



Landscapes

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Full Circle

For nearly two centuries the industrialized world encroached upon the nature-based lifestyles of traditional Aboriginal communities. Now there appear to be signs that those very Aboriginal communities will be needed to help sustain industrial economies.

The Haida First Nation on the Queen Charlotte Islands has spent over a quarter of a million dollars in the last four years on a far-reaching concept. The plan involves replanting the old growth forests that were eliminated on their lands through industrial tree harvesting. The Haida would then sell carbon credits on the world markets to carbon dioxide belching industries that need the credits in order to continue operation.



CLEANING UP AFTER INDUSTRY

“replanting old growth forests that were eliminated on their lands”

The buying and selling of carbon credits is an outgrowth of international climate change policy adjustment. It amounted to a \$14 billion trade last year, roughly equal in size to the total British Columbia forest industry.

The calculations are complex but the concept is simple. A dirty factory pumping tons of carbon into the air can get temporary relief from government closure by buying carbon credits from another clean factory that has far exceeded pollution standards. Or, in the case of the Haida, it can buy carbon credits based on the fact that trees take carbon dioxide out of the atmosphere.

When the original trees in the Haida land, cedar and hemlock, were cut, alder trees moved in to occupy the space. But alder trees are not efficient carbon sponges; hence, the plan by the Haida to replant traditional cedars. Under a pilot project this would involve removing the alder from a one thousand hectare plot over the next few months and starting a planting program. A computer model undertaken by the Aboriginal community shows that under current carbon credit prices, the pilot project alone could be worth \$21 million dollars to the Band.

Two factors will dictate the success of the program. First, the program has to run where logging is banned in order to guarantee that trees can capture carbon long into the future. Second, the Haida require access to protected land in order to start removing the alder and permission for that access has not yet been granted.

Sustainable Profits

One of Canada’s most successful forest companies has its fortunes linked to the neighbourhood blue box. The company, Cascades, produces items such as cardboard toilet rolls and the heavy cardboard used for packing boxes. While it operates in a sector that is awash in red ink, Cascades has linked its fortunes to recycled fibers. As its main raw material it uses over two million tons of recycled paper every year, the equivalent of more than 30 million trees, to produce a variety of cardboard products. As consumers become more conscious of recycling, the company’s supply chain is more secure. As more recycled paper becomes available, the costs for Cascades’ base product are stabilized. By contrast, the costs of regulations and energy required to access virgin timber have soared.

Through the use of recycled materials, Cascades has reduced its energy footprint substantially. This in turn allowed it to sell six million dollars worth of carbon credits to European industries last year.

From the Readers

I use Landscapes in my geography 12 class because it ties in with curriculum. The articles are current and relevant to the kids’ lives.

Doug Gillet
Kelowna BC

I have been receiving your Landscapes Magazine and enjoy reading it and sharing the information with my students.

We place a great deal of emphasis on Canada’s natural resources and conservation in our course. My students find the information in Landscapes pertinent to their studies and their interests and, together, we create meaningful activities around this information.

Laurna Ritchie
Prince Charles Elementary School
Abbotsford, B.C.

About the Cover

Ancient cedars can help restore the climate.

COVER PHOTO: NOEL HENDRICKSON

Landscapes

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BRIDGES

COMMUNITY LEADERSHIP AND TRENDS

Olympic Watershed

In 2008 Beijing expects to welcome two and a half million visitors to the Olympic Games. In preparation the City is in the process of completing an additional 180 kilometers of light transit line and according to the city website it will be able to offer 300,000 rooms to accommodate visiting guests.

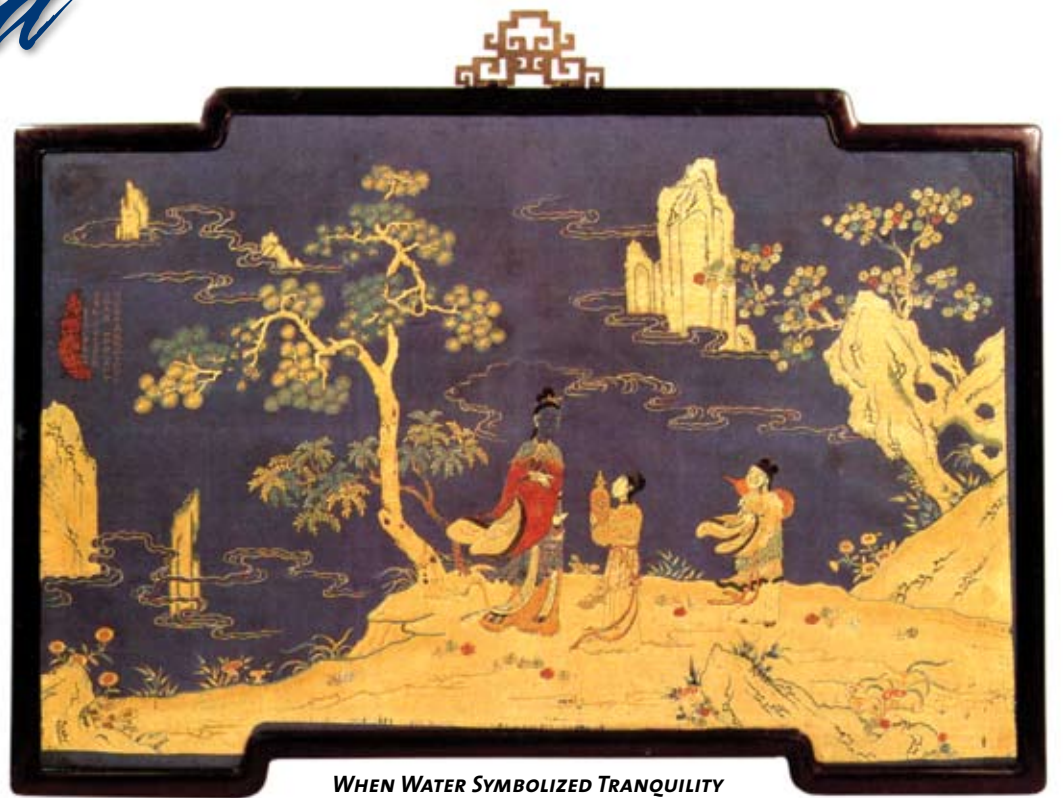
The critical problem may be water. The city has grown at a rate of 400,000 new residents per year in the last five years and is expected to continue its current growth rate

“the population will reach 20 million”

until 2020 when the population will reach 20 million. According to the Beijing Municipal Development and

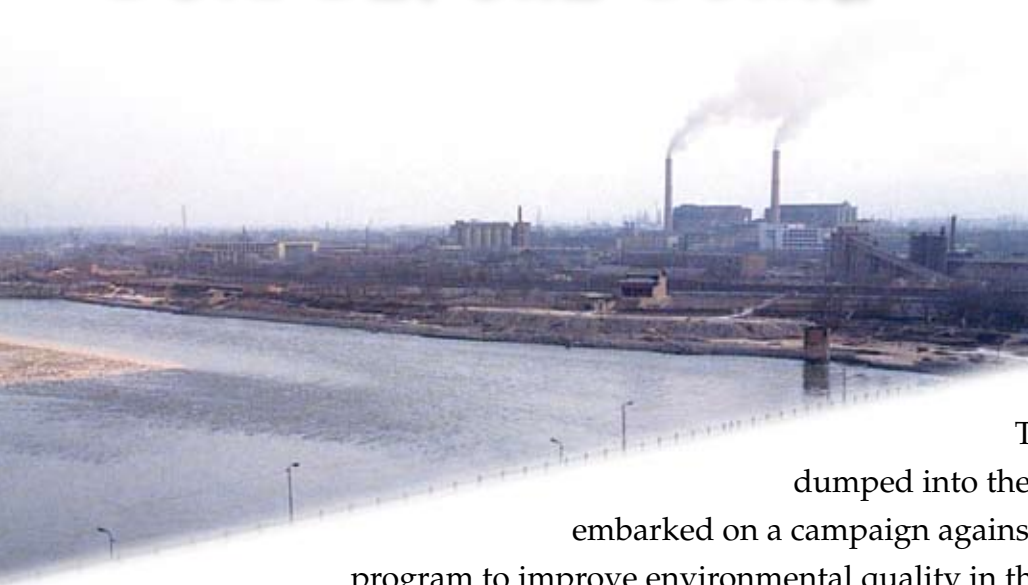
Reform Commission the annual growth in population would have to be cut in half to guarantee sufficient supplies of drinking water.

To confront the challenge, Beijing plans to pump water from the Yangtze River through a series of canals. The Chinese News Agency reports that of the three canals to be constructed, one section alone will stretch over 1200 kilometers, cost \$10 billion and relocate more than 200,000 people. The entire project, when completed, is expected to cost close to \$30 billion Canadian.



