

Galveston Bay Oyster Shell Recycling Program

GLO Contract No. 15-048-000-8393

**FINAL REPORT
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I. Project Summary

In an effort to reverse the significant loss of oyster reef habitat in Galveston Bay, the Galveston Bay Foundation (GBF) works with local restaurants to recycle oyster shells and return them to the bay. Rather than being disposed of in landfills, the reclaimed oyster shells provide additional substrate and enhance the native oyster populations in the bay system. While oyster larvae find many surfaces suitable for attachment/growth, oyster shells are the preferred surface for spat recruitment as indicated by Coen and Luckenbach (2000).

During Grant Cycle 19, specifically from October 2014 through February 2016, over 213 tons of oyster shells were recycled through GBF's Oyster Shell Recycling Program. These shells are in the process of being quarantined via sun curing and will be returned to Galveston Bay through (separately funded) oyster reef enhancement and restoration projects such as GBF's Volunteer Oyster Gardening Program and "oyster bar" breakwater construction.

II. Background Information

Oyster reefs are a vital component of a healthy estuary; they filter contaminants from the water, protect shorelines, stabilize sediment, and provide habitat and food sources for other aquatic species. Unfortunately, oyster reefs are the most threatened marine habitat worldwide. Recent studies show that over 85% of oyster habitat has been lost on a global scale (Beck et al, 2011). In Galveston Bay, over 50% of the oyster reefs have been destroyed, primarily as a result of Hurricane Ike (Hons and Robinson, 2010). Prior to 2008, Galveston Bay provided nearly 80% of the oyster harvest in Texas (Haby et al, 2009). But the severe sediment deposition resulting from Hurricane Ike smothered oyster reefs across the entire bay system and eliminated the hard substrate required for oyster development.

To help replenish hard substrate in the bay and support local oyster restoration efforts, GBF partnered with local restaurant owner Tom Tollet of Tommy's Restaurant and Oyster Bar in 2011 and began recycling oyster shells. Before GBF's Oyster Shell Recycling Program began, oyster shells were discarded along with other restaurant waste and sent to a landfill. To avoid discarding this vital resource, GBF now partners with multiple local restaurants to collect oyster shells and return them to the bay. The reclaimed shells will serve as new oyster habitat, thus enhancing the local oyster populations.

With the assistance of CMP funding, GBF has expanded the program from the pilot stage with one restaurant and one curing site to a total of seven restaurant partners and two curing sites. The expansion of the program has also allowed for the development of outreach materials to educate the public on the importance oysters in an estuarine ecosystem. Under Grant Cycle 19, GBF brought on a new restaurant partner and streamlined the shell collection route in order to set the stage for further expansion and improved restoration efforts.

III. Project Implementation

A) Task 1: Shell Collection

GBF staff collected oyster shells from participating restaurants on a weekly basis to relieve the restaurants of their shell waste. Throughout the week, restaurant staff deposited used oyster shells in recycling receptacles. GBF staff transported these containers of shells via truck and trailer to one of two “curing sites” where the shells were stored temporarily to be quarantined. As the shells accumulated at the curing sites, GBF staff and volunteers strategically piled the shells every 3 to 4 months using a front-end loader. The shells were then left to sun cure or “bleach” for a minimum of 6 months. As identified by Bushek et al. (2004), sun curing oyster shells for a minimum of 1 month ensures that all bacteria and parasites are eliminated. Following the curing process, the shells were ready to be used in (separately funded) oyster reef restoration and enhancement projects throughout Galveston Bay.

To streamline the collection process and improve efficiency, a set pick up schedule was established with each restaurant partner. For those restaurants that produced greater than 1 ton of oyster shells annually, GBF provided two pick-ups per week. For restaurants with less output or those located off the main route, collection services were provided once a week. Meetings with each restaurant partner were held to determine the most convenient collection schedule and the amount of recycling receptacles needed. Restaurants were also presented with the choice of two receptacles, 5-gallon buckets or 32-gallon recycling bins, to help accommodate the different levels of shell output. Based on these discussions, a Monday-Wednesday-Friday shell collection schedule was established.

In addition to weekly shell collection, GBF staff maintained multiple Excel spreadsheets that documented the tonnage of oyster shells recycled monthly, annually, and cumulatively for the entire extent of the program. In order to estimate the tonnage of shells collected at each restaurant, GBF determined the weight of both shell recycling receptacles. It was estimated that each 5-gallon bucket can hold approximately 35 pounds of oyster shells while each 32-gallon recycling bin can hold approximately 230 pounds of oyster shells. These numbers were then converted to tons by dividing the total amount by 2,000 pounds. Please refer to Appendix A for the shell collection numbers and associated graphs.

B) Task 2: Program Material

Education of the public and local restaurants on the importance of oyster reef restoration remains a crucial component of the Oyster Shell Recycling Program. Under CMP Cycle 19, multiple updates were made to existing outreach materials. New materials were also created, such as the new infographic poster and oyster anatomy diorama. Examples of these materials can be found in Appendix B.

Due to the new management of GBF's Oyster Shell Recycling Program, the program materials developed in Cycle 17 (Restaurants to Reefs Brochure, Oyster Shell Recycling Rack Card, and Oyster Fact Sheet) were updated with the new program manager's contact information. Labels were used to make this revision for the brochure and rack card, rather than reprinting, in order to save funds. These three handouts will be redesigned under the next grant cycle, CMP Cycle 20.

With the help of GBF's Communications and Marketing Coordinator, the Oyster Shell Recycling page of GBF's website was redesigned to better represent the program and include new restaurant partnerships as well as sponsors. Photographs were taken of the entire shell recycling process to demonstrate all of the steps required to recycle the shells and to depict the new equipment and supplies being utilized.

Additional outreach materials were created to improve the promotion of the Oyster Shell Recycling Program at outreach/boothing events attended by GBF staff. An infographic, depicting the entire oyster shell recycling process, was developed along with a poster displaying a picture of the shell piles and tractor work at one of the curing sites. An oyster anatomy diorama was designed by a GBF intern to assist in explanations of an oyster's filtration abilities and life history. Furthermore, GBF's Education Team created a mock oyster tray to help connect the consumption of oysters at restaurants to the Oyster Shell Recycling Program. Due to the redesign of a new logo for GBF as an organization and for the Oyster Shell Recycling Program, the development of additional new outreach materials was put on hold during Cycle 19.

