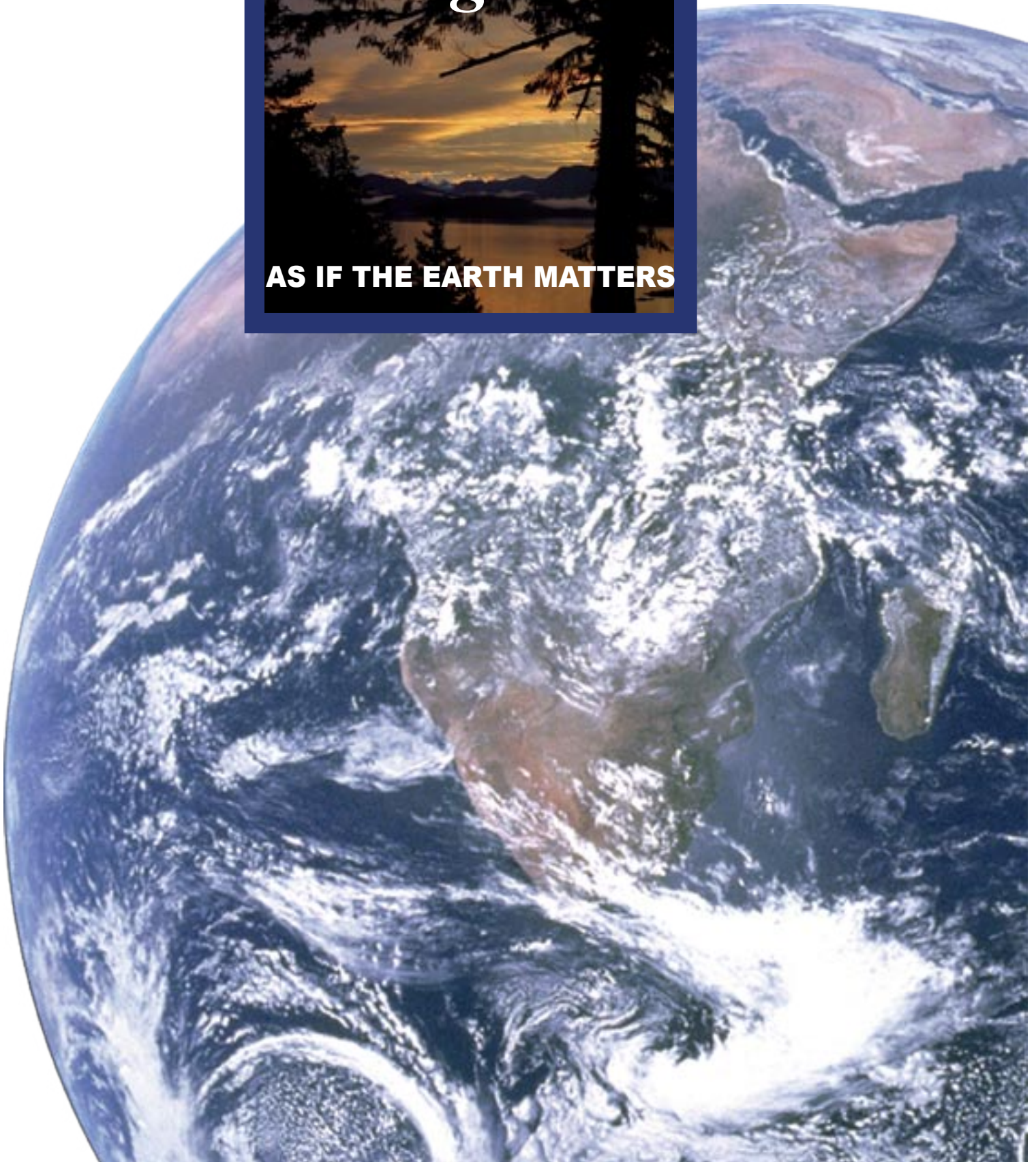


a **Reach for Unbleached** web publication 2005

*making* **PAPER**

**AS IF THE EARTH MATTERS**



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*A Reach for Unbleached  
Publication, 2005*

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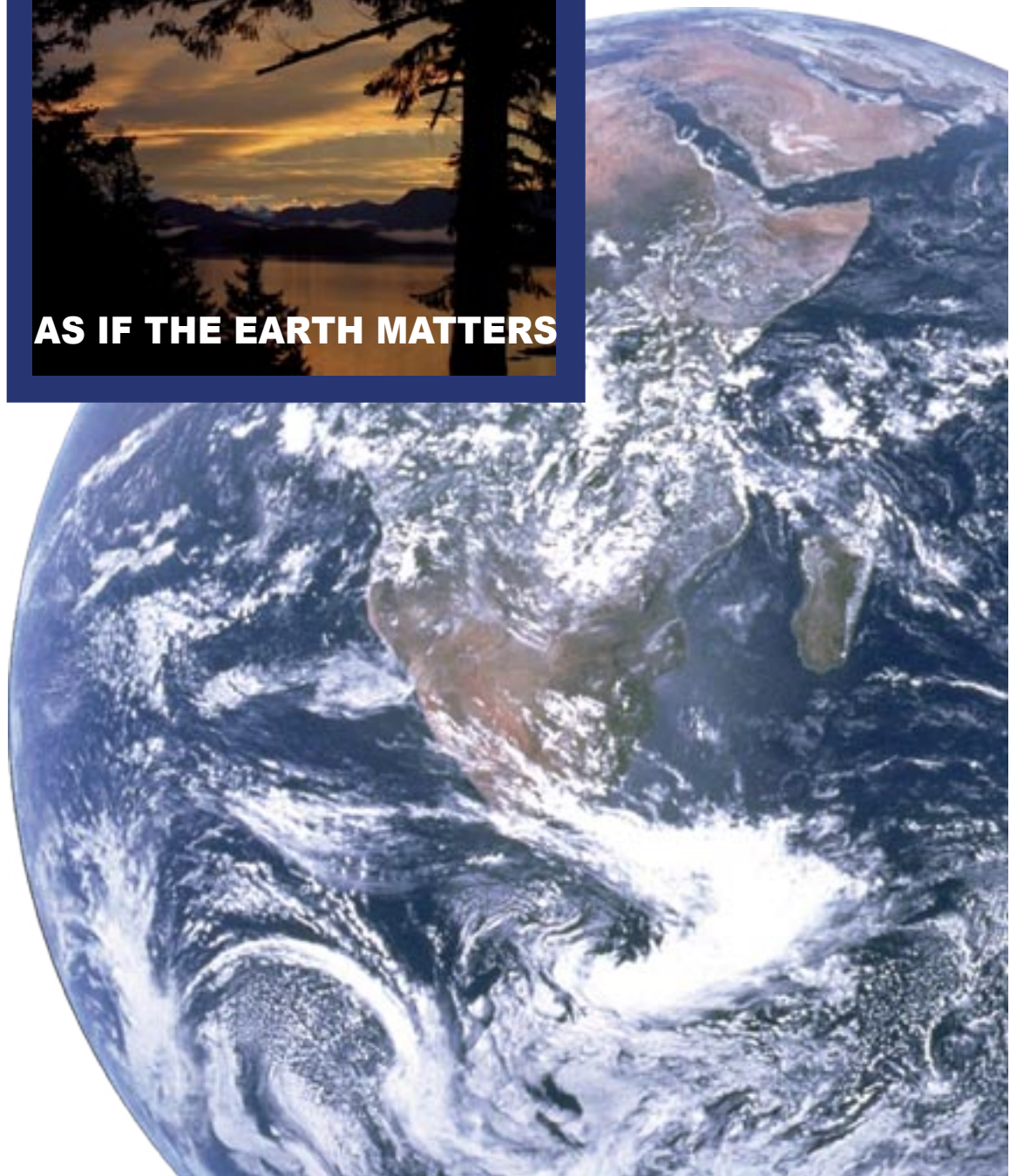
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*Originally published* in 1994 as a freestanding display and tabloid newspaper. This edition has been rewritten and revised for distribution on the World Wide Web, with thanks to the BC Gaming Commission.

