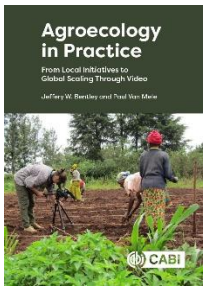
SELECCIÓN BIOLOGIA



Agroecology in Practice From Local Initiatives to Global Scaling Through Video Jeffery W Bentley, Paul Van Mele Paperback: ISBN : 978-1-80062-877-9
Hardback: ISBN : 978-1-80062-876-2 2025 $130.00 Cabi

Industrial agriculture has taken a toll on our soils, environment and local food cultures. *Agroecology in Practice* offers a beacon of hope. This practical guide shares ideas and techniques with readers seeking to implement agroecological principles.

This book presents innovative examples from across the globe on how to:

· Rebuild soil health and fertility

Enhance biodiversity on your farm

· Conserve water resources

· Manage pests and diseases sustainably

· Ensure humane livestock care

· Support farmer cooperation

· Build local food systems.

This book inspires the reader with real-world examples. It also explores the multiple ways in which video can contribute to building the necessary knowledge to transform food systems.

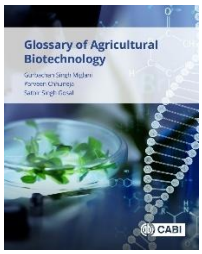
Agroecology in Practice is a must-read for:

· Farmers seeking to transition to more sustainable practices

· Agricultural professionals and educators

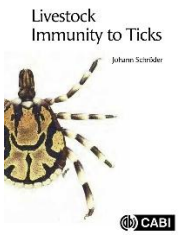
· Students of agroecology

· Policymakers and anyone interested in a healthier future for our planet.



Glossary of Agricultural Biotechnology Gurbachan Singh Miglani, Parveen Chhuneja, Satbir Singh Gosal Hardback: ISBN : 978-1-80062-775-8 2025 $340.00 Cabi

- The rapid progress in molecular genetic techniques and molecular biology has led to a great expansion in the range of biotechnology applications in agriculture. The field is supported by a large number of basic and applied sciences, and agricultural biotechnology has become a multidisciplinary field.
- A vast amount of technical terms is required to be grasped by students, teachers and research workers and this new *Glossary of Agricultural Biotechnology* covers all the scientific areas in this important field, including agricultural biotechnology, artificial intelligence, bioinformatics, biostatistics, cell biology, computer science, CRISPR/Cas, cytogenetics, DNA nanotechnology, epigenetics, epigenomics, genetics, genome editing, genomics, intellectual property rights, molecular biology, molecular genetics, nanobiotechnology, plant breeding, plant pathology, plant physiology, remote sensing, therapeutics, and tissue culture.
- The book includes:
- · Common abbreviations in agricultural biotechnology
- · Brief descriptions and definitions of each term written in a user-friendly style
- · A comprehensive bibliography.
- This book is designed to be an easy-to-use reference for students, teachers, research workers, workers in biotechnology-related government agencies, and the biotechnology industry.



Livestock Immunity to Ticks Johann Schröder
Hardback: ISBN : 978-1-80062-574-7 2025 $130.00 Cabi

As arthropod ectoparasites, ticks threaten the wellbeing of the animals whose habitat they share. They cause skin damage from their bite wounds, secrete toxins, transmit pathogens, and can also induce allergic reactions and infected wounds.

For more than a century, domestic animals have undergone chemical tick treatment as part of their husbandry routine. However, this reliance on chemicals is non-sustainable, and ignores the existence of other possible avenues of tick management. Covering recent developments in the field, this book considers avenues such as:

- Managing infestations through both natural tick control and human intervention

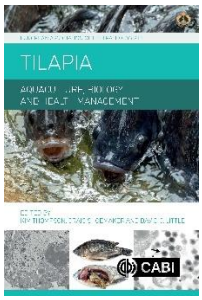
- Innate tick resistance

- Naturally acquired adaptive immunity

- Technological developments and successes such as vaccination schemes

The book also takes into consideration the barriers any one of these solutions may face on the road to commercialization.

Livestock Immunity to Ticks provides a comprehensive and up-to-date resource for researchers and students of immunology, parasitology and entomology.



Tilapia Aquaculture, Biology and Health Management Kim Thompson, Craig A. Shoemaker, David C Little Hardback: ISBN : 978-1-80062-938-7

2025 $235.00 Cabi

Tilapia are a group of cichlid fish endemic to tropical freshwater in Africa, Jordan and Israel, that are extremely nutritious and in high global demand. They are a popular species to farm because of their relative ease of culture, their tolerance to relatively high stocking densities, rapid growth and palatability.

As a thorough exploration of tilapia aquaculture, this book emphasizes the significance of this group of fish and discusses the crucial elements of tilapia farming, including their reproductive and genetic characteristics, the various cultivation systems employed and the emerging governance of the practice. It also addresses important health management issues, focusing on nutrition, immunology, and animal welfare and extensively analyses the diseases that afflict tilapia, how they are diagnosed and what potential zoonotic hazards exist.

The value of the book includes:

Contributing to the wider understanding of tilapia aquaculture and the importance of the species to global food security.

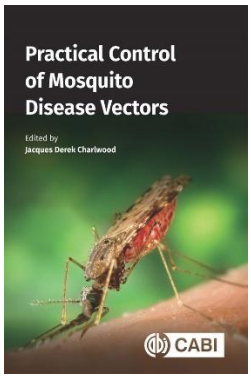
Providing an in-depth discussion on tilapia fish health, including major diseases, nutrition, immunology and disease prevention.

Giving detailed insights into tilapia genetics, production systems, and reproduction.

Written by an international team of experts to advance the long-term, sustainable growth of the global aquaculture industry, this book is a comprehensive and essential resource for anyone involved in or learning about tilapia farming.

Invasive Species Reviews 2018-2024 David Hemming
Hardback: ISBN : 978-1-80062-890-8 2025 $170.00 Cabi

Invasive species are responsible for significant impacts on agriculture, food security and health worldwide. This collection looks at a wide range of invasive species, including insects, plants, snails and fungal diseases, including: *Mimosa diplotricha*, *Chromolaena odorata*, privet, *Opuntia*, fall armyworm, *Aedes albopictus*, *Prostephanus truncatus*, *Pomacea* and ash dieback. The articles examine mechanisms for detecting the spread of invasive species, and models for understanding the mechanisms of invasion alongside control and management approaches with a particular focus on biological control. The articles have been specially selected from contributions to *CABI Reviews*.

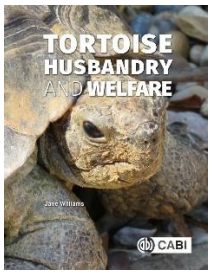


Practical Control of Mosquitoes Disease Vectors **Jacques Derek Charlwood**
Hardback: ISBN : 978-1-78924-882-1 328 pages 2024 $170.00 Cabi

Disease vector control is rapidly changing, both because of the emergence of resistance to conventional methods and the development of new and potentially game-changing techniques. This book reviews several current and future measures for controlling mosquito vectors of disease, with an emphasis on malaria vectors.

Beginning with an introduction to the topic of mosquito ecology and sampling methods, the book then covers several vector-borne disease control methods. The emphasis in many of these methods is for the sufferers of the diseases to take charge of their monitoring and control.

Tackling the problems facing mosquito control, the authors review the important issues of education, economic considerations and climate change before concluding with a consideration of the politics and practicalities of method choice and implementation. This book is a thought-provoking concise and practical resource for anyone interested in primary healthcare and tackling or studying mosquito disease vectors.



Tortoise Husbandry and Welfare Jane Williams
Paperback ISBN : 978-1-80062-371-2 304 pages 2024 $65.00
Hardback: ISBN : 978-1-80062-956-1 304 pages 2024 $195.00 Cabi

Keeping captive tortoises healthy and well is a significant challenge. Because they are ectotherms, these reptiles are totally dependent upon external sources to maintain body temperature and therefore metabolic function. Their physical environment is vital for them to remain healthy and, as owners, we have to provide sufficient choice in the environment for them to be able to experience as near optimum conditions as we can.

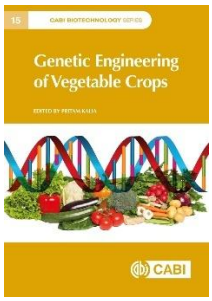
Covering all aspects of tortoise husbandry and welfare, this book advises on:

· Suitable temperature ranges, light sources, humidity, substrate, space, and seasonal changes according to individual tortoise species.

· Specific dietary requirements, and opportunities for expression of natural behaviours including reproduction.

· Variety of environments, ranging across indoor and outdoor accommodation options, to achieve optimum conditions for tortoises in captivity.

Written by a leading clinical animal behaviourist, this book is an important read for anyone involved in tortoise welfare, from students and zoo rescue staff, to pet owners and the veterinarians advising them.



