

**A Strategy  
for  
a National and International Population Policy  
for Canada**

**By J. Anthony Cassils  
The Population Institute of Canada**

**First Written in 2005  
Slightly revised with a Retrospective Introduction , August 2009.**

## Table of Contents

|  |    |
|--|----|
| Retrospective Introduction written in August, 2009 |    |
| Population: The Global Context                     | 1  |
| Population: The Canadian Situation                 | 2  |
| Population as Taboo                                | 3  |
| Issues, Positions/Recommendations, and Arguments   | 4  |
| An Effective Global Approach to Overpopulation     | 10 |
| Conclusions  | 12 |

## **Retrospective Introduction written in August, 2009**

When the Population Institute of Canada (PIC) prepared the paper *Why Canada Needs a Population Policy*, its members were aware that they needed to go a step further and propose a more comprehensive population policy for Canada addressing both national and international aspects. As PIC is a Canada-based organization, its members felt that their initial focus should be on Canada starting to put its own house in order before suggesting to other countries what they should do to stabilize and reduce their respective populations.

The strategy set out in this paper was honed by an open and participatory Web-based process called Wiki set up by the Green Party of Canada in 2004 as an experiment in democratic and broad-based policy development. Tony Cassils, the author of this paper, was asked to be Team Leader for the development of a population plank which received the support of the majority of participants but not the 65% support required for consideration for inclusion in the Green Party Platform.

The policies recommended in this paper are reasonable given the obvious destructive impact of the soaring human population on the life-support system of the Earth, but they are also controversial, for they go against the innate predisposition of most people to favour the steady expansion of human numbers and activities.

The real travesty is that, since the mid 1970s, an alliance of special interests dedicated to economic growth and the expansion of their respective organizations have derailed the responsible attempts to address the social, political, economic, and environmental problems resulting from rapidly increasing human population and activities. However, in recent years, there has been growing support for stabilizing and reducing the human population by humane means to provide a margin of safety in the face of some immediate and looming crises. It may yet be possible to navigate a wise course based on reason through a sea of wants so that humans may learn to live sustainably on a living Earth.

## **Population: The Global Context**

Nothing threatens the future of civilized societies as much as overpopulation, and few problems have proven more difficult for humans to address.

The human population of the Earth has increased from about five million in 6,000 BCE (Ehrlich, 1968), to 1.5 billion in 1900, to more than 6.4 billion in 2004, and the medium projection is for it to rise to 9.1 billion by 2050 (UN, Department of Economic and Social Affairs, World Population Prospects – The 2004 Revision). An increase of 2.7 billion over the next 45 years is equivalent to the global population in 1955. The same Report gives a high projection of 10.6 billion by 2050 and a low projection of 7.7 billion depending on fertility. In the medium variant, fertility declines from 2.6 children per woman today to slightly over 2 children per woman in 2050. Fertility of 0.5 children per woman above or 0.5 below that projected for the medium variant provide the figures for the high and low population projections for 2050. At the world level, continued population growth until 2050 is inevitable even if the decline of fertility accelerates. However the lower projection of a population of 7.7 billion would result in much less hardship and social injustice than the other projections. This underscores the importance of making family planning readily available worldwide. Meanwhile, some analysts suggest that the UN Report pays insufficient attention to the young age structure of the global population, calculating that if the global fertility rate of two children per female had been reached in the year 2000 (the estimated rate was 2.8 in that year), and stabilized, the world population would peak at 12 billion in about 70 years.

The UN Department of Economic and Social Affairs has specified which countries need assistance. Between 2005 and 2050, the population of the fifty least developed countries is projected to more than double, expanding from 0.8 billion to 1.7 billion. Growth in the rest of the developing world is also projected to be considerable, though less rapid, with its population rising from 4.5 billion to 6.1 billion by 2050. In 2004, the global population increased by about 76 million.