*Reach for Unbleached* started in 1991 as a citizens' organization in British Columbia, Canada in response to fishing closures due to dioxin contamination from chlorine-bleaching kraft pulp mills. We are now a national foundation, and a Canadian registered charity with a focus on consumer education and pulp mill monitoring.

*Reach for Unbleached*  
[www.rfu.org](http://www.rfu.org)

*For more information go to*  
[www.rfu.org](http://www.rfu.org)  
*and follow the links to the*  
*Clean Paper section.*



## INTRODUCTION

# *making* PAPER

## AS IF THE EARTH MATTERS



**PAPER.** We write on it, draw on it, read it. Wrap with it, copy on it, wipe with it. We use over 100 million tons of it a year. Forty percent of our solid waste is paper. We use more than we used to, but we're also collecting more of it for recycling. Recycled paper is a part of our everyday lives. Now, we have a real opportunity to make another choice in the kind of paper we choose to use. A choice that can make a real difference to our health, our environment's health, and our economy. **Read on!**

### FIRST, A FEW WORDS YOU SHOULD KNOW

#### **Bioaccumulation**

What happens when chemicals are eaten and retained by organisms. The chemicals can be either in the environment or in food.

#### **Biomagnification**

A cumulative increase in the concentration of persistent substances in higher and higher levels of the food chain. For example, if fish have bioaccumulated a contaminant such as lead, the eagle which eats many fish will retain much more lead. This is Biomagnification.

#### **Contaminant**

Any physical, chemical, biological or radiological substance or matter that has an adverse effect on air, water, or soil.

#### **Effluent**

Waste water discarded during a manufacturing process.

#### **Lignin**

A glue-like substance that provides structural support in trees. It must be washed out of the cellulose fibres to make the pulp from which paper is manufactured.

#### **Organic compounds**

Compounds made from carbon and hydrogen. Organic compounds form the basic building blocks of living tissue.

#### **Organochlorine**

An organic compound, composed of carbon and hydrogen, which also contains the element chlorine. Some organochlorines are persistent and toxic; others appear benign. Some of the more notorious organochlorines are members of the dioxin family, which are produced during the burning of materials containing chlorine. When the carbon is bonded into a benzene ring, the organochlorine is particularly persistent, because the basic ring of carbon is very stable. PCBs, DDT, and 2,4,5-T are other organochlorines whose names are often in the news.

#### **Post-Consumer Recycled Paper**

This refers to paper which uses only fibre from used paper products. Recycled paper is marketed in terms of the percentage of post-consumer fibre it contains. In Canada, paper does not qualify for the government-sponsored EcoLogo if it contains less than 10% post-consumer fibre.

1



AS IF THE EARTH MATTERS

# Paper Doesn't Have To Grow On Trees

**BEFORE** 1900 most paper in North America and Europe was made from cotton rags. Hemp was used across the USA until the 1930s, and both Australia and France cultivate it now for paper. Japanese artisans still make the world's strongest paper from mulberry leaves. In ancient times, the Egyptians made paper from papyrus, a member of the sedge family. The Bible is named after the Greek bi'blos for

