

# **MANATEE PROTECTION PLAN for VOLUSIA COUNTY ANNUAL REPORT 2020**

## **Background**

Florida has been a home to the Florida manatee (*Trichechus manatus latirostris*) for thousands of years. The abundant number of freshwater, brackish, and marine ecosystems throughout the state have historically provided good habitat for the manatee to thrive and reproduce. However, the increase in the human population of Florida has, in recent years become more of a threat to manatees. This increased threat led to several important federal protection measures, including the Marine Mammal Protection Act of 1972 and the Endangered Species Act of 1973, both of which prohibit harassment and harm to the species. In 1978, the Florida Manatee Sanctuary Act declared the entire state as a manatee refuge, and later in 1989, 13 counties, including Volusia County, were listed as key to manatee survival.

Under the 1989 mandate each of the 13 key counties were required to develop a Manatee Protection Plan (MPP). Volusia County completed an MPP that included a marina siting element, as well as educational and outreach components. A Boating Activity Study, which was completed in 1996 and updated in 2000, is the underpinning for many of the policies outlined within the MPP.

The Volusia County MPP strives to balance manatee protection and resource preservation with recreational and economic demands. We divided the plan into two phases in order to fully address all of the components. The goal of both Phase I and Phase II is to achieve and maintain an optimal sustainable manatee population within Volusia County.

Phase I deals with manatee conservation efforts through education, outreach, habitat enhancement, scientific research, and interagency coordination. The Florida Fish and Wildlife Conservation Commission (FWC) approved Phase I in February 2001. Phase II of the MPP includes the boat facility siting plan, which outlines methods for boat facility placement in order to minimize watercraft related injuries to manatees. The boat facility siting element creates policies that address protection of the manatee population, as well as preservation of manatee habitat. Phase II was approved by the FWC in October of 2005.

## Phase I

Phase I of the Volusia County Manatee Protection Plan (MPP) addresses issues such as habitat inventory, law enforcement, habitat protection, education and awareness, scientific research, and governmental coordination. The objective of Phase I is to evaluate current impacts to manatees, and implement strategies to increase public awareness, facilitate interagency coordination, and promote scientific research. Volusia County has designed and developed a number of projects to increase manatee conservation and habitat protection in order to address the objectives of Phase I. In 2020 many of the MPP outreach and activity numbers declined greatly due to the COVID-19 pandemic which caused Governor DeSantis to issue an executive order on April 1<sup>st</sup>, restricting activities within the state to those deemed as essential services. The shutdown lasted for several months and put a strain on our volunteer based programs.

### MONOFILAMENT LINE RECOVERY/RECYCLING AND MARINE DEBRIS PROGRAM

**Bins:** The objective of the Volusia County Monofilament Line Recovery and Recycling Program is to minimize the negative impacts of improperly discarded fishing line by decreasing the amount of fishing line entering the environment, increasing the amount of fishing line being recycled, and by fostering awareness of the potentially harmful effects of improperly discarded line. Monofilament fishing line causes numerous threats to the environment, wildlife, and humans. The program's goal is to place monofilament line recycling bins in areas where there is an abundance of fishing activity, as well as at all county boat ramps.

Individuals, school groups, civic organizations, and business groups volunteer to maintain the bins. Bin maintenance by volunteers includes emptying the bin, to remove garbage, sinkers, bobbers, hooks, and lures, and properly disposing of all items. Volunteers fill out data sheets each time they empty their bin and send the sheets to county staff, usually on a quarterly basis. The data sheets allow program staff to determine how much line is being recycled and which bins are most often used. The collected data also shows us how full the bins become, what types of fishing gear are collected, and how much time our volunteers are contributing to the program.

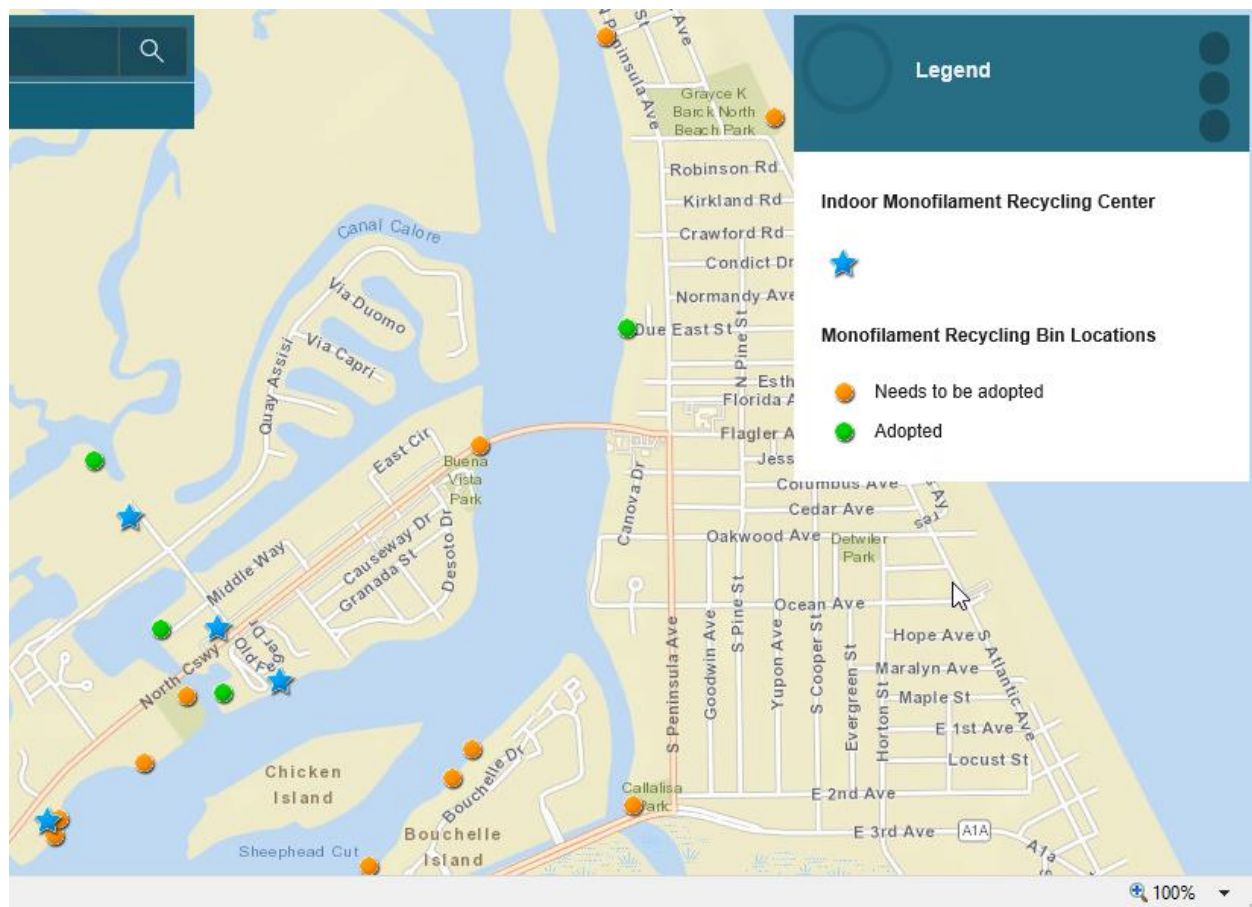
The volunteers then take the clean monofilament line to an indoor recycling center. A fishing line filled, postage paid, recycling box is then sent to The Berkley Conservation Institute. When the full box is received Berkley returns an empty recycling container back to the Volusia County recycling center. The collected fishing line is melted down to make plastic pellets, which are recycled to create artificial fish habitats, and tackle boxes. This recycling process is another incentive for fishers and boaters to participate in the program.

In 2020, the returned data forms show a recovery of 31.5 bins full of line, which equates to 126 pounds of line that will not be entering the environment. The number of active bins in Volusia County in 2020 was 130 bins. Staff recruited two new volunteers to help monitor bins in 2020.

The online data entry form makes the reporting process much easier for volunteers by allowing them to complete the form and submit it in one easy process; the website is [www.volusiafishinglinerecycling.org](http://www.volusiafishinglinerecycling.org). This eliminates the need for scanning, copying or mailing in data sheets.

Monofilament line recycling volunteers spent approximately 45.25 hours, which is the equivalent of \$1,230.80 dollars in volunteer time in 2020. The MPP associate is currently working with the Volusia County GIS department to create an even more efficient online data report form for volunteers to submit their information. The goal is to create a form that will make reporting data even easier for the volunteers. In 2021, they will also be able to mark the exact location of each monofilament bin, creating a more accurate data submission.

The online interactive monofilament bin map, developed in 2019, also continues to be used to help recruit new volunteers. This map allows interested volunteers to expand the map in the area that they are interested in adopting a bin. Once focused in on their area, they can see which bins are available for adoption and its exact location. This interactive map is located at [www.volusiafishinglinerecycling.org](http://www.volusiafishinglinerecycling.org).



*Screenshot of interactive monofilament bin map*

Monofilament line recycling program staff maintains communication with volunteers through e-mail updates sent on a quarterly basis. Each update highlights either a current issue, or a dedicated volunteer. This is a way to acknowledge the diversity and accomplishments of the program and participants. The update also provides facts, hints and reminders concerning fishing line recycling.

Below are the 2020 "Recyclers Review" updates, provided to our volunteers.

## Recycler's Review

Winter Edition

### Our Amazing Indoor Recycling Centers

As you are dropping off your clean and sorted line, please take a second to thank the people behind the counter. Here is the updated list of 2021 Indoor Recycling Centers who are donating their time and effort to keep our Volusia County waterways tangle free:

<b>The Marine Discovery Center</b> 520 Barracuda Blvd. New Smyrna Beach, FL (386) 428-4828	<b>Needful Things: Bait Shop &amp; General Store</b> 6495 Fortlandwood Road New Smyrna Beach, FL (386) 957-4837
<b>Riverdeck Marina</b> 111 N Kromeade Drive New Smyrna Beach, FL (386) 428-7827	<b>North Caneway</b> 4 North Caneway New Smyrna Beach, FL (386) 427-5267
<b>Fishie's Shack</b> 1314 S Atlantic Ave Daytona Beach Shores, FL (386) 788-2120	<b>Pickin' Hole</b> 400 W Beach St. Daytona Beach, FL (386) 252-2804
<b>Aqua Bridge Marinas</b> 1075 W. 38th Aledo, FL (888) 749-4607	<b>The Marine Science Center</b> 100 Lighthouse Dr. Ponce Inlet, FL (386) 304-5545

### Less than 10%...

What is man-made, more numerous than the stars in the Milky Way and has been described as a "smog" throughout our oceans? Plastics and microplastics are one of the leading causes of ocean pollution in the world. Microplastics: a plastic particle measuring under 5 mm, come from a variety of sources and are becoming more numerous by the day. It is projected that there will be more pieces of plastic in the ocean than fish by the year 2050.

Our 3 R's - Reduce, Reuse, Recycle looks great on the side of our home recycling bins but current data agrees the bins aren't everything... Less than 10% actually gets recycled. It's time to Re-group, Re-think, and Re-new our commitment to our planet and fix our use of plastic.



Photo Credit: NOAA

## Recycler's Review

Spring 2020

### Your way of life makes my way of life hard

**Remember:** Welcome to Chad March, our new Manatee Protection Program Associate!

**Volunteers, if you have any questions or concerns, please feel free to contact us using our fishing line recycling email:** [monofilamentrecycling@volusia.org](mailto:monofilamentrecycling@volusia.org)

**\* Please continue to enjoy your recycling commons and submit your collection date once a month.**

**\* Your collection date is VERY important to us. Have your collection date noted at:** [www.monofilamentrecycling.org](http://www.monofilamentrecycling.org)

In February 2020, an entangled Great Blue Heron was reported in Wilbur By The Sea. The bird was spotted with fishing line wrapped around its bill so tightly that it could not open its mouth to eat. Still with enough energy to fly, it evaded multiple rescue attempts. Rescuers watched helplessly from the shore as it nibbled its bill on the branches of Mangroves, trying to free itself from the fishing line. Unfortunately in cases like this one, rescuers are forced to wait until the inability to eat weakens the bird and it can then be caught.

After several more days, good news finally came. On February 20th, Volusia County residents spotted the Heron, was able to secure it, and brought it to the Marine Science Center Bird Rehabilitation Hospital. Under staff care, the line was removed, radiographs were taken to ensure the bird did not ingest any hooks from the line and they began working on bringing it's weight back to normal limits. This Great Blue Heron is now in stable condition.

It was people like you who saved his life. Without residents like you who are willing to step up and take part in protecting our animals and their habitat, this Great Blue Heron would surely not have made it. We are so grateful to have such an amazing group of volunteers working to help keep things like this from happening. One line at a time, we can keep our waterways tangle free!

### They're back...

Another one of Florida's cutest creatures that often suffer from monofilament entanglements is the Florida Manatee. As our water temperatures rise, our Manatees are once again making their way from their wintering grounds and into our main waterways. As we greet these gentle giants on their return, let's all take a minute to refresh ourselves on some quick water etiquette: <https://myfloridacounty.com/media/7337/boaters-made-livins-manatee.pdf>




Photo: SMC

## Recycler's Review

Summer 2020

### 2020 Data Submissions So Far...



### IT'S STUCK!!!

Got a bin that won't budge? Here's an easy 1 - 2 - 3 option for you:

1. Use a crescent wrench to torque the stubborn bottom collar. Tapping the wrench with a hammer can help too!
2. Empty the bin and rinse the inside of the bin and bottom cap with freshwater.
3. Spray a small amount of WD-40 or other lubricant on collar threads and gently replace the bottom cap.

\*Otherwise feel free to email [monofilamentrecycling.org](mailto:monofilamentrecycling.org) for maintenance.

### Meddling with Monofilament

Vibrissae around a manatee's mouth are used for tactile investigation of objects. As a manatee approaches an object to investigate, it engages in a flare response, in which facial muscles contract to flatten and expand the oral disk. This causes the vibrissae of the oral disk to extend outward as a collective sensory array to investigate direct contact with objects. With specialized cell clusters surrounding each vibrissae to convey information to the brain, a manatee will sweep an object with its flippers across its face. Manatees curiously meddling with monofilament can result in fatal entanglements.




