



2627 Avenue O | Galveston, Texas 77550 | 409-770-0722
artistboat.org | info@artistboat.org

Inspiration and education through unique coastal experiences

CMP Cycle 20 “Bucket Brigade –What is in our water?” Final Report

Project Name: Bucket Brigade – What is in Our Water?

Contract No. 16-057-000-9101

October 1st, 2015 - December 31st, 2017

PURPOSE

Artist Boat used CMP Cycle 20 funding to engage beachgoers on Galveston Island in place-based learning to promote improved perceptions and attitudes toward water and sediment quantity and quality on Texas Gulf waters and beaches. Specifically, the project was designed to enhance the public’s understanding of *Sargassum*, suspended sediments in the water column, turbidity and plankton, and human impacts. As part of this program Artist Boat provided Bucket Brigade interpretive tours at beach access points, created a Marine Debris Task Force to develop an action plan to reduce the introduction of marine debris, hosted an annual World Oceans Day Festival and Art Contest, and held biannual Beautify the Bucket competitions during Adopt-A-Beach. Artist Boat requested and received an extension on the original grant period, and provided the program over two years instead of one year. This report reflects the original tasks and deliverables as well as the modified tasks and deliverables agreed upon for the extended period.

TASK 1

ESTABLISHING THE BUCKET BRIGADE

Year 1: Artist Boat hired a Bucket Brigade Education and Volunteer Coordinator, ten (10) Texas A&M University students as Interpreters, and recruited 20-50 Volunteer Bucket Brigade Interpreters. The National Association of Interpretation (NAI) certified that all Interpreters were trained to the NAI standard. The Bucket Brigade Coordinator then used the NAI standard to train all subsequent interpreters and volunteers to deliver tours. Artist Boat developed a curriculum and training manual for Interpreters and Volunteers to provide tours for the public.

Year 2: Artist Boat continued the Bucket Brigade by hiring 2-5 Texas A&M University students as Interpreters and training Interpreters and Volunteers to NAI and place-based education standards.

Achievements and Lessons Learned:

Artist Boat hired ten Texas A&M University at Galveston students for Interpreter position in December of 2015 and arranged for them to be trained and certified by the National Association of Interpretation (NAI). Future Interpreters were trained to NAI standards by the Bucket Brigade Coordinator but did not receive certification. Interpreter numbers were reduced in the 2017 program to maximize locations with greater visitor density at Galveston beaches in the spring and summer.

Interpreter turnover was the largest challenge to achieve our grant deliverables. While the Interpreters enjoyed the programming, they often underestimated the effort required to balance the position and school during the spring semester. This resulted in six Interpreters leaving the program before the end of the spring 2016 season. Interpreters, particularly those who graduated in May 2016, also left the program after finding permanent employment or a summer research program, resulting in four more Interpreters leaving before the end of the 2016 summer season. This issue was addressed in Year 2 by splitting the position into spring and summer postings. This change helped in the 2017 summer season, but the 2017 spring Interpreters still failed to complete the season.

Volunteer Interpreters presented another set of challenges for the Bucket Brigade program. Over the two-year period, fifty-seven individuals expressed interest in the Bucket Brigade program and requested to be informed of trainings and volunteer opportunities. Of those fifty-seven, the Bucket Brigade Coordinator trained thirty-three Volunteer Interpreters according to the Bucket Brigade Training Manual and NAI standards (Table 1).

Year	2016	2017 (spring)	2017 (summer)	2017 (Total)	Total (Both Years)
Volunteer Trainings	11	2	0	2	13
Volunteers Trained	29	4	0	4	33

Despite the interest and training, the role of the Volunteer Interpreter as originally proposed was unrealistic. Originally, volunteers were expected to lead their own tours independent of Interpreters and thus double the tour offerings and participants reached. However, at least at this time, the Volunteers lack the confidence or commitment to lead tours on their own. The volunteers preferred to work with a staff Interpreter to pull from their knowledge and more effectively engage beachgoers. Most volunteers also preferred to only work a half-day (3 tours) rather than the full day (6 tours) due to the heat. Furthermore, not all 33 trained volunteers signed up to help with tours after training, a few only came 1-2 times, and several were not able to continue in the 2017 season. Due to the low commitment rate of many of the volunteers, Artist Boat reduced the amount of time spent recruiting new volunteers in 2017. Going forward, Artist Boat is considering consolidating all organizational volunteer recruiting and highlighting the Bucket Brigade as one of the optional trainings.

