

DRAFT



2020 Manatee Protection Plan Implementation Report



City of Jacksonville
Planning and Development Department
November 2020

Executive Summary

This is a Summary of the **2020** Manatee Protection Plan Implementation Report that reflects on the City of Jacksonville's efforts towards protecting manatees in Duval County. The third revision to the Duval County Manatee Protection Plan (MPP) was adopted by the Jacksonville City Council in 2014 and requires an annual report of the progress on implementation of the MPP. The MPP is a comprehensive planning document that addresses the long-term protection of the Florida manatee through law enforcement, education, boat facility siting, and habitat protection initiatives on a county-wide basis. The purpose of revising the MPP was to collect and evaluate updated information on manatee use and boat activity in the City of Jacksonville (COJ) and provide guidance targeted at reduction of human-related threats to manatees and manatee habitat. The MPP attempts to balance boater access to Jacksonville waterways with impact to manatees from boat traffic, and is intended to increase the predictability of permitting outcomes for boat facility development.

The **2020** MPP Implementation Report is a compilation of the efforts of a wide variety of agencies that reflect the effort expended to protect manatees in Duval County waters. The report is divided into five (5) sections: Meeting Minutes, Law Enforcement Reports, Education, Awareness and Environmental Reports.

The Meeting Minutes subsection report is an assemblage of the appropriate minutes of the Jacksonville (Duval County) Waterways Committee and the Jacksonville Marine Transportation Exchange (JAXMTX) Harbor Safety Committee. This section serves as a good review of the activities of the year and demonstrates the importance that manatee protection has within the City and JAXPORT.

The Law Enforcement Report subsection includes quarterly reports from Jacksonville Sheriff's Office Law Enforcement Task Force, Florida Fish and Wildlife Commission (FWC) Law Enforcement, and Multi-Agency Deployments. The City has improved communication and coordination between federal and state Law Enforcement agencies since the development of a L.E. Task Force in December of 2009 that has fostered improved efforts in manatee protection. The involvement of the City's Waterways Coordinator, a former JSO marine officer, has been very helpful in a variety of ways. His efforts have resulted in the buy-in of all law enforcement agencies and improved the coordinated multi agency deployment weekends.

The Manatee Education Report contains the extensive effort made on behalf of manatee protection within the City of Jacksonville. Included is the COJ's Park Naturalist Education Program, presentations made by Jacksonville University faculty on manatees, and the FWC Northeast Lab outreach programs. The City also completed a 30-second public service announcement broadcast in 2018/2019, but was not broadcast by local TV stations in 2020. **JU also participated in the JAXZOO Manatee Festival in February that involved over 1000 people in attendance.**

The Awareness subsection contains the Updated Boat Facility Inventory, a list of DEP Dock permits, Manatee Mortality Information, along with Aerial Sighting Maps. It should be noted that three (3) flights/year are funded by the City of Jacksonville.

In summary, the MPP Implementation Report offers an up to date review of manatee protection efforts in the City of Jacksonville (Duval County).

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Implementation Summary (Section 8.8 MPP)

MPP Policies and Tasks	Action Items	Progress in 2018-2019	Tasks for 2019-2020
The comprehensive plan will be amended to incorporate the revised MPP	Submit Comprehensive Plan amendment to Department of Economic Development and FWC	Comprehensive Plan changes approved by City Council. Requested an additional 6 months extension from DEO due to downtown DRI request.	Resolved downtown DRI marina request and send Comp changes to DEO March 2018. COMPLETED
COJ will incorporate the use of the revised MPP in their Planning and Development Department reviews for development	Distribution of revised MPP within COJ once approved	The Planning and Development Department has created a GIS boat facility layer for use by the zoning, land use and developmental services sections.	Continue to use the GIS layer.
Keep the Jacksonville Waterways Commission up to date on manatee related issues	COJ will attend monthly meetings and provide updates on manatee related issues	The City's consultant, JU has attended monthly meetings. See Waterways Commission meeting minutes	JU's 2019-2020 contract has this task identified
Report updated information, manatee mortality, and status of implementing the recommendations in the MPP	Draft and submit an annual MPP Implementation Report	Submitting 1st required report.	Continue to collect and summarize data for 2020 report
COJ will actively engage with the shipping/Port industry	Representatives of COJ will be members of JMTX and the Port Safety Committee, attend meetings and assist with implementing manatee awareness initiatives	City Waterways Coordinator attends quarterly meetings	Continue to attend JMTX meetings
COJ will actively engage USCG and Special Events Office	Representatives of COJ will monitor and track special events in the waterways and assist with implementing manatee awareness initiatives	City Waterways Coordinator has worked closely with USCG - they now attend the LE Task Force meetings.	Have Waterways Coordinator summarize and report on special events in Duval County.

MPP Policies and Tasks	Action Items	Progress in 2018-2019	Tasks for 2019-2020
COJ will create awareness within the County regarding manatee protection issues	COJ will inspect and replace manatee educational signs that are their responsibility, develop a maintenance plan and a database of locations	Sign database completed. Working with other agencies for sign and buoy replacement	Continue to report and work with other agencies for sign and buoy replacement
Manatee education Section	COJ will develop policies or incentives to increase educational signs at private marinas and multi-family docks where signs are not required by permit	New Comp plan policies will help address this issue.	Continue to develop incentives for educational signage
Manatee education Section	COJ will work with FWC-ISM, and FWRI to update the Boating and Angling Guide	Guide is completed and being handed out	Continue to distribute the guides
Manatee education Section	COJ will maintain and document manatee sightings reported through the COJ hotline	The City does not have a hotline. JU does. Info reported by JU	Continue to have JU document calls to the hotline
Manatee education Section	COJ will produce multimedia information such as PSAs, billboards, social media and on a website to promote information and awareness	PSA has been developed	PSA has been given to Public Information Office to promote manatee awareness
Manatee education Section	COJ or representatives will present manatee awareness programs to local schools, community groups, boating groups and clubs	Information collected from Park Naturalist. Waterways Coordinator also promotes awareness	Continue to provide manatee info through the Parks Department

MPP Policies and Tasks	Action Items	Progress in 2018-2019	Tasks for 2019-2020
Law enforcement section	COJ will coordinate with USCG when special manatee messages are needed in the “Notice to Mariners”	On-going	On-going
COJ will facilitate improved law enforcement participation in manatee protection, including improved coordination between multiple agencies	Implementation of the MPP Law Enforcement Plan and the action items within it	Plan has been implemented. Efforts are being documented	Continue to implement plan
Law enforcement Section	JSO commits to a minimum of 25 deployments for only manatee speed zone enforcement	JSO continues deployments to manatee speed zone enforcement	Continue to collect quarterly reports from JSO
Law enforcement section	A minimum of six coordinated, multi-agency weekend deployments from April to October specifically for manatee speed zone enforcement	Completed in 2015. Efforts reported in yearly implementation report	Six deployments have been scheduled for this year.
COJ will keep the MPP current, with the best available data and wildlife protection practices	Review the MPP periodically in conjunction with FWC and USFWS to determine whether revisions are needed; Requires COJ analysis and compilation of information from the annual reports	Continue to update manatee data through JU contract. Submit yearly implementation reports	Continue to update manatee data through JU contract.
Implementation section	Complete a Manatee Speed Zone Compliance Study	The City is now revising this study protocol suggestions provided by FWC	Work to complete study in 2020-2021.
Implementation section	Develop a Boat Activity Study Protocol between Recreational and Shipping traffic, and complete the Study	The City will send to FWC for approval	Work to complete study when funded.

MPP Policies and Tasks	Action Items	Progress in 2018-2019	Tasks for 2019-2020
Implementation section	Marine Facility Inventory Update	Completed through JU contract	In JU contract for this year.
Implementation section	Maintain an up-to-date record of the location and status of foraging habitat, warm water discharges and freshwater sources	On-going	On-going

Manatee Data Report

Aerial Sightings: **There was no synoptic survey effort in 2020 due to a warm winter. During warm winters manatees do not congregate at warm water sources and are more spread out, making them difficult to count effectively. Additional surveys included one in June and another in July.** A synoptic survey of northeast Florida was conducted on February 28th (SJR) and 29th (ICW) 2019 and one animal was sighted in the area of Pottsburg Creek near University Blvd. South. An additional survey that year was conducted in May. Subsequent surveys in 2018 occurred in May, and August. As in the past, synoptic surveys identified few animals in the area: On February 1st 2017 a synoptic survey reported 6 animals sighted in the area. Other surveys in 2017 occurred in May, and September. In 2016, a synoptic survey on February 12th reported no manatee sightings. Other surveys in 2016 took place in March, April, May, June, August and September. Similarly in 2015, a synoptic survey on February 16th reported no manatees sighted in the area with subsequent surveys occurring in April, June, August, October and November.

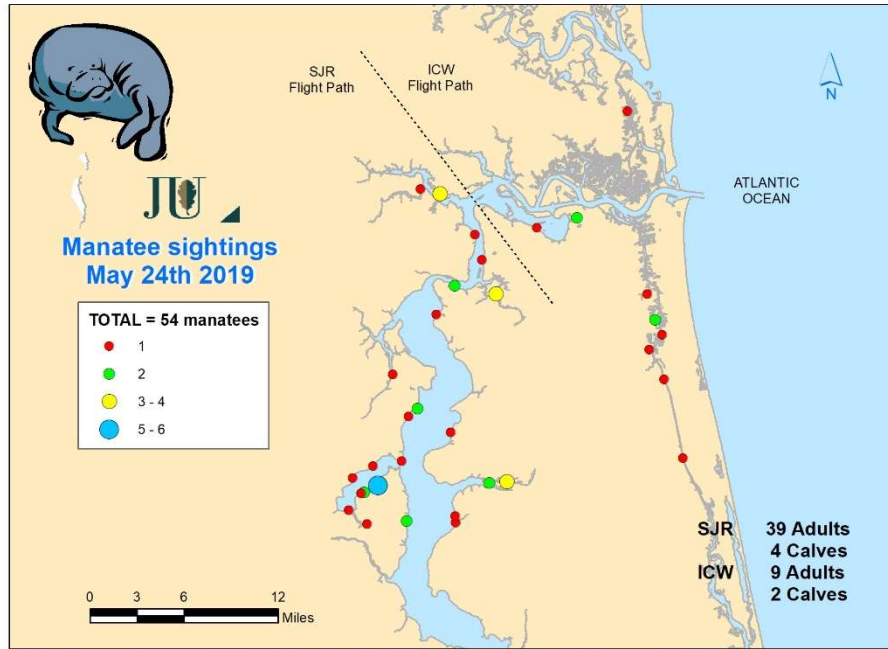
The Single Highest Day Count (SHDC) of manatees represents the highest number of animals counted on a single survey day throughout the year. For the Lower St. Johns River (LSJR), **the SHDC for 2020 was 39 animals per survey in June.** The SHDC for 2019 was 54 animals per survey (May), and 23 animals per survey in May 2018, which was the lowest number ever reported. These low numbers are partly due to animals arriving late into the area, but also not staying, because of a lack of food resources. Severe drought in early 2017 followed by storms and hurricanes later in the year and through 2019, negatively impacted the grass beds, likely causing manatees to travel more for food outside the study area. In contrast, the SHDC for 2017 was 90 animals per survey (May) – which was also lower than 2016 and again probably due to a severe drought earlier in the year. In 2016, the SHDC was 217 animals per survey (May) – the highest count on recorded. In 2015 the SHDC was 155 animals per survey this time in June, and in 2014 it was 176 (June); 2013 it was 143 (July), and in 2012 it was 177 (May).

