



Landscapes



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EQUATION FOR A BETTER PROVINCE

A small group of people + a good idea + a little financial encouragement = a big difference.

Although the Vancouver Foundation is the province's largest philanthropy and the second largest foundation in Canada, it has a knack for finding small things that make a big difference. Since it was established over 60 years ago, it has poured tens of millions of dollars into community projects throughout the province. In the majority of these cases the Foundation follows a simple formula. A small group of people with a good idea, receiving a little financial encouragement, can make a big difference.

A sampling of some of their funding projects over the past year demonstrates this theory in action.

The Foundation funded a group called the Critter Care Wildlife Society in Langley. This Society provides care to orphaned or injured native mammal species. Last year it admitted 13 black bear cubs. Further north the Foundation funded the Get Bear Smart Society in Whistler. The Society

engaged in public information programs to cut down conflicts between humans and bears.

In Vancouver, poor aboriginal kids coming into the city face a stack of challenges. Among these, simply being able to afford a bus ticket is often out of reach. A grant from the Vancouver Foundation to the Urban Native Youth Centre in

Vancouver was created to address this problem.

In another program

aimed at aboriginal youth, the Foundation funded a summer institute for aboriginal teens at the Emily Carr Institute of Art. The program

allowed youth to explore their expressive abilities in native art by removing financial obstacles to study.

Good ideas plus a little encouragement make a big difference. It is

a philosophy that has made the Vancouver Foundation a leading force for positive change for six decades. Long before Google™ was operating under the corporate slogan of "do no evil", the Vancouver Foundation was

operating under the unofficial slogan of "do a lot of good." It still does.

Although the Vancouver Foundation is the province's largest philanthropy and the second largest foundation in Canada, it has a knack for finding small things that make a big difference.



From the Readers

"I just received a copy of Landscapes from our Superintendent's office—what a beautiful magazine! I would love to be included on your mailing list. I look forward to receiving the next edition of your magazine!"

—Cathy Jenkins

North Vancouver Outdoor School, North Vancouver, BC

"I teach Environmental Studies at a public high school in Vancouver and my principal just gave me a copy of your Landscape magazine (winter 08 issue). I think it's great and would love to do an activity with my students using the magazine."

—Léane de Laigue

Kitsilano Secondary, Vancouver, BC

"I just wanted to say that I really appreciate your efforts in forest education for the students in BC. Your Landscapes magazine is great. Our grandson is now reading it, so you have gone from one generation on to the next. Keep up the good work. It is excellent and much appreciated."

—Ron Last, Forester

Nakusp, BC



Landscapes is published by **FORED BC** and circulated to members and community leaders in the public and private sectors, First Nations and the non-profit community. **FORED BC** is a non-profit association that provides information resources and consulting support to organizations and volunteers involved in building sustainable communities.

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A Hostile Climate for Fish

A study released by the Malaysia-based World Fish Centre warns that millions of people in Africa, Asia and South America who depend on the fisheries face unprecedented hardship related to climate change.

The Centre's study examined the fisheries industries in 132 nations using the following criteria: which nations were most vulnerable based on the potential impact of climate change; how dependent was their economy and national diet on fisheries; and, did the country have the capacity to respond to the threat.

The research identified 33 countries as being "highly vulnerable" to the effects of global warming on fisheries. These 33 countries produce 20 per cent of the world's fish exports and two-thirds of them have been classified by the United Nations as "least developed." Inhabitants of these vulnerable countries are also more dependent on fish for daily survival. They require fish to obtain 27 per cent of their dietary protein compared to 13 per cent in other

countries. Two-thirds of these vulnerable countries are in Africa.

The study used an approach developed by the International Panel on Climate Change in order to assess vulnerability. Included in the most vulnerable list are coastal countries like Colombia and Peru. Landlocked countries

like Uganda are included because climate change can also affect lakes and rivers.

THE STUDY USED AN APPROACH DEVELOPED BY THE INTERNATIONAL PANEL ON CLIMATE CHANGE

In order to respond to the threat, these countries would need to take measures to reduce the exposure of their industry to climate related

risks, reduce the public dependence for livelihoods based on climate sensitive resources, and increase each nation's ability to predict the economic impact of climate change. Given the desperate financial state of these vulnerable nations, any of these mitigation measures would require investments far beyond the financial capacity of poor nations.

In British Columbia, coastal First Nations as well as those in the interior, have a dependence on fisheries resources that stretches back in time. The study did not incorporate an analysis on how fisheries-dependent aboriginal communities would be affected by climate change or address the types of mitigation efforts that have to begin today to help First Nations offset the damage.

JUST OFF SHORE

The largest storage site in the world for commercial oil is located in the state of Oklahoma and holds 34 million barrels. The largest recorded oil spill from the Exxon Valdez tanker poured 10 million barrels of oil into Alaskan waters.

With the drop in world oil prices, tankers holding more than 80 million barrels of oil are moored off the coast in the Gulf of Mexico and the Caribbean Sea as producers wait out better prices. The presence of these mammoth oil storage tanks floating in a hurricane-prone region has drawn concern from some quarters of the environmental community.



FROM THE OCEAN TO PIG FARMS

A nine-year study by the University of British Columbia has determined that one-third of all commercially harvested fish taken from the ocean is fed to farmed fish, poultry and pigs.

Fish such as anchovies and sardines, which are called forage fish, account for 37 per cent or over 30 million tons of all the fish taken from the world's oceans each year. The study warns that the practice is adding to what it calls "the serious over-fishing crisis in our oceans." In addition, the populations of third world countries that have a large dependence on fish for their daily sustenance are competing with animals for declining fish stocks.



GREEN JOBS STARTING TO WITHER

Storm clouds are gathering over the promise of an easy transition to millions of green jobs. Somewhere between inspiration and implementation, the stock market brought an ill wind

WIDE OPEN SPACES AREN'T FREE

Just two years ago there were 18 large banks and financial institutions in the USA eager to finance the installation of solar power and wind turbine projects. The loans allowed them to take advantage of generous tax rebates from the government. Since the near collapse of many large banks, the number willing to invest in green technology development has shriveled. The president of Renewable Systems Americas, a wind developer, describes the credit market for alternative energy projects as “absolutely frozen.” American business associations representing factories that develop products for the renewable energy industry are forecasting drops in demand of between 30 and 50 per cent over the next year.

In the face of these grim financial realities, the promise of millions of green jobs replacing traditional employment may be somewhat delayed.

The downturn has had a pronounced effect on communities that staked much of their future on alternative energy. North Dakota is an attractive locale for wind farms because of the wide open spaces and turbulent weather. To take advantage of this natural benefit, DMI Industries, a manufacturer of wind turbines, set up a plant in Fargo, North Dakota. It recently announced a 20 per cent cut in its workforce because of falling sales.

credit market for alternative energy projects is “absolutely frozen.”

