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PICS Climate News Scan – 27 March 2012

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The PICS News Scan is a weekly summary of the major climate-change related science, technology, and policy advances of direct relevance to the BC provincial and the Canadian federal governments and more generally to businesses and civil society. The News Scan focuses on cutting edge climate issues and solutions gathered by the fellows and faculty of [ISIS, a research centre at the Sauder School of Business](#), in partnership with the [Pacific Institute for Climate Solutions \(PICS\)](#). Access to some referenced articles may require a journal subscription or purchase of the article, and appropriate links are provided for this purpose. To be added to the News Scan distribution list or to provide content feedback and/or suggestions about interesting news items, please email picsscan@uvic.ca.

Complementing the News Scan is the [PICS Briefing Note Service](#). This service provides timely and concise analysis, as well as suggested policy action, on issues related broadly to BC climate change mitigation and adaptation.

Research Theme I: The low carbon emissions economy

OECD: Acting now will prevent environmental and economic crunch

March 15, 2012. [Environmental Outlook to 2050: The Consequences of Inaction](#), has been released by the Organisation for Economic Co-operation and Development (OECD), one of the world's premier economic forecasting agencies. The report projects socio-economic trends for the next forty years, and their implications for four key areas of concern: climate change, biodiversity, water, and the health impacts of environmental pollution. The authors state that despite the immediate challenges of stretched public finances and high unemployment, countries and regions must not neglect the longer-term implications. Action now will prevent irreversible damage to the environment, the report states: "Greener sources of growth can help governments today as they tackle these pressing challenges. Greening agriculture, water and energy supply and manufacturing will be critical by 2050 to meet the needs of over 9 billion people." The report says that the cost of inaction could be colossal in both economic and human terms and provides analysis to support new, well-designed policies. Recommendations include: using environmental taxes and emissions-trading schemes to make pollution more costly than greener alternatives; valuing and pricing natural



assets and ecosystem services like clean air, water and biodiversity according to their true worth; removing subsidies to fossil fuels and wasteful irrigation schemes; and encouraging green innovation by making polluting production and consumption activities more expensive, while providing public support for basic R&D.

The report asserts that urban air pollution is set to become the top cause of mortality worldwide by 2050, a cause for concern for BC in light of [last week's analysis](#) highlighting the already increasing problem of long-range air pollution from Asia reaching our shores. The OECD estimates that world energy demand in 2050 will be 80% higher, with most of the growth coming from emerging economies such as China and India that are still 85% reliant on fossil fuel-based energy. This could lead to a 50% increase in greenhouse gas (GHG) emissions globally and considerably more air pollution. "Particulate air pollutants that cause respiratory failure could double premature death rates from just over 1 million today, to 3.6 million every year globally by 2050."

Research Theme II: Sustainable communities

More than new technology required to decarbonize communities

March 19, 2012. [The Jevons Paradox](#) states that energy efficient technologies don't actually reduce total energy use; instead, for the same cost of use, people buy more gadgets and bigger televisions, cars and homes. Nevertheless, the assumption that each unit of renewable power generated will displace a unit of fossil power is implicit in many energy policy analyses, including IPCC reports. The actual reductions in fossil fuel use in the last fifty years are quantified in [a new paper in the journal Nature Climate Change](#). According to the author, on average, each unit of energy from renewable sources displaced less than a quarter of a unit of fossil energy use. The author argues that policymakers must therefore design policies that explicitly discourage fossil fuel use, such as taxing carbon emissions and creating zoning regulations that encourage compact, sustainable communities.

In BC, emissions policies currently include both 'carrots' for more efficient and cleaner energy ([electric vehicle rebates](#), [transit passes](#), [home retrofit loans](#)) and the 'stick' of the [carbon tax](#) for combustion emissions. This paper acts as a useful reminder that, while the carrots are effective to a degree, BC's carbon policy should explicitly seek to suppress fossil fuel demand. This would mean a) continuing to increase the carbon tax, and b) ensuring that options for inherently low carbon living (i.e. smaller homes in walkable and transit-connected communities) are encouraged and not blocked by policy or public investments.

