

# Capacity Building 1 Final Report

# **GULF RESEARCH PROGRAM**

Project Title: Making Monitoring Matter: Breaking Down Barriers to Interdisciplinary Collaboration in

the Houston-Galveston Area **Award Amount:** \$182,344

Awardee: Galveston Bay Foundation

**Award Start Date:** 05/01/17 **Award End Date:** 10/31/19 **NAS Grant ID:** 2000008125

**Project Director:** Sarah Gossett\*

**Affiliation:** Galveston Bay Foundation

# **Project Key Personnel:**

• Kaitlin Grable, Galveston Bay Foundation

# I. PROJECT SUMMARY (from proposal)

Galveston Bay faces a complex assortment of chronic and acute challenges including oil spills, shipping traffic, bayside development, urbanization, commercial fishing, climate change, and shellfish harvesting, among others. These activities put enormous pressure on a system whose productivity supports the well-being of tens of thousands of Texans that work in fishing, recreation, ecotourism, or shipping industries. In order to best address these issues, local stakeholders and policy makers need access to long-term ecological datasets for Galveston Bay.

In 2016, the Galveston Bay Foundation's (GBF's) Water Monitoring Team, consisting of 47 citizen scientists and one full time Volunteer Coordinator, created a Water Monitoring Action Plan specifically designed to facilitate this transfer of knowledge. Funding for this project would support the implementation of this Action Plan, consisting of a series of workgroup meetings and educational outreach events to communicate GBF's citizen science water quality data to stakeholders who can utilize this information to inform management strategies and policies that impact Galveston Bay. Workgroups will consist of A.) researchers and local experts who can advise GBF's Water Monitoring Team on best data management practice; B.) representatives from city municipalities and industry groups whose activities impact the health of Galveston Bay; and C.) concerned citizens who wish to support citizen science initiatives and interdisciplinary collaboration in their community from the bottom-up. Members will determine the best opportunities for cooperative education and training initiatives, striving to equip the greater Houston community with the resources and knowledge it needs to address the challenges facing Galveston Bay.

\* Nathan Johnson was awarded this grant; it was transferred over to Sarah Gossett.

# II. PROJECT SUMMARY (from final report)

Galveston Bay faces a complex assortment of chronic and acute challenges including commercial and industrial threats, development and urbanization. To best address these issues, local stakeholders and policy makers need access to long-term ecological datasets for Galveston Bay. In 2016, the Galveston Bay Foundation's (GBF's) Water Monitoring Team, consisting of approx. 60 citizen scientists and one full time Program Coordinator, created an Action Plan to facilitate this transfer of knowledge. This project supported the implementation of this Plan, including a series of workgroup meetings, outreach events and presentations, stakeholder meetings, and information products to communicate GBF's citizen science water quality data to stakeholders who utilized this information to inform behaviors and management strategies that impact Galveston Bay. This project extended GBF's Water Monitoring program to new stakeholders while fostering scientific literacy, nourishing an appreciation for interdisciplinary collaboration, and communicating the importance of effective Bay-wide monitoring within our growing and diverse region.

This project nurtured cross boundary connections by facilitating collaboration between city municipalities, community organizers, members of industry, local environmental experts, and interested members of the public to address issues facing Galveston Bay. Additionally, it increased engagement with underrepresented and underserved communities in the areas through community presentations and through meetings with community leaders.

Throughout this program GBF continued to collect and evaluate water quality data, updated its data management protocols, and improved in-house capacity for data analysis. During this project period, GBF utilized over 95 volunteers, collected almost 1,500 water samples, and engaged over 1,000 individuals with in-person programming.

# III. PROJECT RESULTS

# Accomplishments

This project aimed to support ongoing, community-driven, quality water quality testing in Galveston Bay to fill a need for increased nearshore water quality monitoring. This project also aimed to foster local stewardship for the Bay's resources by 1) extending GBF's Water Monitoring Citizen Science Project to new stakeholders while fostering scientific literacy, nourishing an appreciation for the value of interdisciplinary collaboration, and communicating the importance of effective Bay-wide monitoring within our growing and diverse region. 2) This project also aimed to facilitate collaborations between municipalities, community organizers, members of industry, local environmental experts, and interested members of the public to more effectively address the myriad of threats to Galveston Bay. 3) Additionally, this project aimed to increase in-house capacity for data collection, management, and analysis.