The downturn is not restricted to North America. The European Wind Energy Association has warned that smaller independent developers of alternative power have become victims of the credit crunch, although large utilities with cash on hand are seeing their projects proceed.

The one bright spot in the world market for alternative energy is China where the government stimulus package includes an allocation for building power transmission infrastructure that will connect to the wind industry. As a leader in photovoltaic products for solar energy however, China has seen its markets collapse in Europe. India has seized on the opportunity to develop wind power projects

as a lure for investment for North American and European companies looking to purchase carbon offsets. The scheme allows the purchasing company to reduce its carbon footprint on paper by buying credits from alternative energy projects based in India or China.

Land costs are another factor in the financing restrictions for alternative energy projects. The wide open spaces required for wind farms are not free. The land has to either be purchased or leased and this can churn through 50 per cent

of the project's total costs before the turbines themselves are turning.

Domestic installations of solar energy take less space on the other hand, but are labour intensive. Labour accounts for almost half the cost of solar panel installation. For this reason, according to the Solar Energy Industry Association of the US, even though solar panels have dropped in price by 25 per cent over the past year, labour costs have remained high and act as a disincentive to home owners. The result is that panel manufacturers in America are facing the same inventory problems as their Chinese competitors face in Europe.

According to the British Wind Energy Association, the heavy dependency on government subsidies could become a threat as governments move to a

leaner cost structure. The Association favours moves that would encourage private financing backed up by government guarantees.

That way, in the event of a prolonged recession, they feel the alternative energy

Faced with a choice between subsidizing windmills or children's hospitals, taxpayers may vote with their deeper values.

industry would not be reduced to fighting for subsidies against other interests like health and education. Faced with a choice between subsidizing windmills or children's hospitals, taxpayers may vote with their deeper values.



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1 ZANY FIELD TRIP

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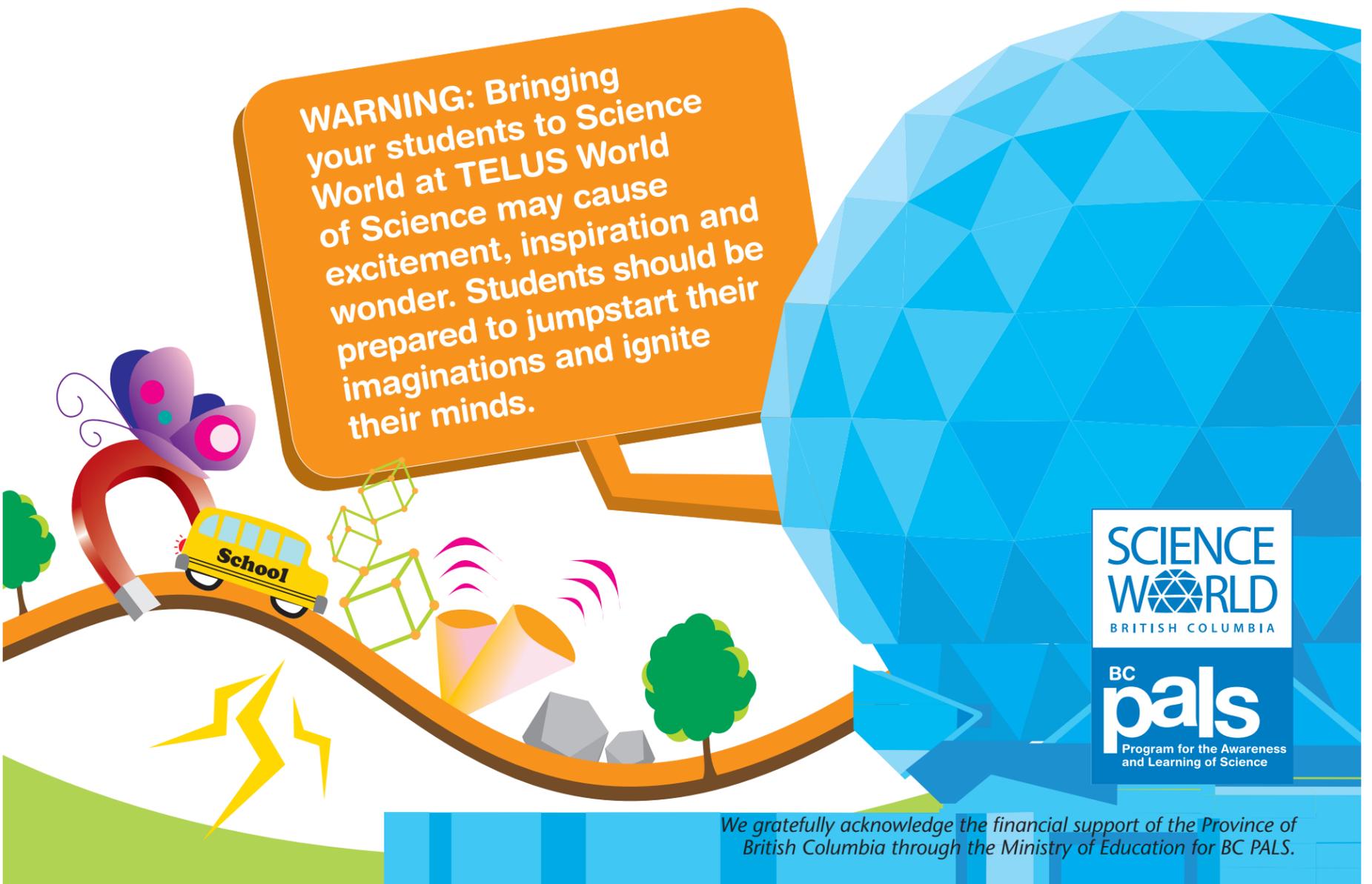
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We don't have all of the details worked out yet for our operations during the upcoming 2010 Winter Olympic Games. As a result, bookings for field trips later than December 31, 2009 will only be accepted starting in September 2009.

WARNING: Bringing your students to Science World at TELUS World of Science may cause excitement, inspiration and wonder. Students should be prepared to jumpstart their imaginations and ignite their minds.



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

ONE WORLD: TWO VISIONS



ARE WESTERN SHOPPING MALLS INCREASING CHINA'S GREENHOUSE GASES?

China should not have to endure restrictive climate change policies when much of the problem originates with its North American consumers using easy credit to buy Chinese products at the local shopping malls.