Photo Credit: NOAA

## Recycler's Review

Fall 2020

### Bin Status Updates

As we are anxious to welcome in 2021, I'd like your help in establishing a bin survey.

### Bins in need of adoptive parents...

If you have friends that share the same connection to nature that you do and are looking for a way to get involved, send them my way. With a referral that adopts a bin, I will send you an official Monofilament Recovery and Recycling Program T-Shirt!

### Where it ends up...

As we are doing our best to keep discarded gear from entering our waterways, sometimes we are given a reminder of why we do what we do. This juvenile Bottlenose dolphin was sighted with a bumper cord wrapped tightly around his head in Edgewater, FL. After about a month of tracking, we were able to coordinate a rescue effort. Along with mom, the calf was netted in shallow water as specialists pumped in and were able to calm the animal. As vital were monitored and samples were taken, the calf was freed from the entanglement, given a long lasting antibiotic injection, and both animals were able to be released on-site - a close call that could have been prevented.

Our efforts in keeping our waterways tangle free are so very important for so many reasons. Thank you all for what you do.

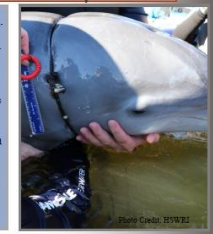


Photo Credit: DFWRI



**Mini-bins:** We have continued promoting the construction of personal recycling containers, called “mini-bins”, which can be attached to belts, boat railings, or other structures via a carabiner clip. The mini-bins help to increase awareness of our fishing line recycling program and make it easy for fishers to recycle their line, especially if they are not fishing near a large outdoor recycling bin, or if fishing from a boat. Mote Marine Laboratory & Aquarium originally created the bins. The state Monofilament Recovery and Recycling Program then adopted the idea as an effective recycling and educational tool.

The mini-bins are constructed using discarded tennis ball tubes, jump rings, and carabiners. Decals are placed on the outside of the bin and educational literature on the inside (see photos below). VCEM staff has promoted the bins use through the county school's IBIS program (Investigating Biomes in Science), the county's Volunteer Volusia programs, the Volusia County Marine Science Center and Lyonia Environmental Center.

Due to the COVID-19 pandemic canceling festivals and outreach events, no mini bins were constructed or distributed in 2020.



*Mini-bin examples*



*Volunteer group of students helping to construct mini-bins*

**Underwater Cleanups:** In an effort to remove monofilament line and other debris that has already entered the environment, the monofilament recycling program organizes and conducts underwater cleanup events along the north jetty at Ponce Inlet during the summer months. Teams of divers, spotters and boat captains work together to remove rope, nets, anchors, lures, fishing poles, fishing line and other debris from this important coastal habitat. During these cleanup events, divers have also freed entangled animals including fish, seahorses, sea urchins, horseshoe and blue crabs, and other species.



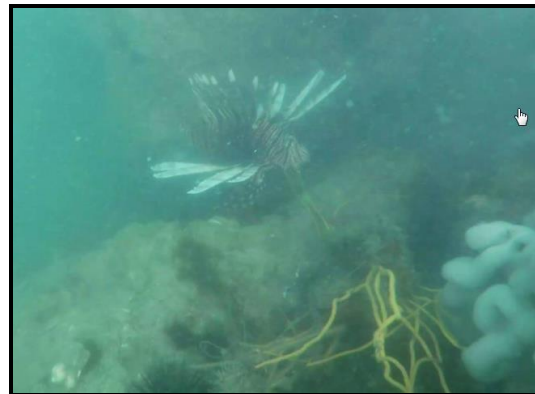
*Top: Trey Hannah holding a Suzuki boat engine retrieved during dive one of the season. Bottom (left to right): Debris collected from the most successful dive of the season (330 lbs. collect), some of the teams gear and safety equipment.*

In 2020, ten underwater cleanups were scheduled, but due to a brief pause in activity due to the pandemic, three were cancelled. The resulting seven cleanups conducted at the north jetty of the Ponce de Leon Inlet were very successful. Divers removed 1,039 pounds of monofilament fishing line and other debris from the inlet (see photos above).

A GoPro underwater camera is used to provide a clean-up video record to show the extent of the impact created by fishing line and other marine debris in the north jetty cleanup area. Education videos were created from the GoPro footage. The 2013 video of our underwater cleanup efforts, produced by Trey Hannah (Volusia County Environmental Management) can be viewed at: <https://www.volusia.org/services/growth-and-resource-management/environmental-management/natural-resources/florida-manatee/monofilament-recycling-program/>.

In May 2018, the "Underwater Cleanup" video created by Gary Daniels for the Volusia Magazine, won a Bronze award in the national Telly Awards in the Nature/Wildlife category. Other winners included national shows such as Sea Rescue, Ocean Treks and Jack Hanna's Wild Countdown. To watch this video, follow the link on the following webpage. <https://www.volusia.org/services/growth-and-resource-management/environmental-management/get-involved/waterway-cleanups/>

During the dives, divers also try to remove non-native species, such as Green Mussels, *Perna vindex* and Titan Acorn Barnacles, *Megabalanus coccopoma* when found. Though they are not always captured or removed, several invasive species are documented as well, such as the Lionfish (*Pterois volitans*). These observations are shared with other biologists and researchers whenever possible so that the location can be included in other research and removal efforts.



Left: Exotic Green Mussel (*Perna vindex*) and Titan Acorn Barnacles (*Megabalanus coccopoma*)  
Right: Invasive Lionfish (*Pterois volitans*)



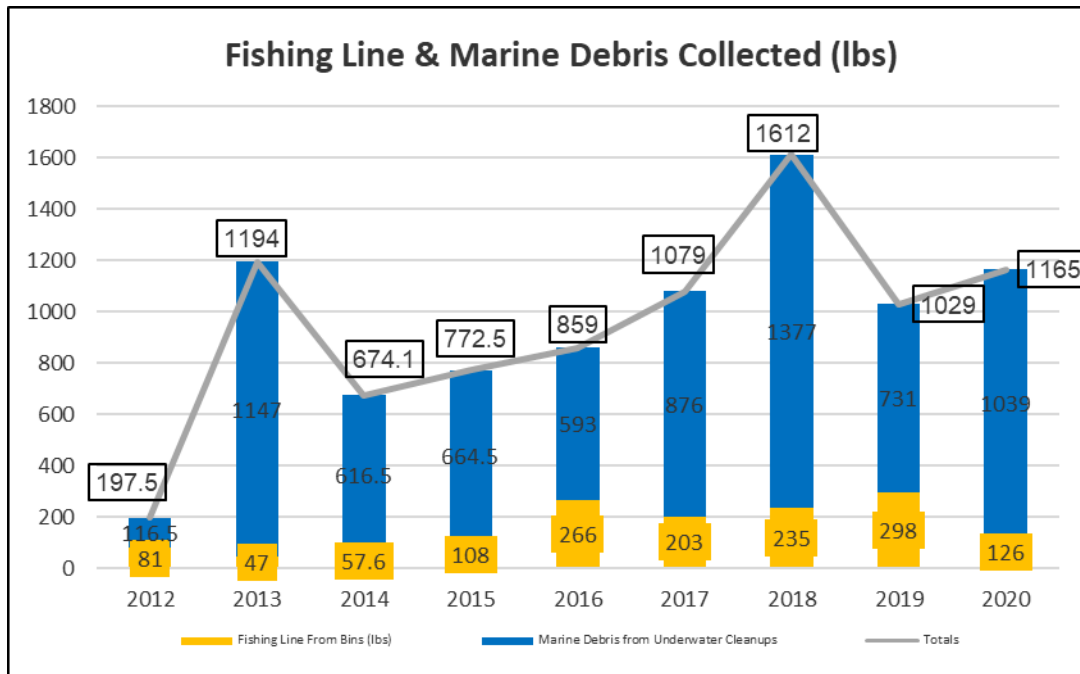


Figure 1. Total amount of monofilament fishing line debris recovered from bin collection and underwater cleanups combined, for the past nine years

Due to the efforts of dedicated volunteers and staff members of the Monofilament Recovery and Recycling Program, the total amount of monofilament and marine debris collected from bins and underwater cleanups between 2002 through 2020, is 11,859 pounds!

### Marine Debris

**NOAA Project:** In December of 2017, Volusia County became the first partner in the state of Florida to participate in the NOAA Marine Debris Monitoring and Assessment Pro. Manatee Protection Program staff identified a site at Rose Bay to conduct monthly marine debris surveys and this effort continued throughout most of 2020. Collection surveys were not conducted every month for the Rose Bay location due to staff scheduling conflicts and COVID\_19 precautions.

Every 28 days, MPP staff, often along with students from the Investigation Biomes in Science (IBIS) project go to the designated stretch of shoreline at Spruce Creek Park to conduct a cleanup. After the debris is collected, items are documented. Some are photographed and large items, >1ft, are measured. All data is uploaded to the NOAA Marine Debris Monitoring webpage.

A description of the NOAA project, with maps and data denoting survey sites is located at:

<https://marinedebris.noaa.gov/research/marine-debris-monitoring-and-assessment-project>.



Below are Figures created using the data from the Rose Bay site collection reports from January 2017 to December 2020. It can be assumed that due to storm activity from Hurricane Dorian, in September of 2019, there was a significant rise in the amount of debris collected. There was also a significantly higher amount of debris collected in July and October of 2020 due to the pause in surveys.

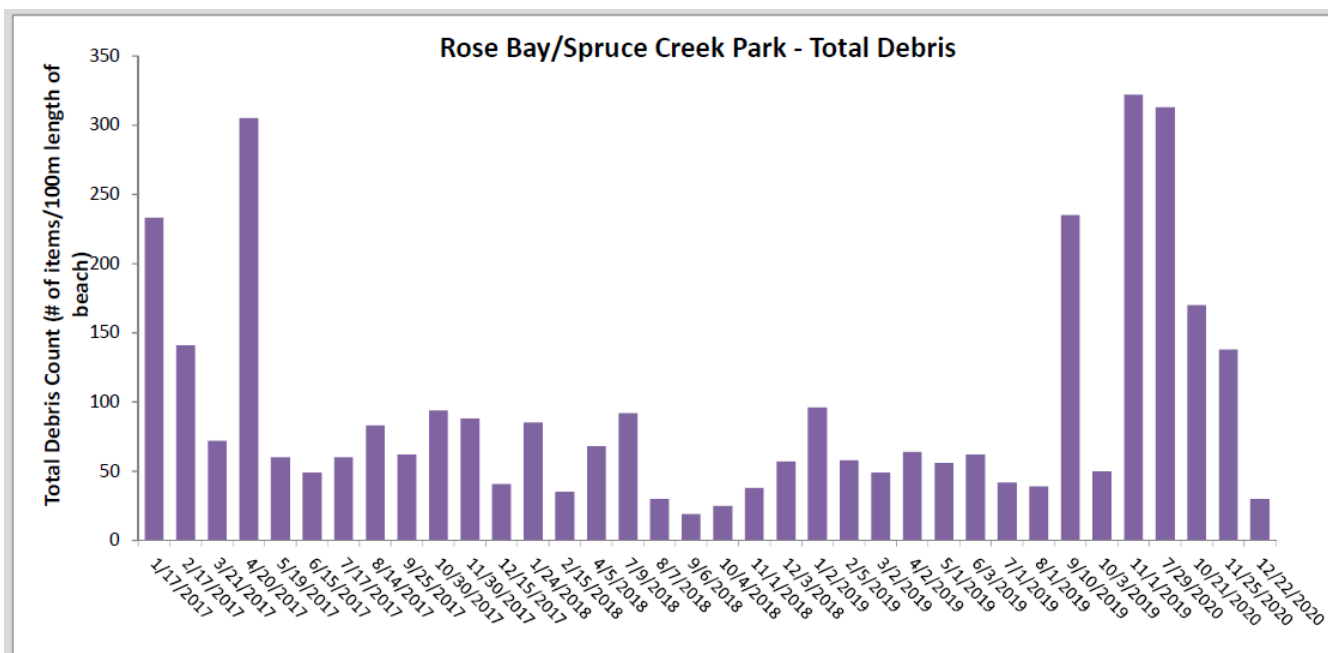


Figure 2. Total debris counts per 100m length of shoreline.

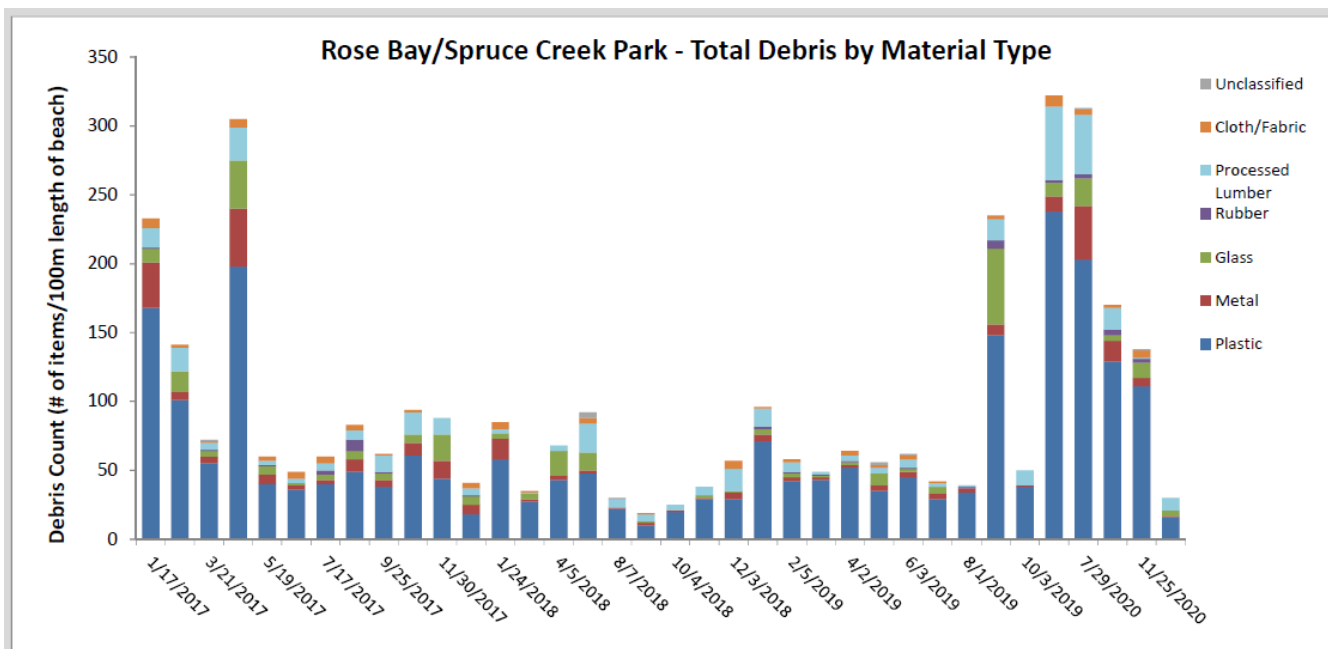


Figure 3. Debris counts per 100m length of shoreline by material type (plastic, metal, glass, rubber, processed lumber, cloth/fabric, and other/unclassified).

