

Preface

This book seeks to present an overview of humanity's interactions with Earth at the beginning of a new century. One of the most striking occurrences of the twentieth century was the growth of the human population from one and a half billion in 1900 to more than six billion in 2000. This was largely achieved through improvements in healthcare and greatly increased food production. However, with these achievements came increased pressure on the environment, the loss of species, depletion of water resources, land degradation, exhaustion of fisheries, pollution, climate change and depletion of the ozone layer. At the beginning of the twenty-first century, all of the continents and oceans have been changed by human activity while population continues to grow and appears set to level out at ten to eleven billion in 2100. Such is the present and likely extent of human induced climate change that it is sometimes said that the warm Holocene epoch, that has lasted for eleven thousand or so years, is being transformed into an Anthropocene epoch. Thus, humans have effectively become the stewards of Earth and its multitudinous lifeforms. The exercise of this stewardship and the future well-being of humanity are intimately intertwined; a realization that is increasingly reflected in international treaties exemplified by the Rio de Janeiro, Montreal and Kyoto Protocols that are concerned with the preservation of biodiversity, protection of the ozone layer and climate change, respectively. Within this context, this book considers life on Earth, population growth, the pressures on water and food supply, genetic engineering, health, energy supply, climate change and the ozone layer in nine chapters. My wife Christine and my colleagues, Ray Choate, David Hayman, Lee Kersten, Bruce May, Derrick Rowley, Andrew Smith and Ching-hwang Yen have collectively read all of the manuscript and provided valuable advice. Nevertheless, any inaccuracies or errors are entirely the responsibility of the author.

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