The past **four** years include anomalous weather conditions. **Mean manatee numbers in 2020 increased in June (34 animals/survey, 2 surveys) compared to May 2019 (28 animals/survey, 2 surveys), and 2018 (11 animals/survey, 3 surveys).** In 2017, the mean number of manatees was 33 manatee per survey (3 surveys), again lower than in previous years. Compare this to 2016, the mean number of manatees 102 (8 surveys) and in 2015 averaged 57 (6 surveys). It is important to note that beginning in 2012 there was a shift in the emphasis of data collection towards assisting the law enforcement effort to protect manatees and educate boaters. As a result, sampling frequency was significantly reduced and focuses on those months when manatee presence in the area is at its highest. To reflect the shift in sampling frequency and focus, manatee data in this report was separated into these two periods (1994-2012 and 2013-2018).

In the Intracoastal Waterway (ICW) the mean number of manatees per survey in 2020 was 4 compared to 6 (2019), and 2 manatee per survey in both 2017 and 2018. Slightly more manatees were observed in the past with 9 manatees per survey (May 2016), 5 manatees per survey (June 2015 and May 2014), 9 (April and July 2013). The period from 2013-2020 has a survey frequency (3 surveys/year; s.d. ± 2 ; range 2-7) and returned a general mean of **3** manatees per survey (s.d ± 3 ; range 2-9 animals).

Seasons were generally classified as follows with each map indicating the specific date when a particular aerial survey was conducted: Winter - December – February; spring – March – May; summer - June – August; fall - September – November.

MAP SERIES A – Manatee aerial sightings, Duval Co., FL. (spring, 2019)

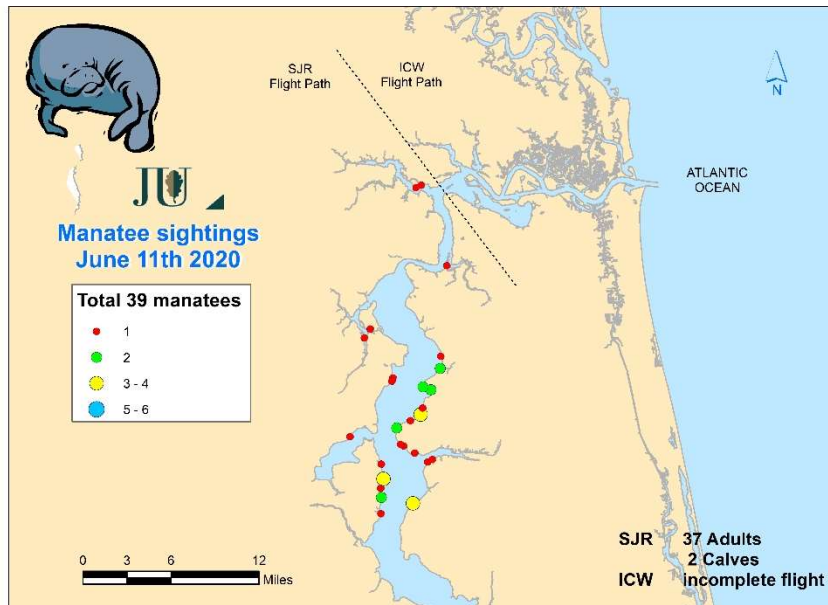


The information contained in this email and the manatee sighting maps are the results of aerial surveys conducted by Jacksonville University under an agreement with COJ. The manatee sightings represent the known minimum number of animals and their location at the time of the flight. The numbers may be higher and the animals change locations frequently. The information is an indication of the number and the location of manatees and subject to change daily.

MAP SERIES A – Manatee aerial sightings, Duval Co., FL. (winter, 2019-2020)

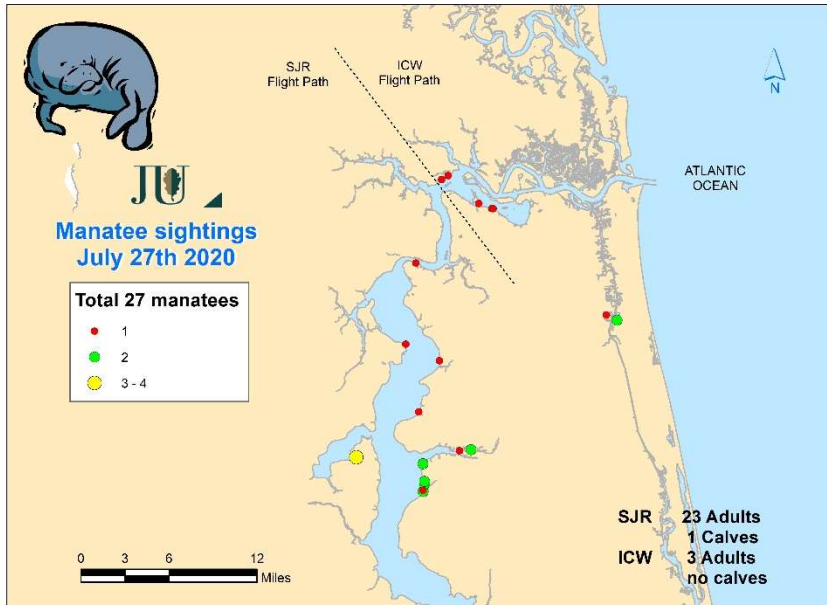
No Northeast Synoptic Survey.

MAP SERIES A – Manatee aerial sightings, Duval Co., FL. (June 2020)



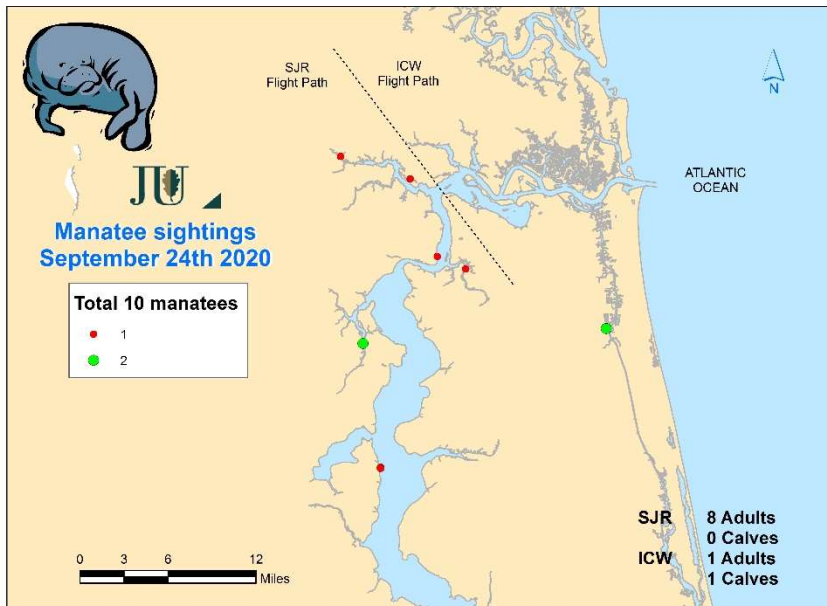
The information contained in this email and the manatee sighting maps are the results of aerial surveys conducted by Jacksonville University under an agreement with COJ. The manatee sightings represent the known minimum number of animals and their location at the time of the flight. The numbers may be higher and the animals change locations frequently. The information is an indication of the number and the location of manatees and subject to change daily.

MAP SERIES A – Manatee aerial sightings, Duval Co., FL. (July 2020)



The information contained in this email and the manatee sighting maps are the results of aerial surveys conducted by Jacksonville University under an agreement with COJ. The manatee sightings represent the known minimum number of animals and their location at the time of the flight. The numbers may be higher and the animals change locations frequently. The information is an indication of the number and the location of manatees and subject to change daily.

MAP SERIES A – Manatee aerial sightings, Duval Co., FL. (September 2020)



The information contained in this email and the manatee sighting maps are the results of aerial surveys conducted by Jacksonville University under an agreement with COJ. The manatee sightings represent the known minimum number of animals and their location at the time of the flight. The numbers may be higher and the animals change locations frequently. The information is an indication of the number and the location of manatees and subject to change daily.

Habitat: Line transect data from 2004-2011, and **2015-2019 indicated that there was a significant long term decline in the grass bed total cover percentage at sites sampled in Duval County (SJRWMD 2020). There has been a limited recovery in 2019 of grass beds but this continues to be below historic levels of the late 1990's.** Additional observations made during aerial surveys in 2015 and 2016 indicated that SAV returned to some areas previously reported to be devoid of grasses. Manatee were observed feeding in those areas. However, recent observations indicate that there are many bare areas with no manatees. Furthermore, recent storms and the resulting turbidity has hindered the recovery of this habitat. **In 2017, 71% of 17 sampling sites in Duval County had no grasses, and in 2018, 56% of 16 sampling sites had no grasses. In 2019, there were 19 sites sampled, and 68% were devoid of grasses.** In the past, aerial observation indicated that there had been a visible decline in the grass beds since 2005. Toxic algae blooms seen in the St. Johns River from 2013-2019 do not seem to have harmed any manatees.

JEA District # 2 Outfall and North Side Generating Station (NSGS): No manatees were observed at the JEA District # 2 site during aerial surveys conducted by Jacksonville University from spring to fall of 2013 to **2020**. However, manatees continue to be seen in the vicinity of the JEA District # 2 waste water treatment outfall's manatee exclusion barrier by JEA's contractor and others.

The lower frequency of aerial survey effort, especially during cold weather, was insufficient to document manatees at this site during the years 2009-2020. However, boat and land surveys by independent contractors indicated that manatees consistently make use of the site.

NAS Mayport: Mayport NAS initiated manatee awareness and reporting program in spring 2011. Signs were posted at intervals along Mayport basin, and a data log kept of sightings and actions. **No data was available in 2020.** As of September 2019, 30 animals were sighted (range 0-12/month). In 2018, 48 animals were sighted (range 0-19/month). In 2017, 59 animals were sighted (range 0-18/month). In 2016, 152 animals were sighted (range 0-48/month), and in 2015, 130 animals (range 0-44/month). Lower numbers were observed during 2013/14 with a mean of 65 (range 0-16), and during 2011/12 with a mean of 35 animals (0-13/month). **Typically, the highest counts were recorded in May and June.**

Duval Manatee Rescues: **No reported rescues in 2020.** **In 2019,** a manatee was rescued because of acute watercraft impact likely from a large slow moving vessel (July 3rd), however, the animal died during transport to the rehab facilities. **A second animal was rescued at Mayport due to cold stress (November 21st 2019) and later released in the Indian River (January 29th 2020), and a third cold stressed animal was rescued at Huguenot State Park (November 26th 2019) but was non responsive and expired at the scene .** **In 2018,** on March 18th a manatee (Vilanzo) was captured suffering from cold stress, rehabbed at Jacksonville Zoo, and successfully released on May 15th at Oak Harbor boat ramp (ICW). Also, on March 22nd 2018, a male manatee was rescued from Miller Creek, it was stuck in the mud and cold stressed. **In 2017,** on February 7th 2017, a male manatee was rescued from Ortega River. On March 31st a female manatee was rescued from Pablo Creek, both manatees exhibited symptoms of cold stress. Furthermore, three manatees were assisted and released on 1st June (Pablo Creek), 2nd July (intake canal JEA NSGS), and a calf on September 11th near Wayland Street opposite Talleyrand docks. On December 16th a female calf was rescued in the San Pablo River, she was beached by herself and cold stressed. **In 2016,** two manatee rescues were performed at JEA's NSGS. "Stokes" was rescued on Jan 27th, and another animal on March 7th, both animals were taken to Sea World of Florida due to cold stress related issues. On November 30th a female manatee was rescued from a storm drain near Davinci Ave. also transported to Sea World. There were **no reported assists or rescues as of September 2015.** **In 2014,** six manatee rescues occurred during cold weather from (JEA District #2 outfall, Green Field Creek, Mill Cove, San Carlos Creek, and Cut Creek).

