

# Biodiversity – Why do we Care

The following is a reprint of an article and responses in the "Readers Write" column of DELTA, the Newsletter of the Global Change Program published Quarterly by The Royal Society of Canada. We are grateful for their permission to include it in our Proceedings and hope it will stimulate further discussion both in the pages of DELTA and of this publication.

## Biodiversity – Why do we Care (DELTA Vol. 7. No. 1 & 2, 1996)

Digby McLaren

The Royal Society of Canada

Ottawa, June 10, 1966: A Symposium, called *Biodiversity – Why Should We Care?* was held in the Museum of Nature and organized by the Canadian Global Change Program of the Royal Society of Canada.

More than one speaker referred to biological wealth in discussing threats to biodiversity, and I should like to comment on this confusing concept. Standard economic theory depends on a closed system of circular flow of exchange values to which the environment and resources are externalities. No heed is paid to uncoded materials such as water, air, soils, forests, animals and plants, without which the ecosystem would cease to exist, and we too.

Attempts to put a cash value on the plants and animals that occur within the ecosphere and that have been found to be of benefit to our species, involve very large sums indeed. These values, however, although of considerable economic importance, may not legitimately be included in a single model with the ecosphere. They are in fact in different dimensions of reality, and because of their local or temporary value, must appear as commodities. Their overuse increases damage to the ecosystem, and they are economically valued only for as long as they last, or are replaced by synthetics or substitution. This essentially obviates the need to care for the rest of the ecosystem which, having no current cash value, is not noticed. The value of commodities withdrawn from the ecosystem has no connection with their role in, for instance, a forest or marine ecosystem. At the same time extinctions of plants and animals are accelerating as the forests shrink or the seas are impoverished. We cannot compute the value to humans of the many unknown species that disappear and are gone for ever. The real value of the ecosystem is without limit. It is invaluable.

I was disappointed that among, the many wise ideas that our speakers addressed, there was little reference to the

fundamental causes for the current attack on planetary biodiversity and indeed the ecosphere as a whole. These are the runaway growth of human population and in our use of energy. Population reached one billion early in the last century, and is now almost six, with an annual increase of 100 million. There was a similar surge in energy use which has doubled every 20 years since 1890. The curve has been a true exponential but cannot double again. Empirical facts must replace models. Simple arithmetic is forcing us to face problems that are unique in history, and to which there appear to be no acceptable alternatives.

We must become aware of the futility of tackling problems as they arise, piecemeal, while ignoring ultimate causes. I call this the "sustainable development syndrome". These ideas may appear to be a simplistic approach to problems but they are simple. It is not doom-saying to suggest that we should use empirically derived facts to convince the people and the body politic that our actions are bringing about the destruction of our own life-support system.

Digby J. McLaren

## In Defence of Economic Theory

(DELTA Vol. 7. No. 3, 1996)

Colin Rowat: King's College, Cambridge, England

Every genre has its hallmarks and the environmentalist is no different. Even Dr. McLaren's column (DELTA, Vol. 7, Nos. 1-2) is not too short to display one of the central features of the environmentalist genre: the passing attack on "standard economic theory", here accused of depending on "a closed system... to which the environment and resources are externalities".

The reason, I suspect, that this is one of the more common allegations made by environmental critics of economics is no more than that this is one of the more common allegations. Familiarity with economic theory would dispel belief in this description: growing economies cannot be closed systems, and economic growth is certainly a phenomenon noted by economic theory (Aha, into the Charybdis of another common allegation, the unsustainable obsession with growth? No, economic growth -- growth in value added -- need

not imply physical growth; (in fact doing more with less has been one of the main sources of economic growth).

To further claim that, in standard economic theory, “no heed is paid to uncosted materials such as water, air, soils, forests, animals and plants” is to reveal one’s own ignorance more than any failing in economics. Certainly since the beginning of the century, when Harold Hotelling scribbled an idea for valuing uncosted U.S. national parks onto a serviette, economists have paid heed to uncosted biota. Much of welfare economics is dedicated precisely to the valuation of uncosted goods, those not appearing in markets.

What economics can do beyond “paying heed” is less clear. Without resorting to ideological conviction there is as yet no satisfactory way to attach a price tag to a forest. Britain’s statisticians, in introducing their new green national accounts, have not included them in the main body of the national accounts for exactly this reason: any implied commensurability would be derived from a political and not an economic decision. This is perhaps what Dr. McLaren has in mind when he claims that “plants and animals are in fact in different dimensions of reality”.