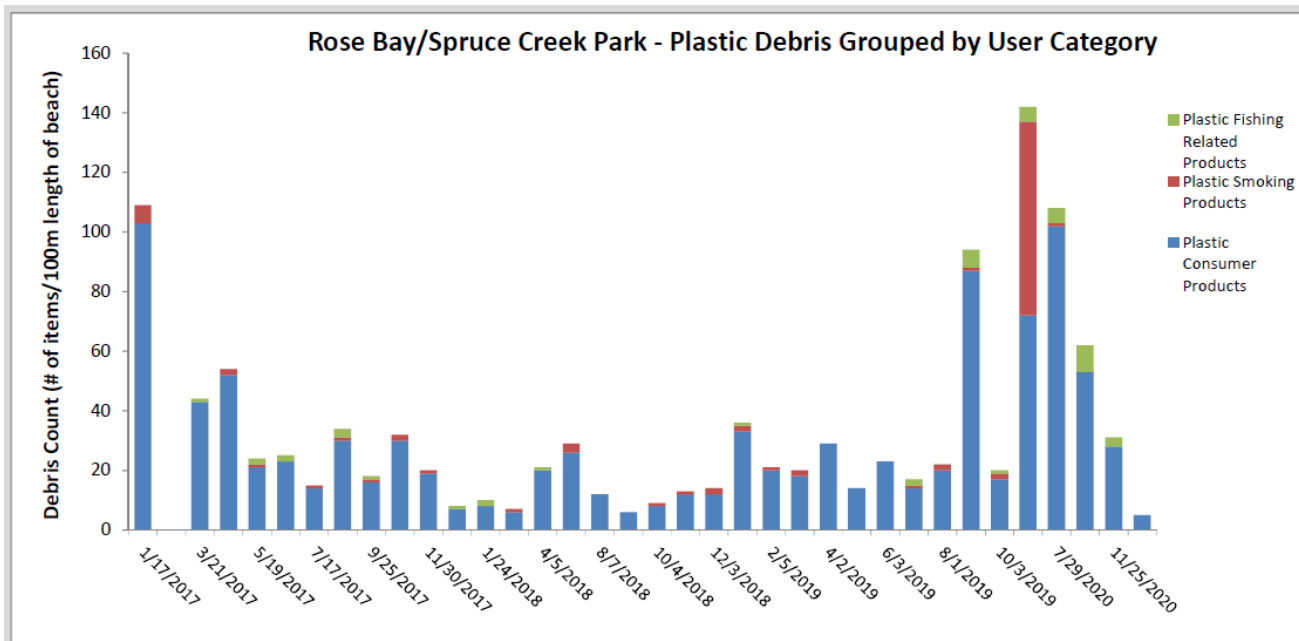


Figure 4. Plastic debris counts per 100m length of beach by user category (plastic consumer products, plastic smoking products >2.5cm, and plastic fishing related products). Plastic Consumer Products include: Food Wrappers, Plastic Beverage Bottles, Other Jugs/Containers, Bottle/Container Caps, 6-Pack Rings, Bags, Cups, Plastic Utensils, Straws, Balloons, and Personal Care Products. Plastic Smoking Products >2.5 cm include: Cigar Tips, Cigarettes, and Disposable Cigarette Lighters. Plastic Fishing Related Products include: Plastic Rope/Net, Buoys & Floats, and Fishing Lures & Line.

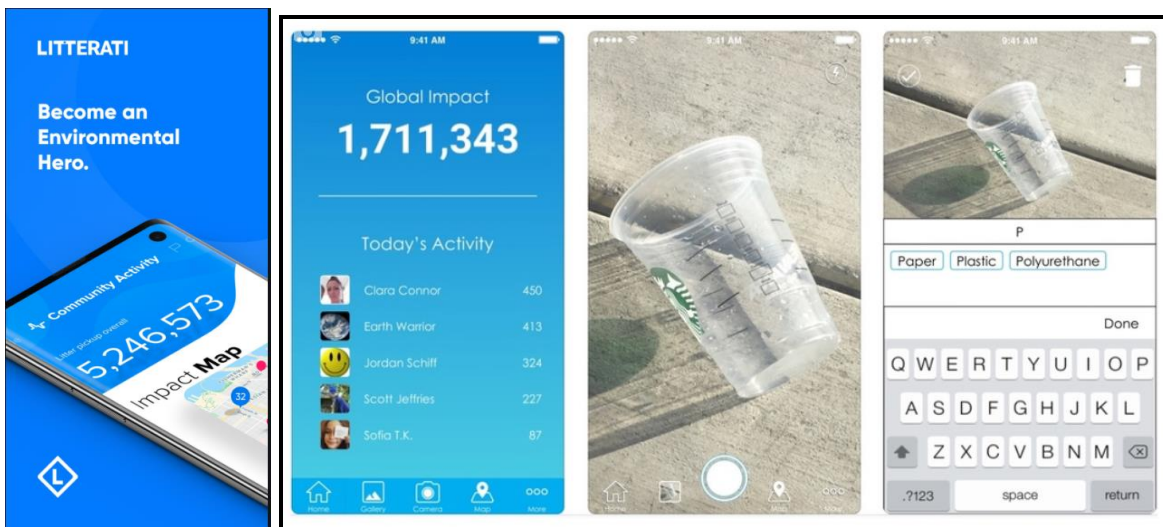
During each survey, photos are taken to document unusual or large abundances of items removed.



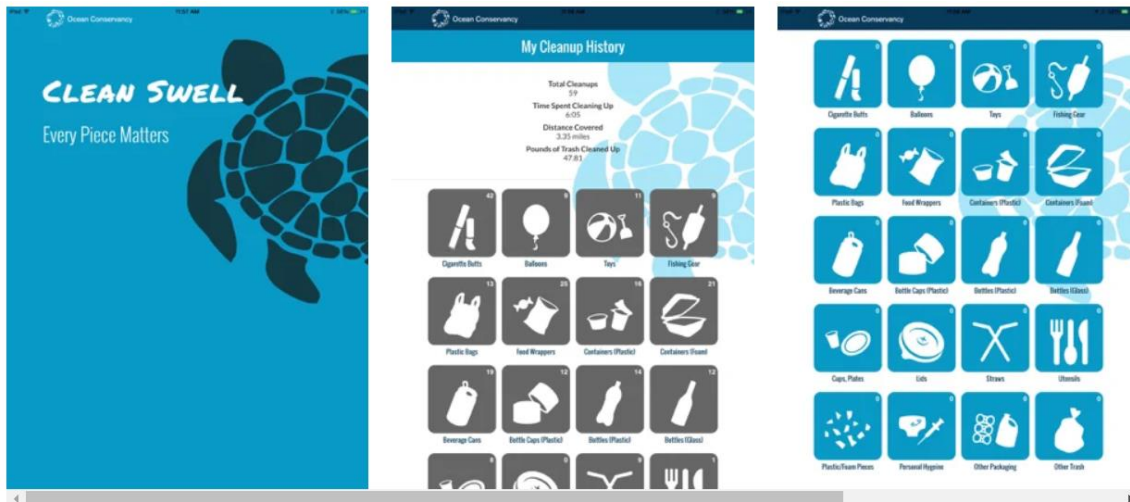
Debris removed during the July cleanup (assorted plastic, foam, wood, metals, etc.)

In addition to this routine effort, which is closely monitored and administrated by NOAA, data is submitted through their smart phone application called the Marine Debris Tracker, which can be downloaded at: <http://www.marinedebris.engr.uga.edu/>. This application allows the public to participate in an important citizen scientist project tracking marine debris in their own neighborhoods. MPP staff encourages people to use the app during educational outreach efforts.

**Cleanups:** MPP staff also assists with other County sponsored marine debris cleanups throughout Volusia County. Due to COVID-19 restrictions, the annual St. Johns River cleanup and the International Coastal Cleanup were held as socially distanced events using new phone applications as the primary method of data submittal. Instead of large groups meeting at the exact same time and locations, volunteers were encouraged to spread out and clean up independently. MPP staff promoted the new apps and cleanup events during outreach programs and in routine volunteer program e mail updates. Staff also assisted in an annual effort to remove monofilament and marine debris on the designated Critical Wildlife Area, Rookery Island, in Port Orange along with Florida Shorebird Alliance Partnership partners.



*LITTERATI application suggested for St. Johns River Cleanup participants to use while collecting their debris.*



*Clean Swell application used during International Coastal cleanup events.*

## Florida Microplastic Awareness Project

Dr. Maia McGuire, Associate Director of Extension and Education for the UF/IFAS extension program, created a program called the Florida Microplastic Awareness Project. A NOAA Marine Debris Prevention, Education and Outreach Partnership Grant funds the project. In 2015, MPP staff received training on testing water samples for microplastics. They learned how to filter the water and identify the plastics under the microscope. They began incorporating education about microplastics and water sample collection into education programs with the Volusia County School's Project IBIS, the Marine Science Center, Lyonia Environmental Center and Explore Volusia programs. For more information on the Awareness Project visit [www.plasticaware.org](http://www.plasticaware.org)

Microplastics are less than 5mm long plastic particles. These particles can take several forms, including microplastic fragments derived from larger pieces of plastic, "Nurdles" pre-production plastic pellets, microbeads, film, and fibers. Researchers have continued to see large increases of these particles in our oceans over the past 10-15 years. Due to a growing concern about the potential impact of microplastics in the marine environment, staff decided to take a closer look at the problem.







*Top Left to Right: Microfiber – Marine & Environmental Research Institute, Microbead - Maia McGuire, Bottom Left to Right: Fragment - Maia McGuire, UF/IFAS Extension, Nurdle - Maia McGuire, UF/IFAS Extension, Flagler County, FL*

The program has been very successful in bringing awareness, to both students and adults, about a growing problem that most people did not know existed until very recently. Scientists are still assessing the possible transfer of microplastics through our food web, and the extent of the harm microplastic pollution is causing to the marine environment, and to human health. MPP staff only had the opportunity to conduct two microplastics awareness presentations during 2020 due to limited outreach opportunities during the COVID- 19 pandemic.

## **MANATEE EDUCATION AND OUTREACH**

Manatee conservation education for both students and adults continues to be an important program objective. Volusia County Manatee Protection Program education and outreach includes the development and distribution of original lesson plans, manatee activities, participation in community festivals, other educational events, and transmitting information to the public via the education program website at:

<https://www.volusia.org/services/growth-and-resource-management/environmental-management/natural-resources/florida-manatee/education/>

The educational curriculum correlates with skill sets outlined in the Next Generation Sunshine State Standards or Common Core, with the goal of providing a complete educational package in a “ready-to-use” format. Teachers can correlate a particular manatee educational lesson to the learning skill they are focusing on at the time. Teachers have access to the manatee curriculum through the manatee education webpage (link above), through personal requests, through the Volusia County School’s Project IBIS (Investigating Biomes in Science) program, the Marine Science Center, the Lyonia Environmental center, and Explore Volusia programs. There are also other educational activities and links to related resources on the web page.

The Manatee Protection Program provides education on manatees, manatee habitat, marine mammals, monofilament line recycling, marine debris, microplastic pollution, and the estuarine environment at the two IBIS Program sites, Spruce Creek Park, the Lyonia Environmental Center, as well as at the Marine Science Center, and during other outreach programs such as Explore Volusia.

For more information on Project IBIS visit:

<https://www.vcsedu.org/science/project-investigating-biomes-science-ibis>

The IBIS program is primarily for high school students; however, elementary age students are the focus audience at the Lyonia Environmental Marine Science Centers. Manatee activities are appropriate to the students' grade levels as an enhancement to their classroom learning experiences. All activities complement the curriculum maps for each part of the school year, address specific Next Generation Sunshine State Standards, and address topics found on the End of Course exams.

The activity, "How Long Will it Take to Decompose?" based on facts from the workbook, "Talking Trash and Taking Action", by the Ocean Conservancy and NOAA Marine Debris, are used with high school students attending the IBIS program at Rose Bay. Students are given a type of marine debris commonly found during beach, shoreline and underwater cleanups, and asked to guess how long it would take their item to decompose in the marine environment. During this time the students are also asked other questions, for example, what is marine debris, how does each marine debris item affect the marine environment, what can we do to prevent this item from getting into the marine environment, and why does their item decompose at a different rate than another?

One of the items used in this exercise is fishing line. When discussed, it provides an opportunity to educate the classes about the Volusia County Monofilament Recovery and Recycling Program. Students are amazed to learn about the 600 year decomposition rate of monofilament, as well as the efforts that are taking place around the county to help prevent the problem and to restore our waterways. The discussion led to concerns about marine debris in general and microplastic pollution. At the end of each session, the activity includes a hands-on marine debris cleanup of Rose Bay. During the cleanups, students are educated about the different types of mangroves commonly found on the East coast of Florida and the importance of the estuary they are helping to preserve. The students typically remove 10-12 bags of marine debris and several hundred pounds of chemically treated wood during each cleanup.