TASK 2
DELIVERY OF BUCKET BRIGADE

Year 1: Artist Boat hosted more than 76 days of Bucket Brigade tours in 2016 at 5-10 beach access sites with 6 tours per location each day. Interpreters engaged participants through a formal 45-minute tour or opportunistically while walking the beach. Opportunistic tours used portions of the curriculum to engage beach goers for a shorter time frame. Artist Boat worked with the Galveston Island Park Board of Trustees to order all program supplies, as well as to design and print program brochures that included information on coastal organisms, the beach code of conduct, currents and water quality. Artist Boat staff presented to the Beach Patrol and key Park Board staff to communicate Bucket Brigade logistics. The Bucket Brigade Coordinator also published a monthly schedule of events and developed a registration protocol for interpretative tours.

Year 2: Artist Boat hosted more than 60 days of Bucket Brigade programming in 2017 at 2-5 beach access sites chosen for visitor numbers the previous year. Each site again hosted 6 tours each day. Artist Boat staff presented to key Park Board staff including Beach Patrol leadership to communicate logistics for 2017 season.

Achievements and Lessons Learned:

During the first year of Bucket Brigade tours, interpreters made 5,168 connections with the public (Table 2). Although the number of connections was lower than originally expected, the connections made were meaningful and the program was well received by participants. Low numbers were attributed to lower than normal beach visitor numbers in the summer of 2016, the infancy of the program, and the limited reach of advertising. Galveston also experienced a lack of *Sargassum* landfall in 2016, so the program focused more on water quality, marine debris, and coastal organisms than originally expected in the grant. Despite these setbacks, Artist Boat and the Galveston Island Park Board of Trustees (Park Board) believed the program served an important role especially in light of the bad press Galveston beaches received in the summer of 2016 regarding the high concentration of *Vibrio* bacteria in some coastal waters.

Table 2: Bucket Brigade Interpretive Beach Tours					
Year	2016	2017 (spring)	2017 (summer)	2017 (Total)	Grant Total
Days	96	10	54	64	160
Events	2,821	85	625	710	3,531
Connections	5,168	738	5,559	6,297	11,465

**2016 had between 5-10 interpreters with tours offered Spring Break, Saturdays and Sundays in the spring, 7 days a week in June and July, and 4 days a week for 3 weeks in August.*

**2017 had 1-4 interpreters with tours offered Spring Break, Saturdays in March and April, and 5 days a week from Memorial Day weekend through the first week in August.*

Artist Boat reduced the number of Interpreters required to deliver the program in 2017 but still made more connections with the public. As a result of fewer interpreters, we reduced the number of locations from 5-10 in 2016 to 1-4 locations in 2017 (Table 2). Tours funneled participants to the locations that experienced the most traffic in the previous year with priority still given to the Beach Parks managed by the Park Board (Figures 1 & 2). Despite the fewer tour locations, Interpreters, and program dates, the Bucket Brigade made more connections in 2017 than the previous year. Whereas opportunistic connections still dominated the way Interpreters engaged with participants, the number of formal tours increased in 2017, indicating that word of mouth, publicity, and paid advertising increased awareness of the Bucket Brigade with the public.

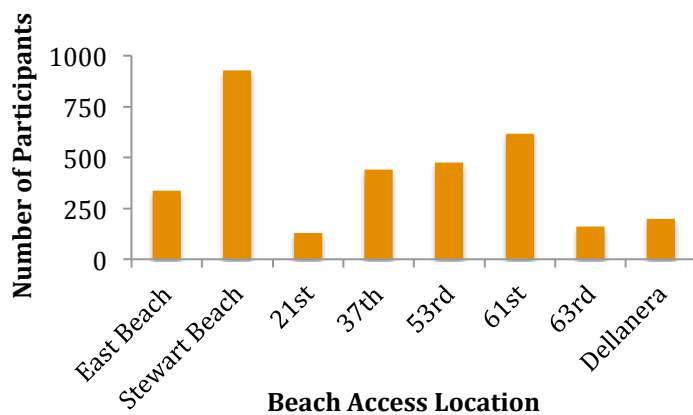


Figure 1. Total number of participants served at each Bucket Brigade location in 2016.

