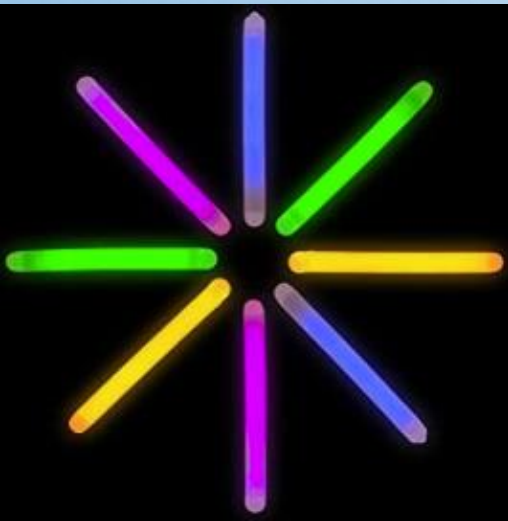


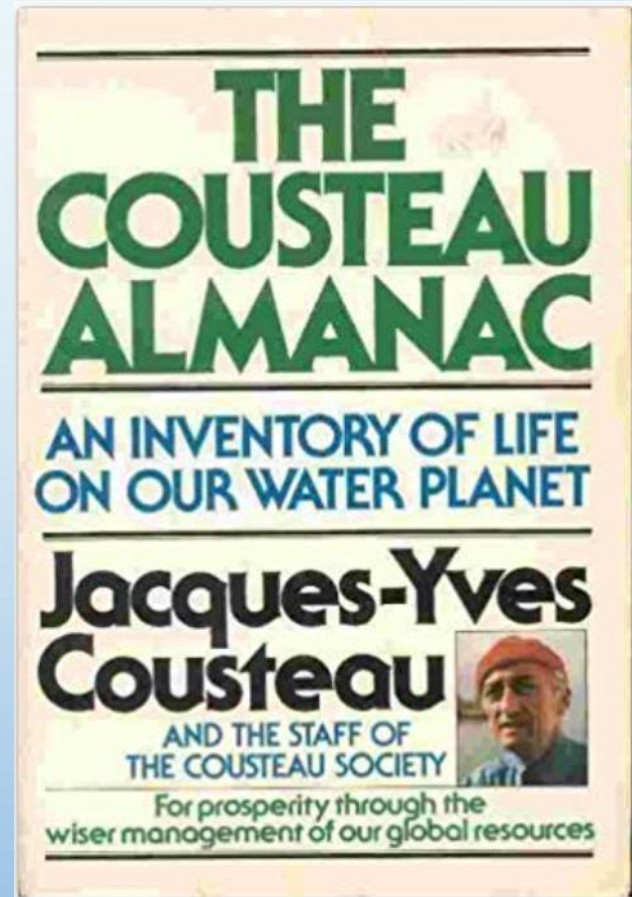


Too much of a good thing!

Consumer Plastics in the Marine Environment

San Antonio Bay Partnership's
10th Anniversary Conference
January 22, 2020







This young whale died with 88 pounds of plastic in its stomach

The animal in the Philippines likely starved because its stomach was full of plastic, not food.



Researchers pulled nearly 90 pounds of plastic waste out of the stomach of a young cuvier beaked whale that died in the Davao Gulf of the Philippines on Saturday, March 16. The whale starved to death because of the plastic in its belly.

PHOTOGRAPH BY MARY GAY BLATCHLEY, D'BONE COLLECTOR MUSEUM

SCIENCE

A Troubling Discovery in the Deepest Ocean Trenches

In the Mariana Trench, the lowest point in any ocean, every tiny animal tested had plastic pollution hiding in its gut.

ED YONG FEB 27, 2019



Every year, at least 8 million tons of plastic is going into the world's oceans.