In the words of E. O. Wilson (2002): “The pattern of human population growth in the 20th century was more bacterial than primate.” The truth is that global population has overshoot sustainable carrying capacity and supports itself by drawing down stores of natural resources leading to calamities, such as, the imminent peaking of oil production, collapsing fisheries, the loss of prime agricultural land to erosion and urbanization, and serious shortages of fresh water. The UN World Water Development Report (2003) projects that, at worst, as many as seven billion people in sixty countries could face water scarcity by 2050. Even under the most favourable projection for water, an estimated two billion people in sixty countries will live water-scarce lives by 2050. Meanwhile, humans are drawing down underground aquifers and polluting fresh and marine waters at an accelerating rate. Clearly, the consequences of population overshoot ensure that for future generations, the Earth will not be able to sustain anything like the current human population.

Since the 1960s, an increasing number of scientists have warned of the dangers of overpopulation. In 1993, the Union of Concerned Scientists published a document called “World Scientists’ Warning to Humanity” which states:

“Pressure resulting from unrestrained population growth puts demands on the natural world that can overwhelm any efforts to achieve a sustainable future.”

Unfortunately, in many countries, the well-founded warnings from scientists of the dangers posed by overpopulation have not achieved a sufficient change in public policy. Although by 2001, sixty-eight percent of national governments reported that they had intervened to modify fertility levels, forty-five percent wanted to lower fertility levels while thirteen percent wanted to increase them, reflecting the human ambivalence when confronted with the serious issue of overpopulation (UN World Population Policies Report, 2003). In many developed countries where populations have stabilized, there is still pressure to expand their populations by immigration. These national population policies are focused on fertility and not on assessing the long-term carrying capacity of the environment to support existing numbers within each country.

### **Population: The Canadian Situation**

Since Confederation, the Canadian population has grown very quickly. It rose from 3,463,000 in 1867 to 11,654,000 in 1942, to 20,378,000 in 1967, and to 31,000,000 in 2001. Statistics Canada estimates that the population will reach about 36,000,000 in 2025. However, with the expected surge of environmental disasters and the concomitant rise in the number of environmental and economic refugees and the growth of human smuggling, the population may be much higher within a generation or two. This represents a potential onslaught of which the Government of Canada is aware, but for which it appears to be very ill-prepared.

The largely unchallenged assumption is that Canada has no population problem since it has the second largest land area of all countries on Earth. These unpopulated Canadian land areas are generally seen as “empty” spaces just waiting to be filled. These assumptions are based on a false premise that the potential for growth is equatable with the crude statistic of land area. The reality is that much of the land is barren and incapable of supporting a large population. Furthermore, whatever population lived in these barren areas would leave a large “ecological footprint.” Most food would have to be shipped in, requiring both land surface for agriculture elsewhere and large amounts of energy for transportation and space heating. It is a reflection of our anthropocentric (i.e. centered on the human species to the exclusion of all other forms of life) bias to consider all people-free areas as “empty” when, in fact, they contain ecosystems that support other species and contribute to the ecological balance of the web of life on the planet.

The majority of Canadians, however, accept the myth over the reality. Despite evidence to the contrary - the collapse of the cod fishery, the crises in the salmon fisheries, the

ever-lengthening list of endangered species, national parks under siege, and the continuing assault on the boreal forest - most continue to assume that theirs is a land of almost limitless resources. The myth is in fact an integral part of Canadian national pride.

The more habitable part of Canada, the most southerly strip near the American border that is home to most Canadians, is already densely populated. Toronto and Vancouver are experiencing serious problems associated with their rapid, unplanned growth, yet Canada continues to actively seek large numbers of immigrants who gravitate towards these regions. Anyone using the Lions gate Bridge in Vancouver, highway 401 in southern Ontario, or emergency services at hospitals across the country knows that we do not lack people.

The policy of the Liberal Party of Canada calls for immigration at a rate of one percent annually of the Canadian population in response to the powerful proponents of continual economic expansion. This target would increase immigration by about one-third over current levels. A plan to increase the population of Canada by at least one percent a year is a recipe for ecological calamity. There is a common misconception that the Canadian population is now shrinking without immigration. While the fertility rate has been below replacement for some years, the built-in momentum of the population (age structure) is such that births are expected to exceed deaths in Canada for about the next fifteen years (Statistics Canada).