This was the view expressed by Li Gao, the director of China's Climate Change office, in a recent meeting with his counterparts in Washington. Although the two countries account for half of the world's greenhouse gases, they appear to be a world and a half apart on how to resolve the problem. The meeting was a prelude to global negotiations to be held later this year in Denmark.

China is the world's largest source of heat-trapping gases from coal, oil and gas linked

to the jobs and activities of its 1.3 billion people. Many American legislators have taken the position that their country cannot be expected to take unilateral action unless China meets the same standards.

In response, Li points out that up to 25 per cent of China's emissions result from making products for the rest of the world.

He contends that while the consumers in developed countries enjoy the benefits of these products, China should not be expected to bear the full brunt of the climate impacts involved in producing them. A similar argument has been made by Canadian researchers who have suggested that the climate impact of producing hydro-carbons in Canada should not be exclusively borne by

Canadians if the products - coal, oil and natural gas - are used in other countries. The climate change calculations become complicated if a ton of coal is mined in BC, then burned in China to power a factory producing running shoes, that are in turn exported back to BC.

As for rumblings from some American legislators that tariffs could be imposed on China's imports if it does not comply with American environmental policy, Li called such thinking "a disaster" and warned that it would precipitate a trade war.

The planning emphasis in China will be to reduce energy intensity which is described as the amount of energy needed for each unit of gross domestic product. This measure is cost driven, not green driven, because it aims to reduce the

energy inputs in end products. With the resulting lower costs, more products could then be produced to meet world demand meaning the total amount of energy used would be as great or greater. However, China does plan to increase renewable energy to 15 per cent of its total energy use in the next 12 years. It also has advanced ambitious plans to increase the use of bio-gas in rural areas, expand research in clean energy and plant more trees.

The pressure to reach international consensus was heightened

in March when a meeting of international scientists in Copenhagen learned that "worst case scenarios" for climate change were already starting to be realized.

25 per cent of China's emissions result from making products for the rest of the world

the world's largest source of heat-trapping gases

SUSTAINABLE CORPORATIONS SURVIVE

It turns out that companies that operate in a sustainable manner last longer.

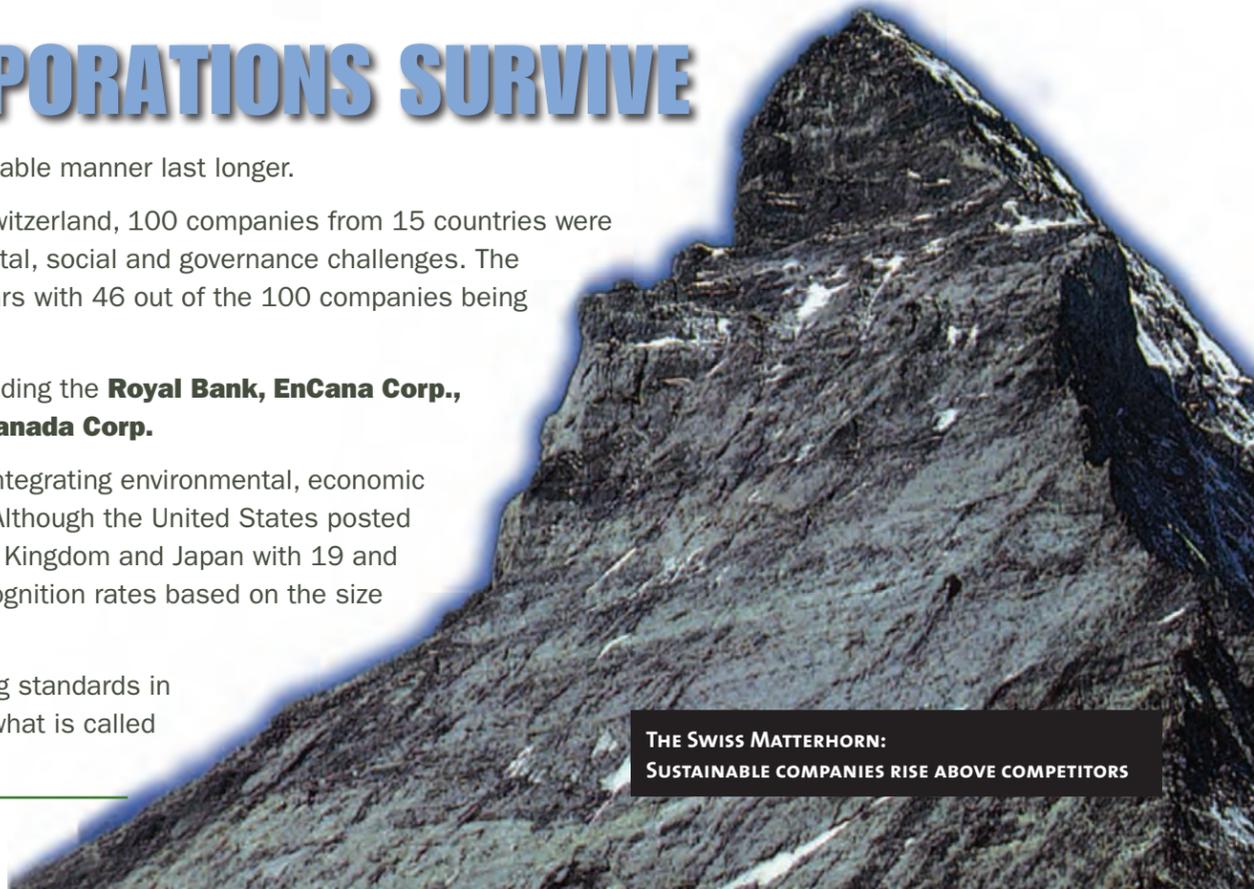
This year at the Davos World Economic Summit in Switzerland, 100 companies from 15 countries were recognized for their approach to meeting environmental, social and governance challenges. The average age of the companies selected was 102 years with 46 out of the 100 companies being over 100 years old.

There were five Canadian companies on the list including the **Royal Bank, EnCana Corp., Toronto Dominion Bank, Telus Corp. and Trans Canada Corp.**

The companies were assessed on their success in integrating environmental, economic and social performance standards in their practice. Although the United States posted the most companies on the list, 20 in all, the United Kingdom and Japan with 19 and 15 companies qualifying respectively had higher recognition rates based on the size of their economies.

Organizers contend that companies exhibiting leading standards in environmental and social performance also provide what is called a "sustainability indicator" that attracts investors.

THE SWISS MATTERHORN: SUSTAINABLE COMPANIES RISE ABOVE COMPETITORS



SOME LIGHT READING

Some of the energy used to create artificial light may be making a darker world

Global dimming does not refer to a drop in average world intelligence. It is a term being used by scientists to explain how visibility on clear days has declined in much of the world in the last 30 years because of an increase in airborne pollutants. Researchers at the university of Maryland have described “global dimming” over South and East Asia, South America, Australia and Africa. They say that visibility has remained stable in North America and improved in Europe. They suggest that aerosols, tiny particles or liquid droplets sent into the air by burning fossil fuels, and other sources are responsible for the dimming.

