



**MERCURY AUSTRALIA**

19<sup>th</sup> July 2021

Joint Standing Committee on Treaties  
PO Box 6021  
Parliament House  
Canberra ACT 2600

**REF.: Submission in response to Inquiry into the Minamata Convention on Mercury**

Mercury Australia welcomes moves by the Australian government to ratify the Minamata Convention. Mercury Australia ([www.mercury-australia.com.au](http://www.mercury-australia.com.au)) is a multi-disciplinary network of Australian university researchers investigating the historical and contemporary uses and impacts of mercury. Through its highly experienced team of scientists and social scientists, Mercury Australia aims to fill the significant knowledge gap on mercury research in Australia in order to address the magnitude and extent of human impacts on the biogeochemical cycle of mercury and the implications for human, plant and wildlife populations.

Mercury Australia researchers are drawn from several complementary disciplines, in particular, chemists, environmental scientists, social scientists, and environmental historians, and are based at universities around Australia. The multi-disciplinary nature of our team allows us to not only understand and track the cycle of mercury in the environment over the long term, but also to present our research findings as practical policy advice for governments and the broader community. Recent work by Mercury Australia is showcased in the scientific journal *Elementa: Science of the Anthropocene* ([https://online.ucpress.edu/elementa/pages/mercury\\_in\\_the\\_southern\\_hemisphere\\_and\\_tropics](https://online.ucpress.edu/elementa/pages/mercury_in_the_southern_hemisphere_and_tropics)). Because of the range and breadth of expertise represented, Mercury Australia is well-placed to provide the expert support needed to meet obligations under the Minamata Convention.

Our research has demonstrated that mercury pollution has been an issue in Australia for many years <sup>1</sup>. Research worldwide and in Australia has shown that human activities have

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<sup>1</sup> **Schneider, L.** When toxic chemicals refuse to die—An examination of the prolonged mercury pesticide use in Australia. *Elementa: Science of the Anthropocene* (2021) 9 (1): 053. **Lawrence, S.; Davies, P.** Historical mercury losses from the gold mines of Victoria, Australia. *Elementa: Science of the Anthropocene* (2020) 8: 35. **Fisher, J.A.; Nelson, P.** Atmospheric mercury in Australia: Recent findings and future research needs. *Elementa: Science of the Anthropocene* (2020) 8 (1): 070.



significantly altered the global mercury cycle in the last 200 years. The amount of mercury in the environment is about four times higher than it was prior to the industrialisation period<sup>2</sup>.

After emission from the source, mercury may reside in the atmosphere for approximately one year and is transferred to the Earth's surface via wet or dry deposition in elemental or particulate form. This long atmospheric residence time means that mercury pollution control requires a co-ordinated international approach. This is one of the reasons the Minamata Convention has been established, with the expectation for Australia to join another 132 countries in this global effort to control mercury pollution.

We support Australian ratification of the convention for the following reasons:

**Australia will become part of the global community of like-minded countries aiming to control global emission and pollution of mercury:**

By ratifying the Minamata Convention, Australia will strengthen global political cooperation and efforts to address all aspects of the mercury issue collectively. Australia will join over 132 other countries, giving Australia equal footing with its international counterparts in global efforts to control global mercury pollution. Becoming a party will allow Australia to shape the future of global mercury cooperation and the implementation of the Minamata Convention. This includes Australia's participation in decision-making, and the right to nominate professionals to treaty-specific bodies including those devising strategies for the implementation and compliance committee.

**Australia will have the latest guidance on reducing mercury pollution from human activities**

Mercury was and is still used in many products and processes. As stated in the Regulation Impact Statement prepared by the Department of Agriculture Water and the Environment, common sources of mercury emissions and releases in Australia include: air emissions from coal-fired power stations and non-ferrous metal smelters, the disposal of damaged fluorescent and low-energy lamps, leaking mercury-containing thermometers and batteries, and amalgam waste from dental practices.

