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0521844789 - The Hudson River Estuary
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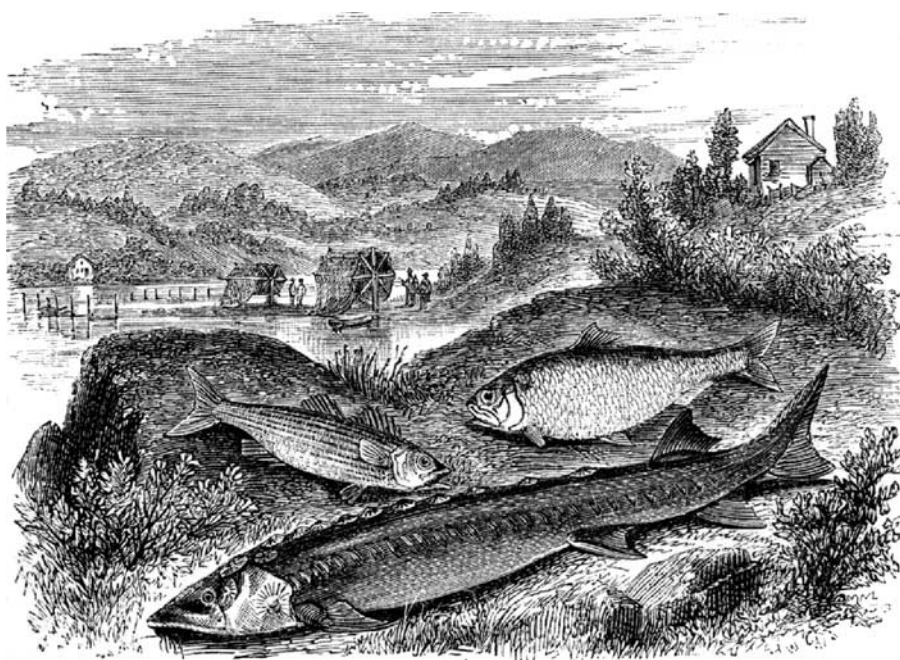
THE HUDSON RIVER ESTUARY

The Hudson River Estuary is a comprehensive look at the physical, chemical, biological, and environmental management issues that are important to our understanding of the Hudson River. Chapters cover the entire range of fields necessary to understanding the workings of the Hudson River estuary; the physics, bedrock geological setting and sedimentological processes of the estuary; ecosystem-level processes and biological interactions; and environmental issues such as fisheries, toxic substances, and the effect of nutrient input from densely populated areas. This book places special emphasis on important issues specific to the Hudson, such as the effect of power plants and high concentrations of PCBs. The chapters are written by specialists at a level that is accessible to students, teachers, and the interested layperson. The Hudson River Estuary is a unique scientific biography of a major estuary, with relevance to the study of any similar natural system in the world.

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*River, take me along,
In your sunshine, sing me a song
Ever moving and winding and free;
You rolling old river, you changing old river
Let's you and me, river, go down to the sea.*

Bill Staines

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CAMBRIDGE UNIVERSITY PRESS
Cambridge, New York, Melbourne, Madrid, Cape Town, Singapore, São Paulo

Cambridge University Press
40 West 20th Street, New York, NY 10011-4211, USA

www.cambridge.org
Information on this title: www.cambridge.org/9780521844789

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First published 2006

Printed in the United States of America

A catalog record for this publication is available from the British Library.

Library of Congress Cataloging in Publication Data

The Hudson River Estuary / edited by Jeffrey S. Levinton, John R. Waldman.
p. cm.

Includes bibliographical references.

ISBN 0-521-84478-9 (hardback)

1. Estuarine ecology – Hudson River Estuary (N.Y. and N.J.) 2. Estuarine pollution – Environmental aspects – Hudson River Estuary (N.Y. and N.J.) I. Levinton, Jeffrey S. II. Waldman, John R. III. Title.

QH104.5.H83H83 2005

577.7'86'097473 – dc22 2005011730

ISBN-13 978-0-521-84478-9 hardback

ISBN-10 0-521-84478-9 hardback

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Preface

The glorious Hudson! No river in the United States has been more loved, nurtured, ridiculed and defended, and more often written off for dead. The Hudson is replete with legends and lacks only one about a raft with Tom Sawyer and Huck Finn; but its own may be more fantastic. To native Americans it was the wondrous *Muhheakunnuk*, “great waters constantly in motion” or “the river that flows both ways.” To the Dutch settlers of the valley it was a fertile wonderland, with many legends emerging from their lives and travels in the Hudson Valley and surrounding forests, fields, and mountains. Beneath the noisy bowlers that, according to legend, caused the thunderclaps atop Storm King Mountain, lay the sirenic fairies luring ships to the rocky shores of the Hudson Highlands, sending them to the deep watery grave of World’s End. It is a river that held the key to the geographic unification of the nascent American revolutionary colonies and also the place where great environmental controversies led to a modern-day *sturm und drang*, giving birth to an era of environmental activism. If this is too burdensome a legacy to bear, the Hudson also gives us its lightness of being: A fall day in a kayak or a ferry ride, or a refreshing swim, or even a big fish to catch. The Hudson valley has produced the greatest school of landscape painting in America and a host of novels with a strong sense of place, from those of Washington Irving to T. C. Boyle.

Many of us have desperately wanted a book that could address a crucial and more concrete need. The many scientific faces of Hudson River research have never been gathered effectively in a single place. Some excellent volumes have captured the natural history of the Hudson and we especially have Robert Boyle to thank for his dedication to the Hudson in his 1969 volume “The Hudson River, A Natural and Unnatural History.” Equally important is the more scientifically inclined treatment of Hudson River research compiled by Karin Limburg and others in 1986. This book set a high standard, but lacks many recent important findings.

With this background we sought to provide a comprehensive volume that covers a wide spectrum of topics, ranging from the physics of water movement, to the biology, to the current environmental problems created by human impacts on the Hudson. In 1998 I approached the Hudson River Foundation with such an idea, which was met with considerable enthusiasm and led to the pleasure of contacting a group of broad-thinking and highly competent colleagues who engaged the project with similar zeal. I later asked John Waldman to join me in editing this large and diverse array of contributions. Of the senior authors of the thirty chapters in this book, I can honestly say that virtually no one who was invited turned me down. All recognized the need for this book, but perhaps some had different schedules than others for completion. Hence, the invitations in 1999 were finally answered with the last typescripts in 2003. All but one were created de novo to fit the volume. The only exception is a very important paper (Baker et al., Chapter 24) describing the science behind the Polychlorinated Biphenyl (PCB) issue in the Hudson, which is reprinted here with slight modifications.

This book could not have been produced without the generous support of the Hudson River Foundation, which provided some support for me to design the scope of the volume and to contact prospective authors. I am especially grateful to the authors who so generously contributed their time and energy to producing the chapters that comprise the book. Clay Hiles and Dennis Suszkowski provided advice and support and provided crucial contacts and suggestions of chapter authors. We thank Susan

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PREFACE

Detwiler and Peggy Rote for their preparation of the volume. Finally, we are very grateful to Kirk Jensen, formerly of Cambridge University Press, for his suggestions, support and encouragement and to Peter Gordon of Cambridge Press who completed the project.

I would especially like to thank John Waldman for joining me as an editor of this volume and we both are grateful to the patience and support of our families during the long time during which this book reached completion. I learned more and more every day I walked the shore with Cady.

Jeffrey Levinton
Stony Brook, New York
June 20, 2005

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