

A population policy for Canada?

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Thoughts on “WHY CANADA NEEDS A POPULATION POLICY”

Excerpts from a Paper by J. Anthony Cassils and Madeline Weld
and comments by Andrew Ferguson

An eight-page Paper of the above title was submitted by Global Population Concerns to the Standing Committee on Citizenship and Immigration of the House of Commons, Government of Canada, on 1st May 2001. The Paper describes the essence of the population problem. It shows us that those in Canada share our European problems:

The assertion is sometimes made that those who wish to limit the population in Canada which given the low birthrate of native-born Canadians, means limiting immigration, harbour racist motivations. In this way, people may be inhibited from expressing opposition to population growth in Canada, regardless of the ecological and socioeconomic concerns.

For an overview, could there be a better expression of the difficulties we face than this?:

The major challenge for all humanity in the twenty-first century is to learn to live within the web of life on Earth without destroying it. This will be a difficult undertaking for a species with a misplaced sense of its own importance. It is only in the past few hundred years that humans have come to accept that the Earth (and by inference humanity) is not the centre of the universe. Now, scientific knowledge about ecology makes it clear that human beings are not of central importance to the continuation of the process of life on Earth except in the negative sense that they have the capacity to destroy it.

The problem is marked in some parts of the United States where the theory of evolution is omitted from the school curriculum in favour of creationism - a literal interpretation of the Book of Genesis. The paper then goes on to consider something to which OPT has devoted considerable time, namely the need to reshape ethics according to ecological constraints:

Current human practices and beliefs are on a collision course with the life support system on Earth ... in many cultures, including the globally predominant consumer culture, [and] there is a bias that recognizes ethics only in terms of human relationships but not in terms of the human impact on other forms of life, regardless of the fact that they make human life possible ...

Despite the popular admonition to 'think globally, and act locally,' any nation that acts with foresight to curtail population and protect its environment, thereby creating an area of order in an increasingly chaotic world, will likely attract more international corporate activity and face enormous pressure to allow the entry of people from less ordered regions. Pressure tactics will include demands for free trade and accusations of racism for restrictions on immigration. The net result of such tactics, if successful, is to accelerate the unravelling of the web of life worldwide ...

A small minority of human beings understands the inevitability of the global encounter with environmental limits and warns of the chaos and pain it will bring. The masses, however, do not grasp the dire nature of the situation, and many institutions ignore the looming environmental crisis because they depend on the growth of human numbers and demand ...

To extricate ourselves from this trap, we must expand our code of ethics from a set of guidelines governing only interactions among humans to one that includes consideration for other life forms and the impact of our activities on future generations. ... When humans make the leap in understanding that we are just one species in an interdependent web, a substantial shift in ethics must follow.

And now, some further comments arising from these excerpts:

Canada's carrying capacity based on eco-footprinting

Using the data set of Table 2, in the *Living Planet Report* (LPR 2000), the existing biocapacity for Canada's 30 million people is 11.16 global hectares (these are hectares with global average productivity; LPR 2000 uses the earlier name, area units) per person. So for each person to enjoy the 7.66 global hectares, which constitutes the Footprint of Canadians, population needs to be limited to $(30 \times 11.16 \times 0.88) / 7.66 = 38$ million. The factor 0.88 is a biodiversity allowance (based on a proposal by the 1987 Brundtland Commission) to allow 12% of ecologically productive land for preserving biodiversity.

We should be clear about the assumptions underlying that calculation. 3.62 global hectares, out of the 7.66, comprises the 'energy footprint', namely the component of the footprint which accounts for energy. For many years, the concept underlying the energy footprint was based on the 'carbon absorption paradigm'; that is to say, it was based on the area required to absorb the carbon emissions from the burning of fossil fuels. The carbon absorption paradigm has frequently been attacked, and it can be predicted with some confidence that in the 2nd Footprint forum, which will appear in the next issue of this Journal, it will be thoroughly demolished. Although the paradigm needs to be changed, it does not affect eco-footprinting figures. That is because the area of land needed to generate energy from renewable resources is estimated to be approximately the same as that which has been used for the carbon absorption paradigm, namely 100 gigajoules/ha/yr, or 3.2 kW/ha.