Genetic Engineering of Vegetable Crops **Pritam Kalia**
Hardback: ISBN : 978-1-80062-710-9 448 pages 2024 $230.00 Cabi

Conventional plant breeding alone can no longer sustain the rising global demand for food. Genetic engineering technology makes it possible to develop new crop varieties with improved yield performance, specific quality attributes (external and internal in vegetable crops), resistance to diseases and insect pests, and environmental stresses. Genetic engineering technology for developing GM crops is complementary to genome editing and other breeding technologies. In addition to food requirements, transgenic crops have the possibility to carry edible vaccines and therapeutic proteins, to help combat human disease and malnutrition.

This book reviews the importance and safety of transgenic vegetable crops and covers a wide variety of crops and different technologies. It includes:

• Genetic engineering in tomato, eggplant, peppers, amaranth, cauliflower, carrot, cucurbits, potato, tropical tubers and melons.

• Transgenic resistance to viral diseases.

• Embryogenic cell suspension culture.

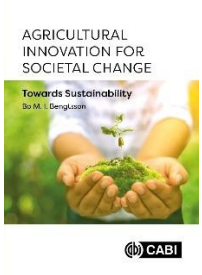
• Genome editing and CRISPR/Cas9.

• Molecular techniques for biofortification.

• RNAi strategies for vegetable crop improvement.

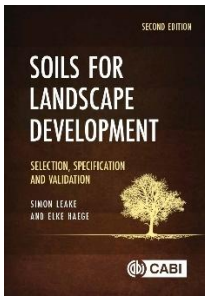
• Designing futuristic vegetable crop varieties.

This book is suitable for researchers in horticulture, plant science, and agricultural biotechnology as well as practitioners in vegetable breeding and seed production.



Agricultural Innovation for Societal Change Towards Sustainability **Bo Malte Ingvar Bengtsson** **Hardback: ISBN : 978-1-80062-778-9 240 pages 2024 $140.00 Cabi**

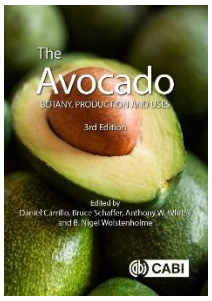
Over the centuries, agriculture has developed through technological steps illustrated by various agricultural revolutions. This book describes and analyses significant agricultural changes since the mid-1960s in the context of development, innovation and adoption by revisiting resource-poor farmers in Ethiopia, Sweden and Trinidad and Tobago, and considering overall development changes up to the early 2020s. It is a platform for discussing current issues for future global food security in the context of globalization and free global trade which have influenced economic growth in many countries but also created environmental concerns and a rapid increase in the number of transnational corporations (TNCs). Sustainable food production is now a global priority and therefore ecological footprints must be reduced - this book provides examples of possible technical changes required to achieve this. Reducing greenhouse gas emissions alone is insufficient: political attention must be paid to declining biodiversity, the increasing global exploration of natural resources, demography, increased consumption, waste mountains, expanding migration and antibiotic resistance. Agribusiness TNCs will challenge national governments and international donors in both research and development, increasing competition for leadership. A gradual societal change, incorporating an understanding of biological fundamentals, is necessary for achieving sustainability and for leading us towards the next agricultural revolution.



Soils for Landscape Development Selection, Specification and Validation **Simon Leake**, **Elke Haege**

Paperback: ISBN : 978-1-83699-003-1 216 pages 2024 $60.00 Cabi

This second edition of Soils for Landscape Development provides a clear, practical and systematic template for specifying landscape soils based on scientific criteria. The soil specifications provide essential information and a universally applicable method for landscape architects and designers, specification writers, landscape contractors and soil supply companies to ensure quality and fit-for-purpose soils. A strong emphasis is placed on reducing environmental impacts by reuse of on-site soil, promoting appropriate minimal soil intervention, and using recycled products. The first edition won the Award of Excellence for Research and Communication in Landscape Architecture at the AILA NSW (Australian Institute of Landscape Architects) Awards in 2014. The authors won a 2nd award for this book through The Australian Institute of Horticulture (AIH) in 2015).



The Avocado Botany, Production and Uses 3rd Edition

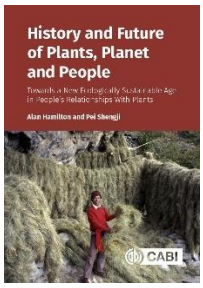
Daniel Carrillo, Bruce Schaffer, B Nigel Wolstenholme, Anthony W Whiley

Hardback: ISBN : 978-1-80062-180-0 688 pages 2024 $235.00 Cabi

The avocado industry is evolving rapidly. Avocado production has almost doubled recently, with significant expansion in areas planted, especially in Latin America, but also in Africa and Asia. Moreover, the global demand for avocado keeps on growing. The Avocado, 3rd edition is a unique and comprehensive source of information for avocado researchers, and covers everything from the history and distribution, novel agronomic practices, ecological and climatic requirements, and emerging diseases and pest problems. It compiles state-of-the-art information to promote more sustainable production systems and better preparedness to face the challenges that will shape the future of avocado production.

This fully updated third edition includes many new international contributors especially from those regions with active and expanding avocado industries. Considering the expansion in avocado consumption, it also includes a new chapter on avocado uses and human nutrition.

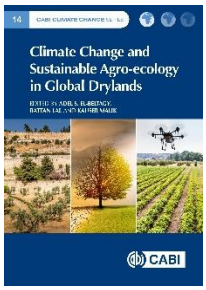
This is a valuable resource for avocado researchers, academicians and students of horticulture and botany, advisers, professional growers and practitioners in the industry.



History and Future of Plants, Planet and People Towards a New Ecologically Sustainable Age in People's Relationships With Plants

Alan Hamilton, Pei Shengji Hardback: ISBN : 978-1-78924-892-0 400 pages 2024 $155.00 Cabi

This fascinating book presents the experiences and pooled knowledge of two very different conservation scientists; Pei Shengji from Sichuan, China and Alan Hamilton from London, UK. They have been drawn together over many years through working on some of the same conservation projects and have discovered that they overlap in their ideas about the sorts of work that needs to be done and how it can best be carried out. The book describes some of their own experiences, set within the contexts of their varied careers and the development of their thinking. Plant conservation is crucial to the preservation of natural ecosystems, but conventional approaches have met with only limited success. The authors have concluded that plant conservationists need social allies - elements of society that have other primary concerns, but whose efforts, if successful, will bring benefits to plant conservation too. It is the state and condition of plants on the ground that ultimately matter in conserving ecosystems, and therefore it is the role of local people who interact directly with them which enables success. Ethnobotany is a key skill required of practical plant conservationists. Its techniques enable them to explore connections between people and plants, learn about local perspectives and establish relationships with the people upon whom conservation and sustainable development relies. This book: recommends how to advance plant conservation, based on real experiences. will inspire more people to become involved in plant conservation. demonstrates how the very different backgrounds of the authors have influenced the courses of their careers, but have enabled them to come to very similar conclusions about conservation practice. demonstrates the importance of geographically-based biocultural diversity, as a counterbalancing force to globalisation.

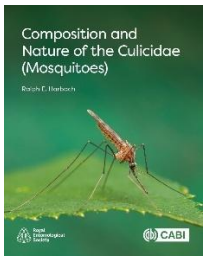


Climate Change and Sustainable Agro-ecology in Global Drylands

Adel S. El-Beltagy, Rattan Lal, Kauser Abdulla Malik Hardback:

ISBN : 978-1-80062-485-6 424 pages 2024 $195.00 Cabi

Drylands, a home for nearly 2.5 billion people, are highly vulnerable to anthropogenic climate change, and dryland area may expand to 50% of the Earth's surface by 2100. Climate change may aggravate the prevalence of undernutrition and malnutrition because of adverse effects on quantity and quality of food production in these regions. This book takes a holistic approach to sustainable management of drylands to make agriculture drought-resilient. Eminent scientists from around the world share their knowledge and experiences for adaptation and mitigation of the anthropogenic climate change through innovation in sustainable management of water, soil, crops, livestock, and fisheries. They anticipate that climate change will have major impacts on agro-ecosystems which requires continuous dynamic assessments, globally, regionally, and at the local level where the major action of adaptation would have to occur. The assessment will require international cooperation and national capacity-building. This book emphasizes approaches such as smart and precision agriculture, conservation agriculture, and new innovation and technology as tools for adaptation and mitigation. Several chapters are devoted to the human dimensions and policy considerations with emphasis on enhancing coping and adaptive capacity. This book addresses the picture after COP27, including loss and damage, governance and finance. This book: - Examines sustainable management for drylands as a solution to environmental and food security issues. - Uses a holistic approach to evaluate sustainable management of drylands. - Explains how researchers are translating science into action for greening global drylands.This work will be valuable to students and researchers in agroecology, climate change science and dryland agriculture.