MANATEE MORTALITY

Mortality Calendars

2013

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	TOTALS
Natural deaths	0	0	0	0	0	0	0	0	0	0	0	0	0
watercraft deaths	0	0	0	0	0	2	0	0	2	0	0	0	4
prenatal	0	0	0	0	2	1	0	0	0	0	0	0	3
other human	0	0	0	0	0	0	0	0	0	0	0	0	0
cold stress	3	1	1	0	0	0	0	0	0	0	0	1	7
undetermined	1	1	1	0	0	1	0	0	0	0	0	1	4
total deaths	4	2	2	0	2	4	0	0	2	0	0	2	18

2014

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	TOTALS
Natural deaths	0	0	0	0	0	0	0	0	0	0	0	0	0
watercraft deaths	0	0	0	0	0	0	0	0	0	0	0	0	0
prenatal	0	0	0	0	0	1	0	0	0	0	2	0	3
other human	0	0	0	0	0	0	0	0	0	0	0	0	0
cold stress	1	1	0	0	0	0	0	0	0	0	0	3	5
undetermined	0	0	1	1	0	0	2	0	0	0	0	0	4
total deaths	1	1	1	1	0	1	2	0	0	0	0	0	12

2015

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	TOTALS
Natural deaths	0	0	0	0	0	0	0	0	0	0	0	0	0
watercraft deaths	0	0	0	0	0	0	0	0	1	0	0	0	1
prenatal	0	0	0	1	1	0	0	1	0	0	0	0	3
other human	0	0	0	0	0	0	0	0	0	0	0	0	0
cold stress	2	0	0	0	0	0	0	0	0	0	0	0	2
undetermined	0	0	0	0	0	1	1	0	0	0	0	0	2
total deaths	2	0	0	1	1	1	1	1	1	0	0	0	8

2016

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	TOTALS
Natural deaths	0	0	0	0	0	0	1	1	0	0	0	0	2
watercraft deaths	1	0	0	0	0	0	0	0	0	0	0	0	1
prenatal	0	0	0	0	0	0	0	0	0	0	0	0	0
other human	0	0	0	0	0	0	1	0	0	0	0	0	1
cold stress	1	1	1	0	0	0	0	0	0	0	0	0	3
undetermined	0	0	2	0	0	2	1	0	0	0	0	0	5
total deaths	2	1	3	0	0	2	3	1	0	0	0	0	12

2017

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	TOTALS
Natural deaths	0	0	0	0	1	0	0	0	0	0	0	0	1
watercraft deaths	0	1	0	0	0	2	1	1	0	0	0	0	5
prenatal	0	0	0	0	1	1	1	1	1	0	0	0	5
other human	0	0	0	0	0	0	0	0	0	0	0	0	0
cold stress	1	0	0	0	0	0	0	0	0	0	0	2	3
undetermined	0	0	0	0	2	1	1	0	0	1	0	0	5
total deaths	1	1	0	0	4	4	3	2	1	1	0	2	19

FWC, FWRI 2020.

Mortality Calendars cont.

2018

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	TOTALS
Natural deaths	0	0	0	0	0	0	0	0	0	0	0	0	0
watercraft deaths	0	0	0	0	0	0	0	0	0	0	0	0	0
prenatal	0	0	0	0	0	0	0	0	1	0	0	0	1
other human	0	0	0	0	0	0	0	0	1	0	0	0	1
cold stress	2	2	0	0	0	0	0	0	0	0	0	2	6
undetermined	0	0	0	1	1	0	0	0	0	1	0	0	3
total deaths	2	2	0	1	1	0	0	0	2	1	0	2	11

FWC, FWRI 2020.

2019

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	TOTALS
Natural deaths	0	0	0	0	0	0	0	0	0	0			0
watercraft deaths	0	0	0	1	0	2	1	0	0	0			4
prenatal	0	0	0	0	0	0	0	0	0	0	1		1
other human	0	0	0	0	0	0	0	0	0	0			0
cold stress	0	0	0	0	0	0	0	0	0	0	1	3	4
undetermined	0	0	0	0	1	0	0	0	0	0		1	2
total deaths	0	0	0	1	1	2	1	0	0	0			11

FWC, FWRI 2020.

2020

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	TOTALS
Natural deaths	0	0	0	0	0	0	0	0	0				0
watercraft deaths	0	0	0	0	0	0	0	0	0				0
prenatal	0	0	0	0	0	0	0	0	1				1
other human	0	0	0	0	0	1 Lock	1 Mono	0	0				2
cold stress	0	1	1	0	0	0	0		0				2
undetermined	0	1		1	0	0	0	1	0				3
total deaths	0	2	1	1	0	1	1	1	0				8

FWC, FWRI 2020 preliminary. Note: Lock = canal lock; Mono = monofilament fishing line

Manatee Mortality

Manatee Mortality: In Duval County, the five-year running average of watercraft mortalities showed a decreasing trend since 2012 (in contrast, that of the State continued to increase). Since 2014, the frequency of times that the watercraft death rate (watercraft percent of total mortalities) was higher than that of the State rate has decreased (with two exceptions 2017 and 2019).

Manatee watercraft mortalities for Duval County and The State of Florida 2010-2020.

Year	Duval				Florida			
	WC 5 Yr. Ave.	WC	% WC	Total	WC 5 Yr. Ave.	WC	% WC	Total
2010	6	2	22	9	82	83	11	766
2011	6	6	40	15	81	88	19	453
2012	6	4	31	13	82	82	21	392
2013	5	4	22	18	84	73	9	830
2014	3	0	0	12	78	69	19	371
2015	3	1	13	8	79	86	21	405
2016	2	1	8	12	83	106	20	520
2017	2	5	26	19	88	111	21	538
2018	1	0	0	11	98	124	15	824
2019	2	4	36	11	112	136	22	606
2020*Aug	2	0	0	7	107	60	13	449

Source data: FWC, FWRI 2020.

Several large vessel caused deaths were reported over the past 5 years (2015-2019 see below). From 2009 to 2013, more watercraft deaths were documented towards the mouth of the river, rather than a more countywide spread as in prior years. Manatee deaths occurred in an area extending from Downtown to the mouth of the St. Johns River. Recently in the last two years, there have been a few more deaths south of downtown, particularly in the Ortega River area. In 2019 and 2020, the number of deaths was over all lower, but this may have been due to unusually less manatees in the area (Map Series B). As of September 2020, there were no watercraft deaths reported in the County.

Manatee deaths from large vessels (MMPL Vessel Class IV) 2015-2019, Duval Co., FL.

Date	Manatee field ID	Mortality category	Location
9/7/2013	MNE1365	1-Watercraft Lg.	Bartram Island deep penetrating prop wounds
9/4/2015	MNE15033	1-Watercraft Lg.	Bartram Island
1/25/2016	MNE16003	1-Watercraft Lg.	Talleyrand
2/09/2017	MNE17007	1-Watercraft Lg.	S. of Talleyrand
6/28/2017	MNE17022	1-Watercraft Lg.	Bount Island
7/20/2017	MNE17028	1-Watercraft Lg.	E. of Metro Pk.
7/3/2019*	MNE19018	1-Watercraft Lg.	Heckscher Dr. crushed by slow moving heavy vessel

Source data: FWC, FWRI 2020.

*Preliminary data

MMPL Category IVa includes very large propellers found on ships and mega yachts.

MMPL Category IVb includes very large propellers found on tugs and workboats.

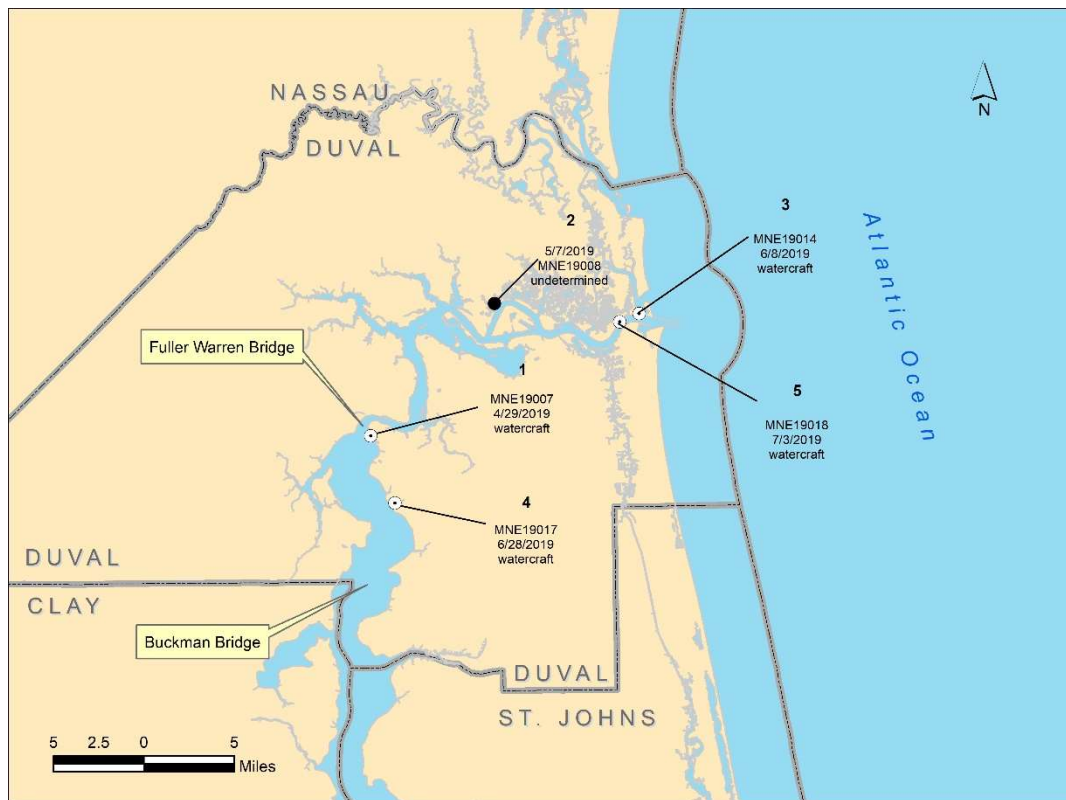
From: Rommel et al. 2007. Forensic methods for characterizing watercraft from watercraft-induced wounds on the Florida manatee (*Trichechus manatus latirostris*) Marine Mammal Science, 23(1): 110–132 (January 2007) © 2006 by the Society for Marine Mammalogy DOI: 10.1111/j.1748-7692.2006.00095.x

Manatee deaths from all causes 2019, Duval Co., FL.

Count	Date	Manatee field ID	Sex	Total Length	Mortality category
1	4/29/2019	MNE19007	M	329	1-Watercraft
2	5/7/2019	MNE19008	F	286	8-Undetermined
3	6/8/2019	MNE19014	M	253	1-Watercraft
4	6/28/2019	MNE19017	M	333	1-Watercraft
5	7/3/2019	MNE19018	F	297	1-Watercraft
6	11/26/2019	MNE19032	F	290	5-Natural-Cold Stress
7	11/28/2019	MNE19033	F	131	Perinatal (=< 150)
8	12/7/2019	MNE19037	M	260	5-Natural-Cold Stress
9	12/15/2019	MNE19041	M	269	8-Undetermined
10	12/15/2019	MNE19042	M	241	5-Natural-Cold Stress
11	12/16/2019	MNE19043	M	283	5-Natural-Cold Stress

Source: FWC, FWRI 2020 Preliminary.

SERIES B – Manatee mortality, Duval Co., FL. As of September 2019.