WHEN WATER SYMBOLIZED TRANQUILITY

BOIL BEFORE USING



A report by the Yangtze River Water Resources Commission this fall indicated that close to 30 percent of the water tested along China's longest river was seriously polluted and the remainder could only be consumed if treated. This complicates the challenge for city planners in Beijing, who plan to divert the water in time for the 2008 Olympics. Currently, millions of people in other Chinese cities depend on the water for daily drinking and sanitation purposes.

The report outlines that some 30 billion tons of polluted water were dumped into the river last year, a 50 percent jump in the last eight years. China has embarked on a campaign against major industrial polluters as part of a five-year, \$200 billion (US) program to improve environmental quality in the country.

WATER TREATMENT IN CANADA

Canada does not have a coherent set of national standards governing the treatment of wastewater, unlike a number of other countries. Instead, the challenge is managed through regulations, policies and by-laws enacted at three levels of government. Municipal sewage is the largest source of pollution discharged to surface water bodies in Canada. It contains a mixture of biological materials, over 200 chemicals from households, industries, hospitals and other institutions, as well as human waste. The treatment of this waste varies from city to city.

“all coastal cities must have secondary treatment”

By contrast, in the European Union, all communities with more than 15,000 people are required to use secondary treatment which involves removing some biodegradable matter from sewage through the use of bacterial and other microorganisms, as well as filters. In the United States, all coastal cities must have secondary treatment. In Canada, in the absence of national standards, the range can go from advanced tertiary treatment to no treatment at all.

The Canadian Council of Ministers of the Environment has been working for years on a common set of standards for all municipalities governing the treatment of municipal waste.



AN ENERGY DRIVEN INDUSTRY

THE DARKER SIDE OF MOVIE MAKING

The onset of digital effects creates the impression that movies have become an artful blend of actors and computer generated scenes. Not quite. The movies "The Matrix Reloaded" and the "The Matrix Revolution" required some 11,000 tons of concrete, steel and lumber. The production teams report that all of the steel was recycled and 37 truckloads of lumber were re-used in housing projects for low-income families in Mexico. This represents an impressive but perhaps not typical example of environmentally-conscious movie making.

A two-year study by the University of California at Los Angeles found that the film and television industry, along with associated activities, make a greater contribution to air pollution in the five counties of Los Angeles than almost all five other business sectors researched in the study. Specifically, the study found that the movie and television industry created more pollution than was produced individually by aerospace manufacturing, clothing, hotels and the semi-conductor manufacturing industry in the Los Angeles region. Of all sectors studied, only the

“only the petroleum manufacturing sector created more emissions than movie-making and television”

petroleum manufacturing sector created more emissions than movie-making and television.

The study was conducted by the University’s Institute

of the Environment. The authors suggest that part of the mystery involved the perception of the industry as people, actors and creative agencies rather than looking at it as a significant consumer of natural resources, including energy. In conducting the study they looked at the pollution that might be caused by a diesel generator used to power a movie set as well as the emissions that may have been created by the coal power plant that provides the electricity to a studio lot. Interviews were conducted with 43 people who worked in a variety of areas within the industry and major trade publications of the movie industry were reviewed to see the level of attention paid to environmental issues.

“difficult to instill environmentally-conscious practices”

Although researchers found that some studios have recycling programs and green building practices, they state “our overall impression is that these practices are the exception and not the rule”.

Compounding the problem is that the movie and television industry involves a lot of what are called “disposable corporations”. These are short-term companies brought together for the purposes of making the movie or television program that go into dormancy until the next opportunity comes along. It is difficult to instill environmentally-conscious practices in such companies according to the study.

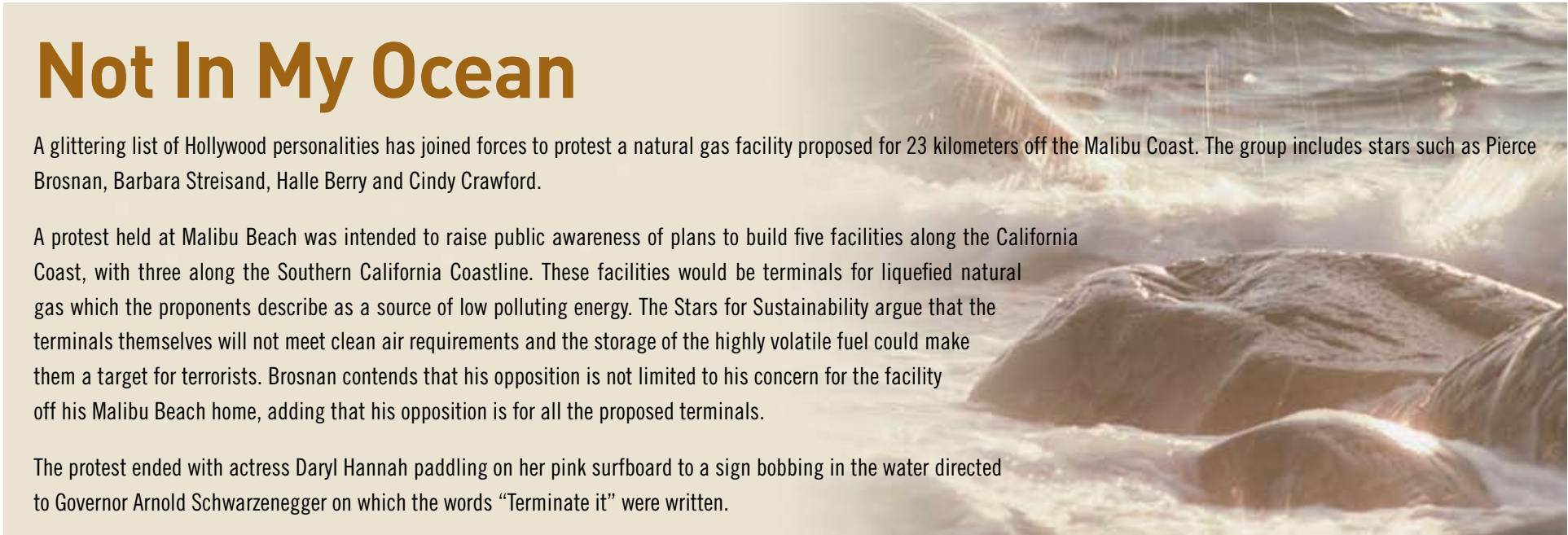
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Not In My Ocean

A glittering list of Hollywood personalities has joined forces to protest a natural gas facility proposed for 23 kilometers off the Malibu Coast. The group includes stars such as Pierce Brosnan, Barbara Streisand, Halle Berry and Cindy Crawford.

A protest held at Malibu Beach was intended to raise public awareness of plans to build five facilities along the California Coast, with three along the Southern California Coastline. These facilities would be terminals for liquefied natural gas which the proponents describe as a source of low polluting energy. The Stars for Sustainability argue that the terminals themselves will not meet clean air requirements and the storage of the highly volatile fuel could make them a target for terrorists. Brosnan contends that his opposition is not limited to his concern for the facility off his Malibu Beach home, adding that his opposition is for all the proposed terminals.

The protest ended with actress Daryl Hannah paddling on her pink surfboard to a sign bobbing in the water directed to Governor Arnold Schwarzenegger on which the words “Terminate it” were written.



Strange Company

The Energy Security Leadership Council is a group of leaders in the United States drawn from the senior ranks of the military as well as corporate America. Some of the council's views would likely find support among the most ardent environmental groups.

The council is launching an energetic effort to get the US Congress to reduce gasoline consumption through a combination of higher efficiency standards and a switch to alternate fuels. The group sees a risk to both American competitiveness and national security unless aggressive action is taken.

“end the exemption for commercial vehicles”

In a recently released report it urges the American government to mandate an improvement of four percent in overall fuel efficiency standards. It also calls for the government to end the exemption for commercial vehicles in such standards. Currently, the high proportion of energy used by commercial vehicles such as trucks delivering consumer goods is driven by consumer consumption, but exclusively exempt from environmental restraints. The Council believes that adoption of their proposals could reduce oil consumption by 20 percent of current American demand.

Automobile manufacturers in the United States have resisted arbitrary measures and are currently working for a new set of voluntary standards with the American government. The industry claims that tougher environmental standards would increase prices for vehicles, which in turn would induce motorists to keep driving older, less fuel efficient cars.

SPEED AND SIZE STILL IN FASHION

CORN CAPER

The Capers food store chain in Vancouver has found a better way to make food containers. They are made from corn. First, starch from the corn is converted into dextrose. Then, a natural culture is added that converts the dextrose into lactic acid. After distillation, simple molecular structures called lactides are produced and these form a long chain. Pellets made from the lactide chains are melted down and shaped as food packages. Customers bring the clean washed containers back to the Capers store. The containers are composted and used as a natural fertilizer to grow – what else – corn?

Cities Act On Climate Change

Although many nations are either in denial or disarray when it comes to the Kyoto Protocol, more and more city hall seems to be making the climate a local issue.

