United Nations Educational, Scientific and Cultural Organization

Intergovernmental Oceanographic Commission

2021 2030 United Nations Decade of Ocean Science for Sustainable Development

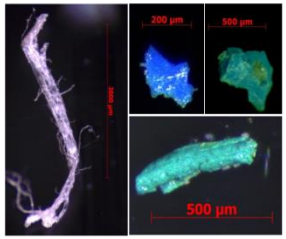
Size is important!

Primary microplastics

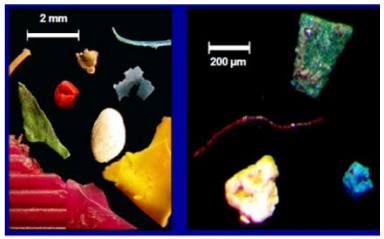
Resin pellets (Geoje, Korea/ KIOST)

PE micro

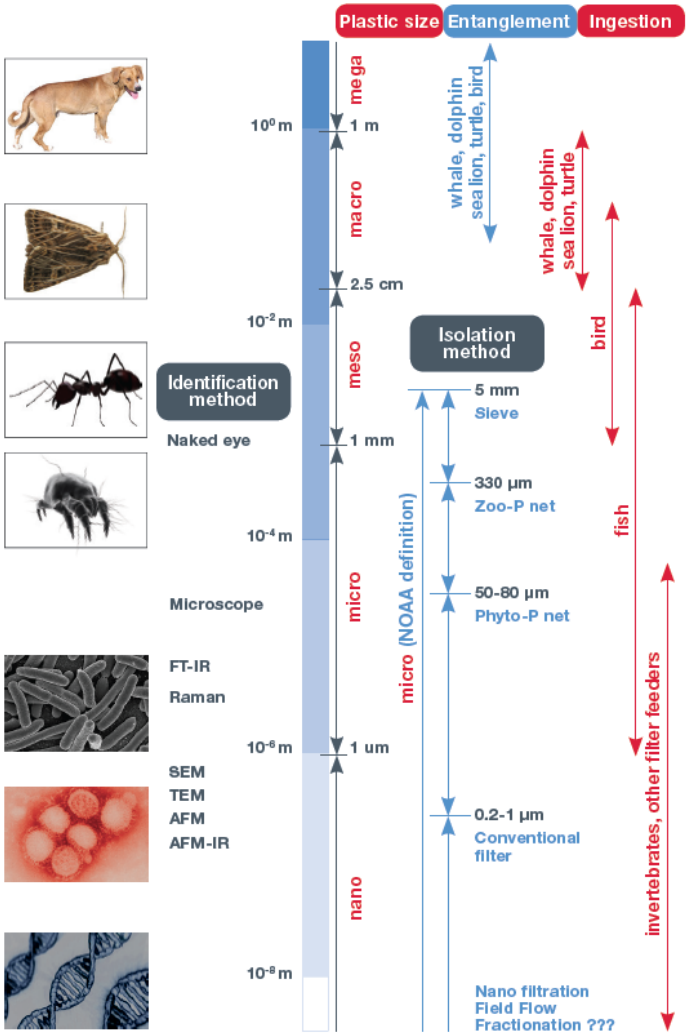
Secondary microplastics



Sand beach (Geoje/KIOST)



Sewage sludge (Zubris & Richards, 2005)



FT-IR Fourier-transform infra-red spectroscopy, Ramon Spectroscopy, SEM scanning electron microscopy, TEM transmission electron microscopy, AFM atomic force microscopy, AFM with IR

Source: GESAMP

Sampling and isolation:

- Mega- & macro -sizes – direct observation
- Meso-size – sieving
- Micro-size – towed plankton nets
- Nano-size – filtration

Direct external effects:

- Mega- & macro–sizes – (entanglement) whales, seals, dolphins, turtles, fish, birds
- Meso-size – unknown
- Micro-size – unknown
- Nano-size – unknown

Direct & indirect internal effects (ingestion):

- Macro–size – whales, seals, dolphins, turtles & birds
- Meso-size – birds, fish & invertebrates
- Micro-size – fish, invertebrates & other filter feeders
- Nano-size – invertebrates & other filter feeders

WESTPAC: Building Blue Partnerships

Priorities & Areas of Action

United Nations Educational, Scientific and Cultural Organization | Intergovernmental Oceanographic Commission | Sustainable Development Goals

WESTPAC
Advancing Knowledge for a Healthy Ocean

- Ocean processes and climate change
- Marine biodiversity and seafood security
- Ocean ecosystem health
- Emerging ocean science issues (**Ocean Acidification, Microplastics**)

- *Strengthen **science-policy interface** for ocean governance*
- *Develop **sustained ocean observations and services** for maritime safety*
- *Safeguarding **marine biodiversity and ecosystem health** for green development*
- *Bolster **institutional capacity** for the Future We Want*

WESTPAC: Building Blue Partnerships

Microplastic Research & Monitoring

United Nations Educational, Scientific and Cultural Organization

Intergovernmental Oceanographic Commission

Sustainable Development Goals

Distribution, Source, Fate and Impacts

Microplastics Monitoring Pilot Sites