**That's equal to 1
garbage truck of
plastic every minute.**



**If no changes are made, there will be more
plastics than fish in the oceans by 2050.**

Ellen MacArthur Foundation, January 2016



CALLER.COM

Spring break 2019: 30 tons of trash is left behind on Corpus Christi, Port Aransas beaches





Skip The Plastic

Published by Neil McQueen [?] · August 19 at 10:53 AM · 🌐

August 16, 2019 this photo of a redfish that swallowed a plastic bottle was taken by Beatrice Ybarra Benavides from Port Lavaca. She caught the fish in Lavaca/Matagorda Bay.



41,540

People Reached

7,420

Engagements

[Boost Post](#)

👍👎👤 103

18 Comments 142 Shares



Research article

The world is your oyster: low-dose, long-term microplastic exposure of juvenile oysters



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Long term exposure
Lysosomal stability
Condition index
Histology
Polystyrene microbeads

ABSTRACT

Bivalve filter feeders, such as oysters, filter large volumes of water and are particularly exposed to microplastics (MP). Consequently, these animals digest and assimilate high levels of MP in their bodies that may likely impact their physiology, and potentially affect shellfish stocks, benthic habitats and, indirectly, the health status of the marine ecosystem and human consumers. In this study we exposed juvenile oysters, *Crassostrea gigas*, to 3 different MP concentrations (10^4 , 10^5 and 10^6 particles L⁻¹), represented by 6µm Polystyrene (PS) microbeads, compared to a control treatment receiving no MP. The study ran for a period of 80 days to test for the impacts of MP on growth, Condition Index and Lysosomal Stability. From histological analysis, microbeads were detected in the intestines of exposed oysters and in the digestive tubules, but no cellular inflammatory features were observed over time. Weight and shell length remained comparable between the different treatments and control. We found that Condition Index in the highest concentration increased initially but significantly reduced over time. The oyster in the highest MP exposure also showed the lowest mean Lysosomal Stability score throughout the experiment. Lysosomes play a vital role in the cells defense mechanisms and breakdown of constituents, crucial for the oysters' wellbeing. Most importantly, we detected an increased mortality in those oysters who were chronically exposed to the highest loads of MP.

1. Introduction

It is well established that the marine environment is widely polluted with MPs (<5 mm) and that this issue poses a serious threat to marine biota [1, 2]. Bivalve filter feeders living in coastal waters, such as oysters, are particularly exposed to MPs because of their feeding mode and enormous filtration capacity; individual oysters can filter ~5–25 L of seawater h⁻¹ [3, 4, 5], making them likely to ingest MPs [4, 6]. Many specimens have been found to contain high loads of MPs in the field [1]. Microplastics in oysters are directly related to the population density within the watershed. Hooded oysters, *Saccostrea cucullata*, along the Pearl River Estuary (China) near urban areas contained statistically significantly more MPs than those near rural areas [7]. Bivalves ingest

and assimilate high levels of MPs in their bodies that may likely impact their physiology, and potentially affect both shellfish stocks, habitats and, indirectly, the health status of the marine ecosystem and human consumers [3, 8, 9, 10, 11]. Bivalves are recommended as ideal sentinel species in several marine monitoring programmes, including those supported by international bodies such as ICES and OSPAR [12]. As a result, bivalves have been recommended as a bioindicator for monitoring MP pollution [13]. They are typically chosen for exposure experiments due to their important role in the economy and the ecosystem. Several experimental studies have shown cellular responses (e.g. loss of lysosomal membrane integrity, oxidative stress, DNA damage) or negative effects on feeding, growth and reproduction of adult bivalves, such as oysters, mussels and clams, after exposure to relatively high concentrations of

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DISCOVER CHEMISTRY

Press Pacs

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FOR IMMEDIATE RELEASE

ACS News Service Weekly PressPac: September 25, 2019

Plastic teabags release microscopic particles into tea

"Plastic Teabags Release Billions of Microparticles and Nanoparticles into Tea"
Environmental Science & Technology

Many people are trying to reduce their plastic use, but some tea manufacturers are moving in the opposite direction: replacing traditional paper teabags with plastic ones. Now, researchers reporting in ACS' *Environmental Science & Technology* have discovered that a soothing cup of the brewed beverage may come with a dose of micro- and nano-sized plastics shed from the bags. Possible health effects of ingesting these particles are currently unknown, the researchers say.