The visibility measurements were taken from

data from over 3000 meteorological stations world-wide. The results were published in the journal Science.

Researchers contend that the aerosols from burning coal, industrial processes, and the burning of tropical forests can influence the climate and have a detrimental impact on human health. Greenhouse gases, on the other hand, are invisible and transparent and therefore do not affect global visibility.

The report blames increased industrial activity in China and India for much of the decreased visibility and credits the improvement of visibility in

Europe with stronger air quality regulations brought in over the past 20 years.

The study also addresses some of the confusion that surrounds the impacts of pollution and greenhouse gases. It explains that aerosols can have different effects on cooling and warming in different parts of the world. China, for example, has experienced cooling because high pollution levels have reduced the warming effects of the sun.

On the other hand, these same high pollution levels over cities can trap the heat generated by energy production processes turning the city into a relative hot spot in an otherwise cooling region.

Greenhouse gases are transparent and therefore do not affect global visibility

The study also addresses some of the confusion that surrounds the impacts of pollution and greenhouse gases

Learning to Share

Former Prime Minister Pierre Trudeau had a two word explanation as to why international fishing treaties were needed. Said Trudeau, “Fish swim.”

In a similar way, 40 per cent of the world’s population shares borders along 260 international river basins which also provide 60 per cent of the world’s fresh water.

The historic approach to sharing rivers has usually involved bilateral discussions on how to share the water. Once that is determined, each country makes independent judgments with respect to how it will use its share.

A new approach proposes that by working together, countries might enjoy greater economic benefits than would be the case if each of them continued to make independent decisions about how to use their share of the water. At the World

Water Forum in Turkey, held earlier this year, protocols for this type of operation were examined. That country has thousands of years of experience in negotiating water usage with its neighbours. Turkey is the home of the sources of both the Euphrates and Tigris Rivers, which in turn create a river basin flowing through Syria and Iraq before draining into the Gulf of Iraq. Because Syria and Iraq are very dry countries, Turkey holds a powerful and sensitive position as the “upstream power.”

GREEN CEMENT: INS

Millions of tons of cement will be used for infrastructure
Can cement makers im

Carbon capture and storage has been touted by many advocates as an effective measure to reduce greenhouse gases. This has generated a number of novel approaches. One Canadian company plans to use captured carbon as a means to drive oil from deep under ground, that will then be burned as fuel in the interests of a greener world. (Landscapes, Winter 2008)

An even more novel concept is being developed by the concrete industry in a move to reposition concrete as a green building product rivaling natural products such as wood.

A pilot project at a power plant on the California coast is capturing carbon dioxide from the plant and bubbling it through sea water in order to make cement. The company, Calera, claims that

it can use 90 per cent of the carbon dioxide for cement production and thereby reduce greenhouse gases.

The production of cement requires heating limestone and other ingredients to 1450 degrees Celsius by burning

fossil fuels. According to the Environmental Protection Agency, cement is the third

largest source of greenhouse pollution in the United States. Critics point out that urban density projects involving large buildings constructed of cement under the guise of ecology based planning, are actually worsening the problem.

Making one ton of cement results in producing one ton of CO₂ and in some cases much more. Calera claims it can reverse that process by sequestering half a ton of

carbon dioxide for every ton of cement they make. The company is taking the concept of carbon storage, put forward by the Intergovernmental Panel on Climate Change, and moving it a step further to store the carbon in a useful product rather in a hole in the ground.

If applied on an international basis, the potential carbon capture numbers involved in the new cement process are immense. According to the Portland Cement Association of the United States, the US used more than 120 million metric tons of Portland cement in 2007 and China used at least 800 million metric tons. The new production method could remove more than 500 million tons of carbon dioxide from the world's atmosphere annually.

The process imitates nature by following the ancient

process of the microscopic sea creatures called coral. These tiny creatures take calcium and magnesium from the sea water and use it to form carbonates in order to make their shells which, in turn become coral reefs.

The cement making technology involves turning CO₂ into carbonic acid and then making a carbonate for the production of cement. According to a company spokesman, "All we need is water and pollution." The technique involves using heat from the emission stacks to dry a muddy mixture that results from blending the sea water and pollution. In effect, it involves using waste heat and

MAKING ONE TON OF CEMENT RESULTS IN PRODUCING ONE TON OF CO₂

a waste product to produce white cement. When it is dry, the cement can be used

as a replacement for Portland cement, which is generally blended with rock and other materials to make concrete

INSPIRED BY NATURE

projects. The resulting CO₂ emissions will threaten coral. Imitate coral and save it?

for everything from roads to buildings.

In the massive infrastructure projects being

announced by governments around the world as a

response to the recession, the carbon footprint of traditional concrete production will undermine the green policy objectives of those same governments. Proponents of the new technology see this as a win for both the economy and the environment.

Other companies, including a Canadian-based company called Carbon Sense Solutions are involved in the race to make environmentally friendly cement from waste gas. The challenge will be to get the product accepted by regulators and by what is described as a highly conservative cement industry that may be dubious about

the qualities of the product. The last major change in

international cement production involved allowing the addition of five per cent limestone in the cement mix. This took 25 years to be accepted by industry authorities.

Public pressure may be a factor in pushing the change. The more the public understands that building cement structures and powering them accounts for more than 40 per cent of American global warming, the more pressure will be created for alternative building materials.

The prime ingredients are in abundant supply. Sea water covers 70 per cent of the earth and contains billions of tons of calcium and magnesium. In America alone, there are 2800 power plants that pump out

close to three billion metric tons of carbon dioxide every year. According to Calera, the calcium and magnesium can be stripped from the sea water for production purposes and the sea water then returned to the ocean without environmental consequences. Emissions

from coal-fired facilities such as factories are even more attractive in that coal generates five times as much carbon emissions as natural gas.

Some environmentalists have warned that the announced goal of reducing America's dependence on foreign oil will really amount to a significant increase in coal power which the United States has in abundance. Reducing emissions from coal by using those emissions to neutralize another carbon source, cement, would seem to have potential popular appeal.

