



2022 Education, Outreach, and Communications Report



April 2023

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SANCTUARIES**

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Cover photo: Kelly Drinnen and two volunteers pose under one of the sanctuary pop-up tents at the start of a "Cheers to 30 Years" event in Pearland, Texas. Photo: NOAA

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Disclaimer

Any views or opinions expressed herein, are those of the authors and do not necessarily reflect the views of NOAA or the Department of Commerce. The mention of trade names or commercial products does not constitute endorsement or recommendation for use.

Report Availability

Electronic copies of this report may be downloaded from the Flower Garden Banks National Marine Sanctuary website at <https://flowergarden.noaa.gov>

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Overview

The purpose of this document is to report the Flower Garden Banks National Marine Sanctuary (FGBNMS) Education, Outreach, and Communications activities completed during fiscal year 2022 (FY22).

While there was only one full-time staff person assigned to education and outreach activities in FY22, many other staff contributed their expertise throughout the course of the year. Outreach is, by nature, a part of everyone's job at FGBNMS. The more FGBNMS staff talk about their jobs, the more people are aware that the sanctuary exists and is an important part of our local environment.

Together, staff provided 52 presentations/programs to schools, clubs, libraries, and the general public; hosted nine workshops to analyze sanctuary trends in support of the condition report and climate vulnerability assessment; hosted or participated in four community events; and reached the public through exhibits at seven different venues. Our programs, workshops, and events reached almost 5,000 people, while our exhibits placed information about the sanctuary in front of another 3.3 million zoo, aquarium, and museum visitors.



Superintendent G.P. Schmahl presented to a packed room at the Tremont Hotel in Galveston just before a viewing of the Window in the Waves documentary about the sanctuary. The event was hosted jointly by a local dive shop and a dive boat operator. Credit: Texas Scuba Adventures



Education/Outreach Staff Projects

Kelly Drinnen, Education and Outreach Specialist (full-time)

- Website
- Social Media
- Communications
- Presentations
- Events
- Seaside Chats
- Webinar Support
- Outreach Products
- Condition Report
- Exhibits
- Aquarium Sanctuary Partnerships for America's Keystone Wildlife
- Media Requests
- Visitor Services
- Recreation and Tourism
- Content Verification
- Editing
- Special Projects – Sanctuary History, Mural/Book Consultation
- IT Support

Leslie Whaylen Clift, Constituency Affairs Coordinator (part-time)

- Sanctuary Advisory Council
- Ocean Guardian Schools
- Presentations
- Condition Report
- Climate Vulnerability Assessment
- Cultural Landscape
- Diversity & Inclusion Grant Program Planning
- Editing

FY22 Highlights

In April 2022, after two years of only virtual programming due to COVID-19 mitigations, FGBNMS staff were finally able to start attending presentations and events in person as COVID-19 precautions were lifted. This allowed staff to make more personal connections with event attendees, and leave more lasting impressions about the sanctuary and its wonders.

Just before the COVID-19 pandemic, staff ordered new pop-up tents branded with NOAA and the Office of National Marine Sanctuaries logos and colors and they were finally put to use in 2022. The vibrant tents now help draw participants to FGBNMS booths and make the sanctuary more visible at events.



New pop-up tents increased the sanctuary's visibility at outdoor events. Credit: Kelly Drinnen/NOAA

To make the sanctuary's return to public events more impactful, staff updated old games and developed new ones to make talking about the sanctuary fun and interactive. Conservation-minded items were made available for people to take away as reminders of what they learned.

Even with this newfound freedom to visit people and places, FGBNMS did not eliminate virtual programming. Webinars continued to be a way for the sanctuary to reach audiences outside of the immediate Galveston-Houston area, and even outside the country. Webinars also allowed staff to do more regional programs by eliminating travel time to and from presentations outside Galveston County.

Sanctuary staff also embarked on a journey of self-discovery in preparation for the next rendition of our sanctuary condition report. This required staff to review all of the education and outreach activities undertaken since 2008 when the last report was published, summing up all sanctuary education activities as an ecosystem service. The next step will be writing the narrative for the final report.

Education/Outreach Programs

School Programs

K–12: 6 programs, 227 students/teachers

College: 2 programs, 45 students/instructors

K–12 classroom presentations were conducted virtually due to ongoing pandemic restrictions, while also allowing for a broader reach to schools in the wider Texas, Louisiana, and Tennessee region. Virtual programming for Houston area schools also made better use of limited staffing resources, since travel time to and from schools is often disproportionate to the amount of time spent doing the actual programs.

Also included in these numbers was in-person judging of 10 local middle school science fair projects.

College level presentations were provided in person by members of the Research team, with some assistance from Education staff. One presentation focused on sanctuary management, while the other focused on invasive lionfish and included the opportunity for students to dissect fish and record relevant data.

After-School Programs

3 programs, 109 students/teachers

Two after-school programs were career discussions with middle school students as part of a NOAA B-WET (Bay Watershed Education Training) grant coordinated by the Citizens' Environmental Coalition (CEC) in Houston. The other program was an introduction to the sanctuary and the issues of climate change, coral bleaching, and ocean acidification for high school students in a Science Honor Society. All of these programs were virtual.