GBF staff attended multiple events at which the Oyster Shell Recycling Program was promoted through educational booths. Local citizens were presented with a display of two fish tanks, one containing live oysters and one containing only bay water, which demonstrated the filtration ability of oysters. A variety of handouts, newly developed outreach materials and examples of the shell recycling receptacles were also exhibited during these events. Through interactions with GBF staff and volunteers, the attendees were educated on the importance of oysters in Galveston Bay and the significance of returning shells to the bay system through the Oyster Shell Recycling Program.

C) Task 3: Participation

The funding received for CMP Cycle 19 allowed GBF to expand the Oyster Shell Recycling Program to seven restaurant partners. Although the seventh partner, Number 13 in Galveston, only participated for a single year, GBF secured a partnership with Captain Benny’s Seafood in Houston in the fall of 2015. A list of the current restaurant partners is included below.

Restaurant	Date Partner began Shell Recycling
Tommy's Restaurant & Oyster Bar	2011
Topwater Grill	2013
Crazy Alan's Swamp Shack	2013
The Aquarium (Kemah)	2013
The Flying Dutchman (Kemah)	2013
Landry's Seafood (Kemah)	2013
Captain Benny's Seafood (Gulf Fwy)	2015

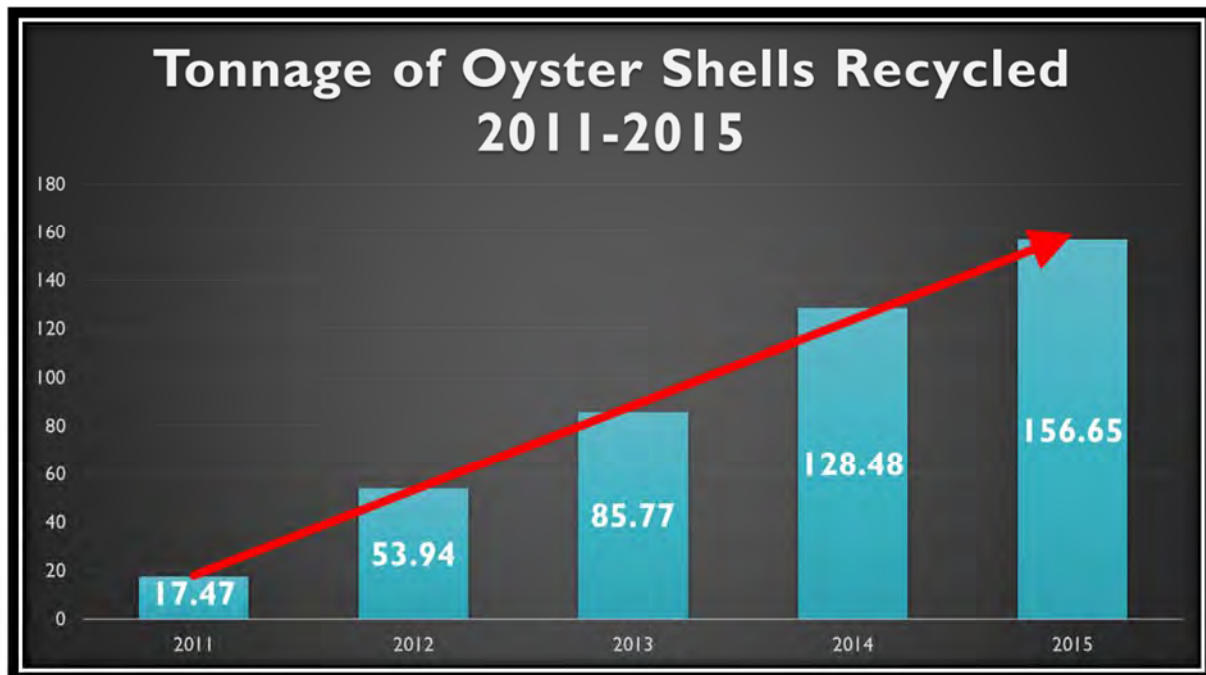
The “Restaurant Database,” as shown in Appendix D, was updated to include new locations serving oysters in the Houston-Galveston area. Part-time staff assisted in analyzing this spreadsheet to conclude which restaurants should be approached for potential partnership in the future. Six restaurants were identified as potential partners due to their location and abundance of oyster items on their menus. These restaurants will be contacted during the next grant cycle.

To determine the cost of expansion, an in-depth budget review was conducted. Based on the current Oyster Shell Recycling Program budget, expansion into downtown Houston is not feasible at this time, primarily due to financial, staffing, and equipment limitations. However, multiple restaurants have been interested in delivering oyster shells to the GBF office and/or storage sites for recycling. GBF is continuing to investigate various strategies to accommodate such requests.

Plans for expansion to Galveston Island were initiated in 2015 and 2016 through conversation with potential partners, TX A&M University at Galveston and Sea Scout Base Galveston, as well as interested restaurants including Gaido’s Seafood Restaurant and the Landry’s chain. The pending partnership with TAMUG would provide staff and equipment locally, thus making the expansion to Galveston Island more feasible than adding restaurant partners in downtown Houston. This expansion will continued to be pursued under the next grant cycle.

IV. Results

The addition of Captain Benny’s Seafood and the revised shell collection schedule led to an 18% increase in the tonnage of oyster shells recycled from 2014 to 2015. As shown in the graph below, the amount of shells recycled by GBF has steadily increased with each cycle of grant funding. Under Cycle 19, GBF increased the amount of shell recycled annually from 2013 to 2014 by 43 tons and from 2014 to 2015 by 28 tons. A total of 213.71 tons of oyster shells were recycled throughout Cycle 19 from October 1, 2014 to February 29, 2016 (please refer to Appendix A). The shells collected during this timeframe are undergoing the proper sun curing process and will be used in GBF’s (separately funded) Volunteer Oyster Gardening Program and “oyster bar” breakwater projects.



V. Lessons Learned

As additional restaurant partnerships were established, it became clear that a pre-determined shell collection schedule is key to a successful oyster shell recycling operation. Prior to 2015, when there was no schedule in place, GBF received numerous complaints that the oyster shells were not being removed from the restaurants in a timely manner. Beginning in the spring of 2015, the part-time Shell Recycling Assistants were required to conduct the shell collections on Mondays, Wednesdays, and Fridays in the morning unless uncontrollable circumstances arose (e.g. severe weather, equipment failure, illness, etc.). Within two weeks of initiating the new schedule, the complaints from the restaurants ceased. The new schedule allowed for more efficiency, particularly in terms of staff time and mileage, and less oversight from the Program Manager. This schedule will also aid in the future expansion of the program. As more restaurant partners are added and a higher volume of shells are collected, a set schedule will be critical in order to maintain efficient routes and appease all of the restaurants' needs.