### **Population as Taboo**

Why is this issue of overpopulation being addressed so inadequately? It is a contentious topic. The idea of stabilizing and reducing human population goes against the basic instinct of all life forms to expand into any given opportunity. Unfortunately, such expansions usually continue until they deplete the food supply leading to a rapid decline of population. For thousands of years, we humans have viewed ourselves as struggling for survival against a hostile natural world and consequently many traditional values and institutions favour the growth of human numbers. Some religious leaders support population growth by opposing birth control and limits to migration. Real estate developers want more people because they require more housing, more retail outlets, and more office space causing real estate prices to rise. Banks like rising real estate prices because it makes their mortgage business more secure. Most businesses prefer a growing population because it increases the number of consumers and drives down wages. Governments support an expanding population for it spreads the burden of public debt, and often they support lax immigration laws with the hope of gaining the support of recent immigrants. Meanwhile, some well-intentioned but misinformed people overlook overpopulation and insist on the redistribution of wealth as the global panacea.

These groups have a vested interest in continual economic expansion and population growth. They manipulate politicians by bloc voting and intimidate dissenters in the public and the media placing their own narrow interests before the future well-being of humanity and of all life.

Proponents of population growth raise the specter of an ageing population arguing that an expanding workforce is necessary to cover the future costs of pensions. This overlooks the fact that there are other ways of dealing with this issue. Sweden and other Scandinavian countries are managing ageing populations without increasing immigration by providing, for example, incentives to encourage older and younger people to participate in the workforce. It is self evident that an increase of the median age of a population is an essential stage in the process of population reduction.

Worldwide, public policy must respond fully to the information from scientists about the state of the global environment and the rapid depletion of natural resources upon which all societies depend. Canada needs vital leaders to meet the demands of the age of ecology, not myopic managers who act like it is “business as usual” while paying lip service to the notion of sustainability and to other environmental issues. Old-line thinking supports policies pertaining to manufacturing, fisheries, forestry, agriculture, and energy that continue to degrade the productivity and integrity of Earth’s ecosystems.

In this global and national context, the following statement of the issue and positions/recommendations are set out for consideration by the Government of Canada and by the Governments of the Provinces and Territories, all of which need to develop population policies.

## **Issues, Positions/Recommendations, and Arguments**

### **Issue**

What is the optimal sustainable level of human population for Canada taking into consideration the following factors: the quality of life to which most Canadians aspire; the carrying capacity of the web of life; the essential needs of biodiversity; the requirement for a continual flow of vital natural resources; the preservation of substantial wilderness areas; and, the global context in which all Canadians live?

The optimal number of people does not mean the maximum number of people since the maximum does not leave a margin of safety to provide for unexpected disasters. Besides, we humans have an ethical obligation to preserve ecosystems needed by other species and a moral obligation to prevent the degradation of societies that inevitably results when population levels are out of balance with the productivity of lands and waters.

The challenge for the twenty-first century will be for humans to live within carrying capacity while following the precautionary principle which provides guidance that when an activity or activities raise threats of serious harm to human health or to the environment, precautionary measures should be taken even if some relationships of cause and effect are not fully established scientifically.

## **Position/Recommendation 1**

The Government of Canada and the Governments of the Provinces and Territories need to develop a population policy that links human numbers in Canada to the long-term carrying capacity of Canadian lands and boundary waters taking into consideration the needs of other species and the biodiversity required for a healthy ecosphere. A similar initiative should be taken by every other country in the world. Although it is a worthwhile goal, an international accord is not required prior to taking national action on this serious issue.

“Carrying capacity” is defined as the human population that can be supported in a given territory, in a specified lifestyle (normally the one to which people can reasonably aspire), without degrading their physical, ecological and social environment, and without imposing wastes on the environment beyond what can be absorbed without damage. Studies of carrying capacity should include an assessment of the global ecological footprint of each country and the extent to which each country is affected by the ecological footprints of others. The “ecological footprint” of a country is the total area of land and water ecosystems needed, both inside and outside its own territory, to produce the renewable natural resources its population consumes and to assimilate the wastes its population produces. The undertaking of these calculations should involve extensive public consultations in an open democratic process.

