The Ecology Of Snow And Ice Environments

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The Snow Leopard Academic Press
Seasonal Snowpacks examines the processes which control the chemistry of seasonal snowcover and provides detailed information on the biogeographical distribution of snow (e.g. urban, alpine snowpacks), snow composition (e.g. micropollutants, stable isotopes) or the physical and biological processes which influence the chemical changes in snow (e.g. wind, microbiological activity). The fluxes of chemicals at the snow-atmosphere and snow-soil interfaces are examined, as are processes which modify composition within the snowcover. It is the first book in which the reader will find a comprehensive overview of the theoretical concepts, latest measurement techniques, process-oriented research methods, and models of studies in snow chemistry. The linkages between snow chemistry, atmospheric chemistry and hydrology will make this book of use to both research workers and students in the physical and biological sciences and to natural resource management personnel.

Snow Cover as an Integral Factor of the Environment and Its Importance in the Ecology Af Mammals and Birds John Wiley & Sons
The Arctic is often portrayed as being isolated, but the reality is that the connectivity with the rest of the planet is huge, be it through weather patterns, global ocean circulation, and large-scale migration patterns to name but a few. There is a huge amount of public interest in the ‘changing Arctic’, especially in terms of the rapid changes taking place in ecosystems and exploitation of resources. There can be no doubt that the Arctic is at the forefront of the international environmental science agenda, both from a scientific aspect, and also from a policy/environmental management perspective. This book aims to stimulate a wide audience to think about the Arctic by highlighting the remarkable breadth of what it means

to study its ecology. Arctic Ecology seeks to systematically introduce the diverse array of ecologies within the Arctic region. As the Arctic rapidly changes, understanding the fundamental ecology underpinning the Arctic is paramount to understanding the consequences of what such change will inevitably bring about. Arctic Ecology is designed to provide graduate students of environmental science, ecology and climate change with a source where Arctic ecology is addressed specifically, with issues due to climate change clearly discussed. It will also be of use to policy-makers, researchers and international agencies who are focusing on ecological issues and effects of global climate change in the Arctic. About the Editor David N. Thomas is Professor of Arctic Ecosystem Research in the Faculty of Biological and Environmental Sciences, University of Helsinki. Previously he spent 24 years in the School of Ocean Sciences, Bangor University, Wales. He studies marine systems, with a particular emphasis on sea ice and land-coast interactions in the Arctic and Southern Oceans as well as the Baltic Sea. He also edited a related book: Sea Ice, 3rd Edition (2017), which is also published by Wiley-Blackwell.

SNOW IN AMER Springer Science & Business Media

Cyanobacteria have existed for 3.5 billion years, yet they are still the most important photosynthetic organisms on the planet for cycling carbon and nitrogen. The ecosystems where they have key roles range from the warmer oceans to many Antarctic sites. They also include dense nuisance growths in nutrient-rich lakes and nitrogen-fixers which aid the fertility of rice-fields and many soils, especially the biological soil crusts of arid regions. Molecular biology has in recent years provided major advances in our

understanding of cyanobacterial ecology. Perhaps for more than any other group of organisms, it is possible to see how the ecology, physiology, biochemistry, ultrastructure and molecular biology interact. This all helps to deal with practical problems such as the control of nuisance blooms and the use of cyanobacterial inocula to manage semi-desert soils. Large-scale culture of several organisms, especially "Spirulina" (Arthrospira), for health food and specialist products is increasingly being expanded for a much wider range of uses. In view of their probable contribution to past oil deposits, much attention is currently focused on their potential as a source of biofuel. Please visit http://extras.springer.com/ to view Extra Materials belonging to this volume. This book complements the highly successful Ecology of Cyanobacteria and integrates the discoveries of the past twelve years with the older literature.

Physiological Ecology of Lichens Springer Science & Business Media

Comprehensive account of the various forms of insect overwintering, highlighting areas of economic interest.

