
Garden
of Time

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When I get stranded for days in far-off places, without means of connecting to anything or anyone, all that I have is time. I can only fall back on what is compiled in my brain: images, memories, events, things I learned or studied, random dots to connect. The possibilities are endless. To start off, all it takes is the right questions.

While standing on an elevation above a northern river rock of the Great Canadian Shield, I ask myself: Does it really matter if this rock all around me is barren, or covered with plant life?

The painter constructs, the photographer discloses.

Susan Sontag , American author

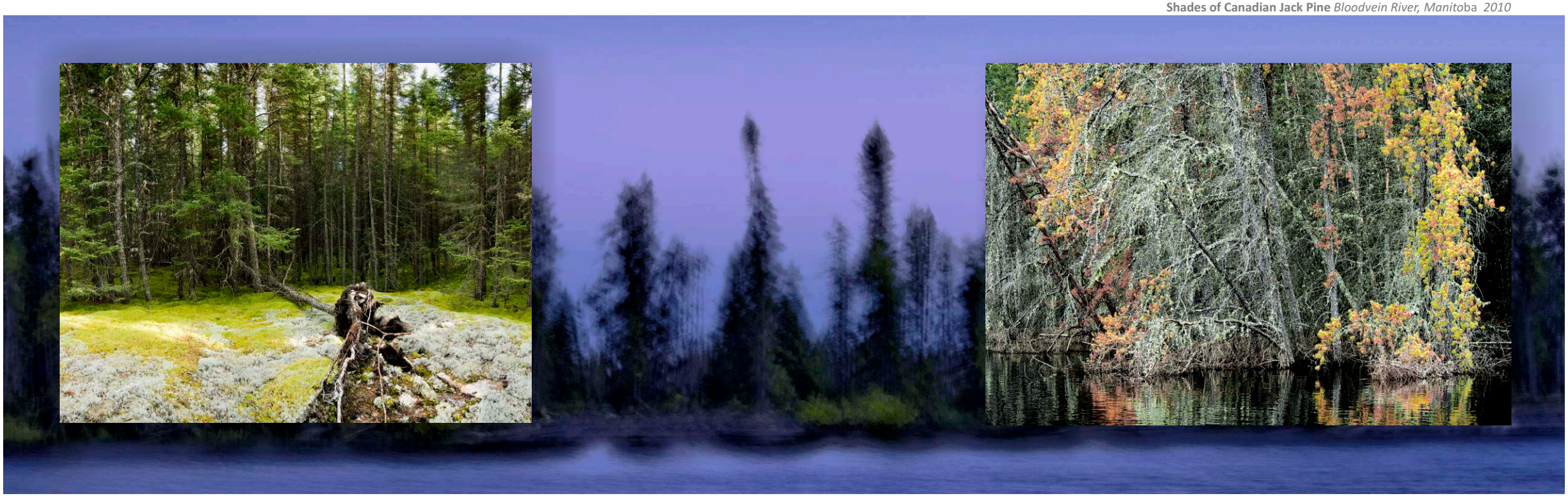
Bloodvein River *Manitoba 2010 32”x 58”*

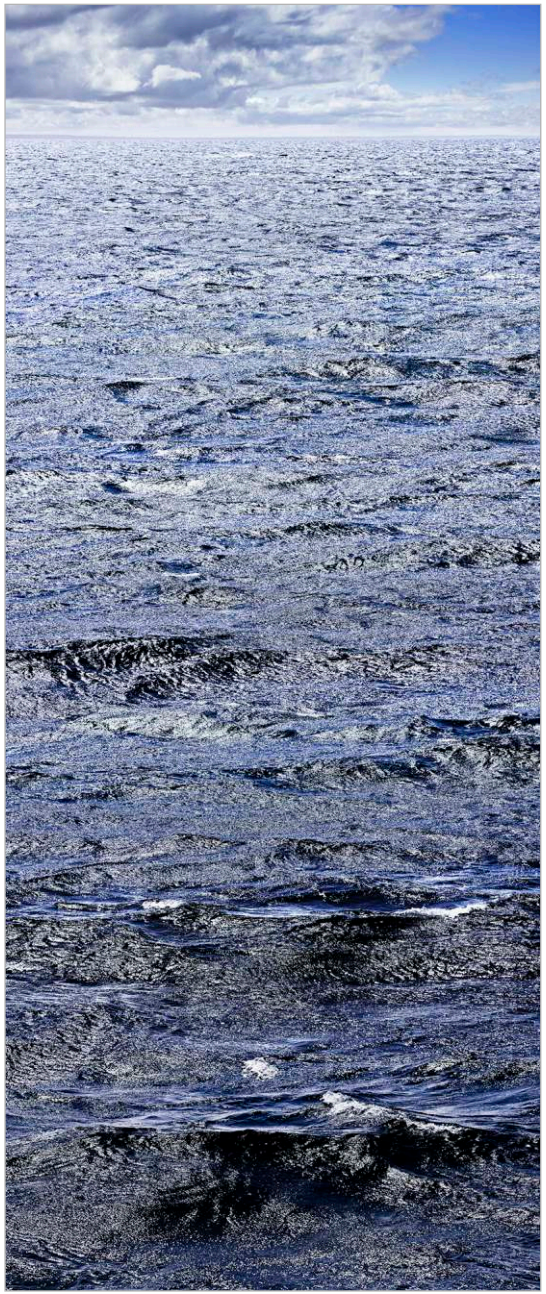
In my travels across three large provinces, I have seen the Shield in a variety of forms and shapes. It's still only a small part of what was in the past, as the tallest and longest mountain range on the planet. Paddling down the Bloodvein River for two weeks, I was wet all the time, enduring multiple thunderstorms and extreme humidity each day. The term “water cycle” from school textbooks has persisted for decades, although “the energy cycle” is a more accurate term. I was witnessing, in fact, a process of massive solar energy redistribution that was accumulating in the waters of Lake Winnipeg. Although keenly aware of water's very high heat storage capacity, I failed to scale it up and apply my knowledge to the real world out there. This clear evidence of ecology in distress was my eureka moment.