This project extended the program to new stakeholders by directly engaging almost 1,000 new stakeholder through in-person presentations about data findings and implications. This project also fostered the establishment of over twenty new partnerships with: over five new municipalities, six new community groups, four new local universities, and over six new environmental organizations. A list of

these new partners can be found below. Additionally, this project supported a stakeholder analysis of Galveston Bay to inform future outreach and engagement efforts.

# **New Partners:**

Communities: City of Pasadena, City of Galveston, City of Bayou Vista, City of Nassau Bay, City of Anahuac

Community Groups: Texas Mariners Cruising Association, Java Lava Brew, Houston Zoo, North Pasadena Neighborhood Association, Liberty County Texas Master Naturalists, CLMA

Universities: TAMUG, University of Houston Downtown, University of Houston Main Campus, Texas A&M University

Organizations: Bayou City Waterkeeper, local CAP organizations, GBEP, Watershed Based planning (Double Bayou, Highland Bayou, BIG, Coalition of Watersheds), Texas City Prairie Preserve This project also supported the creation of key information products that were used to engage thousands more within the community on a more surface level. This included handouts about basic ways to improve water quality, check for recreation safety of Galveston Bay's waters, and remain informed. These information products are elaborated upon in section 5.

This project increased in-house data management capacity by supporting the creation of a long-term relational database in Microsoft Access, improved data analysis capacity, and supporting a comprehensive data review to establish trends, hotspots, and anomalies.

# <u>Implications</u>

By effectively engaging volunteer citizen scientists in robust environmental monitoring research, this program has set a precedent for utilization of cost-effective methods of data collection. Additionally, through using this research as a platform for community and stakeholder engagement, this program has further bridged the gap between research scientists and the people their research is trying to help. By engaging the community in the research, this program has provided ownership and pride in the research to community members. These citizen scientists have been empowered to share their work and findings with their neighbors, friends, and community leaders, providing a familiar, trustworthy, and understandable source to share this knowledge.

Through the successful retention of citizen scientist water quality monitors and through the maintenance of robust community partnerships, GBF has demonstrated their ability to engage the community in both the research and action process. GBF currently partners with over 35 various public and private entities to conduct water quality monitoring on their properties. Partnerships include marinas and RV parks, restaurants and bait camps, municipalities and cities, and other NPO property managers and private landowners. This project allowed for the increase in number and improvement in relationship with these entities. GBF regularly shares all water quality findings for each location with their associated partners, informs them of any water quality or human health concerns, and works with them directly to rectify the problem. This collaborative, iterative research approach allows for ongoing actions and impacts as a direct result from research findings. For example, when GBF found consistently high bacteria levels at a popular local swimming beach and kayak launch, GBF worked with the city council to put up swimming advisory signs until the threat had passed. GBF has also worked with municipal public works departments to change infrastructure to increase circulation at high bacteria

locations, and inform residents of BMPs to reduce polluted stormwater runoff. After GBF's data highlighted regularly high bacteria levels in a popular yet stagnant swimming cove off the Bay, the City of Nassau Bay began work to both inform recreators of recent bacteria findings and build new culverts to connect the lagoon with the rest of the bay to increase water flow and combat chronically high levels. Similarly, GBF has worked with the City of Galveston to conduct further, upstream bacterial testing in stormwater infrastructure after one marina proved ongoing unsafe levels of bacteria, even during dry weather events. Much of the other environmental monitoring occurring around Galveston Bay is not this readily accessible to local decision makers and residents, reducing the level of positive impact the associated research has on the community directly.

This program also provides public information on water quality findings and threats throughout Galveston Bay. Of note, this project allowed for GBF's partnership with Swim Guide, where we post all recent and historic bacteria data. Swim Guide is an interactive website and app that allows anyone to determine the swimming safety at locations around the United States. This project also increased GBF's capacity to inform all communities of potential exposure risks through outreach efforts such as community open houses, presentations, and online marketing strategies. This project allowed for the creation of new community partnerships for increased community engagement and outreach about bacterial exposure levels and other water quality concerns, effectively reducing risk of exposure by creating a more scientifically literate and engaged public.

