

THE ELMS RETURN TO ELMVALE

but so have the beavers, and my personal battle to fight global warming heats up

When I feel the need to eliminate all of the stresses of a busy academic career and get back to Nature, I like to plant trees - lots of them. After an eight hour flight from Frankfurt to Toronto, I drive 90 minutes north to Elmvale, Ontario. Halfway between Barrie and Midland, this traditional farming village gets its name from our native elm, *Ulmus americanus* which, along with white ash and silver maple, once covered this part of Huronia with a magnificent hardwood forest. The soil which allowed the forest to develop is a deep, rich clay loam derived from sediments which were deposited from a glacial lake many thousands of years ago. The primeval forest must have been a sight to behold, with trees hundreds of years old, towering tens of metres above the forest floor. All of this changed dramatically in the early part of the 19th century when settlers arrived from northern Europe.



Elm tree, Conc. 10, Elmvale, October 2007

On our property, just 1.5 km north of town, forest clearing probably began around the mid-1850s, to create arable farmland. Some of the trees were used to make lumber for housing and farm buildings, some for fuel, but the rest was simply burned. All of this was common practice at that time, when trees were considered weeds and the ashes anyway

needed to make soap for the British Navy. On our 70 acres, only three trees were spared destruction: a giant silver maple which stands near the farmhouse, an elm growing on an oxbow "island" formed by a meander of the Wye River which dissects the property, and a majestic white ash found at the back of the farm. All of the other trees were consumed, including those along the banks of the river. This was a time when making a living literally meant carving it out of the land by hand. "Soil erosion" caused by clear-cutting and other poor land-use practices would not be recognised as a widespread environmental problem in North America until a century later.



Farm, ca. 1948

When my father bought the property for our recreation in 1972, I was just starting high school in Toronto. In 1976, we started to plant some trees. The owners of the farmhouse at that time, Mrs. Johnson (75) and her sister Mrs. Cummings (78), were the grandchildren of the pioneers who had cleared the original forest. When they



Mrs Johnson (L) and Mrs. Agnes Cummings (R), June 1972.

asked what we were up to with our shovels and wheelbarrows, I told them that we were planting trees along the fence rows, the lanes, and the river. I will never forget their astonishment: "Planting trees? Do you know how long it took to kill those trees? We cut them, we burned them, we girdled them, and we poisoned them". I then realised that in three generations the priorities of our society had completely reversed direction. For their generation, and their parents and grandparents, the forest was a mortal enemy which had to be beaten back in order to survive: having farmland was the only way to ensure a steady supply of food for the table. Cool, moist, shaded woodlands could not sustain families dependent upon cereal grains, vegetables, and fruits.

Over the years, sometimes with the help of friends from high school, but mainly together with my father, we have planted several thousand tree seedlings, including red oak, white spruce, red pine, and white cedar. The red oaks do very well in this area, and the local rabbits are also rather pleased about their arrival. I can now understand why it is said that a rabbit will walk a mile to eat a red oak seedling - during one winter night, seventeen rabbits were seen on the lawn gorging themselves on red oak. Our approach has always been Darwinian: we plant in excess and expect only the fittest to survive. Despite the savage attacks, the oaks which we planted in 1976 are now more than ten metres tall. This is all the more impressive considering that they were approximately 30 cm tall when we planted them, and that we have never tended them. Amazing how Nature takes care of its own. I didn't realise that oak trees could grow so fast - or is this just the passing of time? Either way, I certainly wish I had planted more oak trees.

Over the years, sometimes with the help of friends from high school, but mainly together



Dad planting maple trees, May 1991

Even though we are well outside of the Carolinian zone, we seem to be having great success with our Kentucky Coffee Tree, the Cucumber Magnolia, and Sycamore. These were planted on an experimental basis as they are normally found further south, in warmer regions of the province. I have learned from experience that the farm is too far north for the Tulip Tree, the Carpathian walnut, or any soft fruit trees. However, the Black Walnut has done very well and again, it is amazing how quickly they can grow on such rich, deep, moist soil.



Kentucky Coffee Tree, in summer.

Our efforts to rehabilitate the property were especially urgent along the banks of the river because of soil erosion. Along one-half of the river, white ash and black willow have established themselves, and here there are no visible signs of erosion: the banks are stabilized by extensive, complex root systems, and the river has maintained its present course for the past fifty years. Man has not yet engineered a device or system as efficient as tree roots against erosion of stream banks. Upstream on the other half of the river, however, there were no trees at all and erosion was a significant problem. Here, the banks are continually being undercut and collapsing, and the river changes its course with surprising speed and regularity. To try to combat erosion, and with the help of the Woodland Improvement Act of the Ministry of



There are few erosion problems where white ash remain along the banks of the river.



Severe erosion problems are found along the banks of the river devoid of trees.

Natural Resources, in 1990 the banks of the river and the perimeter of the property were planted with white spruce, a fast growing conifer which will help to get the stabilization process started. I have since learned, however, that the rate of tree growth cannot keep up with the rate of soil erosion. In fact, I am now beginning to believe that the mature ash trees found along the river are there not because they were able to become established under these circumstances. Instead, I suppose that they started out their lives further from the river, but the river has slowly but steadily cut a path in their direction.

