Sarasota County

June 27, 2025

Michelle Bull
Environmental Administrator
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Subject: Sarasota County Municipal Separate Storm Sewer System (MS4) NPDES Permit No. FLS000004-005 Annual Report

Dear Mrs. Bull,

Enclosed is Sarasota County's 2024 NPDES MS4 Cycle 5 Year 6 Annual Report. This report covers the period from January 1 to December 31, 2024.

Sarasota County is a Co-Permittee with the City of Sarasota, Town of Longboat Key, City of North Port, City of Venice, and the Florida Department of Transportation District I. Please note all Co-Permittees will be submitting separate annual reports.

If you have any questions, please do not hesitate to contact me at (941)396-0915 or rjanneman@scgov.net.

Sincerely,

Rene A. Janneman

Rene A. Janneman
Environmental Specialist III

Enclosures: Sarasota County's 2024 NPDES MS4 C5 Year 6 Annual Report

Cc: Spencer L. Anderson, Director, Public Works
Paul Semenec, Senior Manager, Public Works
John Morgan, Manager III, Public Works

Annual Report Form
For Individual NPDES Permits For
Municipal Separate Storm Sewer Systems
(RULE 62-624.600(2), F.A.C.)

- This Annual Report Form must be completed and submitted to the Department to satisfy the annual reporting requirements established in Rule 62-624.600, F.A.C.
- Submit this fully completed and signed form and any REQUIRED attachments by email to the NPDES Stormwater Program Administrator or to the MS4 coordinator (https://floridadep.gov/water/stormwater/content/npdes-stormwater-permitting-program-contacts). Files larger than 10MB may be placed on the FTP site at: ftp://ftp.dep.state.fl.us/pub/NPDES_Stormwater/. After uploading files, email the MS4 coordinator or NPDES Program Administrator to notify them the report is ready for downloading; or by mail to the address in the box at right.
- Refer to the Form Instructions for guidance on completing each section.
- **Please print or type information in the appropriate areas below.**

Submit the form and attachments to:
Florida Department of Environmental Protection
Mail Station 3585
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

SECTION I. BACKGROUND INFORMATION			
A.	Permittee Name: Sarasota County		
B.	Permit Name: Sarasota County MS4		
C.	Permit Number: FLS000004-005		
D.	Annual Report Year: ☐ Year 1 ☐ Year 2 ☐ Year 3 ☐ Year 4 ☐ Year 5 ☒ Other, specify Year: 6		
E.	Reporting Time Period (month/year): 1/ 2024 through 12 / 2024		
F.	Name of the Responsible Authority: Spencer L. Anderson		
	Title: Director, Public Works		
	Mailing Address: 1001 Sarasota Center Blvd.		
	City: Sarasota	Zip Code: 34240	County: Sarasota
	Telephone Number: (941)415-4329	Fax Number: N/A	
	E-mail Address: sanderso@scgov.net		
G.	Name of the Designated Stormwater Management Program Contact (if different from Section I.F above): Rene A. Janneman		
	Title: Environmental Specialist III		
	Department: Public Works Stormwater		
	Mailing Address: 1001 Sarasota Center Blvd		
	City: Sarasota	Zip Code: 34234	County: Sarasota
	Telephone Number: (941)396-0915	Fax Number: N/A	
	E-mail Address: rjanneman@scgov.net		

SECTION II. MS4 MAJOR OUTFALL INVENTORY (Not Applicable In Year 1)	
A.	Number of outfalls ADDED to the outfall inventory in the current reporting year (insert "0" if none): 0 (Does this number include non-major outfalls? ☐ Yes ☐ No ☒ Not Applicable)
B.	Number of outfalls REMOVED from the outfall inventory in the current reporting year (insert "0" if none): 0 (Does this number include non-major outfalls? ☐ Yes ☐ No ☒ Not Applicable)
C.	Is the change in the total number of outfalls due to lands annexed or vacated? ☐ Yes ☐ No ☒ Not Applicable