URBAN DENSITY PROJECTS CONSTRUCTED OF CEMENT UNDER THE GUISE OF ECOLOGY BASED PLANNING, ARE ACTUALLY WORSENING THE PROBLEM

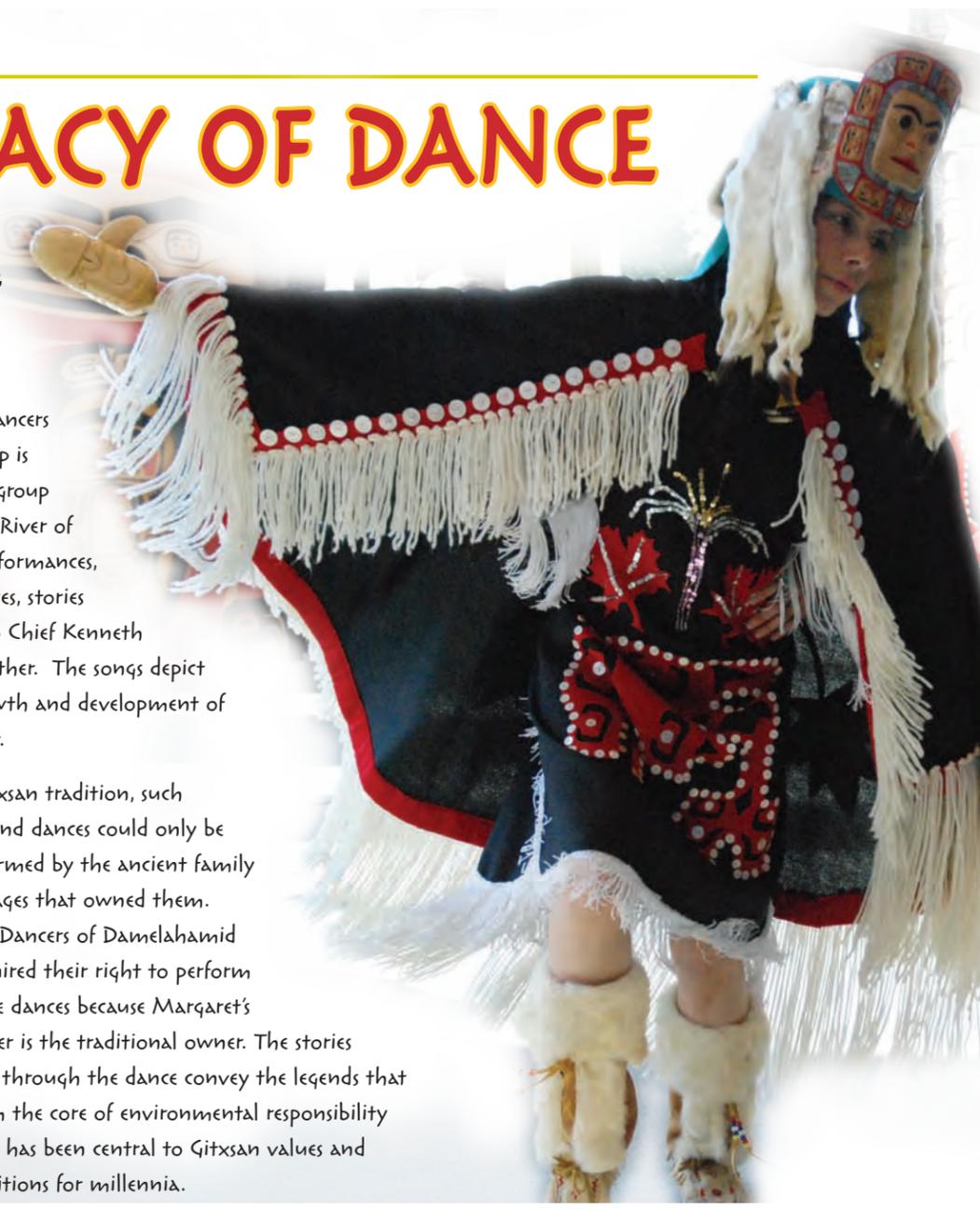
IN THE MASSIVE INFRASTRUCTURE PROJECTS, THE CARBON FOOTPRINT OF TRADITIONAL CONCRETE PRODUCTION WILL UNDERMINE THE GREEN POLICY OBJECTIVES

A LEGACY OF DANCE



Margaret Grenier, a FOED Director, is the daughter of a Gitksan Chief and Executive Director of Dancers of Damelahamid. The group is a traditional Gitksan dance group originally from the Skeena River of northern BC. In their performances, they present masked dances, stories and songs belonging to Chief Kenneth Harris, Margaret's father. The songs depict the industry, growth and development of Gitksan society.

In the Gitksan tradition, such songs and dances could only be performed by the ancient family lineages that owned them. The Dancers of Damelahamid acquired their right to perform these dances because Margaret's father is the traditional owner. The stories told through the dance convey the legends that form the core of environmental responsibility that has been central to Gitksan values and traditions for millennia.



DIFFERENT ROADS FOR DIFFERENT FOLKS

While cities in Canada line up for their share of announced road building and bridge projects, it is often overlooked that some communities consider any road to be a luxury.

In British Columbia, for example, there are 25 First Nations communities that are situated at the end of a logging road. These are the only roads parents can use to get their children to schools and hospitals, often competing for road use with large logging

trucks. In these circumstances, any initiatives related to road upgrading are welcome.

Recently, as part of a province-wide program, the government allocated \$400,000 to improve a 38-kilometre stretch of forest road in northern BC that provides access to three First Nations.

The Leo Creek Forest Service Road is part of

a network of Forest Service roads stretching 55,000 kilometres throughout province and larger than the provincial highway system.

only roads parents can use to get their children to schools

The Ministry of Forests and Range is providing \$20 million over two years to

improve travel conditions on these Forest Service roads as part of a series of measures to improve access for small communities.

ANOTHER LOOMING CRISIS?

One of the iconic images of a summer day is a group of children with pails, buckets and a hose, washing cars in order to raise money for a school band trip.

an act of serious environmental irresponsibility

No more. Environmental groups are warning that the traditional children's car wash is actually an act of serious environmental irresponsibility. It damages the water supply and has negative impacts on marine life. In an article called Greening Your Car Wash environmentalists warn that washing dozens of cars in a small space results in pollutants such as brick dust, oil and heavy detergents

entering the environment. Children's groups are warned that "this is illegal" according to the requirements of the American Environmental Protection Agency.

In the spirit of good times and acknowledging the importance of children's charities, the authors offer alternatives that children might consider. One would involve teaming up with a local car wash. In this way, cars could drive through the car wash where wash water is recycled and the car wash company could donate the money directly to the school without the need for the children's participation. As an alternative, the activists suggested that children could conduct a waterless car wash using a number of dry products that can remove grime from cars without water.

This would also ensure that the children do not engage in frivolous activities such as water fights and sponge throwing.



CHILDREN'S CAR WASHES IN BAD COMPANY

WOULD BAMBI BE PLEASED?