Through native plant educational walks and talks, the IBIS students learn about the value of estuaries as habitat and as natural buffers to storms. They also learn why estuaries are one of the most productive ecosystems in the world. The walks/talks teach students to identify local species of mangroves, and other estuarine plants, and demonstrate how these plants have developed the necessary individual adaptations that allow them to live in such a harsh, saline environment.

In 2020, staff continued to incorporate education about microplastics and water sample collections, into the education programs with Project IBIS, the Marine Science Center, Lyonia Environmental Center and Explore Volusia programs. An Activity Lesson is used in conjunction with the Project IBIS program, the lesson outlines how a microplastic experiment for high school students can be conducted within a 30-45 minute timeframe. The lesson also describes the equipment needed, water sample collection protocol, and

process for filtering for microplastics utilizing the Microplastic Awareness Project guidelines.

Only two programs were conducted in the beginning of the year, before the COVID-19 pandemic shut down education programs conducted for the IBIS program, the Marine Science Center, and the Lyonia Environmental Center students.

Additional educational activities focusing on manatee genetics, taxonomy, and protection to promote conservation of the endangered Florida manatee are available online at <https://www.volusia.org/services/growth-and-resource-management/environmental-management/natural-resources/florida-manatee/education/> Community events and activities also provided numerous opportunities for education and outreach. These additional education programs are typically conducted for groups such as: Lyonia Environmental Center (LEC) Classroom Presenters, the Volusia County Elementary expo, and the Ormond Discovery Center and MPP staff looks forward to being able to conduct them again in 2021. However, following strict pandemic social distancing protocols including keeping groups to 10 or less people, MPP staff presented for 22 Explore Volusia Programs. See <https://www.volusia.org/explorevolusia> for more information on explore Volusia programs.

In addition, one of the largest annual outreach events that MPP staff attends, is the Manatee Festival, which occurs in January each year. The 2020 festival was a great success with more than 4,000 people in attendance. Please visit [www.themanateefestival.com](http://www.themanateefestival.com) for more information about this event.

As the pandemic limited in person educational opportunities, MPP staff initiated virtual programs and pre-recorded videos for organizations such as the National Gardeners Club, the Museum of Photography at Daytona State College, and DeBary Hall Community Information. These educational events reached at least 4,390 children and adults. This number will increase as the online videos continue to be viewed. <https://fb.watch/3jYVR2OdRn/>, <https://fb.watch/3jYHdr6ezW/>, <https://fb.watch/3jYK8S5csC/>

## **MANATEE WATCH**

In 2005, the Manatee Watch program was established as a volunteer network to assist MPP staff in gaining a better understanding of how manatees are utilizing Volusia County's waterways. Now in its fifteenth year, the program continues to play an important part in understanding manatee movement and activities within Volusia County.

In 2020, MPP staff conducted two training sessions for new volunteers, the first was held on February 4<sup>th</sup> at the Historic Courthouse in DeLand and the second training was held on February 15<sup>th</sup> at the Marine Discovery Center in New Smyrna Beach. The trainings introduce the Manatee Watch program to potential volunteers, and provide

education on manatee biology and physiology, manatee identification and scar pattern recognition, and an overview of manatee regulatory laws.

Former Blue Spring State Park manatee specialist, Wayne Hartley, now working for Save the Manatee Club, originated a system to recognize individual animals based on scar patterns that we use with the volunteer program. Mr. Hartley regularly attends the trainings, presenting his slide images and giving valuable insight and information about the manatee identification and documentation process. The volunteers report valuable information and send photos that can be very helpful in identifying known manatees.

As part of the training, participants use a scar matching game to help them learn how to properly document manatee scarring and injuries. Trainees are given a photo of a manatee and a scar documentation sheet. They are subsequently asked to document all scars or injuries seen in the photograph onto the scar sheet. They are then able to verify their work by finding the completed manatee scar sheet that looks most like theirs. This is a great way for them to get hands-on experience filling in the scar sheets while staff is there to help them.

Manatee Watch volunteers are not trained or authorized for manatee rescues, or any sort of intervention. However, once trained, they are able to recognize the difference between an animal in distress and natural behavior, they report distressed animals to MPP staff and then to the Florida Fish and Wildlife Conservation Commission.

Since 2006, MPP staff has also been collaborating, with the U. S. Geologic Survey Sirenia Project, which maintains the Manatee Individual Photo Identification System (MIPS) database, which is a statewide photo identification catalogue. Staff sends manatee sighting reports and photos, from volunteers to the MIPS program via e-mail whenever good photographic documentation is received. In 2020, one manatee named "Sawyer" was positively identified from photos sent in from a Manatee Watch volunteer. One way MPP staff maintains contact with valued volunteers is through Manatee Watch Newsletters (See photos below), which help to keep them current with sightings, upcoming training events, manatee facts, and sighting tips. Feedback from the volunteers has been positive and there has been increased participation since the establishment of the updates. Another way we encourage volunteers to participate is by rewarding each volunteer that sends in three data sheets with a unique Manatee Watch t-shirt!



**Volusia County**

**Manatee Watch Newsletter**

**Fall 2020**

**MANATEE FACT**

Manatees jut with their flippers! Having deistic bone structure, manatees will use their pectoral flippers to grab and push food into their mouths. Feeding around fishing areas, manatees can become entangled in line.

**Fall migrations are starting. What we need to know...**

As our water temperature starts to drop, manatees will be seeking their wintering grounds. We can see wise old mothers teaching their newest calves the way to warm water refuges and some manatees are taking this journey on their own for the very first time. This migration to warmer waters can be interrupted from time to time and leave some animals, literally, out in the cold.

Despite their size, manatees have very little insulation and do not tolerate water temperatures below 20°C/68°F. If they are subjected to cold water for too long, they can become "Cold Stressed". How to tell:

1. Lethargic behavior, pacing, or swimming in circles
2. Discolored skin appearing greyish-white around the snout, flippers, or tail.

**What To Do:**

Call FWC Wildlife Alert Hotline at: 888-404-3922

**MANATEE WATCH**

**In the Spotlight!**

Becky S. and Joyce W.

Thank you so much for your Manatee Watch Sighting Forms. The information you provided has been added to our database!

**Other Local Programs**

Volusia County maintains a Manatee Recovery and Recycling Program that needs some citizen scientist support. Manatees introduced into our environment can be and often is fatal to our local wildlife. We have placed recovery bins all around the county to keep our waterways tangle-free. If you, or a group you know, have a passion for wildlife, check out how to get involved [www.volusia.org/fishingsites](http://www.volusia.org/fishingsites)




**Volusia County**

**Manatee Watch**

**Spring 2020**

**MANATEE FACT**

**It's time to SPRING into action**

Manatees have nails on their flippers that very closely resemble an elephant's nails, which are their closest living relative.



Spring is in the air! As we roll through March we are aware of one thing... MANATEES!!!! As our temperatures climb back up, our Manatees are leaving their wintering grounds. With an average weight of over 1,000 lbs, people assume manatees would get a little too warm in our extreme summer heat but the opposite is true. Manatees have very little insulation and their enormous size comes mostly from very large internal organs and bones. Their herbivorous appetite requires about 150 feet of intestines! These hind gut digesters will spend most of their summer days eating, resting and nursing their young.

**Manatee Watch Volunteers**

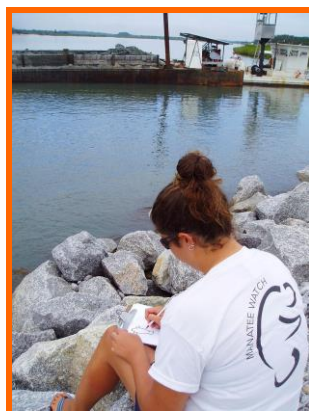
Don't forget... After you send in 3 sighting reports you get a free Manatee Watch t-shirt!

**Manatees in the News**

Rescued as an orphan and weighing only 30 pounds, O'Neil was released into Blue Spring State Park on February 28th. A few years of rehab and a few hundred pounds later, O'Neil weighed in at 700 pounds on Friday! He seems to be adjusting well and finding food on his own.

### Fall and spring Manatee Watch volunteer updates



*Manatee Watch t-shirt worn while documenting a manatee sighting.*

With the addition of 30 new volunteers in 2020, the number of trained Manatee Watchers number reached 285, with 274 active members due to volunteer relocation. In addition to the new volunteers, there is also a list of several potential volunteers. These people have either recently expressed interest in joining the program or have been unable to attend scheduled training sessions. They will be notified when the next training session is scheduled.

The amount of time spent in 2020 by Manatee Watch volunteers declined greatly due to the COVID-19 mandatory stay at home order, and other restrictions. However, despite

the pandemic, Manatee Watch Volunteers submitted 14 sighting reports in 2020. Many reports consisted of multiple animals sighted at the same time, bringing the total number of manatees sighted in 2020 to 24. Sighting reports were submitted by eight different volunteers, in which manatees were documented in eight different bodies of water, one of which was observed in Levy County. Volunteers reported spending seven hours conducting manatee observation, which is valued at \$190.40. Plans to update the online manatee sighting report will help make entering data even easier in the future. These updates are scheduled to launch in 2021 and we hope to see an increase in submitted data once again.