SECTION III. PART V.B. ASSESSMENT PROGRAM	
A.	Provide a brief statement as to the status of water quality monitoring plan implementation. Status may include sampling frequency changes, monitoring location changes, or sampling waiver conditions. *DEP Note: If permittee participates in a collaborative monitoring plan, permittee may refer to a joint response as defined by the interlocal agreement.* Name and date of the approved plan: Sarasota County NPDES MS4 Assessment Program, December 2019. Approved by FDEP on January 24, 2020. Status: 1. **Ambient Water Quality of Bays** https://sarasota.wateratlas.usf.edu/bay-conditions/ https://sarasota.wateratlas.usf.edu/trends-and-hotspots/ 2. **Ambient Water Quality of Watersheds** https://sarasota.wateratlas.usf.edu/creek-conditions/ https://sarasota.wateratlas.usf.edu/trends-and-hotspots/ 3. **Biological Monitoring – Oysters** http://www.sarasota.wateratlas.usf.edu/oysters/ 4. **Biological Monitoring – Seagrass** http://www.sarasota.wateratlas.usf.edu/seagrass/#sarasota-seagrass 5. **Biological Monitoring – Scallops** https://sarasota.wateratlas.usf.edu/scallops/#sarasota-scallops 6. **Rainfall** http://www.sarasota.wateratlas.usf.edu/rainfall/ http://www.sarasota.wateratlas.usf.edu/datamapper/

B.

Provide a brief discussion of the assessment program (monitoring and loading) results to date which includes a summary of the water quality monitoring data and / or stormwater pollutant loading changes from the reporting year.
DEP Note: Results must be specific to the permittee's SWMP.

1. **Ambient Water Quality of Bays:** In 2024 all but two bays achieved a Pass rating. This is a slight decline from 2023 when all six bays passed. Sarasota Bay, Roberts Bay, Little Sarasota Bay and Blackburn Bay remain in good standing, all receiving Pass ratings for 2024. Dona/Roberts Bay and Upper Lemon Bay have shifted from the Pass to the Caution category for 2024.

2. **Ambient Water Quality of Watersheds:** In 2024 Sarasota County recorded both water quality improvements and challenges in several watersheds relative to water quality data reported in 2023. The number of creeks receiving a passing score decreased to 5 in 2024 from 8 in 2023. Phillippi Creek dissolved oxygen improved to a pass score in 2024 while Hudson Bayou and Curry Creek declined to a caution score in 2024 due to a decrease in dissolved oxygen. Gottfried Creek remains in the caution category due to low dissolved oxygen; however, chlorophyll-a and total nitrogen received a pass score. Total phosphorus improved from 2022-2023, declining again in 2024, shifting total phosphorus back to a rating of Caution.

3. **Biological Monitoring – Oysters:** The results of Oyster monitoring conducted in 2024 showed that the percent of live oysters decreased at most monitoring sites. This decrease is most likely due to above-average rainfall during the 2024 wet season. Out of the twenty-five monitored stations, the percentage of live oysters decreased at twenty two sites and increased at three sites.

4. **Biological Monitoring – Seagrass:** In 2024, the 5-year trend for Sarasota County seagrass monitoring showed an overall positive trend in all bays with Roberts Bay exhibiting the most positive trends with an increase in Thalassia and Halodule blade lengths and decrease in Caulerpa abundance. Little Sarasota Bay and Lemon Bay each showed two positive trends, reduced drift algae and Caulerpa abundance and an increase in seagrass density and Halodule blade lengths, respectively, with no negative trends observed. Sarasota Bay, Blackburn Bay, and Dona/ Roberts Bay ranked the lowest in overall assessed seagrass health but still had positive scores indicating these bays are exhibiting seagrass health improvements. Seagrass Mapping by SWFWMD of Sarasota County bays showed a significant gain of 17% in seagrass acreage from 2022 to 2024. Sarasota Bay, Little Sarasota Bay, Blackburn Bay, Dona/Roberts Bay had increases in seagrass acreages and Roberts Bay and Lemon Bay showed negligible changes in seagrass acreage. Sarasota County remains above target for seagrass coverage.

5. **Biological Monitoring – Scallops:** In 2024, there was a county-wide total of 62 spat landings. This is only 13% as many spat as were counted in 2023 (62 vs. 471). Peak spat landings occurred in May, which is typical, although timing can vary; in 2010 the peak occurred in February. The bulk of the spat landings, 34 was collected in May, with a combined 48 collections in April and May. Landings were nearly nonexistent for the remainder of the year. This decrease in spat landings coincides with the increased freshwater contribution to the bays in late 2024, which was overall a wet year with more than 10 inches above the average annual rainfall.