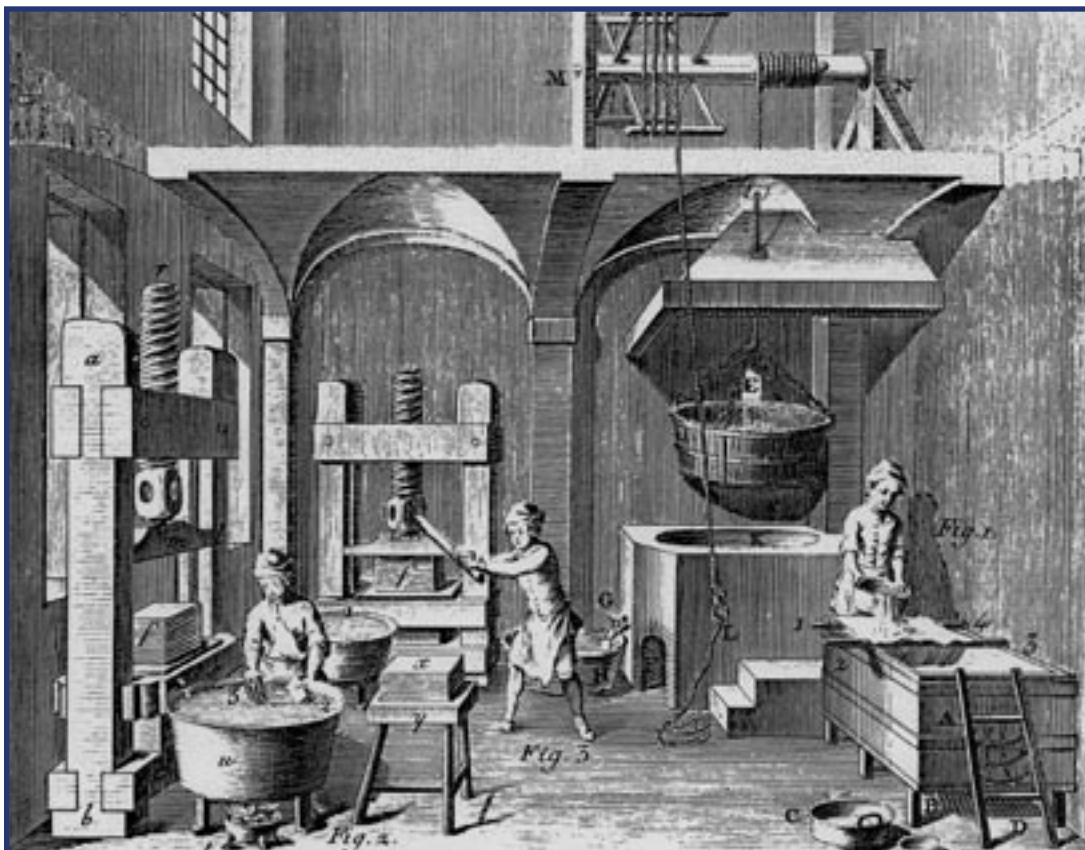
the pithy centre of the papyrus plant.

Why can corn, hemp and blue jeans be used to make paper? Because they contain fibre, the elongated thick-walled cells that help plants and trees to stand upright. While blue jeans weren't used for paper making in the 1890s, British Columbia's very first paper mill – built at Port Alberni – imported rags from Great Britain for their fibre.

Which of these can be made into paper?



The answer?  
All of them –  
corn cobs, onion  
skins, sugar cane,  
and even  
the blue jeans!



Detail of an  
18th century  
French factory  
that used rags  
to make paper

## The Great Canadian Wood Fibre Trail

**BY THE TURN** of the century, world demand for paper was growing so fast that alternative sources of fibre were needed. In Canada there weren't enough rags (or blue jeans!) to make paper. But there were lots of trees and lots of water. It wasn't long before Canadians pioneered the use of wood fibre

for pulp and paper making.

In 1841 Charles Fenerty of Nova Scotia made the first sheet of paper from ground wood. Twenty-five years later, Canadian know-how built the first groundwood pulp mill and sulphite mill, and in 1907 the first kraft mill in North America.

*Did you know that BC Premier WAC Bennett promoted pulp mills as a way to use the sawmill chips from coastal forests? The mill debris would otherwise have gone to waste.*

*At right, loggers in the Queen Charlotte Islands take a break while felling a Sitka spruce, circa 1925.*



## The Trouble With Wood


**WOOD** presents a tough problem to paper makers. Trees have two main ingredients: cellulose, which is fibre; and lignin, the reinforcing glue that makes the tree strong. To make pulp, the cellulose fibres first must be separated and then processed in stages. Different trees require different pulping methods.

Pulping is done one of two ways: mechanically by grinding the wood, or chemi-

cally by boiling the wood. Chemical pulp is more pure, but wastes half the wood and uses large quantities of water. Two main chemical pulping processes are in use today: sulphate and sulphite.

Sulphate or kraft mills cook wood chips in caustic soda with sulphur compounds. Kraft pulp is very strong, but very dark. (Kraft means strong in German.) It's used for cardboard and printing paper.

Sulphite mills cook the chips in acid mediums and sulphur compounds. Sulphite pulp is weaker, softer and lighter in colour than kraft. It's used primarily for tissues. Most sulphite mills are old, and no new ones are currently being built.



**Softwoods** are coniferous trees, like pine, spruce and fir. Their fibres are about 3 to 5 mm long, resulting in stronger pulps. Softwood contains more resins than hardwood.



**Hardwoods** are deciduous trees, like maple, birch, beech and eucalyptus. Their cellulose fibres are short, about 1 to 2 mm long. Hardwoods contain a higher proportion of cellulose fibre than softwoods.

## Whiter Than White: Why Paper Gets Bleached

**IF TREES** didn't contain lignin, we wouldn't need to bleach their fibre. The lignin in paper darkens when exposed to light. While chemical pulp contains less lignin than mechanical pulp, both need additional processing to produce pure white cellulose fibre.



*Hardwood pulp is a natural tan colour, but custom dictates that it needs to be white.*

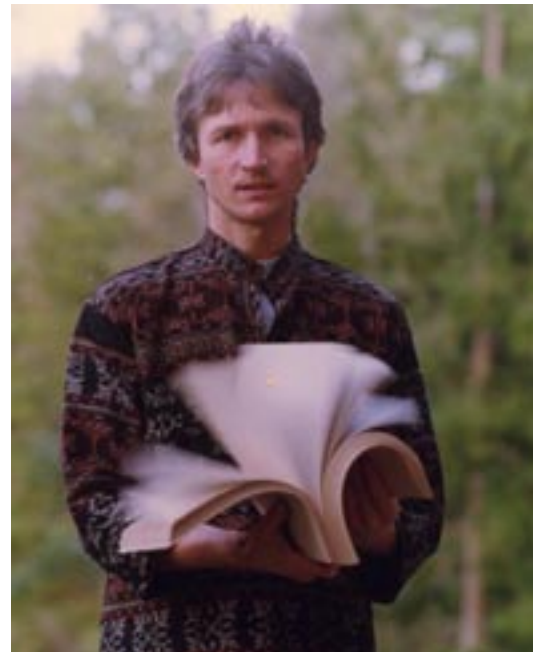
After chemical pulp gets cooked and washed, some of the lignin remains in the fibre. The pulp is naturally brown, in a variety of shades.

After washing, the brown pulp is bleached with chlorine and chlorine dioxide gas, and/or hypo-chlorite. This strong, white kraft pulp makes excellent paper for high speed, high quality printing.