Late last year, mayors from 32 American cities met in Anchorage, Alaska for three days to advance ideas on how their cities could contribute to slowing the growth of global warming. In a storytelling session on the effects of global warming, impacts ranged from increased forest fires surrounding Montana communities to reduced salmon runs in Washington State.

Commenting on the impasse on climate change at the national level, Mayor Rocky Anderson of Salt Lake City, Utah, said “If it’s not going to come from the top down we need to push from the bottom up.”

BIG FEET

The World Wildlife Federation has issued a ranking of the 10 nations in the world whose inhabitants place more demands per capita on the world’s natural resources than over 180 other nations. The report warns that at current rates of growth the equivalent of two planet earths would be needed to provide the natural resources required every year by 2050.

The concept of per capita use of natural resources is often described as an ecological footprint. Nations with the biggest foot were in this order:

- | | |
|-------------------------|----------------|
| 1. United Arab Emirates | 6. Australia |
| 2. United States | 7. Estonia |
| 3. Finland | 8. Sweden |
| 4. Canada | 9. New Zealand |
| 5. Kuwait | 10. Norway |

In the United Arab Emirates it was said that individuals need the equivalent of 12 hectares per person of productive land or seas for the natural resources they use and in order to reabsorb their waste. The global average is 2.2 hectares and the reported available supply per person is less than 2 hectares.

To calculate ecological footprints the WWF calculated the use of fossil fuels, nuclear power, crop land, grazing land, developed land, fishing and forests.

BIG FOOTPRINTS IN BARREN LAND

Man: The Urban Creature

Cities reaching the one million population mark often take on a self-congratulatory tone in their promotional literature that boasts of their world-leading status. But the million mark is by no means an exclusive club. Today 408 cities in the world have at least that many inhabitants. There are 20 so-called mega cities with more than 10 million people and Greater Tokyo with a population 35 million in its amalgamated urban area has a greater population than Canada.



TOKYO: STILL GROWING

A new book entitled “Plan B2.0” by Lester Brown the President of the Earth Policy Institute says that in 2007, more than half of the world’s population will live in cities making mankind an urban species for the first time. Brown emphasizes the importance of integrating sustainable community planning into this surge of urban development. He points out that cities require a concentration of natural resources including water, energy and food, in a form that nature cannot provide. Likewise, the waste products from this concentration process are sent back into nature in concentration levels that overwhelm nature’s ability to cope.

The study shows the key difference between ancient cities and their modern counterparts. The early cities depended

on the surrounding countryside for their food and natural resources which in many cases meant having farms at the city walls. Today, by comparison, cities frequently depend on distant sources for their basic requirements. For example, Los Angeles takes much of its water from the Colorado River nearly 1000 kilometers distant while Mexico City, situated at 3000 meters, must draw water from a distance of 150 kilometers and then lift it a full kilometer or more to meet the city’s needs.



MEXICO CITY: HIGH AND DRY

The challenges in food distribution to sustain major cities are even more daunting. Tokyo gets its grain from the American mid-west, Toronto gets much of its produce from California and Mexico, and the United States provides corn to much of the

world. Compounding the impact of massive urbanization is the fact that the oil needed to transport all of these resources to the world cities often comes great distances with environmental as well as world stability consequences.

“cities require a concentration of natural resources”

Brown does not see the growth of cities as an inevitable and unstoppable phenomenon. As the insatiable appetite for land and water prompted by urban growth continues, the balance of power may tip to the owners of that land and water who live in the Earth’s rural areas. Great cities of the past have faded away because they could not continue to access the resources they required for sustenance. Historians and urban planners can compare notes.

ECONOMIC GROWTH – UNEVEN PICTURE

For the last year reported, 2005, the world economy grew by 4.9 percent. This is an average figure which on closer examination shows some interesting variables. For example in 2005 American growth dropped to the 3 percent range, the European Union economy expanded at an average of less than 2 percent and Japan, the world’s third largest economy, grew by only 2.6 percent.

Energy demand for the developing economies such as China and India has moved other countries into the position as major players in global growth. The African economy for example in 2005 grew at over 5 percent, well ahead of the United States and Canada,



MISSING THE ENERGY BOOM IN AFRICA

stimulated largely by high oil prices in fuel producing states.

All of this growth does not hide the reality of some startling inequalities. The World Policy Institute suggests that the 500 richest people in the world have a larger combined income than the poorest 400 million. In China, the average city resident earns more than 3 times as much as a typical farmer and the gap is widening.

GREEN CITIES

Premier Gordon Campbell of British Columbia announced a number of initiatives to the Union of B.C. Municipalities Convention intended to spur environmental progress at the community level. Among these were:

- A \$ 40 million fund over four years to help communities build bike paths, walkways and green ways.
- Financial incentives to help municipalities retrofit dirty diesel vehicles with cleaner technologies.

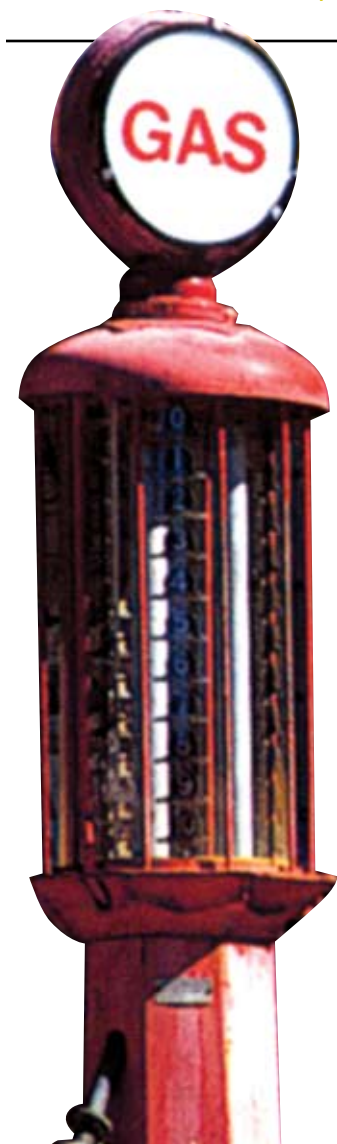
- The \$2000 tax break on hybrid vehicle purchases to be extended beyond 2008.
- As of 2007 all new cars leased or purchased by the Province of British Columbia will be hybrids.
- The Province made a commitment to contribute one-third of the Capital Funding towards the best and lowest cost solution that would provide proper sewage treatment for the Capital City, Victoria. Currently the city discharges raw municipal waste into the ocean.

Baja Summer Cruise for Teachers

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NEW ENERGY CHOICES LAGGING

RUNNING ON EMPTY

Flex fuel is a fuel made from 85 percent corn ethanol and 15 percent gasoline. There are about five million flex fuel vehicles in the United States where, since 1993, car manufacturers making flex fuel cars could avoid some \$2 billion in fuel efficiency fines according to the Union of Concerned Scientists. However, only about 700 of the 170,000 US gas stations offer flex fuel known as “E85”. California has one private E85 station, 13 states have none. The lack of pipelines and storage tanks to date has made availability of E85 almost non-existent. Because of this, environmental groups have complained that automobile manufacturers can continue to get tax credits for making flex fuel cars which in many cases will run exclusively on gasoline and in addition be low mileage vehicles.

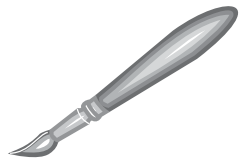
Another challenge to the flex fuel market is that because it has a lower energy content it reduces fuel efficiency. The American Department of Energy estimates that driving a

“it reduces fuel efficiency”

flex fuel sports utility vehicle on E85 for 24,000 kilometers a year can cost consumers an additional \$400. Studies have shown that over a third of consumers lose interest in flex fuel cars when they learn that lower fuel economy translates into higher prices. The consumer resistance is found even in spite of knowing that flex fuel can reduce greenhouse gasses.

Proponents of alternative fuels see hope on the horizon for the development of cellulosic ethanol which is an ethanol fuel made from plants such as grass and poplar trees instead of corn. Although cellulosic ethanol is not commercially viable at this point, the vast forest resources in jurisdictions such as British Columbia offer the potential for creative research.

“can cost consumers an additional \$400”




Asian Water

In the year 2000, world leaders agreed on setting up Millennium Development Goals that included reducing by 50 percent by 2015, the proportion of people without sustainable access to drinking water and improved sanitation. The goal is not being met. While China and India show some promise of meeting the targets, four other Asian nations are expected to fail according to the Asian Development Bank. According to the report, Indonesia will miss both the safe water target and the sanitation target, while Pakistan, Vietnam and the Philippines will not meet the water target. In 2002, about 700 million people in the Asia-Pacific were still without safe water supplies and some two billion had inadequate or no toilet facilities in spite of the goal announced two years earlier. Since 2002, investments in water and sanitation have begun to dry up.

The Bank has established the goal of increasing investment in water operations in developing member countries to US \$2B a year in the next five years from the current level of US \$1.4B. Bringing investments to this level would provide 200 million people with safe drinking water and improved sanitation.





