

Mercury '101'

St. John's, June 8

Mercury '101'

- Mercury (**Hg**) is unique, existing as gas, liquid and solid (Hg-S) at room temperature. Atmospheric Hg main source to land & water
- Historically, many uses, but few today
- Hg occurs in small quantities in *everything, everywhere* – in air, soil, water, plants and all animals – but especially fish ... why?
- Hg/MeHg concentration in water is very low (more Hg in 1 meal of fish than in all the water you will drink in your life...)
- The main form (>90%) of mercury in fish is '**methylmercury**' (**Hg-CH₃**) measured in mg/kg or ppm.
- In water Total Hg is 0.10 ng/L or ppt with <2% as methyl (0.02)

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- A small amount of the inorganic mercury in sediment and flooded soils is transformed into methylmercury ... how much of this that is available for methylation is very important ... and discussed later...
- No new Hg added to reservoirs – the right conditions created for Hg-methylation following inundation – by bacteria responsible for methylation – inorganic Hg + ‘fresh’ organic carbon in soil.
- The mass of Hg (gm) is found mostly in humic organic soil (>90%); and <10% in litter, leaves, needles, twigs, stumps, roots

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- MeHg in the aquatic food web is acquired almost exclusively via dietary pathway... 'you are what you eat.'
- Fish is near exclusive pathway of exposure of MeHg to all animals, including humans.... Because fish are the only carnivorous species you eat
- Fish contain many essential nutrients. In general, especially if you're a First Nations person – eating anything else besides fish is a less healthy meal