Summer Programs

10 programs, 257 kids/family members

For many years, the sanctuary has provided programming at local libraries to tie in with the national summer reading program theme. In 2022, that theme was “Oceans of Possibilities,” which generated interest in the sanctuary from across Texas and Louisiana. There were so many requests, that some had to be turned down. Two programs were offered in person, while the remainder were conducted virtually, sometimes with multiple library branches at one time. The audiences for library programs were often multi-generational, parents/children or grandparents/children being the most common.

Lessons Learned from Sea Life



Lessons Learned from Sea Life was the program presented to libraries across Texas and Louisiana to tie in to the summer reading theme Oceans of Possibilities. Credit: NOAA

Presentations

17 presentations, 2,078 participants

Presentations for adult audiences generally last about an hour and are the bread and butter of FGBNMS outreach programs. These presentations introduce people to sanctuary habitats and marine life, and are often supplemented with information on topics like climate change, coral bleaching, or invasive species. A question and answer session follows each presentation, allowing for more in depth discussions and additional topics of interest.

FY22 audiences included divers, Rotary Club members, garden club members, aquarium hobbyists, environmental journalists, art enthusiasts, public aquarium guests, and library patrons. Seven of these programs were conducted virtually for groups in Houston, Dallas, and Beaumont, Texas, as well as Wisconsin, Tennessee, North Carolina, and Bermuda.

Community Events

4 events, 384 people in attendance

Participation in community events was limited this year due to the pandemic and staffing considerations.

In June and July, FGBNMS hosted three community events in celebration of the sanctuary's 30th anniversary. These "Cheers to 30 Years" events also doubled as annual Get Into Your Sanctuary events. They were held at Bakfish Brewing Company (1) in Pearland, Texas and Penny's Beer

Garden (2) in Dickinson, Texas. All three of these included outdoor booths with information, games, and giveaways to help build awareness of the sanctuary with new audiences.

In August, FGBNMS staff participated in the Moody Gardens Dive Expo, hosting an information booth and providing a speaker for the schedule of presentations on a nearby stage. The National Marine Sanctuary Foundation also participated in this event, hosting a panel discussion during one of the speaker time slots.



The sanctuary hosted a booth at the Moody Gardens Dive Expo held in the Moody Gardens Convention Center. Credit: Kelly Drinnen/NOAA

Seaside Chats

4 presentations, 1,333 participants

The Seaside Chats program celebrated its tenth year of presentations along with the creation of a new emblem to help make the program more recognizable from year to year.



The Seaside Chats program stayed virtual in 2022, since this allows more people to participate and gives the FGBNMS program a broader geographic reach. An average of 333 people attended each webinar, representing a total of 39 states, 4 U.S. territories, and 24 countries.

Presentations focused on coral reproduction, fisheries interventions, climate history, and humpback whales.

- February 2 – Sex Lives of Corals: From Spawning to Conservation, presented by Sarah Davies, Boston University
- February 9 – Paradise Lost? Future Fisheries in a Climate-Driven Gulf, presented by Sepp Haukebo, Environmental Defense Fund
- February 16 – Discovering Climate History in Coral Skeletons, presented by Kristine DeLong, Louisiana State University
- February 23 – How Humpback Whales Feed Hawai'i, presented by Jeannine Rossa, Hawaiian Islands Humpback Whale National Marine Sanctuary

This program continues to be a popular with local Master Naturalists, who are allowed to count their participation toward continuing education requirements. Teachers who attend are also offered continuing professional education hours. Some teachers also encourage their middle or high school students to participate for extra credit.

Citizen Science

Lionfish Invitational: 2 presentations, 56 participants

City Nature Challenge: 1 presentation, 18 participants

REEF Fish ID Classes: 3 programs, 68 participants

Volunteer divers and research partners from Florida, Texas, Louisiana, Washington, Maryland, Georgia, New York, and Dominica participated in the Lionfish Invitational from June 27–29, 2022, for a three-day public lionfish removal event in the sanctuary aboard the MV *Fling*. This included a one-hour introductory presentation about the invasive lionfish problem and techniques for safe removal. Additional outreach was conducted throughout the trip as 228 lionfish were removed, measured and stored for future evaluation, all under sanctuary permits. The removal cruise in September 2022 began as planned, with a one-hour presentation, but ended less than 24 hours later due to mechanical issues on the vessel.

In 2021, the sanctuary was invited to become part of the Houston/Galveston City Nature Challenge region. City Nature Challenge is an annual worldwide bio-blitz in which different city regions compete against each other to see which area can record the greatest diversity of wildlife over the course of four days at the end of April. People participate by taking photos using the

iNaturalist app. To encourage participation within the sanctuary for the 2022 event, a virtual presentation was given to explain how people could participate. Unfortunately, not enough divers signed up for the Texas Caribbean Charters trip the weekend of the City Nature Challenge, so the trip was cancelled and no data was collected. Plans are already underway to encourage participation in the 2023 City Nature Challenge.

In an attempt to reinvigorate participation in the Reef Environmental Education Foundation (REEF) Fish Survey Project within the sanctuary, FGBNMS collaborated with REEF to update their Flower Garden Banks training module, then offered three Fish ID workshops (two in-person, one virtual). The goal was to help divers and snorkelers build confidence in their fish identification skills and learn how to conduct roving diver surveys. Internal GIYS mini-grant funds were used to purchase fish survey materials for workshop participants, to further encourage survey submissions. Since classes were conducted in June and July 2022, there was little opportunity for participants to put their new skills to use before the end of the dive season.



