

The 2017 Martha Kostuch Annual Lecture

Chris Turner Imagines the Future: Climate Change, Conservation, and Cities

By Ian Urquhart

For years now AWA's November calendar of events has been distinguished by the always thought-provoking Martha Kostuch Annual Wilderness and Wildlife Lecture. Last November Canadian writer Chris Turner added his name to the list of those who have offered that fare to AWA members. In the 2017 Kostuch lecture, Turner invited his audience to join him on a journey to consider what one of our futures might look like as we move farther into the Anthropocene – what the Oxford English Dictionary defines as “(t)he era of geological time during which human activity is considered to be the dominant influence on the environment, climate, and ecology of the earth.” During his lecture Turner challenged AWA members to consider, if they hadn't already, changing their understandings of conservation and urban living in order to address what will likely be the 21st Century's defining issue: climate change.

The challenge of addressing climate change is daunting. In Turner's mind it demands a speedy transition from today's situation, where 85 percent of primary energy comes from fossil fuels, to one where almost none of that energy comes from fossil fuels. It's a transition we must make as fast as humanly possible. The imperative to make such a radical switch in global energy use has significant implications, at the very least, for how we think about conservation and for how we think about the life styles we should aspire to.

Turner began with what I thought was an optimistic appraisal of the global commitment to reduce greenhouse gas emissions. That optimism originated in part from his

observation that the world's leaders “broadly, vaguely agree” that all countries must contribute to efforts to reduce global warming and assist less-developed countries to adapt to climate change. The 2015 Paris Agreement strongly affirms this view. This agreement outlines how the countries that signed the United Nations Framework Convention on Climate Change (UNFCCC) in 1992, will implement their UNFCCC commitments after 2020. It intends to strengthen the international response to climate change threats while promoting sustainable development and eradicating global poverty. Its climate change ambition is to see the global community develop policies that will limit the increase in the Earth's average temperature “to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels...”

Turner joins many others in seeing the Paris agreement as a significant achievement. It's a “landmark,” “a watershed moment,” and

an international agreement that “should be celebrated as the triumph that it is and was in 2015.” What he finds very encouraging is its “recognition...that fossil fuels as the core of our economy and the engine...was done now. We were going to have to use it for a long time but...it was now a necessary evil that we were trying to move away from as fast as we could.”

The Smart Prosperity Institute, an organization Turner has worked with, reflects this changing landscape, this “vague, broad consensus that this is the direction the world is going in.” The members and supporters of the Institute, drawn from corporations, First Nations, non-governmental organizations, and the public sector, agree on “a general vision of Canadian society and some of the policy ideas to get us there that we can all agree on.” It's important, in Turner's mind, for conservation organizations like AWA to appreciate that there may well be more allies now than previously in corporate Alberta and Canada for the conservation objectives



Wind turbines in southern Alberta PHOTO: © C. OLSON

AWA was created to pursue.

What does Turner think this climate change challenge means for conservation in Alberta? Generally, it requires conservationists to adapt to a very different toolkit than the classic conservation toolkit. If we are going to get off of fossil fuels as fast as possible we are going to have to warm, at least to some extent, to industrial scale renewable energy projects such as wind and solar farms. “One of the tricky things about it, particularly from the point of view of a conservationist,” Turner said – perhaps with some understatement, “is that thinking about what a rural landscape should be does change a bit in this new paradigm.” Renewable energy on an industrial scale will be “a little bit more intrusive to some degree on the landscape.”

For conservation groups this rapid switch to renewables doesn't mean that, in Turner's view, they should abandon their concerns about the landscape impacts of industrial-scale renewable energy development. But, it does mean that they shouldn't uncondi-

tionally oppose all such projects. Instead they should be prepared to accept, perhaps even advocate, that these projects are appropriate in some locales, on some landscapes. He sees conservation groups as potential allies to those who seek to increase public acceptance in rural Alberta of designs to boost the importance of renewables in Alberta's electricity system. If getting off of fossil fuels as quickly as possible is the Prime Directive for civilizations in this century then conservationists must understand the necessity to welcome industrial-scale renewable energy projects on the land.

At the start of the evening Turner playfully suggested that he hoped to turn everyone into urbanists by the evening's end. He ended his lecture by focusing on the important contribution that city design and density may have to reducing the carbon footprint of humans on this planet. If cities have high urban density levels and their residents don't rely heavily on automobiles then these cities are likely to have smaller carbon footprints. This is a theme that featured in the debate he had with Sid Marty about the respective values of rural and urban life in the April 2018 issue of *Alberta Views*. In his Kostuch

lecture, Turner used Copenhagen to illustrate a city where daily living is much less energy intensive than in others such as Calgary or Edmonton. Rethinking cities and increasing urban density may create less pressure on some of the landscapes AWA cherishes.