Finally, this project allowed for the improvement of GBF's data management and visualization platforms, supporting the creation of a robust, relational database for GBF's water quality data, and the development of a data visualization portal to more effectively share the data with the public.

# **Unexpected Results**

N/A

# **Project Relevance**

The following audiences would be most interested in the results of this project:

- Researchers
- Educators
- Community Leaders
- Non-Profit Private Sector

This project facilitated the collection of ongoing, nearshore, publicly accessible water quality data in Galveston Bay. While a handful of organizations collect water quality data throughout Galveston Bay, local research institutions and state agencies simply don't have the capacity to regularly monitor both water quality and bacteria throughout the entirety of the Bay. However, because Galveston Bay has such a large number of diverse users spread along its shoreline, there is high demand for information regarding water quality and bacteria levels at individual communities, marinas, and fishing spots, many of which are located along the near-shore regions of the Bay. GBF's Water Quality Program is a cost-effective way of meeting this demand for localized water quality data by empowering residents at these locations to collect and interpret this information on a voluntary basis. Additionally, this data is easily accessible and understandable by a wide variety of users. Galveston Bay Foundation publishes the data

in a variety of formats intended for different audiences, based on their information needs and level of understanding.

Researchers are interested in this data to fill in existing data gaps. Researchers at University of Houston used this project's data in association with a study on oyster dynamics in Galveston Bay. Researchers at University of Houston Downtown used this data to better understand how bacteria and water quality values change throughout the watershed. Houston Advanced Research Center researchers used this data to inform the development of the Galveston Bay Report Card.

Educators are interested in this data because it provides a platform for students to explore, investigate, and interact with the data and its findings. Teachers have utilized the data portal within their own classroom lesson plans and GBF's education staff are currently creating classroom curriculum utilizing the data posted on the data visualization portal.

Community leaders are interested in this data because it indicates the overall health of their surface waterways. Each year, GBF shares the data findings with relevant community leaders in reports of overall water quality findings and trends, and reports any troublesome water quality findings in real time. For example, this data has been used by community water quality committees, to inform community-based recreation advisories, and to test upstream stormwater drains for potential contamination issues.

The nonprofit private sector is interested in this data because it fills a niche in data information and can provide valuable information in the status and trends of water quality around Galveston Bay, thus informing project focus and efforts.

# **Education and Training**

Number of students, postdoctoral scholars, or educational components involved in the project:

Undergraduate students: 17

Graduate students: 5 Postdoctoral scholars: 0

Other educational components: 8

GBF has educated and trained 55 community members in water quality dynamics, relationships, impacts and testing. These community members now serve as volunteers on GBF's Water Quality Monitoring Team, collecting data monthly and serving as advocates for Galveston Bay to their communities.

3 high school students and 3 high school students were involved in collecting water quality data as a part of the team. Two informal environmental educators were also involved in interpreting and analyzing data as a part of their educational programming and lesson plan development.

Not reflected in the numbers above are the various students, community leaders, residents, and other stakeholders who have benefited from the findings of our water quality data – adults and children who attended presentations or met with GBF staff or volunteers to learn more about water quality trends and impacts.

# IV. DATA AND INFORMATION PRODUCTS

This project produced data and information products of the following types:

- Data
- Information Products
- Scholarly publications, reports or monographs, workshop summaries or conference proceedings
- Websites or data portals
- Curricula for education and training
- GIS applications
- Other: video, blog posts, social media posts, articles

# **DATA**

# **Data Management Report:**

See attached Data Management Report.

# **Relationships Between Data Sets:**

Only one data set was managed for this project.

## Additional Documentation Produced to Describe Data:

GBF houses all data and Metadata in a relational Microsoft Access database, housed on GBF's cloud network system. The database was created as a result of this project. GBF maintained data collection established in the Texas Stream Team Field Guide and the project's QAPP.

# Other Activities to Make Data Discoverable:

GBF created a data visualization portal to publish and visualize the data, a report analyzing the past 5 years of data, annual summaries of the data, articles, social media posts, flyers, graphics, banners, and posters based on data findings. GBF shared these data findings through presentations, at outreach events, through tabling games and materials, at stakeholder meetings, and through sharing the bacteria data on both Swim Guide and GBF's own bacteria map. Finally, GBF engaged local professors and students in the datasets to help better inform research efforts and promote data use.