REACH OUT—WAY OUT

Dolphins at an aquarium in Liaoning Province in China became sick from nibbling on plastic at the edge of their pool. Attempts to remove the plastic bits with surgical instruments failed because the dolphins’ stomachs contracted to resist the cold steel instruments.

The solution was to call on the world’s tallest man, Bao Xshun, a 7 foot 9 inch herdsman from Inner Mongolia. Bao was able to use his 44 inch arm to gently reach into the dolphins’ stomachs, while their mouths were held open with towels in order to protect Bao from injury.

The operation was a success with both dolphins and the tall man feeling no ill effects.

THANKS FOR THE HAND

Defining “What If”

One of the fundamental tenets in environmental disputes is called the “precautionary principle”. This is the principle that holds that a certain activity should be constrained or eliminated on the grounds that there are strong indicators that it could lead to environmental consequences.

“No accepted definition of the precautionary principle”

According to a recent United Nations report, there is no accepted definition worldwide of the “precautionary principle” so it might sometimes be used by countries to protect their domestic economies.

Last year Canada brought a case before the World Trade Organization arguing that six countries in the European Union had broken trade rules by barring the entry of genetically modified foods because of worries about their safety. Argentina and the United States joined Canada in the action and the resulting ruling was in Canada’s favour. Similarly, the 25 nations in the European Union collectively ban genetically modified rice in response to public fears that it may be a “Frankenfood”. The European ban has expanded to 10 other agricultural products.

The disputes are by no means one-sided. The United States bans unpasteurized European cheeses. Zambia rejects US genetically modified corn because Zambia has a ranking of being a GMO free country in its exports to the European Union.

The “Precautionary Principle” is the foundation of a number of United Nations’ bans on certain pesticides and industrial chemicals as well as manufactured refrigerants that are deemed to affect the Ozone layer.



RICE RISK OR TRADE TIFF?

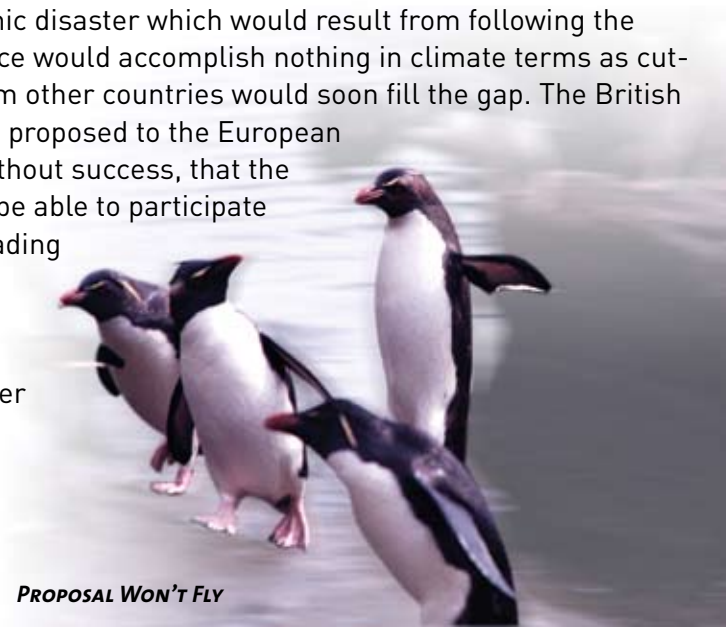
Flighty Climate Goals

The transition to green industries such as tourism from traditional industries is seen as a positive step in climate goals. However, it is not always an easy step. The Environmental Change Institute at Oxford University in England has warned that “unless the rate of growth in flights is curbed, the UK cannot fulfill its commitments on climate change”. Those commitments include a target of cutting carbon dioxide emissions by 60 percent by 2050. The University projects that C02 emissions from aviation in Britain will increase between 4 and 10 times

“cut-rate airlines would soon fill the gap”

the 1990 levels by 2050 and account for two-thirds of the government’s emission target for 2050. Total passenger traffic, is projected to more than double in the next 25 years.

The British government so far has taken the position that the self-inflicted economic disaster which would result from following the university’s advice would accomplish nothing in climate terms as cut-rate airlines from other countries would soon fill the gap. The British government has proposed to the European Commission, without success, that the airline industry be able to participate in the carbon trading program which would allow it to buy carbon credits from other countries.



PROPOSAL WON’T FLY

This Bears Repeating



First there was the malevolent grinning doll of horror movie fame that returns to theatres every Halloween. Now it’s the attack of the killer teddy bear. The Fish and Game Department in New Hampshire reported that a teddy bear was implicated in the death of 2500 trout fish. In this case, a careless visitor to the hatchery dropped the teddy bear which in turn clogged the drain, blocking off the flow of oxygen to the fish. The event prompted the hatchery officials to post a sign reading “Release of any teddy bears into the fish hatchery is not permitted”.

The suspect was wearing a yellow raincoat and hat.

URBAN SUSTAINABILITY

The challenge for urban planners in incorporating sustainability into their planning models is not limited to reducing emissions. Comprehensive sustainable planning for communities encompasses the impact of planning on an exhaustive range of urban challenges from health indicators to crime.

A conference to be held in Glasgow, Scotland this June entitled “Sustainable Urban Development: Meeting the Challenges of Whole Life Assessment” – will examine the scope of community planning for sustainability.

The conference will focus on the need for robust assessment mechanisms that can be applied by planners and civic officials to meet sustainability goals. Topics included will cover: the economics of urban sustainability, environmental justice, lifecycle assessment, democratic participation for urban sustainability, sustainability principles for at-risk societies, and common protocols for measuring urban sustainability.

THE COLONY THAT CLIMATE Changed

GREENLAND THEN

For decades, every fifth grade student in Iceland has learned about the relationship between climate, economy and survival.

“livestock found ample grazing”

In the year 986, Erik the Red sailed from Iceland with a flotilla of 25 ships containing 500 settlers as well as their sheep, cattle, poultry and farming tools. Their destination was Greenland, a name chosen

by Erik, according to legend, in order to build enthusiasm for the new colony. But Greenland was by historical evidence a warmer place then than it is today. This was a time referred to by scientists as the *Medieval Warming Period* (MWP) and within 15 years the colony swelled to some 3000 residents living on close to 400 farms where livestock found ample grazing and foods could be grown and stored for the cold winter. Over the course of the colony’s history,

cooler summers periodically created poor harvests according to written records, but the farm-based economy continued to grow. By the early twelfth century, the population was estimated at 10,000 and had by this time long boasted an established parliament and churches.

“boasted an established parliament and churches”

Towards the end of the fourteenth century a cooling climate began to cause the collapse of some of the Norse communities in Greenland. In 1408, the last written record of life in Greenland involved a wedding held at one of the churches.

By the late fifteenth century between 1480 and 1500 the Norse population of Greenland disappeared after more than 500 years. Although the collapse of the Greenland population remains a mystery, there is a substantial body of opinion among the scientific community that what is called a little ice age (LIA) brought about the collapse.

THE LITTLE ICE AGE

Weather reports do not exist for the period between 1100 and 1850 in Europe. What does exist and gives an indication of weather records, is a precise tracking of grain prices in European countries during that period. Because early farmers did not have access to hardy strains of wheat able to withstand cold temperatures, reduced harvests brought on by bad weather would cause spikes in the price of agricultural products. One study of grain prices in terms of Dutch Guilders (source: Lamb, 1995) shows dramatic upsurges in prices in the late 1300s, the years 1550 to approximately 1630 and the early nineteenth century. The price increase in the fourteenth

“By the year 1400, vineyards disappeared”

and fifteenth centuries coincides with the final decline of Norse settlements in Greenland. Some historians and scientists contend that these records point to the occurrence of a Little Ice Age (LIA) at each of these periods.