This outlook has implications for conservation agendas: “If you're working on conservation in southern Alberta and one of the big pressures you see is urban encroachment and urban growth...your top conservation goal might be to strongly encourage the kind of urban density and urban liveability that makes a city like Copenhagen function so well because a lot of those pressures go away if people are living on this much smaller footprint.” Urbanism, according to this perspective, may be seen as a type of conservation.

I hope Turner's audience found his remarks both illuminating and challenging. I certainly did. Several of his messages are ones I believe should have been accepted when I first started studying climate change at the dawn of this century. They are messages that must be implemented if North Americans are finally going to start to address climate change seriously. Should we be reducing our dependency on fossil fuels as quickly as possible? Yes. Should industrial-scale renewable electricity development be part of the drive to reduce fossil fuel use? Yes. Should development in



Kimberley's SunMine PHOTO: © City of Kimberley

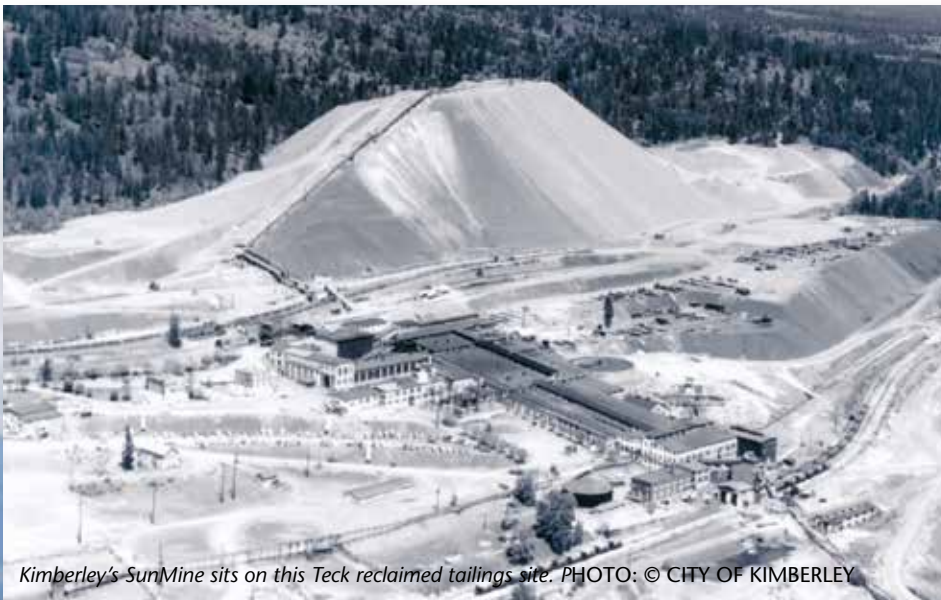
our cities encourage higher density and less sprawl? Yes.

Those points of agreement notwithstanding I question some of his claims and disagree quite vigorously with others. How really green, for example, is urban living? Recent research, unveiled at the Intergovernmental Panel on Climate Change conference on Cities and Climate Change held in Edmonton in March, suggests that major metropolises such as New York and Toronto may not be as green as the then-state of Turner's analysis suggested. The C40 Cities Climate Leadership Group's study, *Consumption-based GHG emissions of C40 Cities*, contends we must consider the emissions associated with the goods/services we con-

sume when measuring carbon footprints. It's certainly true that London, Paris, New York, and Toronto have reduced significantly their local GHG emissions into the atmosphere. But, the C40 study argued that when you included the emissions associated with what the residents of the above cities consume "these cities' emissions have grown substantially and are among the highest in the world on a per person basis." While this research doesn't question the merits of urban densification, it demands we also account for the GHG emissions associated with that latte we enjoy on a sunny day in one of Calgary's walkable neighbourhoods. Global carbon emissions have risen by 60 percent since the ill-fated Kyoto Protocol was signed in

1997... in a mere 20 years... in less than a generation. As Mark Watts, the Executive Director of C40, told *National Geographic* in his comments on his group's analysis: "Using more renewable energy and mass transit won't be enough to reverse this. We have to reduce our consumption."

When it comes to the need for industrial-scale renewable energy projects I agree with Turner that this has to be part of our energy future if we are going to reduce fossil fuel use as rapidly as possible. But, in making his argument for why we need industrial-scale renewables, I think he's incorrect to say that industrial-scale renewables are "not fundamentally as intrusive as a coal power plant." Coal-fired electricity emissions certainly are more intrusive to our lungs than renewables but industrial-scale renewables claim the prize for being the most intrusive on the land. Dustin Solberg, writing for The Nature Conservancy, noted that wind turbines have a "disproportionately large footprint" for the amount of energy they produce. He reported wind's footprint in the United States to be 72.1 square kilometres per terawatt; coal's footprint was much smaller – 9.7 square kilometres per terawatt. While I agree with Turner on the need for industrial-scale renewables to be part of the new toolkit I don't



Kimberley's SunMine sits on this Teck reclaimed tailings site. PHOTO: © CITY OF KIMBERLEY



think we should minimize their impact on the land – an impression I think reasonable people could have taken from his lecture.

