Preface

Economic growth is the primary goal of nations, both capitalist and communist, as well as everything in between. In the United States, both Democrats and Republicans put it in first place, and neither has ever entertained for a moment the possibility that growth could conceivably be uneconomic, much less the likelihood that it has actually become so. And academic economists are even stronger advocates of growth. Yet a small minority, including me, has for over 40 years been arguing that growth in the metabolic throughput of resources (and its close correlate, GDP (gross domestic product)) has become uneconomic in wealthy countries, and is rapidly becoming more so. We have certainly not persuaded the majority, or even a significant minority, of our fellow citizens. Therefore, dear reader, you have every right to approach this book with skepticism. I assume that you will. I have tried hard to argue clearly and persuasively, starting from the beginning, repeating important points, and attempting to answer those criticisms that have been made, and those that I am able to foresee.

Three foreseeable confusions should be dealt with immediately because they tend to block further thought.

One is the confusion between *growth* (quantitative physical increase in size by accretion or assimilation of matter) and *development* (qualitative improvement in design, technology, and ethical priorities). A steady-state economy requires the cessation of growth, not of development – it is defined in terms of physical stocks and flows, not in terms of welfare, or even GDP, although it has definite implications for the latter, as will be discussed. A steady state is not static, the stock of wealth wears out and is continually replaced. Old people die and new people are born. The new can be qualitatively better than the old without requiring growth in the physical stock of wealth or in the throughput flow that maintains it. It is worth making this clarification at the outset because many people assume that a steady-state economy means the end of progress. No, it is ‘development without growth’. It recognizes the fact that when something grows it gets bigger! When the economy grows it too gets bigger. So economists really must face the avoided question of how big the economy should be as a physical subsystem of the containing

ecosystem – at what point does its displacement of the finite natural ecosystem cost more in terms of lost life-support services than it is worth in terms of extra production? What is the optimal scale of the macro-economy relative to its enveloping ecosystem? This is certainly an economic question, one that will be examined in the following chapters.

A second confusion to avoid is to recognize clearly that, in countries where poverty predominates, growth is still required along with development. To overcome poverty it is all the more necessary to move to a steady state in wealthy countries, in order to free up resources and ecological space for the poor to grow into. Considerable sharing will be required to bring the poor up to a level of sufficiency that is assumed for a steady-state economy.

A third confusion to avoid from the beginning is the idea that a steady state is forever, that it implies ‘sustainability’ in the sense of a perpetual terrestrial existence for humankind, or ‘ecological salvation’, as some have claimed. The entropy law rules that out. The aim of a steady-state economy is sustainability in the sense of longevity with sufficiency. If some other disaster does not cause our extinction first, the entropy law guarantees that we will eventually burn out all our resource candles, even if we keep the flame in a steady state. We could opt, as we seem to be doing, for the ‘Roman candle’ strategy of burning it all up in a short fiery and extravagant blast. Either alternative is permitted by physical laws. The choice is a value judgment – sufficiency with longevity versus extravagance with impatience. Such ethical presuppositions (and implicit eschatology) will be considered, mainly in Part IV.

The essays in this book were written over a period of 40 years – from 1972 to the present. Certainly not everything I have written during that time is worth repeating, so I have selected only things that I think need repetition. This is often because they were ignored the first time, or because they consider issues that have become more important today. The other selection criterion is subject matter – economic growth, its ecological costs and limits, and the reasons why standard economics, in its obsession with economic growth, has failed to see that growth can be, and in some countries has become, *uneconomic*. Although covering a 40-year time span risks including some dated material, it has the redeeming benefit of revealing the development of arguments, concepts, and issues over time. Which facets of the limits to growth debate are no longer discussed, and which issues have become dominant? Of course this 40-year period of discussion is here viewed from the mind of a single participant. That is a limitation to be sure, but at least a unifying limitation that introduces some coherence into the collection that would be absent if the essays represented the diversity of a committee. Also,

most of the book is recent. The nature of this coherence is elaborated in the introductory essay, 'Envisioning a successful steady-state economy'.

Part I consists of two articles from the early 1970s. They were published in standard economics journals, which at that time were a bit more open to discussion than today. The first sets forth basic concepts of steady-state economics as an alternative to the Keynesian–neoclassical growth synthesis, drawing on ideas from the classical economists. The second considers critically some initial objections raised against the idea of limits to growth by standard economists. The book *The Limits to Growth* sparked a lively debate beginning in 1972. Since my work was cited therein as a support, and because I thought that many of the criticisms of the book raised by standard economists were wrong, I naturally became involved in the debate. Although some references are dated, especially in Part I, the main issues remain relevant, as shown in Part III, where the debate is resumed currently. Both articles in Part I were written while I was in the Economics Department at Louisiana State University.

