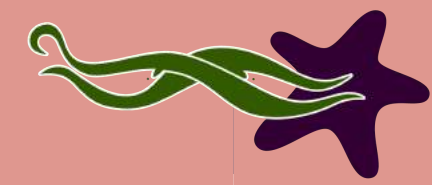


MICROPLASTICS AND MARINE DEBRIS INITIATIVE

QUARTERLY REPORT

Ucluelet
Aquarium
Society



INTRODUCTION

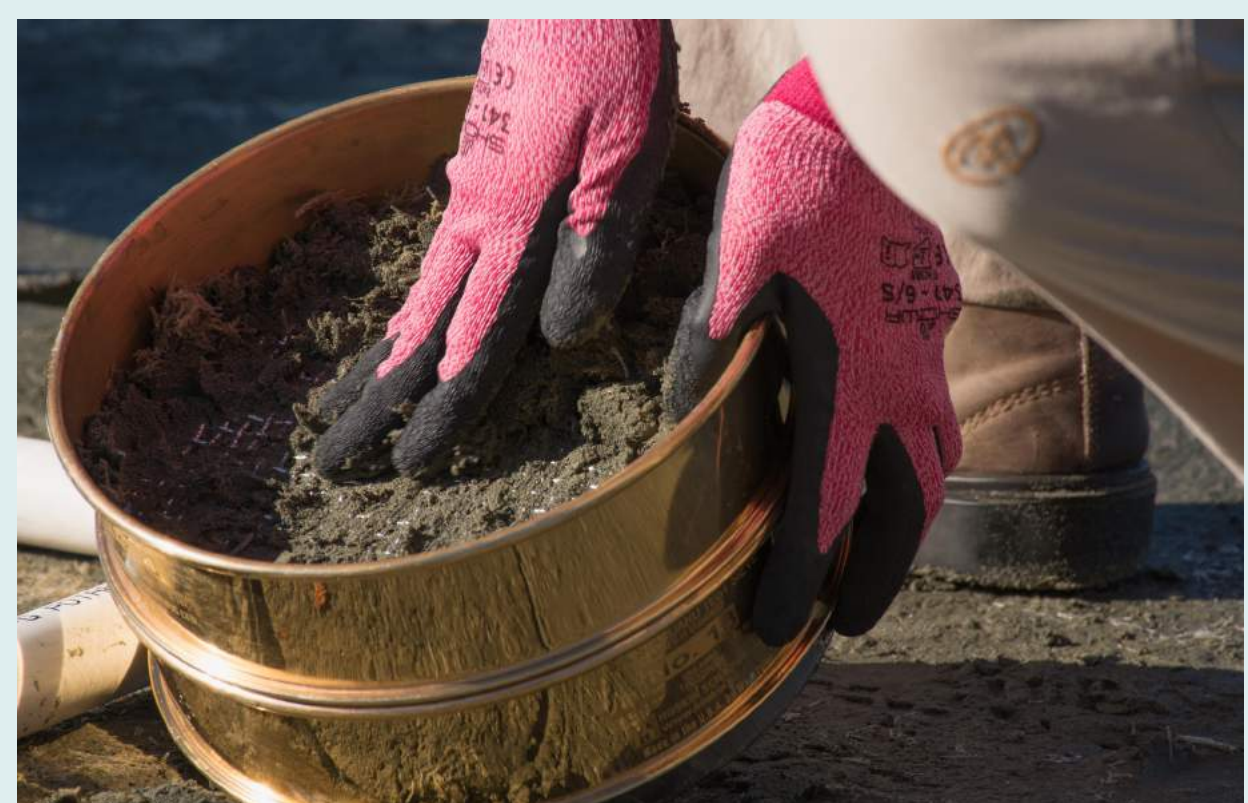
Since August 2017, the Ucluelet Aquarium has been collecting data on microplastic pollution in sediment, along the local beaches in Ucluelet, Pacific Rim National Park, and Tofino. As one of the first projects in British Columbia to scientifically monitor microplastic pollution in coastal sediments, we are learning about the distribution and type of microplastic pollution on our coast with the help of citizen scientists.

