversity, landform diversity, lithodiversity, and land use diversity. The first of its kind, the book is intended to be a combined handbook, historical account of pedodiversity research, and essay on its future challenges.

Microbial Biotechnology in Agriculture and Aquaculture, Vol. 2 - R C Ray 2006-01-10

Plant genetic engineering has revolutionized our ability to produce genetically improved plant varieties. A large portion of our major crops have undergone genetic improvement through the use of recombinant DNA techniques in which microorganisms play a vital role. The cross-kingdom transfer of genes to incorporate novel phenotypes into plants has u