Part II presents some reflections from the 1980–90s. These two articles were written while I was at the World Bank. 'Towards an environmental macroeconomics' was also published in a standard economics journal, but in 1991 had to be placed in the journal's category labeled 'Speculations' because the fledgling field of environmental economics was claimed by microeconomics. The idea of an 'environmental macroeconomics' was at that time strange and therefore speculative. The piece on 'Growth, debt and the World Bank' was written later (2011) but draws on my experience at the World Bank during the late 1980s and early 1990s, and what I came to understand about that institution in retrospect.

Part III moves to the present. 'A further critique of growth economics' adds to and updates the critique in Part I, reviewing modern pro-growth positions and examining 11 fallacies currently and frequently committed in arguments for growth. It is one thing to criticize, but something else to suggest specific policies for 'Moving from a failed growth economy to a steady-state economy', as discussed in the next article. The articles in Part III were not acceptable to standard academic economics journals, so had to be published elsewhere, namely in *Ecological Economics*, a journal I had co-founded with Robert Costanza, Joan Martinez-Alier, and the late Ann-Marie Jansson in 1988, and in an edited collection on heterodox economics. Also included here is a speech to the American Meteorological Society on 'Climate policy: from "know how" to "do now"'. Climate change is presently the major symptom of uneconomic growth. Although much of the discussion has focused on finding alternatives to fossil fuels within the context of overall growth, it seems that

more people are now recognizing growth itself as the main driver of climate change.

Part IV digs into the ethical dimensions of the growth debate, which were always just below the surface and are more influential than commonly realized. ‘Incorporating values in a bottom-line ecological economy’ was first given as a speech in the mid-1980s, and then revised in 2009. In 2014, the article ‘Ethics in relation to economics, ecology and eschatology’ was written for the *Oxford Handbook on Ethics and Economics*. I believe that particular *Oxford Handbook* was motivated by the visibly poor ethical standards exhibited by economists leading up to the financial crisis of 2008.

Part V changes the style of presentation. We move from article-length chapters to a number of editorial-style essays on currently topical issues related to the overall themes previously discussed. These were all written from 2010 to the present, and cover topics ranging from fractional reserve banking, to thermodynamics, to population, to globalization, to ‘fracking’, to philosophical materialism, and more – but always with a connection to the overriding issue of growth. These short essays were first presented in the blog, ‘The Daly News’, contained in the Center for the Advancement of the Steady State Economy (CASSE) website, and edited by Brian Czech and Rob Dietz.

Many thoughtful people have identified ecological destruction as one of the two biggest threats to humankind, even though not usually making the connection to growth as the underlying cause. The other threat is of course a war with nuclear, biological, or chemical weapons. This book deals only with the first threat – it does not discuss war. But there is an obvious connection. A growing economy will inevitably extend its footprint into the ecological space of other countries and into the remaining global commons. This is what ‘globalization’ is all about. It is painted as a peaceful and cooperative process. But in a world dominated by growth it is not likely to remain so, even falsely assuming that it has been so far. Consider the following dated but still relevant quote from growth proponent Harold E. Goeller (‘An optimistic outlook for mineral resources’, paper presented at Scarcity and Growth Conference, National Commission on Materials Policy, University of Minnesota, June, 1972):

assuming reasonable management practices and adaptations, the remaining mineral resource base of the *Earth* is sufficient to maintain the *present state* of material affluence of the *United States*, and to share it to *some meaningful degree* with the *rest of the world*, for at least the *next hundred years*. (my italics)

In other words, if we move rapidly and efficiently to a steady state at 1972 levels, and draw on all the world's resources, and limit our sharing with the other 96 percent of the world to some 'meaningful degree', then our system could last for a hundred years. This was presented as an 'optimistic' outlook, and in so far as it assumes maintenance of the US economy in a steady state at 1972 resource throughput levels it certainly is optimistic. But the expectation that the United States will draw on the resource base of the entire earth to accomplish this, while limiting its sharing with the other 96 percent of the world's people to some 'meaningful' degree, while also writing off the future beyond 100 years, does not seem so optimistic. In fact, in 2014, with only 60 of the originally estimated 100 years left, it seems a recipe for conflict and wars for access to oil, water, agricultural land, and other resources, and for escalating ecological scarcity into military disaster. It is hard to imagine how a finite world of national economies all maximizing growth can manage to live in peace. Incentive to war is a major cost of growth that is not counted, and its reduction is an important argument in favor of a steady-state economy. Since such incentives to war are greater now than in 1972, and not discussed elsewhere in this book, this point should at least be emphasized in the Preface. Maybe steady-state economics will come to be seen as a part of the peace movement.