6. **Rainfall Monitoring:** In 2024 the County received 63 inches of rainfall. This was more than the 2014-2023 long term average of 53.8 inches of precipitation and more than the period of record average of 52.8 inches. The 2024 rainfall was 19% more than the period of record average of 52.8 inches and was a 44% increase from the rainfall totals in 2023 of 35.68 inches. A large contribution to the 2024 rainfall was numerous storms: Invest 90 in June, Hurricane Debby in August, Hurricane Helene in September and Hurricane Milton in October.

C.

Attach a monitoring data summary as required by the permit. An analysis of the data discussing changes in water quality and/or stormwater pollutant loading from previous reporting years.
DEP Note: Analysis must be specific to the permittee's SWMP.

See Appendix A: Monitoring Data Summary

SECTION IV. FISCAL ANALYSIS	
A.	Total expenditures for the NPDES stormwater management program for the current reporting year: $22,831,852
B.	Total budget for the NPDES stormwater management program for the subsequent reporting year: $34,984,389
C.	Did the current reporting year resources decrease from the previous year? Y☐ / N☒ If program resources decreased, provide a discussion of the impact on the implementation of the SWMP. Previous totals included the operating & capital budgets of both Stormwater and Utilities Departments. This report and future reports will only include Stormwater operating & capital budget information.

SECTION V. MATERIALS TO BE SUBMITTED WITH THIS ANNUAL REPORT FORM

Only the following materials are to be submitted to the Department along with this fully completed and signed Annual Report Form (check the appropriate box to indicate whether the item is attached or is not applicable):

Attached	N/A	Required Attachments	Permit Citation	Attachment Number/Title
☐	☒	Any additional information required to be submitted in this current annual reporting year in accordance with Part III.A of your permit that is not otherwise included in Section VII below.	Part III.A	
☐	☒	An explanation of why the minimum inspection frequency in Table II.A.1.a. was not met, if applicable.	Part II.A.1	
☐	☒	A list of the flood control projects that did not include stormwater treatment and an explanation for each of why it did not (if applicable).	Part III.A.4	
☒	☐	A monitoring data summary as directed in Section III.C above and in accordance with Rule 62-624.600(2)(c), F.A.C.	Part V.B.3	Appendix A Monitoring Data Summary
☐	☒	YEAR 1 ONLY: An inventory of all known major outfalls and a map depicting the location of the major outfalls (hard copy or CD-ROM) in accordance with Rule 62-624.600(2)(a), F.A.C.	Part III.A.1	
☐	☒	YEAR 2: A summary review of codes and regulations to reduce the stormwater impact from development.	Part III.A.2	
☐	☒	YEAR 2: A copy of the adopted Florida-Friendly Fertilizer ordinance (if applicable).	Part III.A.6	
☐	☒	Year 3 ONLY: The estimates of pollutant loadings and event mean concentrations for each major outfall or each major watershed in accordance with Rule 62-624.600(2)(b), F.A.C.	Part V.A	
☒	☐	YEAR 3(Yr 6): Summary of TMDL Monitoring Results (if applicable).	Part VIII.B.2	See Appendix B TMDL Summary
☐	☒	YEAR 3: Bacteria Pollution Control Plan (if applicable).	Part VIII.B.3	
☐	☒	YEAR 4: A follow-up report on plan implementation of changes to codes and regulations to reduce the stormwater impact from development.	Part III.A.2	
☐	☒	YEAR 4: A report on any amendments to the applicable legal authority (if applicable).	Part III.A.7.a	
☐	☒	YEAR 4: Permit re-application information in accordance with Rule 62-624.420(2), F.A.C. • The assessment program (with revisions, if applicable). • If the total annual pollutant loadings have not decreased over the past two permit cycles, revisions to the SWMP, as appropriate.	Part V.B.3 Part V.A.3	
☐	☒	YEAR 4: TMDL Supplemental SWMP (if applicable).	Part VIII.B.3	

DO NOT SUBMIT ANY OTHER MATERIALS
(such as records and logs of activities, monitoring raw data, public outreach materials, etc.)