Most sports hunters will proudly define themselves as environmentalists on the basis of their profound respect for nature. Hunters are now carving another notch in their environmental credentials by switching over to “green bullets.”

Green bullets are made of copper instead of lead and are promoted by their manufacturers as being environmentally friendly. Bullets are a \$1 billion a year business in the US and up to now have been largely made of lead. Recently, lead has come under intense scrutiny for its environmental impacts.

Last year, California banned lead bullets in a part of the state where the endangered condor lives. Legislation was drawn up based on studies that suggested the large birds ate fragments of meat left behind by hunters, which led to lead poisoning.

The move to copper bullets by some manufacturers is not exclusively based on environmental sensitivities. One of the

larger producers, Barnes Bullets, reports that copper bullets, in the language of hunting, “perform better” meaning they have higher kill efficiency.

not exclusively based on environmental sensitivities

The debate over the safety of lead bullets in terms of human health impacts has entered the field of scientific study.

The North Dakota Department of Health, working in cooperation with the Centres for Disease Control and Prevention, conducted blood lead studies on over 700 people who ate game shot with lead ammunition. Although the people in the study who ate lead-shot meat had slightly higher blood-lead levels, their readings were not above the legislated threshold for lead content. As a result, the findings of the study were deemed to be inconclusive.

These results were seized upon by the National Shooting Sports Foundation, a hunter’s advocate group, who

dismissed the call for copper bullets as an attempt by governments to take guns away from hunters. The Foundation reasons that because copper bullets are not available for all types of hunting rifles, imposing their use would effectively make many types of guns illegal.

dismissed as an attempt by governments to take guns away from hunters



BULLET MANUFACTURERS MAY CAMOUFLAGE REAL MOTIVES

HIT THE ROAD, TOAD

In 1935, a well meaning civil servant in Australia imported toads from South America to control beetles that were eating the sugar cane. His research failed to take into account that the toads couldn’t jump high enough to eat the beetles. As a result, with no natural predators, the cane toads multiplied into the tens of millions and became a major threat to the Australian environment. The toads spread diseases like salmonella, they produce highly toxic venom that flows on their skin and they eat small animals including birds.

This has resulted in a novel spring celebration in parts of Australia called a Toad Killing Festival. The slogan for the celebration is “Toad Day Out” where residents in five communities capture the toads that are then humanely euthanized to be used as fertilizer. Children are active participants in the toad hunt which offers games, prizes and refreshments.

Since each female cane toad can produce 20,000 eggs, organizers estimate that even culling a few thousand toads can save the country from being inundated by further



UNWANTED, UNLOVED, UNSTOPPABLE

millions. The rules for the event stipulate that the toads must be captured alive and unharmed and then brought to inspection points to make sure that they are not harmless frogs.

They are euthanized with carbon dioxide and some of the remains are turned into fertilizer for sugar cane farmers who historically have paid the greatest price for this environmental gaffe.

The Toad Day Out celebration has earned the support of the Royal Society for the Prevention of Cruelty to Animals on the basis that the toads are killed humanely. In the small community of Townsville where the event is supervised by the Coordinator of Environmental Management, 400 participating toad hunters collect an average 10 toads each. The largest ones were turned into souvenirs by local taxidermists.

The winner, who captures the largest toad, receives several movie passes and a trophy made out of a cane toad. The champion oversize toad was 13 centimetres long, weighed 300 grams and had a fifth leg growing out of its chest.

The winner, who captures the largest toad, receives several movie passes and a trophy made out of a cane toad

HYGIENE: A POTENTIAL HEALTH RISK?

In a curious case of scientific research, the conclusion is drawn that hygiene can be bad for public health. Researchers at the Birmingham and Warwick Universities in England have suggested that shampoos, fabric softeners and disinfectants, as well as other household cleaning products are spreading drug resistant bacteria around the country. They further warn that detergents used by some industries are increasing the chances that medicines will no longer be able to combat dangerous diseases.

The scientists contend that disinfectants and other products like shampoos washed into sewers and rivers are triggering the growth of drug resistant microbes. These microbes were found in soil samples taken from river basins around the country and there is a concern that they have worked their way into the population.

The path from the bathroom cabinet to the food chain follows this direction. Each year Britain produces 1.5 million tons of sewage sludge and most of that is spread on farmland, according to the authors. The sludge contains antibiotic resistant bacteria that thrive because of the chemicals in cleaning products. The excess of 1 billion litres of water pumped out by houses and businesses every year increases the problem.

The authors challenge the conventional view that the problem of drug resistance results from the over prescription of antibiotics or bad hygiene standards in hospitals. They suggest alternatively, that drug resistance is not confined to hospitals but it is spreading over the entire land base and reducing the ability to control infections.

The study looked at Quaternary Ammonium Compounds (QACs) used in many household cleaning products. Large volumes of these chemicals are flushed from homes and businesses into sewers and rivers. When concentrated, QACs kill bacteria but when they become diluted in sewage, the bacteria actually develop a resistance to them. As the evolutionary process continues, the weaker bacteria are killed meaning the QAC-resistant bacteria thrive without competition. The study found out that the same type of DNA that gives bacteria resistance to QACs also gives them resistance to antibiotics.

The volume of carbon credits traded globally in 2009 is expected to hit near six billion metric tons for a volume increase of 20 per cent over the previous year. However, the cash value of the carbon market is expected to drop by over 30 per cent because of falling prices for carbon emission permits. Carbon permits in Europe, called EUAs, have lost two-thirds of their value in the past 12 months and most of that since January 1st of this year.

What is the cause of the rapid deterioration of this market embraced by green investors just two years ago? In short, the investors



shampoos... are spreading drug resistant bacteria around the country

returning the population to a set of conditions similar to medieval plagues when nobody washed

WHAT DANGER LURKS?

If the data holds up,

shampoos, soaps and detergents used to attain modern hygiene standards pose the risk of returning the population to a set of conditions similar to medieval plagues when nobody washed. The authors warn, "Once these bacteria are in the land, they get into the bodies of agricultural workers or people who use the land recreationally and will form reservoirs of drug-resistant microbes that could pose all sorts of problems." The team also found that antibiotics used to treat farm animals, particularly pigs, are helping to spread drug resistance in the soil.

While the study supports the continuation of hospital-based measures to contain bacteria, it sounds the warning that this war must be taken beyond the hospital walls and out into the community at large.

are looking for another kind of green, namely cash, and have dumped their shares in response to the economic downturn.

