Principles of HYDROLOGY

Ward

McGraw-Hill European Geography and Geology Series

Principles of Hydrology

R. C. Ward
Lecturer in Geography
University of Hull

McGRAW-HILL Publishing Company Limited
LONDON · New York · Toronto · Sydney

Published by
McGRAW-HILL Publishing Company Limited
Maidenhead · Berkshire · England

94047

Copyright © 1967 McGraw-Hill Publishing Company Limited.
All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means electronic, mechanical, photocopying, recording or otherwise, without the prior permission of McGraw-Hill Publishing Company Limited.

PRINTED AND BOUND IN GREAT BRITAIN

Contents

试读结束，需要全本PDF请购买 www.ertongbook.com

Principles of Hydrology

Principles of Hydrology

R. C. Ward
Lecturer in Geography
University of Hull

McGRAW-HILL Publishing Company Limited
LONDON · New York · Toronto · Sydney

试读结束，需要全本PDF请购买 www.ertongbook.com

Published by
McGRAW-HILL Publishing Company Limited
Maidenhead · Berkshire · England
94047

Copyright © 1967 McGraw-Hill Publishing Company Limited.
All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means electronic, mechanical, photocopying, recording or otherwise, without the prior permission of McGraw-Hill Publishing Company Limited.

PRINTED AND BOUND IN GREAT BRITAIN

To
Charles and Hilda
and to
Kay

Preface

This book presents a non-mathematical treatment of 'pure' as opposed to 'applied' hydrology. It is intended to fill a long-felt need at university level, among geographers in particular and earth scientists in general, for a straightforward, systematic analysis of the distribution and movement of water in the physical environment. It is, therefore, the first British textbook covering the general field of hydrology that is not aimed exclusively at the engineer. Nevertheless, it will probably be found useful as an elementary text for students in engineering faculties in which hydrology forms a compulsory part of the course, and for technical staffs in water boards and river authorities. In addition, the book is written in a way that should make it quite acceptable to the intelligent layman seeking background information on the pressing problems of water supply, and on the factors underlying the initiation in 1965 of the International Hydrological Decade.

Inevitably, its general scope and framework are similar to that of existing engineering texts. The essential differences lie in the selection, emphasis, and treatment of material and, particularly, in the inclusion of numerous examples from the British Isles. A conscious effort has been made to reduce engineering and other 'applied' aspects to a minimum, although in many cases natural events have been so modified by man's activities that references to the latter are unavoidable. On the other hand, since many of the problems of hydrology are geographical problems of spatial distribution and of climatic and regional differences, the application of geographical methods and techniques should contribute positively to their solution.

The arrangement of the text follows the conventional, although logical, systematic approach, whereby the concept of the continuous natural movement of water in the hydrological cycle is very briefly introduced in chapter 1, and, in the remaining seven chapters, the main phases of the cycle, i.e., precipitation, interception, evaporation, evapotranspiration, soil moisture, groundwater and runoff, are

examined in detail. There was a temptation to write a ninth, concluding chapter but it was felt that the discussion of runoff in chapter 8 provides a natural conclusion, emphasizing, as it does, the effects and interactions of many of the components of the hydrological cycle that have been previously discussed. In view of this arrangement, I have necessarily drawn quite heavily in places on the existing standard hydrological texts, and I hope that this debt is adequately acknowledged in the bibliographies. These have been placed at the end of each chapter, despite the fact that this has resulted in some obvious repetitions, in order to avoid a large and cumbersome bibliography at the end of the book. It will be noted that reference has been made to a large number of articles and other publications throughout this book in the hope that the interested reader will be encouraged to extend his study of particular topics. For this reason, the articles referred to are not necessarily always the normally accepted 'classics'. They have been selected largely because they represent a modern statement of ideas and facts; or they themselves contain an extensive bibliography that will lead the reader back through the development of thought on a given topic; or the journals in which they appear are comparatively easily accessible in this country.

I am sincerely grateful to all who have helped in the preparation of this book. Particular thanks are due to the numerous individuals and publishers for permission to copy or adapt a large number of the many diagrams; individual acknowledgements are made in each case. I would also like to thank Professor H. R. Wilkinson, of the Department of Geography at Hull University, and other colleagues for reading parts of the manuscript, although they are in no way responsible for the deficiencies that still remain; Mr R. R. Dean and the staff of the Geography Department drawing office for the preparation of all the diagrams; Miss J. M. Bailey and Miss P. A. Ashcroft, who bore the brunt of the typing; finally, my wife, Kay Ward, for her commendable assistance during many hours of proofreading and checking.

R. C. WARD

Contents

试读结束，需要全本PDF请购买 www.ertongbook.com