SECTION VI. CERTIFICATION STATEMENT AND SIGNATURE

The Responsible Authority listed in Section I.F above must sign the following certification statement, as per Rule 62-620.305, F.A.C:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based upon my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name of Responsible Authority (type or print): Spencer L. Anderson

Title: Director, Public Works

Signature: Spencer L. Anderson Digitally signed by Spencer L. Anderson Date: 2025.06.26 09:13:41 -04'00' Date: / /

SECTION VII.	STORMWATER MANAGEMENT PROGRAM (SWMP) SUMMARY TABLE								
A.	B.						C.	D.	E.	F.
Permit Citation/ SWMP Element	Permit Requirement/Quantifiable SWMP Activity						Number of Activities Performed	Documentation / Record	Entity Performing the Activity	Comments
Part III.A.1	Structural Controls and Stormwater Collection Systems Operation									
	Report the current known inventory. Report the number of inspection and maintenance activities conducted for each applicable type of structure included in Table II.A.1.a, and the percentage of the total inventory of each type of structure inspected and maintained. *Note: Delete structures that are not in your MS4's inventory. The permittee may choose its own unit of measurement (miles, linear feet, acres, etc) for each structural control to be consistent with the unit of measurement in the documentation.*									
	Type of Structure	**Number of Structures**	**Number of Inspections**	**Percent Inspected**	**Number of Maintenance Activities**	**Percent Maintained**				
	Dry retention systems	1	24	100	8	100		MAXIMO Database & Cartegraph	Public Works Stormwater Travis McCanna	
	Grass treatment swales (miles)	750	309	41.2	43.2	5.76		MAXIMO Database & Cartegraph	Public Works Stormwater Travis McCanna	
	Dry detention systems	2	23	100	3	100		MAXIMO Database & Cartegraph	Public Works Stormwater Travis McCanna	
	Wet detention systems	275	6340	100	578	100		MAXIMO Database & Cartegraph	Public Works Stormwater Travis McCanna	
	Pollution control boxes	22	97	100	7	31.8		MAXIMO Database & Cartegraph	Public Works Stormwater Travis McCanna	
	Pump stations	4	48	100	0	0		MAXIMO Database & Cartegraph	Public Works Stormwater Travis McCanna	
	Major outfalls	51	51	100	10	19.6		MAXIMO Database & Cartegraph	Public Works Stormwater Travis McCanna	
	Weirs or other control structures	45	80	100	6	13.3		MAXIMO Database & Cartegraph	Public Works Stormwater Travis McCanna	
	Pipes / culverts (miles)	359.8	56.8	15.7	68	18.9		MAXIMO Database & Cartegraph	Public Works Stormwater Travis McCanna	

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	Canals	959	172	17.9	851	88.7	MAXIMO Database & Cartegraph	Public Works Stormwater Travis McCanna	
	Inlets / catch basins / grates	17027	2859	16.7	1164	6.8	MAXIMO Database & Cartegraph	Public Works Stormwater Travis McCanna	
	Ditches / conveyance swales (miles)	192.6	103	53.6	103	53.68	MAXIMO Database & Cartegraph	Public Works Stormwater Travis McCanna	
	If the minimum inspection frequencies set forth in Table II.A.1.a. were not met, provide an explanation of why they were not and a description of the actions that will be taken to ensure that they will be met.	☐ N/A							

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Permit Citation/ SWMP Element	**Permit Requirement/Quantifiable SWMP Activity**	**Number of Activities Performed**	**Documentation / Record**	**Entity Performing the Activity**	**Comments**
Part III.A.1 Summary	Provide an evaluation of the Stormwater Management Program according to Part VI.B.2 of the permit.				
	Strengths: Exceeded minimum inspection requirements.				
	Limitations: Continual GIS data collection which increases/decreases our inspection requirement.				
	SWMP revisions implemented to address limitations: N/A				
Part III.A.2	**Areas of New Development and Significant Redevelopment**				
	Report the number of significant development projects, including new and redevelopment, reviewed and approved by the permittee for post-development stormwater considerations.				
	Number of significant development projects reviewed	2	Accela 23 111441 00 DS LDS-DEVSUB-24-000037	Public Works Stormwater Robert Laura	
	Number of significant development projects approved	1	Accela 23 111441 00 DS	Public Works Stormwater Robert Laura	
	Provide in the Year 2 Annual Report the summary report of the review activity. Provide in the Year 4 Annual Report the follow-up report on plan implementation.				
	Year 2 ONLY: Attach the summary report of the review activity	☐	N/A		
	Year 4 ONLY: Attach the follow-up report on plan implementation	☐	N/A		
Part III.A.2 Summary	Provide an evaluation of the Stormwater Management Program according to Part VI.B.2 of the permit.				
	Strengths: The Sarasota County stormwater management program exceeds the minimum requirements of the National Flood Insurance Program (NFIP) which allows the county to have a Class 5 Rating on the Federal Emergency Management Agency (FEMA) Community Rating System (CRS) that gives up to a 25% discount on flood insurance premiums in the county.				
	Limitations: Strict stormwater regulations can be challenging for developers.				
	SWMP revisions implemented to address limitations: County staff has a policy to work with developers and help with the process and follow the County Planning and Land Development Guiding Principles for Reviews.				
Part III.A.3	**Roadways**				
	Report on the litter control program, including the frequency of litter collection, an estimate of the total number of road miles cleaned or amount of area covered by the activities, and an estimate of the quantity of litter collected. *Note: If the permittee does not contract activities, delete CONTRACTOR activities.*				
	PERMITTEE Litter Control: Frequency of litter collection	Monthly	https://sarasotacounty.sharepoint.com/PW/Trans/SitePages/Field%20Services.aspx	Public Works BAO Hannah Brechue	

