Long Term Environmental Monitoring
The Commissioner's Perspective

Gord Miller
Environmental Commissioner of Ontario
October 22, 2007

Overview on LT monitoring

- **Do we need it? Why?**
- **What are we monitoring and what are we not?**
- **What the heck is going on?**
- **What should we do about it?**

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- **Gives us knowledge of the current state of the ecosystem and a reference point in time in order to determine if change has occurred**
- **Allows us to identify oscillations and patterns that emerge on long time scales**
- **Gives us the opportunity to anticipate and prevent (or at least prepare for) adverse future states**

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- **It also allows us to make informed decision on when we should not take action**
- **It can save a great deal of money and perhaps loss of human lives**

What are we monitoring & how well?

Regional / trans-boundary AQ	Good
Community level AQ (beyond AQI)	Rare
Local AQ problems	No
Stream water quality	Inadequate
Lake water quality	Inadequate
Groundwater quality	Inadequate
Great Lakes biota	Sparse
Great Lakes toxic hot spots	Rare

What are we monitoring & how well?

Accumulation of toxins in biota	Fish
State of utilized vertebrate pop'ns	Poor
State of non-utilized vertebrates	No
State of native plant pop'ns	No
State of invertebrate pop'ns	No
Phenology of plant communities	No
Limnological patterns of lakes	Sparse

The story so far …

- We know LT monitoring is necessary
- We know we are not doing enough
- We know that failure to do so has dire consequences
- So what the heck is going on?

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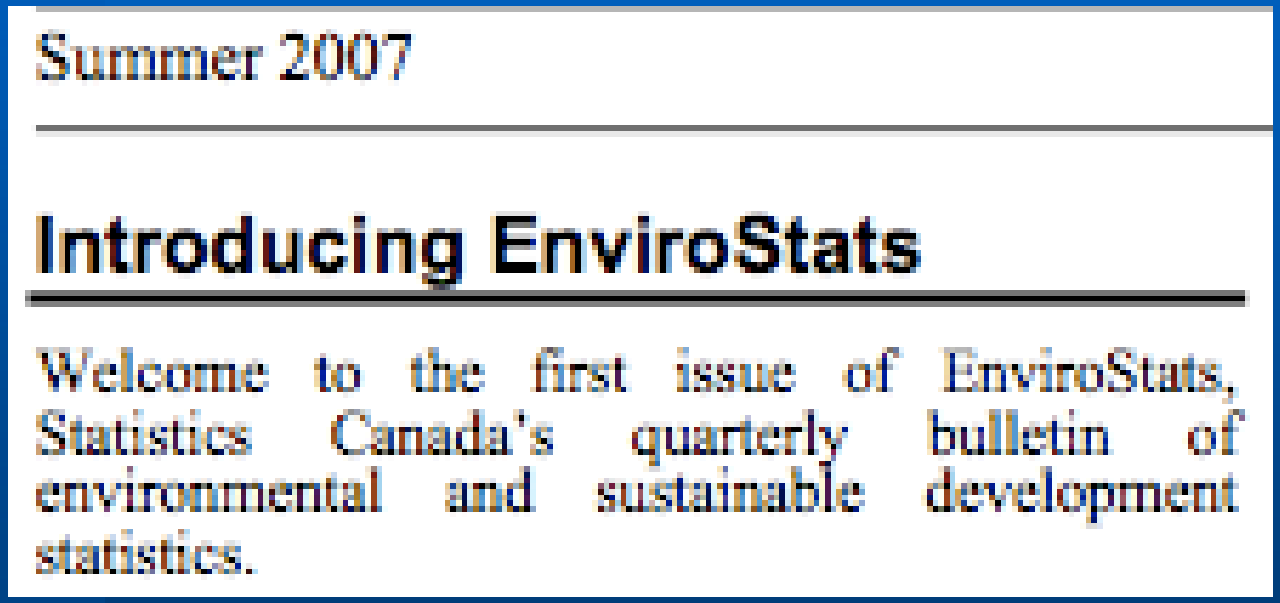
- **The government system of decision making and resource allocation is run by neo-classical economists**
- **They do believe long-term monitoring is necessary to support decision-making economic models**
- **They even have a well funded government agency to collect data for them to utilize**

Statistics Canada -Monitoring



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Introducing EnviroStats

Welcome to the first issue of EnviroStats, Statistics Canada's quarterly bulletin of environmental and sustainable development statistics.

Environment and sustainable development indicators

Population	
Population (number)[1]	31,021,251
percentage change	1.1
aged 65 and over (percent of total)	12.6
urban (percent of total)	79.7
density (per square kilometre)	3.4
Economy	
Gross Domestic Product (million chained 2002 dollars)	1,120,146
percentage change	1.8
per capita (chained 2002 dollars)	36,109
Consumer Price Index (1992 = 100)	116.4
Unemployment rate (percent)	7.2

Environment and sustainable development indicators

Social	
Average household spending (current dollars)	
water and sewage	195
electricity	973
food	6,415
Personal expenditure on consumer goods and services (million chained 2002 dollars)	632,781
Residential waste	
production per capita (kilograms)	..
disposal (tonnes)	..
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diversion (tonnes)	..
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diversion rate (percent of waste production)	..
Asthma (percent of population age 12 and over)	..

Environment and sustainable development indicators

Energy	
Primary energy availability (terajoules)	10,950,393
Primary and secondary energy (terajoules)	
export	9,305,984
residential consumption	1,239,970
Established reserve, closing stock[2]	
crude bitumen (million cubic metres)	1,830
crude oil (million cubic metres)	644.7
natural gas (million cubic metres)	1,590.8
Recoverable reserves, closing stock[2]	
coal (million tonnes)	4,555.4
uranium (tonnes)	452,000

Environment and sustainable development indicators

Environment and Natural Resources	
GHG emissions (megatonnes of carbon dioxide equivalent)	714
GHG emissions by final demand (megatonnes of carbon dioxide equivalent)	
exports	278
personal consumption	200
Annual temperature departures,[3] Canada (degrees Celsius)	1.7
Value of selected natural resources (million current dollars)	
land	926,150
timber	300,445
subsoil resource stocks	396,760
Average farm pesticide expenditures (current dollars)	6,312
Air quality[4]	
ozone (population weighted, parts per billion)	40
$PM_{2.5}$ (population weighted, micrograms per cubic metre)	9

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- **Ecosystems are externalities to neo-classical economists**
- **Collecting info on environmental or ecosystem conditions is a useless activity because it doesn't fit into their models**
- **Worst than that, the presence of such environmental information underlines the inadequacy of their decision-making system**

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- **Use your EBR rights (in Ontario)**
- **“make noise” - exhort the media and the masses**
- **Tell the people what we don’t know but what we could know and should know**
- **Speak out against token monitoring gestures and programs**

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- **The neo-classical economic models that we utilize to make decisions cannot and will not utilize environmental/ecological information**
- **Competent professionals who know better must speak out**

Thank You For Your Attention

The ultimate test of a moral society is the kind of world that it leaves to its children.

Dietrich Bonhoeffer, theologian (1906-1945)