Per- and polyfluorinated alkyl substances (PFASs) are ubiquitous, persistent, anthropogenic chemicals that bioaccumulate in both humans and biota. An understanding of the toxicity of this class of compounds has been late to develop, largely because their mode of action doesn’t follow the routes typical of other persistent organic pollutants. It is now becoming clearer that perfluorooctanoic acid (PFOA), perfluorooctane sulfonate (PFOS) and several of their shorter carbon-chain analogues do elicit toxic consequences in humans and biota, and modes of transport in the environment are now better understood. The primary transport mechanism is water transport of either dissolved or particle bound PFAS and bioaccumulation in aquatic ecosystems can result in many fish species having significant body burdens of PFAS. Ingestion of water or exposed fish is understood to be the primary route of human exposure.

Numerous studies have appeared over the past two years describing the levels of PFAS present in various fish species typically consumed by humans. A particularly enlightening study* by Fair et al. published in January 2019 reports on PFAS burdens in edible fish species from South Carolina, in relation to the Michigan Fish Consumption Advisory Program for PFOS (2016), which advises unrestricted fish consumption for only fish containing less than 9 ppb total PFAS. The most stringent jurisdiction in the US is New Jersey with an unrestricted consumption limit of 0.56 ppb. Most fillets tested exceeded the Michigan limit while all exceeded the New Jersey limit.

To date no studies have appeared on the levels of PFAS in edible fish in Canada. Bureau Veritas Laboratories collected fresh fish sourced across Canada in the summer of 2019 and tested fillets from these at our Mississauga, ON laboratory. This presentation will describe:

- The methods used to analyse PFAS in tissue samples relative to other solids,
- Types and amounts of PFAS found grouped by species, habitat preference and source location, and
- Potential consumption advisories for different groups according to developing guidance.


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