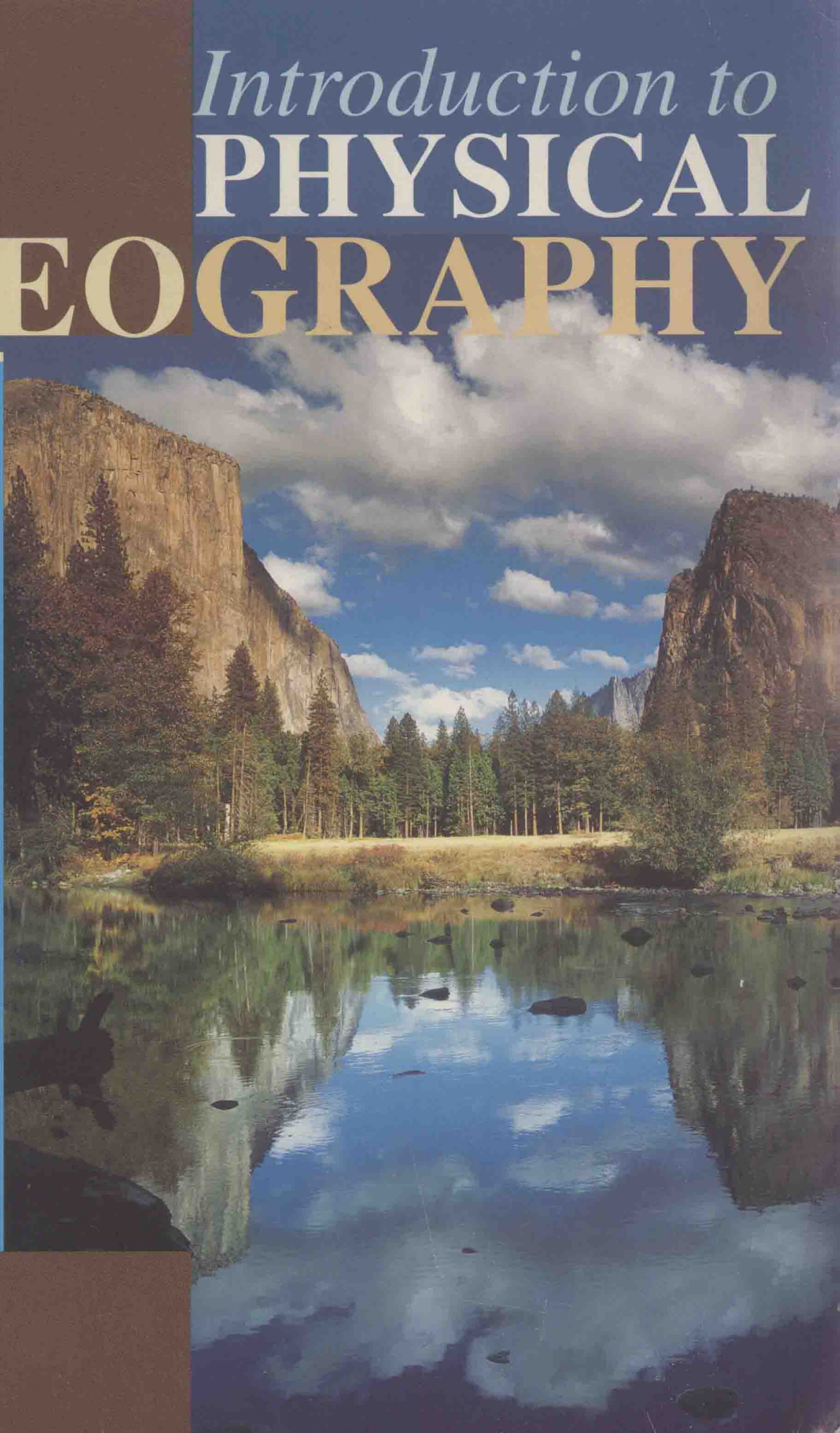


Introduction to
PHYSICAL
GEOGRAPHY

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Introduction to

PHYSICAL GEOGRAPHY

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Library of Congress Catalog Card Number: 91-76061

