

THE ARCTIC GOLD RUSH: THE NEW RACE FOR TOMORROW'S NATURAL RESOURCES. By ROGER HOWARD. London and New York: Continuum, 2009. ISBN 9781441181107. xii + 259 p., maps, notes, bib., index. Hardbound. US\$25.95, UK £16.99, Cdn\$27.95.

*The Arctic Gold Rush* begins with a detailed and dramatic description of the 2007 Russian flag-planting on the seabed at the North Pole—an episode easily visualized by anyone who has seen James Cameron's *Titanic*, since, as author Roger Howard explains, the Russian mission was carried out in the same submersibles used in the film (Mir 1 and Mir 2). The flag was placed on the ocean floor by veteran undersea explorer Anatoly Sagalevich, who also appeared in the movie. "It is tempting," Howard comments, "to view the Arctic as the likely setting of a ... brutal, bitter and bloody confrontation waged between rival international powers that are desperate to acquire the world's diminishing supply of natural resources. From this viewpoint the provocative [flag-planting] appears, if not quite an opening round, a premonition of the trouble that lies ahead." But, he explains, the central argument of his book is that such a scenario is "even less likely to happen in the Arctic than elsewhere" (p. 10).

The book is divided into three parts. The first, "The Setting," contains a concise and reasonably accurate overview of Arctic geography, climate, and history. Then several chapters provide details on "The Issues": sovereignty, oil, natural gas and other resources, sea lanes and shipping, and finally environmental concerns. Next, "The Contestants" devotes a chapter each to Russia, the United States, Canada, and other Arctic nations. Like the introduction, every chapter in the second and third sections opens with a scenario that might have come from a movie script. Invariably, Howard (who is a journalist by profession) begins by outlining, in vivid prose, the most dramatic possible future developments, making international conflict appear all but inevitable. Then he gives a more thoughtful and nuanced evaluation, showing that armed conflict is in fact highly unlikely. For example, in the chapter on oil (titled "Black Gold"), he recounts how recent studies using "the latest scientific methods and instruments" seem "to make a compelling case that the Arctic is set to become a new frontline for oil and natural gas exploration." The estimated extent of Arctic reserves has "fostered speculation that the regions will be the setting for future 'resource wars'" (p. 63). But, says Howard, the stark drama of the worst-case scenario is unlikely ever to be played out. Instead, we can expect a "much more complicated picture ... to emerge" (p. 70). Most oil reserves lie within established borders, and even where this is not the case, the governments involved have "amicable relations that are too strong to be undermined by disagreements over one particular issue." The long Arctic winter, high insurance premiums, the high cost of extraction and transport, and the possible development of alternative energy sources all limit the appeal of northern oil fields, no matter how extensive they may be (p. 71–80).

No doubt Howard has employed this "bait and switch" technique in order to broaden the popular appeal of his book, but surely most readers will soon weary of watching him set up straw men only to knock them down. Specialists will easily be able to spot factual errors, such as the statement that Martin Frobisher's crew went ashore "near Alaska" (p. 36). The structure of the book provides another problem: inevitably, there is considerable overlap between the issue-by-issue and nation-by-nation sections. For example, the particular attitude of each Arctic nation towards northern oil reserves is covered in Part 3; a reader with a special interest in the oil question would have to skip awkwardly between the "Black Gold" chapter and the Russian, American, and Canadian chapters.

Nevertheless, *The Arctic Gold Rush* is an excellent introduction to and survey of current national and international Arctic issues for general readers. Despite the sprinkling of relatively minor errors, the author has done some solid research, and he provides levelheaded and reasonable assessments. Howard's conclusion—that there should be cooperation among Arctic nations—is hardly surprising or new. Still, this book is far superior to most journalistic works on the Far North and its future.

Janice Cavell  
Historical Section  
Foreign Affairs and International Trade Canada  
125 Sussex Drive  
Ottawa, Ontario K1A 0G2, Canada  
[Janice.Cavell@international.gc.ca](mailto:Janice.Cavell@international.gc.ca)

WORLD OCEAN CENSUS: A GLOBAL SURVEY OF MARINE LIFE. By DARLENE TREW CRIST, GAIL SCOWCROFT and JAMES M. HARDING Jr., with a Foreword by SYLVIA A. EARLE. Richmond Hill Ontario: Firefly Books, 2009. ISBN 978-1-55407-434-1. 256 p., maps, b&w and colour illus., glossary, further reading, index. Hardbound. US\$40.00.

This beautiful book in coffee table format aims to reveal the story behind and initial outcomes of the Census of Marine Life, the effort of a global network of researchers who have been studying the diversity, distribution, and abundance of marine life for almost a decade. It promises to be a timely and compelling read for all concerned with life in the oceans.

For those with a natural curiosity about our ocean planet, this new book by an award-winning author and two experienced marine educators is indeed timely and well-written. Superbly designed, the book evokes the majesty and mystery of life in the oceans through the use of captivating photographs, novel graphics, and easy-to-read text. Thorough and consistently high editorial standards are readily apparent. The only publishing error observed was an inaccurate transposition from metric to imperial units in the caption of a photo on page 209.