# Sensitive, Confidential, or Proprietary Data:

N/A

# **INFORMATION PRODUCTS**

# **Information Products Report:**

See attached Information Products Report.

# Citations for Project Publications, Reports and Monographs, and Workshop and Conference Proceedings:

Simoniello, C. et al. Citizen-Science for the Future: Advisory Case Studies From Around the Globe. Frontiers in Marine Science, 2019/05/07.

Link: https://www.frontiersin.org/articles/10.3389/fmars.2019.00225/full?&utm\_so

# **Websites and Data Portals:**

www.galvbay.org/watermonitors www.galvbay.org/citizenscience waterdata.galvbay.org gulfcitizenscience.org

All websites will be maintained indefinitely. Galveston Bay Foundation maintains the domain for the first three websites, and GCOOS maintains the domain for the Gulf Citizen Science Data Portal.

# **Additional Documentation Produced to Describe Information Products:**

N/A

# Other Activities to Make Information Products Accessible and Discoverable:

GBF created a data visualization portal to publish and visualize the data, a report analyzing the past 5 years of data, annual summaries of the data, articles, social media posts, flyers, graphics, banners, and posters based on data findings. GBF shared these data findings through presentations, at outreach events, through tabling games and materials, at stakeholder meetings, and through sharing the bacteria data on both Swim Guide and GBF's own bacteria map. Finally, GBF engaged local professors and students in the datasets to help better inform research efforts and promote data use.

# Confidential, Proprietary, Specially Licensed Information Products:

N/A

### V. PUBLIC INTEREST AND COMMUNICATIONS

# **Most Unique or Innovative Aspect of the Project**

This project is innovative in its utilization of citizen scientists for data collection. While citizen science initiatives have recently increased in popularity around the United States (Crall, et al. 2011), the state of Texas lags behind in the utilization of citizen scientists for effective data monitoring. This cost-effective approach to data collection expands the capacity for scientific research, increases the amount of reliable data collected, and engages communities in the entire research process. Prior to GBF's research, only two locations across all of Galveston Bay's expansive shoreline were regularly monitored for fecal bacteria to inform recreation advisories. Additionally, very little supplemental water quality research occurred along Galveston Bay's shoreline. This project will further highlight the value of this research framework within the existing professional and academic framework.

# **Most Exciting or Surprising Thing Learned During the Project**

Through analysis conducted on GBF's citizen science dataset, GBF has learned much about the data's limitations and strengths, which has helped improve GBF's understanding of the decisions that can be made and actions that can be taken because of this dataset. This analysis has further established the accuracy and validity of citizen science data and has showcased the need for continuous testing throughout Galveston Bay. Additionally, learning more about how different water quality parameters relate and impact each other has helped inform future decisions – while many of the results have been expected, some relationships (or lack therefore) have been quite surprising and have created more questions to investigate. Finally, this project illustrated the value many community members put on this type of program. I was excited and surprised by the number of community members and stakeholders excited about our work and wanting more information after learning about the program. People value citizen-collected data, want to be involved, and truly care about the information findings.

# **Most Important Outcome or Benefit of Project**

Since our monitors are citizens in our area we are able to facilitate behavior changes of the overall community through their improved knowledge and advocacy. Additionally, these community monitors often have connections to important stakeholders in their community, and have their "ear" in a way that GBF may not. This project has the potential to improve water quality for many different communities, improve human health, and increase environmental knowledge while changing community behaviors and perceptions. Most importantly, we've been able to increase the visibility and robust resources associated with this program. This has allowed us to provide tools for improved environmental literacy to a much larger audience than we have in the past.

From an internal perspective, our improved capacity for data management and analysis has been incredibly valuable.