Forecasts appear more reassuring on this side of the Atlantic. The Regional Greenhouse Gas Initiative (RGGI) is a group of ten states in the American northeast and mid-Atlantic that have banded together to form their own cap and trade market. The group is expected to secure a six per cent share of the global carbon market by the end of 2009. At a single auction of carbon

permits in December, it pulled in over \$100 million.

The purchase of carbon credits allows companies and utilities to continue emitting the same volume of greenhouse gases by investing in what are called green energy projects elsewhere. The investment, in the form of carbon credits, allows the investing company or institution to maintain the status quo without making huge capital investments in environmental abatement programs.

investors are looking for another kind of green, namely cash

UP IN SMOKE

CARBON PROOF MEETINGS

A major gathering of environmentalists and business leaders took place in California in April. Coordinated by Fortune Magazine it was called Brainstorm Green. When the presidents of the Fortune 500 and the leaders of America's strongest environmental activist organizations agreed to have a meeting on green economy opportunities, the first decision involved how to conduct the meeting. Discussions resulted in a framework agreement for the conduct of environmentally responsible meetings. The following are some of the guidelines agreed to for green conference structure.

For guest arrival and departure, the check-ins were paperless. Hybrid vehicles were used for ground transportation and idling of transport vehicles was discouraged.

**convention centres
as creators of huge
environmental
footprints**

TRAVELLING TOXIC THREAT

Named for a fleet-footed winged god from Greek mythology, mercury is actually a heavy, slow moving and deadly neurotoxin. This year, representatives from over 140 countries made a commitment to reduce global mercury pollution through a coordinated effort around the globe to reduce both the use and release of mercury into the air, water and land mass.

As a follow-up, the United Nations Environment Program Governing Council will now develop a legally binding international treaty to be in place by 2013.

**grave health effects
including restricted
brain development**

The treaty will stipulate actions to reduce the intentional use of mercury in industrial processes and products and reduce emissions from coal plants and smelters. The intent of the legislation is to reduce mercury contamination in fish, in the water system and cut down on human exposure.

Although slow moving, mercury travels widely. It moves thousands of miles from its original source by traveling through the air and water and accumulating in large predatory fish. In turn, people consuming these fish, such as tuna, can be affected by grave health effects including restricted brain development.

On a world-wide basis, coal-fired power plants are the largest source of mercury air emissions. Each year in the United States, 50 tons of mercury pollution is emitted every year from the more than 600 coal plants in the country. Currently in China, coal-fired power plants provide 75 per cent of the country's energy. In the next eight years China plans to add over 500 new coal plants, almost as many as currently exist in the United States. This translates into one new coal plant per week until 2017.

Other sources of mercury emissions include chemical manufacturing facilities in Europe, India and China as well as small scale gold mines in the developing world.

An international coalition called the Zero Mercury Working Group comprised of 75 non-governmental organizations has been the moving force behind the international legislation to reduce mercury pollution. The group has guided the United Nations in coordinating a response and setting the platform for legislation.

**one new coal
plant per week
until 2017**

All guest rooms were to offer in-room recycling, encourage the reuse of linens and donate unused room amenities such as shampoos to local shelters. In addition, the hotel was directed only to deliver newspapers to rooms upon request.

In meeting rooms, plastic and paper were disallowed at all meal functions. In addition, lighting and air conditioning levels were reduced and meeting space was oxygenated with live plants. For food and beverage service, food waste was composted and excess food delivered to a local food program.

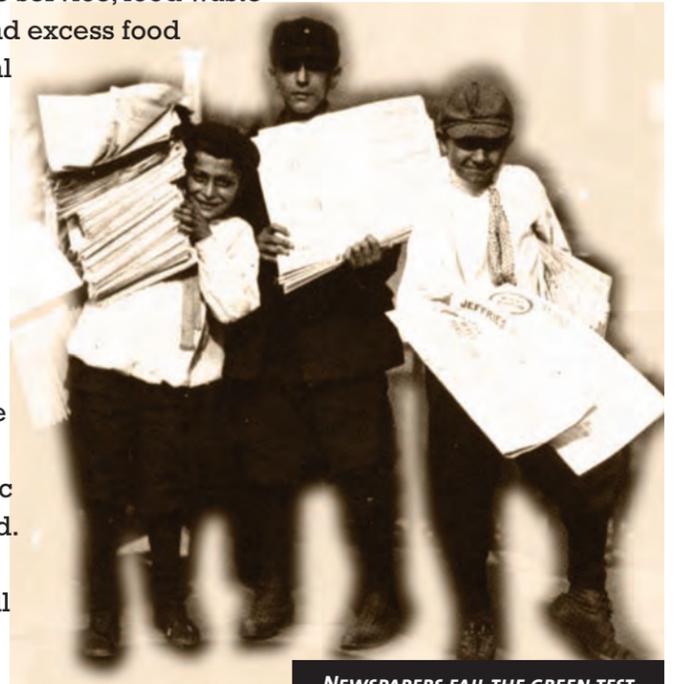
Menus were developed using organic produce from sustainable local farmers. All coffee needed to be Rainforest Alliance certified and teas were to be Organic Fair Trade certified. In the conference business centre, all printers were set to print two-sided using recycled printer cartridges.

Computers were also programmed to go into sleep mode every few minutes.

For staff training, all hotel staff were given advance training is green standards including the use of non-toxic cleaning products. For marketing and promotion, email communication was used exclusively with recipients encouraged not to print.

The environmental community has long viewed convention centres as creators of huge environmental footprints. Delegates arriving by plane and other forms of transportation, staying in air conditioned rooms and spending the day watching audiovisual displays in climate controlled auditoriums combine to create large carbon emissions. The controlling principle behind the green meeting guideline document was based on the view that much could be done in terms of the way meetings were actually conducted.

Measures to offset the carbon intensive process involve getting people to meetings and accommodating them while they are there and go farther than meek requests to use towels twice.



NEWSPAPERS FAIL THE GREEN TEST

ILLUMINATING FACTS

North Americans purchase over two billion light bulbs per year. Public policy throughout North America is moving towards the requirement to replace conventional light bulbs with compact fluorescent lights or CFLs. These CFLs contain a tiny portion of mercury – about five milligrams which is equivalent to the tip of a ball point pen. Even though the amount of mercury is small, the Environmental Protection Agency in the United States, as well as most environmental agencies in North America, has stipulated strict requirements for the disposal of CFLs, particularly if they break while in use.

How much mercury would be involved if all two billion plus light bulbs purchased annually in North America were replaced with CFLs? At five milligrams per light bulb, the amount of mercury in two billion CFLs would equal 10 tons, or the equivalent amount of mercury that is emitted by 100 coal-powered electric plants.