Snow Ecology Smithsonian Books (DC)

Snow . . . symbol of a "howling wilderness" that has forged the hardy American character. Drawing from works of art, poetry, literature, film, history, and public policy, the author discusses snow as a

metaphor for both chaos and order; traces the development of snow technologies such as the shovel, the gauge, and the plow; and explains the importance of snow surveys for climate regulation. 47 illustrations.

Ecology of Winter Snow-free Areas of the Alpine Tundra of Niwot Ridge, Boulder County, Colorado Oxford University Press

This book provides a critical and selective review of lichen physiological ecology.

The Ecology and Conservation of the Snow Leopard (Panthera Uncia) in the Annapurna Conservation Area, Nepal Cambridge University Press

In my book Introduction to High Altitude Entomology, published in 1962, I summa rized the results of eight years' studies, mainly on the Himalaya. I have since then had the opportunity of studying the collections of high altitude insects from the Alps, Carpathians, Caucasus, Urals, Alai-Pamirs, Tien Shan, Altai and other im portant mountains of the world in different museums and institutions in Europe. Through the courtesy and generosity of the Academy of Sciences of the Union of Soviet Socialist Republics, I was also able to personally collect insects and make valuable field observations on the Caucasus, the Alai-Pamirs, Ala-Tau and the Tien Shan mountains. Through comparative studies I have tried to synthesize the fundamental principles of high altitude entomology. I have described here the distinctive characters of the high altitude environment, the ecological specializations of the high altitude insects, their ecological inter relations and the outstanding peculiarities of their biogeography. I have also pre sented here an outline of the high altitude entomology of the principal mountains of the world, with brief accounts of their orogeny, geology and vegetation. This book differs from all other contributions in the field in its comparative ecological approach and in the fact that the main

emphasis is throughout on the evolution of the high altitude ecosystem as an integral part of the orogeny. High mountains are, in all parts of the world, important and independent centres of origin and differ entiation of distinctive and highly specialized ecosystems and faunas.

Snow in July Academic Press

Reference for interpreters about winter in Yellowstone. With articles, essays, or excerpts on the following topics: Snow and life ; adaptations to cold ; arboreal antifreeze : how trees survive the winter ; life in a hot-water basin ; impacts of winter recreationists on wildlife in a portion of Yellowstone National Park ; winter weather as a population-regulating influence on free-ranging bison in Yellowstone National Park ; tracks in the snow ; classification of snow ; snow ecology ; history of skiing ; Of skis, scouts, and soldier ; the Schwatka-Haynes winter expedition of 1887 ; historical development of winter visitor use at Yellowstone National Park ; summary record of snowmobile/snowcoach use, Yellowstone National Park, 1966-1983.

Arctic Ecology Cambridge University Press

This book is an authoritative work on the ecology of some of America's most iconic large mammals in a natural environment - and of the interplay between climate, landscape, and animals in the interior of the world's first and most famous national park. Central Yellowstone includes the range of one of the largest migratory populations of bison in North America as well as a unique elk herd that remains in the park year round. These populations live in a varied landscape with seasonal and often extreme patterns of climate and food

abundance. The reintroduction of wolves into the park a decade ago resulted in scientific and public controversy about the effect of large predators on their prey, a debate closely examined in the book. Introductory chapters describe the geography, geology and vegetation of the ecosystem. The elk and bison are then introduced and their population ecology described both pre- and post– wolf introduction, enabling valuable insights into the demographic and behavioral consequences for their ungulate prey. Subsequent chapters describe the wildlife-human interactions and show how scientific research can inform the debate and policy issues surrounding winter recreation in Yellowstone. The book closes with a discussion of how this ecological knowledge can be used to educate the public, both about Yellowstone itself and about science, ecology and the environment in general. Yellowstone National Park exemplifies some of the currently most hotly debated and high-profile ecological, wildlife management, and environmental policy issues and this book will have broad appeal not only to academic ecologists, but also to natural resource students, managers, biologists, policy makers, administrators and the general public. * Unrivalled descriptions of ecological processes in a world famous ecosystem, based on information from 16 years of painstaking field work and collaborations among 66 scientists and technical experts and 15 graduate studies. * Detailed studies of two charismatic North

American herbivore species – elk and bison * Description of the restoration of wolves into central Yellowstone and their ecological interactions with their elk and bison prey * Illustrated with numerous evocative colour photographs and stunning maps

The Ecology of Recently-deglaciated Terrain Springer Science & Business Media

The majority of extremophiles in ice and snow are microorganisms.