The ratification of the Minamata Convention would bring Australia's management of mercury emission and pollution into line with international best practice, provide greater certainty for business and industry and create opportunities for Australian businesses to take advantage of global prospects.

**Protect the environment and human health from the harmful effects of mercury exposure**

Mercury is a heavy metal that is widespread and persistent in the environment. It is listed within the top 10 chemicals of major public health by the World Health Organisation due to

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<sup>2</sup> Fitzgerald, W.F. et al. Global and local sources of mercury deposition in coastal New England reconstructed from a multiproxy, high-resolution, estuarine sediment record. *Environmental science & technology* (2018) 52 (14), 7614-7620.



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its detrimental effects to human health and the environment. Once released to the environment it can bio-accumulate in, and biomagnify up, the food chain, especially in the aquatic food chain where it constitutes a major threat to global food security. Even at low concentrations, mercury poses a risk of causing adverse effects to human health and the environment. Australia becoming a party to the Minamata Convention, and taking the necessary national and local measures to support the effective implementation of the treaty, would benefit its people by protecting their health and the local environment.

### **Place Australia in the forefront of mercury research in the Southern Hemisphere**

If Australia ratifies the Minamata Convention, Mercury Australia researchers will fully support government efforts in complying with the requirements of the Convention. To date, the cycle of mercury between atmospheric, terrestrial and aquatic systems has received greatest attention in the Northern Hemisphere. In contrast, our understanding of the biogeochemical cycle of mercury in the Southern Hemisphere (SH) and tropics is very poor, particularly for Australasia. Australia is the country best positioned economically to lead mercury research in the SH. Prioritising research in this area will provide stakeholders in Australia and internationally with the necessary tools to take action. As a party to the Minamata Convention, Australian expertise will also play a prominent role in international implementation processes, providing a needed voice by focusing on mercury issues important to the Southern Hemisphere.

We thank the Joint Standing Committee on Treaties for the opportunity to make a submission and emphasise the importance of Australia for ratifying the Minamata Convention on mercury.

On behalf of Mercury Australia, we are:



**Dr Larissa Schneider**

**Australian National University – School of Culture, History and Language**

<https://researchprofiles.anu.edu.au/en/persons/larissa-schneider>

Dr Schneider is an environmental scientist interested in understanding the role of past climate changes and human activities on the biogeochemical cycle of mercury in the Southern Hemisphere. She is a research fellow at the Australian National University, currently holding an ARC DECRA fellowship investigating the historical mercury deposition in freshwater lake sediments in the past 10,000 years. Dr Schneider is the founder and convenor of Mercury Australia.



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**Professor Susan Lawrence FAHA FSA**

**La Trobe University - Centre for the Study of the Inland**

<https://scholars.latrobe.edu.au/selawrence>

Professor Lawrence is an industrial archaeologist and environmental historian and founding member of Mercury Australia. Understanding legacy environmental effects from historical mining is one of her research interests. She is the lead Chief Investigator of the ARC-funded Rivers of Gold project, investigating the impact of gold mining on Victorian rivers. Her book *Sludge: Disaster on Victoria's Goldfields*, co-authored with Peter Davies, was shortlisted for the 2020 Prime Minister's Literary Awards.



**Dr Peter Davies**

**La Trobe University - Centre for the Study of the Inland**

<https://scholars.latrobe.edu.au/display/pw2davies>

Dr Peter Davies is a historical archaeologist and research fellow at La Trobe University. One of his research priorities is the history of mercury use in colonial Australia. He is the author of four books, including *Sludge: Disaster on Victoria's Goldfields*, co-authored with Susan Lawrence, which was shortlisted for the 2020 Prime Minister's Literary Awards.



**Dr Anna Lintern**

**Monash University – Department of Civil Engineering**

<https://www.monash.edu/engineering/annalintern>

Dr Anna Lintern is a Water Engineer and a member of Mercury Australia. Her expertise is in understanding water quality and the impacts of human activities on water quality variability.