As I write this essay, in the spring of 2019, flooding is happening everywhere in southern Ontario and Quebec. What I understood back then on the Bloodvein River was the function of “Natural Infrastructure” clearly in action. I realized then that nothing is left of what I and millions of others call home. Southern Ontario and Quebec are downwind from the Great Lakes that are warming at a slower pace than shallow Lake Winnipeg. But they are warming up as will be revealed in time.

Boreal Nocturne *Bloodvein River, Woodland Caribou Provincial Park, Ontario 2010*

Shades of Canadian Jack Pine *Bloodvein River, Manitoba 2010*

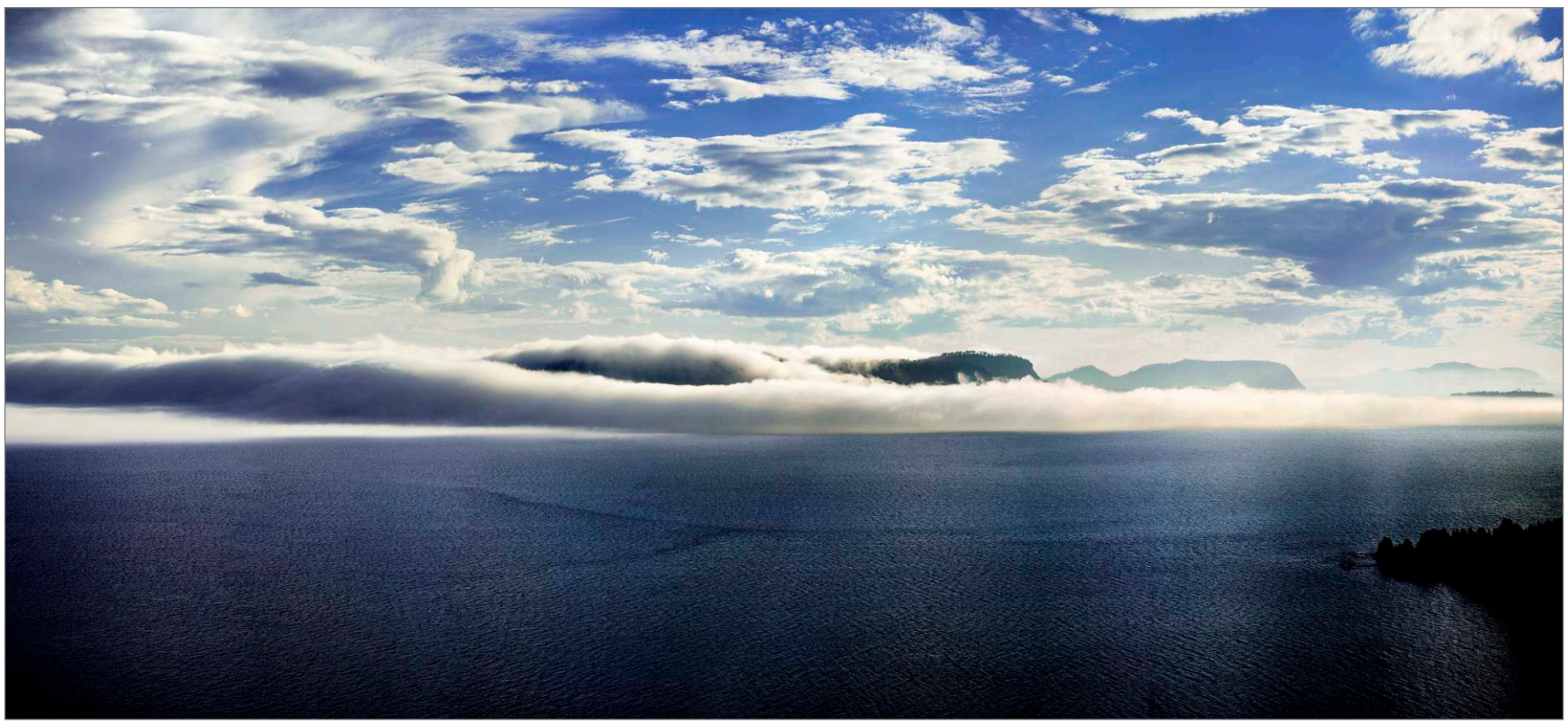




Sweet Water Sea #2 *Lake Huron 2013 96" x 40"*

While going through the science-oriented streaming of traditional education, I felt shortchanged on the subject of history: the reference point of humanity's progression. Yet the idea behind "Enlightenment", which called for an age of reason, or a rational evaluation of the world around me, left a lasting impression. I find myself in trouble trying to apply it in real life, as I am, like many others, predisposed to follow my emotions instead. I can lose myself quickly, mesmerized by the flow of clouds or water. Quite possibly, it strikes a chord with something primordial in my human nature, something connected to my instinctual understanding of natural processes. At such moments, science becomes somehow irrelevant.

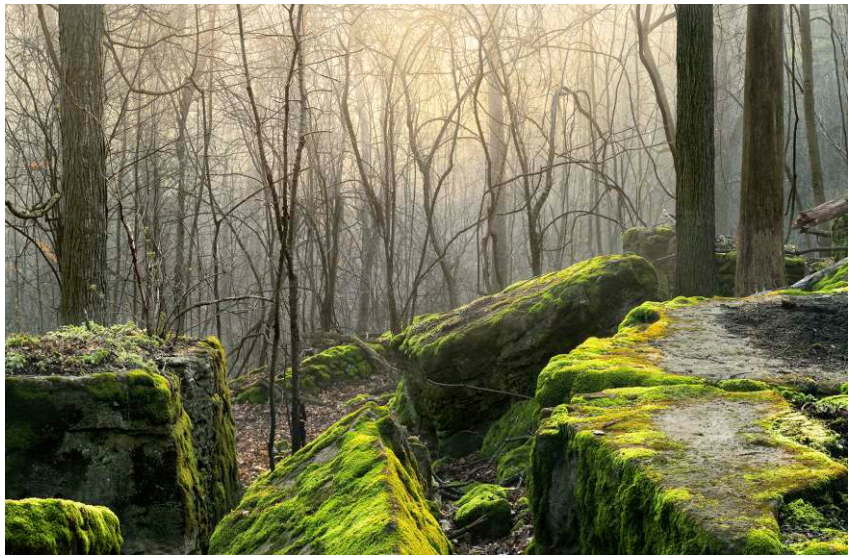
The second law of thermodynamics and the concept of entropy was also articulated two centuries ago, and it's arguably regarded as the most fundamental rule in our universe. It sounds bizarre, however, as it's referring to a "state of messiness in a closed system." Thus, it is difficult for most of us to grasp. Entropy entails the behaviour of matter on the molecular level, which we are unable to see or even imagine. However, the entire natural world lives, communicates and acts mostly on a molecular level. Nature has a better grasp of this law than the human mind does and evolved ingenious mechanisms to keep the system—our planet—in a more or less stable state, regulating the outflow of energy continuously received from our sun.



The Flow *Nipigon Bay, Lake Superior 2015 48" x 100"*