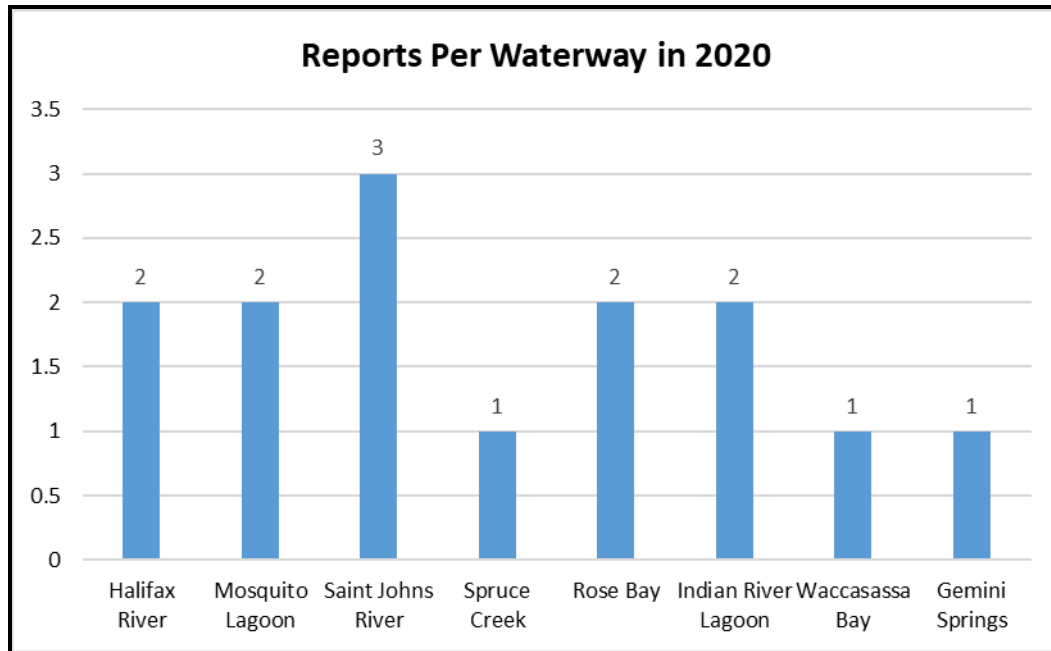


Figure 5: Number of manatee reports sent in per waterway

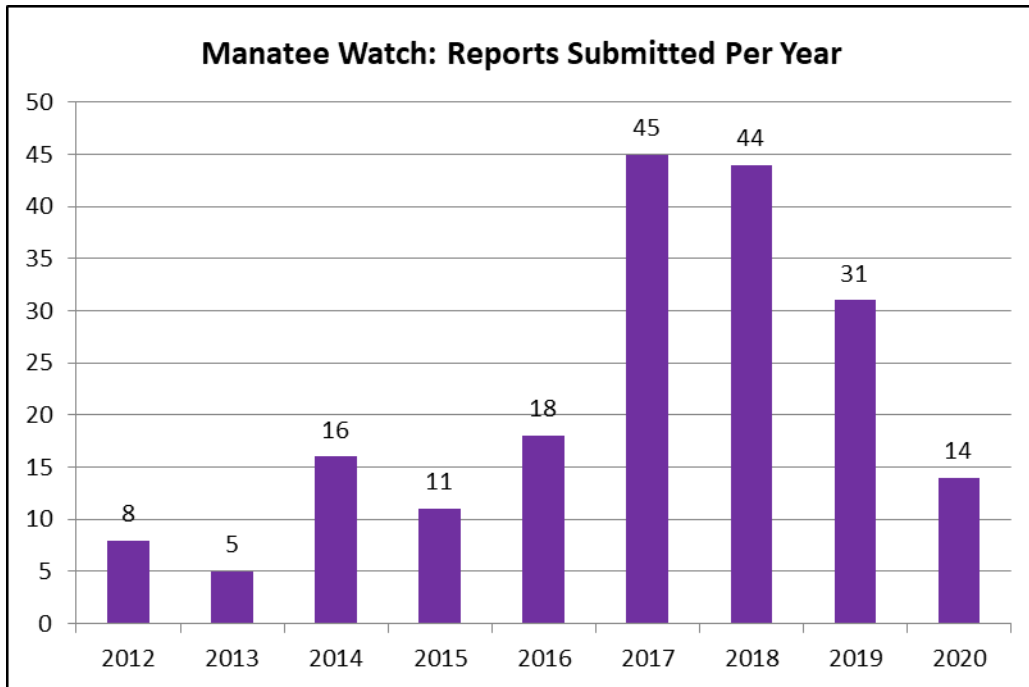


Figure 6. Chart showing volunteer reports submitted from 2012 – 2020

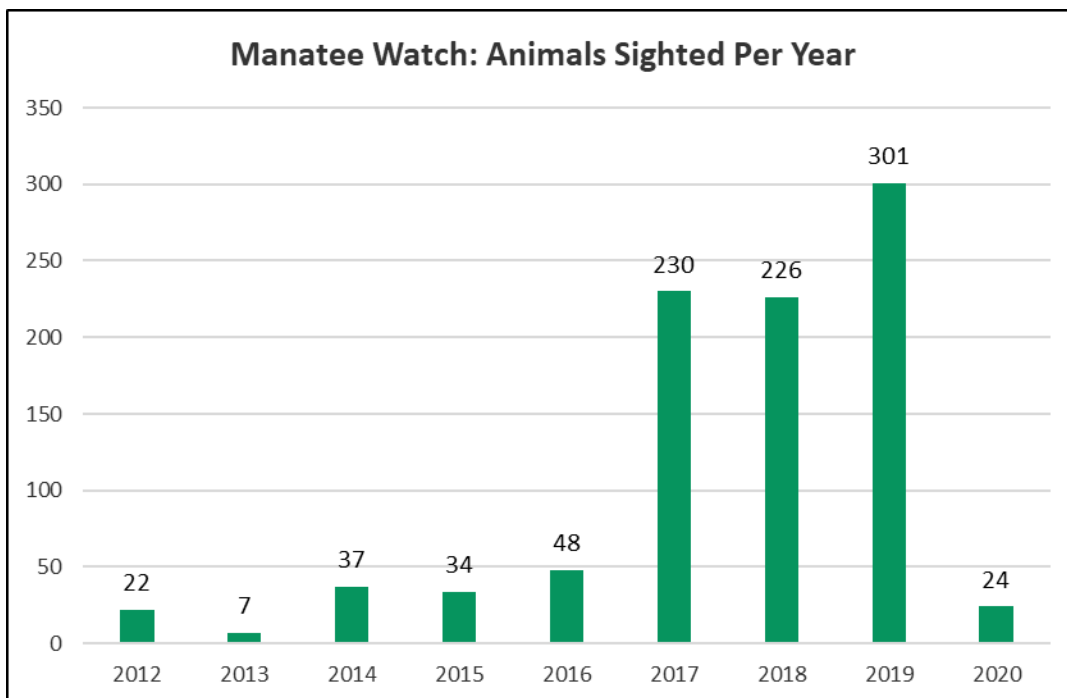


Figure 7. Chart showing the number of animals volunteers sighted from 2012-2020

The Manatee Watch Program is fortunate to have a dynamic group of volunteers with varied experience and knowledge working to collect manatee sighting information throughout the county. A well-trained group of volunteers is able to gather far more information and cover more territory than staff members alone would be able to, and they provide a valuable service to the county's Manatee Protection Program. From this data, we gain a better understanding of how manatees use Volusia County waterways and information such as behavior, size, associations, movement, and even individual identification proves to be extremely valuable in management decisions. Manatee Watchers have also proved invaluable by alerting staff when they observe a manatee that is injured or in distress. This is a great asset for our Marine Mammal Stranding Team's ability to respond to potentially compromised manatees in our waterways.

The Manatee Watch program continues to grow and adapt in response to incoming volunteers, new data, and participation in beneficial collaborative efforts.

### **Blue Spring Manatee Observer Program**

In 2014, MPP staff held the first Manatee Observer training, which is a more advanced, level of Manatee Watch. The program is a cooperative effort between Florida Fish and Wildlife Conservation Commission (FWC), Blue Spring State park volunteers and park rangers, and volunteers from Save the Manatee Club (SMC), Clearwater Marine Aquarium Research Institute (CMARI) and Volusia County Manatee Watch. The goal of the Blue Spring Manatee Observer program is to provide trained volunteers, to assist Blue Spring park rangers, during the summer months (March – October). This is when the manatees can potentially be in the swim area of the spring run and harassment prevention is essential. Ideally, there is a volunteer in a kayak and one on the boardwalk or the swim/diver entry dock, to provide park visitors with information and address manatee education questions. This effort helps to prevent manatee harassment by swimmers and divers.

In 2020, two mandatory volunteer training sessions were held at Blue Spring State Park, during which volunteers were educated about laws protecting manatees, proper manatee etiquette, manatee behavior, signs of distress in a manatee, available equipment, and proper etiquette to deal with park visitors.

Those volunteers interested in observing by kayak, attended an additional mandatory kayaking skills and safety course, conducted by the Blue Spring State Park Manager and the Volusia County Manatee Watch Manager, both ACA certified level 2 Kayak Instructors. With the addition of new volunteers from the 2020 trainings, the program now has 86 active observers, 41 of which are trained to use kayaks while observing.



In 2020 Manatee Observers provided 985.5 volunteer hours of service to the park. This was a decrease from last year due to the government stay at home order and then the limited capacity once the park reopened.



*Trained Boardwalk Manatee Observer*



*Manatee Observer in official Manatee Observer Kayak*

In 1971, there were 11 manatees recorded at Blue Spring, which included one calf. In 1981 there were 36. Now in 2020, there were close to 600 manatees reported at Blue Spring State Park in a single day. These figures clearly demonstrate the effectiveness of the manatee protections that have been put into place on the St. Johns River and at Blue Spring State Park. The number of manatees utilizing the spring as a warm water habitat also show how important it is to maintain the health and flow of Volusia Blue.

## **CLEAN MARINA**



**Clean  
Marina**



**Clean  
Boatyard**



**Clean Marine  
Retailer**



**Pumpout  
Facility**

The Florida Department of Environmental Protection (DEP) developed the Clean Marina Program as a voluntary designation process for marinas that assists them in becoming more environmentally friendly. The DEP has encouraged clean boating through the development of several designations: Clean Marina, Clean Boatyard, Clean Marine Retailer, and Clean Pumpout Facility. These programs recognize facilities engaging in environmentally friendly practices, beyond regulatory requirements, in and around Florida's waterways. The Manatee Protection Program serves as a county liaison for the state program. Currently Volusia County has 22 marinas that have passed inspection and are listed as a "Clean Marina". In 2020, no new marinas opted to join the clean marina program however staff has identified future potential participants while conducting routing marina surveys. For more information on the Clean Marina Program, visit <https://floridadep.gov/fco/clean-marina>.

## **INTERGOVERNMENTAL COORDINATION**

The Manatee Protection Program staff continues to participate in working groups and interagency task forces at the state and federal levels in order to enhance their knowledge of issues relating to scientific research, public interest, available grants, and education and outreach efforts. This also creates opportunities for collaboration with other government agencies, and helps to inform staff of new initiatives. Additionally, participation allows the county to have direct input at both the state and federal level.

The Manatee Protection Program Manager attends periodic meetings of the FWC led Manatee Protection Plan Interagency group. The interagency group discusses topics of vital concern to the counties that have state mandated Manatee Protection Plans, as well as being of interest to all other agencies and non-profits in attendance.

The Manatee Protection Program Manager attends the annual Blue Spring Interagency Meeting, which deals with the removal of exotic aquatic vegetation in the St. Johns River and its potential effect on manatees. At these meetings, one task is to review maps and an herbicide spray schedule annually. Plans are adjusted as deemed necessary. Attending agencies also give updates on their respective programs.

The Program manager also attended meetings with the Northeast Restoration Team (NERT), an annual Volusia Shorebird Partnership meeting, a Derelict Vessel Removal Program meeting and the Marine Recourse Council led, Indian River Lagoon Boaters Guide update meeting.

In 2020 MPP staff took part on the Marine Resources Council's Boater's Guide update committee. The committee worked with the Indian River Lagoon National Estuary Program to produce a new Boater and Anglers Guide for the Indian River Lagoon similar to one that was produced in October 1994. The new Boater's Guide will be a planning tool that showcases the beauty and history of our area, provides regulatory and safety information, encourages clean boating practices, and directs people to resources through maps and content. MPP staff surveyed all of the marinas & boat launches along the Indian River Lagoon in Volusia County. All data was submitted to the GIS coordinators on this project through the Survey 123 application.

## **LAW ENFORCEMENT**

Good coordination and communication with the law enforcement agencies responsible for enforcing manatee speed zones within the county is an essential element of manatee protection. In 2020, staff maintained close contact with participating members of the North Central Florida Maritime Alliance, including, the U.S. Coast Guard, the State Division of Law Enforcement, Volusia County Sheriff Marine Unit, neighboring

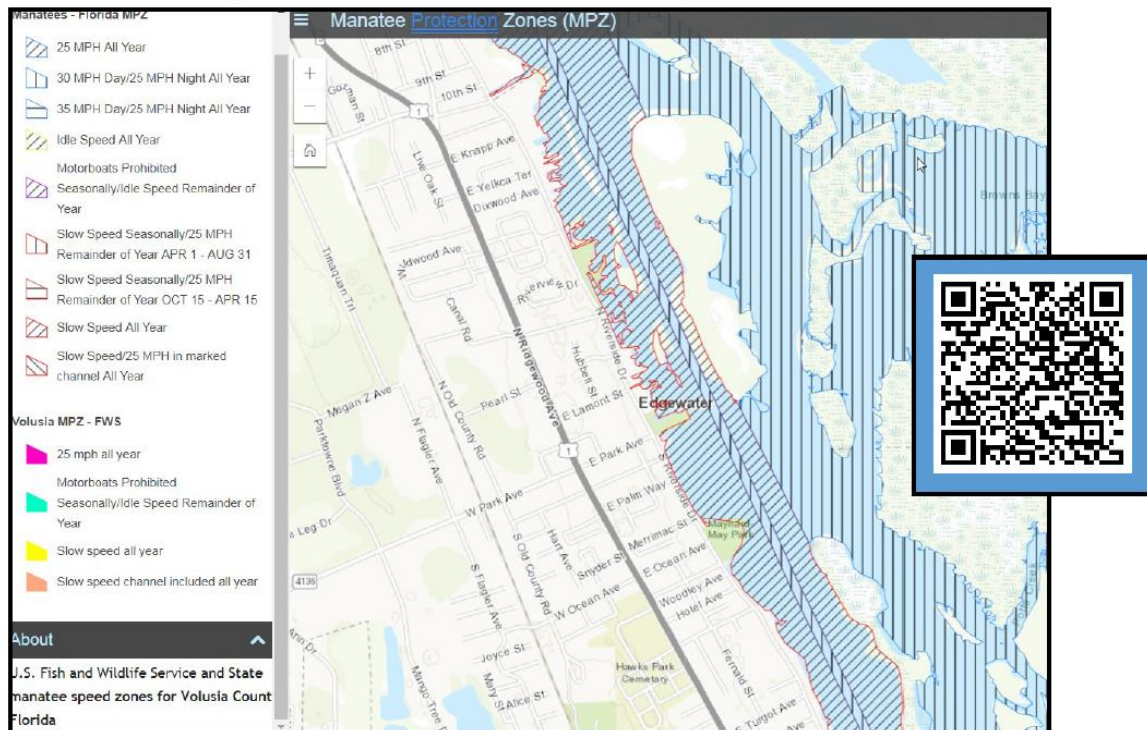
county law enforcement, local municipality on-the-water enforcement, Homeland Security, and other security related agencies.

Staff continues to maintain contact with the different agencies in order to coordinate with each other to maximize their presence and effectiveness. Staff also directly contacts the Sheriff's Marine Unit concerning manatee related enforcement issues that arise from citizen calls, which precipitates a timely on-the-water response. For state related issues staff contacts the Florida Fish and Wildlife Conservation Commission Law Enforcement.

The Volusia County Sheriff Marine Unit has been instrumental in assisting with manatee and dolphin captures, providing additional surveillance for the animals, and creating a safe perimeter while captures are underway. Additionally, the Sheriff Dive Team has greatly enhanced our efforts at marine debris recovery by participating in our underwater cleanup activities at Ponce de Leon Inlet.

The Manatee Protection Program continued to try to decrease the number of manatee injuries and mortalities by providing additional information to the public regarding manatee speed zones. While enjoying Florida's waterways, boaters often pass through manatee speed zones. Especially for the many people visiting or new to Florida, it can be hard to remember what areas are manatee protection zones. In 2018, the Manatee Protection Program staff and Volusia County GIS specialists developed a interactive map that provides digital access to manatee speed zones. While enjoying Florida's waterways, boaters can use the interactive map to zoom in to the area they are interested in, or enter a nearby address or landmark in the search box, to advance to the location. A link to the interactive map, <https://www.volusia.org/services/growth-and-resource-management/environmental-management/natural-resources/florida-manatee/manatee-speed-zones.stml> can be found on the Volusia County Manatee Speed Zone webpage. Staff continues to promote a QR code at festivals. Visitors can quickly scan the code with their smart phones and save the link for easy access while on the water.

# Know your Manatee Speed Zones



Scan the QR Code or visit [www.volusia.org/manatees](http://www.volusia.org/manatees) for our interactive Manatee Speed Zones Map

*Sign created to display at festivals for access to speed zone app*

## **MARINE MAMMAL STRANDING TEAM**

The purpose of the Volusia County Marine Mammal Stranding Team (VCMMST) is to provide a quick and organized local marine mammal stranding response, which is vital to the survival of live stranded marine mammals, offering them the best chance at successful rehabilitation. It also allows for the timely collection of data and disposal of dead animals. Collection of data from dead stranded marine mammals provides an opportunity to learn about the life history, ecology and health of species that are inherently difficult to study in the wild. These animals also serve as indicator species and serve to gauge the health of our marine ecosystems.

The Marine Mammal Stranding Team members are primarily county employees, which provides for continuity in team membership and facilitates increasing the level of training and expertise of the Team as a whole. The Stranding Team works closely with the County's Water Quality Program, the Sea Turtle Program, Beach Safety, the Marine Science Center, and with the Marine Discovery Center. The Stranding Team is an effective instrument for gathering stranding data efficiently, and then removing stranded animals from the beach as quickly as possible. This in turn elicits an interest in marine



mammals from visitors on the beach, and provides a method for distributing information about marine mammal strandings to the public.

The Volusia County Stranding Team works under the Hubbs-SeaWorld Research Institute's (HSWRI) Stranding Agreement with the National Oceanic and Atmospheric Administration (NOAA) Marine Fisheries Service when dealing with cetaceans (dolphins and whales). Team member's work extensively on increasing their level of knowledge and experience, and because of this hard work and dedication, the Stranding Team has attained the "Designee" status under the HSWRI Stranding Agreement.