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Permit Citation/ SWMP Element	**Permit Requirement/Quantifiable SWMP Activity**	**Number of Activities Performed**	**Documentation / Record**	**Entity Performing the Activity**	**Comments**
	PERMITTEE Litter Control: Estimated amount of area maintained (lf)	2730	Arc GIS	Public Works BAO Hannah Brechue	
	PERMITTEE Litter Control: Estimated amount of litter collected (cy)	720	https://sarasotacounty.sharepoint.com/PW/Trans/SitePages/Field%20Services.aspx	Public Works BAO Hannah Brechue	
	CONTRACTOR Litter Control: Frequency of litter collection	Bio Swales 2x per month Lakes and ponds as needed Natural areas bi-monthly	Cartegraph Database	Public Works O&M Jay Thinnes	
	CONTRACTOR Litter Control: Estimated amount of area maintained (ac)	Bio Swales 150 Lakes and Ponds 305	Cartegraph Database	Public Works O&M Jay Thinnes	Areas maintained are measured in acres
	CONTRACTOR Litter Control: Estimated amount of litter collected (cy)	10587	Cartegraph Database	Public Works O&M Jay Thinnes	Combination of all areas
	OPTIONAL: If an Adopt-A-Road or similar volunteer program is implemented, report the total number of road miles cleaned and an estimate of the quantity of litter collected. If you do not participate in an Adopt-A-Road program, report "0".				
	Trash Pick-up Events: Total miles cleaned	31	K:\KSCB\NPDES\2024	Keep Sarasota County Beautiful Hunter Jensen	
	Trash Pick-up Events: Estimated amount of litter collected (lbs)	3784.38	K:\KSCB\NPDES\2024	Keep Sarasota County Beautiful Hunter Jensen	
	Adopt-A-Road: Total miles cleaned	52	K:\KSCB\NPDES\2024	Keep Sarasota County Beautiful Hunter Jensen	
	Adopt-A-Road: Estimated amount of litter collected (lbs)	6772.5	K:\KSCB\NPDES\2024	Keep Sarasota County Beautiful Hunter Jensen	
	Report on the street sweeping program, including the frequency of the sweeping, total miles swept, an estimate of the quantity of sweepings collected, and the total nitrogen and total phosphorus loadings that were removed by the collection of sweepings. If no street sweeping program is implemented, provide the explanation of why not in column F.				
	Frequency of street sweeping	Connector-Monthly Residential-90 day	GPS Data	Public Works BAO Hannah Brechue	

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	Total miles swept	2142.52	GPS Data	Public Works BAO Hannah Brechue	
	Estimated quantity of sweeping material collected (cy)	688.9	https://sarasotacounty.sharepoint.com/PW/Trans/SitePages/Field%20Services.aspx	Public Works BAO Hannah Brechue	
	Total phosphorous loadings removed (pounds)	524	\\bccshare.bcc.scgov.local\shared\EnvSBC\WaterCore\Watershed Planning\NPDES\Annual Reports\2024 Annual Report	Public Works Stormwater Rene Janneman	FSA MS4 Load Reduction Tool
	Total nitrogen loadings removed (pounds)	963	\\bccshare.bcc.scgov.local\shared\EnvSBC\WaterCore\Watershed Planning\NPDES\Annual Reports\2024 Annual Report	Public Works Stormwater Rene Janneman	FSA MS4 Load Reduction Tool
	Report the equipment yards and maintenances shops that support road maintenance activities, and the number of inspections conducted for each facility.				
	Name of Facility	**Number of Inspections**			
	South County Fleet	1	I:\PDSBC\EPD\Air and Water Quality\Water Quality\2024 Water Quality Dashboard.xlsx	Air & Water Quality Brooke Weston	
	North County Fleet	1	I:\PDSBC\EPD\Air and Water Quality\Water Quality\2024 Water Quality Dashboard.xlsx	Air & Water Quality Brooke Weston	