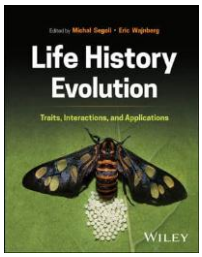
Composition and Nature of the Culicidae (Mosquitoes) Ralph E Harbach

Hardback: ISBN : 978-1-80062-799-4 576 pages 2024 $340.00 Cabi

This landmark volume is a unique, comprehensive compendium of all the biosystematics information on mosquitoes available today. Its purpose is to provide the international community with an up-to-date authoritative resource on the taxonomy and systematics of the entire family of this crucially important group of insects.

The book exhaustively summarizes the large and varied taxonomic literature on mosquitoes, providing a useful and practical amalgamation of their nomenclatural history, classification, morphology, bionomics and evolution. The need for this volume coincides with the growing paucity of professional traditional taxonomists who are still available to assist and advise the new generation of molecular biologists in the principles and practice of zoological nomenclature, morphotaxonomy and classification. For this reason, the compilation is an invaluable resource for students, researchers, entomologists, librarians and anyone interested in the taxa that comprise the family Culicidae.

It is no exaggeration to state that this book is a monumental piece of work. It treats and provides detailed information for all formal and informal elements of hierarchical classification, from species to family level. All parts of the book are interlinked and provide a platform of data for others to use and build upon.



Life History Evolution: Traits, Interactions, and Applications

Michal Segoli (Editor), Eric Wajnberg (Editor) Wiley

ISBN: 978-1-394-18572-6 February 2025 496 pages Hardcover $110.00

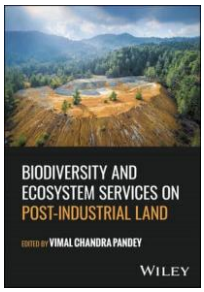
Provides a timely and authoritative account of Life History Evolution by a multidisciplinary team of scholars and researchers from around the world

Life History Evolution: Traits, Interactions, and Applications presents a cutting-edge synthesis of the mechanisms driving life history strategies that span the breadth of taxa, from bacteria to humans. Integrating classical and contemporary perspectives, this comprehensive volume addresses how organisms evolve traits in response to diverse ecological pressures. Editors Michal Segoli and Eric Wajnberg bring together leading experts to explore the intersection of evolutionary biology, ecology, and applied research, focusing on the evolving complexity of life history traits and their implications.

In-depth yet accessible chapters cover a broad spectrum of life history traits, from classical traits of lifespan and reproduction to more complex interactions like social behaviour, predator-prey dynamics, and human-induced.

evolutionary processes. The contributing authors explain essential concepts, identify critical knowledge gaps, discuss future research directions, and demonstrate the relevance of life history evolution in addressing climate change, species invasion, pollution, and more.

Providing a well-balanced understanding of life history traits and their implications, *Life History Evolution*



Biodiversity and Ecosystem Services on Post-Industrial Land

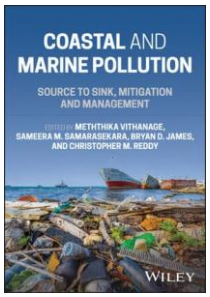
Vimal Chandra Pandey (Editor) ISBN: 978-1-394-18738-6 October 2024

416 pages $190.00 Wiley

Guide to post-industrial site restoration and re-establishment of rich communities of plant species for the provision of key ecosystem services

In line with the UN sustainable development goals, *Biodiversity and Ecosystem Services on Post-Industrial Land* is an expert guide to ecological restoration of post-industrial lands, explaining how to re-introduce biodiversity and ecosystem services by implementing natural processes in the rehabilitation of disturbed sites. It covers both the initial stages associated with the improvement of physicochemical and biological substrate characteristics as a precondition for continuous vegetation, as well as the subsequent re-establishment of rich communities of plant species and how these communities may be optimized for their biodiversity and ecosystem services such as pedogenesis, nutrient cycling, habitation for other organisms, food plants for herbivores, carbon sequestration, and aesthetic value.

Case studies of successful restoration of industrial sites from Asia, Africa, North and South America, and Europe, which include coal and mineral mining sites, oil drilling sites, and dumpsites, complement the conceptual part of the text and demonstrate how to put the theory into practice.



Coastal and Marine Pollution: Source to Sink, Mitigation and Management

Meththika Vithanage (Editor), Sameera M. Samarasekara (Editor), Bryan D. James (Editor), Christopher M. Reddy (Editor) ISBN: 978-1-394-23699-2

March 2025 560 pages $180.00 Wiley

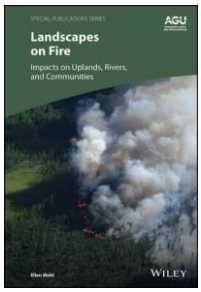
A multi-faceted analysis of how to preserve the long-term health of the world's largest ecosystem

In *Coastal and Marine Pollution: Source to Sink, Mitigation and Management,* a team of distinguished researchers delivers a comprehensive overview of the factors and stakeholders impacting — and impacted by — coastal and marine pollution. The book offers broad and up-to-date coverage of the topic, serving as a valuable reference for professionals and researchers working in the field.

The authors integrate and compare the two main sources of marine and coastal pollution: chronic, long-term, low-level pollution as well as occasional, accidental, disaster-related pollution. They bridge the gap between theory and real-world action, offering best practices for monitoring and preventing pollution, as well as efficient governance and disaster management strategies.

Readers will find:

- A thorough overview of the global state of coastal and marine pollution
- Comprehensive explorations of different types of pollution, including their sources, distribution, and impacts on the biophysical environment
- Practical discussions of pollution monitoring methods, including ecotoxicological approaches and proven strategies for managing coastal and marine pollution
- A critical assessment of policy and governance issues, including public awareness and disaster response strategies



Landscapes on Fire: Impacts on Uplands, Rivers, and Communities

Ellen Wohl ISBN: 978-1-394-23513-1 December 2024 304 pages $175.00 Wiley

Explores the effects of wildfires on land, water, vegetation, wildlife, and humans

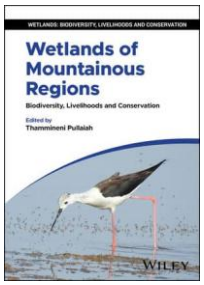
Across the world, wildfires are increasing in frequency, extent, and severity, driven by changes in land use and climate. After the immediate hazards of fire and smoke have passed, landscapes and ecosystems can be left altered for decades.

Landscapes on Fire: Impacts on Uplands, Rivers, and Communities presents an overview of wildfires and their after-effects on different parts of the natural, biological, and human landscape, bringing together perspectives from different disciplines.

Volume highlights include:

- Causes, mechanics, and patterns of wildfire
- Effects of fire on uplands and river networks
- Predicting and mitigating fire-related hazards
- Projected trends in wildfire patterns and effects due to climate change
- Case studies from across the world

The American Geophysical Union promotes discovery in Earth and space science for the benefit of humanity. Its publications disseminate scientific knowledge and provide resources for researchers, students, and professionals.



Wetlands of Mountainous Regions: Biodiversity, Livelihoods and Conservation

Thammineni Pullaiah (Editor) ISBN: 978-1-394-23520-9 February 2025

400 pages $205.00 Wiley

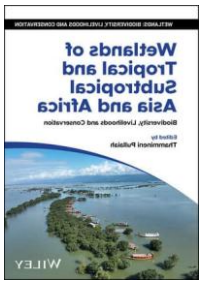
A comprehensive survey of exemplary wetlands that highlights their importance for local livelihoods as well as for global biodiversity

Covering 12 mountainous regions ranging from medium to high altitudes, *Wetlands of Mountainous Regions* provides detailed information on the world's most important wetlands and wetland types across Eurasia and the Americas as well as their current and potential biological resources. Each wetland is analyzed by a regional expert.

Written with UN sustainable development goals in mind, *Wetlands of Mountainous Regions* includes information on:

- Wetlands of Eastern Himalaya, Nepal, Pakistan, Armenia, Georgia, Slovakia, Bosnia, Herzegovina, Mexico, Costa Rica, Bolivia, Argentina, and Serbia
- The importance in sustaining local economic livelihoods of each wetland region by providing food resources as well as recreational opportunities
- Wetland ecosystem services including carbon sequestration, water filtration, nutrient retention, and flood mitigation
- Threats to the integrity of each wetland region as well as management strategies and practical conservation and restoration measures

Wetlands of Mountainous Regions is an essential reference on the subject for ecologists, conservation scientists, hydrologists, and environmental and water resource managers. Governmental agencies and professionals in fisheries, agriculture, and rural development will also find value in the book.