In 2020, the VCMMST responded to 50 stranding calls. There were 24 cetacean (18 Bottlenose dolphins, 5 North Atlantic Right whales and 1 Humpback whale) and 26 sirenian (manatee) calls. As seen in Figure 8, since the three Unusual Mortality Events or UMEs (Mid-Atlantic Bottlenose Dolphins, Indian River Lagoon Bottlenose Dolphins, and Indian River Lagoon Manatees), took place in 2013, the number of responses for cetaceans has continued to remain significantly lower. The number of manatee responses in 2020 also decreased from 2019.

When dealing with manatees, the Stranding Team takes direction from the Florida Fish and Wildlife Conservation Commission (FWC). The Stranding Team applied for and received a Letter of Authorization from the U. S. Fish and Wildlife Service (FWS) for the designation of manatee "Verifier", which allows Team members to be first responders to manatees under the direction of FWC staff. The Team continues to work extensively with FWC staff, both with the Jacksonville Field Station, and with the FWC Indian River Field Station.

2020 was slightly different from previous years due to the pandemic. Manatee health assessments and marine mammal conferences and trainings were cancelled. However, the team stayed active responding to marine mammal strandings throughout the year. All crew practiced new social distancing guidelines, keeping personnel to a minimum, and wearing Personal Protective Equipment (PPE) at all times.

The Team also welcomed three new members in 2020. New members are required to attend training presentations to familiarize them with Stranding Team protocols and basic marine mammal biology. New members are on a monthly on-call calendar as a member in training. Typically, two Team members respond to each stranding event, however, members in training accompany an experienced Team member until they have reached a certain level of competence so sometimes; there are more than two responders. In addition, when a stranding requires a higher level of Team member response, more than two members may be necessary to deal with the stranding event. At those times, other Team members and Hubbs SeaWorld (HSWRI) volunteers may respond. The Stranding Team regularly works with Hubbs SeaWorld trained volunteers in order to provide the highest level of response possible.

The Team has five stranding kits throughout the county. The kits are in place so that when a stranding occurs, the responding team members are fully equipped for any

situation. The VCMMST coordinator regularly inventories and restocks all five kits to ensure that they are ready to go with all necessary stranding event supplies.

Throughout the year, team members attend the required Habitat Conservation Plan (HCP) training from Sea Turtle Program staff to ensure that they understand the proper regulations and safety precautions for driving on beaches when conducting a stranding response in accordance with the HCP.

Each year USGS research staff leads manatee captures and health assessments at Crystal River. These assessments consist of shoreline net sets, morphometric work ups, ultrasonography for skin and blubber thickness, photography for individual identification, pit-tagging, blood collection for health assessment and various studies, respiratory and heart rate monitoring, etc.

Manatee health assessments provide a significant learning experience for VCMMST members because they acquire invaluable knowledge about, and experience with live animal handling and capture techniques. During the assessments, members have the opportunity to help with the capture net, transference of animals from the capture location to the medical tents, as well as the release of the animals. Some may also have the chance to help with respirations, giving oxygen, monitoring carbon dioxide, taking blood samples and inserting pit tags.

As mentioned previously, manatee captures and training events were mostly cancelled in 2020 however, it is anticipated that these opportunities will resume next year.

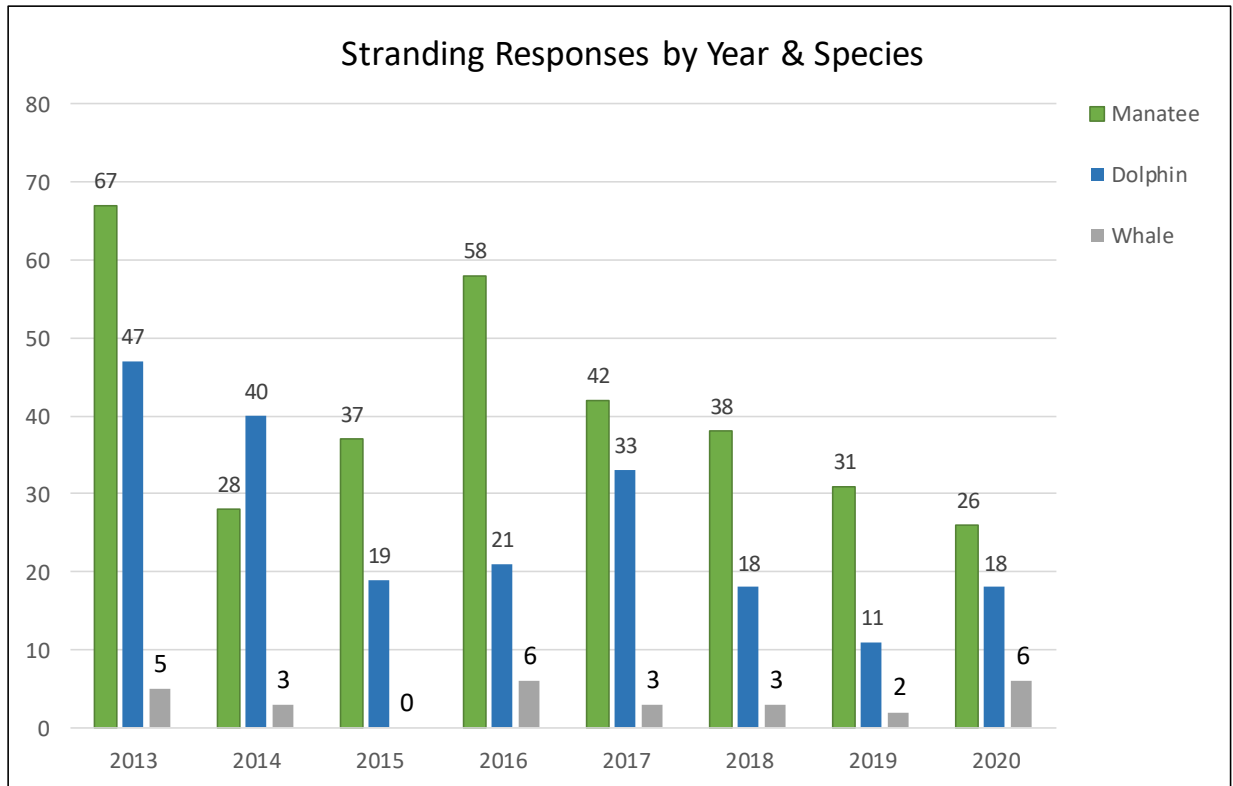


Figure 8. Chart showing the Volusia County stranding responses by year, 2013 - 2020

Of the twenty-four responses for cetaceans, thirteen were for verification of animals that were found to be in good health or not able to be located. There were three cases where the animals were found and in need of additional monitoring. The remaining eight calls were for deceased animals that required either partial or full necropsies. There were no live cetacean stranding events or rescues in 2020. (See Figure 9).

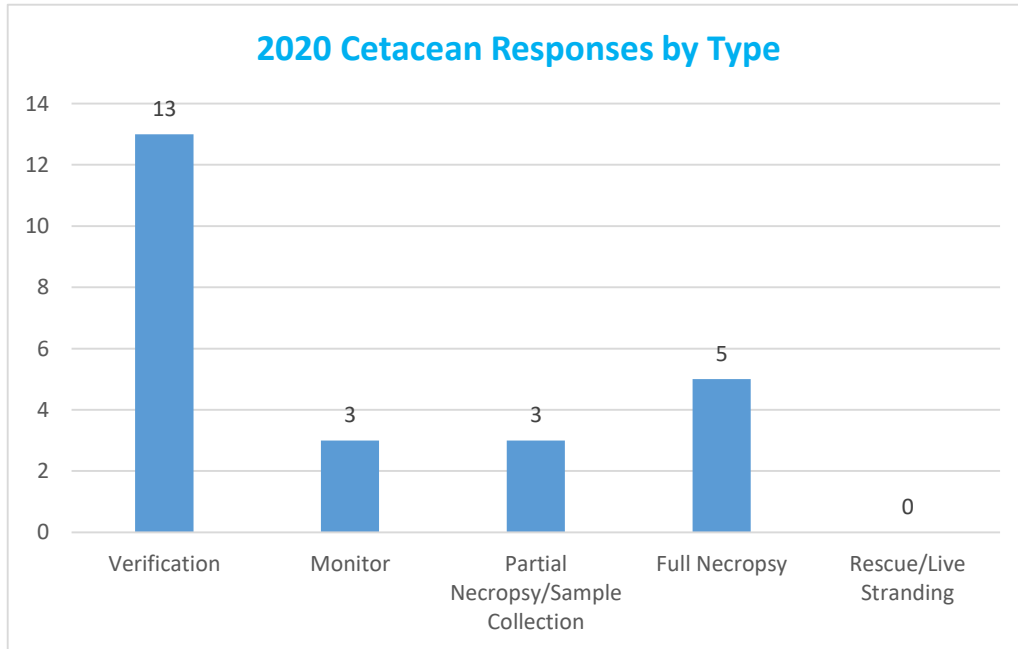


Figure 9. VCMMSST Cetacean responses by type

In 2020, there were 26 manatee calls to which the Volusia County Marine Mammal Stranding Team responded.

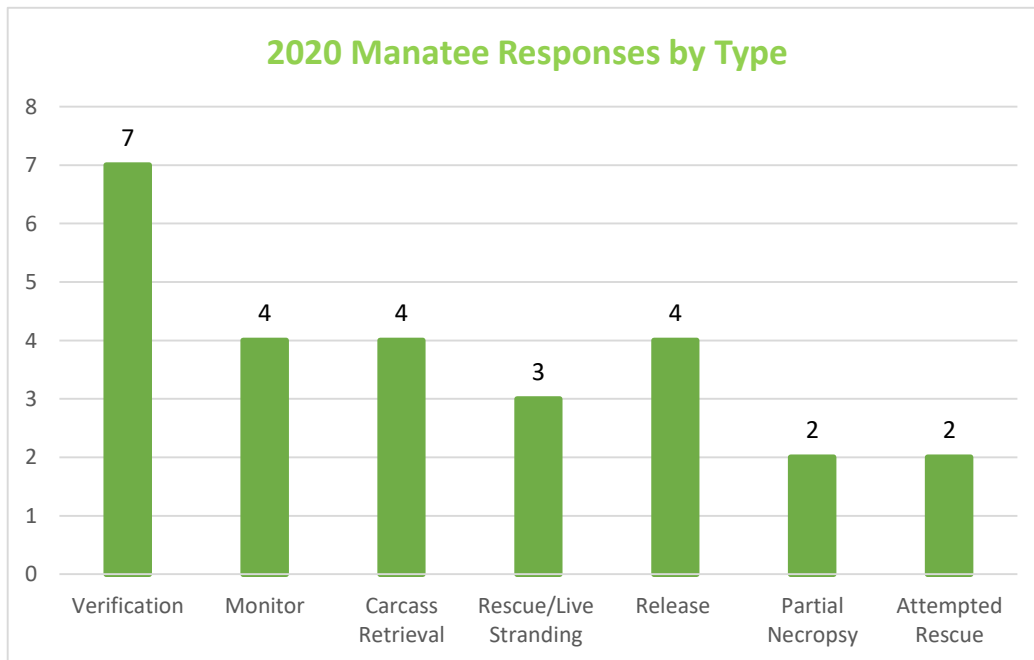


Figure 10. VCMMSST Manatee responses by type

In 2020, seven calls were for verification in which the manatee was either not able to be located, or the manatee was reported as showing normal behavior. The VCMMSST responded to several calls regarding mating herds during which they used the opportunity to educate the public about the event and the dangers involved in getting

too close to the animals. They also informed the public about ways to tell when a manatee is in distress.

Four of the calls that the team responded to were for carcass retrieval. In these cases, the team member would locate the carcass and secure it to the nearest boat ramp or dock for FWC retrieval. The animal was often towed by boat or kayak in order to find a convenient and secure pick up location. Three of the calls were for live responses and rescues, two rescue attempts were unsuccessful due to the animal's ability to evade the rescue boats and in two other cases, team members assisted FWC with field necropsies.

The following charts show the total strandings for each species, including Bottlenose dolphins (*Tursiops truncatus*), manatees (*Trichechus manatus latirostris*), a Humpback whale (*Megaptera novaeangliae*) and two North Atlantic Right whales (*Eubalaena glacialis*) (Figure 11), and their stranding locations within Volusia County (Figure 12).

