

Plastic Pollution Presents Prodigious Problems

Can we trace the plastic pathways to beaches and coastal waters to minimize the impact of these pollutants?

RESEARCHER BIO:



Samreen Siddiqui
Post doctoral Scholar, OSU

Bio: I am an aquatic ecotoxicologist with research focus on estuarine model species with pesticide and plastic exposures along the salinity gradient. I have an interdisciplinary background including big data analysis, modelling using R, and Arc GIS.



Learning Plan Components

Lesson 1:
History of Plastics

Lesson 2:
Impacts of micro and nano plastics on marine organisms

Lesson 3:
The effects of plastics on humans

Lesson 4:
The search for solutions: Community Solutions and Actions

Extensions

- Awareness Poster
- Beach Clean-Up
- Letter to local government

TEACHER BIOS:

Jim Grano – teacher, 33 yrs; 12 yrs post-retirement Watershed Studies Education Program Coordinator; former OCSTEM-Hub mentor teacher; currently Siuslaw Watershed Council VP & Education/Outreach chair.

Eva Ahumada- 8th grade math teacher at Taft high school 7-12 for 5 years. Major in Mathematics, Masters in Math Education and Curriculum and Instruction

Explanation of Anchoring Phenomenon

Plastics are everywhere in our daily lives, especially single-use plastic products, and we frequently observe them as marine debris. We must understand their pathways to our beaches and coastal waters to in order to minimize the volume of these harmful pollutants in our marine and terrestrial ecosystems.

This marine research matters because:

Plastic pollution has become an eco-crisis with the increasing use of plastic in our everyday lives, especially single-use products. Recent research demonstrates the negative impacts of plastic on aquatic organisms' growth, behavior and physiology. There is a crucial need to raise awareness and take action on this issue.

Because of ORSEA:

We collaborated as professionals to produce a ready-to-teach comprehensive four lesson unit on plastic pollution and it's effects on the marine environment.

Classroom:

The classes piloting these lessons are in Ahumada's 8th grade math class as an end of the year enrichment activities. Taft is a Title 1 public school, with >95% of students qualifying for free and reduced lunch.