**MECHANICAL** pulp, with its higher lignin content, is usually made brighter with hydrogen peroxide. This changes the lignin without removing it, and also lightens its colour.

Mechanical grinding breaks the cellulose fibres when it tears them apart, and doesn't remove the lignin around them. This creates an opaque paper that's easy for reading. Mechanical pulp's weaker fibre is often reinforced with chemical pulp, and is used for newsprint and phone books.

Did you know that most of the world's pulp and paper mills don't use chlorine for bleaching? But until the discovery of dioxin in pulp mill effluent in the late 1980s, the use of chlorine was growing. Most papers are made from a mixture of pulps, with kraft pulp added for strength. Strong white paper can withstand the high speeds of modern printing presses, and makes advertising photos look superb.



**Admit One To An Eco-Friendly Zone!**  
Each of the papers above are recycled *without* the use of chlorine.



*Ever notice the rotten egg smell around a pulp mill? It was called 'the smell of money.' It's really the smell of pollution, caused by sulphur compounds in chemical pulping.*

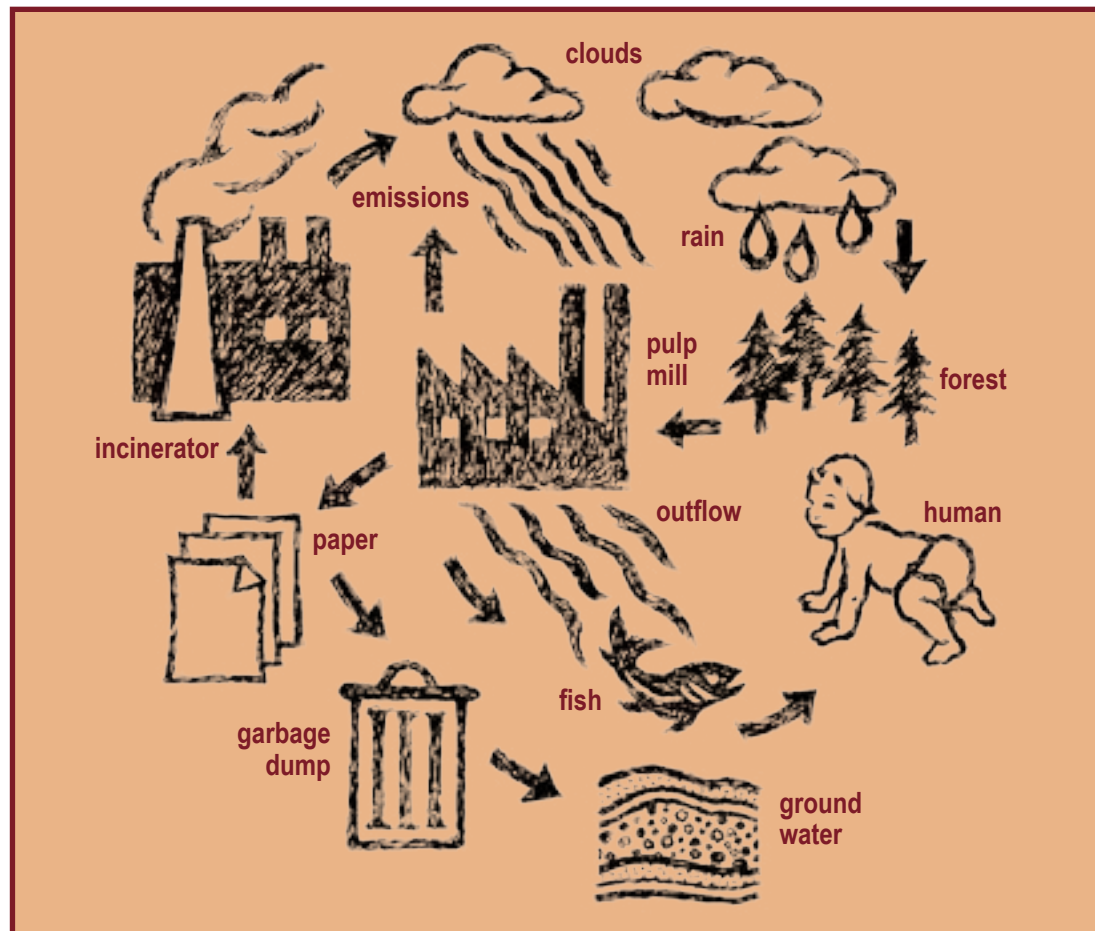
**Chlorine in nature: the cycle of POPs, persistent organic pollutants**

## Trouble in Paradise: The Chlorine Story

**OUR WORLD** has grown a lot bigger in the last fifty years. More people, more industry, and more consumer goods – including bleached white paper. To meet the growing demand, more and more trees around the world are logged to make kraft pulp.

While technical improvements have in fact decreased the amount of chlorine

used per tonne of pulp by two-thirds in the western world and new mills, the number of tonnes of pulp being produced is on the rise. So the amount of chlorine in our environment is increasing. And old troubles still surface around the world in older mills. At a growth rate of 2%, global demand for bleached pulp will double in 35 years.





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# Growth: More People and More Paper

**CONSIDER** the global pulp industry. In 1950 all the mills in the world produced a total of 38 million tonnes of pulp. Canada contributed nearly a quarter of that total, 8.5 million tonnes. From 1970 to 1990 wood pulp consumption (hardwood and softwood) production rose from 102 million metric tonnes to 155 million metric tonnes, an increase of 52 per cent. By 1999 consumption had risen to 160 million metric tonnes.

In 2003, a total of 151 million tons of paper and tissue, and 135 million tons of board, 162 million tons of wood-based pulp and 175 million tons of other fiber

and recycled fiber were used worldwide.