The REEF Fish Survey Project Starter Kit includes a slate with wrist lanyard, underwater survey paper, laminated fish identification card, REEF sticker, REEF luggage tag, instructions, pencil, and pencil holder (to attach to the slate). All items come enclosed in a reusable drawstring cloth bag. Credit: Kelly Drinnen/NOAA

Trainings

Naturalists: 3 programs, 95 participants

Dive Professionals: 1 program, 19 participants

Training programs are presentations of varying lengths offered to zoo/aquarium professionals and volunteers, Master Naturalists, and dive professionals as a form of continuing education. This year two trainings were provided for Galveston Bay Area Master Naturalists (one virtual, one in-person), who will share sanctuary information as they provide volunteer services in environmental education throughout Galveston County. FGBNMS staff also continued the tradition of offering a program for the Moody Gardens youth volunteer program, enhancing their knowledge of sanctuary topics to share with aquarium visitors. The sanctuary's unit dive supervisor also provided training for divers during the AAUS Safe Vessel Operations meeting.

Condition Report and Climate Vulnerability Workshops

9 virtual workshops, 219 participants

The sanctuary hosted eight virtual Condition Report Status and Trends workshops in April and May 2022, with guidance from the Office of National Marine Sanctuaries (ONMS). Over 40 subject matter experts participated in these workshops to help the sanctuary determine the status and trends for sanctuary resources and ecosystem services by evaluating responses to a set of questions. Research staff provided data on various natural resource parameters as well as science as an ecosystem service. Education/Outreach staff reported on the education, heritage, and sense of place ecosystem services. This information will be used to draft the new Flower Garden Banks National Marine Sanctuary [Condition Report](#).

Kelly Drinnen provided webinar support for all eight FGBNMS workshops and helped train staff at Greater Farallones National Marine Sanctuary (GFNMS) on how to use GoToWebinar for their condition report workshops.

In July 2022, FGBNMS, ONMS and GFNMS hosted a Climate Vulnerability Assessment workshop for over 30 participants to determine the vulnerability of sanctuary resources to changing climate conditions. Leslie Clift represented the Education/Outreach team at this workshop and facilitated various planning exercises to develop potential management response actions. Information from this workshop will be used to draft a sanctuary climate vulnerability assessment, which will accompany our condition report and help guide the next sanctuary management plan review.

Exhibits/Kiosks

4 aquarium exhibits, 1 traveling exhibit, 2 video kiosks, 1 partner exhibit

3,338,157 visitors

Tennessee Aquarium, Texas State Aquarium, Moody Gardens Aquarium, and Cameron Park Zoo all have [aquarium exhibits about Flower Garden Banks National Marine Sanctuary](#). Over the years the sanctuary has collaborated with these sites to provide messaging and occasional programming to supplement the exhibits.

Cameron Park Zoo (since 2010) and Downtown Aquarium Denver (since 2013) also host video kiosks about the sanctuary. These stand-alone units allow guests to interact via touch screens to learn more about the sanctuary and the wildlife that live there.



The Reef on the Road traveling exhibit on display in Galveston Cruise Terminal 2.
Credit: Kelly Drinnen/NOAA

Reef on the Road is a traveling exhibit made of three 10-foot-tall units that provide images, information, and videos about the sanctuary. This exhibit premiered at the Association of Zoos and Aquariums (AZA) conference in 2014 and has been hosted at seven different sites since (Moody Gardens Aquarium, Angleton Library, Sea Center Texas, Brazosport Museum of Natural Science, City by the Sea Museum, Alvin Historical Museum, Port of Galveston Cruise Terminal 2). It was scheduled to move on from the Galveston Cruise Terminal location in April 2020, but remained onsite throughout the pandemic since the cruise terminal was closed. Cruises resumed operations in 2021 and the visitation was near pre-pandemic levels in 2022. The exhibit will remain at the cruise terminal until an alternate site is determined.

In April 2019, Texas Sea Grant contacted FGBNMS about the possibility of including the Reef on the Road exhibit as part of a 50th anniversary exhibit at the George Bush Presidential Library and Museum beginning in February 2021. Although the group decided not to use the traveling exhibit, they chose to incorporate sanctuary information, images, and historic artifacts in other ways. Following several pandemic-related postponements, the Texas Sea Grant exhibit finally opened to the public in January 2022. The exhibit closed on July 5, 2022.



The Flower Garden Banks National Marine Sanctuary display was just one part of the Texas Sea Grant 50th anniversary exhibit. It included video footage, a flip book of photos, and dive gear from the 1960s expeditions that first explored the sanctuary. Credit: Kelly Drinnen/NOAA



Sanctuary images were also used to illustrate ten display panels throughout the Texas Sea Grant exhibit, three of which are shown here. A large sanctuary image is at the bottom of each panel, along with a credit to the sanctuary. Credit: Kelly Drinnen/NOAA

Visitor numbers for this category represent total visitation at the facilities housing the various exhibits in FY22, not necessarily the number of people who visited the exhibits themselves.