## **Argument**

An in-depth knowledge and measurement of carrying capacity and interdependence are prerequisites for fully understanding the relationships of humanity within the web of life. Without this knowledge and the political will to use it, we cannot make appropriate decisions. The science of ecology has informed human beings that they are in relationship not only with members of their own species but with all life, and that the health of the human population depends on the well-being of the Earth’s living systems that support life. Therefore, human beings will assure their own future by doing their best to nurture all life. These insights from ecology have yet to permeate the general public perception. It is unrealistic and dangerous to subject the finite Earth to political policies that operate on the assumption that the growth of the economy and of the human population can continue indefinitely. Following the concept of “thinking globally and acting locally,” every country has an obligation to develop a population policy that looks at human numbers in the context of the natural environment that supports them.

Canadians are vulnerable for they have expanded and prospered by using and selling their natural resources at an accelerating pace. Many of these are not renewable, and when supplies of natural resources near exhaustion, the well-being of the population of Canada may decline rapidly. Each country has a responsibility to reduce population and consumption to prevent the chaos that results when complex systems break down. An acceptable response would be to shrink our way to prosperity by reducing population faster than the size of the economy.



Meanwhile, Canada should continue to strive to meet international obligations as a signatory to agreements such as the Geneva Convention on Refugees, the Kyoto Accord, the Convention on International Trade in Endangered Species, and The Migratory Birds Convention, while realizing that the goals of such conventions are endangered by overpopulation and environmental deterioration. In an increasingly overcrowded and desperate world, there will be ever fewer places of refuge.

Most people overlook the inevitability of the human encounter with global environmental limits. The media has done little to help people understand the "whole system" reality of the population/environmental crisis. The right-wing media does not begin to acknowledge that the economy is a dependent subsidiary of the environment; they believe that the resources of the planet are infinite and the loss of a few million species is of no great concern. The left-wing media embraces the "it's not population, it's consumption" ideology, as if the two were not inextricably linked. From the perspective of many on the left, the resource pie is big enough for any number of people provided these people divide it into equal pieces. These positions reflect insufficient understanding of biological capacities and human nature.

To date, no Canadian government has ever adopted a population policy. This is surprising since the Canadian population has increased six fold since 1900 causing the degradation of fisheries, forests, and agricultural soils as well as other environmental deterioration. One could say that the issue has been "addressed" piecemeal and inadequately by policies on subjects such as immigration, refugees, child credits, and abortion. A more comprehensive and ecologically-based approach is essential to address the issue of population.

## **Position/Recommendation 2**

The Government of Canada and the Governments of the Provinces and Territories should provide the strong political leadership needed to create a comprehensive population policy for Canada.

## **Argument**

The development of a population policy requires strong leadership with the capacity to bridge many jurisdictions and interest groups in Canada. Most politicians avoid the issue of population growth because it opens them to criticism from a wide range of interest groups probably damaging rather than helping their careers. However, from time to time, issues arise of such overwhelming importance to the future of humankind that they require an assertive rather than a reactive form of leadership. They demand anticipation and preventive actions, since a cure may not be possible if the stability of the Earth's ecosphere is undermined. The threat posed by the overshoot of human numbers to the

health of the Earth's web of life and to the well-being of civilized societies is such an issue.

### **Position/Recommendation 3**

The Government of Canada and the Governments of the Provinces and Territories should endorse the development of reliable data on the long-term carrying capacity of Canada to provide an objective basis for an ecologically secure and socially just population policy.

### **Argument**

As soon as Canadians try to answer the question posed by the issue, they will realize that they need much better information on which to base their decisions. They should be prepared to make decisions based on the weight-of-evidence approach, acting on the preponderance of evidence rather than waiting for the last bit of data.

Clearly, Canada needs extensive and reliable data on the condition of the web of life on Canadian lands and in Canadian boundary waters to ascertain the appropriate levels of human population and economic activity. The good news is that there is a great deal of environmental information in Canada; unfortunately, it is dispersed in dozens of databases across the country. Many of these databases are not designed to relate easily to one another, creating barriers relating to cost, function and jurisdiction. Gaps exist. In some cases, there is insufficient data to show the present effect of current management practices on natural resources. For example, in forestry, Canadians must often extrapolate from non-Canadian information regarding the effects of harvesting on water quality, wildlife populations, aesthetics, fisheries, and on the inability of forests to regenerate themselves after successive harvests. (Cassils, J. Anthony. Linking Land Titles/Registry Systems in Canada to Land-Related Environmental Information. Unedited Working Paper for Discussion. National Round Table on the Environment and the Economy. April, 1995.)

