

ditional assumption that this species is primarily confined to heavy pack ice, as stated in the book (p. 314). Using satellite telemetry, Nordøy and Blix have revealed that the Ross seal spends most of its time outside the breeding season in the open ocean north of the pack ice. And in contrast to a maximum diving depth of 212 m listed by Shirihai in the book, Nordøy and Blix found a maximum diving depth of almost 800 m for Ross seals.

In such a comprehensive book, it is difficult to avoid some minor mistakes or omissions. I noticed that Bouvetøya is not included on the breeding distribution map of Antarctic Prion on p. 178. However, it is listed as breeding on Bouvetøya on p. 415. On the map of Bouvetøya (p. 413) "Nyrøysa" is located on the wrong side of the island. In spite of some such mistakes, the editor, Guy Kirwan, has done a great job and deserves much of the credit for this book, together with Shirihai and the artist Brett Jarrett.

I would definitely bring this book along on a travel to Antarctica and the Southern Ocean and would have benefited from it during my previous visits to the region. The book is also one of the best sources of information for people who just want to learn more about Antarctic wildlife even if they do not have the opportunity to travel there.

Review of Islands of the Arctic, by Julian Dowdeswell & Michael Hambrey (2002). Cambridge: Cambridge University Press. Xvi + 280 pp. ISBN 0-521-81333-6.

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This is a well illustrated introductory book about the islands of the Arctic. The 25 × 25 cm format, with about two-thirds of the space taken up by photos of a mostly very good quality, clearly indicates the aim of the book to convey the beauty of these islands and their natural features to the

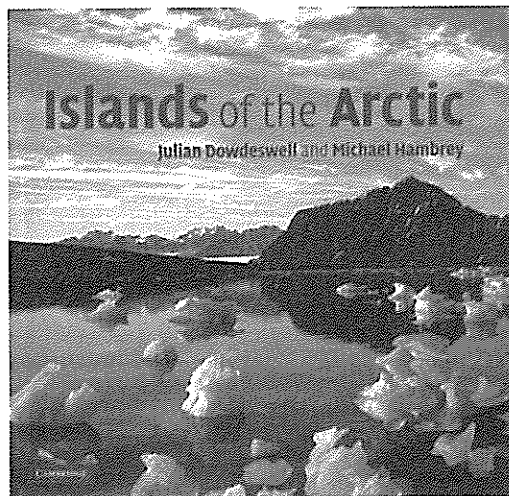


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reader. The chapters are comparatively short and are written in a popular scientific way, with emphasis on explaining the natural environment and the related geological and geophysical processes. There are a few rough maps and an absolute minimum of diagrams and other scientific illustrations.

The authors—renowned earth scientists from the universities of Cambridge and Wales—state in their introduction: "Our aim with this book... is to help the visitor to learn more about the natural environment of the Arctic islands and, at the same time, through the use of photographs taken largely by ourselves, to acquire a lasting visual impression of the region, even from a brief visit. We also hope that the reader will become better informed about current environmental issues, so that we all may be encouraged to adopt a more sustainable approach to human activity in the Arctic." While there is no doubt that the book fully satisfies its two first intentions, the information it provides on current environmental issues is too poor to indicate guidelines for human behaviour in the Arctic.

When using the book, the reader should always have in mind that its subject is not the entire Arctic but rather the islands of the Arctic (this is not always made clear throughout the text): the Canadian Arctic Archipelago, Greenland, Svalbard, Jan Mayen, and the Russian Arctic islands and archipelagos (Franz Josef Land, Novaya Zemlya, Severnaya Zemlya, the New Siberi-

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an Islands and Wrangel Island). The majority of these are mountainous, glaciated areas of High Arctic tundra vegetation, while most of the Arctic mainland is not glaciated and is less or not mountainous. Much of it has more marginal Arctic tundra and forest-tundra vegetation than the Arctic islands.

The book is marked by a geographical imbalance. Claiming to treat the Arctic islands as a whole, it gives a distinct priority to the western Arctic and Svalbard. Even weighed against the comparatively small size of the Russian Arctic islands, their treatment in the book is unduly subordinate. Wherever examples of research programmes are given, or where the history of the scientific discovery and exploration of the Arctic islands is addressed, there is an almost complete lack of references to the wealth of Russian Arctic research.

The chapter on geological evolution starts with a good introduction into general geological processes, but then focuses too much on plate tectonics and the two main mountain-building episodes. Very little is said about the much longer ages of sediment accumulation in the large epicontinental seas, about palaeoenvironmental development, and about many of the questions which people without a geological education tend to ask when they see the rocks in well-exposed fjord walls of the Arctic. The evolution of the Russian Arctic islands is completely omitted.

The subsequent chapter on weather, climate and atmospheric effects provides a much more balanced impression of what visitors can expect to meet during the various seasons.

When reading the chapters on glaciers and ice sheets, sea ice and icebergs, frost action, and coasts, rivers and lakes—together making up about 40% of the book—it becomes obvious that these are the topics with which the authors are most intimate. The book provides a good overview of the relevant features, with sound and intelligible scientific explanations. This is highlighted by photographs combining beautiful landscapes with illustrative examples of the features and processes which are discussed.