Thanks to our local partners Surfrider Pacific Rim, Parks Canada, Cedar Coast Field Station, West Coast Nest, and Raincoast Education Society, we have expanded our network of citizen scientists. The involvement of these participants allows us to teach a greater number of local and international visitors about the impact of microplastic pollution and spread awareness about the impacts of marine debris to a broader audience.

We hope the Microplastics and Marine Debris Initiative will continue to encourage both our local and global communities to limit single-use plastic items and find plastic alternatives.



Microplastics
Photo: Adam Baus

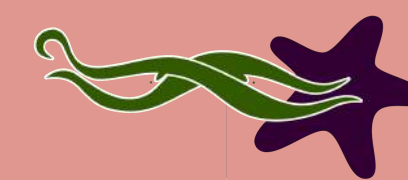


Microplastic sampling process.
Photo: Jessica Landsfield

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PRELIMINARY DATA

Our preliminary data (2017-2018) provides a snapshot of the prevalence, abundance and type of microplastics found on local beaches between Ucluelet and Tofino, B.C. Analysis of the initial data has led us to see potential trends and ask more questions. For example, 'Is there a seasonal difference in the abundance and type of microplastics present?'. By looking at the volume of our samples and comparing them over time, we see that this trend may be present (See Figure 1.) To answer more detailed questions about our study, we decided to alter our sampling procedure. For future sampling events, we will focus our efforts on collecting monthly microplastic data at Wickaninnish Beach, in the Pacific Rim National Park Reserve. Monthly samples will allow us to collect consistent data to help us answer more questions about the role and effects of microplastics while simultaneously allowing for public engagement and outreach at these public beaches.