The current raging debate about global warming would be more productive if we all tried to understand why the atmospheric carbon molecule concentration is the essence of control for the solar energy outflow from our planet. From my point of view, the mechanism is rather simple, and details and graphs are accessible via the internet. In short, at any moment, vast volumes of energy are continuously absorbed and radiated in an infrared radiation spectrum by atmospheric water vapour. A significant yet variable portion of it radiates into outer space. There are two frequencies or gaps in water molecules' absorption spectrum that do not soak up energy in this range of spectral radiation. In these gaps, the variable contents of atmospheric carbon molecules have a high rate of energy absorption, thus trapping the escaping energy out of our atmosphere. Although this mechanism of control was created by evolutionary processes billions of years old, it is still at work and acts as a control valve regardless of its slow pace.

My daily walk takes me along the top of the Niagara Escarpment above the town of Dundas. Layers of exposed sedimentary rock with visible fossils testify that the living world actively regulated climatic conditions more than 400 million years ago. Science supplies volumes of evidence that in the last 3.5 billion years, our atmosphere was profoundly changed by turbulent internal planetary processes or by cosmic collisions. Evidently, the atmospheric composition was later optimized by living organisms moving through the natural evolution in a manner to support their living conditions. The same time-based methods are still at work.
Given how my mind works, I came to believe I had trouble accepting such facts and events for two reasons: I could not see what drove these processes, and could not comprehend their time scale. The overwhelming presence of microbial life processes carries negative connotations in my consciousness, and the memorable events in my life still define the time horizon of my awareness. Although most carbon in our planet's crust is trapped by small organisms on the ocean floor or in the soil, I wouldn't instinctively give bugs and worms credit for what they did, or think about the time it took them to do it.