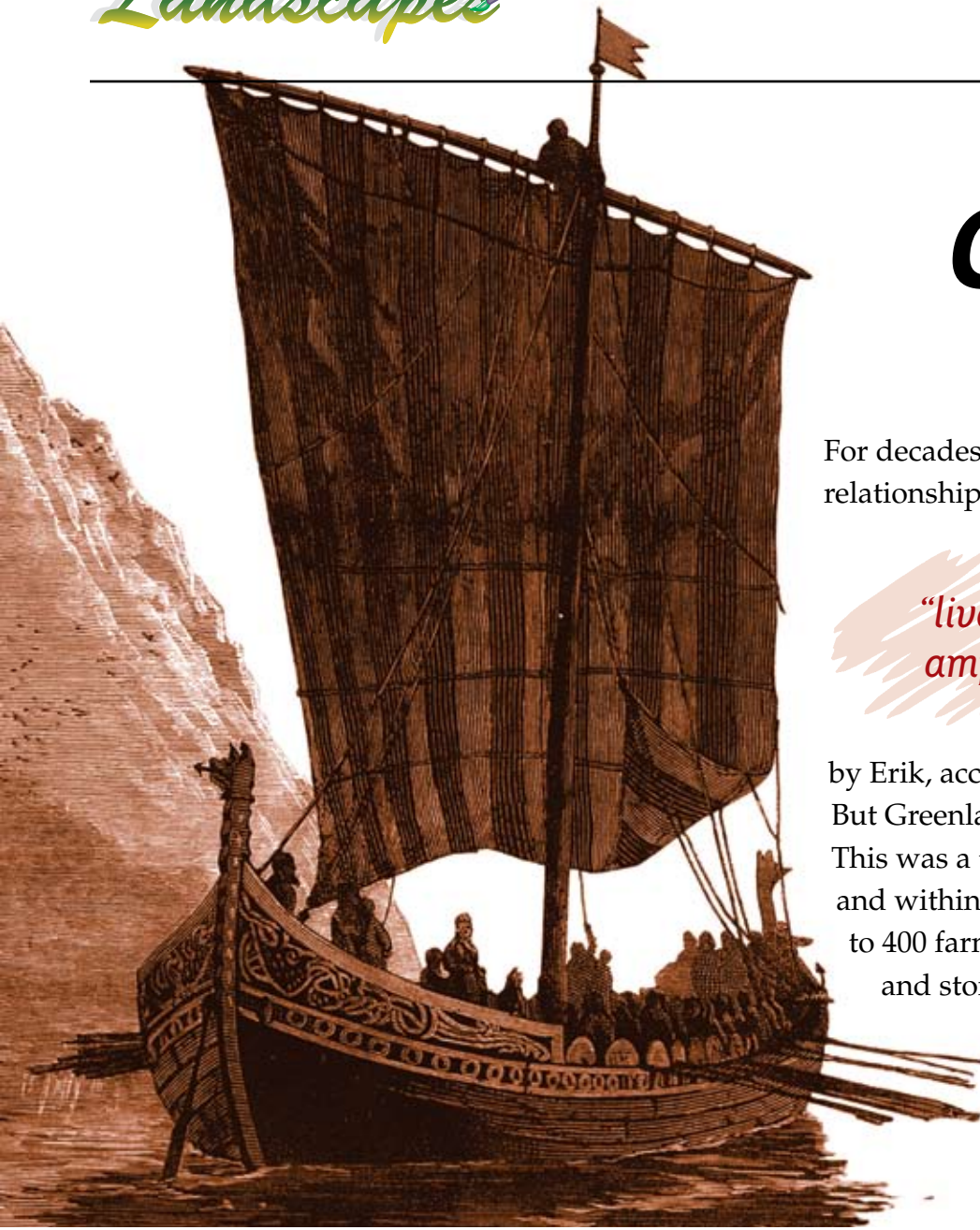
Other records show that the cultivation of grapes was extensive in southern England up to about 1300. In the late eleventh century, the Domesday Survey was completed in England showing that vineyards were located in 46 regions of the country; but by about the year 1400 these disappeared, never to return.

One of the more interesting approaches to researching the Little Ice Age was a study of 12,000 paintings in 41 American art museums and eight European countries (Neuberger: 1970). The purpose was to see whether the artists, covering the period from 1400 to 1967 painted skies in a way that revealed something about the weather. The study found that during the period from 1400 to 1550, cloudiness and darkness prevailed.

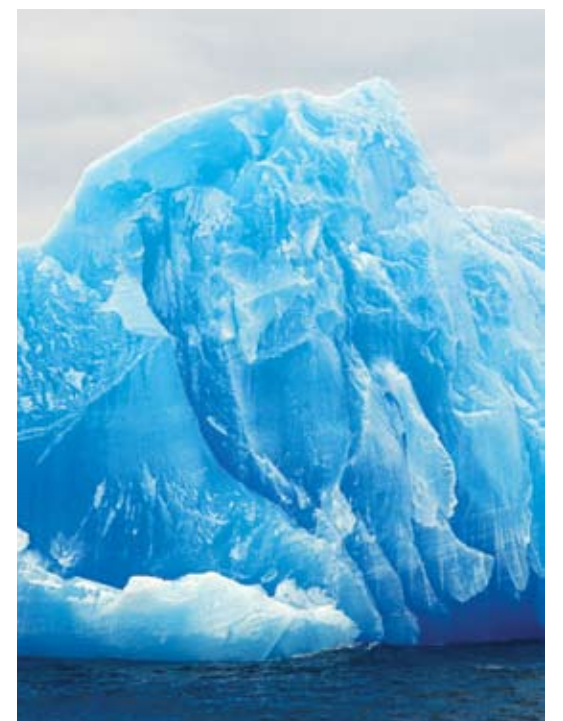
There is even a Canadian connection in the theory that art is a record of climate change. A Dutch painting from the early 1600s entitled “The Hunters in Winter” shows a group of skaters on a frozen river in the background. Close inspection reveals that these skaters are holding something that looks very much like a hockey stick. The painting has caused a lively debate among those who contend that hockey was invented in Canada 250 years later and those who believe that Holland should be recognized in the Hockey Hall of Fame.

“significant increase of ice melting over the past 10 years”

CONTINUED ON PAGE 16...



A COLONY CONFRONTED WITH CLIMATE CHANGE





NIBBLE AND MULTIPLY

Eating Away Their Habitat

In the 1920s, 18 koala bears were placed on Kangaroo Island off the Coast of Australia in an attempt to establish a safe haven for this species that was being wiped out by fur hunters and tree-clearing on the mainland. Today there are close to 30,000 of the little bears on Kangaroo Island, munching the Eucalyptus trees that serve as their habitat, highways and food sources. Lacking any predators on the island, the koalas are growing at a rate that threatens to destroy their habitat with each of them eating one pound of Eucalyptus trees per day.

The thought of culling Australia’s cutest animal is out of the question with the population at large. Scientists are looking at the alternative of a contraceptive device that could be inserted between the shoulder blades of the female koalas which would block reproduction for two years with the slow release of a hormone. The procedure is relatively simple when holding one of the bears in arms, but it becomes a little more complicated when the animals are 100 feet in the air nibbling on leaves. In this case, wild life officers must scale the trees, using ropes and pulleys, and then dangle red flags over the koala’s head. Eventually, the small bears slowly make their way down to the ground where they can be scooped up in bags and given the procedure.

“simple when holding one of the bears in arms”

With the thousands of bears involved, this method is deemed too time-consuming and work is proceeding on developing a dart similar to tranquilizer darts used in similar operations.

Stinging Rebuttal

In 2006 the World Health Organization announced a stunning change in policy. Henceforth, it would advocate the use of DDT to fight malaria, a reversal of a decades old position. The decision was prompted by the organization’s concern that malaria, treatable with DDT, was killing over a million people a year world-wide, most of them in Africa.



The ban on DDT was precipitated by a 1962 book called “Silent Spring” by Rachel Carson which depicted the chemical as a destroyer of the world’s wild life. The title was taken from a segment of the book in which a child commented that she could no longer hear the birds singing.

DDT was banned in 1972 and since that time world agencies and non-profit organizations have resisted its reintroduction. The often preferred alternative promoted is the bed net. Coincidentally, in the latter part of 2006, at the time of the WHO announcement, a Canadian politician and media personality participated in a photo opportunity wearing bed nets in broad daylight. Ironically, the photo demonstrates exactly what African children would have to do in order to be protected from the mosquito-born malaria. Because mosquitoes do not just bite at night, they would have to walk around during the day covered by a full body bed net.

Rising above the debate,the alternative gaining acceptance is the use of both DDT and the bed net as an effective deterrent to the spread of the deadly disease.

Healthy Oceans

In 2006, the Governors of the Pacific Coast States of Oregon, Washington and California announced an agreement to cooperate on the improvement of Pacific Ocean health. In a statement announcing the agreement the governors said “Polluted waters, declining populations of fish and other marine life, degraded near shore habitats, risks of severe storms and tsunamis and impacts related to climate change are threats to ocean dependant states.”

“oppose oil and gas development and exploration”

The Governors resolved to send a joint message to the American Congress in 2007 which would oppose oil and gas leasing, development and exploration off their coasts. In neighboring British Columbia, off shore energy development is a source of intense public dialogue. The tri-state agreement included the stated goals of ensuring clean coastal waters and beaches, protecting healthy ocean and coastal habitats, fostering sustainable diverse coastal communities and expanding

the scientific research needed to support these goals. The plan also calls for cooperation among the governors to seek national funding and collaboration with universities and scientific institutions to enable the research effort to get under way.



No Offshore Drilling



Will Also Take Day Work

Cows And Climate Change

The Food and Agricultural Organization of the United Nations (FAO) has issued a report entitled “Livestock’s Long Shadow”. The 400 page report places the cow and the belching diesel bus in the same context when it comes to climate change. The report states “Livestock’s contribution to environmental problems is on a massive scale ... the impact is so significant that it needs to be addressed with urgency.” It goes on to state “The livestock sector is a major player, responsible for 18 percent of greenhouse gas emissions measured in C02 equivalent. This is a higher share than transport.