The three main parts of the book reflect the three framing questions of the Census of Marine Life: (1) What lived in the oceans? (2) What lives in the oceans? and (3) What will live in the oceans? The two chapters in Part One emphasize the challenges of marine exploration and so set a superb foundation for describing why we know what we know, how we know that, and why more knowledge is needed. To date, the Census has engaged more than 2000 scientists and generated more than \$500 million in funding support—a massive undertaking without parallel in the history of marine science.

Chapter One (“The Known, the Unknown and the Unknowable”) is a very useful addition to basic marine science education and the perfect foundation for later sections of the book. It features a set of well-designed graphics that explain fundamental concepts, such as circulation in the world’s oceans, and outline the structure of ocean realms. Unfortunately, Chapter 2 (Painting a Picture of the Past”) is nowhere near as compelling. The picture it paints of the past is more of a thumbnail sketch than a true artist’s rendering. It is understandably hard to achieve in just 14 illustrated pages the accomplishment of other texts, such as Callum Roberts’ (2007) superb look in the rearview mirror. However, the erratic selection of case studies, the lack of adequate sociological and economic perspectives, and the somewhat uncritical commentary in this chapter undermine its utility.

Part Two is the meat and potatoes of the book. These six chapters summarize the state of knowledge about life in the oceans, using a diversity of case studies and thematic perspectives. Chapters 3, 4, and 5 (“Expanding the Use of Technology,” “Animals as Ocean Observers,” and “Disappearing Ice Oceans”) provide great insights into new technologies such as video plankton recorders (VPR) and the use of animals as environmental monitors. These discussions enrich our understanding of the dynamic nature of ocean species and key ecological phenomena in ways that past books of this type failed to achieve.

However, some of the cases presented were just too short or inadequately researched to be useful even to lay readers. Of particular concern is the 2005 Census case study on tracking the migration of the sooty shearwater (*Puffinus griseus*); the authors contend (p. 115) that the study reports the “longest-ever recorded animal migration.” While impressive, the 62400 km recorded round trip of this species is actually shorter than the long-known migration of the arctic tern (*Sterna paradisaea*), which covers 70900 km.

Chapter 5 focuses on disappearing ice and concludes with a neat comparison of the polar opposites. For readers of *Arctic*, this will likely be one of the least satisfying parts of the book as it contains only a very narrow sample of global cold water marine research currently underway and is organized in a somewhat disjointed fashion. As in some earlier chapters, one is not quite sure what the intent of this chapter is, other than to highlight in a broad sense that polar waters are important, poorly known, and changing.

Chapters 6 through 8 (“Unexpected Diversity at the Edges of the Sea,” “Unexplored Ecosystems: Vents, Seeps, Seamounts and Abyssal Plains,” and “Unraveling the Mystery of New Life-Forms”) provide the most new knowledge from the Census. The authors clearly delight in explaining how the Census has yielded new discoveries in these areas, as well as new insights into old knowledge. The chapters are enriched by stories from field scientists about discoveries such as a species of shrimp (genus *Laurentaeglyphea*) believed extinct in the Eocene and a new species of bioluminescent siphonophore.

Part Three of the book poses the question, “What will live in the ocean?” It comprises two rather scant chapters. Chapter 9 (“Forecasting the Future”) is a mix of stories about the animals most at risk and the threats to ocean diversity posed by fisheries. Chapter 10 (“The Path Forward”), a relatively short essay, reiterates those threats and seeks to make the case as to how the Census will make a difference to our understanding, and presumably ultimately the management, of the oceans.

Unfortunately, these last two chapters are a disappointing end to this otherwise commendable book. They fail the “so what” test. At the end of all the good lead-up work done in Parts One and Two, one would have expected the final section of the book to lay out the significance of the Census work more cogently. One might even have expected the authors to provide a vision for how work undertaken by the Census could be carried forward in both research and management applications. Instead, they missed an opportunity to reinforce the importance of the Census to the management decisions we will need to make in future.

And so would I recommend this work? My answer is conditional. The intended audience for this book was never really made clear. Presumably folks involved in the Census project are a core target. The authors imply that by extension, the wider marine community should therefore be interested in the work. However, given the dated nature of much of the information presented (most results are preliminary and current through 2007 only) and the somewhat narrow sample of the breadth of Census work, it is unlikely that specialized marine scientists would acquire this book. And for the reasons outlined above, the book is equally unlikely to be of much value to decision makers.

A book like this one does have great potential relevance to student scientists and would traditionally have secured a place in school and college libraries, but given the prevalence of more accessible e-media and the limits of library budgets, this book now occupies an uncomfortable literary niche: it is a useful interim record rather than an enduring vital reference. Perhaps the work could have been made more relevant to the marine scientist/education community and even to decision makers if it had included more references to online documentation of the Census project (<http://www.coml.org/>). Better still, an e-media companion CD or web link, using multimedia formats such as those employed by Wolanski (2000) and others, would have enabled readers to view interviews with researchers, learn more about

their field data-collection activities, or perhaps even access social media links (Facebook or similar) that follow up on the work of the Census.