Standard operating procedures were also developed under Cycle 19 to streamline the shell collection process and management of the "Oyster Team" staff. As new part-time staff were hired, these SOPs were an excellent tool for training and helped provide a smooth transition into the position. Furthermore, the program equipment and supplies were better maintained and communications between the part-time Shell Recycling Assistants and Program Manager increased significantly.

Adaptive management measures were taken to accommodate the diverse needs and specifications of each restaurant partner. For instance, three of the restaurant partners with lower output of shells often complained that they were unable to bring the large recycling bins into the restaurant. Additional complaints included the smell and accumulation of flies in and around the shells. To assist these partners, GBF purchased 5-gallon buckets with lids. The new buckets were easily utilized inside the restaurants at the oyster shucking station and initially resulted in more efficient recycling of oyster shells at two of the three restaurants. However, due to high staff turnover rates and loss of an integral manager who helped implement the program among these restaurants, the recycling of oyster shells diminished in 2016 at these locations. Multiple meetings were held to address the concerns with each manager, however there have been few changes. As a result of these challenges, GBF is in the process of developing a tool to determine the minimum output of shells necessary to become and remain a restaurant partner of the Oyster Shell Recycling Program. Additional factors are being taken into consideration to develop a strategic approach to selecting fruitful restaurant partnerships in the future. In order to continue the successful expansion of the program, partnership criteria will be established to allow for the most cost-effective approach to shell recycling.

VI. References

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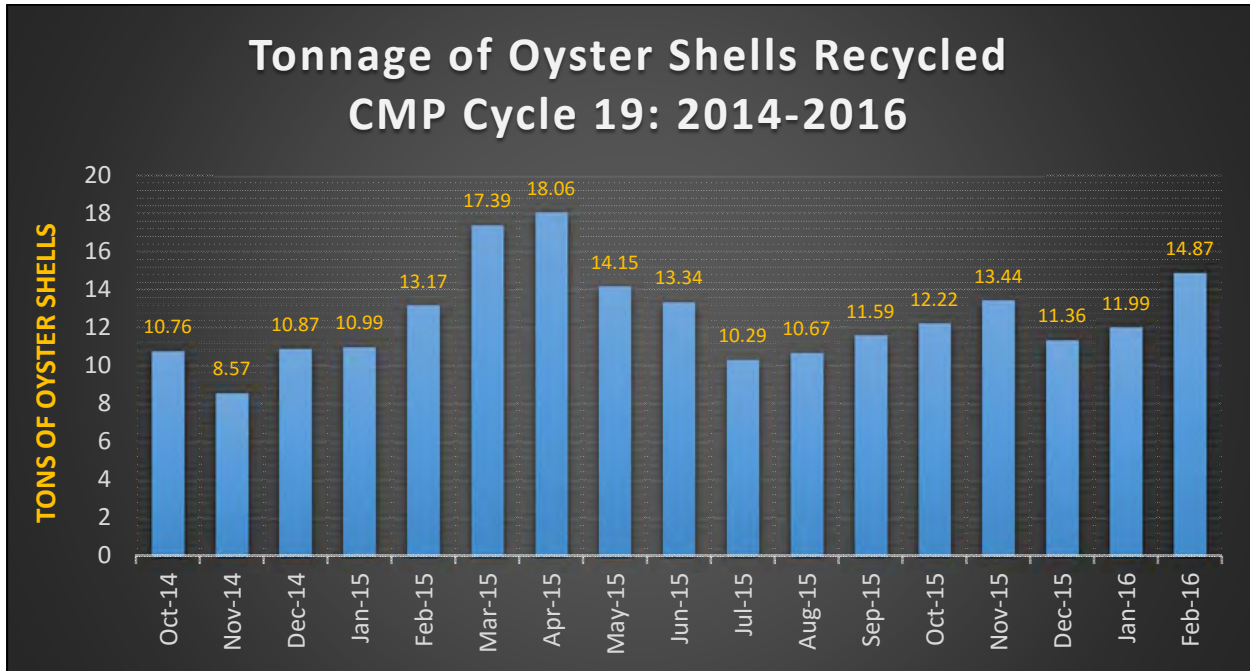
VII. APPENDIX

APPENDIX A SHELL COLLECTION NUMBERS

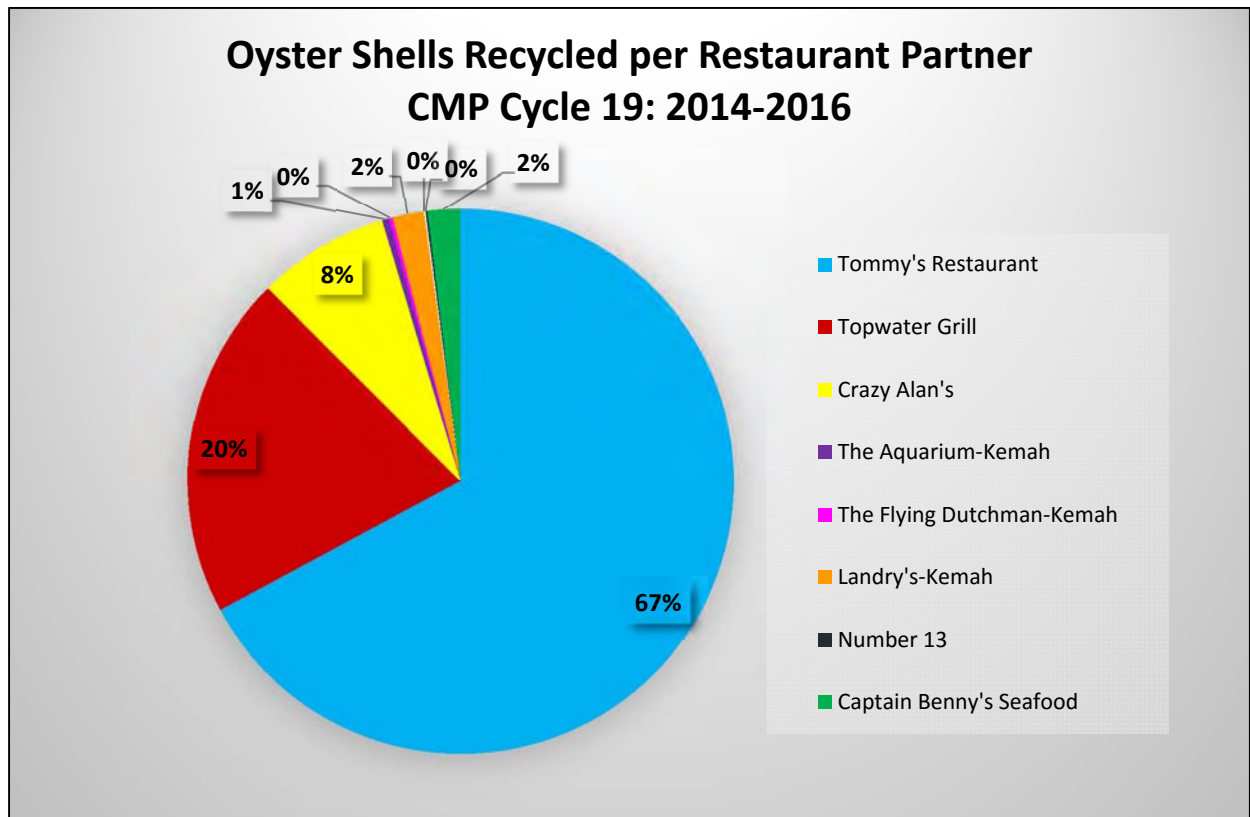
A.1 Tonnage of Oyster Shells Recycled During Cycle 19