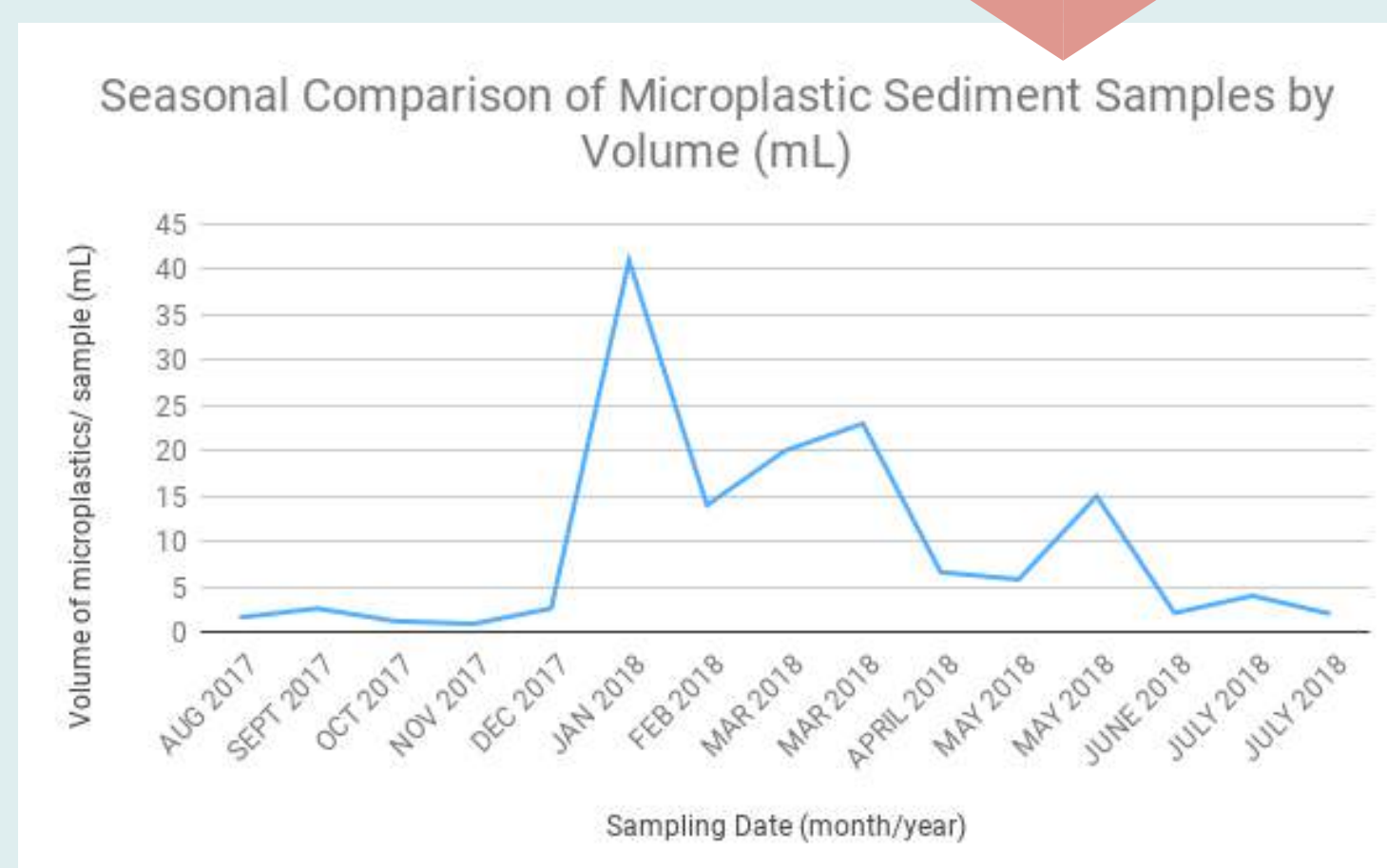


Figure 1. Total microplastic volume (mL) compared at seven beach sites between Ucluelet and Tofino between August 2017 and July 2019.