ISBN 0-697-06741-6 (Cloth)
0-697-15151-4 (Paper)

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Printed in the United States of America by Wm. C. Brown Publishers,
2460 Kerper Boulevard, Dubuque, IA 52001

10 9 8 7 6 5 4 3 2 1

Preface

Introduction to Physical Geography is designed for either majors or non-majors in geography. The text is developed in a highly visual manner to aid in understanding geographic relationships and principles. Each chapter acquaints the reader with the major processes, features, and interrelationships of the natural environment.

The theme of energy is used to view the planet Earth in its totality. Energy is traced as it flows from the Sun to the Earth and is transformed into a variety of other forms in the hydrosphere, atmosphere, lithosphere, and biosphere. Energy from the Earth's interior is viewed as the driving force for tectonic plate motion. Careful attention is paid to the role of humans in the modification of the Earth's systems.

The text is structured into four major topics dealing with energy systems of the atmosphere, biosphere, lithosphere, and hydrosphere.

Introduction to Physical Geography approaches the subject utilizing six unique pedagogical approaches:

1. *The Study Area—Integration of Concepts in a Given Place.* The text begins by introducing seven geographic concepts that provide the student with a geographic perspective. The perspective is introduced in the setting of a small valley where the processes and interrelationships of nature are taking place. The valley serves as a focal point, a place where abstract concepts can be related to a place. The valley is revisited occasionally in the text as an example of some of the processes and physical patterns. This approach gives the reader a point of reference to place in proper context the geographic viewpoint before taking on the task of organizing knowledge about the physical environment.
2. *Energy—Integration of the Environment.* Energy is used as a unifying theme to integrate the various divisions of the environment. Frequently, geography texts divide the environment into four major themes—atmosphere, hydrosphere, biosphere, and lithosphere—without integrating these systems. By tracing energy from the Sun

and the Earth's interior, the student will be able to understand more clearly the interrelationships between the major elements of the environment.

3. *Balanced Study of the Environment.* The four major systems of the environment are treated with more equality given to each. Plants and animals are treated here not in isolation but as integrated systems in community settings.
4. *Learning Tools.* The text is written for students, and especially the liberal arts freshman and sophomore with little science background. Student objectives introduce each chapter. Contemporary environmental issues give the reader an opportunity to see the applications of the material studied.
5. *Geographic Tools.* Teachers often use topographic maps in the classroom as a teaching tool. In this book, topographic maps are used in each unit to illustrate patterns and processes of nature. This text includes U.S. customary and SI (metric) units side by side.
6. *Illustrated Questions.* Illustrated questions, located at the end of each chapter, are linked to figures in the chapter. This approach is designed to help students better apply their knowledge of new concepts to actual physical environments.

An integrated package of ancillary materials has been designed to support and enhance *Introduction to Physical Geography*. Students will benefit from the skillfully prepared *Student Study Guide* by Miriam Helen Hill. Instructors can incorporate the slides and transparencies reproduced from figures in the text into their lectures and can also make use of the illustrations and photographs found on the Wm. C. Brown Earth Science Video-disc. *Instructor's Manual with Test Item File* and *WCB TestPak*, a computerized testing service, are also available to assist in classroom instruction. We hope you will find *Introduction to Physical Geography* and its ancillaries a valuable teaching tool for you and your students.

Acknowledgments

I am indebted to a great many people who have encouraged me to write about our planet Earth. I continue to be awed by its miracle of design.

I thank the Wm. C. Brown staff who have worked so professionally in the development and production stages. Specifically, I want to thank Ed Jaffe, who appreciated my unique approach to the subject; Lynne Meyers and Jeffrey L. Hahn, who worked so patiently through the development and review stages; Jim Sowder and Joyce Ives for their insights on key manuscript changes; Andrew Alden, who copyedited the text; the production team, who directed the transformation of my raw manuscript into the textbook you are now holding; and Charles Hogue for his excellent photographs.

