

CMP Grant "Trash or Treat"  
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Final Report  
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The main objectives of the "Trash or Treat" grant project were to educate the South Texas Coastal Community on the impacts of marine debris, and encourage actions that mitigate damage to the region's coastal environments. The target audiences were: 1) 5th and 6th grade students; and 2) the South Texas Hispanic community. The Hispanic population is the largest cultural demographic in South Texas (59.7%, 2010 US Census), and is an audience that traditionally does not attend Mission-Aransas National Estuarine Research Reserve (NERR) outreach and education events.

This project was comprised of multiple components spanning two academic years and two grade levels (5th and 6th) at Flour Bluff Intermediate School located in Corpus Christi, TX in the Coastal Zone Boundary. These components included classroom instruction, beach cleanup, data analysis and art instruction, and festival outreach. All deliverables and timelines were met.

- **Classroom instruction:** NERR staff visited 5th and 6th grade students in the classroom at Flour Bluff Intermediate School to present an interactive program on the topic of marine debris and its impact on the local environment. Multiple resources were used for this classroom presentation including NOAA "Trash Talk" videos, Texas GLO data from their Adopt-A-Beach clean-ups, and various marine debris resources from the NERR. In addition, students sorted representative collections of marine debris that were collected as part of the NERR marine debris accumulation study. In Spring 2016, 760 students participated in the program. Because the start of the grant was initially delayed, project staff was able to deliver the program to an additional 382 5<sup>th</sup> grade students in the Fall 2016. The total number of students (1,142) was 163% of the total number of students (700) the project initially hoped to reach. Pre- and post-surveys were conducted with 71% of the 5<sup>th</sup> graders who participated in the program in Fall 2016.
- **Beach cleanups:** In Spring 2016, 34 students (5th and 6th graders) from the Flour Bluff Intermediate Nature Club participated in a beach clean-up at "Fish Pass" on Mustang Island. Pictures of the event as well as the data collected by the students was given to GLO. A video of the event was also created by staff from the NERR, posted on the NERR Facebook page and shared with the GLO. During the clean-up, students worked and interacted with the NERR Stewardship Coordinator, who was conducting a marine debris accumulation project. The NERR Coordinator talked to the students about her research and the students compared various items they had collected with the types and abundances of marine debris the Coordinator had collected.
- **Data Analysis:** In the Spring and Fall visits, students were given collections of marine debris that had been gathered as part of the NERR marine debris accumulation. The students then compared their debris collections to the NERR collection and found their debris was similar and representational of the types and abundance of items the NERR had found. One caveat, the items that could present a health or safety threat were removed before the samples were given to the students. Students sorted their collections according to material composition and then graphed their results. Students then compared their charts with charts created using GLO data generated from the preceding year's beach clean-up at the site closest to their site. Project staff discussed what was similar, what was different and what factors might have contributed to these differences. The effect of tides, currents and differing amounts of human-use of sites

were all factored into the discussions. In addition, the students were surprised to find so many items they use frequently in their personal lives. The number of balloons and balloon ribbons surprised many of them, as well as the very large number of single-use bottle caps. In the Fall visits, project staff were able to share the results of their classmates clean-up the previous Spring, and discuss why their collections might have been different. In particular, the discussion focused on the effect of high Spring tides and what happens to marine debris on the beach during particularly high tides (a large amount gets washed back into the ocean). Students were also asked to document the number of turtle bites (triangular- shaped holes seen frequently in plastic items recovered on the beach).

- **Art Project and Dia de Los Muertos Outreach:** To help engage the general public in marine debris outreach, students entered a school-wide marine debris art contest. Several hundred pounds of marine debris that had been sorted and washed by University of Texas Marine Science Institute (UTMSI)/NERR staff were delivered to Flour Bluff Intermediate School for the students to use in their art pieces. “The Marine Debris Lab” (as the room came to be known) was open to students before and after school on certain days and students took the vast majority of the debris that was delivered to utilize in their art pieces. 63 art pieces were turned in and the winners were announced on October 20. Judges consist of both scientists from UTMSI and the NERR as well as local artists (including Sheila Rogers, who had created art from marine debris that was displayed at the Texas State Aquarium). 12 winners had their artwork displayed at the marine debris booth sponsored by UTMSI and the NERR at the Corpus Christi Dia de los Muertos Festival on October 29, 2016. There was extensive media coverage (both on local television stations and on their websites) about the art contest at the school. At the Festival, the artwork was very popular. It helped draw people in to our booth, and enabled project staff to educate many people on the problem of marine debris. The booth was located in the Children’s Area of the Festival, and children were able to decorate a reusable canvas bag while they learned about the problem of marine debris, especially single-use plastic items (including single-use plastic bags, bottles, utensils, etc.). The outreach event was highly successful in both the number of people interacted with (over 2,000) as well as the number of people who were not aware of UTMSI or the NERR, and the problem of marine debris.