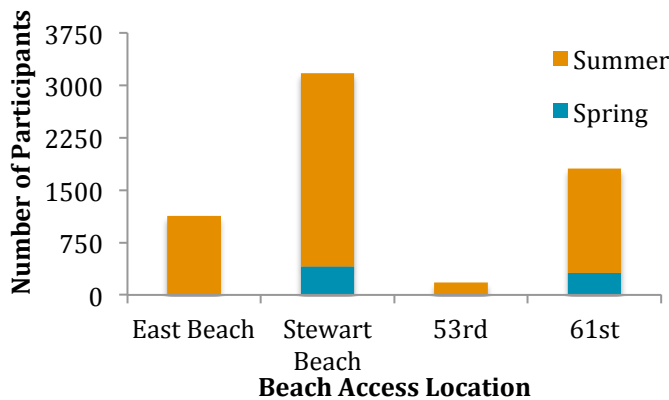


Figure 2. Total number of participants served at each Bucket Brigade location in 2017.

One of the largest successes of the Bucket Brigade was the ability to provide environmental educational experiences to audiences that typically do not participate

because of the cost. Artist Boat engaged more diverse audiences (Figure 3) in contrast to our fee-based Public Eco-Art Kayak Adventure Program. Whereas, 42% of the Bucket Brigade participants were Hispanic and African American (Figure 3), 15% of Eco-Art Kayak Adventure participants were Hispanic and African American. Access to environmental education that increases awareness as well as steps to promote a clean and healthy coast, is often cost prohibitive. Free Bucket Brigade tours, therefore, provide an important service to the Houston-Galveston region that increases environmental literacy and actions to improve water quality along the Texas coast.

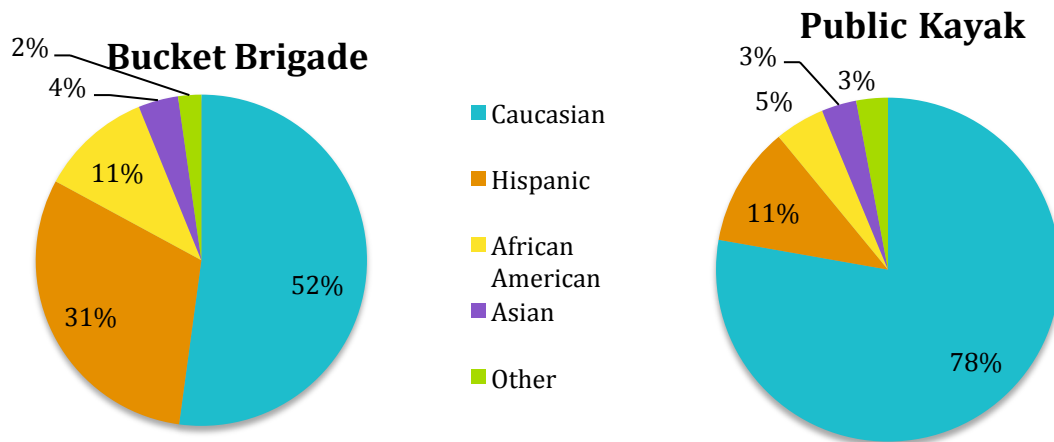


Figure 3. Racial demographics of audiences reached in the Bucket Brigade and Artist Boat’s Public Eco-Art Kayak Adventure Program between September 2016-August 2017.

The Bucket Brigade has also significantly increased the number of children under the age of 12 who are exposed to environmental education. While younger children are often unable to attend a Kayak Adventure, the Bucket Brigade has been able to engage them in place-based experiences at the beach. Young children make up over 30% of the Bucket Brigade’s audience as compared to less than 10% of the audience for the Public Eco-Art Kayak Adventures.

