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ENVIRONMENTAL ECONOMICS IN THEORY AND PRACTICE

Nick Hanley

University of Stirling

Jason F. Shogren

University of Wyoming

and

Ben White

University of Newcastle upon Tyne

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Introduction

This book is aimed at final-year undergraduates in environmental and resource economics, graduate students and professionals. It provides a guide to the most important areas of natural resource and environmental economics: the economics of non-renewable and renewable resource extraction, the economics of pollution control, the application of cost-benefit analysis to the environment and the economics of sustainable development. However we cannot claim that all interesting areas of the subject are represented here. For example, the reader will find very little on distributional issues, on trade and the environment, or recycling and solid waste management. Reasons for omissions include the size and cost of the resultant volume. We have, instead, concentrated on those parts of theory which we find most interesting and have tried to show how this theory can be applied to real-world problems. Thus, for example, Chapter 12 considers the theory of environmental valuation, while Chapter 13 explains how valuation is actually done.

Throughout the book, results are presented in words, in figures and more formally using mathematical models. To aid this exposition, brief 'technical notes' inform readers about the Kuhn-Tucker conditions, game theory and linear programming. The book progresses through the laws of thermodynamics to an analysis of market failure. The economics of pollution control are then considered. Natural resources are the subject of the next section, and the book closes with an examination of environmental cost-benefit analysis and sustainable development.

All of the authors have been involved in teaching courses in environmental and natural resource economics to both undergraduates and graduates in Britain and North America, so we hope that some benefit has been gained from this experience which will in turn aid readers of this book. We have also sought to include material from areas of our own research, emphasising the beneficial links between teaching and research.

This book started life in 1991, and so has been a long time in the making. We would therefore first like to thank Stephen Rutt of the Macmillan Press for his patience and fortitude. Vic Adamowicz deserves a very big thank-you for reading over many draft chapters and providing comments: thanks, Vic. Nick Hanley also would like to thank many people for helpful comments on draft chapters, and for trying to explain the subject to him. In no particular order, these people include Mick Common, Charles Perrings, Jim Shortle, John Hartwick, David Pearce, Kerry Turner, Jack Pezzey,

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