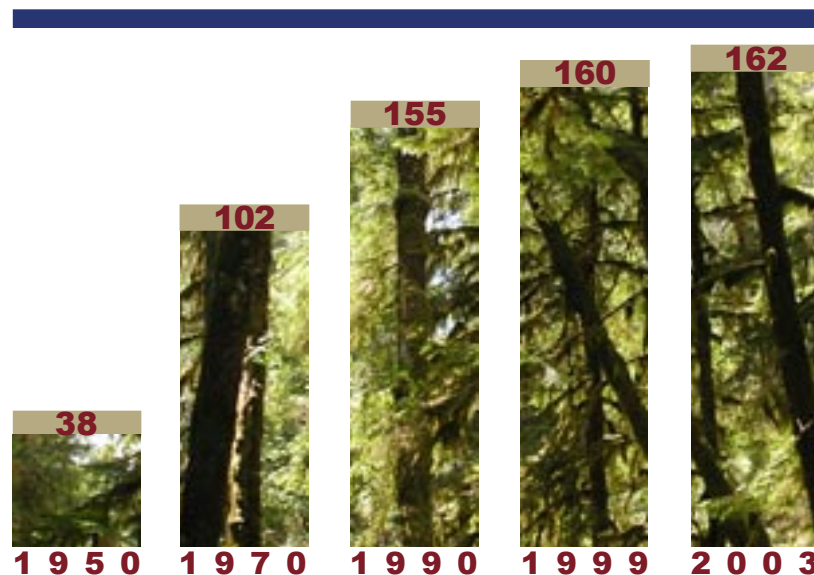
By 2000, Canada was exporting more wood pulp and newsprint than any other country in the world, about 22 million out of 25 million tonnes manufactured a year. This amounted to about a third of the pulp and paper, and almost half of the newsprint, available on the world market. Unlike other countries, Canada sells almost all of the pulp and paper we make.

Pulp sales, and especially newsprint demand, have softened in the last few years for Canadian mills, although Latin American and Asian production in huge, modern, low cost mills is still booming.



**Do the math!**

*How long does it take for the growth rate to double? Use the Exponential Growth Rule of Thumb: Doubling time is calculated by dividing 70 by the percentage of the growth rate. So a growth rate of 5% means you divide 70 by 5. The result? Fourteen years to double at the current rate of growth.*



**World-wide production of wood-based pulp is measured in millions of tonnes per year. The last 53 years have seen a production increase of 426%.**

## The Dark Side of White Paper



**WE LIVE** in a world hungry for paper. But the chemistry of white paper is not as appealing as its looks.

When chlorine or chlorine dioxide is added to a pulping system, it combines with organic molecules in the wood to produce chlorinated organic compounds. More than a thousand chemicals including organochlorines, heavy metals, acids and resins can be found in mill effluents, but only about half of them have been identi-

fied. Some of these compounds are POPs, Persistent Organic Pollutants. Many of them are hormonally active in aquatic life; and some of them, although they are originally natural compounds from the trees, are even more toxic when chlorine is added to the stew.

Every kraft mill that still uses conventional chlorine bleaching generates 30 to 80 tonnes of organochlorines each day. With new bleaching methods and secondary treatment plants, BC mills have lowered that to 10 tonnes per day. But this discharge still goes directly into our rivers, lakes and oceans.

Contrast this with Sweden: today the most modern Swedish mills have totally eliminated organochlorine discharges, and the World Bank requires that all new pulp mills it bankrolls must be built with the capability to run Totally Chlorine Free.



**The Crofton mill near Salt Spring Island, 1990. Pulp mill air emissions are second only to those of the oil and gas industry.**



## AS IF THE EARTH MATTERS

# Chlorine and the Environment

**PULP MILL** emissions and effluent can be harmful to the environment. Organochlorines, heavy metals and benzene based



compounds are especially dangerous because they are persistent. They don't 'go away.' In fact, we don't really know how

long they last, or how they change in the environment.

Governments try to regulate pulp mill pollution in many ways. They set limits on how lethal the effluent can be to fish. They ask the mills to measure toxicity and air pollution. In 1996, Canadian mills began reporting what is happening to the land, air, water and animals in their immediate environment.

### Some of the Problems Caused by Chlorine in the Environment:

#### Water

Particles from the wood wash out with the mills' waste water, and sometimes build up thick fibre mats on the water floor. Because it uses oxygen as it decomposes, the fibre can suffocate aquatic life. All the

environmental effects of chemicals in mill effluent are not yet understood.

#### Air

Sulphur compounds and soot go up the stack, and chlorinated organic compounds like chloroform evaporate every day at pulp and paper mills. Volatile chlorinated organic

compounds are bad news for the ozone layer and, at ground level, for the air we breathe. Some mills even provide their towns with a free car wash, because the air pollution eats through the paint in new cars.

#### Land

Sludge from settling ponds often winds up in landfill sites. Sludge from mills that bleach with chlorine compounds is contaminated with

organochlorines, and so is sludge from mills that recycle chlorine-bleached paper.

#### Wildlife

The most deadly organochlorines are not only toxic, but highly bioaccumulative. This means they remain in the bodies of the organisms that eat them. Contamination levels in wildlife rise for every step in the food chain.

Whoever's at the top gets a heavy dose along with dinner. Some marine animals and birds accumulate such high concentrations that they no longer reproduce properly. Mammals, including humans, excrete organochlorines in their milk as they feed their young.

*continued on  
Page 9*



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## Dioxins and Furans: A Family Affair

**DIOXINS** and furans are a family of chemicals that occur accidentally in many industrial processes that use chlorine and heat. There is controversy about their actual effects, but science indicates that we don't want these persistent chemicals to bioaccumulate in wildlife or humans. The worst dioxin is toxic to some animals in very tiny amounts, and studies indicate that it can occupy the receptor site of a hormone, blocking the hormones' natural function in wildlife and humans. Dioxin causes cancer, immune system suppression and reproductive failure.

*Below: The impact of chlorine in the environment, continued from Page 9*

In the 1980s, environmentalists and scientists discovered that dioxins and

furans were accumulating in shellfish, crabs, fish and birds near mill outfall pipes in rivers and oceans. The Canadian government has since banned the release of the most toxic dioxin and furan compounds in mill effluent.

Pulp mills which use wood chips from logs transported in salt water as fuel for their power boilers, called salty hog fuel, still create a serious amount of dioxin, releasing some of it into the air, and storing most of it in landfills.

### Fish

Most untreated pulp mill effluent kills fish. Both unbleached and

bleached effluent cause reproductive problems in fish and damage their liver and immune systems. Secondary treatment at most North American mills makes effluents much less toxic.

### Workers

in pulp mills are exposed to the same hazards as the environment, and to the many acids and gases used in pulping. Studies suggest workers pay a high price for

our bleached white paper. They may have high rates of some cancers, and suffer chronic lung damage from accidental chlorine and chlorine dioxide gas leaks.

our bodies, too. We are exposed to a range of chemicals: suspected effects include cancer, mutations, reproductive problems and immune system failure.