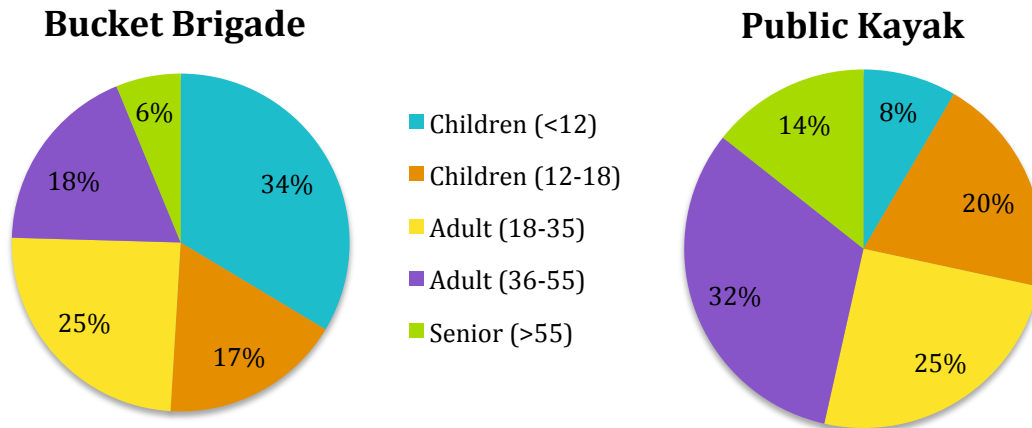


Figure 4. Age demographics of participants in the Bucket Brigade and Artist Boat’s Public Eco-Art Kayak Adventure Program between September 2016-August 2017.

**TASK 3
MARINE DEBRIS TASK FORCE**

Year 1 and 2: Artist Boat established the Marine Debris Task Force (MDTF) comprised of local stakeholders. The MDTF developed a long-term action plan that provides a framework for the Galveston Island Community to address and reduce non-point source pollution, litter, and marine debris. The Task Force implemented short-term action plan goals, while determining channels of communication, funding and collaboration to implement long-term goals.

Achievements and Lessons Learned:

In September 2015, Artist Boat initiated the Marine Debris Task Force by hosting a workshop with support from the Environmental Protection Agency’s Trash Free Waters program. Thirty-five representatives interested in reducing the introduction of aquatic trash attended the first workshop. Of the original 35 representatives, ~15 have participated in the subsequent Task Force meetings over the past 2 years. The most consistent attendance and input has come from Artist Boat, the Galveston Island Park Board, Texas General Land Office, Flower Garden Banks National Marine Sanctuary, Turtle Island Restoration Network, Moody Gardens, and the Environmental Protection Agency.

In November of 2016 the Task Force completed a draft of the 2016 Galveston – Marine Debris Action Plan. The Action Plan outlines goals and actions to reduce the introduction of trash to the marine environment. In addition, the plan includes metrics to determine if the project is successful. Short-term goals include creating opportunities for responsible disposal of trash on the beach, whereas long-term goals will institute policies

to prevent marine debris from overnight campsites, and working with the City of Galveston to encourage investment in the citywide recycling infrastructure. A draft of the plan was presented to committees that assist the Galveston Park Board: (1) Galveston Beach Maintenance Advisory Committee and (2) Tourism Development Advisory Committee.

In Year 1 and 2, the Task Force implemented the first action in the plan, which was to provide recycling to beach goers. Task Force secured funding for seven recycling stations on Galveston beaches (Figure 5). The recycle stations are located at beach access points chosen for high beach traffic and/or proximity to a sponsor location (the Hilton and the Victorian). Between March and mid-November 2017, the recycling stations captured 3,060 pounds of recyclable materials, 70% of which was plastic. Moving forward, the Task Force plans to acquire more stations and add a “free-cycle” area to the station to catch a wider-range of beach debris such as beach toys. The Task Force also plans to install recycle cans on Galveston’s Seawall.