Carrying capacities based on eco-footprinting are thus estimates of carrying capacity once fossil fuels are no longer available. The greatest weakness in the 38 million estimate is that it takes no account

of the unsustainability of Canadian agriculture, which, like that in the USA, is probably associated with serious soil erosion. Thus the 38 million figure might appropriately be called the uncorrected Footprint carrying capacity.

Canada's carrying capacity based on carbon dioxide emissions

In global terms, the constraint on population size is simple. The Earth's carbon sinks are able to absorb about 9 billion tonnes (1×10^{12} kg) of carbon dioxide a year, from the burning of fossil fuels. A probable mean lowest acceptable carbon dioxide emission is 4.2 tonnes per person (capita) per year (to compare with the USA figure of 20 t/cap, a European average of 10 t/cap, and a world average, in 1990, of 4.2 t/cap). Thus to maintain a constant level of carbon dioxide concentration, global population needs to be limited to $9 / 4.2 = 2.1$ billion, i.e, a reduction to 34% of the present 6.1 billion.

The constraints become far less clear when considering individual nations, because this requires decisions about how to allocate the rights to carbon emissions. At present there seem to be three 'methods' under consideration:

1. Requiring each nation to make similar percentage reductions of their emissions, starting from the basis of 1990 national emissions.
2. Dividing up the rights to emission on the basis of 'present' populations.
3. Dividing up the rights to emission on the basis of populations at some fixed point in time, say 1990.

Method 1 is obviously grossly unfair, and would not be worth mentioning, except that it appears to be the method advocated by the United States of America; and voices of dissent are not frequently raised in Australia and Europe.

Method 2 has the disadvantage that if 'present' is not a fixed date, then nations with increasing populations (e.g. Pakistan with a doubling time of 25 years) will have a growing share of the whole.

Method 3 is arguably the most just. Let us choose 1996 as the date, to fit in with the LPR 2000 data set, and look at Canada.

Canada, with a population of 30 million out of a global population of 5700 million, would have a right to emit $30 / 5700 \times 9$ billion = 47 million tonnes of carbon dioxide a year.

Although the world averages 4.2 t/cap, this would be very difficult for Canada, which presently emits 13 t/cap. But by using energy more frugally and efficiently, 8 t/cap is plausible. This would constrain the population to $47 / 8 = 6$ million. The 8 t per person is only indicative: nations should be able to choose a low population density and a higher physical standard of living, or a high emission with a consequent lower population.

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We can now see why Canada is a special case. Canada may have a carrying capacity nearly as high as the *uncorrected* footprint carrying capacity of 38 million; but if it is to make a fair contribution to the world's task of reducing carbon dioxide emissions to safe levels, then it needs to reduce its population from the present 30 million to 6 million. It may seem fanciful to imagine that a nation could be so altruistic as to reduce its population merely to save the rest of the world from suffering the ravages of climate change, but there are reasons of self-interest too. It is not only because of the unsustainability of present agriculture that the 38 million figure may be too high. The estimation of an energy/land ratio, using a mix of renewable energies, is very difficult. While there is no space to go into details here, the figure we use, 3.2 kW/ha, may be optimistic for Canada. A survey of this aspect, related to Australia, was given by Jill Curnow, in *Energy Use And Australia's Carrying Capacity* (Curnow, 2001). In brief conclusion, the very least we can say is that self-interest as well as altruism suggests the need for a much lower population in Canada.

A longer study of Canada's carrying capacity is available on request.

Full references appear in the OPT Journal.

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Tel: 07976-370 221

Optimum Population Trust Ltd

(Membership Secretary)

12 Meadowgate, Urmston

Manchester M41 9LB, UK

E-mail: info@optimumpopulation.org