Those reservations reflect a growing concern about the efficacy of traditional published media more than a criticism of this particular book. This book has taken a great first step in making the initial outcomes of the Census of Marine Life more accessible. But so much more can and should be done with Census results if we are ultimately to make the case for expanding marine science investments and improving scientific input for decision making about the future use of our oceans.

#### REFERENCE

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*Ian M. Dutton  
President & CEO  
Alaska SeaLife Center  
301 Railway Avenue  
Seward, Alaska 99664, USA  
ian\_dutton@alaskasealife.org*

**PIKE'S PORTAGE: STORIES OF A DISTINGUISHED PLACE.** Edited by MORTEN ASFELDT and BOB HENDERSON. Toronto: Natural Heritage Books, Dundurn Press, 2010. ISBN 978-1-55488-460-5. 325 p., maps, b&w and colour illus., selected bib., index. Softbound. Cdn\$29.99; £17.99.

Before the establishment of commercial bush plane services in Canada's North in the 1930s, the East Arm of Great Slave Lake was arguably the primary gateway to the Barren Lands, that huge triangle of mainland Arctic tundra west of Hudson Bay. Access to the tundra plateau above the forested East Arm lay along a handful of ancient aboriginal portage routes that more or less followed the courses of the rivers that drop steeply into Great Slave Lake. The easiest and most travelled of these was Pike's Portage—actually a series of portages linking a chain of small lakes—avoiding the canyons and waterfalls of the nearly impassable lower Lockhart River. From Artillery Lake at the opposite end of Pike's Portage, there is easy access via upstream travel on the Lockhart to three of the five major barrenland rivers draining into Hudson Bay and the Arctic Ocean—the Thelon, Back, and Coppermine.

Pike's Portage and the other nearby portage trails that serve as entry points to the Barren Lands were used for centuries, and probably for millennia, by nomadic aboriginal peoples following the annual migrations of the life-

sustaining caribou herds. Beginning in the 19th century, explorers, sportsmen, adventurers, surveyors, and trappers followed in the footsteps of their aboriginal predecessors, most of them accompanied by Dene and Metis guides. Today, Pike's Portage bears the footprints of small family groups from the nearby Dene community of Lutsel K'e who make spring pilgrimages to the "Old Lady of the Falls" on the Lockhart River. In summer, the only evidence of travel is likely to be left by the most intrepid of canoeists en route to the tundra interior. But in late winter and early spring, this trail is packed hard by snowmobiles carrying Dene hunters from Lutsel K'e in search of caribou and muskoxen.

Soon Pike's Portage will lie inside a large new national park, Thaidene Nene, "Land of the Ancestors," that is now being championed by the people of Lutsel K'e. However, as I write this review in the late winter of 2010, there is a good possibility that a hydro transmission line will soon be built through the heart of the park to the new diamond mines in the Barrens to the north. This transmission line would cut across the eastern tip of Great Slave Lake at Reliance or across Pike's Portage and the lower Lockhart River—all sacred places for the Lutsel K'e Dene.

*Pike's Portage: Stories of a Distinguished Place* tells what we know of the aboriginal history of this key travel corridor and acts as a showcase for the more recent stories of those who followed these legendary trails leading from Great Slave Lake into the great unknown. As co-editor Morten Asfeldt tells us in the Introduction, this region "has a rich and diverse history that is partially captured in the published narratives, but nowhere were they gathered together providing a focused and comprehensive sense of its storied past. In fact, some stories weren't published at all" (p. 26). The objective of this book was to bring these stories together under one cover.

The book is not meant to be an exhaustive collection of stories about historically important figures who have lived in and travelled through this area. The editors have selected an eclectic representation that includes British Navy explorer George Back from the 1830s; Canadian surveyor-explorers J.W. Tyrrell and Guy Blanchet; eccentric John Hornby, who starved to death on the Thelon River; muskox-seeking sport hunters Warburton Pike and Buffalo Jones; the Metis guides of the ubiquitous Beaulieu clan; famous author Ernest Thompson Seton; James Anderson and James Green Stewart, who canoed the Back River in 1855; early 20th century trappers Gus D'Aoust and Helge Ingstad; Dene hunter and trapper Noel Drybones; modern-day homesteaders Dave and Kristen Olesen; and Roger Catling, the last wolf hunter. There are also chapters on the recent archaeological discoveries in the area and on present-day life in and around Lutsel K'e.

Fifteen authors contributed their efforts to this book, including both editors, several academics, and well-known writers of popular books on northern history such as David Pelly, Gwyneth Hoyle, and James Raffan. I particularly enjoyed the delightful chapter by John McInnes, recreational canoeist, who has travelled and unravelled the lesser-