Collaborations

Aquarium-Sanctuary Partnerships for America's Keystone Wildlife

Moody Gardens, Texas State Aquarium, and Tennessee Aquarium are part of Aquarium-Sanctuary Partnerships for America's Keystone Wildlife, supported by NOAA's Office of National Marine Sanctuaries, the National Marine Sanctuary Foundation, and the Association of Zoos and Aquariums. These relationships recognize shared goals of increasing the capacity of the sanctuary to fulfill priority field conservation objectives, as well as enhancing interpretive educational messaging and programming.

These partnerships led to collaboration on some specific projects this year, four of which were focused on outreach:

- Dive gear disinfection video (Tennessee Aquarium)
- High School STEM Projects (Tennessee Aquarium)
- Dive Expo (Moody Gardens)
- Dive reciprocity (Texas State Aquarium)
- Lionfish Invitational (Moody Gardens, Tennessee Aquarium, Texas State Aquarium)

The gear disinfection video is now [available on the FGBNMS website](#) and was distributed to dive shops across the region in an effort to prevent the spread of Stony Coral Tissue Loss Disease by scuba divers.

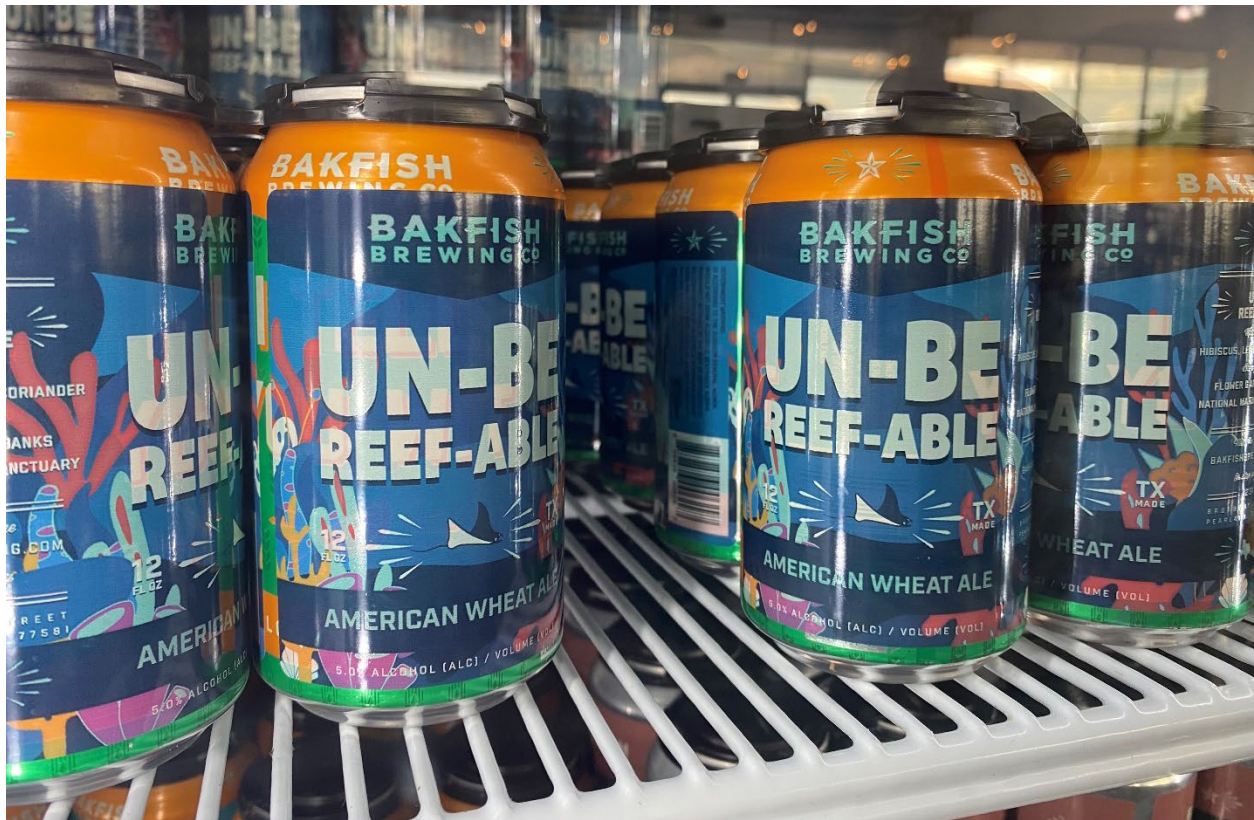
Tennessee Aquarium made their Secret Reef exhibit the focus of their work with a local STEM high school in Chattanooga, Tennessee. Students were asked to find ways to enhance guests' understanding that the Secret Reef exhibit is about FGBNMS. Students worked in teams to develop interpretive elements then presented their ideas and products to both aquarium and sanctuary staff for discussion.

UnbeREEFable

In September 2021, FGBNMS staff approached Bakfish Brewing Company in Pearland, Texas with the idea of making a custom brew in honor of the sanctuary's 30th anniversary in 2022. The thought behind this was to bring awareness of FGBNMS to new audiences in a unique way.

The final product was UnbeREEFable, an American wheat beer with lemon, coriander, and hibiscus. Incorporating hibiscus into the recipe was a nod to the sanctuary name, Flower Garden Banks, and also lent a reddish color to the brew, reminiscent of the color most often associated with coral. The can design featured a manta ray swimming through a colorful coral reef.

