

We All Live Downstream

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Remember.....

- When the air was clean and clear and it was easy to breathe?
- When we could slake our thirst by drinking deeply from lakes and mountain streams?
- When food was grown by a caring synergy of human minds and hands, the sun's energy, the work of soil organisms, and the fresh rain falling to earth?
- When the oceans were vast, pristine, unexplored ecosystems teeming with life?
- When we had little fear of invisible toxins and our elders told us what plants to avoid or treat with caution?
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Do you remember this? The memory is in your cells. There was a time when once we lived this way.

Today, consider this – We All Live Downstream



This Orca is threatened by the concentrations of contaminants called polychlorinated biphenyls or PCBs which are stored in its blubber. These long-lasting industrial chemicals were banned in the 1970s for their threat to both the environment and human health. The accumulation of PCBs within orcas, specifically, damages the immune system, development, and reproductive processes. PCBs bio-accumulate in the environment.

Local orcas are the most toxic whales in the world. When a West Coast local whale, age 22, washed up on shore near Everett, Washington in 2000, he hadn't developed his sexual organs and had no sperm. Orcas become sexually viable around the age of fifteen.

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This growing baby and her mother may be exposed every day to phthalates, plastic softeners found in shampoos, conditioners, personal care products and some plastic wrap. Phthalates are endocrine disrupting chemicals that mimic female hormones or interfere with male hormones. Exposure during pregnancy is linked to developmental defects in male children. Phthalates may also play a role in breast cancer. At many critical times in her life, including very early years, females are vulnerable to critical changes in breast cells that can be triggered by chemical exposure or hormone disruption. Even low dose exposures during fetal development or puberty can create the first in a cascade of events that lead to cancer in later life.

Phthalates are showing up in increasing levels in wildlife.

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John works in a Poly Vinyl Chloride pipe fabrication plant. His work endangers his health. PVC production has been associated with tumours of the liver, brain, lung and other body systems. Vinyl chloride is a known human carcinogen. Fabrication processes for making PVC pipes, cables, plastic bags, intravenous tubing, etc add stabilizers and plasticizers to enhance durability, using salts from various metals such as lead and cadmium. Exposure to the lead dust can damage nervous and reproductive systems. This can result in personality and behaviour changes, decreased fertility and increased in miscarriage rates for women. Plasticizers such as phthalates used in PVC manufacture can, at very low levels, result in de-masculinization of the male fetus. Exposure can occur through inhalation of workplace air or consumption of contaminated water. Incineration of PVC generates dioxins, one of the most toxic chemicals known, potentially resulting in cancer, impaired child development, infertility and immune system damage.



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This Inuit woman should have the right to safe and nutritious country foods. As should her baby. However, environmental factors, such as long range transport of contaminants and climate change are damaging the food chain in Inuit regions. Over the last two decades the Northern Contaminants Program has documented alarming levels of persistent organic pollutants, heavy metals, and radionuclides in the air, land, sea, animals and even people of the Arctic. The nutritious “country food” diet of seal and other marine

mammals is compromised by the presence of Persistent Organic Pollutants (POPs). PCB levels in 2000 in over 60% of Inuit children under age 15 exceed “tolerable levels” set by Health Canada. 14 On average, Inuit women have levels of PCB's in their breast milk 5 to 10 times higher than women in southern Canada. Inuit women also have higher levels of PBDEs (flame retardants) in their breast milk.

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This Lesser Yellowlegs starts out its journey to the Canadian Boreal from as far south as Tierra Fuego, Argentina, passing through the tar sands. Birds breathe the same air as humans. Pollutants, such as Volatile Organic Compounds include cancer causing chemicals. VOCs have their biggest impact at the source of production, but they also contribute to ground-level ozone and smog. VOCs are lethal to birds at high levels and impact behaviour and physiology at lower levels.



Heavy metals are released from tar sands refining processes, from machinery emission and from leakage and emission of tailings ponds. Mercury causes embryo malformation. Lead can impair location. Eggs shells thin, testes are damaged. Kidneys become toxic.

Nitrogen and sulphur dioxides flushed by rain into aquatic systems cause wetlands to become stagnant. Acid rain destroys ecosystems, on which birds, aquatic invertebrates and fish depend.

Tailing pond toxins cause developmental abnormalities and mortality in embryos, reduced egg production, increased clutch or brood abandonment, reduced growth, and increased organ weight.

The tar sands are just the worst and one of the largest examples of pollution of wildlife habitat which are happening throughout the continent, and the world. Everywhere, dumping, sewage and rain run-off in urban areas carries a variety of chemicals into rivers, ponds, and lakes.

Chemical Trespass

Tens of thousands of chemicals have come into use in the past 50 or so years. The vast majority of them have never been tested for their impact on living things. These chemicals have had a revolutionary impact on industrial and home process in modern life but they also have myriad toxic impacts on health and the environment. We call this chemical trespass.