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Permit Citation/ SWMP Element	**Permit Requirement/Quantifiable SWMP Activity**	**Number of Activities Performed**	**Documentation / Record**	**Entity Performing the Activity**	**Comments**
	Public Works Field Operations	0	I:\PDSBC\EPD\ Air and Water Quality\Water Quality\2024 Water Quality Dashboard.xlsx	Air & Water Quality Brooke Weston	

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Permit Citation/ SWMP Element	**Permit Requirement/Quantifiable SWMP Activity**	**Number of Activities Performed**	**Documentation / Record**	**Entity Performing the Activity**	**Comments**
Part III.A.3 Summary	Provide an evaluation of the Stormwater Management Program according to Part VI.B.2 of the permit.				
	Strengths: KSCB**:** Keep Sarasota County Beautiful is an established program (@ 35 years) with dedicated volunteers. AWQ: Small number of facilities.				
	Limitations: KSCB: Perceived safety for volunteers along the roadways with increased traffic and speed of vehicles. AWQ: None				
	SWMP revisions implemented to address limitations: KSCB: Continue to encourage participation in off-peak travel times. AWQ: None at this time.				
Part III.A.4	**Flood Control Projects**				
	Report the total number of flood control projects that were constructed by the permittee during the reporting period and the number of those projects that did NOT include stormwater treatment. Provide a list of the projects where stormwater treatment was not included with an explanation for each of why it was not. Report on any stormwater retrofit planning activities and the associated implementation of retrofitting projects to reduce stormwater pollutant loads from existing drainage systems that do not have treatment BMPs.				
	Flood control projects completed during the reporting period	0	https://app.smartsheet.com/sheets/WRHgjMQgqG5Hhmf74H4CMgMFXvrpGPH768VW81?view=grid	Capital Projects Dara Walker	
	Flood control projects completed that did not include stormwater treatment	0	https://app.smartsheet.com/sheets/WRHgjMQgqG5Hhmf74H4CMgMFXvrpGPH768VW81?view=grid	Capital Projects Dara Walker	
	Stormwater retrofit projects planned/under construction	1	https://app.smartsheet.com/sheets/WRHgjMQgqG5Hhmf74H4CMgMFXvrpGPH768VW81?view=grid	Capital Projects Dara Walker	Englewood Coastal Stormwater Improvements
	Stormwater retrofit projects completed	0	https://app.smartsheet.com/sheets/WRHgjMQgqG5Hhmf74H4CMgMFXvrpGPH768VW81?view=grid	Capital Projects Dara Walker	
	If there were projects that did not include stormwater treatment, provide as an attachment a list of the projects and an explanation for each of why it did not.	☐	N/A		
Part III.A.4	Provide an evaluation of the Stormwater Management Program according to Part VI.B.2 of the permit.				

SECTION VII. STORMWATER MANAGEMENT PROGRAM (SWMP) SUMMARY TABLE					
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Permit Citation/ SWMP Element	**Permit Requirement/Quantifiable SWMP Activity**	**Number of Activities Performed**	**Documentation / Record**	**Entity Performing the Activity**	**Comments**
Summary	**Strengths:** Sarasota County continues with inspections, cleaning and repairing of pipes, culverts and major issues that may impede water flow.				
	Limitations: Low staffing numbers and turnover could present a limitation to operation work.				
	SWMP revisions implemented to address limitations: No deficiencies noted.				
Part III.A.5	**Municipal Waste Treatment, Storage, and Disposal Facilities Not Covered by an NPDES Stormwater Permit**				
	Report the applicable TSD facilities and the number of the inspections conducted for each facility.				
	Name of Facility	**Number of Inspections**			
	Chemical Collection Center North	0	I:\PDSBC\EPD\ Air and Water Quality\Water Quality\2024 Water Quality Dashboard.xlsx	Air & Water Quality John Morgan	Unable to locate documentation due to staff turnover.
	Chemical Collection Center Central Solid Waste Complex	0	I:\PDSBC\EPD\ Air and Water Quality\Water Quality\2024 Water Quality Dashboard.xlsx	Air & Water Quality John Morgan	Unable to locate documentation due to staff turnover.
	Chemical Collection Center South	0	I:\PDSBC\EPD\ Air and Water Quality\Water Quality\2024 Water Quality Dashboard.xlsx	Air & Water Quality John Morgan	Unable to locate documentation due to staff turnover.
Part III.A.5 Summary	Provide an evaluation of the Stormwater Management Program according to Part VI.B.2 of the permit.				
	Strengths: Limited facilities				
	Limitations: Resource availability				
	SWMP revisions implemented to address limitations: Cross train other staff to support NPDES role.				
Part III.A.6	**Pesticides, Herbicides, and Fertilizer Application**				
	Report the number of permittee personnel applicators and contracted commercial applicators of pesticides and herbicides who are FDACS certified / licensed.				
	PERSONNEL: FDACS public applicators of pesticides/herbicides	48	FDACS Database	UF IFAS Extension Jackie Lebouitz	
	CONTRACTORS: FDACS commercial applicators of pesticides/ herbicides	71	FDACS Database	UF IFAS Extension Jackie Lebouitz	