Month	Oyster Shells Recycled (tons)
Oct-14	10.76
Nov-14	8.57
Dec-14	10.87
Jan-15	10.99
Feb-15	13.17
Mar-15	17.39
Apr-15	18.06
May-15	14.15
Jun-15	13.34
Jul-15	10.29
Aug-15	10.67
Sep-15	11.59
Oct-15	12.22
Nov-15	13.44
Dec-15	11.36
Jan-16	11.99
Feb-16	14.87
TOTAL	213.71

A.2 Monthly Tonnage of Oyster Shells Recycled



A.3 Percentage of Shells Recycled per Restaurant Partner



APPENDIX B PROGRAM MATERIALS

B.1 Updated Outreach Materials

GALVESTON BAY
Oyster Shell Recycling Program

Restaurants to Reefs

GALVESTON BAY FOUNDATION

www.galvbay.org

Project Partners:

- TEXAS COASTAL MANAGEMENT PROGRAM
- NOAA
- EPA
- TOYOTA
- Aramco Services Company
- TEXAS PARKS & WILDLIFE

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GALVESTON BAY
Oyster Shell Recycling Program

Galveston Bay Foundation's Oyster Shell Recycling Program promotes sustainable, native oyster populations that clean and filter our bay waters, provide habitat for fishery species, and stabilize the bay bottom. For restaurants, this program provides waste-hauling cost savings, a positive "green" image, and exposure to new customers.

Why Recycle Oyster Shell?

- Oysters help improve water quality, provide essential fisheries habitat, and support the local economy.
- Galveston Bay lost an estimated 50% of its consolidated oyster reefs as a result of Hurricane Ike in 2008.
- Reclaimed (recycled) oyster shell can be used to restore oyster reef habitat.
- Local restaurants can recycle much of the necessary shell to restore reefs in Galveston Bay.

How Can You Help?

- Contact the Galveston Bay Foundation to find out about oyster shell recycling and restoration volunteer opportunities.
- Visit restaurants that participate in the oyster shell recycling program and serve local oysters. Encourage restaurants you visit to participate in the program.
- Educate friends and family about the importance of oyster shell recycling.
- If you have an event where oysters are served, DO NOT throw the shells away or dump them directly into the bay! Contact GBF about how you can recycle your oyster shell.

Did You Know...
One oyster can filter up to 50 gallons of water in a single day!

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GALVESTON BAY OYSTERS

WHERE AND IN WHAT CONDITIONS DO OYSTERS LIVE?

- The Eastern oyster (*Crassostrea virginica*) is native to Galveston Bay
- Adult oysters are sessile (cannot move)
- Free floating larvae (spat) require hard substrate on which to attach in order to develop
- Ideal conditions include good water circulation, temperate water (68-86 °F is ideal), and moderate salinity (10-30 ppt)
- Oyster reefs can be intertidal or subtidal (to depths up to 25 ft)

WHY ARE OYSTERS IMPORTANT?

- Oyster reefs provide shelter and foraging opportunities for many different species of fish, shrimp, and crab
- Oyster reefs stabilize the bay bottom and break wave energy, protecting shorelines from erosion
- Oysters act as a natural filtration system by filtering silt and contaminants from the water, making it cleaner and clearer
- A single oyster can filter up to 50 gallons of water a day

WHAT IS THE STATUS OF OYSTERS, BOTH GLOBALLY AND LOCALLY?

- Recent studies show that oyster reef is the most threatened marine habitat worldwide, with 85% loss on a global scale (Source: Beck, et al. Shellfish Reefs at Risk, 2009. pg. 2)
- Prior to 2008, Galveston Bay accounted for 80% of all oysters harvested in Texas
- In 2008, Hurricane Ike severely impacted nearly 60% of Galveston Bay's oyster reefs as sediments from the storm deposited on reefs and physically smothered oysters. East Bay lost 80% of its reefs. (Source: TPWD—Galveston Bay Oyster Reefs Expanding. Aug. 15, 2011)

HOW CAN I GET INVOLVED IN OYSTER REEF RESTORATION?

- Contact the Galveston Bay Foundation (GBF). By working with GBF, you can get involved in ongoing efforts including:
 - Oyster gardening
 - Oyster reef restoration
 - Oyster shell recycling

For more information on Galveston Bay Foundation's oyster restoration projects, please contact Haille Carter, Habitat Restoration Coordinator, at 281.332.3381 x203 or hcarter@galvbay.org. You can also visit galvbay.org to learn more.

