

Ecological Diversity and Its Measurement

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*To my parents
Roy and Mary Magurran*

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Preface

Although diversity is one of the central themes of ecology there is considerable disagreement about how it should be measured. I first encountered this problem 10 years ago when I started my research career and spent a long time pouring over the literature in order to find the most useful techniques. The intervening decade has seen a further increase in the number of papers devoted to the topic of ecological diversity but has led to no consensus on how it should be measured. My aim in writing this book is therefore to provide a practical guide to ecological diversity and its measurement. In a quantitative subject such as the measurement of diversity it is inevitable that some mathematics are involved, but at all times these are kept as simple as possible, and the emphasis is constantly on ecological reality and practical application. I hope that others entering the fascinating field of ecological diversity will find it helpful.

This book grew out of my work in The School of Biological and Environmental Studies at the New University of Ulster, Coleraine, Northern Ireland. I am indebted to all the ecologists there for providing a stimulating atmosphere. Foremost among these were Amyan Macfadyen and Palmer Newbould. A number of the figures and tables in the book are based on data collected in Northern Irish woodlands. It is a pleasure to thank the Northern Ireland Forest Service and Conservation Branch for access to their forests and reserves. I am particularly grateful in this respect to Joe Furphy and John Greer.

Writing a book on diversity and its measurement is rather like setting out across an ecological minefield and I am therefore indebted to the many people who provided advice and ideas. These include Keith Day, Bob May, Ralph Oxley, Stuart Pimm, Tony Pitcher, Brian Rushton and two anonymous referees. The reviewers made helpful and extensive comments on the manuscript. I have incorporated many of their suggestions and feel that the book has been greatly improved by them. The reviewers did not always agree with each other and I am sure that not all readers will approve of my approach! The emphasis and opinions of the book, and any errors that remain, are of course my own responsibility.

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I am grateful to Jane ap Thomas for drawing the vignettes and the pictures of moths, mosses and other organisms.

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*Anne Magurran,
Bangor 1987*