# Communications, Outreach, and Dissemination Activities of Project

Press Release for Post Harvey Public Meeting - 2/28/2018 <a href="https://galvbay.org/wp-content/uploads/2018/04/Open-House-Press-Release-2018.pdf">https://galvbay.org/wp-content/uploads/2018/04/Open-House-Press-Release-2018.pdf</a>

# Articles:

- GBF webpage: Hurricane Harvey Impacts <a href="https://galvbay.org/news/how-has-harvey-impacted-water-quality/">https://galvbay.org/news/how-has-harvey-impacted-water-quality/</a>
- GBF 2017 overview: <a href="https://galvbay.org/wp-content/uploads/2018/03/2017-Data-summary">https://galvbay.org/wp-content/uploads/2018/03/2017-Data-summary</a> Final.pdf
- Galveston Bay Report Card feature (WMT):
- http://www.galvbaygrade.org/cover-stories/2018/03/water-quality-monitoring-team/
- GBF 2018 overview: <a href="https://galvbay.org/wp-content/uploads/2019/04/FINAL-Galveston-Bay-2018-year-in-review-Data-Summary.pdf">https://galvbay.org/wp-content/uploads/2019/04/FINAL-Galveston-Bay-2018-year-in-review-Data-Summary.pdf</a>
- "Is Galveston Bay Safe For Swimming?" <a href="https://galvbay.org/news/is-galveston-bay-safe-for-swimming/">https://galvbay.org/news/is-galveston-bay-safe-for-swimming/</a>
- "Galveston Bay Foundation joins the Swim Guide Family"
   https://www.theswimguide.org/2018/10/02/galveston-bay-foundation-joins-swim-guide/

Water Monitor Spotlight: <a href="https://galvbay.org/news/full-circle-galveston-bay-foundation-water-monitor-finds-old-newspaper-clipping-of-science-fair-project-on-water-quality/">https://galvbay.org/news/full-circle-galveston-bay-foundation-water-monitor-finds-old-newspaper-clipping-of-science-fair-project-on-water-quality/</a>

# Webpages:

Project overview: www.galvbay.org/watermonitors

Bacteria map & Intern reports: www.galvbay.org/citizenscience

Citizen Science Data Portal: waterdata.galvbay.org

### Video:

https://www.youtube.com/watch?v=Nbf8P51vOpA&fbclid=lwAR1N5smIXU\_a6b3hqr\_WGuw5Ofd44mLL Y3FNfiQUYeERcXQTemcs2Wy1wBM

# Facebook Page:

https://www.facebook.com/GalvestonBayFoundation/

# **Facebook Posts:**

https://www.facebook.com/GalvestonBayFoundation/posts/10156780746723439

https://www.facebook.com/GalvestonBayFoundation/posts/10156740547933439

https://www.facebook.com/GalvestonBayFoundation/posts/10156684952493439

https://www.facebook.com/GalvestonBayFoundation/posts/10156684954353439

https://www.facebook.com/GalvestonBayFoundation/posts/10156684947023439

https://www.facebook.com/GalvestonBayFoundation/posts/10156684641428439

https://www.facebook.com/GalvestonBayFoundation/posts/10156430826688439

https://www.facebook.com/GalvestonBayFoundation/posts/10156205846013439

https://www.facebook.com/GalvestonBayFoundation/posts/10156131556028439

https://www.facebook.com/GalvestonBayFoundation/videos/542305429554671/

https://www.facebook.com/GalvestonBayFoundation/posts/10155936289098439

https://www.facebook.com/GalvestonBayFoundation/photos/a.235649273438.135241.17910018438/1

0155172331023439/?type=3&theater

 $\underline{\text{https://www.facebook.com/GalvestonBayFoundation/photos/a.235649273438.135241.17910018438/1}}$ 