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	Report the number of permittee personnel who have been trained through the Green Industry BMP Program and the number of contracted commercial applicators of fertilizer who are FDACS certified / licensed.				
	PERSONNEL: Green Industry BMP Program training completed	19	UF IFAS Attendance Records	UF IFAS Extension Jackie Lebouitz	
	CONTRACTORS: FDACS certified / licensed applicators of fertilizer	102	FDACS Database	UF IFAS Extension Jackie Lebouitz	
	Provide a copy of the adopted ordinance with the Year 2 Annual Report. If this provision is not applicable because the permittee is not within the watershed of a nutrient-impaired water body, indicate that in Column F.				
	Year 2 ONLY: Attach copy of adopted Florida-friendly fertilizer ordinance	☐	N/A		
	Report on the public education and outreach activities that are performed or sponsored by the permittee within the permittee's jurisdiction to encourage citizens to reduce their use of pesticides, herbicides and fertilizers including the type and number of activities conducted, the type and number of materials distributed, and the number of Web site visits (if applicable). *DEP Note: Indicate under Column E "Entity Performing the Activity" if FYN or IFAS is performing any of the reported public education and outreach activities. In addition, please complete the following line:* **FYN PROGRAM FUNDING: Permittee provides funding? ☒ Yes ☐ No Amount of Funding: = $ 277,218.64 J.Andrickson**				
	Brochures/Flyers/Fact sheets distributed	8798	I:\HHSBC\Mosquito_shared\Clear Point Data Collection\ Outreach I:\EnvSBC\ WaterCore\ Planning & Regulatory\ENVIRONMENTAL\ WATER QUALITY PLANNING\Outreach\NPDES I:\PDSBC\EPD\ Air and Water Quality\Water Quality\2024 Water Quality Dashboard.xlsx	Mosquito Management Wade Brennan Carly Dufficy Public Works Stormwater Kayla Quinn Air & Water Quality John Morgan	MMS: 2500 MMS/FYN: 1436 PWS/NEST: 4456 AWQ: 406 Estimated based on attendees at presentations, events, schools.

SECTION VII. STORMWATER MANAGEMENT PROGRAM (SWMP) SUMMARY TABLE					
A.	**B.**	**C.**	**D.**	**E.**	**F.**
Permit Citation/ SWMP Element	**Permit Requirement/Quantifiable SWMP Activity**	**Number of Activities Performed**	**Documentation / Record**	**Entity Performing the Activity**	**Comments**
	Neighborhood presentations: Number conducted	55	I:\HHSBC\Mosquito_shared\Clear Point Data Collection\ Outreach I:\EnvSBC\ WaterCore \Watershed Planning\NEST\ NPDES Info\2024 Folder I:\PDSBC\EPD\ Air and Water Quality\Water Quality\2024 Water Quality Dashboard.xlsx	Mosquito Management Wade Brennan Carly Dufficy Public Works NEST Mollie Holland Air & Water Quality John Morgan	MMS: 42 MMS/FYN: 5 NEST: 7 AWQ: 1
	Neighborhood presentations: Number of participants	1518	I:\HHSBC\Mosquito_shared\Clear Point Data Collection\ Outreach I:\EnvSBC\ WaterCore \Watershed Planning\NEST\ NPDES Info\2024 Folder I:\PDSBC\EPD\ Air and Water Quality\Water Quality\2024 Water Quality Dashboard.xlsx	Mosquito Management Wade Brennan Carly Dufficy Public Works NEST Mollie Holland Air & Water Quality John Morgan	MMS: 940 MMS/FYN: 440 NEST: 118 AWQ: 20