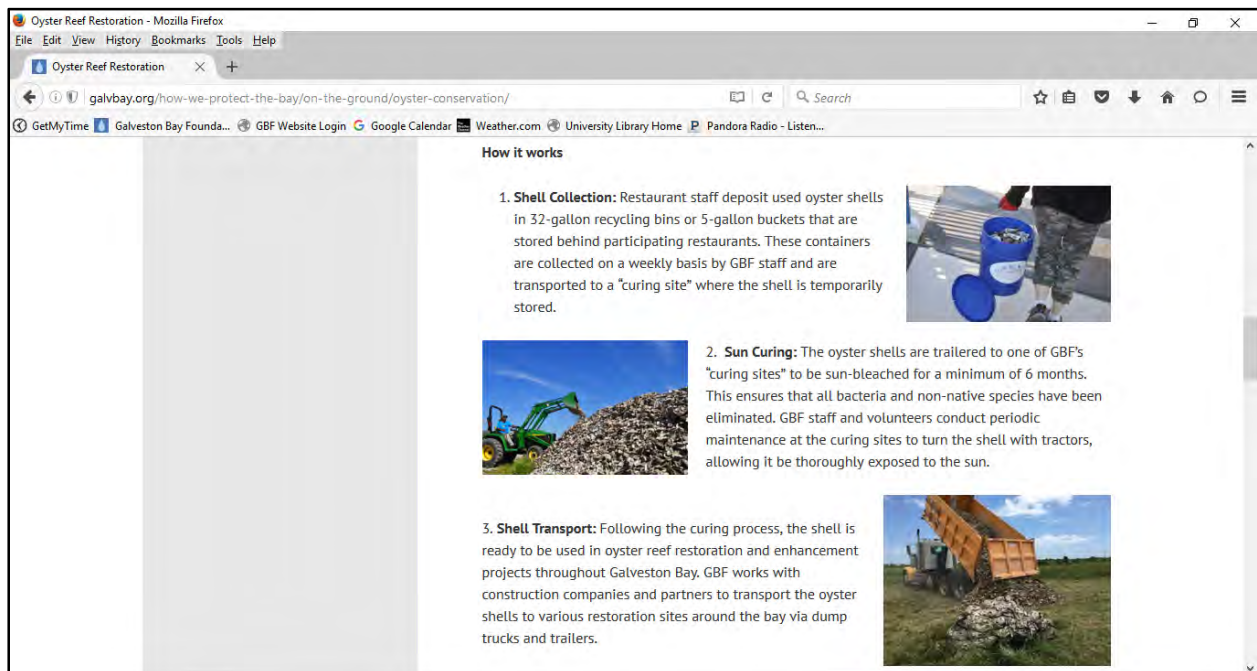
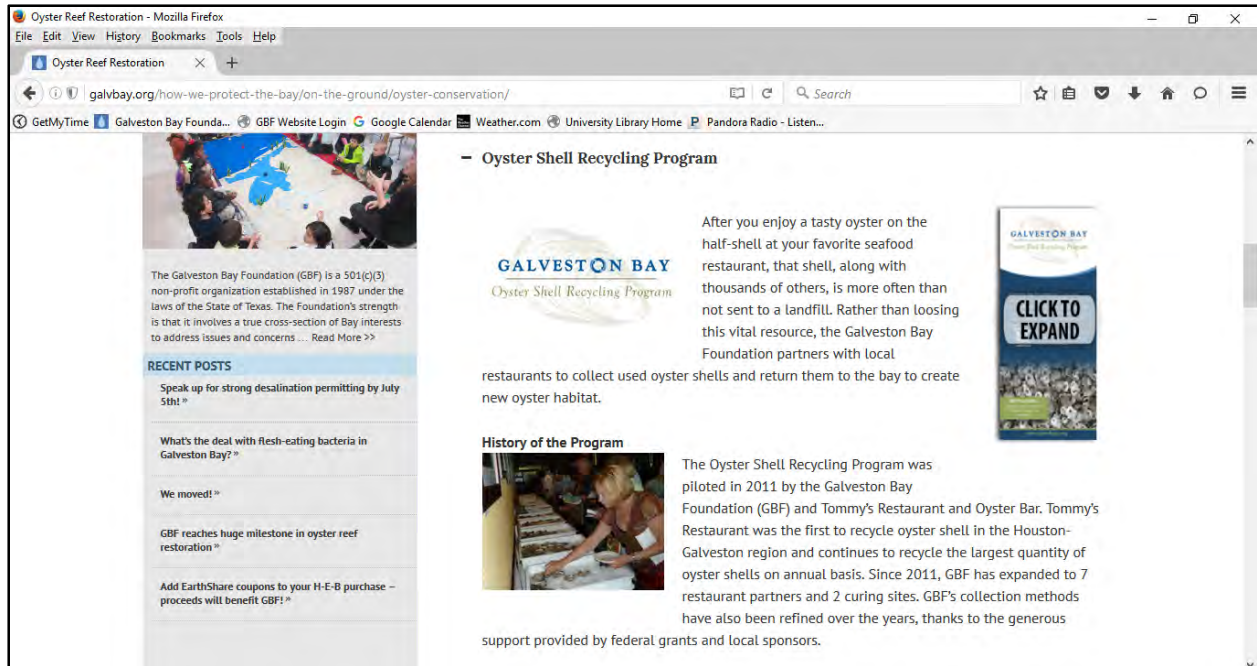