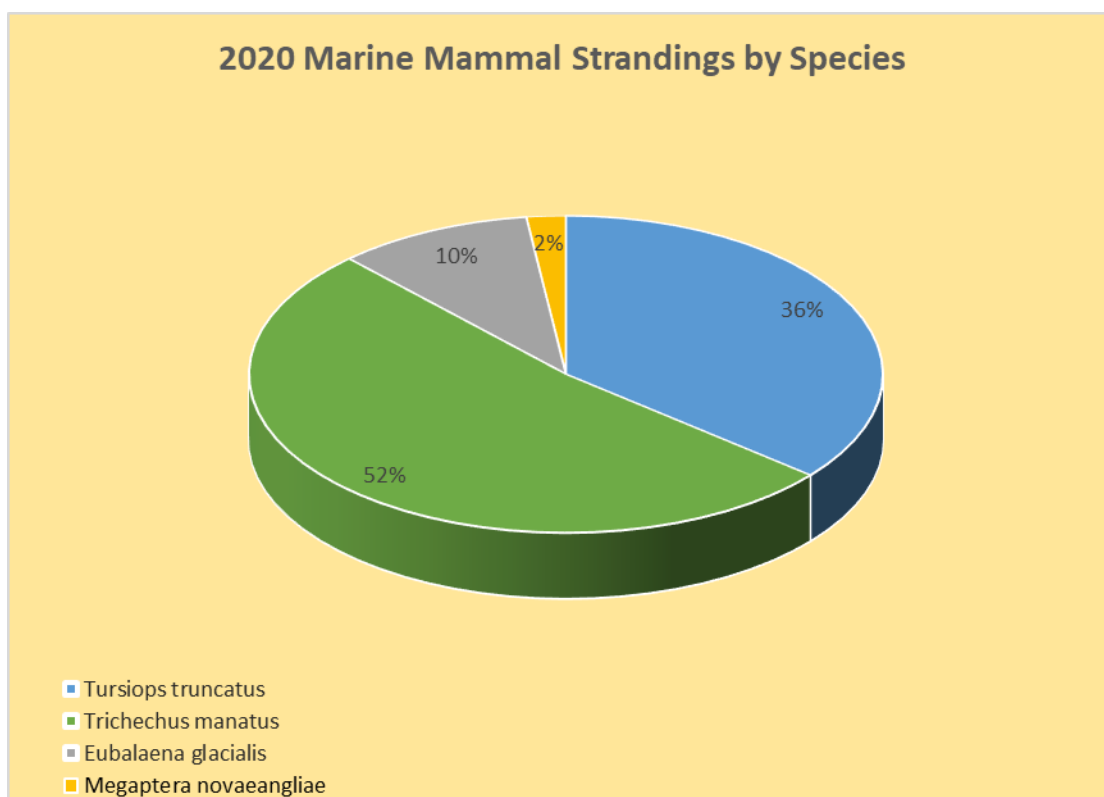


Figure 11: Species strandings percentage for 2020



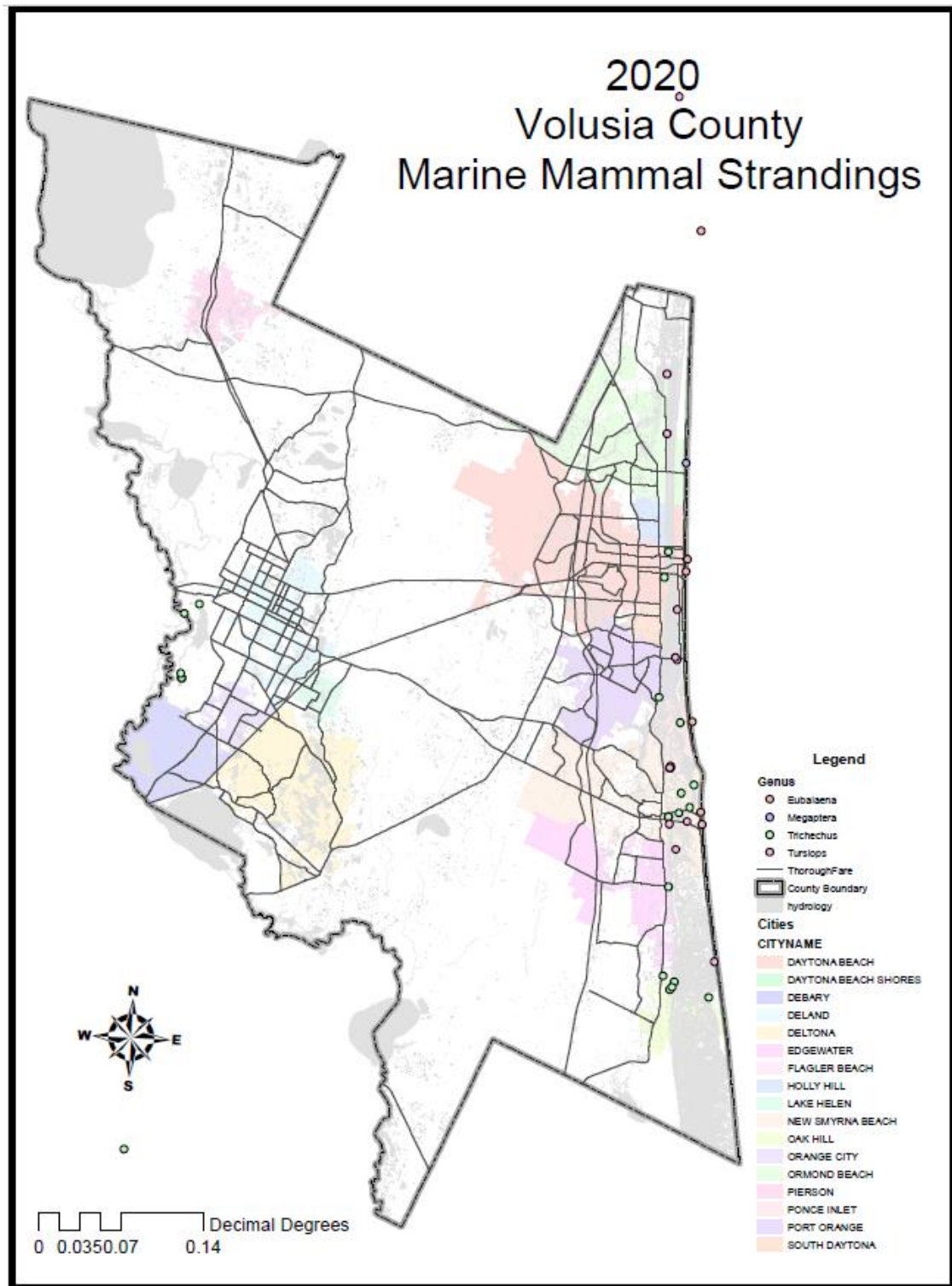


Figure 12: Stranding locations within Volusia County

Figure 13 below shows the total number of strandings per city in Volusia county for 2020.

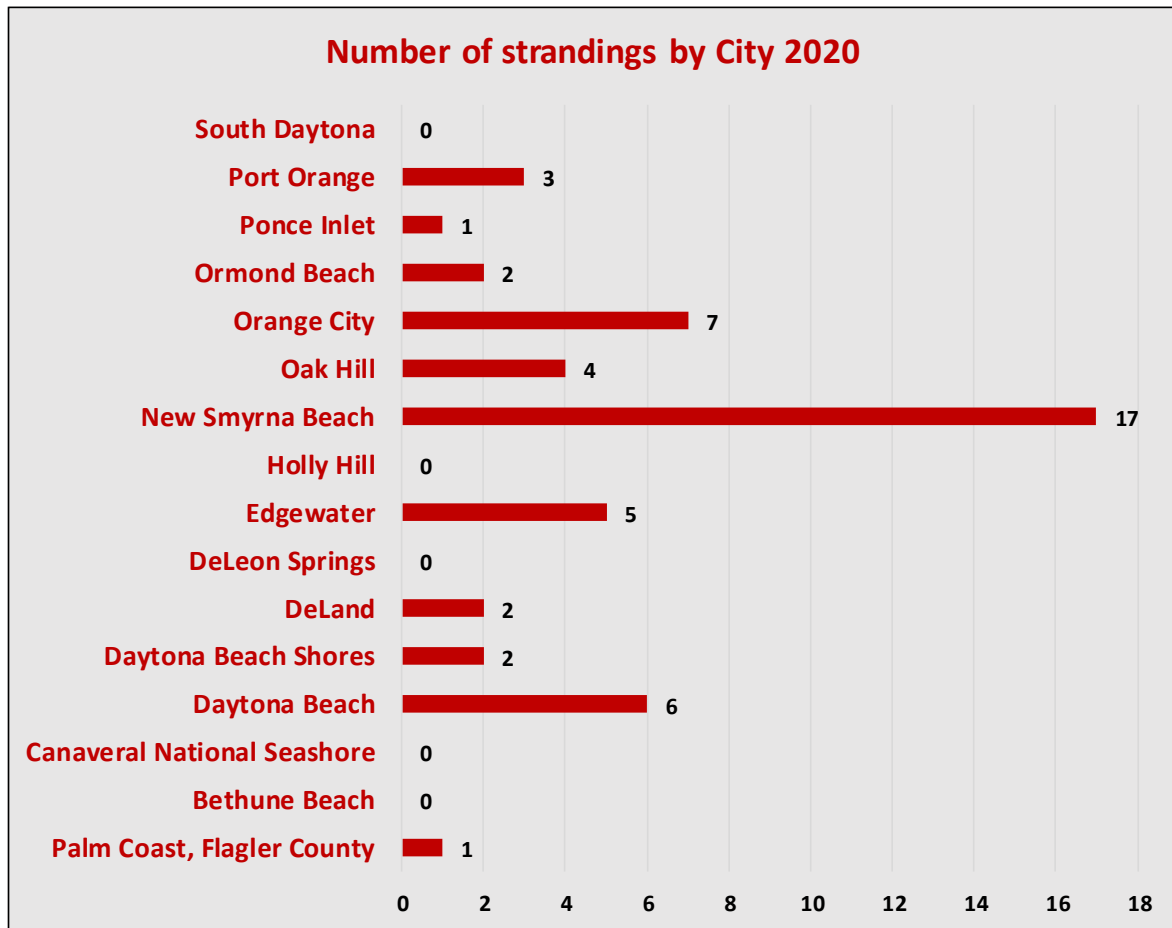


Figure 13. Number of stranding calls by city

The following are photos of VCOMMST members assisting with stranding calls.



Manatee Release (Orange City)



Humpback Whale (Ormond)



*North Atlantic Right whale sighting: “Chimineia” and calf Photo: Volusia County Beach Safety*

## **MANATEE MORTALITY**

The Florida Wildlife Research Institute (FWRI), which is the research branch of the Florida Fish and Wildlife Conservation Commission (FWC), maintains an on-line manatee mortality database. This database indicates that in 2020 there were a total of 40 manatee mortalities in Volusia County, an increase of 7 from 2019. This total includes all categories of mortality, human related as well as deaths from natural causes. Of the 40 manatee deaths, 4 were due to watercraft strikes (a decrease from 12 in 2019), which includes both propeller related injuries and blunt force trauma resulting from the impact with an engine, prop, boat hull, or other structural part of a boat.

There were six mortalities listed as perinatal deaths in 2020. The term perinatal refers to the size of the animal rather than a cause of death, and is an animal less than 150 cm (5 ft.) in total length, which was not determined to have died due to human-related causes.

There were seven undetermined, three cold stress, three natural causes, such as heart conditions or age, two non-boat related human interaction caused deaths i.e. starvation from plastics or fishing line ingestion, and 15 unrecovered carcasses. The total number of unrecovered carcasses greatly increased from 2019 due to COVID-19 restrictions on staff responding to non-essential carcasses during the pandemic.

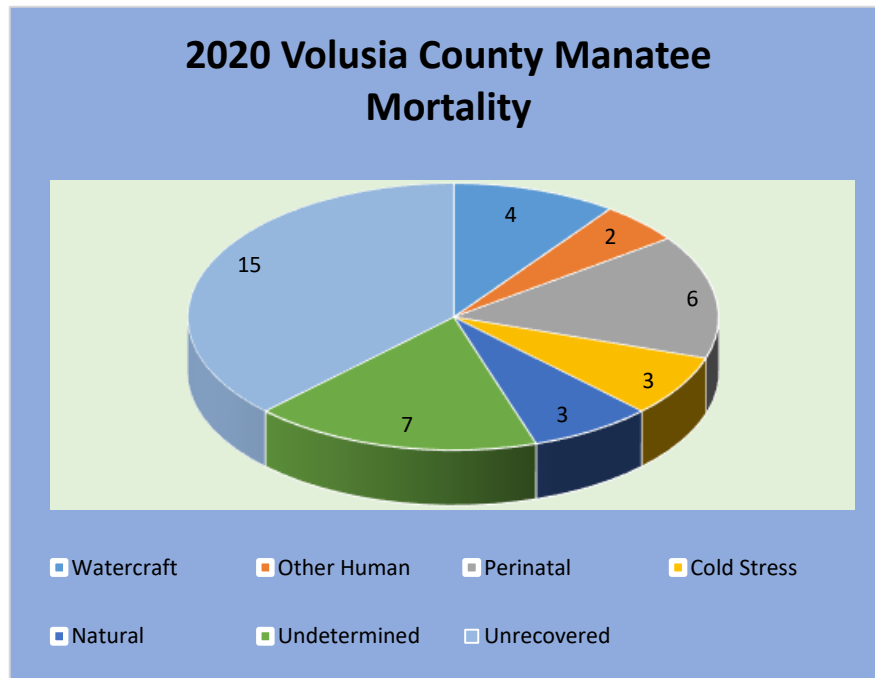


Figure 14. Volusia County manatee mortality by category

A red tide, or harmful algal bloom, is a higher-than-normal concentration of a microscopic alga. In Florida and The Gulf of Mexico, the species that causes most red tides is *Karenia brevis*. Overall, in Florida, there was a decrease in the number of manatee fatalities from 2019 to 2020. This is due to the large number of manatee deaths from an extreme red tide event that occurred in 2018. In 2020, there were no red tide related manatee deaths in Volusia County and there were only six confirmed red tide fatalities and three suspect, for a possible total of 9 in Florida. For more information on Red tides visit, <https://myfwc.com/research/redtide/faq/> .

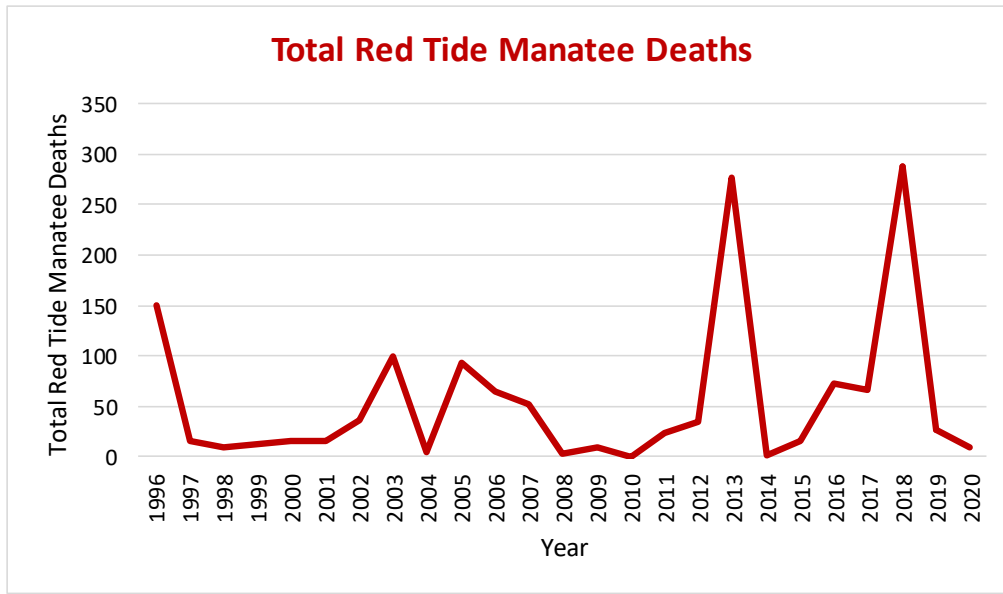


Figure 15: Total number of manatee deaths from Red Tide blooms from 1996-2020

For more information regarding manatee statistics for 2020 visit <https://myfwc.com/research/manatee/rescue-mortality-response/statistics/mortality>

## Phase II

### **BACKGROUND**

Phase II of the Manatee Protection Plan for Volusia County (MPP) is the Boat Facility Siting Plan. The goal of Phase II is to provide direction to those wishing to expand or construct new marine facilities, to decrease the potential direct impact to manatees through watercraft collisions, and to minimize potential indirect impacts to manatees and their habitat.