Escarpment *Dundas Valley 2012 22” x 40”*

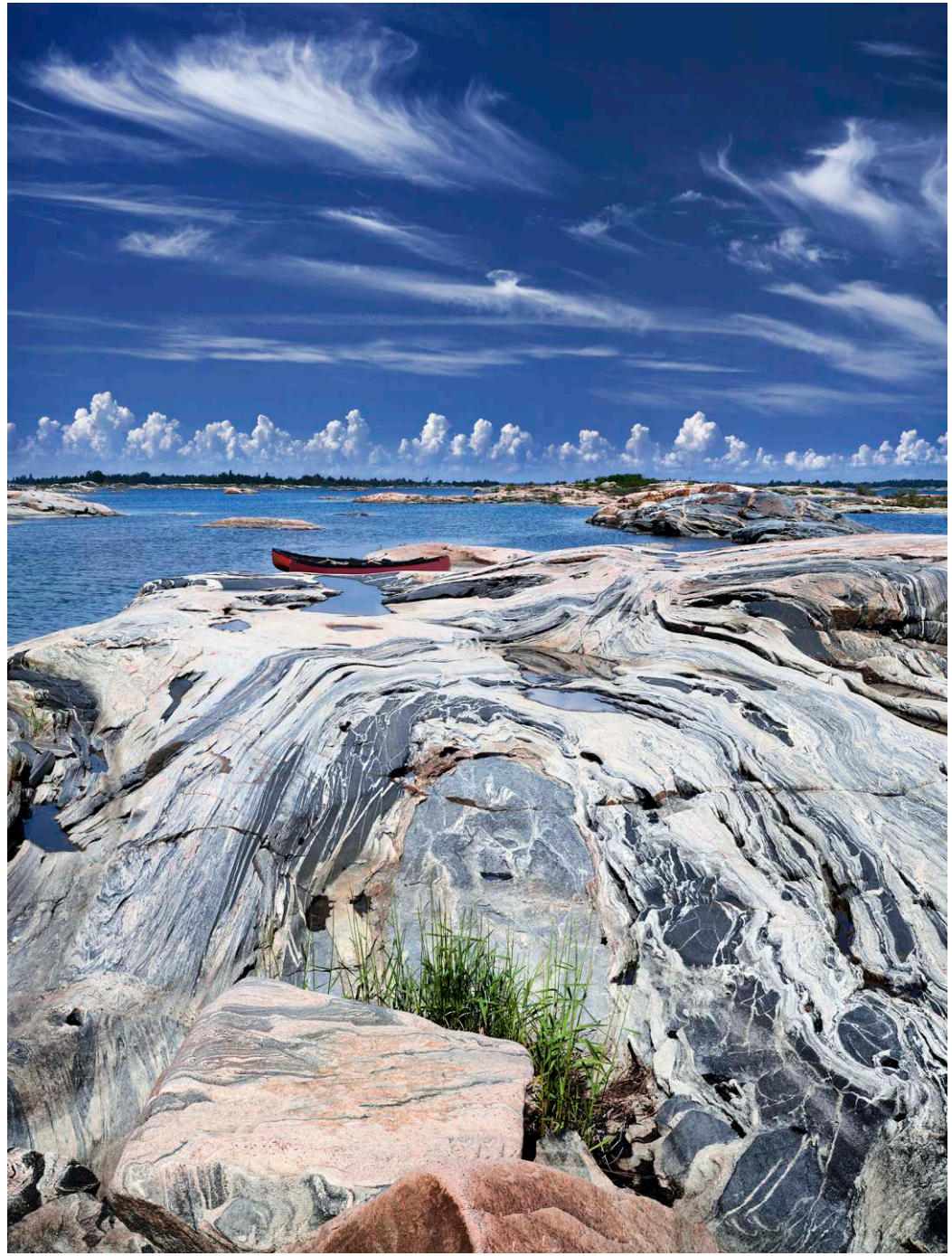
Shores of Bruce Peninsula 2007 28” x 70”

Microbial life leaching metals spilled from Sudbury crater (1.9 billions old) . The fossil shown (135milions old) is from a shallow sea. Photograph from Killarney area, Ontario

Many Ontarians in the last century had their first encounter with Great Canadian Shield environments while vacationing or boating on Georgian Bay. Some pockets have retained the same appearance over thousands or millions of years. When stepping barefoot on a rock exposed to sun, we instinctively look for patches of ground cover so as not to burn our feet. Conditions a few feet away from the water's edge resemble the harshest rocky deserts. Lichens, a symbiotic relationship of two or more living species that emerged about 400 million years ago, slowly claim their ground, retaining water and reducing the rock's heat absorption. They synthesize many molecules used by other species of plants to establish and gradually enlarge their own foothold. With gains in footprint and plant diversity, these spots retained more water and built a large concentration of biomass. During periodic glaciation, all of it was swept across the continent and buried. This mixture of material became the soil on which we grow our food.