In addition to being served on tap at various local establishments, UnbeREEFable was also available for sale at a few grocery stores and in Total Wine stores throughout the Houston area. It proved so popular that Bakfish had to brew a second batch to finish out the summer season.



Bakfish Brewing Company's UnbeREEFable beer was created in recognition of the sanctuary's 30th anniversary in 2022. Credit: Michelle Johnston/NOAA

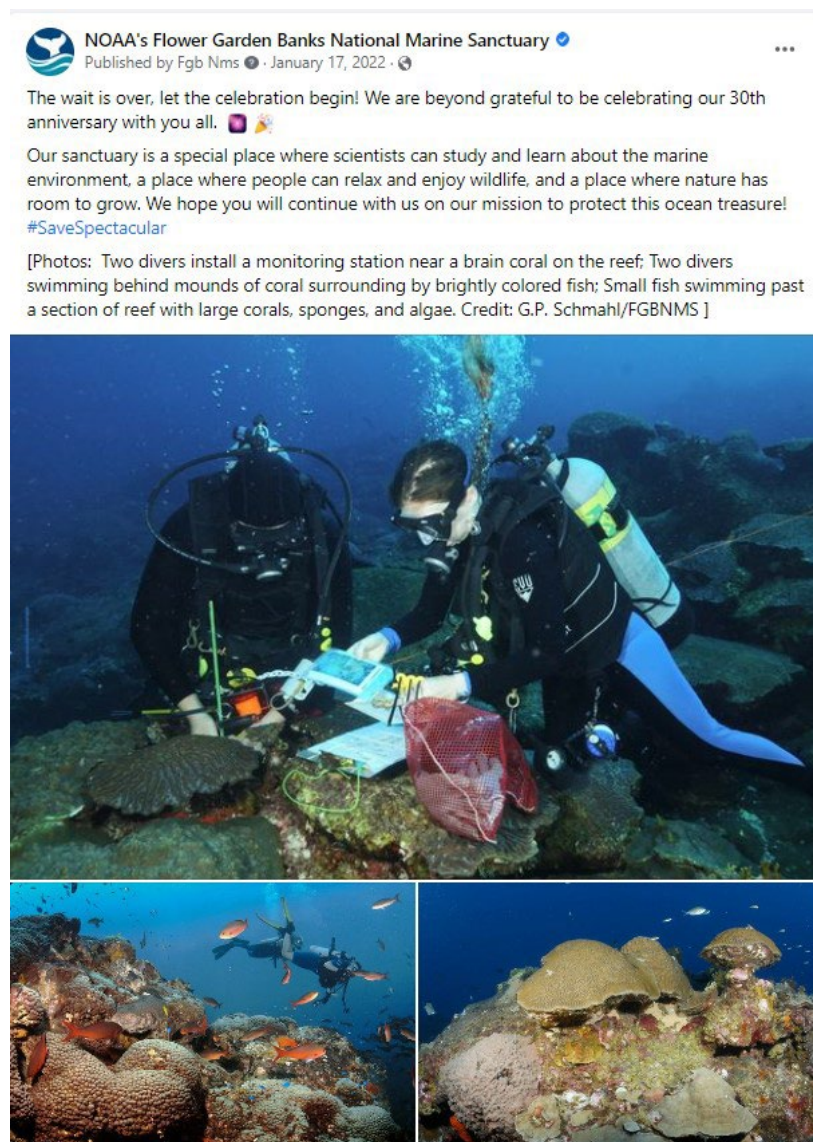
The sanctuary hosted a Cheers to 30 Years event at Bakfish to coincide with the release of this beer on June 4, 2022 (see cover photo). FGBNMS and Bakfish also participated at a second event at Penny's Beer Garden in Dickinson, Texas on July 9, 2022.

Communications

Social Media

The sanctuary continues to expand its social media offerings in an effort to be seen by a variety of audiences. As changes occur in individual platforms and audience preferences, FGBNMS strives to strike a balance between what entices and intrigues audiences, but also educates and garners support.

Posts generally occur once a day, Monday through Friday, except holidays. Additional posts are sometimes created to recognized special events or holidays. This year also included a week full of featured posts, aligned with our Sanctuary Updates emails, for the sanctuary's 30th anniversary on January 17, 2022.



A series of five social media posts highlighted what is so special about the sanctuary, leading up to this celebratory post on January 17, 2022. Credit: NOAA

Facebook

Followers: 28,250

Total Reach: 330,000

Average Number of Posts: 25 per month

The FGBNMS Facebook page was created in November 2009. It has a substantial following that is only exceeded by the Office of National Marine Sanctuaries and Florida Keys National Marine Sanctuary pages. The demographic for the page is primarily people age 35–64, with approximately 53% male and 47% female. Content is informational and often includes links to our website for additional information.

Twitter

End of Year Followers: 3,719

Total Impressions: 230,000

Average Number of Posts: 27 per month

The FGBNMS Twitter account was created in December 2012 and the audience has increased steadily since its inception. Almost 40% of all Twitter users are age 25–34, with 56% male and 44% female (<https://blog.hootsuite.com/twitter-demographics/>). Content is limited to 240 characters per Tweet, so content is occasionally broken into multiple posts on the same day. The use of 3–4 hashtags per post draws attention to specific subjects or ties FGBNMS in to trending topics. Content often includes links to our website for additional information.