A proper presentation of the role of economic theory neither can be presented here nor would be warranted by Dr. McLaren’s passing remarks. Suffice it to note that such remarks are both frequent and frequently ill-informed within environmental circles. Their effect is to encourage a view of economics that is not only embarrassingly naive but possibly dangerous.

Colin Rowat King’s College, Cambridge, England

### Reply (by Digby J. McLaren)

I welcome Colin Rowat’s comments on my review of the Symposium on *Biodiversity - Should We Care?* in DELTA (7.1/2). It gives me a chance to clear up some misconceptions that have arisen, probably due to the need to be brief.

Firstly, the term “environmentalist” is wide and vague and, if I am to be categorised, I would prefer “empiricist”, as one whose knowledge of the world is based on observation and experiment. I criticise certain aspects of economic theory because they are derived deductively from axioms that cannot be justified by observation in the real world.

I want to comment on Colin Rowat’s remarks on costing of natural resources in economic theory. Life has existed on the planet for 3½ billion years, in ever changing balance with its environment which includes the atmosphere, the waters, and the lands. This highly complex and dynamic system, we call the ecosystem which exists within the ecosphere. Humans are part of

this system, which supports life on earth, and which we do not understand and cannot control. Man has always used plants and other animals for his needs, and has remained in ecological balance. But over the last two hundred years, with an accelerating use of energy, he has far exceeded that balance and has brought about rapid increase in massive environmental destruction leading to the extinction of plants and animals at about 1,000 times the normal rate.

How then may we cost this system? It might be legitimate to put a value on trees or insects in a tropical forest for the pharmaceuticals they might contain, or on water used for irrigation, or genetic materials for new hybrids, but only if such cropping allows for real sustainability. The values assessed by man cease when the need ends, or a substitute is discovered.

Our life support system, the ecosphere, cannot be costed, and although we may not understand it, yet it is vital to our continued occupancy of the planet. Let us ask a simple question: what is your blood supply worth? There are two answers: (1) the money I am paid if I sell some of it for medical use, and (2) as I cannot live without it, its value cannot be costed – it is invaluable.

The two answers are examples of different dimensions of reality, and they must not be confused in simplistic attempts at economic modelling. Fortunately not all economists fall into this error.

I shall end this note with a quote from Kenneth Arrow, Nobel Laureate economist, and ten other authors from many disciplines:

*“Above all, given the fundamental uncertainties about the nature of ecosystem dynamics and the dramatic consequences we would face if we were to guess wrong, it is necessary that we act in a precautionary way so as to retain the diversity and resilience of ecosystems”.*  
(From: *Economic Growth, Carrying Capacity, and the Environment*. Science, 268, 520-1. 1995).

Digby J. McLaren, Ottawa. 15 September, 1996.

### Environmentalist—Economist Debate

#### Heats Up Some More (DELTA Vol. 8. No. 1, 1997)

The exchange between Digby McLaren and Colin Rowat (DELTA, Vol. 7, No. 3, 1996) is incomplete. McLaren has tempted his quarry into the open but his “empiricist” parry to Rowat’s patronising charge of economic illiteracy falls short of closure. He has nonetheless exposed a fat target for critics specialized to Rowat’s subject.

Defensive squirming about the virtuous intentions of welfare (public policy) economists is lame without a demonstration of effectiveness against the monitored destruction of ecosystems. Are these praiseworthy analytic efforts ignored by decision-makers? If so, why are economists like Rowat not numbered among the indignant environmentalists? Or do the economic analyses tend to counter the conclusions and recommendations of environmental scientists, thereby confirming McLaren's accusation? .

Rowat speaks for a sub-discipline of courtesans who sell expert testimony based on the "empirical" measurement of subjective values, which are linked by monetary transactions to motivations of materialism and short-term self-interest. These laboriously constructed opinion polls, weighted by individual purchasing power, are then touted as "scientific" evidence that policy preferences which run deliberately counter to the entropic tendency of materialism are "not economic". They are political judgements which favour the status quo but are dressed up to look like objective, empirically-based science. They are then dispensed as professional expertise to a bewildered public and politicians.