The chapter on animals and plants provides a rough introduction into the specific conditions and living environments of the Arctic islands, subdivided into the marine and the terrestrial realms. Important species, their habitats and ecology are addressed. Historical and modern unsustainable hunting pressure impacting some

of the species is mentioned, but perhaps more space should have been devoted to environmental threats such as the introduction of toxic substances into the food chain.

The chapter on indigenous peoples, exploration and environmental impacts does not really fulfil what is promised in the book's introduction. It is subdivided into nine short sections, most of them addressing a complex topic like indigenous peoples, scientific research, strategic importance and politics, and tourism and education. This is sufficient to make the reader aware of these issues, but does not even come close to a rough overview—except for the some of the purely historical sections. In some places, the authors' generalizations are somewhat misleading. A few examples follow.

(1) The section on indigenous peoples provides a short introduction into Inuit settlement and traditional lifeways. Modern social issues are confined to the mentioning of existing self-government areas, giving the impression that all is well with the Arctic's indigenous islanders. Neglected are the deep cultural ties indigenous peoples' have to their land and way of life, their struggle for cultural survival, health problems associated with lifestyle changes, and the important role their organizations have played lately in Canadian and Greenlandic society.

(2) Although the search for the North-east Passage (the Northern Sea Route) is briefly described, information about its significance for the Soviet Union and the current, political and environmental issues related to this route are lacking.

(3) The section on scientific research (again) completely overlooks Russia, giving the mistaken impression that Arctic research is only carried out by western countries.

(4) In the environmental impacts section, a few remarks on existing mines and increasing tourism indicate that there are environmental problems, but there is no real consideration of their character, effects and consequences and the related social and political issues.

"Postscript: the future of the Arctic islands" deals mainly with the observation and effects of global warming. The penultimate paragraph finally addresses the problems arising from the interactions of native and lower-latitude populations which were missing in the previous chapter. This introduces a final appeal to minimize environmental damage and to preserve the islands of the Arctic. This would have been bolstered by a

fuller discussion of environmental problems in the foregoing chapters.

Apart from such shortcomings, the book successfully conveys polar scientists' fascination with the natural environment of the islands of the Arctic and introduces the reader to many of the past and ongoing processes that shape them.

Review of Sea ice—an introduction to its physics, chemistry, biology and geology, edited by David N. Thomas & Gerhard S. Dieckmann (2003). Oxford: Blackwell Publishing. Xiv + 402 pp. ISBN 0-632-05808-0.

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To my knowledge, there is (as yet) no university course producing "sea ice scientists" in the way that there are university programmes for young oceanographers, glaciologists and so on. In the community of scientists working on sea ice, researchers come from different disciplines, such as geophysics, meteorology, oceanography, biology, chemistry, environmental science, physics, engineering, mechanics and mineralogy. This variety of disciplines illuminates how complex and diverse sea ice is as a research subject.

Despite the crucial role sea ice plays in climate and the environment, there are few books solely concerning sea ice. This new textbook is one of them. Moreover, whereas most sea ice books are limited either thematically or geographically (e.g. concentrate on either physics or biology of sea ice, or dealing only with sea ice in the Antarctic region), Thomas & Dieckmann's new volume addresses both the physics of sea ice and (to a slightly greater extent) sea ice biology, as well as some chemical and geological aspects.

The subtitle of the book indicates the editors' ambitious aim—to cover quite a lot of the disciplines related to sea ice within one book. Consequently, the individual book chapters are less

detailed than journal articles or specialized books dealing with specific sea ice related issues or problems. After a foreword and introductory chapter giving overviews of the importance of sea ice and the history of sea ice research, the book is composed of chapters on growth, microstructure and properties of sea ice, sea ice thickness distribution, large-scale characteristics and variability, primary production, microbiology, sea ice as a habitat for polar marine mammals and birds, biogeochemistry, particulate flux from sea ice and palaeo-distribution of sea ice. In addition to these chapters, the book contains a glossary, a detailed index and colour plates. The contributions are written by leading North American, European and Australian scientists in fields bearing on sea ice research. Several of the authors are affiliated with past or ongoing sea ice programmes at the Alfred Wegener Institute for Polar and Marine Research (Bremerhaven, Germany), which probably eased the integration of their individual contributions. This integration is visible in many helpful cross-references between chapters.

In general, the articles present important and up-to-date information—both basic and advanced—on the nature of sea ice, sea ice processes, changes in sea ice concentration, thickness and properties, mathematical descriptions of relevant processes, sea ice ecology and measurement techniques. The selection of figures and their technical quality is generally good. Extensive reference lists after each chapter ease the search for more detailed works relating to each topic. In this respect, the reference list for the palaeo sea ice distribution chapter (Chapter 11) stands out somewhat, being about twice as long as most other reference lists in the book. As manifested in the number of recent publications on the subject, the variability of sea ice thickness and its relation to climate change is one of the most discussed and worked-on topics in sea ice studies today. Accordingly, one chapter (Chapter 3) in the book is dedicated to this topic, including modern measurement and monitoring approaches such as electromagnetics, upward-looking sonar and existing and planned satellite missions.

The glossary, which defines key terms and concepts, and an index facilitate understanding and locating issues and cross-links between disciplines and articles. Some important terms missing in the glossary (e.g. nilas) can be found in the index. Regrettably, terms appearing in the captions to the plates and figures are not listed in the

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