Here are three categories of chemicals that are harmful to life:

- Carcinogens** cancer-causing toxins. In the 1970's 1 in 5 Canadians had a lifetime probability of cancer. Today it is 1 in 2.3 for men and 1 in 2.6 for women.
- Reproductive toxins** chemicals which impact reproduction in humans, other animals and development of the young of all species.
- Endocrine disrupters** chemicals that affect the hormone producing organs of the body.

Many carcinogens are also reproductive toxins. Some are also neurotoxic, affecting the brain or nervous system. The 2006 British Medical Journal – the Lancet – warns of a silent pandemic of neuro-behavioural disorders among children caused by pesticides and other chemicals. Disorders include autism, and attention deficit disorder and hyperactivity disorder which are today occurring at far higher rates.

We might think it obvious that there is a link between cancer (and other sicknesses) and things in our environment. But only recently has the link between cancer and environmental and occupational chemicals been accepted. There are very powerful corporate forces which would have us deny this link.

What can we do?

The goal is to eliminate exposure. What steps can help us achieve this?

1. Win the Right to Know.

We need to know what's in the products we use, whether we consume them, apply them, live next to, or on them. If you're working with products in the workplace, health and safety regulations require that potentially hazardous contents of these products be disclosed in a safety data sheet. This right was won in a long, hard struggle by workers to protect themselves from workplace hazards and un-caring employers. Of course, even today, workers have to assert this legal right to know what they are being exposed to, the hazards and to have dangerous substances replaced by safer ones.

There are no such labelling requirements for most consumer products. Shouldn't we have this right?

Take action:

- Find out what you can. There are many resources, including Toxic Free Canada's Cancer Smart Guide which can help you find information. The internet has many resources.

- Insist that governments introduce **right to know labelling** that requires manufacturers to disclose what is in their products. So far, it's only required on cosmetics (Nov. 2006)
- Support efforts to establish the right of communities to know about harmful substances in lands, waters, and manufacturing/industrial facilities

2. **Reduce and eliminate exposure to toxic chemicals. It's not enough to know about them.**

Take Action:

- Just say No. Stop using powerful toxic chemicals in your homes, on your body, on your food, on your gardens, in your home construction. There are safer alternatives. Eat healthy foods that have been raised without pesticides and hormones. Use green alternatives in cleaning products.
- Advocate for the **precautionary principle** in the regulation of chemicals. This principle asserts that if there is a weight of evidence that a chemical is carcinogenic or toxic in other ways, there should be regulations restricting its use or even banning it, even if there is not yet conclusive proof of its impact. If there is doubt...err on the side of caution.
 - The European Union has adopted a new chemicals policy (REACH) which supports a precautionary approach. The onus is on manufacturers to show that new chemicals will not cause harm before they are used. Existing chemicals must undergo rigorous authorization. Some have already been banned: e.g. 22 chemicals formerly used in cosmetics have been banned. California and San Francisco in particular have made big strides in applying the precautionary principles to many aspects of public services.
- Support efforts to ban known toxic substances.
 - Canada has an abysmal record regarding asbestos (a known carcinogen) production, continuing to export large amounts to majority world countries. A number of unions are waging campaigns to stop production and export. You can connect with them through Ban Asbestos Canada <http://www.bacanada.org/main.html>
 - Many municipalities have banned the use of cosmetic herbicides. Ask yours to do the same. The active ingredient in many lawn and garden weed killers in Canada is 2,4-D which is linked to cancer, neurological impairment, reproductive problems and non-Hodgkins lymphoma. Demand that the provincial and federal governments impose such a ban. Quebec has already taken that step. TFC is actively working for a ban in BC. You can add your voice: <http://www.toxicfreecanada.ca/articlefull.asp?uid=54>
 - While we're at it, let's ensure we remember and honour the legacy of Rachel Carson whose famous work "Silent Spring" exposed the environmental damage done by the powerful organochloride pesticide DDT. DDT, which we all carry in our blood, is still widely used outside of Europe and NA.
 - Acknowledge positive government action and push for much more. Know that change will not come without our action. The federal government introduced regulations in 2008 to ban the use, sale and importation of the two main groups of PBDEs, octa-and pentaBDEs, that had been used in

furniture, mattresses and textiles. New regulations have been gazetted this year that will mainly deal with the last remaining group, the decaBDEs, by banning their use in electronic products, where 90 per cent of them are used. All those regulations really are the result of action by environmental and health groups as well as leading scientists, including Peter Ross from Department of Fisheries and Oceans.

- Reduce plastics in our environment. Plastics often contain phthalates (reproductive toxins which can cause liver and kidney damage). Polycarbonate plastics contain bisphenol – A, an endocrine disrupter which mimics the female hormone estrogen. Plastics may leach toxins into liquids and into landfills and water systems. They clog our landfills. And they consume precious energy in their production. Toxic Free Canada has just launched a campaign to reduce plastic water bottles. Let's make a toast to public tap water!