I believe it's these "disproportionately large" landscape impacts of industrial-scale renewables that rest at the heart of many a conservationist's concerns about how renewables may be developed in Alberta. So I don't think Turner was necessarily correct to suggest that, for conservationists who are concerned about wind farms, "there is a tendency...with things like renewable energy to judge it almost aesthetically." There's much more to conservationists' concerns than aesthetics. Solberg's piece in *Cool Green Science*, for example, points out the disruptive effect wind turbines have on songbirds in the native prairie or on the nesting habits of mallards and northern pintails. AWA members know well that the majority of Alberta species at risk call the grasslands home – the same grasslands that, more often than not, are viewed as prime locations for wind and solar farms. I would argue it's the possibility of increasing the risks already faced by these species or the lack of protection of native grasslands that is the more serious source of a conservationist's concerns about industrial-scale renewables. Public policy must take those concerns seriously.

As we rush to increase dramatically the amount of Alberta's electricity generated by renewables I wish I saw more signs of creative thinking from governments. I wish I saw more interest from government in increasing renewable electricity production without intruding on already otherwise productive, and sometimes threatened, landscapes. Why the fascination, if not fixation, on industrial-scale renewable projects? Why don't we see more interest from government in decentralizing energy production and using investment tax credits to encourage homeowners or corporations to put solar on their roofs. Governments should do more to encourage small businesses to follow the examples set by Stu Moore Clothier's in Medicine Hat (a 10 Kw system sits atop their building) or by my daughter and son-in-law who have a 5.72 Kw system on their home in Calgary's Hillhurst neighbourhood.

Or, why don't we hear more about purchasing or using brownfield sites such as old open-pit mines to develop industrial solar and wind? Revitalizing brownfields through renewable energy development was one strategic objective of President Obama's energy and climate change policies. Why haven't we made that a priority here in Alberta? Alberta surely doesn't lack brownfield sites that get plenty of sun and wind. The City of Kimberley, B.C. offers a valuable model to follow. Kimberley developed its "SunMine" on a portion of Teck's reclaimed Sullivan mine site. This 4,000 plus solar-module facility is capable of generating 1.05 megawatts of electricity. Following Kimberley's example would enable us to build some of Alberta's renewable electricity path on lands that our actions already have compromised severely.

Finally, Chris Turner and I will disagree quite profoundly when it comes to assessing the value of the 2015 Paris agreement. Of course, it's significant when the nations of the world broadly agree about whether this or that issue is a problem that needs to be tackled. Paris is significant for that reason. But I would argue the international community recorded its broad and vague agreement about the need to tackle climate change a generation before the Paris agreement. This is exactly what the 1992 United Nations Framework Convention on Climate Change (UNFCCC), an international treaty ratified by 196 countries and the European Union, did. In the words of the Center for Climate and Energy Solutions, the UNFCCC provided "a foundation for the global climate effort."

What the world has needed since 1992 is not an affirmation of whether climate change is serious and needs to be addressed. Instead the world has needed targets and measures to reduce greenhouse gas emissions. Those targets and measures have been largely missing in action (the European Union stands out as an important, commendable exception to this record of neglect). For me, this is the vital test of the worth of the Paris agreement – the targets and measures it prescribes for governments to insist their societies follow.

Some will tell me that Paris has targets.

They're right. It does. The Agreement asks those countries that ratify it to strive to hold: the increase in the global average temperature to well below 2 °C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change.

Paris also refers to measures. These are the so-called "Intended Nationally Determined Contributions" (INDCs). But not enough of those who celebrated Paris and its targets drew the public's attention to the efficacy, really the lack of efficacy, of the INDCs proposed by the countries who signed Paris. The United Nations document that adopted the Paris Agreement noted with concern:

that much greater emission reduction efforts will be required than those associated with the intended nationally determined contributions in order to hold the increase in the global average temperature to below 2°C above pre-industrial levels...

In other words, Paris acknowledged that the-then national commitments couldn't reach or satisfy the Agreement's targets. As the Climate Action Tracker Consortium reported on the eve of the Paris conference in 2015, the INDCs of the countries that would sign Paris were estimated to increase the global average temperature by 2.7°C by the beginning of the 22nd Century. This projected increase is 0.9°C lower than the world would experience without those INDCs but it is considerably higher than the Paris targets.

The specific targets and (binding) measures I believe Turner is glad to see set aside by organizations such as the Smart Prosperity Institute are, I'm afraid, exactly what the world needs in order to realize the targets for increases in the average global temperature presented in the Paris Agreement. Governments have yet to serve them to us. After another generation goes by I hope I'll be able to buy Chris Turner a latté in one of Calgary's walkable neighbourhoods and tell him he was right and I was wrong. 🍷