The Government of Canada and the Governments of the Provinces and Territories should actively promote the development of the branch of ecology that looks at the carrying capacity of the natural environment and at the ecological footprints of various communities, cities and countries. Too much damage has already been done and restoration to former levels of productivity should now be a priority.

In determining the carrying capacity of Canada, one should attempt also to take into account the interdependency of Canada with the rest of the world. Canada helps others to live by selling its natural resources and manufactured goods, and is helped in turn by other countries that supply Canada with a broad range of products. Canadians need to become more aware of the size of their collective global ecological footprint and understand how Canada is affected by the ecological footprints of others, for example the northern parts of Canada have been seriously affected by the tendency of global air

pollution to coalesce in the Polar Regions.

Canada should place the highest priority on developing reliable data on the use, and trends in the use, of resources to ensure that human demands on the web of life remain safely within the bounds of sustainability. Without such information, the state of health of the web of life will be left to the uninformed demands of corporate, religious, political, and environmental interests. Furthermore, good ecological data will give rise to a profound transformation of the way people value the environment. It will change the way leaders think and make decisions, and give birth to new institutions.

#### **Position/Recommendation 4**

The Government of Canada and the Governments of the Provinces and Territories should undertake an initiative to educate Canadians about the acute dangers of overpopulation and to build public participation and support for a population policy.

#### **Argument**

Faced with such a complex issue, it is essential to take time to educate and engage the public and to draw upon their insights in formulating a population policy.

An unbiased, accessible process of consultation would help to develop consensus in an open, participatory process. The end-product would be a statement of goals, assumptions and principles for a population policy. In the course of doing this task, the participants in the consultation process would draw upon the growing database of reliable environmental information and identify gaps. The process should be designed so that the attainment of a more comprehensive database and the production of the statement of goals, assumptions and principles coincide to give legislators a solid foundation for a population policy.

#### **Position/Recommendation 5**

The Government of Canada and the Governments of the Provinces and Territories should advocate steps to slow the growth of population in Canada pending the development of the information base on carrying capacity and the completion of public consultations, and undertake measures to increase international aid to those overpopulated countries that have or are willing to have policies to lower fertility but need assistance to develop and implement such policies.

#### **Argument**

As Canada will have a very slow natural population growth rate without immigration for about the next fifteen years (Statistics Canada), one measure to slow population growth

would be to bring immigration to levels in place prior to 1989. Between 1867 and 1989, Canada adjusted its intake of immigrants according to its ability to absorb them and to provide suitable employment.

In 1989, the Mulroney government, in an unsuccessful attempt to win the support of recent immigrants in swing urban ridings from the Liberals, set an informal target to increase the population of Canada by 1 percent annually, largely from immigration, regardless of the economic or environmental conditions in Canada. Since 1990, recent immigrants have been doing substantially less well than the average Canadian, when a generation or two before, they did considerably better. This may suggest that Canada has reached its carrying capacity. For as long as an ecological surplus exists, additional population seems to increase wealth, but when carrying capacity has been exceeded, added population causes a rise in poverty levels (William Catton). The current level of migration to Canada as a percentage of population exceeds that of all other developed nations.

A policy to maintain high levels of immigration could be contrary to the wishes of many Canadians who are beginning to stabilize the Canadian population by having smaller families. The conventional economic explanation for smaller families is that Canadians want to avoid the expense of having large families and believe that too many children would interfere with their lifestyles. Ecologists have another perspective. As with other mammalian species, it may be that the overcrowding and increasing scarcity, encountered by Canadians as the high cost of living and a lower quality of life, intensify the competition for survival and lower the fertility rate. All levels of government in Canada need to act on the understanding that without healthy, natural systems to support and buffer industrial, urban, and agricultural activities there can be no healthy economy or high quality of life. (Eugene Odum)

In light of these facts, Canada should approach all forms of population growth with care pending the completion of a thorough assessment of carrying capacity. No other measures are proposed to lower population growth at this time. However a woman should retain the right to have a lawful abortion.

