Winged Sentinels: Birds and Climate Change
Winged Sentinels: Birds and Climate Change by Janice Wormworth; Çağan Şekercioğlu
Review by: Tony Gaston
The Auk, Vol. 130, No. 1 (January 2013), pp. 196-197
Published by: University of California Press on behalf of the American Ornithologists' Union
Stable URL: http://www.jstor.org/stable/10.1525/auk.2013.130.1.196

Book Reviews

EDITED BY R. TODD ENGSTROM

The following critiques express the opinions of the individual evaluators regarding the strengths, weaknesses, and value of the books they review. As such, the appraisals are subjective assessments and do not necessarily reflect the opinions of the editors or any official policy of the American Ornithologists' Union.

The Auk 130(1):196–197, 2013

Winged Sentinels: Birds and Climate Change.—Janice Wormworth and Çağan Şekercioğlu. 2011. Cambridge University Press, Port Melbourne, Australia. ix + 262 pp., 24 color plates. ISBN 9780521126823. Softcover, $42.00.—I must begin with a disclaimer: the first thing I did on opening this book was to check whether my own work was cited. When I found, not only that my work was featured, but that it was accurately reported, I became very well disposed towards it.

The book sets out to cover the effects of climate change on birds, and the authors admit to placing more emphasis on the negative consequences than on any benefits. Both the title and the masthead quotation, from the mid-20th-century conservationist Mary Stoneham Douglas, suggest that what happens to the birds can be used as an early warning to alert us to our own peril. However, there is little in the book concerning this idea. The bulk of the text describes examples of birds affected in one way or another by climate change, and the last chapter reviews some of the broader consequences for conservation of a warming planet: there is little attempt to draw conclusions for us from what is happening to the birds.

The chapters deal, variously, with phenology, migration, seabirds and ocean change, changes in range, changes in populations and tropical regions, and climate islands. The text is dense with examples and exceptional in its geographic scope, with the action switching rapidly from Pied Flycatchers in Europe to manakins in Costa Rica to sub-Antarctic penguins. A very large proportion of the avian studies that have claimed to detect change in bird distributions, populations, migrations, and phenology in relation to climate change, at least in the major ecology journals, get a mention somewhere. This is certainly a strength, but also a slight weakness, in that the story is made to look more complex than was perhaps necessary. Where individual studies are described, the accounts generally seem accurate. However, I found myself questioning some of the broader generalizations (e.g., "Like other warm-blooded animals they [birds] are predisposed to live in a particular thermal environment"—tell that to the raven and the peregrine), and although I am quite sure the authors understand evolution by natural selection perfectly well, some of the text concerning climate adaptation sounds a little off key.

There is an introductory chapter, but it does not set out any clear framework for what we can expect in the way of climate change and what will happen to the biosphere in general, although changes in specific ecosystems and ecozones are referred to throughout the text. It seems the authors decided that enough has already been written about climate change at the planetary level and about the results of the IPCC process, and they may well be right about that.

The book is decorated with three sets of eight pages of color plates illustrating some of the species mentioned in the text. Many were taken by the second author, and they provide good evidence that he must have accumulated a heap of frequent-flier points. For the most part they do not relate to climate change (no shots of heat-stressed birds or dried-out potholes) and, hence, seem to be added simply for eye candy. However, the picture of a rockhopper penguin in the act of rock-hopping is priceless, and I believe this is the first time in a Western text where I have seen a picture of conservation in action in Turkey.

For me, the strangest feature of the book is the lack of text figures. Usually, diagrams and attractive line drawings are a feature of popular science books, enabling complex concepts to be readily visualized (e.g., the wave vs. photon theories of light). In this case, there are only three diagrams, all reproduced as plates. The chapters on migration and on range changes cry out for maps, but there are none in the book and I think a reader who had stayed in North America all their life might find this a real problem. References are numbered by chapters and gathered as endnotes: 337 in total. I found myself wanting more than are given, which is some measure of the broad scope of topics covered.

Published in Australia and printed in China, the book's design and production are somewhat pedestrian, but the font size should satisfy those with poor eyesight. The title and tone of the book, as well as the fact that the first author is a science journalist, suggest that it is intended as popular science, appealing to non-scientists. However, there are plenty of technical terms used, not all defined (e.g., endogenous rhythms, niche, North Atlantic Oscillation, density dependence—although phenology gets a detailed definition, as well as an etymology), which contrasts with the liberal use of "climate finger-print" (I would have preferred "sign") and "yardstick" applied to timing of egg laying as a measure of phenology.