Wetlands of Tropical and Subtropical Asia and Africa: Biodiversity, Livelihoods and Conservation Thammineni Pullaiah (Editor) ISBN: 978-1-394-23524-7

March 2025 480 pages $205.00 Wiley

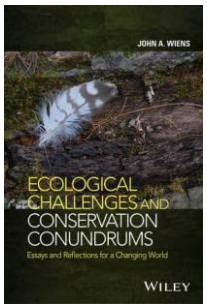
A comprehensive survey of exemplary wetlands that highlights their importance for local livelihoods as well as for global biodiversity

Covering 17 different regions, *Wetlands of Tropical and Subtropical Asia and Africa* provides detailed information on some of the world's most important wetlands and wetland types across those countries, as well as their current and potential biological resources. Each wetland is analyzed by a regional expert.

Written with UN sustainable development goals in mind, *Wetlands of Tropical and Subtropical Asia and Africa* includes information on:

- Recommendations for the sustainable management of wetlands in the Asian and African tropics
- The importance of sustaining local economic livelihoods in each wetland region by providing food resources as well as recreational opportunities
- Wetland ecosystem services including carbon sequestration, water filtration, nutrient retention, and flood mitigation
- Threats to the integrity of each wetland region as well as management strategies and practical conservation and restoration measures

Wetlands of Tropical and Subtropical Asia and Africa is an essential reference on the subject for ecologists, conservation scientists, hydrologists, and environmental and water resource managers. Governmental agencies and professionals in fisheries, agriculture, and rural development will also find value in the book.

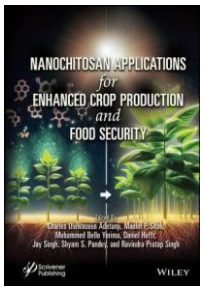


Ecological Challenges and Conservation Conundrums: Essays and Reflections for a Changing World John A. Wiens ISBN: 978-1-118-89510-8 February 2025

Wiley-Blackwell 344 pages $95.95

Short, compelling, but mostly thought-provoking essys that encompass many of the central issues shaping ecology and conservation in the changing world

- Collected essays from one of the best known ecologists and conservationists in the world
- Includes all issues at the cutting edge of the interface between ecology and conservation
- Attractive to a broad audience of ecologists, conservationists, natural resource managers, policy makers, and naturalists



Nanochitosan Applications for Enhanced Crop Production and Food Security

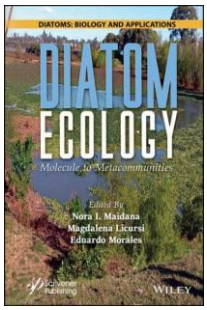
Charles Oluwaseun Adetunji (Editor), Chukwuebuka Egbuna (Editor), Oluwatosin Ademola Ijabadeniyi (Editor), Samantha C. Karunarathna (Editor)

ISBN: 978-1-394-21257-6 May 2025 448 pages $225.00 Wiley

This unique, important, and timely book provides detailed information about the application of nanochitosan to increase agricultural productivity to enhance food security and nutrition.

Readers will find in *Nanochitosan Applications for Enhanced Crop Production and Food Security* detailed state-of-the-art information including:

- The modes of action through which nanochitosan perform numerous biological activities;
- State-of-the-art information and recent advancements in the application of nanochitosan, including targeted delivery, genetic manipulation, antimicrobial uses, curing infections in plants, controlled delivery of biologically active constituents, applications in the evaluation of carbon dioxide concentrations and humidity in controlled greenhouse environments, and their use as pressure sensors in agrichemical spraying equipment;
- Information on applying nanochitosan as a biofertilizer and bioinsecticide when applied on seeds and for foliar spraying of agricultural crops, soil amendment, and protection against pathogens and pests;
- The application of nanochitosan in the manufacturing of nanosensors in precision farming in the determination of crop growth, condition of soils, penetration of agrochemicals, diseases, and the level of environmental pollution to ensure a high level of safety for plant and soil health.



Diatom Ecology: Molecule to Metacommunities Nora I. Maidana (Editor), Magdalena Licursi (Editor), Eduardo Morales (Editor) ISBN: 978-1-394-17445-4

October 2024 464 pages $249.00 Wiley

This book offers a comprehensive, unique and up-to-date exploration of diatom ecology spanning from fundamental molecular aspects to the intricate dynamics of metacommunities.

In recent years there has been a considerable increase in the amount of research devoted to diatom ecology, with a wide spectrum of approaches. This large amount of information, published in many different journals and books, makes it very difficult to keep up to date, both for the trained researcher and for students. Eduardo A. Morales (d. May 2023) had the original idea to assemble chapters on various subjects within diatom ecology. The questions he posed to potential contributors framed the current book consisting of 12 chapters.

- Are diatoms suitable tools for ecological restoration?
- What would be the features that make them reliable in this context?
- What makes diatoms ecologically successful?
- In an ecological sense, why is there such variability in diatom reproductive strategies and why are they worth considering?
- What do new approaches in ecological synthesis provide to diatom ecology, biogeography and metacommunities?
- Are all diatoms widely spread and each species uniquely characterized by its own, unaltered phenotype?
- Can we really make any ecological consideration without knowing (with a high degree of certainty) the identity of taxa?

Handbook of Agricultural Biotechnology, Volume 5: Nanobiofertilizers

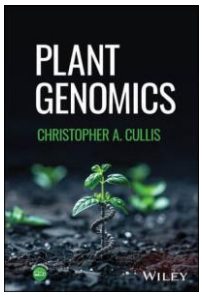
Charles Oluwaseun Adetunji (Editor), Chukwuebuka Egbuna (Editor), Anton Ficai (Editor), Oluwatosin Ademola Ijabadeniyi (Editor)

ISBN: 978-1-394-21149-4 October 2024 592 pages $249.00 Wiley

This book details recent advances in the applications of nanobiofertilizers as a substitute for synthetic fertilizers in boosting food production.

With the steady rise of the world's population, there is a need to increase the production of safe and nutritious food. The constant loss of arable land, as a result of various anthropogenic activities from human action, has become a threat to global biodiversity and ecosystems. Additionally, the issue of climate change has imposed many obstacles to increasing agricultural productivity, especially from biotic and abiotic stressors and temperature-limited environments, such as in high altitudes or seasonally hot regions. Because of these factors, there is a need to adopt sustainable and modern technologies that can boost and improve the rate of food production.

One of the cheapest means of enhancing sustainable food production is to explore natural and unlimited beneficial microorganisms, particularly those that can increase the level of soil fertility, improve crop production and health, improve tolerance to stress, support nutrient uptake and availability, and boost natural biodiversity. The synergetic effect of nanotechnology and beneficial microorganisms for the effective bio-fabrication of nanobiofertilizers, is a sustainable solution for producing pesticide-free food. This book provides a deep insight into microbial diversity, recent techniques used for the isolation, screening, and characterization of beneficial microorganisms with eco-friendly attributes, used for bioengineering of nanobiofertilizers, as well as the application of proteomics, metabolomics, genomics, and bioinformatics. The book also covers commercialization, patents, and the business and socio-economic aspects of nanobiofertilizers, as well as the role of policymakers, stakeholders, and government agencies in the translation of nanobioferilizer research into policy.



Plant Genomics

Christopher A. Cullis ISBN: 978-1-394-21155-5 March 2025 288 pages $97.95 Wiley

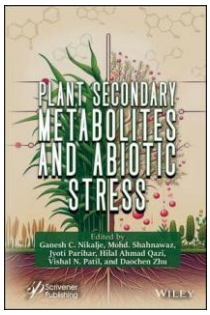
Introduction to the range of molecular techniques to investigate unique facets of plant growth, development, and responses to the environment

Plant Genomics introduces the complex relationship between the genome, microbiome, genes, and epigenetics of plants, as well as the range of molecular techniques applicable to investigating the unique facets of plant growth, development, and response to the environment. State-of-the-art science in the field is discussed, as well as future outlooks on what the next decade is likely to bring.

This book includes new techniques for modifying the plant genome and their impact on modifying plants to combat the impact of biotic and abiotic stresses, including those associated with climate change, new technologies including long and short read sequencing and proximity ligation and the combination of these technologies for assembling sequence data into chromosomes, a new chapter on the sequences of the chloroplast and mitochondrial genomes, and a dedicated chapter to epigenetics and the importance in gene regulation.

Written by a highly qualified author with significant published research contributions to the field, *Plant Genomics* includes information on:

- Structure and information content of the chloroplast and mitochondrial genomes and their use in phylogeny
- Use of transcriptomes from various tissues to identify expressed sequences and their identification as genes
- Function of small regulatory RNAs and long non-coding RNAs and involvement of small RNAs in the control of gene expression
- Epigenetic silencing of transposable elements and their release by stress and cross-generational contribution of epigenetic variation



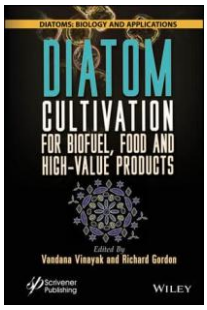
Plant Secondary Metabolites and Abiotic Stress

Ganesh C. Nikalje (Editor), Mohd. Shahnawaz (Editor), Jyoti Parihar (Editor), Hilal Ahmad Qazi (Editor), Vishal N. Patil (Editor), Daochen Zhu (Editor)

ISBN: 978-1-394-18580-1 November 2024 704 pages $275.00 Wiley

This book provides a comprehensive overview of cutting-edge biotechnological approaches for enhancing plant secondary metabolites to address abiotic stress, offering valuable insights into the future of utilizing plants for medicinal and industrial purposes.

