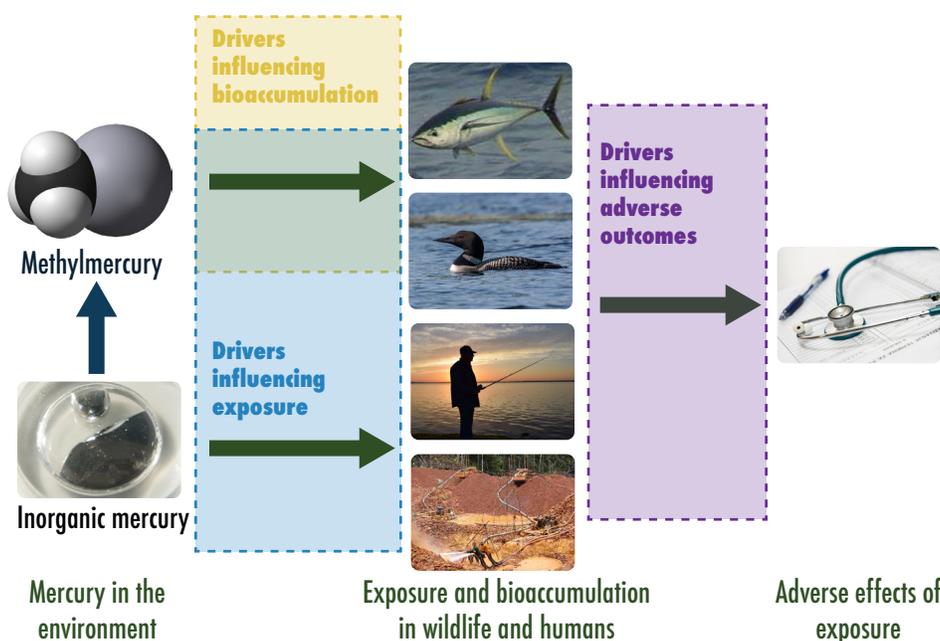




Science to Inform Implementation of the Minamata Convention: Water and Health

Processes in aquatic ecosystems influence how wildlife and humans are exposed to mercury. Mercury and methylmercury (a more toxic form) are present in ecosystems, and undergo changes that can modify where and when wildlife and humans are exposed. Different drivers (see Figure) can influence bioaccumulation, exposure, and the adverse effects of exposure. Drivers can include biological, ecological, and socioeconomic factors. Understanding and accounting for these drivers is critical to effectively reducing mercury risk in the environment in the face of global change, and to evaluating the effectiveness of the Minamata Convention.



Synthesis: COP-1

As part of the 13th International Conference on Mercury as a Global Pollutant, teams of scientists prepared syntheses of the current state of mercury science. Syntheses addressed four topics:

- Science to Inform Implementation of the Minamata Convention
- Global Mercury Processes and Perturbations
- Managing Aquatic Mercury Pollution in Altered Landscapes
- Mercury Exposure and Effects in Wildlife and Humans

Insights from the syntheses relevant to the implementation of the Minamata Convention are summarized here to inform COP-1 delegates and observers.

What does the latest science say about mercury, water, and health?

- Transfer of mercury in aquatic food webs to fish is affected by global change, which impacts the bioaccumulation and biomagnification of mercury.
- Human and wildlife exposure to mercury is determined by intrinsic (e.g. food choice and assimilation) and extrinsic (e.g. commercial and subsistence fisheries and artisanal and small-scale gold mining) drivers.
- Adverse health outcomes in humans and wildlife depend on individual physiological and genetic characteristics, and are influenced by other nutrients and contaminants in food.

Synthesis Paper: C. Eagles-Smith, E. K. Silbergeld, N. Basu, P. Bustamante, F. Diaz-Barriga, W. A. Hopkins, K.A. Kidd, J. F. Nyland. "Intrinsic and extrinsic modulators of mercury exposure, bioaccumulation, and adverse effects in wildlife and humans in the context of rapid global change."

Available at: <http://mercury2017.com/program/synthesis-effort/>

How do different drivers influence mercury exposure and risk?

Drivers such as...

Influence mercury risk by...