Plastic teabags release nano- and microplastics into the beverage during brewing.
 Credit: Africa Studio/Shutterstock.com

“To conduct their analysis, the researchers purchased four different commercial teas packaged in plastic teabags. The researchers cut open the bags, removed the tea leaves and washed the empty bags. Then, they heated the teabags in containers of water to simulate brewing conditions. Using electron microscopy, the team found that a single plastic teabag at brewing temperature released about 11.6 billion microplastic and 3.1 billion nanoplastic particles into the water. These levels were thousands of times higher than those reported previously in other foods.”

PACKAGING AWAY THE PLANET

U.S. GROCERY RETAILERS AND THE PLASTIC POLLUTION CRISIS



www.greenpeace.org/usa/reports/packaging-away-the-planet-2019

2019 SUPERMARKET PLASTICS SCORECARD



Criteria:

- Policy
- Reduction
- Initiatives
- Transparency

LOCAL // HOUSTON

Plastics industry accounts for one-fourth of Houston-area industrial air pollution, report finds

Perla Trevizo and Erin Douglas | Sep. 5, 2019 | Updated: Sep. 5, 2019 11:08 a.m.





Skip the Plastic

skiptheplastic.surfrider.org

facebook.com/skiptheplastic





Julie Findley



Dr. Sylvia Earle



Tony Amos

Bag Heroes



DMC Green team



Girl Scout Troop 96001



Corpus Christi
Stormwater Dept.



Coastal Bend Audubon
Society



Natural Grocers



Alexa Obregon
& Todd Jarrell



TAMU-CC Islander
Green Team



Casey Lain



Jeff Wilson







LEGAL, PLASTIC POLLUTION

AUGUST 06 2019

Surfrider Joins Petition Demanding EPA Regulate Pollution from Plastics Manufacturing

by [Jennie Romer](#)

Last month, Surfrider joined a [legal petition](#) along with more than 270 community and conservation organizations demanding that the U.S. Environmental Protection Agency eliminate plastic pellet discharge and adopt strict pollution limits for toxic waste water from industrial plants that create plastic.

The petition calls for the EPA to take **four specific actions** under the Clean Water Act: 1) **Prohibit the discharge of plastic pellets** and other plastic materials in industrial stormwater and wastewater, 2) Update Effluent Limitations Guidelines and Standards for new facilities to **eliminate the discharge of toxic priority pollutants** from wastewater and stormwater streams, 3) For existing facilities, put into effect Effluent Limitations Guidelines and Standards for **pollutants of concern not currently regulated**, and 4) Update current Effluent Limitations Guidelines and Standards for existing facilities to **reflect advances in detection and treatment technologies** since the last revisions a decade ago.



OCEAN FRIENDLY RESTAURANTS



Restaurants participating must follow the first five criteria:

- No expanded polystyrene use (aka Styrofoam).
- Proper recycling practices are followed.
- Only reusable tableware is used for onsite dining, and disposable utensils for takeout food are provided only upon request.
- No plastic bags offered for takeout or to-go orders.
- Straws are provided only upon request.

And choose a minimum of two of these criteria:

- No beverages sold in plastic bottles.
- Discount is offered for customers with reusable cup, mug, bag, etc.
- Vegetarian/vegan food options are offered on a regular basis
- All seafood must be a 'Best Choice' or 'Good Alternative' as defined by [Seafood Watch](#) or certified as sustainable.
- Water conservation efforts, such as low-flow faucets and toilets, are implemented.
- Energy efficiency efforts such as LED lighting and Energy Star appliances, are in place.

Restaurants who meet all of the criteria are recognized as a Platinum Level Ocean Friendly Restaurant.