NO QUICK FIX

The idea has taunted scientists for decades. It involves creating an artificial sun as a source of safe and limitless energy.

Recently, seven countries representing half the world's population have agreed to build such a project, an experimental fusion reactor in Southern France. Although only an experiment, it involves a commitment of \$ 13 billion (US) and an agreed waiting time of more decades to determine whether or not it will work. With world-wide demand for energy expected to double in the next 25 years, the partners including the United States, the European Union, China, India, Russia, Japan and South Korea, believe a bold experiment is in order. If successful, the fusion reactor would imitate the sun's power source, produce no greenhouse gasses and generate relatively trace amounts of radioactive wastes. It will be ready to demonstrate these capabilities by the year 2040. Officials involved in the project are confident that it could replace between 10 and 20 percent of the world's energy with fusion by the end of the century.

Fusion, which powers the sun as well as other stars, involves confining hydrogen at extreme temperatures and pressures to create a highly energetic gas. Once it reaches 180 million degrees, the gas undergoes nuclear fusion which releases energy that can be used to generate electricity. It is described as a limitless source of energy with backers saying that one quart of seawater used in fusion would be able to generate the equivalent of one quart of oil or two pounds of coal.

COAL CONCERNS

Like most environmental issues, the growth of coal as an energy source to drive economic development can be a matter of perspective. In British Columbia, where careful consideration is being given to building two coal plants over the next 20 years, protests are mounting. In China, where in 2006 a new coal plant was either completed or started every five days, the issue has not garnered a proportionate level of concern.

Nevertheless, the International Energy Agency (IEA) has warned that in its words, the world is on its way to a "dirty future" because of the growing reliance on coal. The agency is a UN body acting as the world's leading energy watchdog.



COAL PLUMES
DRIFT WORLDWIDE

The warning comes in a report that outlines the developing countries, principally China and India, will account for 85 percent of the growth of coal use in the next 25 years. As a result, the agency projects that three years from now, China will be producing more greenhouse gasses than the United States currently the world's largest emitter. When it is considered that China has four times America's population and that its economy is growing at three times the rate of the United States, the gap will explode.

The IAE calls for a move towards nuclear power to offset the dirty future. It backs up its support for nuclear power by cautioning that the developed world will increasingly rely on "unstable regimes" for oil and gas.

Water And The Poor

A recent report by the United Nations on the subjects of climate change and drought points to an apparent irony. Specifically, the majority of the most malnourished people in the world, estimated at more than 800 million, are small farmers, herders and workers involved in food producing activities.

The "Human Development Report" cautions that climate change will intensify water insecurity through higher temperatures and reduction of rainfall. These factors in turn will reduce water supply to some of the world's most water-stressed areas such as East Africa and Southern Africa. Projections in the report dealing with East Africa warn of potential losses of as much as a third of the agricultural products used to raise cattle and feed civilian populations.

The report estimates that in the next 25 years, the number of people living in water-stressed countries will increase from the current level of 800 million to three billion people.

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We gratefully acknowledge the financial support of the Province of British Columbia through the Ministry of Education for BC PALS.



Maintaining Balance

The good news is that the amount of recoverable crude oil reserves in the Alberta Oil Sands would place Canada just behind Saudi Arabia. The bad news is that in the past 10 years, development of the oil sands has resulted in the project being the single largest source of the increase in Canada’s greenhouse gas emissions according to the Globe Foundation of Canada.

The Sands contain an estimated 127 billion barrels of reserves held in a land area larger than the State of Florida. Over a million barrels of oil sands are produced daily, a figure expected to triple in less than 10 years. A 20-year industry investment program announced in 1996 will hit close to \$90 billion by 2016.

“largest source of the increase in Canada’s greenhouse gas”

Extracting oil from thick sand deposits is thirsty work. The Athabasca River supplies the oil industry with the essential water for the production process. Currently the industry is permitted to withdraw more than double what the City of Calgary uses. Complex mathematical formulas are used to track the emissions problem. One of the lead companies, Suncor, reports that the intensity of emissions of greenhouse gasses has decreased steadily in the last six years. Intensity refers to the amount of emissions per unit of oil recovered. Critics argue that while technologies have improved intensity levels the overall volume of emissions has increased because of the growth of extraction.

CONTINUED ON PAGE 16...

ILLEGAL LOGGING

According to the World Bank, poor developing countries are losing \$10 billion a year because of illegal logging, and amount equivalent to the entire softwood lumber industry in British Columbia. On top of this according to the bank, an additional \$ 5 billion in government revenue is lost because of tax evasion and failure to pay fees on behalf of illegal logging groups.

To underline the severity of the situation, the bank states that about 20 percent of mankind is dependent on forests for some part of its livelihood. The report adds that the degradation and devastation of the world’s forests through illegal logging also has serious implications for climate change and the loss of species.

The report surveyed illegal logging activities as a percentage of total logging in 17 countries. According to the report, about two-thirds of those countries have illegal logging rates of at least 50 percent with the figure reaching 80 percent in Indonesia and Bolivia and a full 90 percent in Cambodia. In most of the countries surveyed, governments lack the law enforcement capability to take on the dangerous logging operations.

“does not currently distinguish between legally and illegally produced timber”

The report placed a significant emphasis on China’s growing demand for timber. In the 10 years following 1996, China’s timber imports rose from \$6 billion US a year to \$16 billion US and, according to the report, the wood came “principally from Russia’s far east, Indonesia, Malaysia, New Guinea, and Thailand”. The author states “It is feared that the Chinese demand which does not currently distinguish between legally and illegally produced timber for imports is escalating the problem of illegal logging”.

China disputes these findings as well as similar findings in other reports. In 2008 world leaders have agreed to place illegal logging on the agenda for the G8 Summit and open a dialogue that will include China, India and other high-demand nations.

NOTHING REPLANTED

CHALLENGING CHAINSAW ECONOMICS

A study produced by Edmonton-based ecological economist Mark Anielski suggests that Canada’s forests deserve a place on the country’s balance sheet. According to the study, forests in northern nations including Canada and Russia are worth \$250 billion a year because of the environmental services they provide. These include taking up greenhouse gasses and purifying water. The \$250 billion tally covers services including filtering water and waste, providing animal habitat and attracting tourists. It contends that by giving a cash valuation to a country’s forests, society could discourage the logging of trees that were not replaced through reforestation. In Canada alone, the environmental services provided by Canada’s forests were said to be worth about \$93 billion per year, which translates into \$160 benefit for every hectare of forest.

The concept of applying monetary values to natural endowments is not new. A United Nations’ report said that coral reefs are worth between \$1000 and \$6000 per hectare every year because of services provided which range from fisheries to tourism.

TOYING WITH CHILDREN’S HEALTH

The Sierra Club in the United States has sued the American Government (Environmental Protection Agency) in order to halt the sale of toy jewelry made with lead on the grounds that it can impair brain development in children. The environmental group claims that children can be exposed to dangerous lead levels if they suck or swallow the jewelry.

In 2006, a four year old child in Minnesota died of lead poisoning after swallowing a charm from a bracelet made in China. Subsequently

the distribution company recalled 300,000 of the bracelets and found them to be made of 90 percent lead. Before the lawsuit, more than 70 major US retail stores agreed to stop selling children’s jewelry containing lead after a suit was launched by the California State Attorney in 2004.

To date, the Environmental Protection Agency has regulations in place to protect children from exposure to lead but none that mention children’s jewelry specifically.



TOILET TRAINING LACKING

The tallest mountain in Europe, Mont-Blanc, is giving a questionable name to the reputation of eco-tourism. Recently, the mayor of a mountain village, Saint-Gervais Mont-Blanc charged that the 30,000 plus people who climbed the 4800 meter mountain each summer are leaving the pristine mountain passes and glaciers in “intolerable” condition. In a town meeting he described how in landing his helicopter on a Mont-Blanc glacier, he found it strewn with frozen excrement and the ice stained yellow from the urine of thousands of climbers. Said the mayor, “The problem is that many people think that a garbage truck and a street cleaner will pass by the next day”.

He has called for charging an “eco-tax” of about 15 dollars on climbers to help his community recoup the costs of installing dry toilets on the high mountain passes and sending up helicopters to collect trash.

Last year “Landscapes” reported how climbers of Mount Everest were revolted by the stream of trash left by those who came before them.

Forgiveness For Forests

The United States has agreed to forgive about 20 percent of the debt owed to it by Guatemala, around \$120 million US, on the condition that the money is used to protect threatened plants and wildlife. The agreement is part of the Tropic Forest Conservation Act of 1998 that allows debt owed to America to be invested in protecting the environment.



Guatemala’s rain forests and mangrove reserves have been under serious assault in recent years due to slash and burn agriculture and land grabs.

