

European Arctic – sea users guide

Jan Marcin Węśławski (ed.)

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The book is exactly what is stated in the book summary, *i.e.* a field guide for those professionals who are going to explore Arctic seas, particularly those close to Europe. Formally, the book is organized as commented vocabulary bringing a list of 50 terms to a reader. Apart of Jan Marcin Węśławski, there are 25 co-authors of the book who prepared individual professional items.

First part of the book brings a basic information on atmospheric physics. It starts with Northern light and Aurora borealis, then follows with atmospheric circulation over northern seas and ends with the description of sea aerosol formation, Arctic haze and pollution transport. In the following two chapters, the co-authors describe several items related to Northern ocean physics and chemistry. They pay their particular attention to a great variety of topics that range from general ones, such as *e.g.* thermohaline circulation and acidification of sea water, to specific topics related to recent science in Arctic regions such as *e.g.* global warming effects, contamination of sea water, and methane clathrate in the Arctic regions. Particular processes described in this part of the book are well documented by high-quality photographs, graphs and schemes. This is, a general feature of the book that it gives a reader a lot of very good pictures and graphs. A comprehensive information of geology and palaeoceanography is also given. Main emphasis is put on the processes forming ocean floor, analysis and dating of marine sediments, as well as analysis of ocean temperature that is reconstructed from stable isotops ^{16}O and ^{18}O contents in calcium carbonate shells of Foraminifera. A nice overview of primary production of Arctic sea is given in the next chapter. It deals both with the production of autotrophic microplankton species and consumers ranging from micro- to macrozooplankton. This chapter, as well as the chapters describing micro and macrofauna of Arctic sea are well-written and documented by numerous photographs of typical representatives. The book ends with several chapters devoted to big animal inhabiting Arctic seas, *i.e.* fishes, birds and sea mammals. Finally, a brief overview of future scenarios of global climate change in the Arctic is given with predicted consequences for local and regional economies as well as the impacts on society structure and function of indigenous people.

The book can be recommended to university students and early career scientists in the fields of polar ecology, polar climatology, marine sciences, and polar biology. A target group of readers is also general public with interest in polar regions and environmental challenges in the Arctic. Apart of hard issue of the book, there is an electronic file, freely available at the webpage: http://www.iopan.gda.pl/projects/European_Arctic (full content of the book).

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