The shores are quiet now and deprived of children's laughter. Most lodges and summer camps are closed and no artists paint the unyielding sky. I feel uncomfortably burdened with the task of being a chronicler and spy, using a magnifying glass to understand these expansive vistas.

Shield Study #4 *Georgian Bay 2013 48" x 80"*



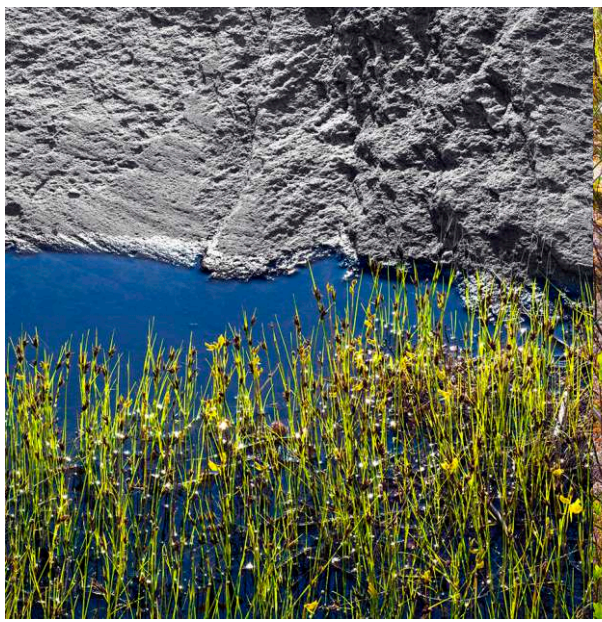
Elemental *Georgian Bay 2010 56"x 42"*

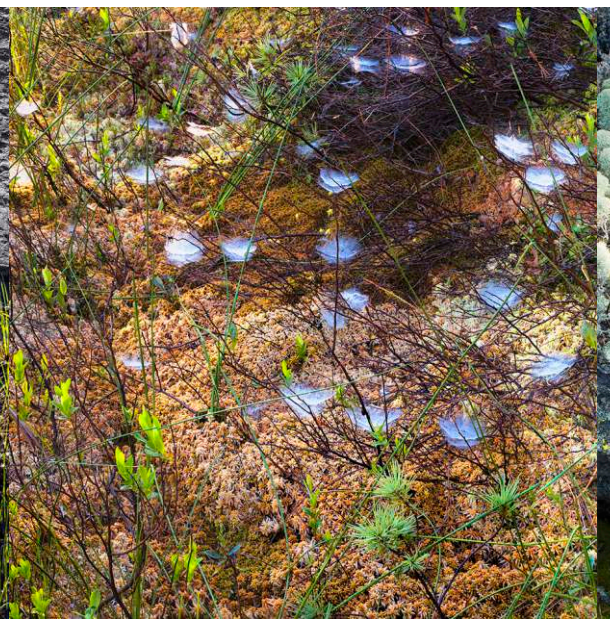
Eventually, I reached the conclusion that nothing in nature can be adequately explained through space, time or species singularity. It appears to me that the stability of any ecosystem increases with its complexity. In this world of complex interactions between species and their conditions, the immensity of communication occurring in nature dwarfs the volume of modern human communication technology. Like much else involving the human mind, what is out of view becomes out of the reach of understanding. Despite 10 years of extensive chemistry studies, I felt totally unprepared to confront an entirely different level of chemistry. The following paragraph is for readers who like to read the small print in their telephone contract:

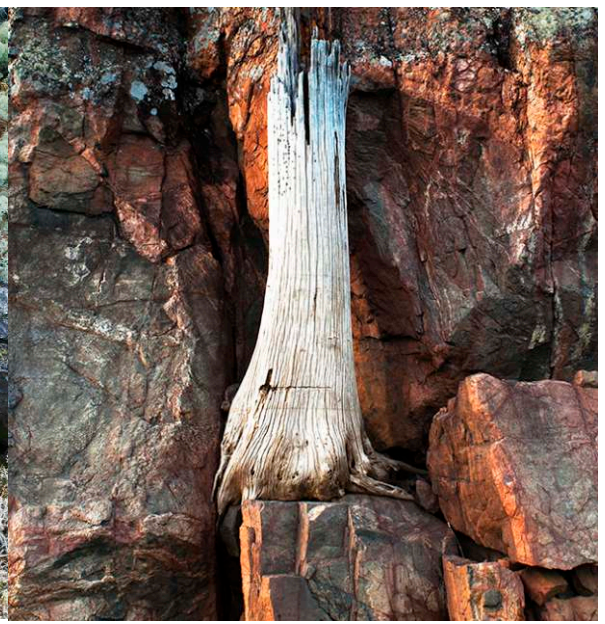
> *At any given time, each living cell is decoding DNA, codon by codon, to assemble protein, amino acid by amino acid. Each newly created protein is then sent to carry out precise instructions encoded within; to deliver required energy, induce a particular chemical reaction, or communicate specific information to neighbouring cells or species. Every single cell is like a small all-in-one chemical plant, programmed, self-contained and working within a living organism.*
>
> *Since each cell is a self-contained storage unit of information and processing hardware, reprogramming is complicated and time-consuming when the need arises to adapt to a new species in the vicinity or to a change in environmental conditions. This may require retrieving sets of instruction from forgotten corners of DNA, or writing new ones by the process we call "natural selection."*

Confronting my many years of accumulated evidence, I had to conclude that hanging onto unilateral views in a multilateral world is more folly than virtue.