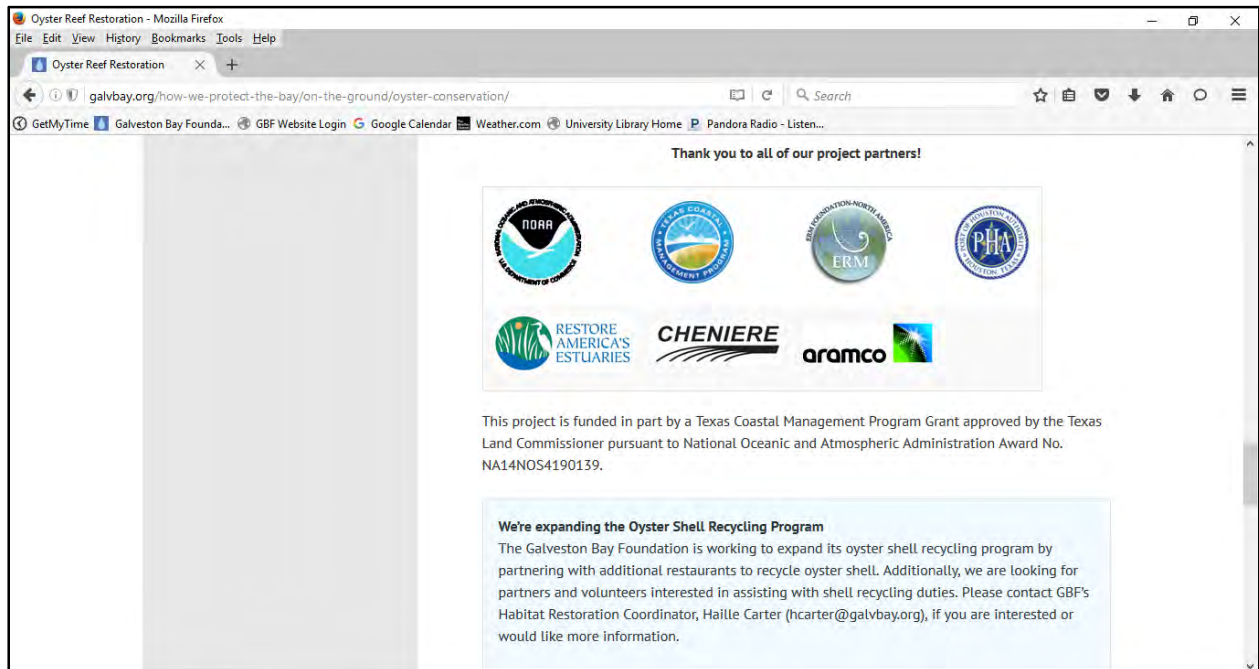
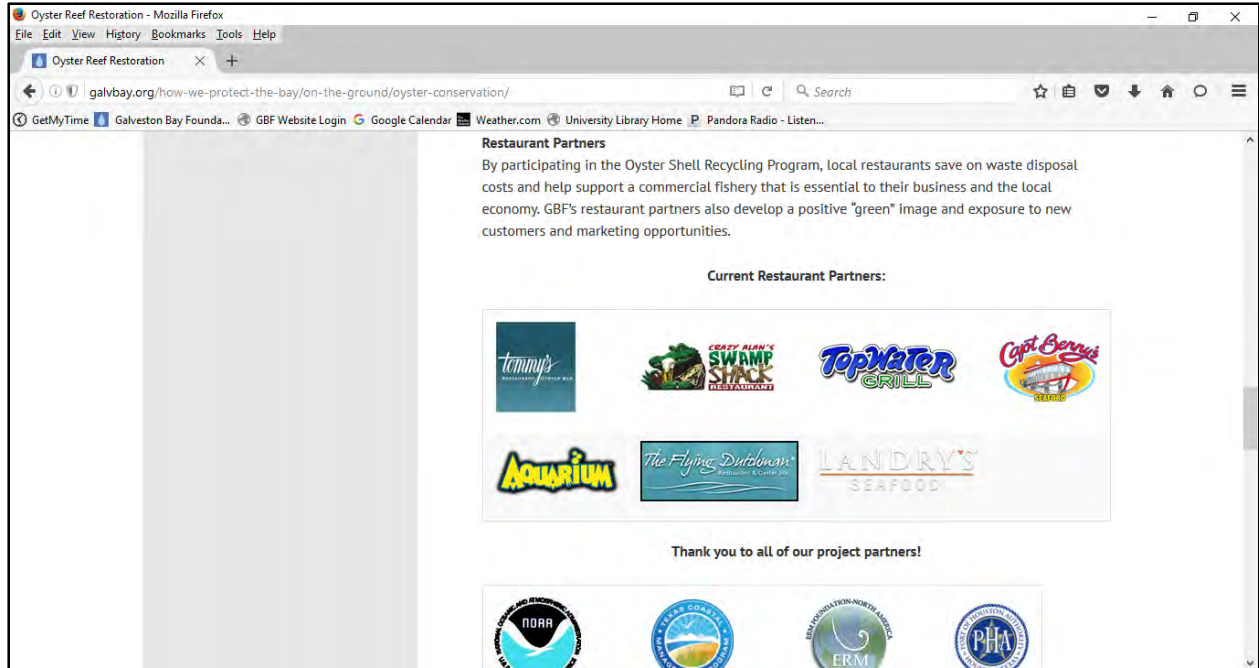
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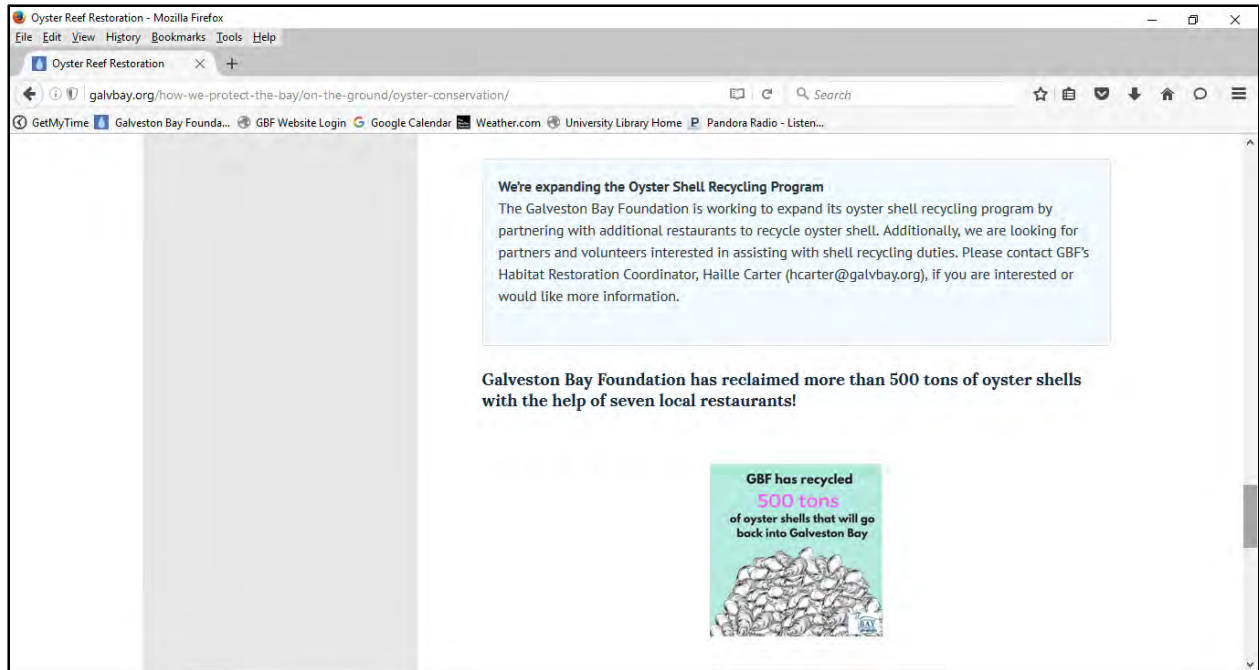