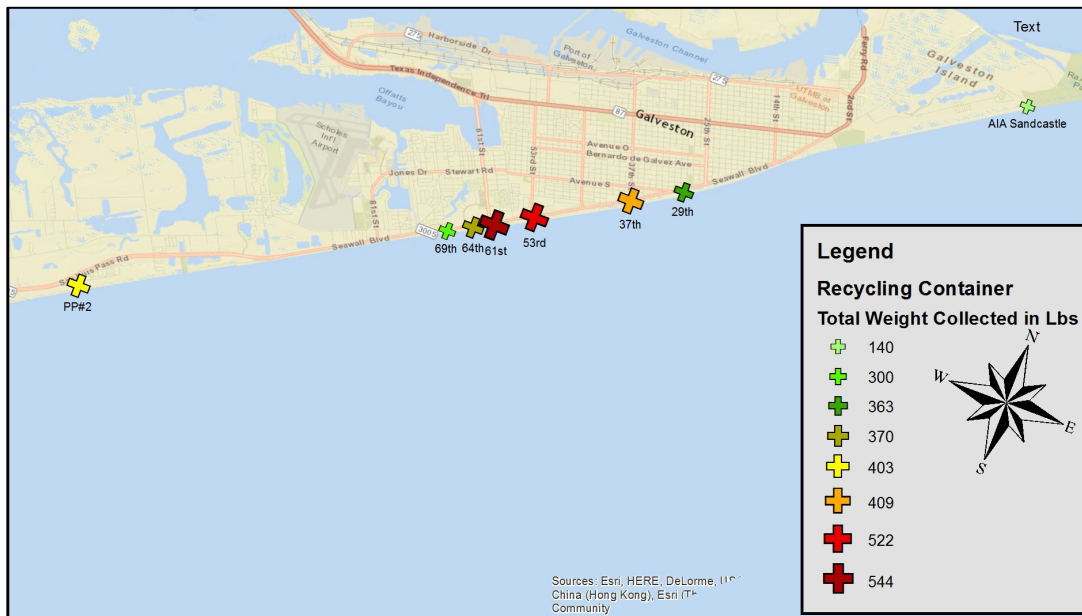


Figure 5. Recyclable weights collected by the Beach Recycling Stations between March and November 2017.

TASK 4 SARGASSUM SEAWEED ART CONTEST AND WORLD OCEAN DAY CELEBRATION

Year 1: Artist Boat hosted a Sargassum Seaweed Art Contest and World Ocean Day Celebration. The World Ocean Day Celebration was designed to have booths hosted by area, regional, and national organizations with hands-on activities to teach participants how to improve the water quality in our oceans, reduce the entrapment of wildlife in

plastics, and increase their knowledge about marine debris hazards and sources on Texas beaches. Artist Boat designed and broadcasted rules of the art contest on our website and on Facebook. We designed the event space and recruited organizations to participate by hosting booths. Artist Boat selected organizations with hands-on activities to promote learning and stewardship of the coast. Press releases were written to increase publicity of World Oceans Day Event. Finally, Artist Boat hosted World Oceans Day at Stewart Beach on June 8th, 2016, where we judged the art contest and recorded participation.

Year 2: Artist Boat hosted the second annual World Oceans Day Festival and Art Contest (renamed for the 2017 event) on June 8, 2017 where we judged the art contest and recorded participation. Similar to 2016, we designed and broadcasted rules of the art contest, designed event space, recruited and selected organizations, and issued press releases.

Achievements and Lessons Learned:

Artist Boat hosted the first World Oceans Day Festival and Marine Debris Art Contest on June 8th, 2016 at Stewart Beach. Almost 200 visitors attended the Festival and visited the interactive booths to learn about the human connection to the ocean. Eleven booths were hosted by partner organizations, and fifteen entries were submitted to the Marine Debris Art Contest.

2016 Partner Organizations:

- Texas A&M Galveston Research Groups - ADDOMEx and DEEPEND
- Texas General Land Office - Adopt-A-Beach
- Flower Garden Banks National Marine Sanctuary
- FotoFest International: Literacy Through Photography
- Friends of Galveston Island State Park
- Galveston Bay Foundation
- Galveston Children's Museum
- Houston-Galveston Area Council -Trash Bash
- Houston Wilderness
- Houston Zoo
- Turtle Island Restoration Network

On June 8th, 2017, Artist Boat hosted the second World Oceans Day Festival and Marine Debris Art Contest at Stewart Beach. The second event attracted almost double the number of visitors and increased the number of partner organizations hosting interactive booths (Table 3). Only seven art pieces were submitted to the second Marine Debris Art Contest.