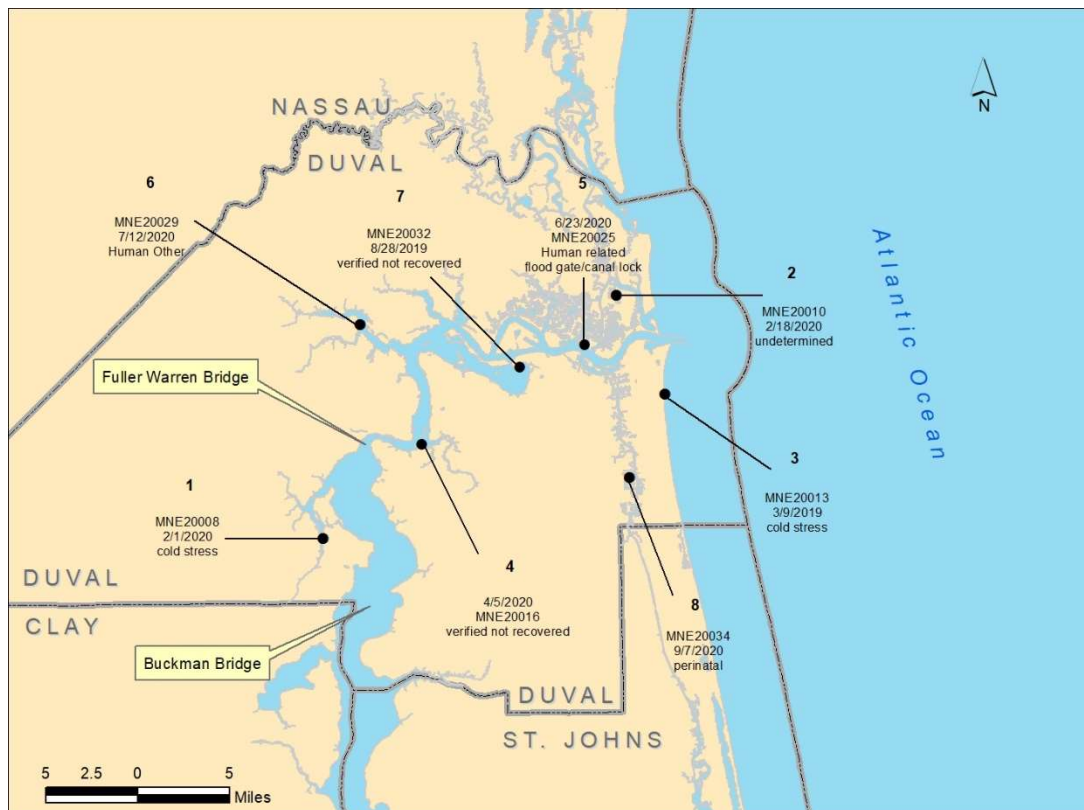
FWC, FWRI 2020 preliminary.
Dots surrounded by white border are watercraft mortalities.

Manatee deaths from all causes 2020, Duval Co., FL.

Count	Date	Manatee field ID	Sex	Total Length	Mortality category
1	2/1/2020	MNE20008	F	222	5-Natural-Cold Stress
2	2/18/2020	MNE20010	M	298	8-Undetermined
3	3/9/2020	MNE20013	M	300	5-Natural-Cold Stress
4	4/5/2020	MNE20016	U	200	Verified Not recovered
5	6/23/2020	MNE20025	F	296	2-Human Related: Flood Gate/Canal Lock
6	7/12/2020	MNE20029	M	307	3-Human, Other
7	8/28/2020	MNE20032	F	270	Verified Not recovered
8	9/7/2020	MNE20034	F	120	Perinatal (=< 150)

Source: FWC, FWRI 2020. Preliminary.

SERIES B – Manatee mortality, Duval Co., FL. As of September 2020.



FWC, FWRI 2020 preliminary.
No watercraft mortalities.

Marine Facility Inventory Summary

Boat Launch Facilities Signage Inventory:

An inventory of signage was completed and there were no changes to report since the previous year. A couple of vandalized signs were attended to including a manatee kiosk sign at Oak Harbor boat ramp that was cleaned, and a manatee informational sign at Goodby's Creek boat ramp that was removed and has not been replaced yet. The database of all local manatee, boating safety signage, and information kiosks at boat ramps in Duval County is current and up to date. Methods: Researchers visited all facilities to record and verify information.

Marine Facilities Inventory:

This inventory includes **188** commercial and multi-family marinas and docks, which were checked over the boating season (June-September). Changes in the number of wet and dry slips from previous years are highlighted. There was an increase in the number of wet slips from 3,892 in 2015 to 4,028 in 2020 (change +136). Dry slips increased from 2,510 in 2015 to 2,716 in 2020 (change +200). There was a total of 69 ramps and 782 parking spaces from 2014 to 2020.

Methods: Researchers placed phone calls to individual facilities to obtain information about the occupancy and capacity changes if any. Subsequent to that, researchers visited a subsample of these facilities to verify information.

In addition, 51 single-family homes dock permits were issued in Duval County (2019/20) as compared to 25 (2018/19), 82 (2017/18), 64 (2016/17), 65 (2015/16), 59 (2015) and 71 (2014) (Source: SJRWMD 2020).

Facility No.	FACILITY NAME	Wet slips 2014	Wet slips 2015	Wet slips 2020	Dry slips 2014	Dry slips 2015	Dry slips 2020	No. of Ramps	No. of Lanes	Paved	Parking Spaces
1	Clark's Fish Camp	10	10	10	0	0	0	0	0		0
2	The Marina at Julington Creek	91	91	91	226	226	226	0	0		0
3	Mandarin Holiday Marina and Fish Camp	160	160	160	0	0	0	1	1	YES	0
4	Beatrice A. Gamble Julington Pier #3	84	84	84	8	8	8	0	0		0
5	Bull Bay Pier/Wiley E. Andreu	78	84	78	25	15	25	0	0		0
6	Old Bull Bay	6	6	6	0	0	0	0	0		0
7	Tala Cay HOA	2	2	2	0	0	0	0	0		0
8	Plummers Cove HOA	12	12	12	0	0	0	0	0		0
9	Florida Tackle & Gun Club	32	32	32	12	12	12	1	2	YES	5
10	The Cove at St Johns	13	13	13	0	0	0	0	0		0
11	La Terraza	4	4	4	0	0	0	0	0		0
12	NFL Yacht Sales/Mandarin Marina/GC YC	5	5	5	208	208	208	1	1	YES	0
13	Epping Forest Yacht Club	73	73	52	0	0	17	0	0		0
14	6006 of Jacksonville Inc	7	7	7	0	0	0	0	0		0
15	Club Condominiums	8	8	8	0	0	0	0	0		0
16	The Rudder Club of Jacksonville	35	35	35	89	65	89	1	1	YES	0
17	NAS/Jax Marina	152	152	96	248	248	241	1	2	YES	0
18	Florida Yacht Club	94	93	152	61	50	248	1	1	YES	0
19	Venitian on the Ortega	43	43	94	0	0	61	0	0		0
20	Confederate Point Apts	18	10	43	0	0	0	0	0		0

C = Commercial; M = Marina; MF = Multifamily; OT = Other; R = Ramp; SBT = Ship/Barge/Tug; T = Transitory

Facility No.	FACILITY NAME	Wet slips 2014	Wet slips 2015	Wet slips 2020	Dry slips 2014	Dry slips 2015	Dry slips 2020	No. of Ramps	No. of Lanes	Paved	Parking Spaces
21	Preserve at Cedar Rvr/Cedar Cove Apts	24	4	18	0	0	0	1	1	YES	0
22	2509 Blanding Blvd LLC (retail)	4	4	24	0	0	0	0	0		0
23	Coastal Creek Condo fka Cedar Shores	24	24	4	0	0	0	0	0		0
24	Lighthouse Marine/Florcal Marina	23	23	24	10	16	0	0	0		0
25	Cedar River Moorings/Club(HarborLts)	15	15	23	0	0	10	1	1	YES	12
26	Cedar Creek Landing Condos	8	8	15	0	0	0	1	1	YES	0
27	Londontowne Apartments	10	0	8	0	0	0	0	0		0
28	Klehm Estate (Chuck's Boat Yard)	30	30	10	0	0	0	0	0		0
29	Lakeshore Dry Storage	0	0	23	208	200	208	0	0		0
30	Lambs Yacht Center	240	250	152	0	0	0	0	0		0
31	Cedar Point Marina	23	23		0	0		0	0		0
32	Huckins Yacht	31	38	36	0	0	0	0	0		0
33	Sadler Point Marina	65	66		45	30		0	0		0
34	Ortega Yacht Club Marina	112	99	112	0	0	0	0	0		0
35	Lakeside Ortega Prtnshp/JOWens Marina	24	24	112	0	0	0	0	0		0
36	Ortega Landing Marina	192	192	24	0	0	0	0	0		0
37	Commander Apt	6	6	192	0	0	0	0	0		0
38	Jerry Strozier Ferguson Estate	12	12	6	0	0	0	0	0		0
39	River City Brewing Co	62	60	60	0	0	0	0	0		0
40	Berkman Plaza and Marina	54	54	12	0	0	0	0	0		0
41	Shipyards	240*	240*	240	0	0	0	0	0		0
42	Metropolitan Park & Marina	78	78	78	0	0	0	0	0		0
43	Colonial Point Condos	14	14	14	0	0	0	0	0		0
44	Carlton At Oak Landing	11	0	11	0	0	0	0	0		0
45	Magnolia Shores Homeowners	7	7	7	0	0	0	0	0		0
46	River Hills Condo	21	21	21	0	0	0	0	0		0
47	Jones College (Riverton towers)	9	7	9	0	0	0	0	0		0
48	Arlington Marina/MoBro Marine Inc	28	30	28	178	135	178	0	0		0
49	St Johns Riverview Homes Condo Assoc	6	6	6	0	0	0	0	0		0
50	Arlington by the River Condo	17	17	6	0	0	0	0	0		0
51	JU Row Cntr and Marine Sci Dock	8	8	17	0	0	0	2	2		0
52	Pirates Point Yacht Club & Marina	14	14	8	0	0	0	0	0		0
53	William Dye Marina (DyenicYachts)	44	44	14	0	6	0	0	0		0
54	Fire Station #38 (COJ)	12	12	44	0	0	0	0	0		0
55	Seafarers Marina	75	75	12	0	0	0	0	0		0
56	Edwards Marina (Fisherman's Marina)	23	23	75	0	0	0	0	0		0
57	Eleanor Garrison	8	8	23	0	0	0	0	0		0
58	Loretta Courson	5	5	8	0	0	0	1	1	YES	0
59	Trout River Drive Apts (Strong)	0	0	5	7	7	0	1	1	YES	0
60	Sibbald Road Trust	5	5	0	0	0	7	0	0		0
61	Dames Pt Marina (Shafnacker)	11	23	5	20	20	0	1	2	NO	0
62	Dames Pt Yacht Club(Nicholas Crk Dev)	6	6	11	0	0	20	0	0		0
63	Safe Harbor Haven (Boys Home)	59	59	6	36	36	0	1	1	YES	0

C = Commercial; M = Marina; MF = Multifamily; OT= Other; R=Ramp; SBT=Ship/Barge/Tug; T=Transitory
 *= Development Rights- Not Constructed

