

# Green Scene: Some Good News for a Change?

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**The use of mercury as a final step to purify gold in small mining operations such as this one which dredges sediment from the river bed on the Rio Madre de Dios in Peru will contaminate the surrounding environment and impact on communities downstream. *Bruce Brandhorst photo.***

I thought it would be nice to start the new year with some good news on the environmental front. While, to my mind, the best news is that we continue to have many enthusiastic volunteers committed to creating a better world for future generations, there has been at least one excellent international initiative this year. And I am willing to bet, this is one that almost certainly escaped your attention.

For several decades, mercury has been recognized to be a very toxic component in our environment. The “mad hatters” of old (made famous in “Alice in Wonderland”) became afflicted when they used mercury to strengthen the brims of the hats they made. In 1956, in Minamata, Japan, an epidemic of strange symptoms including numbness, paralysis, birth defects, convulsions and, in some cases, deaths struck a number of fishing families in this coastal village. It took several years before it was recognized these symptoms, eponymously named Minamata disease, were caused by a chemical plant which had been releasing mercury into local waters. Canada has also had incidents of mercury poisoning. For example, in 1969, a pulp and paper mill near Dryden, Ontario was found to be releasing mercury which eventually found its way into fish. When people from the local White Dog and Grassy Narrows First Nations consumed the fish, they fell ill.

Mercury is an unusual metal because it is a liquid at room temperature and readily evaporates into the atmosphere. When washed to the ground by rainfall, it can be converted to methylmercury by bacteria found in soil and sediments. Methylmercury, which is highly toxic, concentrates as it moves up through the food chain from vegetation to small fish and then to larger fish eaten by people. Eating too much tuna or other long-lived fish such as halibut can be hazardous to your health. In many parts of the world, people rely on fish as a main component of their diet; this makes them especially vulnerable to mercury's toxic effects.

Scientific studies have now clarified how mercury moves through the atmosphere, the oceans and into the bodies of living organisms. An analysis of museum samples has shown that there is now at least 10 times more mercury cycling through the environment as a consequence of human activities over that of natural sources. Emissions from coal burning plants since the beginning of the industrial age have been identified a major source of this mercury. Other sources include mining, cement production, fossil fuel extraction and other industrial processes. Even the cremation of a deceased person with mercury amalgam dental fillings can add a small burden of mercury to the atmosphere.

A surprising recent discovery is the current major source of atmospheric mercury is no longer coal-burning plants but mercury released from the small and often illegal gold mining operations in undeveloped countries around the world. Mercury combines easily with gold to form a malleable alloy which makes it a seemingly attractive way to extract gold from concentrated sediments. When the miners burn off the mercury to obtain pure gold, they end up polluting the local air and water and cause considerable harm to themselves and their families and those living downstream. The solution lies in not making this activity illegal (which would force it underground) but to work with local communities to implement better measures to purify gold. Having seen such worrisome gold mining practices in Peru, I was hugely impressed to learn we have a small non-profit group in BC which is dedicated to working in such communities to improve practices – see <http://www.artisanalgold.org> for more information.

In 2013, after meetings that took place over several years, the nations of the world have now agreed to a treaty which will finally begin to limit mercury pollution. This treaty, appropriately called the Minamata Convention calls on all signatory nations to initiate a number of measures to reduce mercury pollution. The signing began in Minamata, Japan on October 10, 2013. To date, 94 nations have signed, including Canada.

However, in the arcane world of UN treaties, there is a final important step – ratification. While signing a treaty indicates preliminary endorsement, it carries no legally binding obligations. Ratification is the clincher which makes the agreement legally binding. A country which ratifies the Minamata Convention would be expected, for example, to legislate (within 3 years), strict emission controls to prohibit the release of mercury from coal-burning plants and implement other effective legislation to significantly reduce mercury emissions. To date, only the USA has ratified the Minamata Convention. Would it be too much to hope that our Canadian government could be convinced to ratify the Minamata Convention in 2014?