Algoma Boreal Transition *Northern Ontario 2013 50" x 100"*



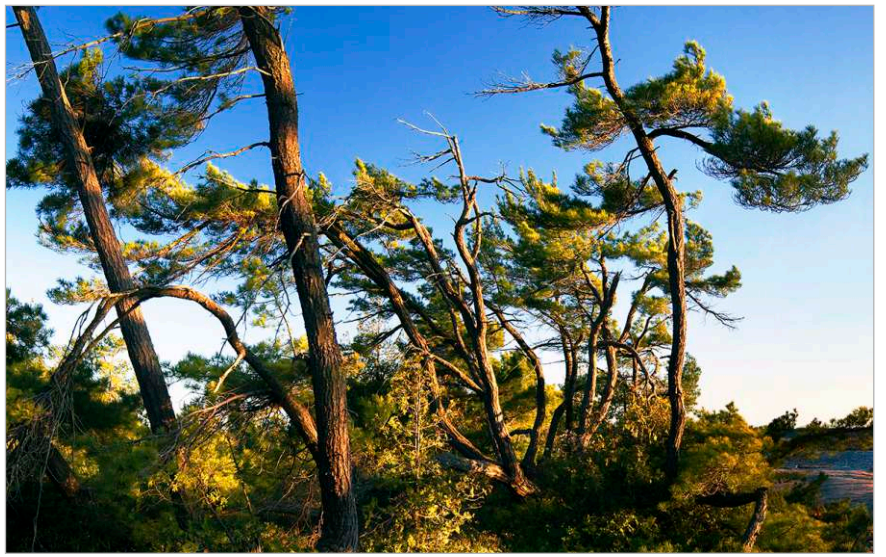




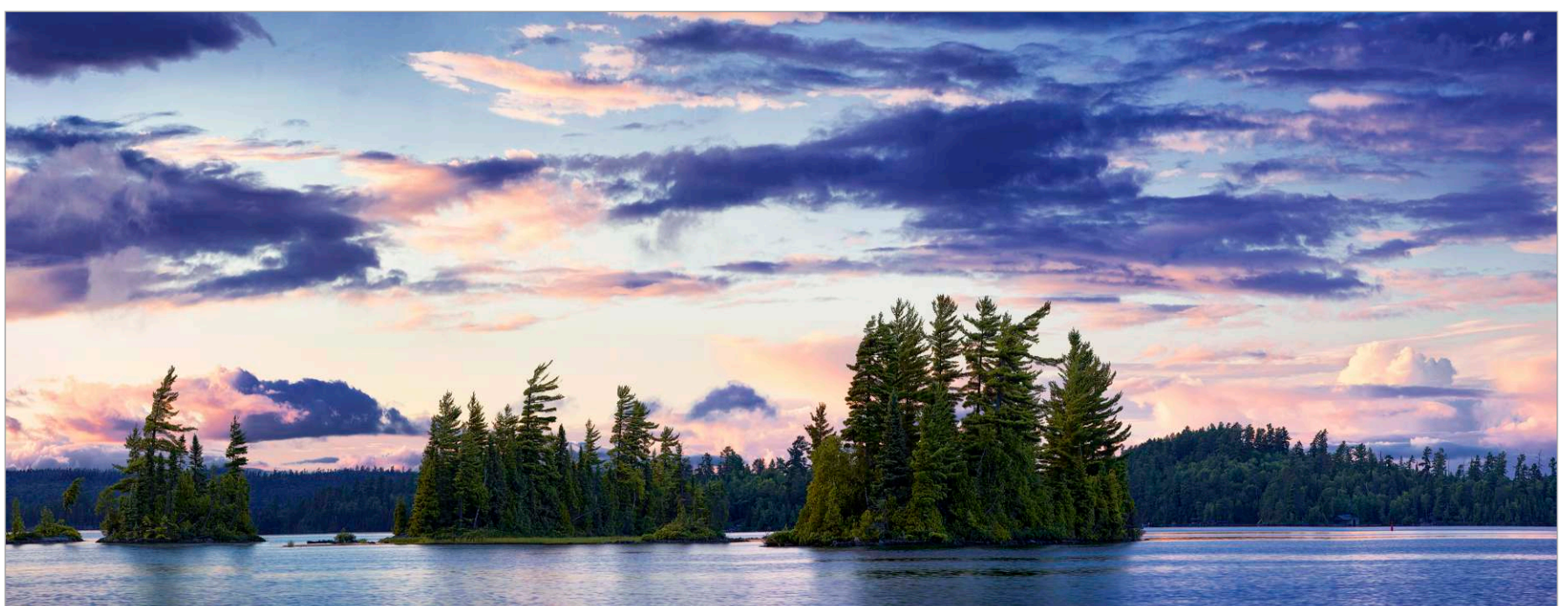
When I travel, I prefer to camp sheltered by eastern white pines. ”Peace Trees,” as some native tribes called them, were heavily logged by incoming settlers. I call them the magnificent survivors. Their genome lineage is reported to be around 100 millions year old, with genome “obesity” and lots of genetic cousins. In fact, the white pine's genetic makeup is ten times greater than that of a human being. This volume of accumulated DNA instructions testifies how often the species was forced to respond to earlier changes in ecology or climate. My artistic freedom allows me to speculate that a significant portion of DNA instructions of this species addresses how to interact within symbiotic relationships as a seedling.