B.2 Webpage (screenshots)

<http://galvbay.org/how-we-protect-the-bay/on-the-ground/oyster-conservation/>







B.3 Infographic

Galveston Bay Foundation's Oyster Shell Recycling Program


The infographic illustrates a three-step process for recycling oyster shells. Step One, 'Shell Collection', shows a person placing shells into a blue recycling bin. Step Two, 'Curing (aka sun-bleaching)', shows a person using a wheelbarrow to transport shells to a curing area. Step Three, 'Oyster Reef Restoration', shows shells being placed on a reef in the water. Green arrows indicate the flow from Step One to Step Two, Step Two to Step Three, and Step Three back to Step One.

**Step One:
Shell Collection**

**Step Two:
Curing (aka sun-bleaching)**

**Step Three:
Oyster Reef Restoration**

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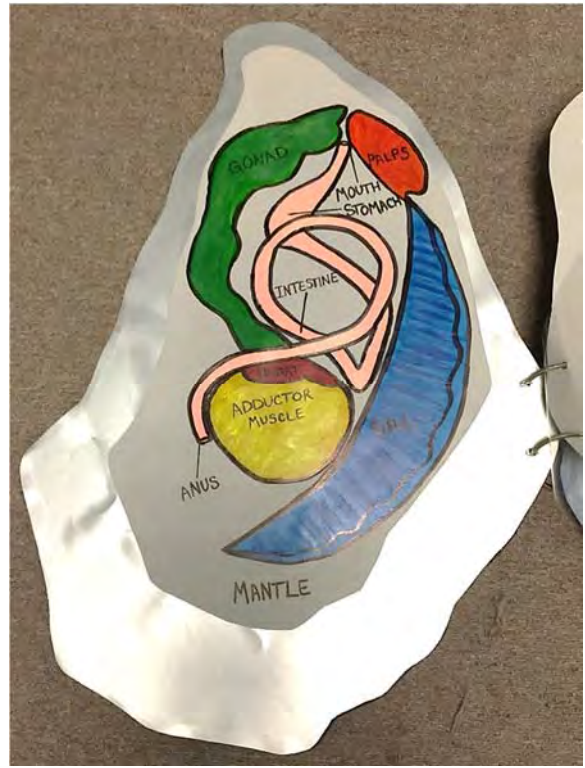
B.4 Shell Recycling Poster



B.5 Mock Oyster Shell Tray



B.6 Oyster Anatomy Diorama



B.7 Outreach Booths



B.8 Galveston County Daily News Article

Reef restoration

By ERIN HEFFERNAN | Posted: Saturday, May 2, 2015 12:45 am

http://www.galvnews.com/news/free/article_d2c40d26-f08b-11e4-8ed8-035db35f0e0e.html



Reef Restoration

Jim Olis of the Galveston Bay Foundation Oyster shell Recycling Program dumps discarded shells collected from area restaurants at a recycling site near Texas City on Thursday. The shells will remain at the site for at least 6 months to be cured by the sun before being reintroduced to the bay.

GALVESTON —Six truckloads of oyster shells salvaged from the plates of local restaurants sat in towering piles Friday on the banks of a small saltwater lake.

After being shucked and cooked, or just slurped, and set aside in restaurants, the shells will serve a noble cause: rebuilding the depleted oyster population in Galveston Bay and surrounding waters.

Volunteers with the Galveston Bay Foundation will stack more than 200 tons of the shell over the summer at the foundation’s Sweetwater Preserve, near 7 Mile Road in Galveston. The recycled shells will house future generations of oysters.

Thirty volunteers from the Aramco Services Company, an oil and gas organization, gathered Friday as part of the ongoing project working to bag and stack the shells in pyramids along the edge of the water.

The result will be a self-sustaining oyster reef—a vital resource to maintaining Galveston Bay ecosystems and industry. Juvenile oysters, known as spats, then float through the water in search of a home, attach to the manmade reef and thrive.

The foundation began its oyster shell recycling program in 2011 and has collected 326 tons of shell so far, about 80 of which have been returned to the bay. “The shells would end up in the trash in most restaurants,” Sharon Roark, major gifts officer at the foundation said. “But the beauty of this project is that they instead build up reefs the restaurants rely on for their product.”

The first restaurant partner in the program was Tommy’s Restaurant & Oyster Bar in Houston, which is still one of the largest contributors of shells. Shells are also collected from Crazy Alan’s Swamp Shack, The Flying Dutchman, Aquarium and Landry’s in Kemah and The Topwater Grill in San Leon. They then sit out and cure in the sun for six months to rid the shells of bacteria before they can be put back into the water.

Volunteers, like the Aramco group, then bag the oysters and construct the reef. The hope is that the reefs can restore an oyster habitat that was cut by more than 60 percent in Hurricane Ike. The storm deposited a layer of sediments and debris atop the bay bottom, smothering live oysters.

“We’re focusing on bringing back oysters because they are really important to industry, but also to the ecosystem” Haille Carter, a habitat restoration coordinator with the foundation said. Oyster reefs work to prevent the shoreline from eroding by cutting the waves. They are also one of the most effective ways of filtering bacteria out of the water. Just one oyster can filter 50 gallons of water a day. The reef also becomes a place where fish can thrive. Carter said that they hope the Sweetwater preserve reef will be done by the end of the summer with the help of volunteer groups.

“When you build a reef with your own hands, it’s kind of amazing,” volunteer Savannah Ober of Aramco said. “I had no idea what went into it.”