Regenerating a natural environment is not a single event which can be accomplished on an afternoon, but rather a slow, steady, complex series of interrelated processes which takes place imperceptibly, on a time scale of years. The red pine litter, for example, has already accumulated enough organic matter that various native herbs are now found growing under the pines. Similarly, the lack of obstrusive human activity has allowed white-tailed deer, red fox, coyote, red squirrel, porcupine, wild turkey, northern harrier, and great blue heron, to become frequent visitors. Another, but perhaps less welcome new inhabitant, is the beaver. The beavers have been a nuisance to property owners in this area for some time. Because the land is both flat and low lying, any obstructions to the flow of the river can cause extensive flooding. And beavers are very good at building obstructions. In fact, that`s their specialty. Thirty years ago, a call to the MNR was all that was needed to arrange to have a trapper come to the site to remove the unwanted animals. With fur prices low due to the lack of demand, professional trapping is no longer available.



“Our” beaver.

Unfortunately for our stream rehabilitation efforts, beavers have a seemingly insatiable appetite for young trees. Not only have they felled many of the young white ash which is now seeding itself naturally along the river banks, but the beavers also cut down five of the six black cherry trees I planted, all of the ones planted by Mother Nature, and more than one hundred of the white spruce. These young trees represent my efforts in fighting the battle of increasing greenhouse gas emissions: these trees



The remains of 18 young black cherry trees, winter 2007.

are my own personal carbon dioxide “sink”. Not only do the beavers attack these carbon dioxide removal devices, but if the beavers dam the river they will create a methane-generating beaver pond. Methane is also a greenhouse gas, and twenty times more effective per atom of carbon than carbon dioxide. As a result, the beavers contribute to global warming in two ways: by removing the sinks for atmospheric carbon dioxide (the trees) and by creating new sources of atmospheric methane (the beaver ponds).

For many years I raged at these beavers for attacking “my” forest. How could I create any kind of forest if this dark, furry symbol of the Great White North were to destroy the trees before they can even reach adolescence? I eventually came to understand that if I was to allow the forest to return to its natural state, that the beaver would also have to play its role. The native Canadian view is that the beaver is our brother. This same message was eloquently delivered to us by Grey Owl who described the great intelligence and ingenuity of these beautiful creatures. I now realise that a forest cannot “belong” to anybody, and that the beaver will always play an integral role. But how can I do my part to tackle both erosion control and the greenhouse problem at the same time, all the while trying to leave the beavers alone to live their lives as Nature intended? I think I may have found a reasonable compromise: I have started building wire mesh fences around the desirable tree species such as white ash and silver maple, but I am leaving the Manitoba maples for the beavers to munch on. A native species, this is considered a “weed” by many arborists and is rapidly establishing itself along the river. Rather than cutting them down to allow more room for the valuable species, I’ve decided to leave them alone. While they may not be a pretty tree, and though the wood has no inherent value, they certainly provide valuable shade as well as insect life for the river, help to minimise erosion, and will keep the beavers well stocked with groceries for many years to come.

While all of my reforestation efforts have been underway, I found some young elm trees growing by the river. By the time I found them a few years ago, there were perhaps half a dozen specimens growing straight as arrows and some were already more than ten metres tall. When I first found them, I had great hopes that the elms were beginning their



Young elm trees, seeded by Mother Nature, along the banks of the Wye River.

slow return to Elmvale. I have since learned, however, that once these trees achieve sufficient girth for bark beetles to attack, they succumb to Dutch elm disease as quickly as did their predecessors. This loss is lamentable not only because the elm is the most stately of our native hardwoods and because of the appellation of the village, but because of its value and importance as a building material. The hay barn which still stands on the property to this day, is supported by massive, hand hewn beams of solid elm which are testimony to the great strength and durability of this wood. However, I remain hopeful that Nature will eventually evolve a disease-resistant elm. Perhaps my children, or their children, will see stately elms growing in Elmvale once again.

When the Europeans arrived, Nature had been in a state of equilibrium, with the wolves controlling the beaver population and fires periodically regenerating the forests. There were intricate checks and balances in place on both sides, but we destroyed all of that through our own ignorance. By burning fossil fuels and clearing our forests, huge quantities of carbon dioxide were emitted which are now creating a warmer planet. Wildlife habitat disappeared and most animal species along with it. Erosion of soils and sediments choked the streams and destroyed any value they had for aquatic life. Most of us neither know nor appreciate what we had, and do not realise what we have lost.

Even though I live far away, I do get up to the farm as often as possible, and I continue to plant as many trees as I can. My father recently passed away, but for several years he was too ill and frail to join me on the trips to the farm. Despite this, I did my very best to keep him well informed of our progress on all fronts. During these same years, my children reached the age where they could begin to help, and I look forward to trying to inspire in them a true love of the natural world, and the desire to help protect what is left of it. While we can never return to the Garden of Eden, I am trying my best to create a small replica of that paradise by planting some trees in Elmvale.



Sleeping on the cedar boughs, March 2006



American Elm. From D.C. Peattie, (1991). A Natural History of Trees of Eastern and Central North America. with an Introduction by Robert Finch. Houghton Mifflin, Boston, 606pp.