2017 Partner Organizations:

- Texas A&M Galveston Research Groups - ADDOMEx and DEEPEND
- American Bird Conservancy

- Eddie V. Gray Wetlands Center
- Flower Garden Banks National Marine Sanctuary
- FotoFest International: Literacy Through Photography
- Friends of Galveston Island State Park
- Galveston Bay Estuary Program
- Galveston Bay Foundation
- Galveston Children’s Museum
- Galveston Island Beach Patrol
- Houston Audubon
- Houston-Galveston Area Council - Trash Bash
- Houston Wilderness
- Houston Zoo
- Texas Marine Mammal Stranding Network
- Turtle Island Restoration Network

Year	2016	2017	Total
Exhibitor Booths (non-Artist Boat)	11	16	25
Visitors	175	330	505

The low attendance for the 2016 Festival might be attributed to the Wednesday date of World Oceans Day, the limited advertising budget, and the rain and coastal flooding of the previous week. In 2017, June 8th was on a Thursday and closer to the weekend, and Artist Boat dedicated a portion of its annual Hotel Occupancy Tax (HOT) Budget to advertising the Festival. These changes seem to have increased participation in the World Oceans Day event. Partner organizations expressed their enthusiasm for the moderate size and set up of the event both years, believing that they made meaningful connections to fewer participants rather than casual conversations with more participants.

TASK 5

BEAUTIFY THE BUCKET DAY IN CONJUNCTION WITH ADOPT-A-BEACH

Year 1: Artist Boat hosted a trashcan art contest during the September 2016 General Land Office’s Adopt-A-Beach trash clean up event. The Beautify the Bucket contest was designed to allow individuals, groups, and organizations to adopt a blue trash can destined for Galveston beaches and paint the trashcan with messages and images that promote proper disposal of waste on the beach, ocean organisms, local marine ecosystems, and Galveston recreational activities. Artist Boat modified the event from taking place over four hours on the day of the Adopt-A-Beach event, to a “take-home” project. Artist Boat registered individuals and groups to paint barrels prior to the event. Artist Boat designed and broadcasted rules for the art contest on www.ArtistBoat.org and announced winners on our Facebook page. Artist Boat has reported on project

deliverables to the Park Board via written reports and presentations during advisory committee meetings.

Year 2: Artist Boat hosted a second and third “Beautify the Bucket” Competition in April and September 2017 on the days of the General Land Office’s Adopt-A-Beach clean up events. As with the previous year, Artist Boat was responsible for creating press releases, advertising for the competition, advertising winners, and reporting to the Park Board.

Achievements and Lessons Learned:

Artist Boat hosted three Beautify-the-Bucket competitions during the span of the grant period (September 22nd, 2016; April 22nd, 2017; September 23rd, 2017). The first competition allowed spaces for 75 individuals to register, but after discussion with the Park Board the later competitions reduced the registration to 60 openings. Each competition had close to or met the limit for registrants by the deadline except for the Fall 2017 competition, which was hindered by Hurricane Harvey (Table 4). After each registration deadline more individuals continued to contact Artist Boat about wanting to get on a waiting list for the next competition, and all the artists claimed to thoroughly enjoy the project. Participants appreciated the artistic approach to stewardship that was open to all ages and skill levels and provided a means for schools, families, and individuals to assist with and learn about the aquatic trash problem.

Because of low registration numbers for the Fall 2017 event, Artist Boat participated in 7 outreach events on 12 days where we painted 10 buckets with 423 participants. During each event we promoted the Beautify the Bucket events and Bucket Brigade.

Going forward Artist Boat will meet with the Park Board to see how well the paint is holding up on the barrels and determine if any logistical changes are required. Each competition also had at least five barrels not returned, and had small to moderate audiences for the prize announcements. Increasing the return rate and competition-day participation are goals for the future.

Table 4: Beautify the Bucket				
Competition	Fall 2016	Spring 2017	Fall 2017	Total
Registrants	72	60	41	173
Completed Buckets	61	54	27*	142

**Fall 2017 had lower completion numbers for the competition due to Hurricane Harvey. Twenty-seven barrels were returned by the competition deadline and two barrels were been following the competition. During the Fall 2017, Artist Boat painted between 12 barrels at the following outreach events: Bayou City Art fest, Maker Faire, Texas Art Educators Association, Clear Creek Intermediate School Lights On Afterschool, Seabrook Library event, Galveston ArtWalk, and Pop Shop.*

TASK 6

PRESS/MARKETING AND PUBLIC OUTREACH

Year 1 and 2: Artist Boat created advertising to ensure the public knew about the Bucket Brigade, the World Oceans Day Festival and Art Contest, and the Beautify the Bucket Competition. We employed print advertising in newspapers, rack cards, television, and direct contact. Artist Boat worked closely with the Galveston Island Park Board of Trustees – Convention and Visitors Bureau to ensure effective reach of advertising and publicity.

