

**Title of Research:**

23-5-08

Assessing sources, emissions and environmental risk of microplastics in support of effective risk reduction strategies

**Principal Investigator:**

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**Summary of Research:**

The objective of this research project is to facilitate realistic and effective risk management strategies against microplastic (MP) pollution by analyzing the load and sources of MP, and conducting practical risk assessments focused on Tokyo Bay. Specifically, leveraging material flow analysis and precise field data, our goal is to quantitatively assess the sources of MP pollution in marine environments and their respective contributions. Additionally, we aim to quantify the temporal changes in MP-related environmental risks and the efficacy of various mitigation measures. Moreover, we propose an environmental risk assessment methodology tailored to the unique characteristics of MP, drawing from practical case studies in Tokyo Bay and the latest insights from both domestic and international sources.

**Timeline:**

March 2023 -

**Topics:**

JCIA-LRI Annual Workshop “Assessing sources, emissions and environmental risk of microplastics in support of effective risk reduction strategies”, August 2023

**Publications:**

Ono K, Naito W, Ogura I, Xue M, Kato E, Uesaka M, Tsunemi K (2023). Estimation of microplastic emission and transfer into Tokyo Bay, Japan, using material flow analysis. *Marine Pollution Bulletin*. 194. 115440. 10.1016/j.marpolbul.2023.115440

Iwasaki Y, Takeshita K.M, Ueda K, Naito W. Estimating species sensitivity distributions for microplastics by quantitatively considering particle characteristics using a recently created ecotoxicity database. *Micropl.&Nanopl.* 3, 21 (2023). <https://doi.org/10.1186/s43591-023-00070-6>