A STUNNINGLY ILLUSTRATED ATLAS OF THE WORLD'S RIVERS, ESTUARIES, AND DELTAS, AND THEIR ECOSYSTEMS

From the Congo and the Mekong to the Seine and the Mississippi, Earth's rivers carve through landscapes before coursing into the world's oceans through estuaries and deltas. Their inexorable flow carries sediment and more, acting as lifeblood for a variety of ecosystems and communities. More than any other surface feature of Earth, rivers, estuaries, and deltas are vitally important to our economic and social well-being, and our management of them often sits at the sharp edge of today's most pressing environmental challenges. *The World Atlas of Rivers, Estuaries, and Deltas* takes readers on an unforgettable tour of these dynamic bodies of water, explaining how they function at each stage of their flow. Combining maps and graphics with informative essays and beautiful photos, this invaluable reference book will give you a new appreciation for the power that rivers, estuaries, and deltas wield.

- Features a wealth of color photos, maps, and infographics
- Brings together invaluable perspectives from leading experts
- Describes the rich biodiversity associated with the world's rivers, estuaries, and deltas
- Explains how rivers, estuaries, and deltas work, from river networks to deltaic floodplains, and sheds light on the erosion, movement, and deposition of sediment
- Describes the anatomy of rivers, estuaries, and deltas, from channel geometry and river planforms to estuarine shape and delta morphology
- Examines the ecology and ecosystems of rivers, estuaries, and deltas and how humans interact with these environments
- Additional topics include damming, climate change, water use, pollution, resource management, and planetary health, as well as future perspectives on these vital landscapes

JIM BEST is the Threet Professor of Sedimentary Geology and Professor of Physical Geography at the University of Illinois, Urbana-Champaign. He researches the fluid and sediment dynamics of modern Earth surface environments and the interpretation of such sediments in the geological record. STEPHEN DARBY is Professor of Physical Geography at the University of Southampton. He researches processes of flooding, erosion, and deposition and their implications for river management, especially in the world's largest river systems. LUCIANA ESTEVES is Associate Professor of Physical Geography at Bournemouth University. She researches changes in coastal areas driven by natural and human-induced processes and coastal management options to reduce erosion and flooding risks. CAROL WILSON is Associate Professor of Deltaic Wetland Sedimentology and Geomorphology at Louisiana State University. Her research centers on quantifying the eco-physical processes that shape deltas and coastal wetlands.

Cover image: © Tom Wagenbrenne Cover design: Wanda España



ISBN: 978-0-691-24483-9 90000 1780691 244839

Printed in Malays

Contents

_				
	ntr	-	-4	-
			-	

9 ESTUARIES AND US

10 HOW DO DELTAS WORK?

1	THE WORLD OF RIVERS, ESTUARIES, AND DELTAS	16
2	HOW DO RIVERS WORK?	48
3	THE ANATOMY OF RIVERS	80
4	RIVER ECOLOGY AND BIODIVERSITY	104
5	RIVERS AND US	128
6	HOW DO ESTUARIES WORK?	160
7	THE ANATOMY OF ESTUARIES	180
8	ESTUARINE ECOLOGY AND BIODIVERSITY	202

220

244



THE ANATOMY OF DELTAS	268
DELTA ECOLOGY AND BIODIVERSITY	286
DELTAS AND US	316
FUTURE RIVERS, ESTUARIES, AND DELTAS	340
Glossary	386
Glossary Resources	386
Resources	388
Resources Notes on contributors	388