Rowat is quite right in pointing out that to attach values other than these materialistic ones to elements of nature is an ineluctably political act. But he is wrong in excusing economists for dodging it. It is the duty of economists, by the classic definitions of political economy, to grapple with the empirical facts of life, to explain what cannot be done, and to devise political structures which mitigate the worst effects of scarcity. Instead, economists have prostituted themselves to the popular delusion that there are no limitations to gratification, only temporary delays while technology is perfected. In the process they have lost the understanding of their own role. This abuse is especially evident in the branch of economics which Rowat defends. These are not acts of personal perfidy, but of collective delusion. Time and space preclude an exposition of its origins, but it is a consequence of the aspiration by an earlier generation of economists to be technologists, expanding consumptive possibilities in the short term rather than devising optimal management strategies given the inevitability of resource constraints.

McLaren provides important reasons why our values are wrong, and points the direction of vital change. Economists like Rowat take the inappropriate values as a given and add up evidence of their popularity. Popularity is put forward as a justification of the values and a "scientific demonstration" that we really wouldn't want to change them. The reasoning is completely

circular and serves to excuse the comfortable denial of need for changes that we do not wish to make. This role is clearly a danger to humanity and a serious social mischief which ought not to continue to be funded from the 'public purse. (After years of observing this group occasionally from the sidelines, I was delighted recently to see evidence of progress out of the incestuous intellectual trap, in a paper connected to the World Bank. On passing forward my laudatory review, I was told that the author is not an economist.)

*Keith Wilde: Office of the Superintendent of Financial Institutions Canada*

### **And more.. .**

Dr. Digby McLaren may prefer to be called an "empiricist" but he exhibits a primary characteristic of environmentalists, an obsession with energy. In his response to economist Colin Rowat (*DELTA*, Vol. 7, No. 3, 1996) he singles out energy as the villain claiming that man's use of energy has "brought about rapid increase in massive environmental destruction....." In this, he is confusing the symptom with the disease.

Energy, along with food, air, water and shelter are staples, essential at some minimum level. For anything beyond mere survival, improved living standards require increased energy. The rapid increase in global demand for energy is largely due to two factors: a rapid increase in population, and an improved standard of living in much of that population. Energy is a means not an end.

Energy production and use can damage the environment, but it can also be a vital means of protecting it. True environmentalists appreciate energy as a potential ally: for instance, many megawatts of electricity are used in the sewage disposal plants of large cities and the conversion of smelting operations to electricity has greatly reduced atmospheric pollution.

Energy has contributed to improved health world wide, through improved sanitation, better housing, a readier supply of clean water, better nutrition and better means for flood preservation, among other factors. A case can be made that energy has saved more lives than medicine. The Industrial Revolution, for all its "dark satanic mills" using coal as an energy source, vastly improved the lot of most people then and since. Just as coal and the Industrial Revolution did more than Abraham Lincoln to free the slaves, so electricity has done more to emancipate women than all the political speeches on the subject. Ready access to electricity has removed much of the drudgery from "women's work", and has thereby made us men willing to share it to some extent.

Certainly, one can find energy being wasted, but it is

waste, not energy, that is the culprit. Also, who is to define waste? As long as our society allows us to spend as we please any money we earn legitimately, I would not be any more sinful spending mine on keeping warm than would others spending theirs on consumer goods: both require the use of energy. Unemployment is the most effective means of “conserving” electricity, but that is the worst waste.

One definition of “empiricist” in my dictionary is: “a person who relies too much upon mere experience; quack”. If it quacks like a duck... .

J.A.L. Robertson, F.R.S.C. Deep River, Ontario

### Better information needed

The ongoing “standard economic” vs. “environmentalist” debate has been touched far too briefly in DELTA Vol. 7, No. 3. There is a major credibility barrier between the two sides and the gulf is partly responsible for a dangerous lack of vision and action. It is unfortunate that Dr. Rowat does not consider that Dr. McLaren's “passing remarks” warrant

a proper presentation. His admission that such remarks are both frequent and frequently ill-informed makes an important statement. It would be useful if well-informed experts from both sides could come together for the better information of the rest of us, and as an aid to make headway towards more useful discussion. Simple repetition of old arguments is not enough. This is a call for a more extended treatment and synthesis.

Dr. Terry Poulton, Geological Survey of Canada

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*DELTA Editor's Note: We will certainly consider your suggestions for a future issue of DELTA. If our mail is anything to go by it is obviously an issue requiring more discussion on these pages.*

*CACOR Editor's Note: Any contributions sent to the Editor of the CACOR Proceedings will be copied to the Editor of DELTA. and may be published in either or both publications.*

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