I extend my gratitude to the members of the review team for their helpful comments and insights:

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A special thanks is given to the individuals whose responses to market research helped to develop the initial scope and focus of the text:

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The review team would have never seen this text if it hadn't been for the inspiration of my father and mother, who taught me to love the outdoors and its beauty as we traveled together on many vacations.

A special thanks to my typist, Nancy Phillips, who labored so faithfully, never missing a deadline, and providing many suggestions for organizing information.

Finally, the steady support and encouragement of my wife, Betty, helped make this project a reality. Her insights provided me with the student perspective reflected in the text.

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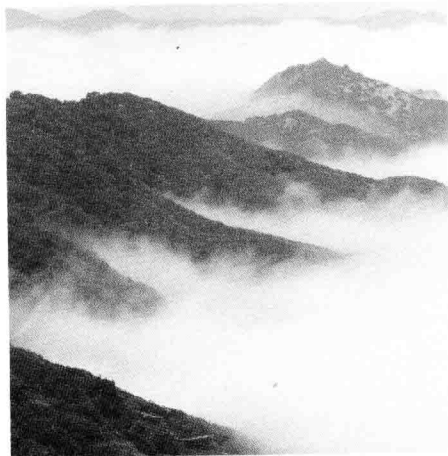
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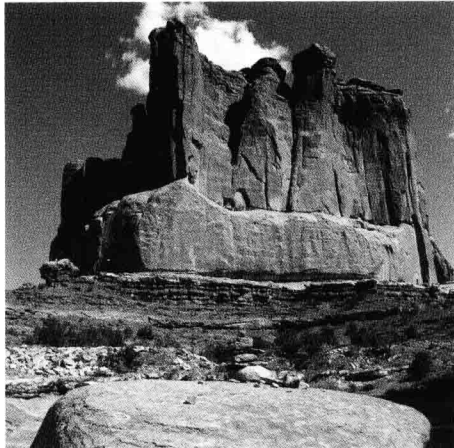
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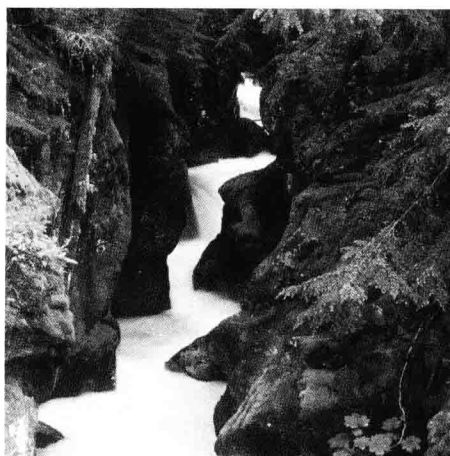
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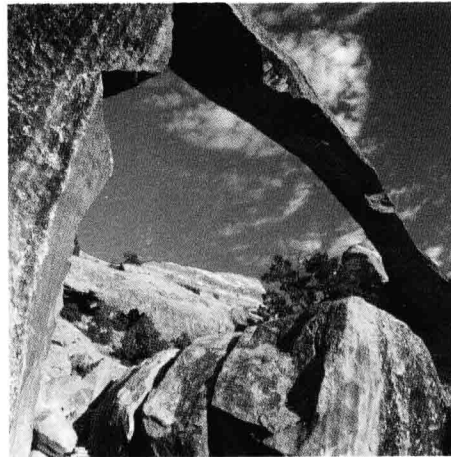
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Introduction

Wild Rose and Twin Peaks, Big Cottonwood Canyon, Wasatch Range, Utah.

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Figure I.1

This volcanic mountain located in the Cascade Range of Washington is a part of a chain of volcanic peaks bordering the Pacific Ocean. How was it formed? What impact does it have on the region's climate, vegetation, soils, and cultural activities? These are some of the questions a geographer might ask. This aerial view was taken during the height of activity on May 18, 1980.

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