Facility No.	FACILITY NAME	Wet slips 2014	Wet slips 2015	Wet slips 2020	Dry slips 2014	Dry slips 2015	Dry slips 2020	No. of Ramps	No. of Lanes	Paved	Parking Spaces
64	Brown's Creek Fish Camp	0	0	0	25	25	25	1	1	YES	0
65	Clapboard Creek Marina	30	30	35	20	20	0	0	0		0
66	Clapboard Creek Fish Camp	0	0	0	30	30	30	1	2		10
67	Mariner Point Yacht Club	50	50	50	0	0	0	0	0		0
68	Harbour North Park Assoc	6	6	6	0	0	0	1	1	YES	0
69	Riverfront RV Park	6	6	0	0	0	0	1	1	?	0
70	Sandollar Marina	14	12		3	0		0	0		0
71	Fort George Harbor Yacht Club	35	10	14	150	128	150	0	0		0
72	Mayport Harbor OPS	16	16		0	0		1	1	YES	0
73	JPA/St Johns Bar Pilot Assoc	2	2	4	0	0	0	0	0		0
74	Morningstar Marinas	14	10	2	145	200	0	0	0		0
75	JPA/Mayport Tarvern	7	7	14	0	0	145	0	0		0
76	JPA/Mayport Yacht Basin	4	4	7	0	0	0	0	0		0
77	Spanish Point Civic Assoc	0	0	4	0	0	0	1	1	YES	0
78	Queens Harbour Yacht & Country Club	56	60	0	0	0	0	0	0		0
79	Harbortown f/k/a Pablo Creek Marina	150	150	56	0	0	0	0	0		0
80	Seven Pines Island Marina Assoc	20	20	150	0	0	0	0	0		0
81	Sunset Point Homeowners Assoc	5	5	20	0	0	0	0	0		0
82	Palm Cove Marina	375	375	5	438	438	0	1	1	YES	0
83	Beach Marine	325	350	375	350	350	438	0	0		0
84	Moorings Condo Assoc	81	81	325	0	0	350	0	0		0
85	Waterside fka Lighthouse Grille/Cove	24	24	81	0	0	0	0	0		0
86	Marina San Pablo	46	46	24	0	0	0	0	0		0
87	Hood Landing Boat Ramp	0	0	46	0	0	0	1	1	YES	12
88	Mandarin Park Boat Ramp	0	0	0	0	0	0	1	2	YES	15
89	Duval County Dock Park	0	0	0	0	0	0	1	1	YES	5
90	Goodby's Lake Boat Ramp	0	0	0	0	0	0	1	3	YES	43
91	Hooters(Jax has additional name)	8	8	0	0	0	0	0	0		0
92	Timuquana Country Club	12	0	8	0	0	0	0	0		0
93	Wayne B Stevens Boat Ramp	0	0	12	0	0	0	3	5	YES	49
94	Lighthouse Marine Boat Ramp COJ	0	0	0	0	0	0	2	2	YES	16
95	St Johns Marina at Riverwalk Park	0	0	0	0	0	0	1	2	YES	15
96	COJ - Friendship Fountn	1	1	0	0	0	0	0	0		0
97	COJ-Jax Landing	1	1	1	0	0	0	0	0		0
98	COJ-Crowne Plaza	1	1	1	0	0	0	0	0		0
99	COJ - Liberty St	1	1	1	0	0	0	0	0		0
100	COJ-Wyndham	1	1	1	0	0	0	0	0		0
101	COJ - Metropolitan Park	1	1	1	0	0	0	0	0		0
102	Beach Blvd Boat Ramp(Pottsburg Crk)	0	0	1	0	0	0	1	1	YES	12
103	Arlington Road Boat Ramp	0	0	0	0	0	0	1	2	YES	13
104	Arlington Lions Club Park Boat Ramp	0	0	0	0	0	0	1	1	YES	61
105	Reddie Pointe Preserve	6	6	0	0	0	0	0	0		0
106	Lonnie Wurn Boat Ramp	0	0	6	0	0	0	1	1	YES	9

C = Commercial; M = Marina; MF = Multifamily; OT= Other; R=Ramp; SBT=Ship/Barge/Tug; T=Transitory

Facility No.	FACILITY NAME	Wet slips 2014	Wet slips 2015	Wet slips 2020	Dry slips 2014	Dry slips 2015	Dry slips 2020	No. of Ramps	No. of Lanes	Paved	Parking Spaces
107	Dunn Creek Bridge	0	0	0	0	0	0	1	1	NO	5
108	Drummond Point	0	0	0	0	0	0	1	1	NO	5
109	Jackies Restaurant (Seafood)	35	35	0	0	0	0	0	0		0
110	Bert Maxwell Boat Ramp	0	0	35	0	0	0	2	4	YES	45
111	T K Stokes Boatramp	0	0	0	0	0	0	1	1	YES	30
112	Harborview Boatramp	0	0	0	0	0	0	2	2	YES	7
113	Charles Reese Boatramp	0	0	0	0	0	0	1	1	YES	6
114	Dinsmore Boat Ramp	0	0	0	0	0	0	1	2	YES	16
115	Brown's Creek Bridge	0	0	0	0	0	0	1	1		10
116	St Johns Landing Estates	0	0	0	0	0	0	1	1	YES	0
117	St Johns Landing Homeowners Assco	0	0	0	0	0	0	1	1	YES	6
118	Palms Fish Camp/COJ	0	0	0	0	0	0	1	1	YES	20
119	Fulton Boat Ramp	0	0	0	0	0	0	1	1	YES	7
120	Ft Caroline National Memorial Dock	3	2	0	0	0	0	0	0		0
121	Gate Petroleum Co	0	0	3	0	0	0	1	1	NO	2
122	Pirates Cove Fish Camp	0	0	0	0	0	0	1	1	NO	10
123	Joe Carlucci-Sisters Creek Park	0	0	0	0	0	0	1	2	YES	47
124	Sisters Creek Marina	0	0	0	0	0	0	1	4	YES	94
125	Fort George Island Ferry (North port)	1	1	2	0	0	0	0	0		0
126	Singleton's Seafood Shack	2	2	2	0	0	0	0	0		0
127	Michael B Scanlan Boat Ramp	0	0	0	0	0	0	2	8		75
128	Alimacani Boat Ramp	0	0	0	0	0	0	1	1	NO	10
129	Ribault Club @ Ft George	0	0	0	0	0	0	1	1		6
130	Kingsley Plantation	3	4	3	0	0	0	0	0		0
131	Simpson Creek Park	0	0	0	0	0	0	1	1	NO	2
132	Big Talbot Island SP	0	0	0	0	0	0	1	1	YES	37
133	Oak Harbor Boat Ramp	0	0	0	0	0	0	1	1	YES	28
134	Intracoastal Waterways Boat Ramp	0	0	0	0	0	0	2	4	YES	37
135	Weeks Marine	3	0	3	0	0	0	1	1	YES	0
136	All Wet Sports/Suzanne Paul	0	0	0	8	25	8	0	0		0
137	River Cruises	2	2	2	0	0	0	0	0		0
138	JEA Park (old JEAS site)	2	2	2	0	0	0	0	0		0
139	Riverfront Dev Group	4	4	4	0	0	0	0	0		0
140	Commodore Point Prop/N FL Shipyard	6	1	7	0	0	0	0	0		0
141	Hill Street LLC	5	5	5	0	0	0	0	0		0
142	Hal Jones Contractor Inc	3	0	3	0	0	0	0	0		0
143	Cross State Towing Co	5	3	0	0	0	0	1	1	YES	0
144	1163 Tallyrand Inc/Crowley Liner Serv	6	18	5	0	0	0	0	0		0
145	JPA Talleyrand Marine Terminal	6	6	6	0	0	0	0	0		0
146	Standard Oil Co (Chevron)	1	1	6	0	0	0	0	0		0
147	Coastal Fuels Termianal	1	1	1	0	0	0	0	0		0
148	JEA/Kennedy Generating Station	6	6	1	0	0	0	0	0		0
149	Keystone Terminal	1	1	6	0	0	0	0	0		0

C = Commercial; M = Marina; MF = Multifamily; OT= Other; R=Ramp; SBT=Ship/Barge/Tug; T=Transitory

Facility No.	FACILITY NAME	Wet slips 2014	Wet slips 2015	Wet slips 2020	Dry slips 2014	Dry slips 2015	Dry slips 2020	No. of Ramps	No. of Lanes	Paved	Parking Spaces
150	White Sprngs AgChem(GA Sthn/FL Rlway)	2	2	1	0	0	0	0	0		0
151	Support Terminal	1	1	2	0	0	0	0	0		0
152	NuStar Energy	5	5	1	0	0	0	0	0		0
153	US Gypsum Company	1	1	5	0	0	0	0	0		0
154	Southern Belle Frozen Foods	1	1	1	0	0	0	0	0		0
155	Trout RIVER Pier 68 Marina	6	6	1	0	0	0	0	0		0
156	Gate Concrete Co	2	2	6	0	0	0	0	0		0
157	US Navy Fuel Depot	1	1	2	0	0	0	1	1	YES	0
158	BP Oil	1	1	1	0	0	0	0	0		0
159	Amerada Hess Fuel Oil Inc	1	1	1	0	0	0	0	0		0
160	One Dock Builders	8	8	1	0	0	0	0	0		0
161	JaxPort-Ed Austin Marine Terminal	1	1	8	0	0	0	0	0		0
162	TraPac Terminal	2	2	1	0	0	0	0	0		0
163	JaxPort Bulk Terminal	7	7	2	0	0	0	0	0		0
164	Jax Port Authority	4	4	7	0	0	0	0	0		0
165	JPA/Blount Island	8	8	4	0	0	0	0	0		0
166	B P B Acquistions (Formerly Celotex)	1	1	8	0	0	0	0	0		0
167	ESI of Florida LLC	11	11	1	0	0	0	0	0		0
168	Terminal Services	4	4	11	0	0	0	0	0		0
169	Kenneth Vogelsong	2	2	4	0	0	0	0	0		0
170	JEA North Generating Station Dock	1	1	2	0	0	0	0	0		0
171	Jax Port Authority - 4916	2	2	1	0	0	0	0	0		0
172	Florida East Coast Shrimp Producers	9	9	2	6	6	0	3	0	YES	0
173	M & M Shrimp Dock Inc	2	2	9	0	0	6	0	0		0
174	U.S. Marine Corp	3	3	2	0	0	0	0	0		0
175	Atlantic Dry Dock Corp	10	10	3	6	6	0	0	0		0
176	St Johns Boat Co	6	6	10	0	0	6	0	0		0
177	Mayport Naval Station	34	34	6	0	0	0	0	0		0
178	JPA/Mayport Ferry Slip	1	1	34	0	0	0	0	0		0
179	JPA/Formerly LA Cruise	1	1	1	0	0	0	0	0		0
180	JPA/Roland Ice Co	8	8	1	0	0	0	0	0		0
181	JPA/Gilmer Pier	7	7	8	0	0	0	0	0		0
182	JPA/Hornblower Marine/Ferry Maint Yrd	1	1	7	0	0	0	0	0		0
183	JPA/Formerly Atlantic Seafood Co	3	0	1	0	0	0	0	0		0
184	JPA/Mat Roland Seafood	7	0	3	0	0	0	0	0		0
185	Miss Becky Seafood/Safe Harbor Mrkt	20	20	7	0	0	0	0	0		0
186	Rebecca Pack	4	4	20	0	0	0	0	0		0
187	U.S. Coast Guard - Mayport	6	6	4	0	0	0	0	0		0
188	Moody Land Co/Bellinger Shipyard	12	12	6	0	0	0	0	0		0
TOTAL		3,946	3,892	4,028	2,562	2,510	2,716	69	92	46Y	782

C = Commercial; M = Marina; MF = Multifamily; OT= Other; R=Ramp; SBT=Ship/Barge/Tug; T=Transitory

Figure 63. Table of Marine Facilities in Jacksonville (Duval County) Florida 2020.

Development slips specific to the downtown DRI:

The number of slips in downtown Jacksonville was increased by 175 slips from 789 to 964, and supporting justifications for these slips were provided by letters outlining the City's commitments, and the regulatory agencies authorizations for the slip increase (MPP Implementation Report 2017). This sub-inventory includes tracking of development slips specific to the downtown DRI area. Note that 194 slips have actually been constructed.

There was no change to this information as of 2019/2020.