Various books on plant secondary metabolites are available, however, no book has an overview of the recent trends and future prospects of all the methods available to enhance the contents of the plant secondary metabolites. *Plant Secondary Metabolites and Abiotic Stress* aims to give an overview of all the available strategies to ameliorate abiotic stress in plants by modulating secondary metabolites using biotechnological approaches including plant tissue cultures, synthetic metabolic pathway engineering, targeted gene silencing, and editing using RNAi and CRISPR CAS9 technologies.



Diatom Cultivation for Biofuel, Food and High-Value Products

Vandana Vinayak (Editor), Richard Gordon (Editor)

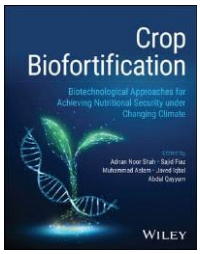
ISBN: 978-1-394-17448-5 April 2025 448 pages $225.00 Wiley

This unique book examines the techno-economic prospects of diatom cultivation, the design and implementation of algal reactors, and the potential of diatoms as a source of biofuel and other value-added products.

Diatom Cultivation for Biofuel, Food and High-Value Products covers the scientific, economic, and practical aspects of using diatoms for multiple purposes. It explores an integrated approach to diatom cultivation, including discussions on techniques, harvesting methods, and innovative technologies. The book discusses the potential of these techniques for improving the efficiency and yield of diatom-based biofuels, as well as the challenges and ethical considerations associated with genetic engineering.

Readers of the book will discover a wealth of information including:

- The adaptation of chitosan-based harvesting methods for microalgae flocculation; the trends, scope, and techno-economic prospects of diatom cultivation, including the design and implementation of algal reactors and the potential of diatoms as a source of biofuel and other value-added products.
- Advanced applications and innovative techniques in the field of diatoms and microalgae such as an in-depth analysis of the pigments and proteins found in *Phaeodactylum tricornutum*; the nature and applications of diatom cell walls, including their purification processes and industrial uses; the biochemical engineering of diatoms for health and biorefinery concepts, highlighting the potential of diatoms in producing biofuels and other high-value products; the metabolic and transcriptomic stress and engineering of diatoms to enhance lipid production, exploring the stress conditions that can increase oil yield.



Crop Biofortification: Biotechnological Approaches for Achieving Nutritional Security under Changing Climate

Adnan Noor Shah (Editor), Sajid Fiaz (Editor), Muhammad Aslam (Editor), Javed Iqbal (Editor), Abdul Qayyum (Editor)

ISBN: 978-1-394-27324-9 March 2025 496 pages $190.00 Wiley

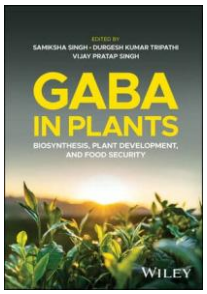
Develop more nutritious crops to aid in the fight against world hunger with this timely volume

One in nine people worldwide suffer from hunger or food scarcity. Massively increasing food production is one of the most urgent scientific projects in the modern world, particularly as a changing climate places increasing pressure on the global food supply and on sustainable food production processes. Biofortification is a process in which plant breeding, improved agronomic practices, and/or modern biotechnology are employed to increase nutrient density of crops without sacrificing any of their desirable characteristics. It's an essential tool in the global fight against hunger.

Crop Biofortification offers an up-to-the-minute overview of this essential subject and its recent advances. It covers all the latest methodologies and techniques deployed in biofortification, as well as surveying plant responses to genetically induced biofortification and the effect of climate change on biofortified crops. Designed to allow for the application of these techniques at the field level, it's a significant contribution towards the search for a sustainable global food supply.

Crop Biofortification readers will also find:

- Presentation of recent advances in omics, particularly metabolomics, which can decipher potential changes in plants caused by biofortification
- Detailed discussion of methods for increasing the nutritional content of edible plants to address specific nutritional deficiencies



GABA in Plants: Biosynthesis, Plant Development, and Food Security

Samiksha Singh (Editor), Durgesh Kumar Tripathi (Editor), Vijay Pratap Singh (Editor)

ISBN: 978-1-394-21775-5 January 2025 368 pages $200.00 Wiley

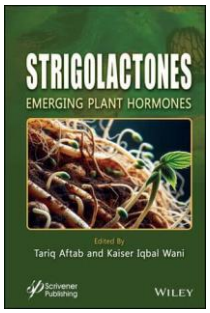
A comprehensive overview of the role played by GABA as a signaling molecule in plants

In *GABA in Plants: Biosynthesis, Plant Development, and Food Security*, the editors deliver an expertly balanced discussion of the role played by GABA as a signaling molecule in plants, plant development, stress acclimation, as well as its potential impact on crop productivity under changing environmental conditions.

From explorations of the discovery of GABA in plants to presentations of GABA biosynthesis pathways, GABA crosstalk with other metabolites, and GABA's role in programmed cell death in plants, this book is an essential treatment of a four-carbon signaling molecule that may yet prove pivotal in sustaining crop production in the face of climate change.

Readers will also find:

- A thorough introduction to GABA and its involvement in nodulation in and wounding stress in plants
- Comprehensive explorations of plant stress responses and tolerance mechanisms
- Practical discussions of GABA priming induced modulations in the redox homeostasis of plants under osmotic stress
- Complete treatments of GABA and heat, oxidative, cold, bacterial, mediated salt, and chilling stressors



Strigolactones: Emerging Plant Hormones

Tariq Aftab (Editor), Kaiser Iqbal Wani (Editor)

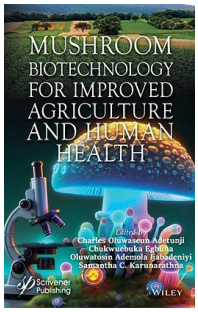
ISBN: 978-1-394-30279-6 March 2025 320 pages $195.00 Wiley

This book is a comprehensive guide to strigolactones' role in plant biology, growth, and sustainable agriculture.

Strigolactones, a fascinating and rapidly evolving class of plant hormones, have garnered significant attention in plant biology over the past decade. Initially discovered for stimulating the germination of parasitic plants, strigolactones are now recognized as key regulators of numerous plant processes, including growth, development, and response to environmental stresses. Their multifaceted nature and wide-ranging impact on plant physiology make strigolactones a critical study area for researchers aiming to enhance crop yield, resilience, and overall agricultural productivity.

This edited volume provides a comprehensive overview of the current state of knowledge on strigolactones, exploring their biosynthesis, signaling mechanisms, and practical applications in agriculture. The book collects contributions from leading experts in the field, offering a diverse and in-depth perspective on the various roles that strigolactones play in plant biology.

The chapters in this volume cover a broad spectrum of topics, from the molecular and genetic basis of strigolactone biosynthesis to their interactions with other phytohormones and environmental factors. The book examines the regulatory functions of strigolactones in plant architecture, including shoot branching, root development, and leaf senescence, as well as their involvement in stress responses such as drought, salinity, and pathogen attack. Also highlighted are recent advancements in understanding strigolactone signaling pathways and the potential for genetic engineering to manipulate these hormones for crop improvement.



Mushroom Biotechnology for Improved Agriculture and Human Health

Charles Oluwaseun Adetunji (Editor), Chukwuebuka Egbuna (Editor), Oluwatosin Ademola Ijabadeniyi (Editor), Samantha C. Karunarathna (Editor)

ISBN: 978-1-394-21263-7 May 2025 400 pages $225.00 Wiley

The book is essential for those seeking to understand innovative and sustainable solutions to global food insecurity and health challenges, as it offers invaluable insights into the transformative potential of mushroom biotechnology and its applications.

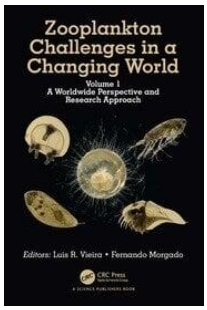
The intervention of microbial biotechnology in various sectors has displayed remarkable growth linked to sustainable innovations and biotechnological utilization of beneficial microorganisms, such as mushrooms, for the benefit of humanity. Recent advancements in mushroom biotechnology will prove successful due to mushrooms' nature as natural problem solvers, including their ability to enhance nutritional values obtained from agricultural crops, sustained health benefits derived from pharmacologically active substances used to manage human diseases, and improve crop production.