Research Theme III: Resilient ecosystems

Cost of ocean degradation could reach \$2 trillion a year

March 21, 2012. A [study by marine experts](#) from the Stockholm Environment Institute states that the cost of damage to the world's oceans from climate change could reach \$2 trillion per

year by 2100. The study found that rising greenhouse gas emissions will lead to significant ocean acidification, sea level rise, marine pollution, species migration and more intense tropical cyclones. Climate change will also cause the degradation of coral reefs, disruption of fisheries and depletion of fish stocks. The loss of tourism would incur the highest economic cost, at \$639 billion per year. According to the study, the loss of the ocean carbon sink would cost almost \$458 billion. With effective emissions reductions tactics, nearly \$1.4 trillion of the total cost could be avoided, the study found.

The damage to BC's ocean biodiversity under this scenario would be considerable, and in turn would have a significant impact on prosperity in the province. BC's ocean-based economy was worth approximately \$11.1B in 2005, according to a [report](#) jointly commissioned by the federal and provincial governments. Key components of that total, including commercial and sport fishing and marine-based tourism, could suffer substantial financial losses. The BC ocean economy employs almost 170,000 people and accounts for close to 8 percent of the province's GDP. Further analysis of current ocean economy data would be a useful starting point for accessing the extent of financial risk posed to the sector by climate change, and in making a case for further action to protect this extremely valuable ecosystem.

Research Theme IV: Social mobilization

Are young adults desensitized to environmental issues?

March 15, 2012. According to a [recent study published](#) in the Journal of Personality and Social Psychology, young people today are less environmentally conscious than their predecessors. The study, [which reports similar findings to other surveys](#), suggests that young people are less concerned about environmental issues, and less likely to act on them, than their parents. But whether this is due to a genuine lack of interest or to other forces remains to be seen. Some suggest that younger generations are burned out, having listened to messaging and debates about climate change for most of their lives. Others suppose that it may be due to [an increasing disconnection with nature](#). Children and young adults spend less time than ever outside in nature, leading to cognitive and behavioural issues as well as a decreased appreciation for nature.

In Canada, [surveys show similar results](#); older generations are more likely to take active steps to mitigate their environmental impact. These findings contradict conventional wisdom, which suggests the younger generation is actively engaged in climate change issues. Some of the research suggested that young adults are polarized, some with strong engagement and others apathetic. A young adult from BC, currently studying in Maine, has become well known for her [passionate speech in Durban](#) during the latest round of United Nations climate talks. In BC, [Walking the Talk](#) is a sustainability education network whose goal is to foster improved education on climate change issues in schools.

Research Theme V: Carbon management in BC forests

Beetle's breeding doubled by warm springs

March 16, 2012. Researchers have made a startling discovery about the breeding cycle of the Mountain Pine Beetle (MPB). [Evidence has emerged](#) in Colorado that warmer spring temperatures allow the MPB to carry out two reproductive cycles in a single year. The discovery was made by chance, when two researchers noticed in mid-June that adult MPBs were leaving a host tree in search of new targets. (Normally the MPB does not leave its host until mid-August.) These early emigrants were immediately infecting nearby pines, and their offspring were found to hatch by August or September. Under previous conditions, this cycle of reproduction and infestation happens once per year. The MPBs emerging in September could potentially infest new hosts, greatly increasing the beetles' overall impact on forest health. The researchers caution that the MPBs emerging in August and September may not produce larvae that survive winter temperatures in order to hatch in June. But warm winters increase the likelihood of this generation's survival, and with 2012 the [4th warmest winter on record](#), the prospects are not encouraging.

The impact of the MPB on BC's forests has been [devastating](#). This discovery may shed light on how MPB populations exploded in the past 15 years. It also shows how climate change impacts the lifecycles of different species in different ways. Insects are responsive and adaptable: their short lifespan, mobility, and abundance allow them to exploit the niches created by a changing climate. Trees, in contrast, although among the earth's longest-lived organisms, are immobile and vulnerable to climate change. Forest managers have been [thinking](#) about how to help. Pestilence, increased risk of fire, and more frequent and severe droughts are the three main challenges faced. So-called "adaptive management" may offer solutions; scientists [suggest](#) that density management (thinning forest stands to mitigate the threat of fire), additional and targeted planting and assisted migration are all options. Assisted migration is being [tested](#) in Whistler, BC, under the Peak2Peak Gondola, where researchers are investigating the viability of whitebark pine at various altitudes. The challenge for adaptive management is the uncertainties it faces, as the effects of climate change are not always obvious or easy to understand.

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