FACILITY	ADDRESS/LOCATION	NUMBER OF SLIPS ALLOCATED	NUMBER OF SLIPS CONSTRUCTED
River City Brewing	835 Museum Cir	62	62
Berkman Plaza	400 E. Bay St.	54	54
Shipyards	750 E. bay St	400	
Metro Park	1410 Gator Bowl Blvd.	78	78
Aetna Site	Prudential Dr	128	
St. Johns/The Strand	Riverplace BLVD.	75	
The District	801 Broadcast Pl	125	
COJ	Along the Riverwalk	50	
TOTAL		972	194

Waterways Commission Meeting Summaries

The Jacksonville Waterways Commission was established in 1984 to study and make recommendations to the City Council with respect to the improvement, development and protection of the St. Johns River and all tidal waters in Duval County. The Commission is charged to formulate an overall plan for dealing with any problems that exist the St. Johns River and Duval County tidal waters and devise methods of developing future uses of those waterways.

The Commission serves as the Duval County committee to review rules proposed by the Florida Fish and Wildlife Conservation Commission governing speed and operation of motorboats to protect manatees. And acts as a coordinating agency and specialized advisor for governmental units and for programs and activities affecting the improvement, development and protection of the St. Johns River and all tidal waters in Duval County.

DATE DISCUSSION

October 9, 2019 Dr. White said that water has remained warm at 81 degrees. He highlighted the issues of storm waters to the range of salinity. Dr. Pinto had to leave early, so Dr. White covered the manatee portion with an update that no manatees have died since the last meeting leaving the total at 5 for this year.

November 13, 2019 Dr. White talked about the drastic drop in temperature from the 80s to the 40s as a good example of climate change and the large fluctuations that can occur. The City of Jacksonville is in a drought and that could create concerns about fires. There have been foaming incidents at in the St. John's River Memorial Park and in Little Fishweir Creek which have been puzzling. Dr. Pinto said that most of the manatees have left the area due to the cold weather and there have been no new deaths, leaving the total at 5 for the year.

December 11, 2019 • Manatee Implementation Report 2019
Dr. White said that December has been a crazy month for weather and it highlights the new normal. Tides are above the predicted levels and there is a large range in salinity. Dr. Pinto reported that there have been 3 more manatee deaths and a manatee was released back into the wild after being rehabilitated at the zoo. This brought the total up to 8 manatee deaths for the year. Dr. Pinto went over the 2019 Manatee Protection Plan Implementation Report.

January 15, 2020 • Manatee Implementation Report 2019
Dr. White said that the unusual weather in January has led to warmer waters and a drought in the area. The impact of Hurricane Irma is beginning to lessen. Dr. Pinto said that there have been 3 manatee deaths since the last meeting. Dr. Pinto said they have corrected the typos from the report which were identified by Commissioner Brock at the last meeting and the report is available to be approved by the Commission. The report was approved. APPROVE 9-0.

February 12, 2020 Dr. White said that there have been high tides due to the water levels being above normal. The rainfall has been below normal which has impacted the salinity. Dr. Pinto said that it is currently not manatee season and has been very quiet. There have been no new deaths since the last meeting.

March 11, 2020 Dr. Pinto did the updates for both water quality and manatees since Dr. White could not be at the meeting. Dr. Pinto said that the city of Jacksonville is one inch above normal for water fall which is impacting the salinity. The water temperature is warming up and that brings in more manatees. There were 2 manatee deaths in February.

April 15, 2020 Cancelled

May 13, 2020 Cancelled

June 17, 2020 Dr. White said we have gone from a drought to the last 9-10 days there has been a lot of rain and now the salinity has dropped. There has been overflow which has caused water quality issues. The issues of water runoff near Roosevelt Mall have been fixed. COVID-19 has slowed down most research and the campus at Jacksonville University which has been slowed down until August 3rd when students can return to campus. Jacksonville University has been working with the City on a boater compliance study in terms of manatee protection zones. Dr. Pinto talked about being able to fly over the river where he saw 39 manatees in the City of Jacksonville. This is fewer manatees than normal, most likely due to the lack of food available. There have been 4 manatee deaths this year and no deaths since the last meeting.

August 12, 2020 Dr. White talked about the water levels and water salinity. Dr. White talked about the artificial reefs that are helping to clean the water which has been implemented since 2014. Dr. White said that there has been a virtual marine camp at JU this summer. CM DeFoor said that COVID-19 has led to more boating which highlights the value of the waterways in Jacksonville. Dr. Pinto reported a total of 6 manatee deaths and none of them are attributed to watercrafts.

September 9, 2020 Dr. White said that the St. Johns River has been hot and the temperatures have created fuel for hurricanes. There has been no major algae bloom and the water levels remain high. Dr. White said that Mayport is being used as a film location. Dr. White said that they are continuing to work with the City for the docks at Mayport. Dr. White said they have been working on the 2014 artificial reefs which were heavily impacted by Hurricane Irma and he said that the wildlife has come back but not how it was expected. There have been 8 manatee deaths this year to date with none being from watercraft. There were also 2 that were reported but never found. CM Bowman asked about manatees that were struck and if the boaters know they hit it. Dr. White said most don't realize they hit the manatee. CM Bowman asked if manatee zones have been successful. Dr. White said they have been very helpful.

October 14, 2020 Dr. White said this has been a record hurricane season. With 16 straight days of rain, Jacksonville is 2 inches above normal in rainfall (51 inches). Water temperatures are still quite warm. Dr. White talked about the huge shifts in salinity. Dr. White said they are working on a boater compliance study which will be brought up later in the meeting in terms of the manatee protection study. Mr. Pringle asked about the salinity. Dr. White said that salt water is denser than fresh water, slightly fresher on the top of the water and with more salt water on the bottom. CM Bowman asked what we can do about speed zones. Dr. White said clearer signs are important and that it is a state and federal process which he has continued to push for more. Dr. Pinto said that there are no more manatee deaths to report with 8 overall for the year. James Richardson, EPB, talked about the State of the River Report. October 22nd will be the official release of the State of the River Report.

Law Report Summary

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. Although the City has minimal data to compare to previous years, the continued tracking of law enforcement efforts will allow the City to provide better analysis in future implementation reports.

The L.E. Task Force is a valuable method for all law enforcement agencies to communicate and coordinate efforts. All federal, state, and local agencies are committed to assisting the City in boating compliance. The meetings are well attended and all agencies attend JSO Media Awareness Day. However, the event was suspended this year due to the COVID pandemic shut down.

A. Jacksonville Sheriff's Office

In 2018, JSO spent 7,280 hours patrolling manatee zones. This represented an increase of 3,983 hrs. (+55%) from the previous year. In addition, JSO issued 23 citations (+91%, 21 more than in 2017), and 1,400 warnings (+62%, or 863 more than in 2017). The Marine Unity had 8 patrol officers on duty, (6 more than in 2017).

FOCUS AREA	# of patrols	Citations	Warnings	Manatee related Incidents
Julington Creek	103	0	20	0
County Line - Buckman Bridge	115	0	8	0
buckman Bridge - Fuller Warren Bridge	309	0	46	2
Goodbys Creek	76	0	18	0
Ortega River	220	1	69	3
Fuller Warrant Bridge - Main St Bridge	643	5	166	10
Main St Bridge - Hart Bridge	882	6	219	10
Hart Bridge - Matthews Bridge and Arlington River	968	3	199	4
Matthews Bridge - Reddie Point	1,160	2	122	3
Trout River	348	0	71	0
Reddie Point - Blount Island	640	0	105	0
Blount Island - ICW	515	1	57	3
ICW North	382	3	97	3
ICW South	467	2	85	13
ICW- Jetties	452	0	118	17
TOTAL	7,280	23	1,400	68

JSO 2018.

In 2019, JSO spent 7,245 hours patrolling manatee zones. This represented a decrease of 35 hrs. (-0.5%) from the previous year. In addition, JSO issued 25 citations (+8 %, 2 more than in 2018), and 986 warnings (-30 %, or 414 less than in 2018). The Marine Unity had 8 patrol officers on duty, (same as in 2018).

FOCUS AREA	# of patrols	Citations	Warnings	Manatee related Incidents
Julington Creek	115	2	21	1
County Line - Buckman Bridge	157	0	4	0
buckman Bridge - Fuller Warren Bridge	313	0	22	0
Goodbys Creek	75	0	4	0
Ortega River	219	0	41	0
Fuller Warrant Bridge - Main St Bridge	697	6	185	11
Main St Bridge - Hart Bridge	838	3	200	8
Hart Bridge - Matthews Bridge and Arlington River	906	2	100	0
Matthews Bridge - Reddie Point	1,082	2	67	2
Trout River	333	0	32	0
Reddie Point - Blount Island	618	0	41	1
Blount Island - ICW	501	0	36	1
ICW North	435	2	85	2
ICW South	551	8	130	0
ICW- Jetties	405	0	18	0
TOTAL	7,245	25	986	26

JSO 2019.

In 2019, patrol effort on the water decreased by about 0.5 % from 2018 (still 8 officers like in 2018), but remained relatively high compared to 2017 and prior years. In summary, from 2015 to 2019, JSO hours on the water patrolling manatee zones increased from 1,692 to 7,245 Hrs. (+328 % or +5,553 Hrs.); citations issued increased from 7 to 25 (+257 % or +18); and warnings increased from 16 to 986 (+6,063 % or 970 warnings). In addition, the number of available officers increased from 3 in 2015 to 8 in 2018 (+167 %). Moreover, specific manatee related incidents increased from one in 2015 to 26 in 2019 (+2,500%).

As of September 2020, JSO spent 5,308 hours patrolling manatee zones. This represented a decrease of -2,086 hrs. (-28 %) from the previous year over the same period. In addition, JSO issued 12 citations (-45 %, 10 less than in 2019), and 295 warnings (-77 %, or 976 less than in 2019). The Marine Unity had 8 patrol officers on duty.

FOCUS AREA	# of patrols	Citations	Warnings	Manatee related Incidents
Julington Creek	86	0	6	1
County Line - Buckman Bridge	103	0	0	0
buckman Bridge - Fuller Warren Bridge	206	0	5	0
Goodbys Creek	31	0	3	0
Ortega River	153	0	10	0
Fuller Warrant Bridge - Main St Bridge	501	0	46	14
Main St Bridge - Hart Bridge	648	1	81	10
Hart Bridge - Matthews Bridge and Arlington River	655	4	21	0
Matthews Bridge - Reddie Point	854	1	14	1
Trout River	195	0	1	0
Reddie Point - Blount Island	519	0	2	0
Blount Island - ICW	478	0	8	1
ICW North	264	2	21	0
ICW South	389	4	71	2
ICW- Jetties	226	0	6	0
TOTAL	5308	12	295	29

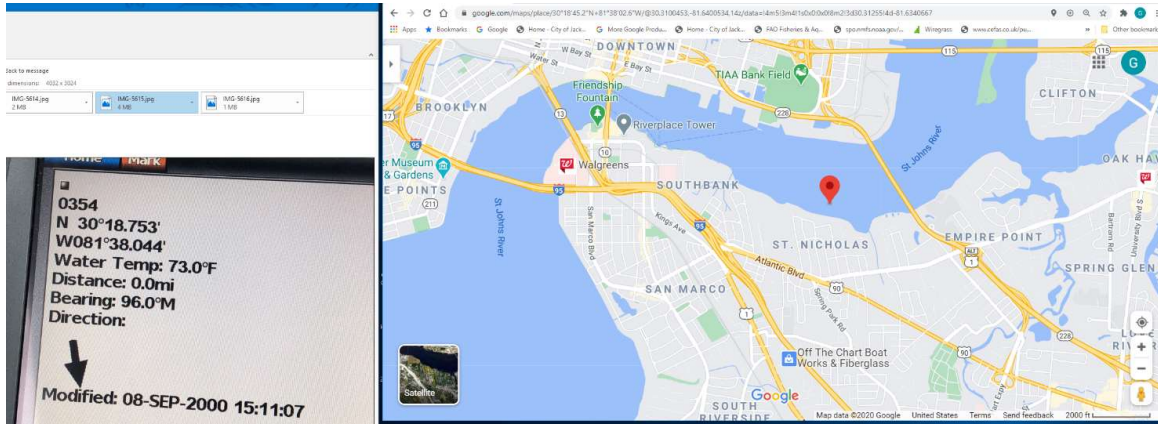
JSO 2020 Sept.

