



The importance of ecological economics to wildlife conservation

An Introduction, by Brian Czech

The Wildlife Society's Local Governance Working Group is honored to host the new millennium's first special section of the *Wildlife Society Bulletin*. "The Importance of Ecological Economics to Wildlife Conservation" is largely the product of a symposium held at the 1998 TWS conference in Buffalo, New York. The symposium was well attended and generated an extraordinary amount of discussion, at times quite heated. This prompted several of the presenters to compose the papers which, along with other invited papers, comprise this special section.

Many wildlife professionals view economic growth as the greatest challenge to wildlife conservation. Indeed, this premise was the starting point from which the Working Group based its decision to focus on local governance, which plays a major supporting role for economic growth. On the other hand, many wildlife professionals are not convinced that economic growth is problematic; some even view economic growth and wildlife conservation as mutually reinforcing. The appeal of such a view can be strong, given the power of win-win politics. In the vast majority of cases, however, wildlife professionals on both sides of the argument have limited macroeconomic understanding. As a result, many of us are reluctant to express our opinions on economic growth and some of the opinions that do get expressed are simplistic or otherwise conceived poorly.

The wildlife profession's paucity of macroeconomic expertise and total lack of involvement in macroeconomic policy is disturbing. What if economic growth truly is the greatest challenge to wildlife conservation? Then it could be argued that our profession, lacking macroeconomic knowledge and involvement, is tantamount to an exercise in futility.

In the first paper in this special section, I develop the logic for identifying economic growth as the limiting factor for wildlife in the aggregate. Based on the principles

of niche breadth and competitive exclusion, growth of the human economy (the synthesis of population size and per-capita consumption) proceeds at the expense of wildlife in the aggregate. Claims to non-consumptive economic growth do not withstand our fundamental training in trophic ecology. The economy of nature holds many lessons for macroeconomics; we should take the initiative in providing them. Fortunately, the new transdiscipline of ecological economics welcomes us.

Ecological economics is not to be confused with environmental economics. Ecological economics is a fundamentally alternative approach to mainstream or neoclassical economics, whereas environmental economics is an application of neoclassical theory to environmental issues. In the history of academia, neoclassical economics has produced the policies most problematic to wildlife conservation, and Charlie Hall's paper illustrates some of the most important reasons why. At the top of the list is the neoclassical theory of economic growth, which asserts that due to the substitutability of resources and perpetually increasing efficiency, there is no practical limit to economic growth. This theory is at odds with our concept of carrying capacity.

John Gowdy's paper provides an introduction to the terms and concepts used in ecological economics. Gowdy continues with a comparative analysis of "weak sustainability" and "strong sustainability." This analysis illustrates some of the key distinctions between ecological and neoclassical economics. While sustainability is an issue that ecological economics will be wrestling with for some time, ecological economics clearly provides a vision that is more consistent with the principles of wildlife ecology (and the goal of wildlife conservation) than the neoclassical vision of sustainability.

The paper by Jon Erickson focuses on concepts in neoclassical and ecological economics that are particularly

relevant to the conservation of species. Erickson shows how policies derived from neoclassical economics tend to reflect an overconfidence in the ability of markets to protect entities valued by the public, including wildlife species. Ecological complexity and uncertainty tend to undermine assumptions upon which the neoclassical model of the market is built. Erickson's concluding argument for "well-defined limits to substitution, minimum stocks of natural capital, and preservation of ecosystem function" is a challenge to the wildlife profession to assist in defining these limits, stocks, and functions.

Despite the weaknesses of the neoclassical model of the market, and partly because of the influence of neoclassical economics on public policy, we live in a society where many of our choices find their only expression in the marketplace. The state of the wildlife market is summarized by Curtis Freese. The marketable value of many wildlife species has never been greater. The state of the wildlife market is at once encouraging and alarming from a historical perspective. As Freese aptly notes, "Commercial markets and natural ecosystems are uneasy partners." While the current market serves to illustrate the great value attributed to wildlife, great value provides economic incentive for exploitation and for "milking" wildlife from not-so-wild settings.

There are many ways to address the impact of market failure on wildlife conservation. One is by managing wildlife and regulating wildlife consumption and habitat destruction independently of the market. Another is to fix the market mechanism to the extent possible. Yet another is to devise proxy markets for decision-making purposes. John Loomis explores techniques pursuant to the latter alternative, with a focus (via case study) on contingent valuation. Ascertaining values of nonmarketed ecosystem resources falls at the nexus of neoclassical and ecological economics.

Our special section concludes with an ecologically economic assessment of ecotourism by Jack Isaacs. Ecotourism is one of the economic sectors sometimes touted as having potential for reconciling the goals of economic growth and wildlife conservation. In many respects, ecotourism is less harmful to wildlife than other economic sectors. Isaacs' analysis suggests, however, that even from a neoclassical perspective, the net effect of ecotourism on wildlife conservation is unlikely to be positive unless the scale of the ecotourism sector is constrained by nonmarket forces. This brings our special section full circle, with economic growth casting a pall on the future of wildlife conservation.

The opinions presented in this special section are not entirely compatible. All of the authors are concerned with wildlife conservation, but they vary considerably, for example, in the extent to which they "buy" the market model of resource allocation. Basically, our authors fall along a spectrum, with one endpoint representing an adherence to neoclassical economics and the other repre-

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senting the rejection thereof. Readers who have their interest in ecological economics piqued are encouraged to continue with *Valuing the Earth* by Daly and Townsend (1993, MIT Press), *A Survey of Ecological Economics* by Krishan et al. (1995, Island Press), or my own *Shoveling Fuel for a Runaway Train* (Fall 2000, University of California Press). The first 2 are edited volumes of classic works in ecological economics. The third contains a critique of neoclassical economic growth theory from a wildlife ecology perspective, an overview of ecological economics, and a proposal for a steady-state revolution that entails class identification based upon expenditure.

As a Certified Wildlife Biologist who believes that economic growth has become the limiting factor for wildlife in the aggregate, my strongest hope is that the wildlife profession will develop a keen interest in macroeconomics, especially economic growth theory. How could we not be interested in a process that competitively excludes what we are charged to conserve? I am confident that we will rise to the occasion, because with our interest in and knowledge about the economy of nature, we should gravitate naturally toward ecological economics. Our resulting interest will manifest itself academically, managerially, and even politically. In the decades ahead, I believe we will be prominent contributors to economic policy discourse.—**Brian Czech**, *Special Associate Editor and Local Governance Working Group Chairman*