0155072915183439/?type=3&theater

#### Data Report

DataType	DigitalResourceType	Title	FileName	Creators	PointofContact	PublicationYear	RepositoryName	DOIorPersistentURL	Keywords	Publications
Chemical	Tabular/Spreadsheet	Water Quality Monitoring Data	gulfcitizenscience.org; WMT database_GBF.xlx	Nolan, Lindsey; Gossett, Sarah	Programs Manager; Sarah Gossett; sgossett@galvbay.org; 281-332-3381 x 217	2017	Gulf Coast Citizen Science Data Portal; Dropbox Dropbox:		Water Quality, Citizen Science, Galveston Bay	All Publications
Chemical	Images	Harvey Impact Graphs	s Harvey_Impact.pdf	Gossett, Sarah	Programs Manager; Sarah Gossett; sgossett@galvbay.org; 281-332-3381 x 217	2017	https://www.dropbox.com/s h/yqvl3wxw361l8rh/AABVjrf Gi7D 2Z59kLaX3x-Sa?dl=0 Dropbox:		Water Quality, Houston, Harvey, flood, Galveston Bay, Citizen Science	https://galvbay.org/news/how-has-harvey- impacted-water-quality
Chemical	Images	2017 Summary Graphs	2017_overview_graphs.pdf	Nolan, Lindsey	Programs Manager; Sarah Gossett; sgossett@galvbay.org; 281-332-3381 x 217	2018	https://www.dropbox.com/s h/yqvl3wxw361l8rh/AABVjrf Gi7D_2Z59kLaX3x-Sa?dl=0 Dropbox:		Water Quality, Citizen Science, Galveston Bay	https://galvbay.org/wp- content/uploads/2018/03/2017-Data- Summary_Final.pdf
Chemical	Images	2017 Salinity Map	2017_salinity_map.png	Nolan, Lindsey	Programs Manager; Sarah Gossett; sgossett@galvbay.org; 281-332-3381 x 217	2018	https://www.dropbox.com/s h/yqvl3wxw361l8rh/AABVjrf Gi7D 2259kLaX3x-Sa?dl=0 Dropbox:		Water Quality, Citizen Science, Galveston Bay, Salinity, Flood	https://galvbay.org/wp- content/uploads/2018/03/2017-Data- Summary_Final.pdf
Chemical	Images	WQRA reports	WQRA_Figures.zip https://www.google.com/maps/d	Cullen, Josh	Programs Manager; Sarah Gossett; sgossett@galvbay.org; 281-332-3381 x 217	2018	https://www.dropbox.com/s h/yqvl3wxw361l8rh/AABVjrf Gi7D 2Z59kLaX3x-Sa?dl=0		Water Quality, Citizen Science, Galveston Bay	https://galvbay.org/wp- content/uploads/2018/05/Cullen- Condensed-Water-Quality-Report.pdf https://www.google.com/maps/d/u/0/vie
Ecological/Biological	Geospatial (vector,	Bacteria Mao	/u/0/viewer?hl=en∣=10BF1IG XFXym309G7-wut- 6wQMv0≪=29.61608764344447 %2C-95.10935542285154&z=11		Programs Manager; Sarah Gossett; sgossett@galvbay.org; 281-332-3381 x 217	2017	Galveston Bay Foundation website (Google Maps)		Water Quality, Citizen Science, Galveston Bay	wer?hl=en∣=10BF1IGXFXym309G7- wut- 6wQMv0≪=29.616087643444445%2C- 95.10935542285154&z=11
Ecological/ biological	raster, or gridded)	вассена мар	https://www.google.com/maps/d /u/0/viewer?mid=1vGQBeglSj-Q4-		3g055ett@galvDdy.Ulg, 201-552-5501 x 217	2017	website (doogle Maps)		.,	https://www.google.com/maps/d/u/0/vie
Ecological/Biological	Geospatial (vector, raster, or gridded)	Harvey Impact Map	5c6D11AxTBSIxE&II=29.35849830 087383%2C- 95.01741100000004&z=10	Gossett, Sarah	Programs Manager; Sarah Gossett; sgossett@galvbay.org; 281-332-3381 x 217	2017	Galveston Bay Foundation website (Google Maps)		Water Quality, Citizen Science, Galveston Bay, Salinity, Flood	wer?mid=1vGQBeglSj-Q4- 5c6D11AxTB5lxE≪=29.35849830087385% 2C-95.01741100000004&z=10