This book will serve as one of the first volumes addressing the usefulness of mushroom biotechnology, giving detailed state-of-the-art information on recent advancements and how the industry could maximize profits. The volume will also assist the pharmaceutical and medical sectors by examining the discovery of novel pharmacological and bioactive compounds that could replace the various adverse effects when using synthetic drugs. It presents a simple, adaptable, reproducible methodology that will help researchers and scientists adopt these methodologies for similar projects.

Microbial Based Land Restoration Handbook, Two Volume Set

Edited By Vimal Pandey, Umesh Pankaj Paperback $120.00 ISBN 9780367705848 630 Pages 46 B/W Illustrations nPublished March 13, 2025 by CRC Press

This is the first handbook that covers all aspects of bio-inoculants used in degraded lands to improve soil fertility and crop productivity as well as for the remediation of polluted lands. It discusses all novel sustainable approaches for the reclamation of problematic soils. Taking a multidisciplinary approach, this book explores the recent uses of plant microbe interactions in ecological and agricultural revitalization beyond normal agriculture practices and offers practical and applied solutions for the restoration of degraded lands for food, fodder, fuel and fiber security. Provides a single comprehensive platform for soil scientist, agriculture specialists, ecologists, and others.



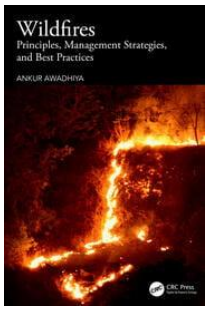
Zooplankton Challenges in a Changing WorldVolume 1: A Worldwide Perspective and Research Approach

Edited By Luis R. Vieira, Fernando Manuel Raposo Morgado Copyright 2025

Hardback $200.00 ISBN 9781032649764 320 Pages 19 Color & 19 B/W Illustrations

Published March 12, 2025 by CRC Press

Plankton populations have lived in the oceans for hundreds of millions of years, performing essential functions within marine ecosystems. This book explores emerging and current topics in marine ecosystem plankton research, focusing on pelagic diversity, functioning, and productivity from a multidisciplinary structural and functional view. It also examines the context of environmental stressors and global Climate Change Research and Policy. The book represents a contribution from a team of researchers from several regions of the world with a common mission to enhance readers' understanding of current ocean science and marine biology while pointing towards future directions.



WildfiresPrinciples, Management Strategies, and Best Practices

By Ankur AwadhiyaCopyright 2025 Hardback $150.00 ISBN 9781032831725

272 Pages 34 Color & 1 B/W Illustrations Published March 10, 2025 by CRC Press

Wildfires pose a persistent global challenge, affecting ecosystems, human societies, and the climate. This comprehensive volume, *Wildfires: Principles, Management Strategies, and Best Practices*, authored by Dr. Ankur Awadhiya, provides an authoritative exploration of the multifaceted nature of wildfires. Drawing from the author's extensive experience as a forest officer and researcher, the book offers in-depth insights into the science of wildfires, their causes and effects, and the latest advancements in wildfire management. What distinguishes this book is its seamless integration of scientific principles, traditional knowledge, and cutting-edge technology, rendering it an indispensable resource for addressing wildfires in the context of climate change.

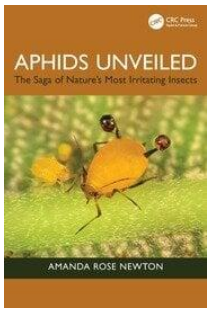
Key Features

- Extensive analysis of wildfire principles, encompassing their various types, underlying causes, and global distribution patterns.

- Comprehensive coverage of the multifaceted effects of wildfires on ecosystems, human health, and climate change.

- In-depth examination of strategies for wildfire prevention, detection, suppression, and post-fire restoration efforts.

- Insights into advanced technologies such as satellite monitoring, LiDAR, Geographic Information Systems (GIS), unmanned aerial vehicles (drones), and artificial intelligence (AI) in wildfire management.



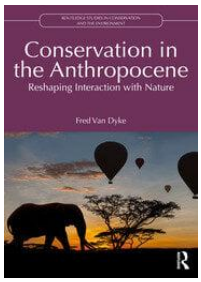
Aphids UnveiledThe Saga of Nature's Most Irritating Insects

By Amanda Rose NewtonCopyright 2025 Paperback $66.99 ISBN 9781032883465

112 Pages 71 Color Illustrations Published March 6, 2025 by CRC Press

Aphids Unveiled: The Saga of Nature's Most Irritating Insects explores the curious journey of these tiny insects from humble beginnings to becoming the most obnoxious pests for farmers and home gardeners alike. With a witty narrative style and a touch of humor, the book aims to engage readers with the quirky behaviors, social structures, and survival strategies of aphids, all while unraveling the reasons behind their impact on agriculture and horticulture.

Amanda Rose Newton brings over a decade of experience in both the horticulture and pest control worlds to write for a broad audience, from gardening enthusiasts seeking effective pest management strategies to science enthusiasts interested in a lighthearted exploration of the natural world. As an entomologist and professor, her writing uniquely blends expertise with a passion for storytelling, ensuring *Aphids Unveiled* is not only informative but also an entertaining read.



Conservation in the AnthropoceneReshaping Interaction with Nature

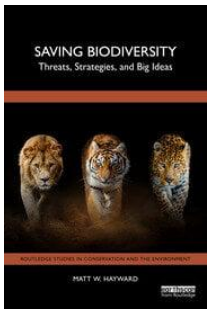
By Fred Van DykeCopyright 2025 Paperback $54.99 ISBN 9781032511078

288 Pages 61 B/W Illustrations Published March 6, 2025 by Routledge

This book provides a critical assessment of conservation in the Anthropocene grounded in the personal, historical, and cultural development of human interaction with nature.

The author argues that conservation can no longer be primarily about preserving nature but must adapt its efforts to promote changes through which humans create a landscape that is neither abandoned nor degraded but used well by humans and non-humans alike. The book first reviews the origin of ideas and conditions that have led to the concept and classification of the Anthropocene and explores how the author's own interactions with nature were shaped through his experience as a conservation biologist. Next, it considers how humans have come to be the primary drivers of ecological activity, geological events, and climate change. Chapters then focus on the need for new conservation thinking regarding novel ecosystems, urban conservation, the role of Indigenous Peoples in conservation, and the value of protected areas (PAs), parks, and wilderness. The book concludes by identifying strategies for effective conservation and argues for a new formulation of conservation values that redefine human relationships and interaction with nature. Chapters are enlivened by the personal experiences of the author and the first-person narratives of conservation activists and scientists throughout the world who are learning to practice and succeed in conservation efforts under Anthropogenic conditions.

Drawing on global examples, this book will be of great value to students and scholars of biodiversity conservation and environmental science ready to consider a new way of looking at the care and nurture of nature in the Anthropocene.



Saving BiodiversityThreats, Strategies, and Big Ideas

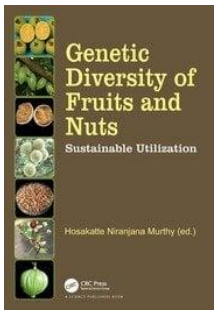
By Matt W. HaywardCopyright 2025 Paperback $48.99 ISBN 9781032960265

338 Pages 17 B/W Illustrations Published March 3, 2025 by Routledge

Drawing on the author's personal experiences working across the globe, this book explains why we need to conserve biodiversity, the threats it faces, how we can successfully conserve biodiversity, and some success stories of how we have conserved it.

This is a personal journey from being an environmental vandal to internationally renowned conservationist. The book follows the author’s life and career in conservation, from scarring koala-feed trees to being chased by elephants, sniffed by lions, gored by quokkas, and watched by wolves. It mixes robust facts with fun stories to engage a broad audience spanning the general public to academics and enthuse them into promoting the conservation of the plants and animals humanity relies on. Split into five sections, the first explains why we should conserve Nature and the value it holds. Section 2 discusses the threats to biodiversity, and Section 3 describes the author’s personal experiences in conserving biodiversity, from creating protected areas and managing invasive species, reintroduction programmes, and the social policies we need to enact to ensure biodiversity persists. Section 4 provides examples of conservation success stories from across the globe, and the book concludes by looking at the big picture issues society needs to address to ensure that future generations get to experience the same degree of beauty of the natural world that we have.

This book is a must read for all concerned with conserving Nature and sustaining our planet.



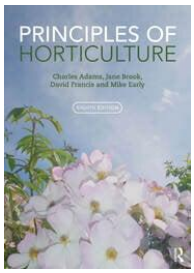
Genetic Diversity of Fruits and NutsSustainable Utilization

Edited By Hosakatte Niranjana MurthyCopyright 2025

Hardback $220.00 ISBN 9781032779119 398 Pages 20 Color & 26 B/W Illustrations

Published February 12, 2025 by CRC Press

Genetic Diversity of Fruits and Nuts: Sustainable Utilization presents an account of the diversity and possible exploitation of such variability in the improvement of varied fruits and nuts of the world. Expert authors in the field have addressed the significance of fruit and nut crops' genetic variability for their sustainable exploitation to develop new cultivars that can cater to growers' needs, adapt to climate change, and address the rising need for food.