Instagram

End of Year Followers: 213

Total Reach: 3,700

Average Number of Posts: 21 per month

The FGBNMS Instagram account was created in June 2022 and the following is growing steadily. The demographic following the account is primarily people age 25–44, with approximately 67% female and 33% male. This platform is more image oriented, with short videos drawing the most attention. Numerous hashtags are used with every post to draw attention to the content.

Email Lists

The sanctuary maintains five different email lists, targeted to different interests. These have existed in their current format since 2017. People can sign up for the lists through the [FGBNMS website](#) or a link provided at the bottom of the emails. While sign-up sheets are occasionally provided when hosting programs or events, the majority of followers sign up online. An increase of approximately 100 people per list occurred each month in 2022.

FGBNMS email subscribers total 24,719, with some people subscribed to multiple lists.

Diving

Subscribers: 3,784

Average Number of Emails: 5 per month

Subscribers to this list include individuals, as well as dive shops and dive clubs from across the Gulf states. Content covers diving-related news and issues in the Gulf of Mexico. Emails are sent as items of interest arise, and often include news from local dive clubs.

Education

Subscribers: 5,809

Average Number of Emails: 13 per month

Subscribers to this list include formal and informal educators from across the country. Content covers information on coral reef and ocean conservation issues, educational resources, grant and scholarship opportunities, professional development workshops, job and internship opportunities, and more.

Emails are generally sent daily (Monday through Friday, except holidays), each containing six items of interest. Sources for these items include the Office of National Marine Sanctuaries, various branches of NOAA, marine education lists, and Houston/Galveston environmental education organizations.

Fishing

Subscribers: 3,335

Average Number of Emails: 4 per month

Subscribers to this list include individuals, as well as some fishing related businesses from across the Gulf states. Content covers fishing-related news and issues in the Gulf of Mexico. Emails are sent as items of interest arise, and often include news from NOAA Fisheries and the Gulf of Mexico Fishery Management Council.

Sanctuary Updates

Subscribers: 8,058

Average Number of Emails: 3 per month

Subscribers to this list include individuals, as well as media contacts. Content covers the latest sanctuary news, events, and web updates. Emails are generally sent no more than once a week; however, a full week of emails led up to the sanctuary's 30th anniversary on January 17, 2022.

Volunteers

Subscribers: 3,733

Average Number of Emails: 0–1 per month

Subscribers to this list include individuals who are interested in volunteering for the sanctuary. Since volunteer opportunities with the sanctuary are few and far between, volunteer opportunities offered by our community partners are also shared.

Media Coverage

Weekly searches are conducted on the internet to identify places FGBNMS is mentioned in the news. From October 1, 2021 through September 30, 2022, 147 articles were identified and saved. Photos of the sanctuary were included in 32 of these articles. Additional mentions were also found in various online calendar-type announcements that were not tracked in any way.

The primary topics addressed by these articles were:

- Manta Rays (13 articles)
- Dive Destinations (11 articles)
- Climate Risks for Coral (9 articles)
- Gulf of Mexico Lease Sales (7 articles)
- Aquarius Art Tunnel Project (7 articles)
- Coral Disease (5 articles)
- National Marine Sanctuaries 50th Anniversary (5 articles)
- “Deep in the Heart” Documentary (5 articles)
- Moody Gardens Ice Land – Caribbean Christmas (5 articles)
- Sea Urchin Die-offs (4 articles)
- Flower Garden Banks National Marine Sanctuary 30th Anniversary (4 articles)