Achievements and Lessons Learned:

Artist Boat created and distributed advertisement for the different components of the CMP Cycle 20 “Bucket Brigade” grant (Bucket Brigade, World Oceans Day Festival, and Beautify the Bucket) using a variety of channels. During the first year, advertisement consisted mostly of flyers hung in local businesses, social media shared by program partners, press releases, and contacting local teachers and homeschooled groups directly via email. Artist Boat utilized a small portion of the Hotel Occupancy Tax (HOT) Budget to create a Rack Card for the Bucket Brigade in the summer and to boost Facebook ads, and this resulted in a slight increase in tour participation. The Park Board also reserved some of their paid radio spots on Houston Public Media for the Bucket Brigade tours.

During the second year Artist Boat committed a larger portion of its HOT Budget to advertising the three program components. In addition to the previous channels, Artist Boat also paid for advertisement for World Oceans Day and the Bucket Brigade in the Houston Chronicle, Galveston Daily News, and local community newsletters. We also printed cards and posters that were distributed to local schools, businesses, and hotels to advertise for World Oceans Day. The addition of the paid advertising seems to have had a positive impact. Almost double the number of participants came to the World Oceans Day Festival, and the volume of calls for Bucket Brigade tours increased significantly. In addition, the Park Board continued to promote the program via their social media, Houston Public Media, and Fox 26 News, which did a short live segment on their morning news program on Bucket Brigade.

TASK 7

PROJECT MONITORING AND REPORTING

Year 1 and 2: Artist Boat created monthly progress reports on the budget and deliverables, and this document is our final report describing and evaluating the work completed under each task in the CMP Cycle 20 grant.

Achievements and Lessons Learned:

Artist Boat has completed all monthly reporting requirements and is submitting this final report for review.

CONCLUSIONS

Over the two years of the CMP Cycle 20 “Bucket Brigade” Grant, Artist Boat greatly expanded its reach to the public through the Bucket Brigade, World Oceans Day Festival, and Beautify the Bucket Competitions. These public connections proved meaningful and necessary in the face of lower beach visitor numbers and continued misperceptions of Galveston’s unique coastal ecosystems.

Artist Boat also helped enhance the visual landscape of Galveston beaches with the Beautified trash barrels and beach recycling stations that will continue to encourage actions to reduce aquatic trash. Future goals outlined in the Marine Debris Taskforce’s Action Plan will continue building on these efforts.

While the Bucket Brigade Interpretive Beach Tours did not meet original grant expectations for participant and volunteer numbers, the tours experienced increased interest in the second year. The tours not only served more individuals both overall and at each location (Figures 1 & 2), they also received more interest from daycare and summer programs looking to schedule tours. While it is not possible to record and analyze participant attitude and behavior changes from the tours, Interpreters noted that most visitors responded positively to tour information and many were even enthusiastic when learning about coastal organisms, marine debris, and *Sargassum*. Although tours were positively received and reached more participants each year, most participants were engaged informally rather than through formal tours. While informal engagement reaches a wider range of visitors, Artist Boat will need to look into more strategies for populating formal tours in the future.

Both the World Oceans Day Festival and Beautify the Bucket Competitions also experienced growth in the second year of the program, and event participants and partners expressed a desire to see them continue. The two events attracted a different section of the public to Artist Boat programming and expanded the reach of the program’s messages to more community members than tours, which are often attended by tourists. The Marine Debris Task Force likewise garnered interest from local and regional partners interested in continuing efforts to reduce aquatic trash, and inspired communication between Galveston and Houston-area groups at a “Trash Summit” to write an Action Plan for the Greater Houston-Galveston Region.

The components of the CMP Cycle 20 “Bucket Brigade” Grant provided programming and communication to address key issues of concern to both local and regional groups. The programs also filled in gaps in regional education and outreach both in audience (local and visitors) and topic (marine debris, *Sargassum*, the human-ocean connection, etc.) Although several aspects of the program proposal required adaptation and revision, the impact was meaningful and Artist Boat believes the different programs are worth continuing.

Beautify the Bucket Photos



Beautify the
Bucket Photos



Bucket
Brigade



Sargassum Art Contest Photo



World Ocean Day Photo