For most researchers in the field, the book is probably too general and too skimpily referenced to be of great value and

The Auk, Vol. 130, Number 1, pages 196–200. ISSN 0004-8038, electronic ISSN 1938-4254. DOI: 10.1525/auk.2013.130.1.196

Møller et al.'s *Effects of Climate Change on Birds* (Oxford University Press, 2010) would be a better choice. The topic should appeal to many birders and naturalists, although more thought about presentation, especially the provision of text figures, would have made it more attractive. On the other hand, I know of no other popular treatise on this topic, and it certainly provides a very wide-ranging entry into the burgeoning literature on birds and climate change. It would be a good book for an undergraduate course on either birds or climate change. Mark: A–. Strength: lots of ground covered. Weakness: insufficient integration.—Tony Gaston, *Environment Canada, National Wildlife Research Centre, Carleton University, Ottawa, Ontario K1A 0H3, Canada. E-mail: tony.gaston@ec.gc.ca.*

The Auk 130(1):197–198, 2013

The Puffin.—Mike P. Harris and Sarah Wanless. 2011. T & AD Poyser, London, U.K. 256 pp., 44 color plates, 78 text figures. ISBN (print) 9781408108673; (e-pub) 9781408160565; (e-pdf) 9781408160558. Cloth, $79.—The puffin referred to in this book's title is the Atlantic Puffin (*Fratercula arctica*), the subject of over 35 years' research by the book's senior author, concentrated on the Isle of May in southeast Scotland. This long-awaited update of the classic 1984 volume—by the senior author and the same publisher—lives up fully to expectations based on both authors' reputations as among the finest seabird researchers of the past 50 years (and we hope many more). There are 14 appendices, 16 pages of references, and a 7-page index. The attractive cover painting, and numerous sketches throughout, are by Keith Brockie and add much to the pleasure provided by this book. While on the topic of aesthetic values, the publisher is to be congratulated on the number of high-quality color plates, which are needed to do justice to this bird and were sadly absent from the 1984 original.

This is a beautiful and fascinating book, written in an engaging and accessible style but with sufficient sources, tables, and graphs to satisfy the appetite of the most data-hungry ornithologist. The authors' work on puffins, and indeed seabirds in general, continues to influence the approach of many an ornithologist on both sides of the Atlantic. In the interest of full disclosure, I am happy to confess that Mike Harris was my first boss and mentor; he taught me both a work ethic and a rigorous approach to seabird research that have stood me in good stead for nearly 50 years.

There are 15 chapters, as in the original version, but with slightly different coverage. Each chapter has been updated thoroughly, with references extending into the year of publication. There are only 32 pages more than the earlier book, but the font is slightly smaller and the page margins narrower, so there is more extra content than the page count alone might suggest.

Chapter 1, "Puffins and auks," sets the focal species in its taxonomic and geographic context and includes discussion of the various subspecies that have been allocated (other puffins are also discussed briefly). Figure 1.3 shows nicely the increase in wing length across latitudes and shows clearly how the North American birds are ~20 mm longer-winged than birds at the same latitude in Europe. The authors attribute this, probably correctly, to latitude being a proxy for temperature; it might make a nice student exercise to confirm this. Size variation is clearly clinal, and the authors accordingly reject all proposed subspecies, except the clearly distinct *naumanni* of northern Europe (dramatically illustrated in plate 9); as they point out, DNA studies would help resolve this, and it is surprising that they have not been done.

Chapter 2, "Studies of puffins," briefly summarizes these, with North American studies earning only half a page (of four and a half); we have a lot of catching up to do! Chapter 3, "Appearance, development and moult" (British spelling throughout; the book is not yet available in a North American edition, so you will have to put up with weird spelling), covers the ground thoroughly and includes delightful drawings of the major plumages (also well illustrated in plates 11–16) and details of the arrangement of the proximal horny bill-plates, which are shed seasonally. My favorite line from the original book—"puffins do not so much land as stop flying" (and crash) has been reworded, somewhat more kindly but perhaps less graphically! This chapter also includes an interesting table (3.3) that summarizes studies of the relative roles of the sexes in rearing young, divided into 10 categories; males took the greater share in 9 studies, females in 12, and shares were equal in 11. The uncertainty about timing of wing molt in this species is clearly described—a cautionary tale for those of us using stable isotopes in feathers to infer diet at different times of year.

Distribution and status are covered in chapters 4 (Britain, Ireland, and France) and 5 (northern Europe, Greenland, and North America). These chapters are thorough and comprehensive, covering the entire range with the help of collaborators throughout the range and ending with an estimated total of 6–7 million pairs, over half in Iceland and a quarter in Norway, slightly more than the 5 million in the 1984 book.

Chapter 6, "Colony attendance and incubation," is full of interesting detail and includes mention of egg-replacement rates. In Chapter 7, "Chick rearing and breeding success," the "chick desertion myth" (started by Ronald Lockley and widely accepted since) is firmly refuted; the chick leaves the parents (strictly, the burrow), not the other way round. Forty-year trends in breeding success at five British colonies, illustrated graphically in figure 7.6, show worryingly steep declines in three colonies (including the Isle of May) but not the others.

Many readers will be particularly interested in "Puffin behaviour" (chapter 8, by Kenny Taylor) and may be struck, as I was, by the continuing dearth of peer-reviewed scientific papers on the topic. Excellent as this account is, it is based on the author's extensive personal experience (embodied elsewhere in two theses and two books) rather than the extensive scientific literature that supports topics covered in the other chapters, and adds little to the contents of the earlier book. This represents an obvious and surprising lacuna in the otherwise comprehensive scientific literature on the biology of this species. One of the few changes here from 1984, which I am glad to see, is that the "head flick" is no longer distinguished from the "head jerk" and is no more; some of us have wasted much time trying to distinguish between them! The main