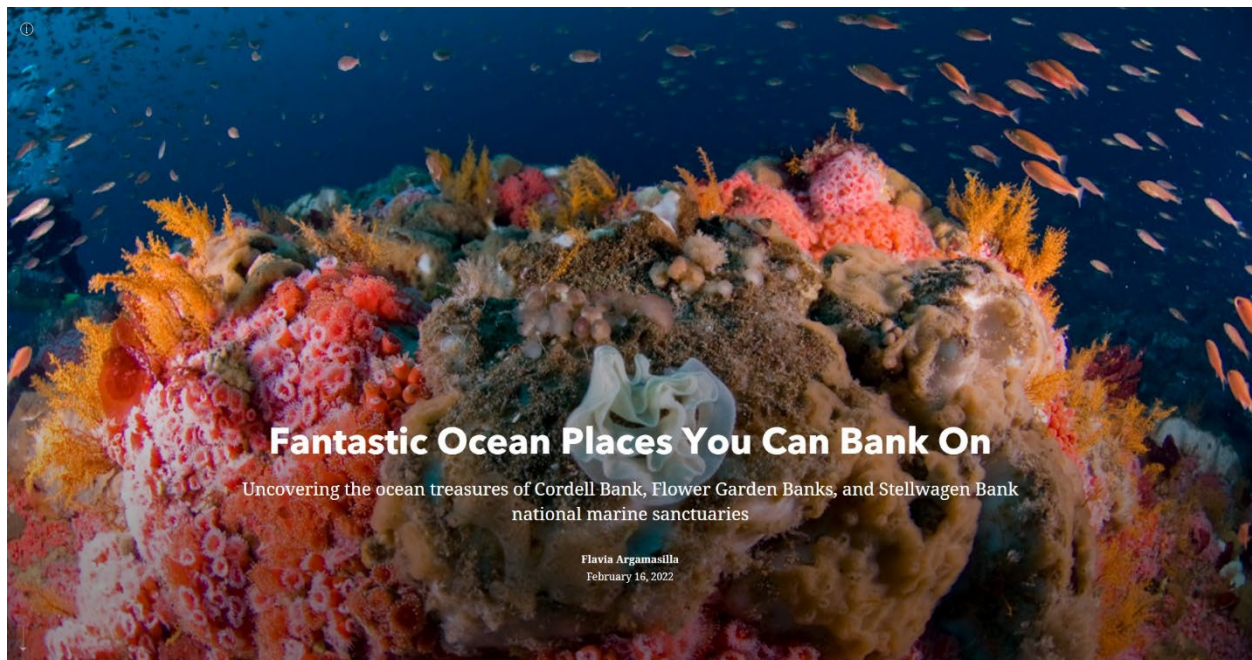
Website

The sanctuary website provides a strong internet presence. With a combination of informational and educational elements, it is a great resource to learn about the sanctuary.

Transition to the current design layout began in 2015 and is ongoing. Older style pages still exist, but are being updated to the newer format as time allows. Content on both old and new style webpages is constantly being updated.

New Pages

- January 12–September 30, 2022 - [Educational Presentations](#) page to share webinar recordings from virtual programs other than Seaside Chats recordings
 - 122 page views, average 2:07 minutes
- March 9–September 30, 2022 - [Fantastic Ocean Places You Can Bank On story map](#), a collaborative effort between the three sanctuaries with “bank” in their names: Cordell Bank, Stellwagen Bank, and Flower Garden Banks national marine sanctuaries
 - 243 page views
- September 23–30, 2022 - [Sanctuary Investigating Recent Coral Disease](#) article
 - 121 page views, average 3:34 minutes
- September 1–30, 2022 - Separate pages for the original three banks, to align with the pages created for the newer sanctuary banks
 - [East Flower Garden Bank](#) - 39 page views, average 3:32 minutes
 - [West Flower Garden Bank](#) - 41 page views, average 2:30 minutes
 - [Stetson Bank](#) - 45 page views, average 3:24 minutes



The story map [Fantastic Ocean Places You Can Bank On](#) was a collaborative effort of the three sanctuaries with “bank” in their names. Credit: NOAA

New Content

- [Seaside Chats](#) information and recording links, including English and Spanish captions
 - 3,101 page views, average 6:05 minutes, 939 registration link clicks
- [Lionfish Invitational](#) information and application materials
 - 2,924 page views, average 1:30 minutes, 282 application downloads
- New [Sanctuary staff](#)
 - 1,333 page views, average 3:13 minutes
- New [Advisory Council members](#)
 - 785 page views, average 2:39 minutes
- New Gear Disinfection video on [Prevent Coral Disease page](#)
 - 711 page views, average 2:45 minutes
- [Advisory Council meeting information](#)
 - 532 page views, average 1:50 minutes
- New [NOAA Corps staff](#)
 - 517 page views, average 2:19 minutes
- [Advisory Council recruitment](#) information and application materials
 - 471 page views, average 3:55 minutes, 58 application downloads
- [2020 and 2021 Research Reports](#)
 - 63 downloads, 9 downloads
- [Advisory Council charter amendments](#)
 - 10 downloads

Website Traffic

The FGBNMS website received 143,250 page views, with an average of 392 page views per day. Average time spent on the website was 2:24 minutes.

Page Name (Section Name)	Page Views	% of Total Page Views
Welcome	37,881	26.44%
Invasive Lionfish (Education)	13,680	9.55%
Dive Charters (Visit)	11,640	8.13%
Email Lists (News)	4,148	2.9%
About	3,899	2.72%
Visit	3,538	2.47%
Coral Bleaching (Education)	3,333	2.33%
Seaside Chats (Education)	3,101	2.16%
Lionfish Invitational (Involved)	2,924	2.04%
Coral Basics (Education)	2,793	1.95%

The website Welcome page, along with the Education, About, and Visit sections of the website accounted for 76% of the website traffic.

In addition to viewing content, website visitors downloaded 4,795 images and 2,233 documents. 31% of the document downloads came from the Teacher and Student pages.

Education/Outreach Products

With the return to in-person programs and events, the Education team opted to refresh its outreach tools. This resulted in the creation of several new products. Many of these purchases were made with support from the National Marine Sanctuary Foundation (Foundation), using funds set aside for education and outreach purposes.

- **Cornhole** – A custom cornhole set featuring sanctuary habitats and marine life was designed to include NOAA and FGBNMS logos along with the words “Gulf of Mexico” to help build brand and location awareness. Custom bean bags included embroidered logos from the sanctuary and the Foundation. This game was used at the Cheers to 30 Years events and was a crowd pleaser that drew people in and facilitated conversations about the sanctuary.



