# Dictionary of Environmental Science and Technology

Fourth Edition

ANDREW PORTEOUS



## Dictionary of Environmental Science and Technology

Fourth Edition

By the rubbish in our wake, and the noble noise we make, Be sure, be sure, we're going to do some splendid things!

Rudyard Kipling, 'The Road Song of the Bandar-Log'

# Dictionary of Environmental Science and Technology

### Fourth Edition

#### ANDREW PORTEOUS

Emeritus Professor of Environmental Engineering, the Open University, UK



Fourth edition published 2008 by John Wiley & Sons Ltd, Baffins Lane, Chichester, West Sussex PO19 1UD, England National (+44) 1243 779777 International (+44) 1243 779777

Third edition published 2000 Second edition published 1996 Revised edition published 1992 First edition published 1991 by Open University Press

Copyright © Andrew Porteous 1991, 1992, 1996, 2000, 2008

All rights reserved.

No part of this book may be reproduced by any means, or transmitted, or translated into a machine language without the written permission of the publisher.

#### Other Wiley Editorial Offices

John Wiley & Sons Inc., 111 River Street, Hoboken, NJ 07030, USA

Jossey-Bass, 989 Market Street, San Francisco, CA 94103-1741, USA

Wiley-VCH Verlag GmbH, Boschstr. 12, D-69469 Weinheim, Germany

John Wiley & Sons Australia Ltd, 42 McDougall Street, Milton, Queensland 4064, Australia

John Wiley & Sons (Asia) Pte Ltd, 2 Clementi Loop #02-01, Jin Xing Distripark, Singapore 129809

John Wiley & Sons Canada Ltd, 6045 Freemont Blvd. Mississauga, Ontario, L5R 4J3 Canada

Wiley also publishes its books in a variety of electronic formats. Some content that appears in print may not be available in electronic books.

#### Library of Congress Cataloging-in-Publication Data

#### British Library Cataloguing in Publication Data

A catalogue record for this book is available from the British Library

ISBN 978-0-470-06194-7 (cloth) 978-0-470-06195-4 (paper)

Typeset in 10/12pt Times by SNP Best-set Typesetter Ltd., Hong Kong Printed and bound in Great Britain by TJ International Ltd., Padstow, Cornwall

### To Margaret, for forty-five years of support, care and love. And to Neil for the future

## Contents

Preface to Fourth Edition		ix
Preface to Third Edition		xi
Preface to Second Edition		xiii
Preface		XV
Introduction		xvii
Acknowledgements		xix
Abbreviations		xxiii
The Dictionary		1
Appendix I	Pollution and the environment-organizations	779
Appendix II	The Periodic Table	791
	Table of Chemical Elements	792
Appendix III	Table of prefixes for SI units	795
Appendix IV	Conversion table for SI and British units	796