# Information Products Report

InfoProductType	DigitalResourceType	e Title	FileName	Creators	PublicationYear Publisher Galveston Bay	RepositoryName	DOIorPersistentURL DatasetReference
Website or Data Portals	Web Based Resource	Water Monitoring Team webpage	galvbay.org/watermonitors	Gossett, Sarah	2017 Foundation Galveston Bay	GBF webpage (galvbay.org)	
Website or Data Portals	Web Based Resource	Bacteria Monitoring webpage	galvbay.org/citizenscience	Gossett, Sarah	2017 Foundation	GBF webpage (galvbay.org) Dropbox:	
Report or Monograph	Text	Poster: overview of team	WMT Poster 2017.pdf	Gossett, Sarah; Grable, Kaitlin	Galveston Bay 2018 Foundation	https://www.dropbox.com/sh/g1nqkgyp4f85 g0w/AABajBhpjPoIA7qliqYiMSIEa?dl=0 Dropbox:	
Report or Monograph	Text	Poster: Harvey findings	Post-HarveyPosterWaterQuality.pdf	Gossett, Sarah; Everett, Claire	Galveston Bay 2017 Foundation	https://www.dropbox.com/sh/g1nqkgyp4f85 g0w/AABajBhpjPoIA7qliqYiMSIEa?dl=0 Dropbox:	
Report or Monograph	Text	Poster: 2017 overview	2017 data poster.pdf	Nolan, Lindsey; Grable, Kaitlin	Galveston Bay 2018 Foundation	https://www.dropbox.com/sh/g1nqkgyp4f85 g0w/AABajBhpjPoIA7qliqYiMSIEa?dl=0 Dropbox:	
Report or Monograph	Text	2017 data summary	2017 Data Sumary.pdf	Nolan, Lindsey	Galveston Bay 2018 Foundation	https://www.dropbox.com/sh/g1nqkgyp4f85 g0w/AABajBhpjPoIA7qliqYiMSIEa?dl=0 Dropbox:	
Report or Monograph	Text	2017 individual site summaries	2017 Ind Site Summaries.zip	Nolan, Lindsey	Galveston Bay 2018 Foundation	https://www.dropbox.com/sh/g1nqkgyp4f85 g0w/AABajBhpjPoIA7qliqYIMSIEa?dl=0 Dropbox:	
Report or Monograph	Image	Harvey Infographic	Post Harvey Infographic.png http://www.galvbaygrade.org/cover-	Everett, Claire	Galveston Bay 2017 Foundation	https://www.dropbox.com/sh/g1nqkgyp4f85 g0w/AABajBhpjPoIA7qliqYiMSIEa?dl=0	
Report or Monograph	Text	WMT article on RC webpage	stories/2018/03/water-quality- monitoring-team/	Gossett, Sarah; Thompson, T'Noy	Galveston Bay a 2018 Foundation	GBRC website (galvbaygrade.org) Dropbox:	
Report or Monograph	Image	Bacteria Testing infographic	Bacteria Testing Infographic.png	Grable, Kaitlin; Gossett, Sarah	Galveston Bay 2017 Foundation	https://www.dropbox.com/sh/g1nqkgyp4f85 g0w/AABajBhpjPoIA7qliqYiMSIEa?dl=0 Dropbox:	
Models and Simulations	Other Resource Type	WQ Research Assistant models	WQRA Code (R).zip	Cullen, Josh	Galveston Bay 2018 Foundation	https://www.dropbox.com/sh/g1nqkgvp4f85 g0w/AABajBhpjPoIA7qliqYiMSIEa?dl=0 Dropbox:	
Workshop or Conference Proceeding	Other Resource Type	General Report Card presentation	2017 GBRC prez.pdf	Gossett, Sarah; Thompson, T'Noy	Galveston Bay a 2017 Foundation	https://www.dropbox.com/sh/g1nqkgyp4f85 g0w/AABajBhpjPoIA7qliqYiMSIEa?dl=0 Dropbox:	
Workshop or Conference Proceeding	Other Resource Type	Harvey Impacts Presentation	Harvey Impacts prez.pdf	Gossett, Sarah Gossett, Sarah;	Galveston Bay 2018 Foundation	https://www.dropbox.com/sh/g1nqkgyp4f85 g0w/AABajBhpjPoIA7qliqYiMSIEa?dl=0 Dropbox:	
Workshop or Conference Proceeding	Other Resource Type	Public Meeting Presentation	Public Meeting prez.pdf	Nolan, Lindsey; Grable, Kaitlin	Galveston Bay 2018 Foundation	https://www.dropbox.com/sh/g1nqkgyp4f85 g0w/AABajBhpjPoIA7qliqYiMSIEa?dl=0 Dropbox:	
Workshop or Conference Proceeding	Other Resource Type	Water Monitoring Team training presentation	WMT Training.pdf	Gossett, Sarah; Nolan, Lindsey	Galveston Bay 2018 Foundation	https://www.dropbox.com/sh/g1nqkgyp4f85 g0w/AABajBhpjPoIA7qliqYiMSIEa?dl=0	