- **Aluminum Cups** – For our Cheers to 30 Years events, the sanctuary provided a take-away souvenir that would be meaningful, reusable, and not have too much of an environmental impact. The recyclable silver cups, made from recycled aluminum, featured the sanctuary logo and web address on one side. Guests at our events were happy to use these to consume the beverages they purchased, including the UnbeREEFable beer. These cups were also shared at the Moody Gardens Dive Expo.



- **Handheld Fans** – FGBNMS staff designed and ordered custom cardboard fans that could serve as physical reminders of the sanctuary and also help with the Texas heat. The design featured coral sea fans from the mesophotic areas of the sanctuary, on both sides, with the tag line, “I’m a Sea Fan!” with the goal of providing something meaningful, reusable, and recyclable. The Foundation’s logo was featured on the reverse side.



- **Playing cards** – Custom playing cards were designed and ordered to use as ongoing practice in learning reef fish identification. The Ace through King cards feature color photos of sanctuary fish species, while the Joker cards feature Gulf of Mexico maps showing currents and distances from the sanctuary to the next closest coral reefs. Users can play the game “Go Fish” to practice matching fish in the same families, or simply use them as flash cards to practice recognizing different species.



- **Reusable bags** – For many years now, the sanctuary has distributed reusable shopping bags, made from recycled plastic content, as an alternative to single-use plastic bags. The large sanctuary logo and website address featured on these bags help spread awareness of the sanctuary, while the bags themselves help to encourage more environmentally responsible behavior.



- **Logo Stickers** – Small 30th anniversary sanctuary logo stickers were used on individually packaged sea life cookies distributed at the first Cheers to 30 Years event. These stickers helped to build brand awareness and remind people about the sanctuary and its anniversary.



Sanctuary-Inspired Art

Treasures From the Gulf – Mosaic Mural/Book

In May of 2021, artist Dianne Sonnenberg contacted FGBNMS regarding a commission she received to create a mural for the new Pediatric Surgical Waiting Area at Memorial Hermann Hospital in Houston, Texas. The hospital had asked for a coral reef theme and Dianne wanted to base her mural on the Flower Garden Banks reefs. Kelly Drinnen provided information about the reefs and made species recommendations that would fit with the overall mural design, consulting with Dianne and watercolor artist Beatrice Baldwin as they created the painting that would serve as a template for the final mural.



Dianne Sonnenberg's mosaic mural of the Flower Garden Banks was installed in the Pediatric Surgical Waiting Area at Memorial Hermann Hospital in Houston, Texas. Credit: Diane Sonnenberg

Installed in November 2021, the completed [Treasures of the Gulf mosaic mural](#) consists of three 4' x 6' panels made from ceramic tile and fused glass pieces. After installation, Dianne was excited to hear someone say that they had been diving in the Gulf of Mexico and recognized that this represented the Flower Garden Banks!

Once the mural was installed, Dianne and Beatrice began the next part of their project—a book for school-age children that describes the process of making the mural and also gives information about the sanctuary's coral reefs. Throughout 2022, Kelly Drinnen consulted on the contents of the book to ensure the accuracy of information about the sanctuary species represented in the mural.



The mural is so large it had to be built in three sections. This is the right end of the mural. The marine life is so realistic that people can identify specific species. Credit: Diane Sonnenberg

Flower Garden Banks Public Art Installation

In April 2022, local artist Eepi Chaad installed her [Flower Garden Banks Installation](#) at Seawolf Park in Galveston, Texas. This site-specific art project was designed to connect Galveston residents and visitors with their geographic proximity to the sanctuary and celebrate the biodiversity of the sanctuary with a specific focus on bioluminescence. Since the project proposal was initiated before the sanctuary expanded in 2021, it focused on just three banks.

The installation took the form of three lightweight berm structures that glow in the dark to mimic bioluminescence in the reef system and engage viewers throughout the day and evening. The berm shapes represented East Flower Garden Bank, West Flower Garden Bank, and Stetson Bank and were positioned to represent the location of the banks relative to one another. A graphic panel near the Stetson Bank berm provided information about the project, the sanctuary, and a link to the sanctuary's website.

G.P. Schmahl attended the exhibit dedication on April 23, 2022 and was asked to say a few words about the sanctuary. Sanctuary staff also supported Eepi with information about the sanctuary and its inhabitants as she was creating her proposal for the city of Galveston and the Galveston Park Board. The installation closed on July 16, 2022.



The colorful textiles used to link together the ribs of each berm were designed to glow in the dark to create a different experience for visitors after dark, simulating bioluminescence on the reefs at night. Credit: G.P. Schmahl/NOAA

Aquarius Art Tunnel

In 2021, artist Janavi Mahimtura-Folmsbee began consulting with Emma Hickerson and G.P. Schmahl regarding the Aquarius Art Tunnel, an art project commissioned by the Houston Mayor’s Office of Cultural Affairs on behalf of IAH George Bush Intercontinental Airport through the city’s Civic Art Program and Houston Art’s Alliance. The goal of the project was to create an immersive ocean experience in a 240-foot tunnel connecting two terminals at the airport, using sanctuary images and sounds for inspiration. While a lot of the work leading up to the installation took place in FY22, the project wasn’t completed until November 30, 2022, which falls in FY23. A full accounting of this project will occur in next year’s report.



NATIONAL MARINE
SANCTUARIES

AMERICA'S UNDERWATER TREASURES