### & the Public

Organochlorines and other contaminants bioaccumulate in

## Local Heroes: Who Are You?

**YOU'RE** a fisher and a seafood farmer. You're an environmentalist and a business person, a government lawmaker and a pulp industry executive. And you have a lot in common. You want to change habits and to change laws, to preserve habitats and communities. You know that we all need clean

water, whether it's for recreation, drinking, or just messing around in boats.

The warning signs are in the watersheds. Yet as problems arise, so do solutions. Where there's a watershed in trouble, there's also a citizens' group working for change. When the residents of the Milton Lake area in Quesnel BC learned that the mill was dumping raw sludge above their drinking water source, they organized a public meeting, and, within a few weeks, the mill had hauled the sludge back to the company's land. When the Crofton Airshed Citizens' Group found that Norske Canada planned to burn tires, railway ties and coal at the Crofton pulp mill on Vancouver Island, they held a major rock concert which raised the money to do their own scientific studies of the airshed.



### Missing the Boat?

In the 1990s, the governments of British Columbia and Ontario, Canada, were supporting the move toward zero discharge of chlorinated organic compounds from pulp and paper mills.

Getting the chlorine out of the pulping systems would have allowed the mills to move toward Zero Effluent but the governments bowed to political pressure and unconvincing science on the dangers of the chlorine itself, and gave up on this move to technical innovation.

## Where Are the Mills in Your Watershed?



You can find out at  
[www.pollutionwatch.org](http://www.pollutionwatch.org).

*Pulp and paper mill pollution is a local problem on a global level. Consider the Georgia Basin / Puget Sound ecosystem, declared a priority by the US and Canadian governments. This is a*

*map of the area impacted by the effluent from six pulp mills in Georgia Strait off the mainland coast of British Columbia.*



## The Problem With Pulp Mills

**IN THE** United States and Canada, nearly 750 pulp and paper mills release their wastes directly into the air, local watersheds or oceans, and put their solid wastes into landfills which have varying levels of security. These mills range from those that do recycling, to kraft bleaching mills, to mills that make newsprint, even to mills that use less toxic methods to whiten pulp and paper.

Whatever their specialty, most mills on this continent still discharge their effluent

into rivers, lakes and oceans. This affects water quality by removing oxygen and adding harmful nutrients. It also contaminates marine habitats, wildlife and our food chain with a host of dangerous and often persistent chemicals.

The chart below shows what these mills were putting into the airshed – which extends from Whistler to Bellingham – in 2002, as reported to the National Pollutant Release



**Photo:**  
*Emissions plume from the former pulp mill in Gold River, BC*

### What comes out of pulp mills that may affect our health?

**The chemical soup of pulp mill pollutants entering the air, water, land - and us - includes:**

Ammonia • Carbon Monoxide • Carbon Dioxide • Carbonyl Sulphide • Chlorine and Chlorine Dioxide • Chloroform • Dioxins and Furans • Hydrogen Chloride • Methanol • Nitrogen Oxides (NOX) • Particulate Matter • Phenols • Sulphur Oxides • Total Reduced Sulphur Compounds • Cadmium • Mercury • Zinc • Resin Acids • Alcohols Terpenes • Acetaldehyde • Nitrates • Fungi (*aspergillus fumigatus* and *a. versicolor*) • Bioaerosols (endotoxins) • Benzene • Chlorinated Benzenes and Phenolics • Guaiacols • Other Volatile Organic Compounds, including Dichloroacetic Acid, Methyl Ester, 2,5,- Dichlorothiophane, Styrene, Toluene and Xylenes

### Key Pulp Mill Pollutants Affecting Health

**Particulate Matter (PM2.5):** Tiny airborne particles – small but deadly in lungs, linked to asthma and heart disease.

**Dioxin:** Going into air, land, and water – toxic in minute amounts; linked to cancer, diabetes, learning disabilities, and other illnesses.

**Chlorine/Chlorine Dioxide Gas:** Cause or worsen lung disease; react to form organochlorines which are linked to cancer, hormone problems and reproductive ailments.

**Hydrogen Sulphide:** A gas linked to damage of immune systems, respiratory problems and chemical sensitivity.

**Formaldehyde and Acetaldehyde:** Hundreds of tonnes of these cancer-causing byproducts are released into the air and water each year.

## Can Industry Rise to The Challenge?

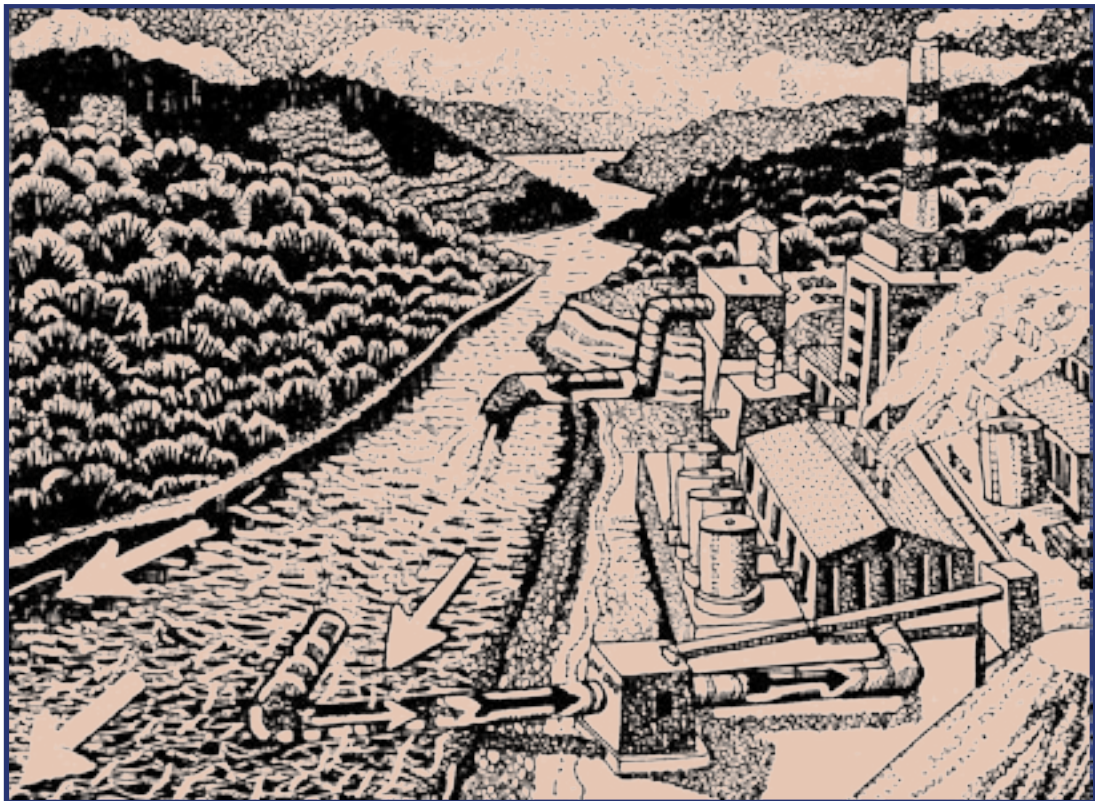
**WHAT** does it really mean, making paper as if the Earth matters? The Canadian pulp and paper industry believes the answer is a closed-loop or minimal effluent pulp mill, where all possible fibre and chemicals are salvaged for further use, sludge is composted or burnt safely for energy, chemicals are recovered and water is purified for re-use. This is possible if chlorine is reduced or