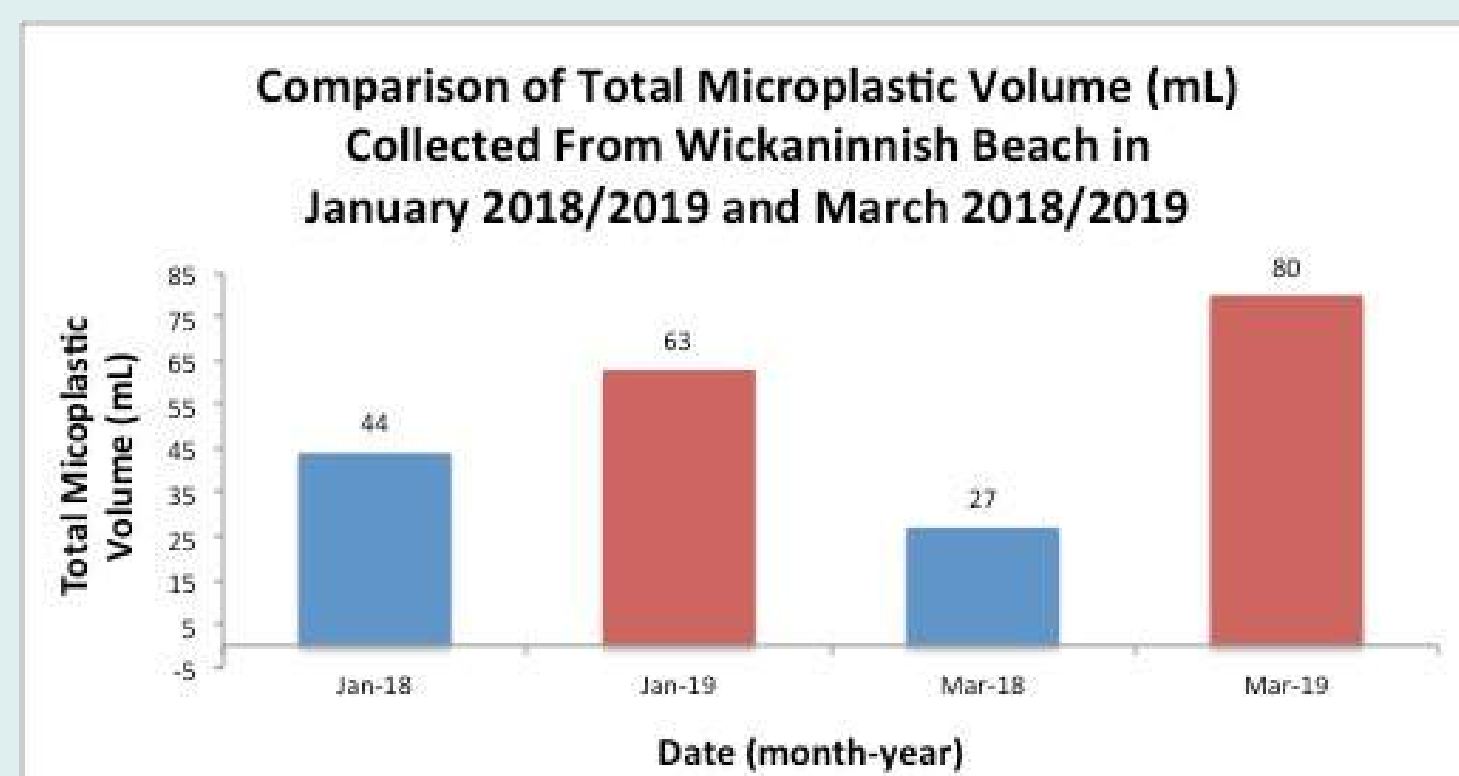


Figure 2. Comparison of total microplastic volume (mL) between January and March 2018 (blue), and January and March 2019 (red) from samples collected at Wickaninnish Beach.

2019 RESULTS

From January to April 2019 we have conducted four microplastic samples, and cumulatively collected over 400 mL of microplastics from 40 square meters along the high tide line at Wickaninnish Beach.

We have compared the total microplastic volume (mL) of samples at Wickaninnish Beach between January and March 2018 to January and March 2019 (Figure 2 above). This graph shows an increase in total volume of microplastics collected between years. The largest difference in total microplastics collected was between March 2018 and 2019 with a total increase of 63mL from 2018 to 2019. We are starting to see some trends emerge, and are excited for another year of sampling to further investigate our results.

Our February sample yielded the highest total volume of microplastics collected to date at 214mL (Figure 3.)! Big thanks to our citizen scientists that helped collect this sample consisting of 165mL of hard plastic, 44mL of nurdles and 5mL of styrofoam!

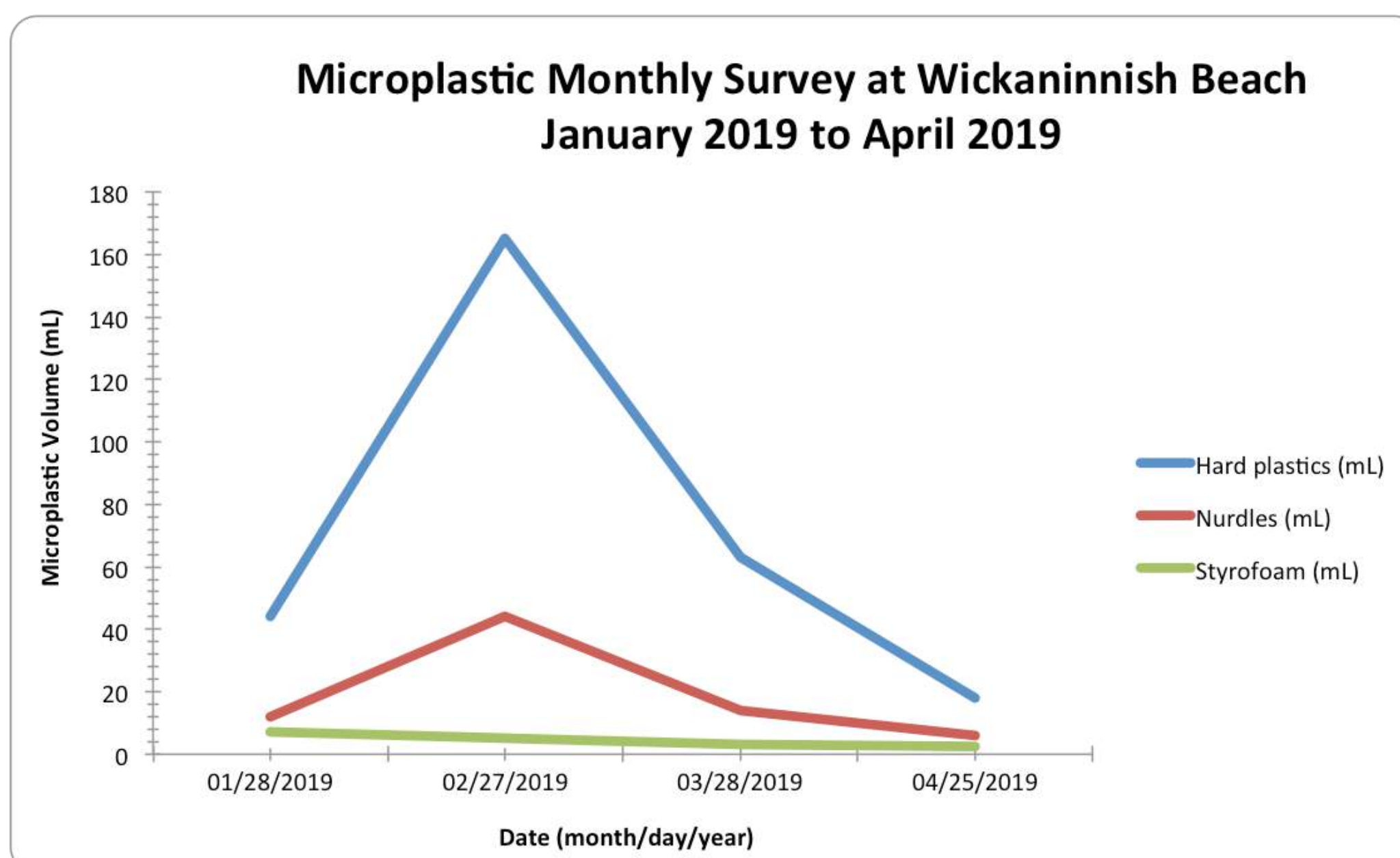
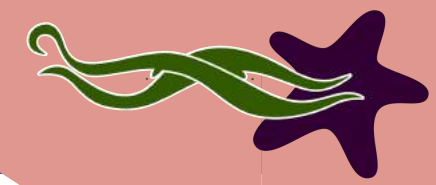


