

# THE TINY COTTAGER

Issue No. 54

A GEORGIAN BAY PERSPECTIVE

Fall/Winter 2019-20

## PRESIDENT'S MESSAGE

by PAUL COWLEY, CARUSOE BAY

My message to you this fall must begin the same way it did last spring, with a continued focus on the threat to our precious water in the Alliston aquifer complex — scientifically proven to be possibly the purest water in the world.

The lessons learned from Dump Site 41 are seemingly short-lived and need to be aggressively revisited.

CRH (owner of the Teedon Gravel Pit) seeks to expand the existing pit operations northward into French's Hill — a primary recharge area for the aquifer. This application (also challenged by the township) is now proceeding to the Local Planning Appeal Tribunal (LPAT), a successor to the Ontario Municipal Board. CRH also seeks to renew a water taking permit that allows it to use millions of litres of water a day for aggregate washing. This threatens our aquifer. Governments at all levels have so far not acknowledged this threat, much less dealt with it.

Please read Dr. William Shotyk's letter to Simcoe Council on this, and Judith Grant's article on page 5. FoTTSA will be engaging legally in the LPAT hearings and we need all of your support to bring the appropriate level of attention to this threat to the aquifer.

Our record high water levels have begun easing off, but Georgian Bay Great Lakes Foundation continues to work with the International Joint Commission (IJC) and other Great Lakes organizations to bring about effective water management, which is currently badly lacking.

Another threat to our Great Lakes ecosystems and fisheries is the Grass Carp, which has been making its way into our waters. This highly destructive species decimates wetland grasses and native species' spawning areas; it must be eradicated. The Grass Carp poses a serious ecological and economic threat to our wetlands and native fisheries.

For an update on these topics, go to the GBGLF web site: [www.georgianbaygreatlakesfoundation.com](http://www.georgianbaygreatlakesfoundation.com)

**Wishing you and your family a great Thanksgiving and winter.**



Photo by JUDITH GRANT

One of many gravel-laden trucks that leave Teedon Pit daily

## Why Scientist William Shotyk Urges a Moratorium on Aggregate Extraction in the Waverley Uplands

*Excerpted from a letter written to Simcoe County by Dr. William Shotyk on December 5, 2018. His request for an opportunity to present his case was denied.*

I am writing to express my profound concern regarding environmental impacts of aggregate extraction on our groundwater resources. I wish to propose a moratorium on expansion of aggregate extraction in the Waverley Uplands, until the impacts on groundwater flow systems are fully understood. Many if not most residents of Springwater, Tiny and Tay Townships depend on groundwater resources for their drinking water, and there are legitimate concerns about increasing impacts on water quality. It seems to me that the potential impacts of aggregate expansion on our groundwater resources are either being overlooked, or not carefully considered. At the same time, the value of our groundwater resources is being underestimated. I hereby request an opportunity to present my case to Simcoe County Council in person, in May of 2019.

### Impacts of aggregate extraction on groundwater resources

The impacts of aggregate extraction on groundwater resources are well known to the scientific community. The following quotation is from a recent Canadian study, published in an international, peer-reviewed journal:

*"The extraction of sand and gravel for construction purposes stands out as a major concern with respect to groundwater protection. Sand and gravel extraction activities commonly involve (1) the removal of vegetation and soil cover, (2) the modification of natural surface slopes, (3) a reduction in the unsaturated layer thickness, and (4) increased risks related to the spill of polluting substances during mechanical operations. As a result, groundwater quantity, quality and temperature can be impacted, along with dependent ecosystems" (Nadeau et al., 2015, p.536).*

Studies have shown that sand and gravel pits can lead to increasing groundwater temperatures (Markle and Schincariol, 2007), groundwater pulses (Smerdon et al., 2012) and increasing trace metal concentrations in receiving waters (Bayram and Onsoy, 2015), to cite a few examples.

According to John Cherry, Emeritus Professor at the University of Guelph and author of the leading textbook on groundwater, the literature about groundwater

impacts from excessive disturbances generally shows that it is extremely difficult or technically / economically impossible to restore the groundwater to its original quality. Therefore, the prevention of adverse impacts is by far the most economically prudent strategy of managing these natural resources.

### Natural filtration of water by soil

At this time, there are many unanswered scientific questions about the groundwater resources of Springwater, Tiny and Tay Townships. Our understanding of the Quaternary geology of the area is only now being studied in detail by the Ontario Geological Survey. We do know that the filtration of the groundwater takes place in the soils of the uplands. Some combination of plants, minerals and microorganism evolving together over thousands of years have created what amounts to a perfect water filtration system. Imagine these soils as a kind of organism, with all the parts of the system so intimately related that changing any one of them will bring on changes to the entire organism: those changes will, with time, impact the function and ultimately destroy the organism. Removing those soils to extract the aggregate simply removes the water filtration system. At the same time, aggregate extraction removes the water towers which give rise to our remarkable artesian flow systems.

### Groundwater quality: trace metals

The remarkable quality of our groundwater resources has long been known to the residents who depend on it for drinking. From a scientific perspective, I have been testing these spring waters on and off for almost 30 years, first at my laboratory at the University of Berne (Switzerland), then at the University of Heidelberg (Germany), and now at the University of Alberta. Using metal-free, ultraclean research facilities at each of these universities, I have shown that these spring waters contain lower concentrations of trace metals such as lead (Pb) than ancient arctic ice (which I have also tested). The quality of the waters in these artesian springs has been documented in international, peer-reviewed scientific journals. In fact, these spring waters have become the "gold standard" that was

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