I have seen small pine trees atop little rocks barely sticking above the water, inside decaying tree trunks, and on the high ledges of rocky Algoma cliffs. One square foot of intertwined moss, grass, and lichens are often sufficient for a tree to take over an entire rock while spreading its branches on the ground, giving the appearance of a forested island. In time this growing tree creates shelter for many other species, making the colonized rock fully alive. Hence white pines have been termed keystone species.

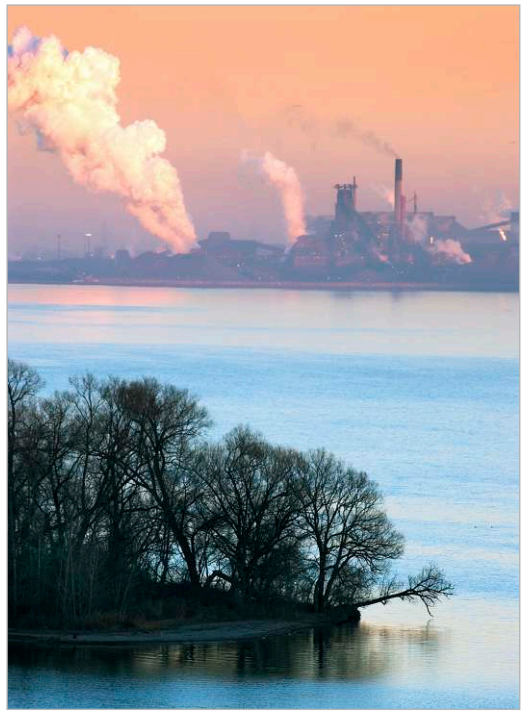
Fragment of larger image



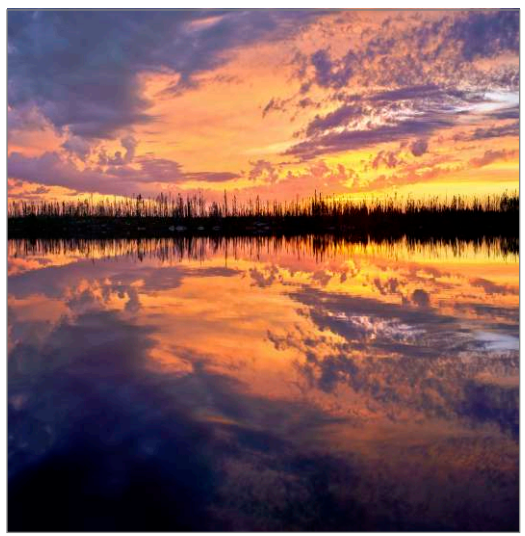
Evening White Pine 2008 20” x 30”



Temagami 2013 36” x 96”



Hamilton, Ontario 2003



Fire 2003 40”x40” Northern Ontario

The trouble with collecting evidence is that sooner or later it becomes impossible to dismiss. By now I have shed all doubt that the evolution of living species has kept pace with changes in our planet's atmospheric composition, thus actively participating in changing proportions of trapped solar energy. Records of these changes, unraveled and confirmed by many separate branches of science, go back 3.5 billion years. Evidence is found everywhere. Nature, oblivious to the presence of humans, relentlessly pursues the task of ecosystem stabilization.

Canadian wetlands exemplify the processes of carbon trapping and sequestration. The wetland shown to the right is located about 100 km as the crow flies from Toronto's Queen's Park. Many bogs are found in closer proximity to Parliament Hill in Ottawa, as is true of many other provincial capitals. Each occupant living in a political power center can choose to be oblivious to natural processes or not, to cooperate with or work against them, while authorizing decisions imposed on all of us. On the other hand, anyone can instantaneously update the current assessment of “global warming” with a few strokes of a keyboard, and act accordingly.

Once I paddled three and a half days across an area affected by only one of many wildfires in northern Ontario that year. I paused to sit among thousands of still-standing scorched trees and listened to the sound of them falling, one at a time, over and over.