Summary of JSO law enforcement efforts 2014 - September 2020

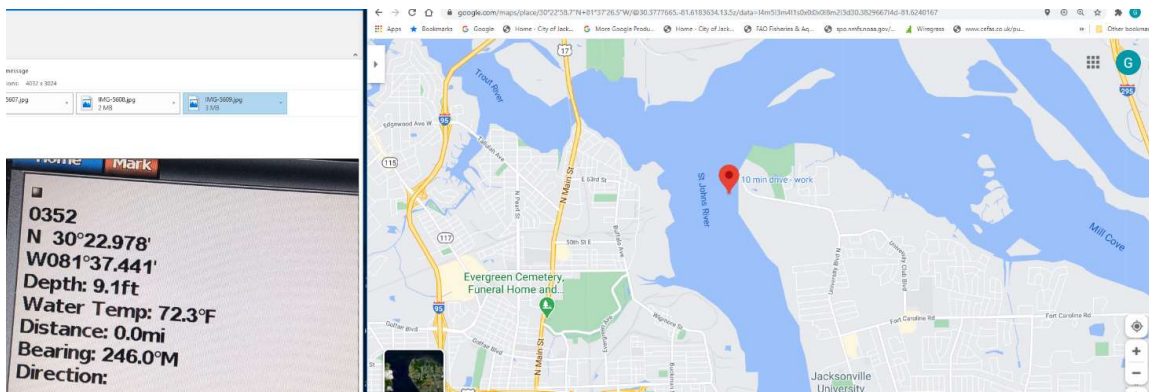
YEAR	# of patrols	Citations	Warnings	Manatee related Incidents	Officers
2014	105	5	41	0	-
2015	1,692	7	16	1	-
2016	1,551	11	326	2	3
2017	3,297	2	537	5	2
2018	7,280	23	1,400	68	8
2019	7,245	25	986	26	8
2020 Sept.	5308	12	295	29	8

Signage issues identified by JSO law enforcement (does not include all signage issues).

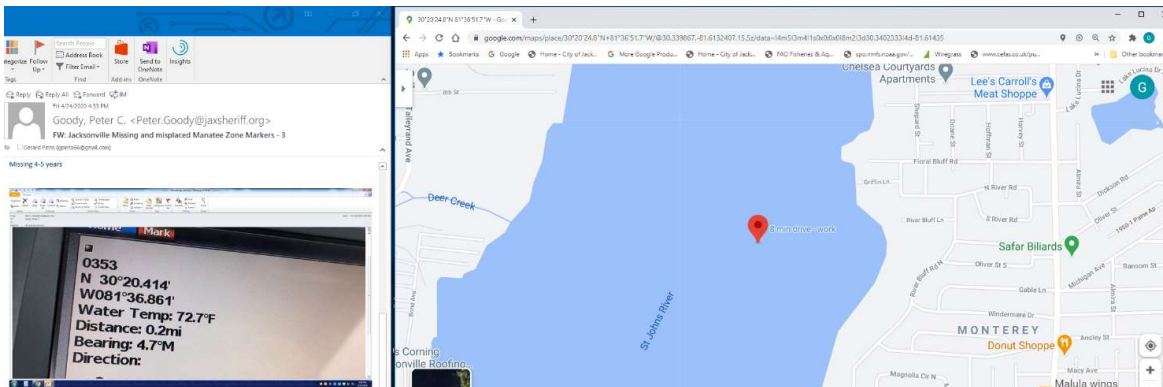
This speed zone marker is off station for more than 5 years now. This is a channel only 25mph zone and the marker is on the south bank several hundred yards outside the designated channel. This issue causes confusion as to where the actual zone is making it a hindrance to enforcement. The issue was reported to FWCs Boating and Waterways Section.



This area marks the location between Reddie Point and Blue Cypress Park where one manatee zone marker is missing and another is off station (1000ft Buffer zone and marker is more like 300ft). This issue has caused confusion as to where the actual zone is, making it a hindrance to enforcement for the last 5 years. The issue was reported to FWCs Boating and Waterways Section.



This area marks the location between Arlington Marina and Jacksonville University where a manatee zone marker is missing (1000ft Buffer zone on two pilings). This issue has causes confusion as to where the actual zone is making it a hindrance to enforcement for the last 4-5 years. The issue was reported to FWCs Boating and Waterways Section.



B. Florida Fish and Wildlife Commission

The City of Jacksonville began to receive quarterly reports from FWC in November 2014. In the 2014-2015 year, FWC gave 161 citations for the Duval County area. FWC cited more boats in the ICW and the downtown area.

FWC 2015	# of times in area	Citations	Warnings
FOCUS AREA			
Julington Creek		15	
County Line - Buckman Brg			
Buckman Brg - Fuller Warren Brg		2	
Goodbys Creek			
Ortega River		5	
Fuller Warren Brg - Main Street Brg		22	
Main Street Brg - Hart Brg		7	
Hart Brg - Matthews Brg / Arlington River		12	
Matthews Brg - Reddie Pt		5	
Trout River			
Reddie Pt - Blount Island		1	
Blount Island - ICW			
ICW North		20	
ICW South		32	
ICW - Jetties		12	
In St. Johns River		23	
not marked location		5	
TOTAL		161	

FDLE 2015.

In the 2015-2016 year, FWC gave 68 citations for the Duval County area. FWC cited more boats in the ICW, downtown area, and Julington Creek. There were significantly less citations issued than the previous year, with 93 fewer citations issued as compared to 2015.

FWC 2016	# of times in area	Citations	Warnings
FOCUS AREA			
Julington Creek		11	
County Line - Buckman Brg			
Buckman Brg - Fuller Warren Brg			
Goodbys Creek			
Ortega River		1	
Fuller Warren Brg - Main Street Brg		39	
Main Street Brg - Hart Brg			
Hart Brg - Matthews Brg /Arlington River			
Matthews Brg - Reddie Pt		2	
Trout River			
Reddie Pt - Blount Island			
Blount Island - ICW			
ICW North		7	
ICW South		6	
ICW - Jetties		2	
In St. Johns River			
not marked location			
TOTAL		68	

FDLE 2016.

In the 2016-2017 year, FWC gave 27 citations for the Duval County area. FWC cited more boats in the downtown area. There were significantly less citations issued than the previous year, with 41 fewer citations issued as compared to 2016.

FWC 2017			
FOCUS AREA	# of times in area	Citations	Warnings
Julington Creek		1	
County Line - Buckman Brg			
Buckman Brg - Fuller Warren Brg		1	
Goodbys Creek			
Ortega River		1	
Fuller Warren Brg - Main Street Brg		11	
Main Street Brg - Hart Brg		5+2	
Hart Brg - Matthews Brg /Arlington River		2	
Matthews Brg - Reddie Pt			
Trout River			
Reddie Pt - Blount Island			
Blount Island - ICW		1	
ICW North		2	
ICW South		1	
ICW - Jetties			
In St. Johns River			
not marked location			
TOTAL		27	

FDLE 2017.

From 2015 to 2017, citations issued by FWC decreased from 161 to 27 (-83%).

In the 2017-2018 year, FWC gave 5 citations for the Duval County area. There was significantly less than issued the previous year (22 fewer citations than in 2016).

FWC 2018			
FOCUS AREA	# of times in area	Citations	Warnings
Julington Creek			
County Line - Buckman Brg			
Buckman Brg - Fuller Warren Brg			
Goodbys Creek			
Ortega River		1	
Fuller Warren Brg - Main Street Brg			
Main Street Brg - Hart Brg		2	
Hart Brg - Matthews Brg /Arlington River			
Matthews Brg - Reddie Pt			
Trout River			
Reddie Pt - Blount Island			
Blount Island - ICW			
ICW North		2	
ICW South			
ICW - Jetties			
In St. Johns River			
not marked location			
TOTAL		5	

FDLE 2018.

No data were provided for 2019, and 2020.

C. US Coast Guard

The City of Jacksonville received 2 multi-agency reports from the USCG. The USCG has been willing and active in manatee protection efforts, but the problem is the constant turnover of personnel assigned to Sector Jacksonville. The USCG has been attending the L.E. Task Force meetings.

FOCUS AREA	# of times in area	Citations	Warnings
Julington Creek			
County Line - Buckman Brg			
Buckman Brg - Fuller Warren Brg			
Goodbys Creek			
Ortega River			
Fuller Warren Brg - Main Street Brg	6	1	
Main Street Brg - Hart Brg			
Hart Brg - Matthews Brg / Arlington River			
Matthews Brg - Reddie Pt			
Trout River			
Reddie Pt - Blount Island			
Blount Island - ICW			
ICW North	13		
ICW South	10		
ICW - Jetties	14	5	
TOTAL	43	6	

USCG 2016.

FOCUS AREA	# of times in area	Citations	Warnings
Julington Creek	11		0
County Line - Buckman Brg	20		0
Buckman Brg - Fuller Warren Brg	28		0
Goodbys Creek	0		0
Ortega River	12		0
Fuller Warren Brg - Main Street Brg	36		3
Main Street Brg - Hart Brg	36		0
Hart Brg - Matthews Brg and Arlington River	38		0
Matthews Brg - Reddie Pt	50		0
Trout River	17		0
Reddie Pt - Blount Island	50		0
Blount Island - ICW	77		0
ICW North	91		10
ICW South	88		9
ICW - Jetties*	88		19
TOTAL	642		41

*zone still not enforceable due to lack of signage
USCG 2017.

USCG significantly increased hours of operation in the area from 43 hrs. (2016) to 642 hrs. (2017). There was an increase in the warnings given from 6 (2016) to 41 (2017). The area of the ICW near the Jetties remains unenforceable due to a lack of signage. No report was received for 2018, 2019, and 2020.

D. Multi agency deployments

Six multi-agency deployments were held in 2015. A combined 259 hours of law enforcement presence was reported during the 6 deployment weekends. A total of 16 citations and 12 warnings were given.

Multi agency USCG / JSO 2015

FOCUS AREA	# of times in area	Citations	Warnings
Julington Creek	7	4	2
County Line - Buckman Brg	12		
Buckman Brg - Fuller Warren Brg	23		
Goodbys Creek	6		
Ortega River	6		
Fuller Warren Brg - Main Street Brg	24		2
Main Street Brg - Hart Brg	36		5
Hart Brg - Matthews Brg / Arlington River	32		
Matthews Brg - Reddie Pt	47	1	1
Trout River	8		
Reddie Pt - Blount Island	14		
Blount Island - ICW	14	1	
ICW North	4	2	
ICW South	16	8	1
ICW - Jetties	10		1
TOTAL	259	16	12

USCG / JSO 2015.

In 2016, six multi-agency deployments were held. A combined 244 hours of law enforcement presence was reported during the 6 deployment weekends. A total of 1 citations and 52 warnings were given.

Multi agency USCG / JSO 2016

FOCUS AREA	# of times in area	Citations	Warnings
Julington Creek	3	0	1
County Line - Buckman Brg	7	0	0
Buckman Brg - Fuller Warren Brg	16	0	0
Goodbys Creek	1	0	0
Ortega River	1	0	0
Fuller Warren Brg - Main Street Brg	27	0	8
Main Street Brg - Hart Brg	36	0	9
Hart Brg - Matthews Brg /Arlington River	34	0	6
Matthews Brg - Reddie Pt	42	1	12
Trout River	9	0	0
Reddie Pt - Blount Island	17	0	1
Blount Island - ICW	16	0	3
ICW North	12	0	5
ICW South	12	0	7
ICW - Jetties	11	0	0
TOTAL	244	1	52

USCG / JSO 2016.