STYROFOAM ICE

In the far northern reaches of the Province of Ontario, there are 34 Aboriginal communities numbering 20,000 Indians, who depend on ice roads for essentials during the winter. During the coldest months of the year, between January and March, these winter roads are built by clearing snow on a network of rivers and lakes to allow trucks to bring in winter shipments of heating fuel, gasoline and fuel to power electricity generating stations. According to the Indians, climate change is affecting their winter roads. Said Chief Stand Beardy, “The ice doesn’t have its solid blue colour any more it is more like Styrofoam, really brittle.” He blames the combination of global warming and the drift of toxic waste from the highly populated south.

According to the Canadian Environmental Department, in the past 60 years in the region, temperatures have increased by an average of two degrees Fahrenheit or 0.8 degrees Celsius in winter and slightly higher in the spring.

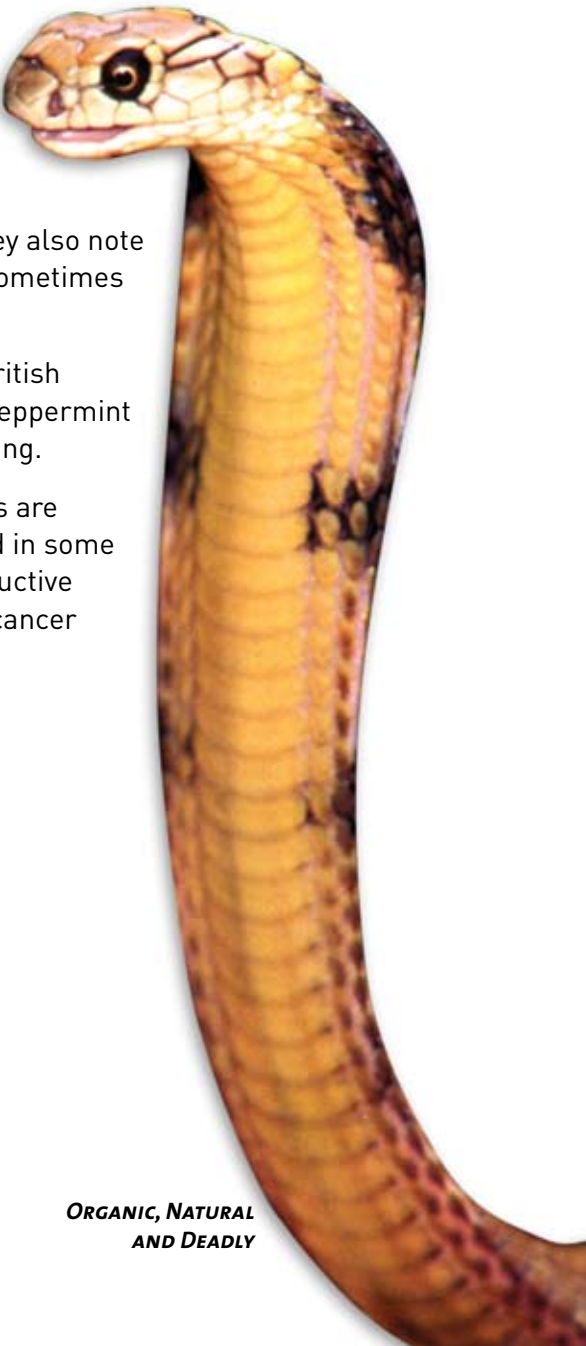
Natural...but?

Scientists involved in dermatology and medicinal chemistry are cautious about use of the word natural to describe some cosmetic products. They warn that the casual application of the term natural is not synonymous with safe. One representative of the Canadian Dermatology Association interviewed in Canada’s National Post quipped, “Cobra venom is natural but very poisonous.” They also note that the packaging in which environmental products are contained can sometimes cancel out any environmental benefits of the product itself.

“Highly suspected for impacts”

Adam Frankel, a Professor of Medicinal Chemistry at the University of British Columbia, points out that some natural ingredients such as cinnamon, peppermint and rosemary can cause allergic reactions ranging from burns to blistering.

Some of the chemical ingredients added to everyday cosmetics raise doubts as to whether the outward benefits are worth the inner risk. Coal tar for example, found in hair dyes, is a known carcinogen. So is formaldehyde, found in some nail polish. Mercury found in some deodorants and eye drops is highly suspected for impacts on human reproductive capability and petroleum distillates found in mascara, lipstick, lip balm and perfumes is held to be a potential cancer causing agent.



ORGANIC, NATURAL AND DEADLY

Fish Story



It has been around for an estimated 400 million years, it weighs 150 kilograms, has no teeth, and has been comfortable swimming in Canada’s rivers and eating worms since the age of the early dinosaurs.

According to the Committee on the Status of Endangered Wild Life in Canada the Lake Sturgeon could be gone in a lifetime because of pollution, over fishing, and changes in river flows.

In 2006 the Canadian Government took initial moves to protect the Lake Sturgeon.



Recognizing Commitment

More than 1000 guests including FORED BC's CEO Cheryl Zyola attended the EMA awards in Los Angeles in November to recognize the creative efforts of the television and film industry and actors in increasing public awareness of environmental issues. Major sponsors for the awards include Toyota Motor

“the most compelling environmental message”

Sales USA and the Fairmont Hotel Chain. In the feature film category the winner was “Ice Age: The Meltdown” with the documentary film award going to “An Inconvenient Truth”. The TV episode drama recognized for the most compelling environmental message went to “Boston

Legal” for the episode “Finding Nimmo” and the episodic comedy award went to the Simpson’s for the episode “The Bonfire of the Manatees”. Law and Order: Special Victims Unit also garnered an award.

The diversity of attendees at the event suggests both a broad commitment in the entertainment industry as well as that industry’s ability to reach out to other

sectors. Attending the award ceremony and a follow-up environmentally green silent auction were figures such as former Canadian football star Warren Moon, Col. Buzz Aldrin the second man on the moon, the legendary rock group The Red Hot Chili Peppers and Rock and Role Hall of Fame inductee Graham Nash.

EMA Profile



MASIELA LUSHA

Best known for her role as Carmen in the George Lopez series, actor/writer Masiela Lusha is a strong supporter of EMA as an organization that gets things done on the environmental front. Getting things done is very much in keeping with Masiela’s approach to life. At age 12 she published a book in two languages and was honoured as one of the top 10 young poets in North America. She graduated from high school at age 15 and by age 18 was balancing studies at UCLA with a growing acting career.

In a conversation with FORED President Cheryl Ziola she described her respect for EMA as being based on the organization’s ability to draw

out both commitment and a sense of responsibility from its members. Describing herself as a “freelance activist” she explained her rationale for being an active supporter of a number of associations, saying “lending a name is nice, but lending a hand is even better”. Although she is proud of the accomplishments of the entertainment industry in spreading an environmental message, she doesn’t see it as an exclusive source of guidance for people who support sustainable lifestyles. Says Lusha:

“Lending a name is nice, lending a hand is even better”

“Each individual trusts and receives information from their preferred group”.

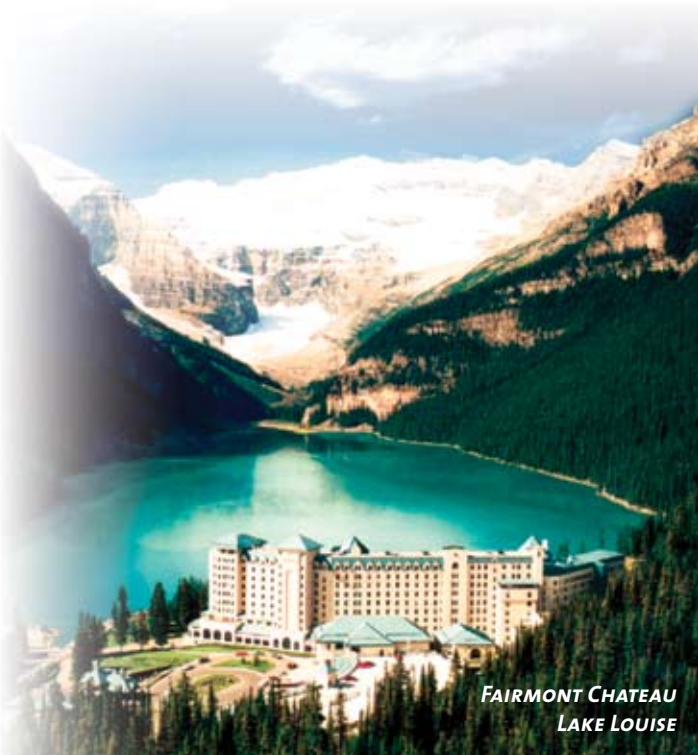
Masiela concedes that she is still on a learning curve and therefore it is premature for her to adopt one signature cause like some high profile actors. She explains “I haven’t limited my activism to one particular view yet”. She professes a modest view for her potential impact by saying “in the end, I’m just a girl with a voice – it’s really all I have, but Hollywood is wonderful when it comes to helping people listen to even the smallest voice.”