Canadian policy makers need to develop a deeper appreciation of the impact of the long-term exponential growth of human population on the carrying capacity of ecosystems in Canada. Often, they compare Canada with other countries, many of which are overpopulated and showing signs of severe ecological, social, and political stress. Then, they leap to the wrong conclusion that Canada has too few people.

Human numbers do not tell the whole story. The range of human activities and the types of technologies used influence the impact on the web of life. Canadians demand energy- and technology-intensive lifestyles involving activities that are high-cost, financially and environmentally. Some of this consumption may be inevitable - a large cold country will require much energy for transportation and heating - but this does not mitigate its impact.

It is popular in the current intellectual climate to pretend that all would be well if only those in the developed regions would consume less, an initiative they would fiercely resist. However, this ignores the fact that it is primarily population growth and its concomitant deforestation, erosion, and desertification that, in the poorer countries, destroys the ecological underpinnings of their subsistence way of life. This unfortunate situation is exacerbated by the growing international demand for natural resources. Furthermore, the disparity in perceived consumption is based in part on differences in per capita incomes. A person earning thirty thousand dollars a year in Toronto would appear at first glance to have as much as fifty times the purchasing power of a person in one of the poorest countries. However, it is expensive to live in Canada. A person earning an income of thirty thousand dollars in Toronto does not have much discretionary spending after paying for taxes, shelter, heating, food, and transportation. Meanwhile a person in a poorer country may have a more benign climate, be able to build their own shelter, and grow two or three crops for food per year. Details of subsistence ways of life will likely not be recorded in poorer countries and much energy may be consumed and pollution produced by, for example, slash and burn agriculture.

Nevertheless, Canadians must make every effort to reduce the pollution caused by their consumption and activities. They should try also to consume considerably less, but it has been a political truism that no government in a democracy has been elected based on a platform advocating a reduction of consumption. The most acceptable first step is to encourage greater efficiency in the use of natural resources by applying financial incentives with the added benefit that this would urge Canadian companies to move into the forefront in the development of green technologies. Germany provides an excellent example of this shift.

Canada needs to seize the initiative and show that it is serious about taking measures at home to help restore the health of the ecosphere by stabilizing and reducing population and consumption if it wishes its efforts to resolve global overpopulation to be taken seriously by other countries. This does not imply in any way that Canadians are cutting themselves off from the rest of the world. As Canada stabilizes and reduces its population, it will provide a useful example that will inspire other countries to adopt similar goals, even though conditions vary considerably from one country to another. In any event, Canada should increase substantially its aid to those countries which need help to develop population policies to bring their respective populations into alignment with carrying capacity.

## **AN EFFECTIVE GLOBAL APPROACH TO OVERPOPULATION**

The international community must come to an unequivocal agreement that a significant reduction of human population is a desirable goal. The Cairo Conference in 1994 was a small tentative step that, unfortunately, failed to address this challenge. International agreements can take many years to achieve given the complexity of often-conflicting

national interests at the global level, but, thankfully, individual countries do not need to wait for an international accord before taking action. National strategies to encourage falling birth rates have been a factor in improving human well-being in South Korea, Thailand, and China among others. Falling birth rates provide what is called a “demographic dividend” when having fewer dependent children allows more adults to participate in the workforce, increasing productivity and prosperity.

All governments should calculate the carrying capacity of their respective countries. In so doing, they should take into consideration not only human needs, but also the needs of other species.

More prosperous countries should make every effort to improve the education for women and children in the poorest countries and to supply them with all suitable means of contraception.

If the citizens of countries in the lead in reducing their populations are to benefit from their foresight and feel secure, they must not be invaded by illegal migration or military action. Nor should they give in to the advocates of growth within their respective countries by allowing massive immigration. Some political leaders consider that a large population is an indicator of political, economic, and potentially, military significance. Permitting the continual outflow from overpopulated regions rewards those who multiply without fully understanding the consequences and perpetuates the myth that unlimited growth is possible. Countries that allow their populations to rise beyond carrying capacity must face the results of their actions or inaction as this will make evident to them very rapidly the need to change their habits and cultures. Meanwhile, they should receive all the assistance required to help them make a quick transition to lower fertility levels. There is a huge unmet need for family planning. Ultimately, the various peoples of the world will have to assume the responsibility to restore their respective regions into lands of hope. In an overcrowded world, mass migration is no longer a reasonable option to address overpopulation.