eliminated from the bleaching process.

What will it take to close the loop? Three things, the industry says: improved computer modeling and prediction; acceptance of a step-by-step plan toward safer pulp and paper making; and less or no chlorine in the system. Our take? All of the above, plus the use of regionally and seasonally appropriate fibre supplies.

### The Solution to Pollution

Imagine how quickly the engineers would clean up factory effluents if all water-users had to locate their inflow pipe 100 feet downstream from their outflow! There is no doubt that pulp mills can recycle their water as well as the paper fibre. One mill in Flagstaff, Arizona, reuses their water *nine times* before treating it and releasing it into the municipal sewage lagoons.



## Cleaner Ways to Whiten Pulp

**THERE** are several methods for whitening pulp that have already been in use in mills on this continent and in Europe for the last 25 years and longer:

**Hydrogen peroxide:** The addition of hydrogen peroxide to the pulp, combined with extended cooking time and an oxygen delignification process, makes a good quality paper that's easy on the eyes. Hardwood pulp is fine just as it is, but adding a little hydrogen peroxide makes it even whiter.

**Oxygen bleaching** and calcium carbonate fillers get high marks for whitening pulp.

**Activated oxygen** is the new kid on the block, used in combination with oxygen and hydrogen peroxide.

**Ozone** can also be injected into the pulp to bleach it. This is a relatively new process.

Some mills are also experimenting with **enzymes** to reduce chlorine production in the pulping process.



*Here are a few sources of the eco-friendly writing and copy papers available in North America today:*

**New Life Recycled**  
100% Post-Consumer Recycled, Processed Chlorine Free, oxygen-whitened, alkaline process, acid-free. Union-made in Quebec by Rolland with chlorine-free pulp. Available from Graphic Papers or in Canada from the *Reach for Unbleached* Buying Club.

**New Leaf Encore**  
100% Post-Consumer Recycled, Processed Chlorine Free, available in full cases only. See [www.newleafpaper.com/encore.html](http://www.newleafpaper.com/encore.html) for ordering details.

**Sandpiper**  
100% post-consumer recycled, not deinked, from Domtar in eastern Canada and the eastern US. Available in nine colours from major paper distributors.

**Markets Initiative**  
For information about Canadian retail distributors of recycled and chlorine free paper products go to their web site at [www.oldgrowthfree.com/alternatives.html](http://www.oldgrowthfree.com/alternatives.html)

For an up-to-date listing of other papers available in the US and sometimes in Canada, see **Conservatree's Paper Guide**, which is regularly updated. [www.conservatree.com/paper/PaperGuide.shtml](http://www.conservatree.com/paper/PaperGuide.shtml)

For a list of products certified by the **Chlorine Free Products Association**, go to [www.chlorinefreeproducts.org/endorsed.htm](http://www.chlorinefreeproducts.org/endorsed.htm)

**The Native Forest Network** recommends several European papers, rather than North American ones, due to the following considerations:

- One hundred percent post-consumer waste paper – or as near as possible;
- Paper sourced from

alternative fibres such as hemp, kenaf, bagasse, wheatstraw, rice straw, etc;

- Paper that has minimal pulp and papermaking emissions, does not use chlorine bleaching and is manufactured in a closed loop system (ie, full effluent recycling);
- Paper sourced from ecologically managed eucalypt or pine plantations.

For information go to [www.rainforestinfo.org.au/good\\_wood/envf\\_pap.htm](http://www.rainforestinfo.org.au/good_wood/envf_pap.htm)



**AS IF THE EARTH MATTERS**

## The Common Vision

**GETTING** the chlorine out of pulp mill operations is one big step towards making environmentally friendly paper. But environmentally friendly means more than just getting chlorine out of the loop. It's another way of saying sustainable. It means making paper in such a way that air, land and water quality are preserved for future generations. It means closed-loop pulp mills that re-use their water and chemicals, and safely burn their waste. It means good forestry management, sustainable logging practices and diversified replanting.

In 2002, close to 100 environmental organizations from Canada and the United States agreed on a Common Vision for Transforming the Paper Industry. The statement includes:

- A treatise that is meant to unify the efforts of environmental organizations in advancing environmental and social responsibility within the paper production and consumption cycle.
- A guide to best practices for manufacturers, governments, purchasers, and suppliers.
- Guidelines for environmentally preferable paper purchasing.
- A hierarchy of pulping and bleaching processes.

The Common Vision calls on users to minimize paper consumption, demands clean production, urges the adoption of alternative fibres and wood fibres which are not from endangered forests, and ranks paper production with post-consumer recycled, process chlorine free papers at the top. See [www.environmentalpaper.org/commonvision.html](http://www.environmentalpaper.org/commonvision.html)



*Paper doesn't have to be made from trees! Fibres like hemp and straw, bleached with hydrogen peroxide, are used to make papers like eco-friendly Tree Free from China. Did you know that hemp yields four times more fibre than the same acreage of trees?*

The waste from agricultural crops such as wheat can also be used to produce paper. Paper should be produced locally and the different sources of fibre that are available in each region may be the best to use.