**HOW MANY LIGHT BULBS DOES IT
TAKE TO EQUAL A COAL PLANT?**

BEYOND THE BEETLE

Of the 203 First Nations communities in British Columbia, over 100 are affected by the ravages of the Mountain Pine Beetle. Visible from satellites, the beetle infestation chews up statistics in the same manner that the insect chews the trees. The numbers are staggering. A landmass greater than many countries is under assault. Enough wood to build millions of houses is being destroyed. Thousands of jobs are lost and billions of dollars of revenue from conventional sources will not be seen.

For the affected First Nations, the numbers alone don't tell the whole story. This is because for First Nations, the forest is much more than an economic entity. The land has been an integral part of collective culture and personal identify for First Nations for millennia. The devastation of the land base has personal and cultural dimensions for each of them. Because of this sensitivity, the Province of British Columbia has been working carefully with First Nations to ensure that the short and long term responses to the impact of the Pine Beetle on First Nations communities are undertaken with full respect to unique traditional values.

In spite of the immense scope of the infestation problem, it is a cycle of nature. It will end and there will be a transition

to new opportunities. The challenge is to anticipate the risks and opportunities in the post-beetle world and commence planning now.

The shared commitment of the Province and First Nations is that the latter enjoy maximum access to new opportunities in a way that protects and strengthens community values. While the vision for a post beetle environment is still taking shape, the economic drivers in that new environment will be vastly different. Business as usual will be past tense.

For First Nations it will mean being part of a massive effort to regenerate the forest. It will mean engaging in using forest products for green energy alternatives. It will involve full participation in the development, manufacture and sale of value-added forest products.

The pieces are being put

in place for a forest economy that is knowledge driven, value driven and culture driven. The young people in the 100 or so First Nations communities affected will acquire unprecedented skill sets to enter into unprecedented career paths. Like the forests they have called home for thousands of years, First Nations will regenerate and grow.

**for First Nations,
the forest is much
more than an
economic entity**

GROWING A NEW FOREST INDUSTRY

What do you do if wood markets crash in the midst of an environmental disaster? If you're the person in charge of BC's forest ministry you get to work on new opportunities.

When Pat Bell talks about embracing new career opportunities, he draws on personal experience. Currently heading his third Ministry since being elected, the Forest Minister pursued success in diverse fields before entering government. A trained educator, he spent part of his career as a district manager for Wendy's Restaurants before starting a successful logging business.

Bell sat down to talk to *Landscapes* about changes underway in BC forestry, opportunities on the horizon and the pride he has in the workers in BC's forest sector.

He dismisses chatter about forestry being a sunset industry. "We are on the edge of a brand new industry," says Bell, "one that is going to add significant new product lines and penetrate new markets." He draws a comparison to the period prior to the advent of the pulp industry 50 years ago. He describes it as a time when "huge slabs of spruce and fir would pile up and every few weeks someone would pour a little diesel fuel on them and strike a match." Adds Bell, "At some point, someone looked at it and realized it didn't make any sense. So the pulp industry emerged as a means of extracting greater value."

He sees a parallel with the move towards green energy resulting in part from people looking for value in residual logging material. "In 2008, we produced about 1.8 million tons of wood pellets in what is the fastest growing segment of our forest industry," he notes. Bell enthuses about the fact that 90 per cent of that product was exported with the majority going to Scandinavia. Asked what is driving that opportunity he suggests that Europeans have "a far more advanced green economy," putting the gap in carbon emissions management at six or seven years. But

Bell is anything but complacent. He says BC is closing that green gap at an accelerated pace.

He also sees a bullish future in silviculture, everything from research to tree planting. Bell is careful to note that he is not being critical of past industry practices to put something back. The practices at the time "met the standards of the day" as set by public policy. He talks about moving to a regime of managing stands to maximum potential. "One of our focuses in the Ministry right now is looking at how we can have a more active and aggressive approach to growing on the land base," says Bell. He sees robust career potential in this new approach.

Bell is concerned about the current downturn but not deterred. "There is nothing particularly new here although the depth of the cycle is certainly worse than previous ones," he says. The response strategy he supports is well underway. He talks about moving away from the traditional hunker down and hope approach of waiting for a rebound in the US housing market. Instead, he is spearheading a two-track strategy involving growth in the Chinese market as well as promoting wood in commercial institutional construction.

The experience in the Chinese market has been a two-way education. "When we first went into China, we thought that if they would just build houses out of wood, everything would be fine," he recalls. But with a greater understanding of China's need for density, BC has developed prototypes for six story buildings, made of wood, that conform to China's building codes. Wood is also displacing steel in Chinese construction applications thanks to BC marketing efforts.

With forest fire season approaching, Bell's thoughts turn to the need for vigilance and personal responsibility. While proud of BC's record in fire fighting ("People don't realize that BC is a world leader in forest fire management," he notes) Bell warns that government alone can't micromanage every risk. He cautions people living in interface zones, where the forest borders human settlements, to take proactive and creative measures under their control. "Government by itself cannot analyze every situation," he states. Ever the optimist, Bell sees opportunities for economic return in the task of cleaning underbrush for fire protection. He speaks about a company in his riding that collected logging debris and sold it to a pellet company with customers in Sweden.

The story reflects Bell's abhorrence of waste. "One of the things that used to drive me nuts when I logged during the 90s was to see the waste that was left behind in the bush," he recalls.

He hasn't changed his views on waste. That's why rather than wasting time lamenting the current industry downturn he is pushing for changes that will create unprecedented market opportunities and jobs to match. But he gives the credit to Ministry staff. "We have a great team of people who understand that the industry is more challenged today than it as ever been. They are not happy about it. They want to change it. They will be successful."

"We are on the edge of a brand new industry"

"People don't realize that BC is a world leader in forest fire management,"

moving away from the traditional hunker down and hope approach

HOMELESS

BECAUSE YOUR CAMPFIRE BECAME A WILDFIRE

CAMPFIRE SAFETY TIPS:

- ✓ KEEP YOUR CAMPFIRE SMALL
- ✓ HAVE WATER & SHOVEL CLOSE BY
- ✓ ENSURE YOUR CAMPFIRE IS COMPLETELY OUT BEFORE LEAVING

REPORT WILDFIRES 1-800-663-5555

SAY IT WITH CRAYONS

For decades, FORED has invited school children across BC to participate in a poster contest to express their views and dreams for BC forests. From hundreds of submissions, picking winners is a challenge. But every child has a place of honour for their artwork, on the family fridge door or on the walls of their parents' workplaces. We salute this year's winners in this issue of Landscapes.



Paige - Heritage Christian On-Line School, Kelowna
Primary Winner



Simran - Senator Reid Elementary School, Surrey
Intermediate Winner



Mia - Princeton Secondary School, Princeton
Secondary Winner