Principles of Horticulture

By Charles Adams, Jane Brook, David Francis, Mike EarlyCopyright 2025

Paperback $66.99 ISBN 9781032946900 340 Pages 520 Color & 9 B/W Illustrations

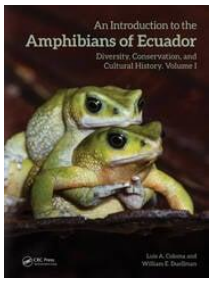
Published February 12, 2025 by Routledge

Gardening and horticulture generally are essentially practical activities much enhanced by an understanding of how plants grow. This colourful guide will introduce you to the fundamentals of horticulture. It is written in a clear and accessible style and covers the principles that underpin growing plants for the garden and allotment, with reference to how these are tackled by professionals.

With highlighted definitions, key points and illustrations in full colour, this book will be a useful companion as you progress in the study and practice of horticulture. The book covers topics such as classifying and naming plants, the plant life cycle, ecology and garden wildlife, soils, composts, hydroponics, weeds, plant nutrition, plant pests, and plant diseases and disorders. The new edition has been updated to reflect changes in legislation and the modernization of horticultural practices. It is also fully reflective of the changes in the new syllabuses for horticulture at Level 2.

Principles of Horticulture is a valuable resource whether you are taking a Level 2 RHS, City and Guilds, Teagasc or SNQ course, or are a keen amateur or seasoned gardener.

The book is accompanied by ancillary materials including essential and extended information on horticultural principles and downloadable instructor resources.



An Introduction to the Amphibians of EcuadorDiversity, Conservation, and Cultural History By Luis A. Coloma, William E. Duellman Copyright 2025 Hardback $150.00

ISBN 9780367653569 Pages 133 Color & 41 B/W Illustrations Published December 27, 2024 by CRC Press $150.00

An Introduction to the Amphibians of Ecuador is the first of four volumes, which are comprehensive, well-illustrated, and authoritative works, making them invaluable to biologists, conservationists, and others. This initial volume delves into the cultural history of amphibians, encompassing ethnobatrachology and folklore, while summarizing the amphibian iconography found in Ecuadorian archaeology. Moreover, it covers topics such as bioprospecting, sustainable management, and biotrade activities. The history and present state of amphibian biology research are also addressed. Furthermore, it explores in comprehensive detail the rich amphibian diversity of Ecuador, providing a thorough review of biogeography, amphibian declines, and conservation.

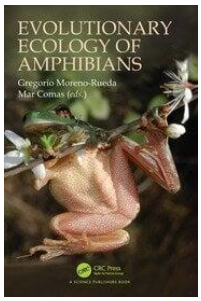
Subsequent volumes list the characteristics of each species, define each taxon, and compare them to similar other species. Natural history and reproductive behavior, where known, are described, as are data on vocalizations, larvae, and ontogenetic changes. Amphibian distributions are illustrated with physiographic maps with dots. Each volume addresses the declines, extinctions, and conservation status of each species and provides notations of their occurrence in reserves.

KEY FEATURES

- Summarizes the ethnozoological aspects of amphibians
- Provides a thorough history of research
- Introduction to three volumes providing accounts for each of the 3 orders, 19 families, 78 genera, and over 650 species from Ecuador

Evolution and Speciation in Fungi and Eukaryotic Biodiversity By T. J. PandianCopyright 2024 Paperback $64.99 ISBN 9781032421438 306 Pages 1 Color & 94 B/W Illustrations Published December 19, 2024 by CRC Press

Being sessiles like autotrophic plants and heterotrophics as animals, fungi are fascinating eukaryotes. In them, the need for external digestion has demanded surface expansion and limited tissues to < eight types. To reproduce, 96% fungi engage spores. Being 800 times denser than air, water renders the spore dispersal costlier. Their externally excreted digestive enzymes may rapidly be dissolved in water. These have limited 96% fungi to land. As 90% fungi are clonals, and only 1,400 species are erected/y (year), their number may not exceed 260,000 species over the next 100 y. Mating types arising from homothallic basidium and their risky external fertilization in air have limited diversity to 23,975 species in Basidiomycota. Contrastingly, heterothallism and safer internal fertilization have accelerated it to 77,083 species in Ascomycotina. About 46, 40 and 14% fungi are decomposers, parasites and symbionts. Fungal ability to decompose in dry soil is 10 times greater than that of bacteria. Volume of dead plants decomposed by fungi is ~ 38 g carbon/m^2/y. The mycorrhizas facilitate 85% angiosperms to acquire water and minerals, enhance productivity and fight against drought and pollutants. During the geological past, lichens have weathered rock and formed the present landscape. Only 121 fungal species excrete digestive enzymes to meet industrial demand. The beneficial fungi contribute 1,000 billion US$. Parasitic fungi cause 1.6 million human deaths and > 20% loss of commercial crops. Despite their ecological and economic importance, no university offers a degree course in Mycology. For 2,056,907 eukaryotic species, this book elaborates the role played by environmental factors (i) spatial distribution, (ii) light-temperature, (iii) precipitation-liquid water and biological attributes, (iv) cellularity, (v) symmetry, (vi) clonality, (vii) sexuality, (viii) modality and (ix) motility that either accelerate or decelerate biodiversity. About 20 and 80% eukaryotes are aquatics and terrestrials. Decreasing light intensity and temperature reduce diversity from the equator toward the polar zones.

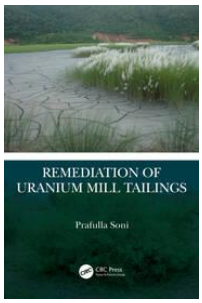


Evolutionary Ecology of Amphibians

Edited By Gregorio Moreno-Rueda, Mar ComasCopyright 2023 Paperback $61.99

ISBN 9780367553975 264 Pages 8 Color & 14 B/W Illustrations Published December 19, 2024 by CRC Press

Amphibians are the oldest tetrapod group and show an astonishing diversity in lifestyles, many of them being unique. However, globally, they are on a decline. Hence, their study is fundamental to understanding the evolution of diversity and conserving them. This book, authored by experts from around the world, summarizes the current knowledge on the evolutionary ecology of amphibians. The book treats biological concepts related to the evolution, ecology, physiology, immunology, behaviour, and morphology of amphibians in their different states. This book constitutes an actualized work indispensable for evolutionary ecologists and herpetologists.



Remediation of Uranium Mill Tailings

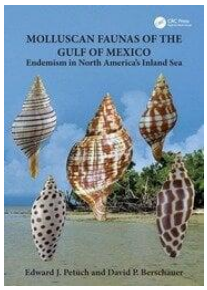
By Prafulla SoniCopyright 2024 Paperback $61.99 ISBN 9781032352800 176 Pages 7 B/W Illustrations Published December 19, 2024 by CRC Press

This book covers issues pertaining to uranium tailings with special reference to consolidation of radioactivity including systematic ecological strategy for consolidation of radionuclides in uranium tailings. It discusses sustainable consolidation of radioactivity and checks the migration of unextracted uranium from tailing piles to plants and atmosphere supported by a case study from a uranium mine. It provides simple ecological solutions for the remediation of radioactivity in mill tailings.

Features:

- Provides insight into the application of applied ecology for bioremediation of radioactive wastes.
- Discusses species selection criteria for tailings radioactivity consolidation.
- Explains safe treatment of the tailings of radioactive ore processing plants.
- Illustrates the role of ethnobotany in the selection of the most appropriate species to effectively use in bioremediation.
- Focuses on experimental outcomes.

This book is aimed at researchers and professionals in mining engineering, applied geology, nuclear tailings and environmental protection.