**AS IF THE EARTH MATTERS**

## Paper Use For A Small Blue Planet

### **Recycling isn't new!**

Pre-consumer waste like clean mill scraps and unsold publications have always been used to make new paper. That's why recycled paper usually specifies its post-consumer content.

### **Help industry go green**

Use your dollars to speak for the environment. Choose products that don't harm the Earth. When you ask for unbleached recycled paper, you support sustainable paper production. And industry is listening. They will come on side as fast as your dollars convince them it makes good economic sense.



### **Garbage is a resource**

Every day, Americans add to the 'urban forest' by recycling. In 2004, 50 percent of the paper consumed in the US was recovered for recycling, or 49.3 million tons. But more recycled fibre is needed, and in 2003 the US industry set an aggressive goal to increase paper recovery to 55 percent by 2012. Waste paper still makes up nearly one third of all landfill garbage in both the US and Canada today.

### **Good housekeeping for a small planet**

Paper consumers can be environmentally friendly too. In fact, it's essential. World forests can't sustain our hunger for paper, and face depletion within decades if we don't learn to handle this resource with care.

You can help by avoiding disposable paper products, bleached or unbleached; reducing your paper use; and recycling all your waste paper.

## FAQs on the Paper Trail

### What's the difference between post-consumer and recycled paper?

Recycled is a new word, but it's not a new process. Mill scraps have always been recycled to make paper, but their use doesn't particularly reduce the number of trees needed for the process. Post-consumer paper does make a difference: it's the ideal recycled paper, having been used at least once by someone somewhere.

### If I have the choice between buying recycled bathroom tissue and unbleached bathroom tissue, what should I choose?

It's a choice you shouldn't even have to make: bathroom tissue should only be unbleached *and* recycled. Paper manufacturers are giving you a non-choice, and you can complain to them directly by calling the 800 number on the package.

### Is it okay to use paper that says chlorine-free?

Essentially this is mill double-talk. Chlorine-free sometimes actually means chlorine-free, yet sometimes it means only elemental chlorine-

free. For paper that has not been manufactured using any chlorine compounds, look for these words: *totally chlorine-free* or *process chlorine-free* (TCF or PCF).

### Are the problems solved if I buy unbleached recycled paper?

Three reasons why the answer is still *No*: **1** Even the newly existing manufacturing processes are still harmful to the environment.

**2** Our society must radically reduce its reliance on paper. Two out of every five trees cut in the world today are pulped for paper, and, if this goes on, world consumption will double in the next thirty years! Forests are not an instant renewable resource.

**3** To sustain even a reduced global paper use, sources of fibre other than trees must be developed world-wide. But producing unbleached recycled paper is a good first step.

### Don't I save trees when I recycle?

Yes, some trees are saved when we use recycled products. But recycling itself still comes at a high environmental cost. Each time a piece of paper is recycled, much of the wood fibre is washed away in the sludge. This creates a negative environmen-

tal impact. Until we change the way we whiten paper and switch to vegetable-based inks, the sludge created by the recycling process will continue to be contaminated with organochlorines and heavy metals from printers' inks.

### Can we grow enough trees to meet the world's paper needs?

Unlikely. Our world's forests are disappearing at a rate that can be measured in acres per minute. They are being replanted at a rate far below their rate of harvest.

Besides, monocultures deplete soil and diminish resistance to disease and insects. Clearcutting causes soil damage, and exposes tender young trees to harsh weather. In the long term, by clearcutting our forests we may be ruining their capacity to regenerate at all.

### Does recycled paper contain organochlorines too?

Yes. Recycling paper that's been chlorine-bleached does not eliminate chlorine from the system. Sludge from recycling operations contains toxic chlorinated organic compounds along with heavy metals from ink. Recycling unbleached paper is safer.

## FAQs on the Paper Trail

### Are pulp mills the only source of organochlorines?

No, organochlorines are produced wherever chlorine combines with the carbon in organic material. For example, industrially they are created by the manufacture of PVC, herbicide, pesticides, by incinerators which burn plastic, by the burning of wood which has been in salt water, and by water treatment plants, where the chlorine combines with sediment in the water, forming organochlorines.

### What's the true cost of white paper?

Good question! The cost of white paper is not just what's on the price sticker. White paper costs big, in terms of fishery closures, contamination of birds and wildlife, and lost jobs in other industries. Pulp mill workers also pay the price with their health, due to effects from chlorine exposure.

### Why does totally chlorine-free paper cost more than bleached white paper?

The comparative cost of totally chlorine-free paper is actually going down bit by bit. But continued consumer demand is still neces-

sary to further drive down the cost, by providing incentives for mills to produce it. The necessary technology does exist, and several mills in the US and Canada now make unbleached recycled paper or paper whitened without the use of chlorine compounds.

All paper grades underwent a price increase in late 2004 due to an industry-wide increase in global pulp prices.

### Why, after all these years, are so many paper products still bleached with chlorine compounds?

Production is market-based, and unless consumers use their economic clout to demand safer ways of paper production, many mills will continue business as usual, *ie* using chlorine to bleach pulp. By choosing alternative sources for chlorine-free paper products, individual consumers send a clear message to mainstream paper producers to clean up their act if they want us to buy their products. So spread the word! Your money talks!

### Hey, is there any good news out there?

Yes, there is good news to report:

in October 2004, Rolland Paper Mills upgraded the content of their New Life paper from 80% recycled to 100% recycled post-consumer process chlorine free fibre. So we finally have a 100% post-consumer *and* chlorine free copy paper, and it's made right here in Canada

Though many factors played a part in Rolland Mill's decision, the continued support and pressure from the Buying Club was certainly amongst them. The Buying Club is the largest customer for New Life paper in Western Canada. So thanks and congratulations to all!

### Where can I buy totally chlorine-free paper?

Actually, most paper wholesalers can supply it now. If they don't, it's more a lack of will power than a lack of paper supply. For more sources of paper processed without the use of chlorine compounds, see Chapter 14 of this publication, *Safer Ways to Whiten Paper*. The Reach for Unbleached website ([www.rfu.org](http://www.rfu.org)) contains links to the Buying Club in Canada.

## making paper as if the earth matters

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