Ocean Friendly Restaurants in the Coastal Bend

Texas State Aquarium's Pepsi Shoreline Grill

University of Texas Marine Science Institute's cafeteria

GLOW in Rockport

Water Street Sushi Room in Corpus Christi

La Playa Mexican Grille in Port Aransas

Scuttlebutt's Bar & Grill in North Padre Island

And more coming in 2020!





SUSTAINABILITY REPORT



USA 2018
Youth
Sailing World
Championships



CORPUS CHRISTI SUSTAINABILITY EVENT PLAN



Developed by the Corpus Christi Yacht Club Green Team
for the
2018 Youth Sailing World Championships, July 2018



March 2019

Event Organizer's Guide on Maximizing Recycling and Composting (and Diverting Waste Away from the Landfill)

When planning a large event, maximize the amount of waste that goes to the landfill.

Reuse

When they can be used, wax treated paper cups are an option.

Recycling

Contact the City of Corpus Christi before the event to arrange:

- o Solid Waste Services: <http://www.cctexas.org>
- o Republic Services: <http://www.republicservices.com>

Types of Materials to Avoid

- o Styrofoam cups, plates
- o Compostable cups at composting systems
- o Christi and cups and city's recycling facility
- o Any plastic cups, plates

Preferred Plates, To-Go Containers

Encourage all food vendors to create by giving containers, utensils and cups examples:



Dell wax paper sheets



Paper plates



Paper corrugated clamshells



March 2019



March 2019

Wax treated paper cups



Recycling Volunteers & Signage

At each waste station, post signs on walls or the bins themselves, and have a volunteer at each station to remind people which items are recyclable.

These are examples of signs that tell customers which items are acceptable in each type of bin:



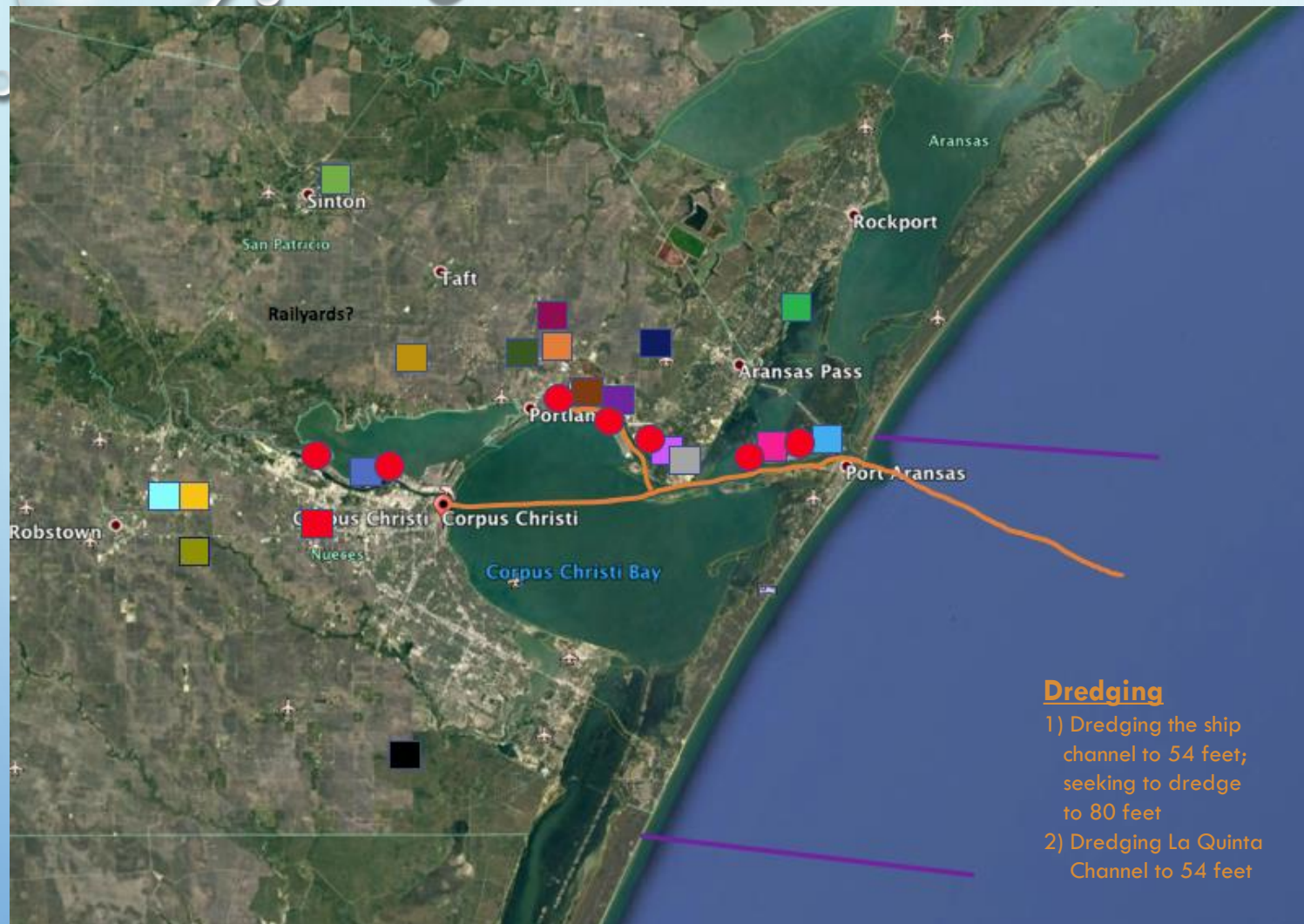
You will need to create signs with the applicable items for your event. For assistance contact: -----