Examining Your Environment: Mini-climates Cambridge University Press

The first comprehensive review of the available information on the ecology of recently-deglaciated terrain, this volume evaluates critically the methodology employed in such studies.

The Significance of Snow Cover in the Ecology and Geographical Distribution of Mammals and Birds Springer Science & Business Media

All of Erin's life her older sister has eclipsed her, stolen her boyfriends and commanded the family's attention with one crisis after another. Meghan was always smarter, prettier, more daring and dynamic. But she is long gone and Erin is now anxious to get out of Butte too. Then Meghan, now a single mother with a 6-year-old child, suddenly returns expecting her family to solve her problems. But this time there are other people involved and no one else to blame. Meghan, now addicted to men, danger and drugs is happy to let Erin take care of her child, but is Erin?

The Ecology of Large Mammals in Central Yellowstone Oxford University Press, USA

Foraging theory, the confluence of the ecology and evolution, strives to understand ecological patterns and processes. I use concepts of

foraging theory in combination with mud-and-boots field biology to report the distribution and abundance of the endangered snow leopard and the Himalayan tahr on Mt. Everest of Nepal. I use the vigilance behavior of tahr to infer the status of their predator, the snow leopard, and confirm that snow leopards have returned to Mt. Everest following their disappearance some 40 years ago. I model how animals should select their habitats under predation-risk and partition time between competing fitness enhancing activities. In the former, I examine the consequence of animal's habitat selection under the threat of predation as an additional factor. In the later, I develop a game theory model, and suggest that group size effect on vigilance behavior is contingent upon the strength of interacting effects of many eyes, dilution and predator attraction effects. In examining ecological theories, I track how top predators may structure biological communities. Furthermore, I examine a few major ecological paradigms in light of biodiversity conservation.

Potential Ecological Impacts of Snowpack Augmentation in the Uinta Mountains, Utah Cambridge University Press

Ecology program designed for use in grades 4-8.

The Ecology of Snow and Ice Environments U of Minnesota Press

A multidisciplinary 2001 overview of life in, on and under snow for anyone interested in the cryosphere.

Snow Cover as an Integral Factor of the Environment and Its Importance in the Ecology of Mammals and Birds, by A. N. Formozov. Translated ...by W. Prychodko and W. O. Pruitt, Jr.- LAP Lambert

Academic Publishing

When it begins to look, feel, and smell like snow, everyone prepares for a winter blizzard.

Review of Snow ecology

Snow and ice environments support significant biological activity, yet the biological importance of some of these habitats, such as glaciers, has only recently gained appreciation. Collectively, these ecosystems form a significant part of the cryosphere, most of which is situated at high latitudes. These ice environments are important sentinels of climate change since the polar regions are presently undergoing the highest rates of climate warming, resulting in very marked changes in the extent of ice caps, glaciers, and the sea ice. Glacial systems are also regarded as an analogue for astrobiology, particularly for Mars and the moons of Jupiter (e.g. Europa), and one of the justifications for research in this area is its potential value in astrobiology. This timely and accessible volume draws together the current knowledge on life in snow and ice environments. It describes these often complex and often productive ecosystems, their physical and chemical conditions, and the nature and activity of the organisms that have colonised them. The cryosphere is the domain of extremophiles, organisms able to adapt to the physiological and biochemical challenges of harsh cold conditions where liquid water may only be present for relatively short periods each year. The majority of extremophiles in ice and snow

are microorganisms. The Ecology of Snow and Ice Environments is intended for the non-specialist, enabling environmental scientists to understand the biological functioning of extreme cold environments and for biologists to gain knowledge of the nature of the cryosphere.

