Next Steps for Science in San Francisco Bay & California

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RMP: Partnership to monitor the health of the Bay

Science leadership on microplastics

RMP Strategy:
• sfei.org/projects/microplastics
Microplastics: Higher Priority for the Bay

Risk-based evaluation

• Widely detected
• Impacts on wildlife uncertain
• Production is increasing
• Very persistent
• Extremely difficult to clean up
• No safe discharge according to E.U.
Ongoing RMP Study: Microplastics in Mussels & Clams
New RMP Study: Understanding Urban Stormwater
Recommended Focus for Future Work

Urban stormwater monitoring
• Where should we focus efforts?

Green stormwater infrastructure
• How effective is it?

Monitoring to track trends
• Are solutions working?
Microplastics Measurement Methods Evaluation Study

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BACKGROUND

We need standardized methods

- Different methods used prevents comparisons among studies
- California needs drinking water method
- Methods for other types of samples needed for ocean microplastics strategy

April 2019 Microplastics Workshop

- Gain a better understanding of how microplastics are currently measured
- Developed plan to evaluate and standardize methods
Create blind samples to be analyzed by multiple laboratories

- How accurate is each lab?
- How repeatable are measurements?
  - Repeatable by same lab
  - Repeatable across labs with different levels of experience
- How expensive is it?
STUDY DETAILS

Over 20 labs from five countries participating

Four sample types
  • Clean water
  • Dirty water
  • Sediment
  • Fish tissue

Five identification methods
SAMPLE DETAILS

Samples have a known amount of plastic

Four types of plastic, four sizes

- 1-10 microns
- 10-100 microns
- 100-300 microns
- 300-1000 microns

Two shapes: Pellets and Fibers

Include “false positive” non-plastic material
STUDY AUGMENTATIONS

Many Factors Can Affect Results

Leveraging core study to test

Examples:

• Alternative methods to extract microplastics from samples
• Automated detection
• Altering the target material
SCHEDULE FOR THE FUTURE

Nov 2019: Prepare samples, train labs
Dec 2019: Distribute samples to labs
Apr 2020: Receive lab data and begin analysis
Jun 2020: Workshop to review results, recommendations for state
Sept 2020: Final report
Thank you

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