Microplastic Pollution in California

APRIL 2021

NEW REPORT SHARES A PRECAUTIONARY FRAMEWORK AND SCIENTIFIC GUIDANCE TO ASSESS AND ADDRESS RISK

Background

In 2018, the California Ocean Protection Council (OPC) was tasked by state legislation (S.B. 1263) to develop a Statewide Microplastics Strategy, including the development of a risk assessment framework for microplastic pollution in California. The Ocean Science Trust (OST) convened an OPC Science Advisory Team (OPC SAT) Microplastic Working Group of interdisciplinary scientific experts to develop this framework and provide scientific guidance to assist the State in understanding the risks microplastics pose to marine ecosystems and humans in California.

Key Recommendations

- Use a precautionary approach to assess the risk of and manage microplastic pollution.This recommendation is based on current scientific understanding on microplastic persistence, lack of feasible cleanup options, projected rate of increased concentrations in the environment, and evidence that microplastics contaminate and may lead to adverse effects in organisms and humans.

- Manage and assess microplastic pollution risk using a particulate approach, rather than a toxicant approach, until California-specific data are available and the chemical effects of microplastics are fully understood.

- Focus future microplastic risk assessments, using the precautionary framework, on the following high priority & most prevalent components:
  - **Particle Morphology:** microfibers and fragments
  - **Polymer Types:** microfibers and tire & road wear particles
  - **Fate & Transport Pathways:** stormwater runoff (urban, agricultural), aerial deposition, and wastewater
  - **Sources:** unknown in California, but international literature suggests tire & road wear, laundry & textiles, and plastic litter from aquaculture & fishing
  - **Priority Endpoints:** microplastic internalization for benthic mollusks, large crustaceans, and lower and upper trophic level fish

KEY RECOMMENDATIONS CONTINUTED...

- Apply the risk prioritization tool, proposed in the full report, that uses a weight-of-evidence approach to characterize and rank risk associated with the highest priority and most prevalent components of microplastic pollution.

- True source reduction of plastic materials may be the most effective precautionary strategy to reduce and prevent microplastic pollution, given the lack of feasible microplastic cleanup strategies.

- The top research need is an inventory of the top sources of macro- and micro- plastic loading in California, that investigates the contribution of agricultural sources relative to urban and industrial runoff, as well as wastewater.

- Revisit this risk assessment framework in five (5) years, given how rapidly microplastics science is evolving, to assess if effects data are then sufficient for a quantitative effects risk assessment.

For more information and the full report, please visit https://www.oceansciencetrust.org/projects/microplastics-risk-assessment/

ABOUT OCEAN SCIENCE TRUST

Ocean Science Trust (OST) is a non-profit organization dedicated to accelerating progress towards a healthy and productive ocean future for California. Created by the California Ocean Resources Stewardship Act of 2000 (CORSA), OST bridges the gap between cutting-edge scientific research and sound ocean management.

ABOUT THE CALIFORNIA OCEAN PROTECTION COUNCIL

The California Ocean Protection Council (OPC) is a cabinet-level state policy body within the California Natural Resources Agency. Created by the California Ocean Protection Act of 2004 (COPA), OPC advances the Governor's priorities for coastal and ocean policy and works to ensure healthy coastal and ocean ecosystems for current and future generations by advancing innovative, science-based policy and management, making strategic investments, and catalyzing action through partnerships and collaboration.

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CALIFORNIA OCEAN SCIENCE TRUST

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