

Renewable Energy Institute  
Fifth Anniversary  
David Suzukid

I am a biologist and tend to think of life in the historical context of evolution. From that perspective, humanity has been suddenly transformed into a new kind of animal, a species now altering the physical, chemical and biological properties of the planet on a geological scale. That's why scientists now refer to the present as the **Anthropocene epoch**, the Age of Man. Humanity's enormous **ecological footprint** reflects the explosive rise in population, technology, consumption and a globalized economy. However, our knowledge of the exquisite interconnectedness of everything in the biosphere is too limited to anticipate the consequences of our demands so we are undermining the very systems that are the key to our survival and well being.

For most of human history, **nature** was our touchstone, the source of all we needed for happiness. But now, we are overwhelming the biosphere's capacity to replenish itself, driving species into extinction at a rate unseen since the dinosaurs disappeared 65 million years ago. And since the 20<sup>th</sup> century, most people in the world have moved from agrarian villages to big cities where we become less and less aware that our highest need is nature's gift of clean air, pure water, unpolluted soil, clean energy and life's variety that are the source of Earth's productivity and resilience.

The crisis of the Anthropocene is not technological, economic or social but psychological – the way we see ourselves in relation to Earth determines the way we behave in our surroundings. I encountered Peruvian villagers who learn from childhood that the mountain on which their village is located is an “apu” (meaning god) that determines their destiny so they treat that mountain with far greater respect than Canadian kids who grow up in the Rockies and are taught the mountains are full of gold and silver. I encountered Dene people in Deline, Northwest Territories, who believe a heart in Great Bear Lake pumps water to the rest of the world so they have a responsibility to care for the lake.

Is a forest a “sacred grove” or “timber and pulp”?

Is a river the “circulatory system of the earth” or an opportunity for “energy” or “irrigation”?

Is soil a “complex community of organisms” or just “dirt”?

Is another species our “biological kin” or a “resource”?

Is a house one’s “home” or simply “property” or “real estate”?

The way we answer those questions shapes the way we behave towards them.

Ever since the wave of explorers arrived on exotic shores for five centuries, they “discovered” indigenous people they called “savages” and so learned little from them and the animals, plants and the land were seen as wealth to be exploited without regard to limits or

sustainability. And the economic system of which we are a part has little regard for nature's services (creation of oxygen and sequestration of carbon dioxide, filtration of water, creation of soil, pollination, etc) which when lost are dismissed as "externalities" by economists. Furthermore, societies now strive for constant economic growth without limit, which is impossible in a finite world. So trying to achieve it becomes suicidal.

Ever since our species harnessed fire, energy has been a critical need for every society. The early arrivals to Australia brought a culture of burning and modified the ecology of the continent, while in North and South America, fire was used extensively to "manage" forests and prairies. But it was fossil fuels, beginning with coal, then oil and gas, that fuelled the industrial revolution and enabled the economic growth of modern nations.

But as with all technological innovation, the exploitation of fossil fuels was accompanied by costs, especially pollution from spills and climate change. In Japan, the conjunction between the crisis of fossil fuel driven climate change and the tragedy of Fukushima, puts energy at the centre of discussion about society's challenge and priorities.

Despite two decades of a static economy, Japan stands as an example that economic growth is not essential for the well being of a developed country. Runaway climate change is a real threat that scientists believe endangers the very survival of our species and to avoid that catastrophe, we have to quickly reduce the

output of greenhouse gases, especially from fossil fuels and methane.

If fossil fuels must be phased out, is nuclear energy the best choice for Japan? Nuclear fuel creates energy by super-heating steam that drives turbines and generates electricity. In a seismically active nation like Japan that is richly endowed with thousands of onsen, it makes no sense to fail to exploit this abundant and clean geothermal resource which would both reduce the use of fossil fuels and the risk of nuclear accidents. Japan's crisis becomes an opportunity to put energy in perspective and to embark on a safer, cleaner and abundant future.