SUPPORTING ROLE

EMA sponsor Fairmont Hotels is a creative and committed company when it comes to reducing its environmental footprint. All properties in the company’s American portfolio are part of the voluntary Energy Star Program that involves measurement, tracking and benchmarking of the hotel’s energy performance. In Canada since 1999, the Fairmont Chateau Lake Louise has been purchasing green power with an agreement through the Canadian Eco-Logo Certified Canadian Hydro Developers. At present fully 40 percent of the hotel’s electricity needs are met by a blend of wind and run of the river electricity generation. The company’s remote chalet properties get 50 percent of their energy from solar panels and the purchase of wind power for Alberta properties has resulted in a reduction of greenhouse gasses to a level of close to 100 tons on an annual basis.

“equivalent to removing 215 cars from the road”

In British Columbia, energy conversation programs by Fairmont Hotels and Resorts have resulted in the equivalent of removing 215 cars from the road, or planting over one thousand acres of trees.



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FORED BC

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E-mail: info@foredbc.org

Available from FORED BC

- Landscapes magazine
- Information resources for community sustainability initiatives
- Field service programs to facilitate citizen involvement
- Support services for Youth volunteer groups
- Community participation models for First Nations
- Guest speakers

Sustainable Art

One of the most successful initiatives by FORED BC over the past many years has been using the forests as an artistic medium to teach kids about sustainability. The program involves awards for children at three school levels for the development

“more than a finger painting exercise”

of themed posters during National Forest Week. This year over 600 entries were received from

children throughout British Columbia. The winners were from Maple Ridge Christian School, Skaha Lake Middle School in Penticton, B.C., and the Special Needs Lifeskills Class at Heritage Park Secondary School in Mission.

The poster shown in Page 15 is from the special needs class. In a submission letter, the teacher Julie Cameron explains that her challenge was to involve all 21 students aged 13 to 18, many of who are diagnosed with autism, Down’s syndrome and cerebral palsy. She explained that in addition, some of her students have severe vision impairments

CONTINUED ON PAGE 16...



TOUCHING EDUCATION IDEA

PROFILING CAUSES

The concept of product placement has become an increasingly common and in some cases contentious part of movie making. Product placement involves having a name brand product such as a car or soft drink conspicuously visible during a key scene in a movie. There is another side of the placement phenomenon that doesn’t get as much attention. Two organizations, the Entertainment Industries Council (EIC) and the Hollywood Health and Society Organization (HH&S) exist to build bridges between good causes and good entertainment.

The EIC brings together writers and leaders from health and social issues organizations. The Board of Directors includes studio executives and network officials. The organization puts writers in touch with experts, on a range of issues from mental health to slavery. The goal is to help writers get the facts straight when dealing with sensitive issues.

For non-profits, the EIC organizes events such as conferences that bring top medical professionals and movie

writers together to enhance the writers’ understanding of complex issues and allow the non-profits to insert positive messages in movie production.

The HH&S also provides current research to movie writers and organizes conferences for the movie industry on complex social issues. In a typical year the organization will receive over 200 requests from writers for background on complex health issues. In one instance in 2005, HH&S developed a briefing

session for the Writers’ Guild on breast cancer. As a result, writers from two of television’s leading medical shows developed story lines incorporating a preventative message to women.

To help non-profits connect with Hollywood, a resource publication has been published called “Your Issue Here: working with Hollywood to deliver your message to millions”. The report was written by Los Angeles public relations expert Andy Goodman and Karen Brailsford with sponsorship from the Robert Wood Foundation.

“The goal is to help writers get the facts straight”

Annual Markers

In 2006 FORED BC spearheaded a diverse range of initiatives as part of its mission. The following is a partial list of highlight events for the year.

- FORED was a full partner is the first of a series of sustainability workshops for First Nations communities.
- An education program was completed, designed to help

B.C. students understand the complex role of forest fires in our natural ecology and the range of human impacts and responses.

- In cooperation with the City of Vancouver, a web-based newsletter called

“developed to help adult basic literacy learners”

“Cool Vancouver News” was developed to help adult basic literacy learners become involved in educational programs about climate change.

- A comprehensive blueprint was developed for British Columbia’s motion picture

industry to help the industry achieve international leadership in sustainable movie productions.

THE DARKER SIDE OF MOVIE MAKING cont'd from page 4

In addition to the recycling efforts of the “Matrix” producers, the researchers also commended exceptional practices such as the film “The Day After Tomorrow” which paid \$200,000 to plant trees to offset the 10,000 tons of carbon dioxide emissions caused by vehicles, generators, and other machinery used in production.

One company, Participant Productions, which produced the environmentally themed movies “Syriana” and “An Inconvenient Truth” expressed surprise at the findings. Said spokesperson Lisa Day, “I think the industry does look at itself. The studios have done a lot in terms of waste reduction. I think energy is the new thing the industry is looking at and what impact they have”.

Maintaining Balance cont'd from page 12

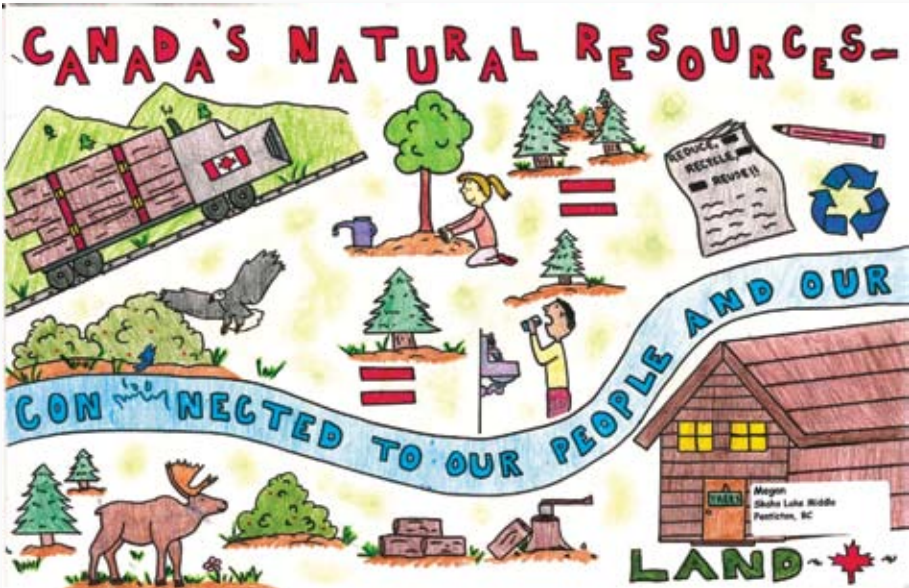
A committee of representatives from government, industry, First Nations and environmental organizations has been created to develop a sustainability vision for the future of the oil sands and is in the process of public consultation meetings in Alberta. There is optimism that progress can be made in a number of areas. These include greater efficiencies in the use of energy and water to extract the oil, improved efforts to capture and store carbon, and the use of alternative fuels to drive the industrial giant that the oil sands has become.

With the importance of the oil sands in the context of Canada’s ambition to improve its track record in greenhouse gas emissions, this dialogue is expected to expand to include Canadians across the country.

Sustainable Art cont'd from page 15

and difficulty with verbal communication. Getting all of them to participate in a poster contest meant dealing with obstacles such as the fact that many could not manipulate scissors or writing instruments.

The solution was to have each student make a fingerprint leaf. For these special students, it was more than a finger painting exercise. Says teacher Cameron, “To some degree they were able to understand some of the ways forests enhanced their lives”.



THE COLONY THAT CLIMATE CHANGED cont'd from page 9

GREENLAND TODAY

Although the ice sheet covering much of Greenland is as high as 4300 meters in some places “the significant increase in ice melting over the past 10 years” has scientists concerned about the effects of global warming. Although the fertile cattle grazing valleys of Leif Erikson’s time are no more, on the extreme southern parts of Greenland, mosses and stubble grasses do allow some sheep grazing. Greenlanders are passionate about soccer but because it is impossible to grow adequate soccer field grass on the island, world soccer authorities have granted an exemption that allows the use of artificial turf. Although a wealth of minerals lies beneath the surface, drilling through four kilometers of ice to get to them means the treasure chest is in cold storage.

GREENLAND TOMORROW

According the NASA scientists the Greenland ice sheet is shrinking but not as fast as previous research indicated. In a study released in October NASA said that the low coastal regions of Greenland lost 41 cubic miles of ice each year between 2003 and 2005 while the high elevation interior gained 14 cubic miles from excess snowfall. In the 1990s, according to the report, the gains and losses balanced one another out whereas today there is a shortfall of some 27 cubic miles. To put that in North American Terms, NASA equates it to the total water flow of the Colorado River for six years.

NASA scientists said that although the ice loss in this study is less than half of that reported in other recent research, it still shows that Greenland is losing more mass than it gets in new snow fall each year.

Landscapes magazine and other FORED information programs promoting environmental conservation and community sustainability are supported in part through proceeds from our charitable gaming license. Working in partnership with First Nations, youth, business, government, labour and other organizations, FORED programs directly benefit communities throughout BC.

BRITISH COLUMBIA