The primary method for determining boat facility placement is the use of area specific slip-to-shoreline ratios established by a criteria-based evaluation of the manatee data and manatee habitat, by state and federal agencies. Another essential part of Phase II is the funding mechanism incorporated within the plan, which provides for increased on-the-water enforcement of manatee speed zones. The boat facility siting plan also includes site-specific criteria such as water depth, water quality, presence of submerged aquatic vegetation, zoning and land use policies, etc. Guidelines for best management practices are also included as recommendations for facility structure and management. These provisions utilized together result in a dock density that is appropriate for Volusia County.



## CITY PARTICIPATION

Volusia County is essentially surrounded by water, with the Atlantic Ocean and the Intracoastal Waterway on the east side of the county, and the St. Johns River on the west side. These waterbodies, and all lakes, and tributaries connected to these primary waterways, which are traversable by manatees, are included in the Manatee Protection Plan (MPP), and covered by the provisions of the plan. On the coastal side of the county, there are ten existing municipalities with shoreline affected by the provisions of the plan, and on the west side, there are two such municipalities.

### Coastal Volusia

- City of Ormond Beach
- City of Holly Hill
- City of Daytona Beach
- City of Daytona Beach Shores
- City of South Daytona
- City of Port Orange
- Town of Ponce Inlet
- City of New Smyrna Beach
- City of Edgewater
- City of Oak Hill

### West Volusia

- City of DeBary
- City of Deltona

Under the MPP Phase II provisions, cities and municipalities bordering waterways along the coastal side of the County have three options that relate to boat facility siting. Those cities may:

- 1) Adopt Phase II provisions as written, referred to as the “as is” option,
- 2) Adopt a city specific refinement to Phase II’s provisions referred to as the “slip aggregation” option, or
- 3) Take no action.

Unincorporated county lands, and cities bordering the St. Johns River have two options:

- 1) Adopt Phase II provisions as written, referred to as the “as is” option, or
- 2) Take no action.

The option for slip aggregation does not apply to the west side municipalities, or to unincorporated county lands.

Since the MPP is a county specific document, and applies to unincorporated Volusia County, adoption by the cities of either the “as is” option or the “slip aggregation” option is necessary in order to include that city under the MPP, and allow permitting to be regulated by the Phase II provisions. A decision by an affected city to take no action could result in impediments in the boat facility permitting process within that city.

Currently only one coastal city, Ormond Beach, has decided to adopt the “as is” option as outlined in Phase II of the MPP. All of the other coastal cities have opted for the “slip aggregation” method, and all have endorsed the MPP and adopted resolutions to that effect. The unincorporated county, and cities with lands bordering the St. Johns River, are required by the MPP, to utilize the “as is” method if they decide to endorse the MPP provisions. Both DeBary and Deltona, the only two cities bordering the St. Johns River, have endorsed the MPP and adopted the “as is” method through resolutions of support.

Another MPP requirement of Phase II is the execution of a Memorandum of Understanding (MOU) with each participating city in order to outline the responsibilities of both the county and the city, and to detail the process for the permitting of boat facilities. All of the affected cities have executed MOU’s with the county.

### SLIP ALLOCATIONS

All the cities that opted for the “slip aggregation” method have slip pools that were agreed upon by both the cities and the FWC. The slip pools are derived from a formula that started with the measurement of shoreline within each city jurisdiction, and the calculation of the possible number of slips for each city, as per the MPP. Then all existing wet slips, dry slips, and boat trailer spaces are deducted, and all single family residential parcels are deducted. The remaining number of slips are then placed in a “slip pool” from which the respective cities can allocate slips to marine facilities.

In 2020, one commercial or multi-family facility in South Daytona, one in New Smyrna Beach, two in Ponce Inlet, and one within unincorporated county increased number of slips. Six other properties were issued Letters of Exemption for repairs and/or modifications on existing slips (Figure 16).

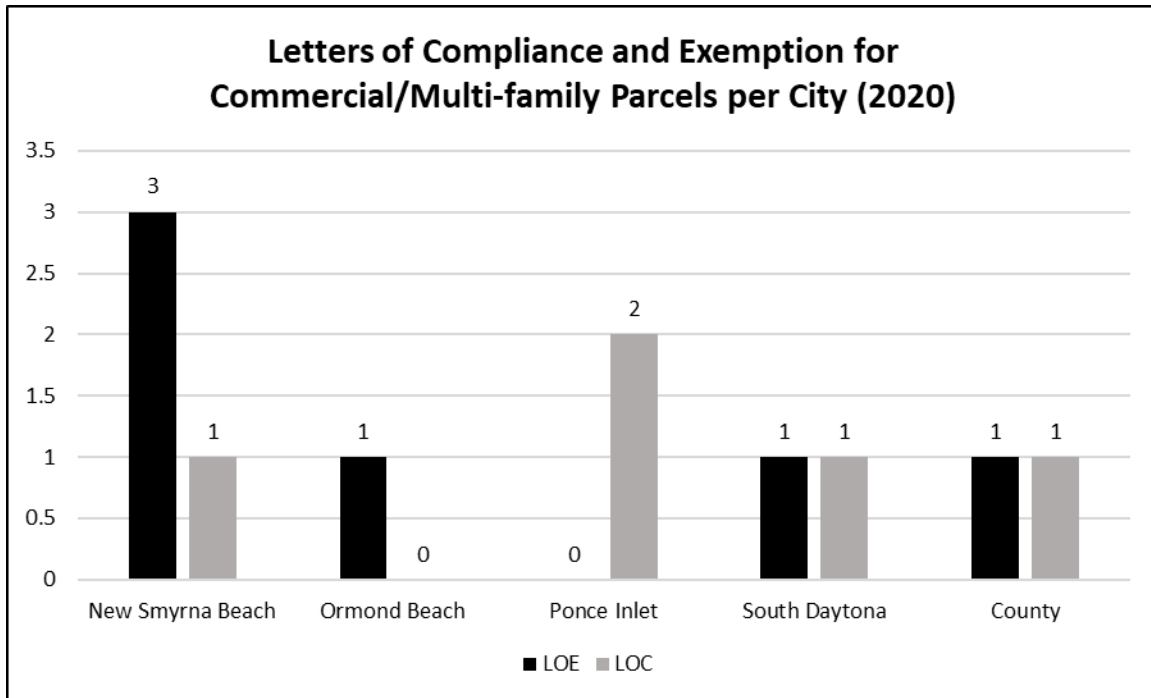


Figure 16: Number of Letters of Compliance and Exemption written for each city in 2020 for commercial/multi-family parcels.

Twenty-three (23) single-family residences were issued Letters of Compliance and thirty-four (34) were issued Letters of Exemption for construction of new docks or repairs on existing docks in Volusia County. Ten (10) Letters of Compliance were written for single-family residences in unincorporated county (Figure 17).

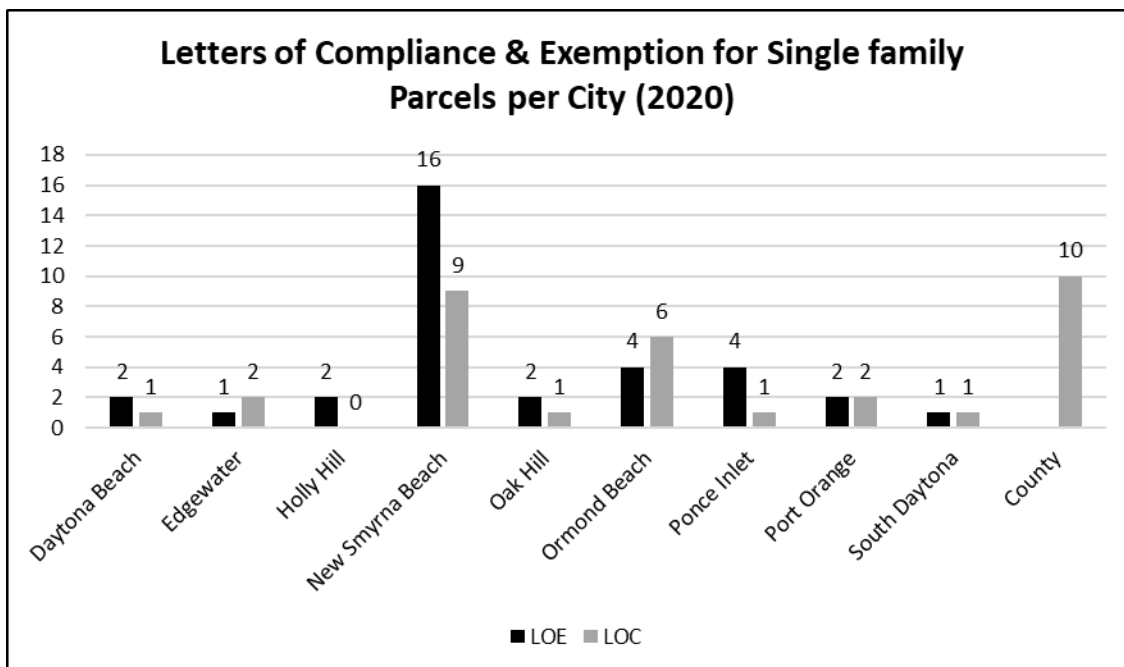


Figure 17: Number of Letters of Compliance and Exemption written for each city in 2020 for single family parcels.

## LAW ENFORCEMENT

An important premise of the MPP is that in order to sustain a healthy, viable manatee population within the context of a growing county, additional on-the-water enforcement is necessary. The boat facility siting component of the MPP provides a mechanism for funding this additional enforcement through the collection of a manatee mitigation fee. All applicants with new or expanding boat facilities must pay a one-time mitigation fee for each new: boat slip, ramp parking space, and/or dry storage space. The fees are deposited into a dedicated, interest bearing account named the Manatee Conservation Fund (MCF).

All new or expanded boat facilities pay a one-time manatee mitigation fee, which ranges from \$250 for single family residential boat docks, to \$1,000 per wet slip, dry storage space, or ramp parking space for all other types of facilities. While various factors including watercraft related manatee mortality may necessitate changes in mitigation fees, which the Volusia County Council reserves the right to raise as it sees fit, for the first five years of the plan the mitigation fees and planning zone descriptions shall remain fixed.

The Volusia County Manatee Protection Program administers the MCF, with the majority of the funds being disbursed as grants to on-the-water law enforcement units. The MCF is designed so that the first \$500,000 collected may be used in its entirety for enforcement and manatee conservation and education purposes. Once the \$500,000 dollar threshold has been reached, thereafter the County of Volusia will only utilize/disburse the interest accrued on the fund account.

Seventy five percent of the funding is reserved for law enforcement, and is awarded through grants to the County Sheriff's Marine Unit as well as participating cities. MCF grant funding to the Sheriff's Marine Unit and the participating cities is determined by percentage, based on linear river miles within each agency's jurisdiction. The funding is used for increased enforcement of manatee speed zones by marine law enforcement units, additional equipment for on-the-water law enforcement efforts, and enforcement related education programs.

Twenty five percent of the MCF is reserved for manatee conservation efforts, and education and awareness programs, which are administered by the County Manatee Protection Program.

In 2011, the MCF reached and exceeded the \$500,000 threshold, and only interest is able to be used for grant disbursement since that threshold was met.

The Volusia County Sheriff's Marine Unit has participated in the Manatee Conservation Fund grant program since its inception, actively patrolling the county's waterways. The Volusia County Sheriff's Office Marine Unit is very involved in efforts to conserve and protect manatees, and have assisted in numerous manatee carcass recoveries and a number of rescues. They also educate the boating public about manatee awareness,

and assist with underwater marine debris collection in Ponce de Leon Inlet. The Sheriff's Marine Unit has also been instrumental in conducting directed patrols in areas where human and manatee interaction has occurred.

#### North East Law Enforcement Maritime Alliance

The North East Law Enforcement Maritime Alliance is an important law enforcement alliance, and is comprised of officers representing law enforcement and other entities within the central and northeast region of the state. Representatives are: the U.S. Coast Guard, U.S. Fish and Wildlife Service, Florida Fish and Wildlife Conservation Commission, the National Park Service, Division of Homeland Security, North Florida High Intensity Drug Trafficking Area, National Insurance Crime Bureau, National Oceanic and Atmospheric Agency, Florida Division of Law Enforcement, Volusia County Sheriff's Office, Volusia County Environmental Management, Brevard County Sheriff's Office, Seminole County Sheriff's Office, Orange County Sheriff's Office, Flagler County Sheriff's Office, City of Daytona Beach Police Department, Town of Ponce Inlet Police Department, City of New Smyrna Beach Police Department, City of Edgewater Police Department, City of South Daytona Police Department, and the Marine Industry Association of Central Florida.

The formation of this group has led to much greater cooperation between law enforcement agencies, and has introduced more integrated strategies for many marine related situations, including manatee speed zone enforcement. Other environmental violations, such as marine sanitation device (MSD) lock-down regulations, have also been increasingly addressed. Environmental Management staff continues to attend the meetings, when held, as this provides an excellent vehicle for disseminating information on manatee boat related mortality and existing or potential "hot spots", and results in effective directed patrols in these areas.

For more information on the Volusia County Manatee Protection Plan, visit <https://www.volusia.org/services/growth-and-resource-management/environmental-management/natural-resources/florida-manatee/manatee-protection-plan/>