© STUART VILLANUEVA/The Daily News

**APPENDIX C
 OUTREACH MATERIAL DISTRIBUTION**

C.1 Materials Distributed to Restaurant Partners

Restaurant	Coaster	Restaurants to Reefs Brochure	Rack Card	Oyster Fact Sheet	Shell Collection Receptacles
Tommy's Restaurant & Oyster Bar	100	50	50	5	26 bins
Topwater Grill	0	50	50	0	18 bins
Crazy Alan's Swamp Shack	0	0	0	0	6 bins
The Aquarium	400	10	50	25	3 buckets
The Flying Dutchman	300	0	0	0	3 buckets 1 bin
Landry's Seafood	300	0	100	0	3 buckets
Captain Benny's Seafood	836	50	50	5	3 bins
TOTALS:	1936	160	300	35	60 bins 9 buckets

APPENDIX D RESTAURANTS DATABASE

Restaurant Database Legend:
Current Partner
Potential addition in 2016 or 2017

Restaurant	Location	Restaurant Address	Contacted?	Interested?	Notes
Aquarium, The	Kemah	#11 Kemah Boardwalk	Current Partner		Partner since 2013
Baybrook's Fresh Seafood	Seabrook	416 11th Ave	No	-	Contact in 3-5 years
Black Pearl Oyster Bar	Galveston	327 23rd St	Yes	Yes	Contact in 2016 or 2017
BLVD Seafood	Galveston	2804 R 1/2	No	-	Added to list in 2016
Bonefish Grill	Clear Lake	19325 Gulf Freeway	No	-	Added to list in 2016
Captain Benny's Seafood	Houston	8253 Gulf Fwy	Current Partner		Partner since 2015 Four additional locations (2 in Houston, 1 in Deer Park, 1 in Stafford)
Captain Tom's Seafood & Oyster	Houston	13955 East Fwy	No	-	2 additional locations in Houston and Katy
Chasin' Tail Sports Bar	Clear Lake	2402 Bay Area Suite M	No	-	Added to list in 2016
Chilos Seafood & Oyster Bar	Houston	1150 Edgebrook Dr	No	-	Added to list in 2015
Clary's Seafood Restaurant	Galveston	8509 Teichman Rd	No	-	Seasonal oyster sales only
Crazy Alans Swamp Shack	Kemah	310 Texas Ave	Current Partner		Partner since 2013
Crawfish Pot & Oyster Bar, The	Houston	9820 Gulf Fwy #7	No	-	Added to list in 2015
Crescent City Connection Sports & Oyster Bar	Houston	16605 El Camino Real	No	-	Added to list in 2015
Fish Tales	Galveston	2502 Seawall	No	-	Added to list in 2016
Fisherman's Wharf	Galveston	2200 Harborside Drive	No	-	Seasonal oyster sales only

Restaurant	Location	Restaurant Address	Contacted?	Interested?	Notes
Floyd's Cajun Seafood And Steakhouse	Webster	20760 Gulf Fwy	No	-	
Flying Dutchman	Kemah	9 11th Ave Kemah Waterfront	Current Partner		Partner since 2013
Gaido's Seafood Restaurant	Galveston	3828 Seawall Blvd	Yes	Yes	Met with manager 3/22/16; Interested in starting in 2017; Seasonal oyster sales only
Gilhooley's Restaurant	Dickinson	222 9th St	Yes	See Notes	Contacted but not interested as of 2014 Possible future interest
Landry's	Kemah	1 Kemah Boardwalk	Current Partner		Partner since 2013
Landry's Seafood House	Galveston	5310 Seawall Blvd	No	-	2 additional locations in Katy and Woodlands
LA Crawfish	Clear Lake	939 W. Bay Area	No	-	Added to list 5/15/2016
Lone Star Grill	Bacliff	3435 Hwy 146	No	-	Added to list in 2016 Potential addition in 2016 or 2017
Mambo Seafood	Houston	10402 Gulf Freeway	No	-	Added to list in 2016 Potential addition in 2016 or 2017
Marcos Seafood & Oyster Bar	Houston	917 Edgebrook Dr	No	-	Added to list in 2015
Noah's Ark Bar & Grill	Bacliff	4438 Boulevard St	No	-	Added to list in 2015
Number 13	Galveston	7809 Broadway St	Yes	No - see notes	Contacted in 2015 - discontinued partnership due to lack of time/staff commitment Possible future interest
Ostioneria Michoacan Seafood and Oyster Bar	Houston	5819 Gulf Fwy	No	-	Added to list in 2015
Outriggers	Seabrook	101 Bath Ave	Yes	No - see notes	Contacted but not interested as of 2014 Possible future interest
Pappas Seafood House	Webster	19991 Gulf Freeway	No	-	Added to list in 2016 Potential addition in 2016 or 2017
Peska's Seafood Culture	Houston	1700 Post Oak Blvd #1-190	Yes	Yes	Added to list in 2016 May be willing to deliver shells to GBF

Restaurant	Location	Restaurant Address	Contacted?	Interested?	Notes
Perry's Steakhouse & Grille	Houston	487 Bay Area Blvd	Yes	See Notes	Contacted but not interested as of 2014 Possible future interest
Rajun Cajun	Houston	930 Main St	No	-	3 additional locations (2 in Houston, 1 in Sugarland)
Reef Seafood House, The	Texas City	1301 31st 1/2 St N	No	-	
Rose's Seafood Inc.	Seabrook	415 11th Ave	No	-	
Rouxpour	Clear Lake	700 Baybrook Mall, Ste H100	No	-	Added to list in 2016 Potential addition in 2016 or 2017
Sam's Boat	Seabrook	3101 Nasa Rd 1	No	-	Added to list in 2016
Spot, The	Galveston	3204 Seawall	No	-	Added to list in 2016
Tommy's Restaurant & Oyster Bar	Houston	2555 Bay Area Blvd	Current Partner		Partner since 2011
Topwater Grill	San Leon	815 Ave O	Current Partner		Partner since 2013
Tookie's Seafood	Seabrook	1106 Bayport Blvd	Yes	Yes	Met with manager on 3/18/16; <i>Plans to begin recycling in June or July 2016</i>
Valdo's Seafood House	El Lago	4106 Nasa Rd 1	No	-	Potential addition in 2016 or 2017
Willie G's	Galveston	2100 Harbor Side	No	-	1 additional location in Houston

APPENDIX E PROJECT PHOTOGRAPHS

E.1 Oyster Shell Collection



E.2 Shell Recycling Truck & Trailer



E.3 New 5-gallon Shell Collection Buckets



E.4 Sun Curing Process



E.5 Port of Houston Authority Lease: "Red Bluff Road Curing Site"



E.6 GBF's TX City Preserve: "TX City Curing Site"