### **Pre- & post-test Results**

A simple 4-question test was administered to 273 of the 5<sup>th</sup> graders receiving the marine debris presentation. Although the program was administered to 382 5<sup>th</sup> graders, several class sections had a shortened time period due to lunch or dismissal times. Therefore, project staff were unable to administer both the pre- & post-test to every student. The test assessed their knowledge of the definition of marine debris, problems caused by marine debris, where marine debris originates, and various ways to prevent marine debris.

Pre-Survey Results: 42% of the students were able to identify marine debris as something, physical (trash, plastic, aluminum, etc.) that is in the ocean that doesn’t belong there. The answer “pollution” was not accepted as a correct answer. 51% were able to identify marine debris as something being generated by humans. 54% were able to identify some of effect of marine debris (“they kill turtles,”

“animal injuries,” “the death of animals”). 50% were able to identify some way to reduce marine debris (acceptable answers included recycling, disposing of trash properly, cleaning up the beach as well as some more sophisticated answers such “reducing plastic use.”)

Post-Survey Results: 84% of the students were able to identify marine debris as something physical (trash, plastic old boats, etc.) in the ocean. 89% were able to identify humans as the source of marine debris. 83% were able to identify some effect of marine debris and many of the answers were much more detailed (“they eat plastic and it makes them sick,” etc.). 95% were able to give some example of an action that could help prevent marine debris (acceptable answers included, “the 3 Rs,” “use less plastic,” “recycle,” “clean the beach,” as well as several others).

Overall, the pre- and post-survey assessment as well as the in-class discussions indicate that students retained a large amount of the information as to the causes and effects of marine debris. In addition, because there were multiple points of contact between staff and many of the students, including the classroom presentations, clean-up and art contest, the issue of marine debris was talked about at multiple points during both school years that the grant operated in. This repeated exposure helped increase the amount of time that marine debris was a focus for students.

### **Project Results**

This project exceeded NERR staff expectations in almost every aspect and strengthened the NERR’s relationship with a neighboring school in a highly meaningful way. Project staff worked closely with the principal, three teachers and more students than originally anticipated. Both the administration, staff and students were extremely positive about the project, and the administration and staff felt that, in addition to the valuable information and activities in which the students participated, it brought the school valuable community publicity through both the news media and the Festival participation. NERR staff are looking into additional ways to continue this project without external funding due to the projects success.

	Current Federal/ CMP Budget	Billed to Date	Obligated* CMP Budget	Remaining CMP Budget
Personnel	\$ 11,735.00	\$ 11,735.00	\$ -	\$ -
Fringe	\$ 3,011.00	\$ 3,009.35	\$ -	\$ 1.65
Travel	\$ 260.00	\$ 260.00	\$ -	\$ -
Supplies	\$ 2,070.00	\$ 2,070.00	\$ -	\$ -
Equipment	\$ -	\$ -	\$ -	\$ -
Contractual	\$ -		\$ -	\$ -
Other	\$ 50.00	\$ 50.00	\$ -	\$ -
Subtotal	\$ 17,126.00	\$ 17,124.35	\$ -	\$ 1.65
Indirect Costs	\$ 2,568.00	\$ 2,568.00	\$ -	\$ -
Totals	\$ 19,694.00	\$ 19,692.35	\$ -	\$ 1.65

	Current Local Budget	Billed to Date	Obligated* Local Budget	Remaining Local Budget
Personnel	\$ 9,928.00	\$ 11,260.00	\$ -	\$ (1,332.00)
Fringe	\$ 2,337.00	\$ 3,394.00	\$ -	\$ (1,057.00)
Travel		\$ -	\$ -	\$ -
Supplies	\$ 750.00	\$ -	\$ -	\$ 750.00
Equipment	\$ -	\$ -	\$ -	\$ -
Contractual	\$ -	\$ -	\$ -	\$ -
Other		\$ -	\$ -	\$ -
Subtotal	\$ 13,015.00	\$ 14,654.00	\$ -	\$ (1,639.00)
Indirect Costs		\$ -	\$ -	\$ -
Totals	\$ 13,015.00	\$ 14,654.00	\$ -	\$ (1,639.00)

	Current 3rd Party Budget	Billed to Date	Obligated* 3rd Party Budget	Remaining 3rd Party Budget
Personnel	\$ -	\$ -	\$ -	\$ -
Fringe	\$ -	\$ -	\$ -	\$ -
Travel	\$ -	\$ -	\$ -	\$ -
Supplies	\$ -	\$ -	\$ -	\$ -
Equipment	\$ -	\$ -	\$ -	\$ -
Contractual	\$ -	\$ -	\$ -	\$ -
Other	\$ -	\$ -	\$ -	\$ -
Subtotal	\$ -	\$ -	\$ -	\$ -
Indirect Costs	\$ -	\$ -	\$ -	\$ -