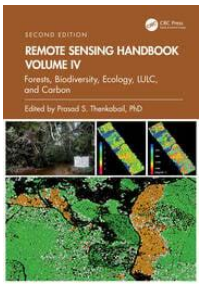


Molluscan Faunas of the Gulf of MexicoEndemism in North America's Inland Sea

By Edward J. Petuch, David P. BerschauerCopyright 2025 Hardback $170.00
ISBN 9781032883588 237 Pages 153 Color Illustrations Published November 29, 2024 by CRC Press

Recent biodiversity studies, reported here for the first time, have shown that the molluscan fauna of the Gulf of Mexico is far richer and more complex than previously thought. As a result of these new discoveries, the Gulf malacofauna is shown to contain large numbers of endemic species that reside within four separate biogeographical subdivisions of the larger Carolinian Molluscan Province: the Floridian, Suwannean, Texan, and Yucatanean Subprovinces. These four Gulf biotic components, with each supporting its own endemic fauna, are shown here to be separated by distinct ecological and oceanographic barriers. The resultant physical and genetic isolation has led to the evolution of spectacular sibling species radiations, many unknown and undescribed until now. Some of the most conspicuous and important of these are found in the gastropod families Fasciolariidae, Volutidae, Conidae, Muricidae, and Busyconidae, all of which are dominant predators in their respective benthonic ecosystems. The species within these ecologically important families, along with hundreds of endemic taxa in 50 other gastropod and bivalve families, are illustrated here in **Molluscan Faunas of the Gulf of Mexico: Endemism in North America's Inland Sea** on 132 color plates and are discussed in detail in the individual chapters. Special attention is given to the mollusks of poorly studied and virtually unknown ecosystems such as those on the deep reefs off the Florida Keys and Dry Tortugas, the deep water coralline algal beds off western Florida, the Flower Garden Reefs off Texas, the petroleum seeps and brine pools of the Sigsbee Escarpment, the Campeche Bank Archipelago, and the deep water areas at the mouth of the Yucatan Channel.

This new book is unlike previous taxonomic surveys of the Gulf of Mexico.



Remote Sensing Handbook, Volume IVForests, Biodiversity, Ecology, LULC, and Carbon Edited By Prasad S. ThenkabailCopyright 2025 Hardback $200.00 ISBN 9781032891033 544 Pages 107 Color & 23 B/W Illustrations Published November 29, 2024 by CRC Press

Volume IV of the Six Volume *Remote Sensing Handbook*, Second Edition, is focused on the use of remote sensing in forestry, biodiversity, ecology, land use and land cover, and global terrestrial carbon mapping and monitoring. It discusses remote sensing studies of multi-scale habitat modeling, forest informatics, tree and stand height studies, land cover and land use (LCLU) change mapping, forest biomass and carbon modeling and mapping, and advanced image analysis methods and advances in land remote sensing using optical, radar, LiDAR, and hyperspectral remote sensing. This thoroughly revised and updated volume draws on the expertise of a diverse array of leading international authorities in remote sensing and provides an essential resource for researchers at all levels interested in using remote sensing. It integrates discussions of remote sensing principles, data, methods, development, applications, and scientific and social context.

FEATURES

- Provides the most up-to-date comprehensive coverage of remote sensing science for forests, biodiversity, land cover and land use change (LCLUC), biomass, and carbon.
- Discusses and analyzes data from old and new generations of satellites and sensors spread across 60 years.
- Extensive forestry, LCLUC studies, biomass, and carbon using optical, radar, LiDAR, and hyperspectral data.
- Includes numerous case studies on advances and applications at local, regional, and global scales.

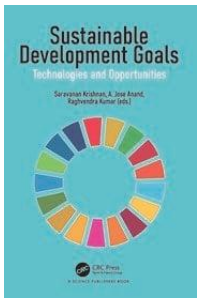
Chemical EcologyInsect-Plant Interactions

By Jamin Ali, Ri Zhao ChenCopyright 2025 Paperback $49.99 ISBN 9781032767062

196 Pages 15 B/W Illustrations Published November 26, 2024 by CRC Press

This textbook provides a comprehensive overview of the principles, methods and applications of chemical ecology, covering such topics as chemical signalling, predator–prey interactions, host plant selection and chemical defence. The book takes the reader through the historical development of the discipline to current state-of-the-art research, delving into recent findings on the role of chemical ecology in conservation and management and exploring how the field may contribute to future innovations in ecological science. A chapter is dedicated to the techniques that have been used in chemical ecology and some success stories.

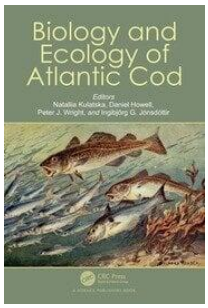
Chemical Ecology: Insect-Plant Interactions is an important resource for advanced undergraduates and postgraduate researchers as well as practitioners in this interdisciplinary field. The book's layout aligns with the curriculum of chemical-ecology-related disciplines, progressing from basic fundamental principles to a more advanced level. Those studying and researching in ecology, entomology, plant biology and biochemistry will find it invaluable as well as those practising in areas such as agriculture, forestry and pest management.



Sustainable Development GoalsTechnologies and Opportunities

Edited By Saravanan Krishnan, Jose Anand Archangel, Raghvendra KumarCopyright 2025 Hardback $153.00 ISBN 9781032733067 330 Pages 2 Color & 58 B/W Illustrations Published November 7, 2024 by CRC Press

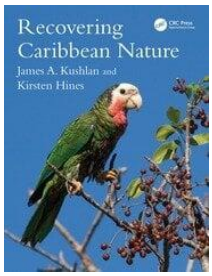
Sustainable Development Goals (SDGs) are goals set by the United Nations to address the global challenges and foster sustainable development and harmony. To effectively achieve these goals, leveraging advanced technologies and engineering techniques is paramount. This edited volume explores the pivotal role of technology and engineering in advancing the SDGs across various sectors such as green energy, water management, healthcare, agriculture, and smart manufacturing. From innovative solutions in clean energy production to precision agriculture and smart cities, technological advancements offer scalable and efficient approaches to tackle complex sustainability issues.



Biology and Ecology of Atlantic Cod

Edited By Nataliia Kulatska, Daniel Howell, Peter J. Wright, Ingibjörg G. Jónsdóttir
Copyright 2025 Hardback $120.00 ISBN 9780367638283 254 Pages 8 Color & 91 B/W Illustrations Published October 31, 2024 by CRC Press

Atlantic cod is an important fish species in human history and continues to be a major influence on North Atlantic fisheries management, as stock collapses and recoveries impact coastal communities and shelf sea food webs. This book provides an overview of Atlantic cod biology and ecology, focussing on regional differences in life-history and stock dynamics that affect productivity and the challenges faced by management. By comparing the success of management approaches and the local influence of changing climate and food webs, the book highlights the different pressures facing stocks and identifies knowledge gaps across the species' range.

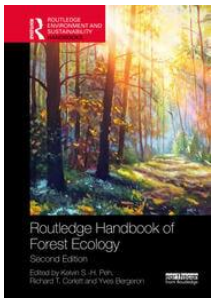


Recovering Caribbean Nature

By James A. Kushlan, Kirsten HinesCopyright 2024 Hardback $200.00 ISBN 9781032489834 266 Pages 149 Color Illustrations Published October 29, 2024 CRC Press

The Caribbean is a global biodiversity hotspot; half its resident bird species are found nowhere else, yet, a quarter are threatened with extinction. Nearly all its native amphibians and reptiles and thousands of plants also are endemic. Yet, less than 1% of the landscape can be considered natural; and apart from reserves, most land is privately owned. Despite the challenges of such habitat fragmentation, the Caribbean's distinctive fauna and flora can be preserved through planning and managing a connected network of sustainable naturalistic landscapes, reserves, parks, and private gardens. This book uniquely provides both a theoretical background and practical applications to restoring nature within the tropical Caribbean. Packed with beautiful color photographs, it offers unifying principles that can be applied across the tropics and synthesizes information on the Caribbean's environmental uniqueness and globally significant biodiversity. It also provides explicit guidance on establishing sustainable and more naturalistic landscapes from large public lands to private yards and gardens.

The book is essential reading for academics and researchers studying the Caribbean environment, resource management professionals, and scientists and.educatos from nongovernmental organizations who provide programs and advocacy for conservation and regional sustainability. Moreover, it highlights the importance of private lands and gardens, where the greatest gains can be made, and so offers a handbook for knowledgeable private landowners and their professional advisors.



2nd Edition Routledge Handbook of Forest Ecology

Edited By Kelvin S.-H. Peh, Richard T. Corlett, Yves BergeronCopyright 2025

Hardback $325.00 ISBN 9781032348384 720 Pages 130 B/W Illustrations Published October 7, 2024 by Routledge

The *Routledge Handbook of Forest Ecology* is an essential resource covering all aspects of forest ecology from a global perspective. This new edition has been fully revised and updated throughout to reflect the profound and unprecedented changes in both forests and climates since the publication of the first edition in 2015. The handbook reflects key developments in the field of forest dynamics and large-scale processes, as well as the changes that are now manifesting in different types of forests across the globe as a result of climate change. It covers both natural and managed forests, from boreal, temperate, sub-tropical and tropical regions of the world. In this second edition, the breadth of the handbook has been expanded with new chapters on mountain forests, monodominance, pathogens and invertebrate pests and amphibians and reptiles in forest ecosystems. Original author teams are complemented by the addition of new authors to offer fresh perspectives, and the second edition places greater emphasis on the applicability of each topic at a global level. The handbook is divided into seven parts:

- Part I: The forest
- Part II: Forest dynamics
- Part III: Forest flora and fauna
- Part IV: Energy and nutrients
- Part V: Forest conservation and management
- Part VI: Forest and climate change
- Part VII: Human ecology