In 2017, five multi-agency deployments were held. A combined 240 hours of law enforcement presence was reported during the 5 deployment weekends. A total of 3 citations and 112 warnings were given.

Multi agency USCG / JSO 2017

FOCUS AREA	# of times in area	Citations	Warnings
Julington Creek	9	0	4
County Line - Buckman Brg	10	0	0
Buckman Brg - Fuller Warren Brg	15	0	0
Goodbys Creek	6	0	0
Ortega River	2	0	2
Fuller Warren Brg - Main Street Brg	22	1	8
Main Street Brg - Hart Brg	33	0	66
Hart Brg - Matthews Brg /Arlington River	34	1	5
Matthews Brg - Reddie Pt	54	1	12
Trout River	9	0	0
Reddie Pt - Blount Island	16	0	2
Blount Island - ICW	15	0	0
ICW North	9	0	6
ICW South	8	0	4
ICW - Jetties	9	0	1
TOTAL	240	3	112

USCG / JSO 2017.

From 2015 to 2017, total hours on the water patrolling manatee zones have decreased from 259 to 240 (-7%); citations have decreased from 16 to 3 (-81%); however, warnings issued have increased from 12 to 112 (+89%). There was no report for 2018, 2019, and 2020.

EDUCATION SUMMARY

Manatee education for both students and adults continues to be an important objective of Duval County's Manatee Protection Program. Education and outreach includes the development and distribution of the Boating and Angling Guides, community manatee educational talks, participation in community festivals and other events, and transmitting information to the public via the PSA on local T.V. **The stations that have the video for their PSA rotation include WJXT4, Fox30, CBS47, and CW17. The PSA is aired when there is available space/time determined by the T.V. stations. All outreach programs in 2020 were reduced due to COVID.**

Florida Fish and Wildlife Commission - Public Outreach

A total of 5,739 people were involved in the FWC Community Outreach programs and events. The events ranged from virtual and in person School based education programs to Zoo, summer camps and festivals.

City of Jacksonville Parks Naturalist - Nature Walks and Talks

From October 2019-September 2020, a total of 125 people attended 206 hrs. of walk and talks discussions (n=54) by the Parks Department Naturalist.

Jacksonville University - Public Outreach

In 2020, 3,106 people (excluding digital media, TV, Radio and Times Union newspaper) attended JU manatee education talks for a variety of schools and community groups compared to 2019 (4,895), 2018 (3,389), and 2017/2016 (3,081 and 1,179, respectively).

In addition, 1,149 people attended the Aqua Jax Festival at MOSH. About 4,000 people attended the Jacksonville Science Festival (Jax Beach). Moreover, attendance at the Right Whale Festival was about 1,000 people (Jacksonville Beach or Fernandina Beach); Manatee Festival 5,700 (Jacksonville Zoological Gardens); and Rock the docks 450 (Jacksonville University's Marine Science Research Institute).

Public Service Announcement (PSA)

Clear Channel reported that The Manatee PSA was conducted as a digital PSA program. The program ran for April-June 2019 and has not run since. Clear Channel provided 23,174 eight-second digital spots:

<u>Impressions (# 8 sec. spots)</u>	<u>Value</u>
April: 92	\$ 3.68
May: 12,146	\$ 485.84
June: 10,936	\$ 437.44
<u>Total: 23,174</u>	<u>\$ 926.96</u>

2018: The message was displayed beginning in April, and through the boating season until September. The PSA was shown at 3 locations each month, and shared time with other not-for-profits. Following is a breakdown of "impressions" aired. Each impression is defined as the number of eight-second "spots".

<u>Impressions (# 8 sec. spots)</u>	<u>Value</u>
April: 11,095	\$ 475.50
May: 12,833	\$ 549.99
June: 7,002	\$ 300.09
July: 39,793	\$1,705.41
Aug: 8,660	\$ 371.14
Sept: 5,234	\$ 224.31
<u>Total: 84,617</u>	<u>\$3,626.44</u>

AWARENESS SUMMARY

- **Created PSA was not aired in 2020.**
- **JSO held Media Day to stress safe boating and to be aware of manatees in the area.**
- **Dr. White does a monthly newspaper column with FTU and has discussed manatees.**
- **Dr. Pinto conducted 3 manatee aerial surveys.**
- **From October 2019 to September 2020, 51 single family dock permits were issued in Duval County as compared to 25 in (2018/19), 82 in (2017/18), 71 in (2016/17), 65 (2015/16), 59 (2014/15) and 71 (2013/14) for the same months (SJRWMD 2020).**

A total of **three (3)** manatee sighting flights were conducted over the county to determine movement patterns of manatees, this including one State Synoptic Aerial Survey. The information is provided to stake holders including law enforcement (Federal, State and County). Stake holders included the Jacksonville Marine Transportation Exchange Network (JMTX), Jacksonville Port, P1 boat race that typically runs a race in June in the waters south of downtown, and the media (Florida Time Union, First Coast News and Others). In addition, local FWC Marine Mammal Recovery Unit personnel are notified about the latest manatee sightings report and map.

In 2019/2020, the number of manatee observations was lower than usual due to major storms/hurricanes developing from as far back as 2017 – having deleterious effects on the submerged vegetation food supply.

Just like in Lee County, Florida (**Semeyn, et al. 2011**) the manatee count and distribution information in the form of maps is disseminated to local, state and federal law enforcement, maritime industry groups, the port, and the media so that efforts can be focused on raising public awareness through education.

Table of Educational presentations by JU (2019-20).

Speaker	Date	Address	Time	Organization	POC	Number	Ages	Topic				
2019 OCTOBER												
Dr. Pinto	10/11/2019	Duval	9-1030	Grace Episcopal	Emily Flore_River Keeper	28	2	Manatees and St. Johns River				
Dr. White	10/11/2020	Duval	9:00 to 2:00	JEA Energy and Electric Vehicle Expo	JEA/Mayport NAS	200	All ages	Manatees and MSRI				
Dr.Pinto	10/17/2019	Duval	9-1030	Water Policy Working Group	River Keeper org	10		SJR/Manatees				
Dr.Pinto	10/21/2019	Duval	9435-1045	Scott Wilson City Council President	River Keeper org/Jimmy Orth, Lisa Rinaman, ar	3		River Report SJR/Manatees				
Dr. Pinto	10/24/2019	Duval	1000-1200	Elizabeth Ross Home School Group	MSRI, Emily Flore_River Keeper	5	4	Manatees, River Report, River, Ocean				
2019 NOVEMBER												
Dr. White/Dr.Pinto	11/1/2020	Nassau	1000-1400	Right Whale Festival	Sea to Shore/NOAA	800-1000	All ages	Manatee and marine conservation				
Dr.Pinto	11/13/2019	Duval	9-1030	Marine Science class at FWC office visit	Marine Science w Melinda Simmons	23	2	SJR/Manatees				
Dr.Pinto	11/21/2019	Duval	9-1030	Water Policy Working Group	River Keeper org	10		SJR/Manatees				
Dr.Pinto	11/25/2019	Duval	9-1030	Vanguard HS student project	By email	1		SJR/SAV/Manatees/Fish				
2019 DECEMBER												
Dr. Pinto	12/11/2019	Duval	5-7pm	SJRK Event 5-7pm MSRI	River Keeper org	40		Social advocacy				
2020 JANUARY												
Dr.Pinto	1/9/2020	Duval	9-1030	Water Policy Working Group	River Keeper org	8		SJR/Manatees				
Dr.Pinto	1/14/2020	Duval	1-2pm	East FL Endangered Species Index draft review marine	Lauren Szathnany	6	Adults/Professional	SJR/Manatees/Whales global.goto meeting				
2020 FEBRUARY												
Dr.Pinto	2/1/2020	Duval	08:30-4:30	Jax AquaFest MOSH	Elizabeth Valnoha	1,149	Various	Manatees/St. Johns River				
Dr. Pinto	2/1/2020	Duval	14:00-15:00	Jax AquaFest - Talk at MOSH	Elizabeth Valnoha	15	Various	Manatees in Duval Co.				
Dr. Pinto	2/7/2020	Duval	10:00-11	Sunshine Tour MSRI HS guidance councilors	Countney Penna	20	Adults	Manatees/SJR/Aquaculture				
Dr. Pinto/Dr. White	2/15/2020	Duval	09:00-14:00	Manatee Festival at Jax Zoo	ZOO JAX - Liam Major Gate attendance was 5,7	200+	All ages	Manatees in Duval Co.				
Dr. Pinto	2/29/2020	Duval	08:00-15:00	Jacksonville Science Festival - Jax Beach 2/29 FSCJ 3/5,	JSF Beaches attendance was 4,000+	100+	Various	Manatees in Duval Co.				
2020 MARCH												
Dr. White/Dr.Pinto	3/7/2020	Duval	8:30-4	Rock the docks at MSRI/boat talk	MSRI	450	Adults	SJR/Manatees/etc..				
Dr. Pinto	3/10/2020	Duval	11-12	Home School Group	Emily Flore River Keeper	13+4	Adults/Kinder. to 6th Grade	Manatees				
Dr. White/Dr.Pinto	3/28/2020	Duval	1-2pm	Boating compliance meeting/ COJ/FWC	MSRI	4	Adults	SJR/Manatees/BCStudy				
COVID SHUT DOWN												
COVID SHUT DOWN												
2020 APRIL												
2020 MAY												
Dr. Pinto	5/6/2020	Duval	9-10 AM	Water Policy Working Group Virtual Meeting	River Keeper Org	8	Adults	Manatees/St. Johns River				
2020 JUNE												
Dr. Pinto	6/12/2020	Duval	9-10 AM	Water Policy Working Group Virtual Meeting	River Keeper Org	8	Adults	Manatees/St. Johns River				
2020 JULY												
Dr. Pinto	7/9/2020	Duval	9-10 AM	Water Policy Working Group Virtual Meeting	River Keeper Org	8	Adults	Manatees/St. Johns River				
Dr. Pinto	7/22/2020	Duval	11 AM	Marine Science Camp online	MSRI U-Tube views	400+	High Schoolers / 8-18	Manatees/St. Johns River				
2020 AUGUST												
Dr. Pinto	8/13/2020	Duval	9-10 AM	Water Policy Working Group Virtual Meeting	River Keeper Org	8	Adults	Manatees/St. Johns River				
2020 SEPTEMBER												
Dr. Pinto	9/10/2020	Duval	9-10 AM	Water Policy Working Group Virtual Meeting	River Keeper Org	8	Adults	Manatees/St. Johns River				
2020 OCTOBER												
Dr. Pinto	10/8/2020	Duval	9-10 AM	Water Policy Working Group Virtual Meeting	River Keeper Org	8	Adults	Manatees/St. Johns River				
Dr. White	10/15/2020	Nassau	1200-2:00	Amelia Island Newcomers Club	Bruce Dureck	50=	Adults	Manatees and MSRI				
Dr.Pinto	10/22/2020	Duval	4-6 pm	River Report Release	WJCT EPB JU - ADAPT ONLINE SERIES	95	Adults 166 rsvps/replays 22	Manatees/St. Johns River				
Dr.White	10/22/2020	Duval	7-9 pm	River Report Panel Discussion	WJCT EPB JU - ADAPT ONLINE SERIES	124	Adults 253 rsvps/replays 21	Manatees/St. Johns River				
Dr.Pinto	10/23/2020	Duval		SJR REPORT	Steve Patterson TU article	100-150,000+	Various	Manatees/wetlands/pollutants				
Dr. Pinto	10/29/2020	Duval	1pm	Interview online - manatee program/flights	Ashley Roy -Sterling Flight Training-facebook	100+	Various	Manatees/St. Johns River				