As many old institutions and value systems seem unable to respond to the challenge of new ecological insights, all governments should show real leadership by designing institutions that can help humanity shrink its way to sustainable prosperity. We need institutions that can thrive as the global population and economy shrink. For example, the concept of the corporation was conceived in the 17th century when perpetual economic growth was considered possible. In the twenty-first century, the corporate model clearly needs to be revised substantially or to be replaced.

The advantages of this proposed approach to overpopulation are as follows: it targets those countries that have the highest fertility; it addresses directly and immediately the need for female education and the huge unmet need for family planning; and, it would set in place incentives to encourage all countries to think globally and act locally to begin to resolve the critical issue of human overpopulation.



The good news is that populations that grow exponentially can shrink exponentially. A few generations of below replacement fertility could reduce the global population to sustainable levels. Below replacement fertility is already a reality in fifty-one countries including China. This trend should be celebrated. Instead the purveyors of perpetual growth bemoan lower fertility rates as they rush to lay waste to what remains of the living Earth.

## **CONCLUSIONS**

The greatest challenge faced by humanity is to come to terms with the huge ecological burdens caused by human numbers and their demands.

In many cultures, including the globally predominant consumer culture, 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. Consequently, human numbers and demands continue to grow and fuel the deterioration of the web of life on Earth. We humans must develop a greener sense of ethics that involves confronting our instinctive expansionist drives and our disregard for non-human forms of life. We need ecocentric ethics which are grounded in awareness of our place in nature. We need to recognize that the Earth is the only home we have.

Huge benefits would result from a reduction of population and of human demands on the living Earth. Humanity can choose to have more people and lower living standards or fewer people and a higher quality of life in a healthier ecosphere. Excessive human numbers drive down average income and quality of life and drive up the cost of the necessities of life. This is already causing widespread hardship and suffering to hundreds of millions. The debasement of the value of human life, while not publicly acknowledged, is occurring in many countries. If humans continue to overstep the mark, then nature will cull us with great hardship. Actions taken now to lower fertility can prevent much grief and social injustice.

Governments have paid lip-service to some environmental issues, but they have failed to address comprehensively the problem of rapid environmental deterioration. Nor have they come to terms with the underlying human preference for the growth of human numbers, of consumption per capita, and of the economy. While there is an urgent need to bring humanity into a sustainable alignment with the rest of the ecosphere, humans have a tendency to fight amongst themselves for relative advantage instead of addressing this overriding issue. Important long-term issues receive little attention from the average person who is pre-occupied with day-to-day affairs. However, we cannot afford such a haphazard approach to problem-solving given the gravity of the situation. Civilization is at risk.

In troubled times we need leaders, not managers for business-as-usual. In recent decades, governments have relied on economic growth to provide the revenues to win public support. These times of relative abundance have given rise to an approach to governing that caters to special interests, segment by segment, while overlooking the broader public good. The human bias for growth has overburdened the living Earth and many life forms that support human life but do not have a voice. We humans need to recognize that we are in relationship not only with other members of our own species, but with all life forms. We have a duty to speak for the voiceless as well as for ourselves. As the current human expansion threatens to surpass other major extinctions caused by the formation of the unified continent of Pangea and by the Earth's collision with a large meteorite, this is no time for complacency. We must vigorously address issues like overpopulation that some in politics consider to be "dangerous." Otherwise, these issues will fester until they emerge as monstrous calamities that will shred the fabric of the living Earth.

This raises an important question about human nature. While we humans may have more consciousness than other life forms, collectively, we may not have enough to counteract the basic genetic impulses to expand our numbers and demands as long as we are able, even though we understand that we may undermine the living Earth that sustains all life. Our species will be defined by its response to this issue. Do we humans have the will and the understanding to act? If not, it may be that we are little more than rabbits with attitude.