Member Organizations

Clean Economy Coalition
Coastal Bend Audubon Society
Earthworks
For the Greater Good
Islander Green Team
Port Aransas Conservancy
Portland Citizens United

San Antonio Bay Estuarine Waterkeeper
Sierra Club
Surfrider Foundation – Texas Coastal Bend Chapter
Texas Campaign for the Environment
Texas Drought Project
Texas Environmental Justice Advocacy Services
Our Revolution



New or Planned Facilities

- 1) Epic Y fractionator
- 2) Permico fractionator
- 3) Tank Farm near CC Airport
- 4) M&G Polymers, now CC Polymers
- 5) Steel Dynamics
- 6) ExxonMobile-SABIC
- 7) Exxon east storage terminal
- 8) Cheniere expansion
- 9) Lone Star VLCC Terminal
- 10) Moda Midstream
- 11) Buckeye Midstream expansion
- 12) Bluewater tank farm
- 13) Chapman Ranch (Trafigura) tank farm
- 14) Axis Midstream VLCC Terminal

CCREDC Qualified Sites

- 15) 1,700 acre megasite
- 16) 1,300 acre megasite
- 17) 3,800 acre Port property
- 18) 250 acre site
- 19) LyondellBassel expansion

Desalination Plants

- 1) Port-Harbor Island
- 2) Ingleside
- 3) Port-La Quinta
- 4) CC Inner Harbor
- 5) CC Polymers
- 6) CC-La Quinta
- 7) Seven Seas

Dredging

- 1) Dredging the ship channel to 54 feet; seeking to dredge to 80 feet
- 2) Dredging La Quinta Channel to 54 feet

Offshore Terminals


- 1) Trafigura
- 2) Bluewater

Our bays are not industry's toilet!





4 alternatives and the plastic waste you save per year

 turtelclean

1 reusable
bag



=

783 plastic
bags



1 reusable
bottle



=

83 plastic
bottles



1 reusable
cup



=

1256 plastic
cups



1 reusable
straw



=

295 plastic
straws



protect what you love

A photograph of a coastal landscape. In the foreground, a large, dense bush of green plants with bright yellow flowers grows on a sandy dune. The background shows more sand dunes, some sparse vegetation, and the ocean under a clear blue sky. The scene is brightly lit, suggesting a sunny day.

**Don't Mess With
Texas Beaches.**



coastalbend.surfrider.org