Snow Leopards

Snow Leopards: Biodiversity of the World: Conservation from Genes to Landscapes is the only comprehensive work on the biology, behavior, and conservation status of the snow leopard, a species that has long been one of the least studied, and hence poorly understood, of the large cats. Breakthroughs in technologies and methodologies to study this elusive cat have come rapidly, including non-invasive genetics, camera traps, and GPS-satellite collaring. The book begins with chapters on the genetic standing and taxonomy of the snow leopard, followed by chapters on their behavior and ecology. Additional contributions follow on the current and emerging threats to the species, which include longstanding concerns, such as poaching and conflicts with livestock, and new and emerging threats such as mining and climate change. A section on conservation solutions, backed by valuable case studies, starts with an overview of the important role mountain communities play in assuring the snow leopard's long-term persistence. In addition, chapters on the role of captive snow leopards for the conservation of the species, state-of-the-art techniques and technologies for studying and monitoring snow leopards, status reports from around the region, and future perspectives, such as transboundary conservation initiatives, international conventions (CITES, CMS, etc.), the role of the IUCN Cat Specialist Group and the Snow Leopard Network, and undertakings such as the Global Snow Leopard Forum facilitated by the World Bank are also included. Serves as the first and only comprehensive book on the biology, behavior, and

conservation status of the snow leopard Brings together the most current scientific knowledge, documents the most pressing conservation issues, and shares success stories in alleviating the broad threats that now jeopardize the long-term survival of this species Brings current knowledge of the species, not only to researchers and conservationists, but also to decision makers, academics, and students Edited by recognized snow leopard experts, with more than 50 years of collective experience in research and conservation of the species

Unveiling the Ghost of the Mountain; Snow Leopard Ecology and Behaviour

Part of the Penguin Orange Collection, a limited-run series of twelve influential and beloved American classics in a bold series design offering a modern take on the iconic Penguin paperback Winner of the 2016 AIGA + Design Observer 50 Books | 50 Covers competition For the seventieth anniversary of Penguin Classics, the Penguin Orange Collection celebrates the heritage of Penguin's iconic book design with twelve influential American literary classics representing the breadth and diversity of the Penguin Classics library. These collectible editions are dressed in the iconic orange and white tri-band cover design, first created in 1935, while french flaps, high-quality paper, and striking cover illustrations provide the cutting-edge design treatment that is the signature of Penguin Classics Deluxe Editions today. The Snow Leopard In 1973, Peter Matthiessen and field biologist George Schaller traveled high into the remote mountains of Nepal to study the Himalayan blue sheep and possibly

glimpse the rare and beautiful snow leopard. Matthiessen, a student of Zen Buddhism, was also on a spiritual quest to find the Lama of Shey at the ancient shrine on Crystal Mountain. The result is a remarkable account of a journey both physical and spiritual, as the arduous climb yields to Matthiessen a deepening Buddhist understanding of reality, suffering, impermanence, and beauty.

Ecology

The primary role of this book is to introduce the reader to, and hopefully stimulate interest in, the ecology of temporary aquatic habi tats. The book assumes that the reader will have, already, some gen eral knowledge of ecology but this is not essential. Temporary waters exhibit amplitudes in both physical and chemical parameters which are much greater than those found in most waterbodies. The organisms that live in these types of habitats have, therefore, to be very well adapted to these conditions if they are to survive. Survival depends largely on exceptional physiological tolerance or effective immigration and emigration abilities. Examples of such adaptations are given throughout the book and it is hoped that these will aid the reader in gaining an insight into the structure and function of plant and animal communities of these unusual habi tats. The final chapter suggests field and laboratory projects that should be useful to students in school and university studies.