Morning Bog *2009 30” x 60”*

Back to Water *2019 30”x 80*

“Algoma Face” (below) is a place I named and revisited many times over the years. I set up camp across it on the Montreal River. Beside a flickering campfire, I eat my meal, drink my cup of wine, and meditate on the rock that emerged from the belly of the Earth 2.5 billion years ago.

My curiosity brought me here. I wondered about the insanity of Montreal fur traders pushing heavy cargo across numerous rapids and waterfalls on their way upriver. I thought of the native population, the other partner of that fur trade, as eager culprits of the near extermination of beavers. Years later, I saw voyageurs' epics more as a way of life than anything else. Then I changed my mind about why natives traded so eagerly, when I tried to cook my meal without a ceramic or metal pot.

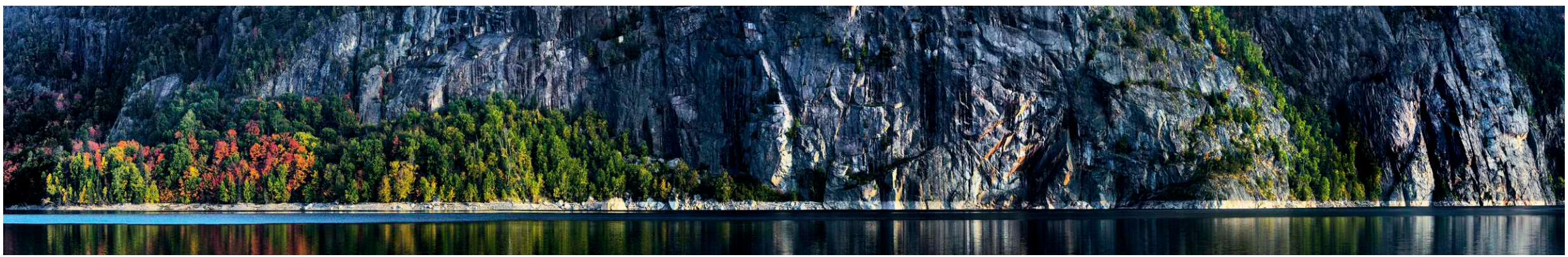
At the top of this massive rock is a hidden place with the misleading name of “Bible Camp”, where American parents send their kids for a digital detox retreat. With the expansion of network coverage, a new camp was built 40 km up the river and outside the signal range.

I bet that the Group of Seven painters had a glimpse of this rock from the elevated railway bridge on the way to their destination in Agawa Canyon. Back then, they felt driven to explore new-found freedom in interpreting reality without enslavement to established formulas. In fact, we humans are the only species capable of complex interpretations of our world. However, having distanced ourselves from nature's mould, we now find it difficult to interpret our relationship to it.

I look at the rock in front of me. It emerged around the time when cyanobacteria, the then-dominant form of life, separated oxygen from iron and changed our planet atmosphere. With two burning elements—sun and oxygen—to deal with, along with a lack of ozone layer, these life forms were safe only as long as they remained in water's buffering conditions. Once on shore, larger molecular structures and smarter organisms were needed to survive the constant assault of molecules of physical matter, drunken with an excess of absorbed energy. And that's how my story began.
I meditate on the fate of a small pine seedling in patches of mosses clinging to this wall. The sun heats the rock, and the rock cools at night but not enough for water vapour to condense on both plants and bedrock surface. A few more nights like this and rain, when it comes, will wash everything down without a trace. Even this straightforward observation is nudging me with the need to articulate conclusions.

Life is, was, and will be, nothing less or more than a process. It gives me a choice to contribute something to it or to be irrelevant. It occupies a 4-dimensional space where events very distant in the past might be profoundly relevant to current living conditions. It is a functioning system of high complexity, and any changes imposed upon it require time frames adequate to the system's level of sophistication. The larger a system's scale, the slower the momentum of change, which becomes more and more unstoppable.

In the span of the last decade and a half, I have come to realize how poorly equipped I am to have a meaningful relationship with nature. I am asking myself where my mode of being was derived from. Was it my life experiences or contemporary culture?



Algoma Face 2007 - up to 200” wide

Working on the subject of an art project inevitably takes time.

Indeed it took more of it than I envisioned. However, it uncovered for me avenues to the knowledge I was not aware of, which consequently helped me define my relationship with the natural world. This relationship happened to be a very personal affair, and there is no prescription for it. Trying to find one could be as rewarding as it might be necessary in a world that is changing so fast.

Over the years, my library of relevant images has grown substantially, and to pick the right ones for this presentation was a challenge. I followed the formula of using images from locations that most Ontarians might be more familiar with.

Although this project was conceived as an exhibition project for a public gallery, the financial commitment that goes along with it is of a scale that, like for many visual artists today, becomes no longer attainable. In essence, it then becomes an open-ended project that might evolve, having a life of its own or in concert with other creative content providers.

Author on location working on the "Seven Day Island" project in 2014, Georgian

With respect and appreciation for all followers of my work, I have therefore formatted this project to be suitable for viewing on 4K TV screens.


januszwrobel.com