Figure 3. Microplastic volumes from four surveys between January and April 2019.

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PROJECT SNAPSHOT

Over the last 15 months we have trained over 80 citizen scientists, collected 23 samples at 7 local beaches, and participated in many outreach events, some which involved important leaders of change. In June, 2018 we supported MP Gord Johns campaign M-151, a national strategy to combat plastic pollution, a bill that was recently passed! In the summer of 2018, we had the opportunity to share our work on microplastics with the Minister of Environment and Climate Change Canada, Catherine McKenna. In 2018 the Ucluelet Aquarium also hosted two Plastic Free Markets. This unique market gave locals and visitors the opportunity to find alternatives to plastic and support a movement towards plastic free habits!

COME JOIN US!

Citizen science enables the public to make a direct contribution to research and gain insights about their environmental impacts. Citizen scientists also help researchers maximize the amount of data collected on a project!

With the help of citizen scientists, the Microplastic and Marine Debris Initiative has been successful in:

- 1) Increasing available information on microplastic pollution on the west coast of Vancouver Island.
- 2) Understanding the type and distribution of microplastic pollution in coastal sediment.
- 3) Learning about the ecological impacts of microplastics in local marine environments.
- 4) Sharing solutions and resources with the public about eliminating plastic consumption and waste

UPCOMING EVENT:

Plastic Free Market
July 2nd, 2019 530-830pm

Come join us to celebrate World Ocean's Day at the Ucluelet Aquarium! Come learn about the amazing marine life of the Pacific Northwest and find plastic alternatives to take home with you! We have vendors coming from Vancouver Island and Vancouver to bring you speciality items to reduce your plastic consumption!

Microplastic sampling dates at Wickaninnish Beach :

June 21st, 2019 @ 9:30am
July 23rd, 2019 @ 10:45am
August 26th, 2019 @ 10:45am

Meeting location: Kwisitis
Visitors Center Parking Lot

Please note these dates are subject to change due to weather or other aquarium events. Keep an eye on our facebook page for the most up to date information!

Thanks to our previous and current partners,
sponsors, and donors!

If you would like to support this project please
contact our marine debris coordinator:
marinedebris@uclueletaquarium.org