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Permit Citation/ SWMP Element	**Permit Requirement/Quantifiable SWMP Activity**	**Number of Activities Performed**	**Documentation / Record**	**Entity Performing the Activity**	**Comments**
	Newspapers & newsletters: Number of articles/notices published	10	D:\NPDES\ 2024 I:\PDSBC\EPD\ Air and Water Quality\Water Quality\2024 Water Quality Dashboard.xlsx	Mosquito Management Wade Brennan Air & Water Quality John Morgan	MMS: 8 AWQ: 2 MMS: Buzzwords, Epigram
	Newsletters: Number of newsletters distributed	3	I:\HHSBC\Mosquito_shared\Clear Point Data Collection\ Outreach I:\PDSBC\EPD\ Air and Water Quality\Water Quality\2024 Water Quality Dashboard.xlsx	County Mosquito Management Wade Brennan Air & Water Quality John Morgan	MMS: 1 AWQ: 2
	Public displays (e.g., kiosks, storyboards, posters, etc.)	3	I:\EnvSBC\ WaterCore\ Planning & Regulatory\ENVIRONMENTAL\ WATER QUALITY PLANNING\Outreach\NPDES Outreach\2024	Public Works Stormwater Kayla Quinn	

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Permit Citation/ SWMP Element	**Permit Requirement/Quantifiable SWMP Activity**	**Number of Activities Performed**	**Documentation / Record**	**Entity Performing the Activity**	**Comments**
	Radio or television Public Service Announcements (PSAs)	16	I:\HHSBC\Mosquito_shared\Clear Point Data Collection\ Outreach I:\EnvSBC\ WaterCore\ Planning & Regulatory\ENVIRONMENTAL\ WATER QUALITY PLANNING\Outreach\NPDES Outreach\2024	Mosquito Management Wade Brennan Carly Dufficy Public Works Stormwater Kayla Quinn	MMS: 3 MMS/FYN: 2 PWS: 11 MMS: Hurricane Response, Media Day, NPR
	School presentations: Number conducted	9	I:\HHSBC\Mosquito_shared\Clear Point Data Collection\ Outreach I:\EnvSBC\ WaterCore\ Watershed Planning\NEST\ NPDES Info\2024 Folder	Mosquito Management Wade Brennan Public Works NEST Mollie Holland	MMS: 7 NEST: 2 MMS: LNS and Early Learning Academy
	School presentations: Number of participants	276	I:\HHSBC\Mosquito_shared\Clear Point Data Collection\ Outreach I:\EnvSBC\ WaterCore\ Watershed Planning\NEST\ NPDES Info\2024 Folder	County Mosquito Management Wade Brennan Public Works NEST Mollie Holland	MMS: 235 NEST: 41

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Permit Citation/ SWMP Element	**Permit Requirement/Quantifiable SWMP Activity**	**Number of Activities Performed**	**Documentation / Record**	**Entity Performing the Activity**	**Comments**
	Seminars/Workshops: Number conducted	6	I:\EnvSBC\ WaterCore\ Watershed Planning\NEST\ NPDES Info\2024 Folder I:\PDSBC\EPD\ Air and Water Quality\Water Quality\2024 Water Quality Dashboard.xlsx	Public Works NEST Mollie Holland Air & Water Quality John Morgan	NEST: 1 AWQ: 5
	Seminars/Workshops: Number of participants	191	I:\EnvSBC\ WaterCore\ Watershed Planning\NEST\ NPDES Info\2024 Folder I:\PDSBC\EPD\ Air and Water Quality\Water Quality\2024 Water Quality Dashboard.xlsx	Public Works NEST Mollie Holland Air & Water Quality John Morgan	NEST: 46 AWQ: 145

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Permit Citation/ SWMP Element	**Permit Requirement/Quantifiable SWMP Activity**	**Number of Activities Performed**	**Documentation / Record**	**Entity Performing the Activity**	**Comments**
	Special events: Number conducted	73	I:\HHSBC\Mosquito_shared\Clear Point Data Collection\ Outreach I:\EnvSBC\ WaterCore\ Planning & Regulatory\ENVIRONMENTAL\ WATER QUALITY PLANNING\Outreach\NPDES Outreach\2024 I:\PDSBC\EPD\ Air and Water Quality\Water Quality\2024 Water Quality Dashboard.xlsx	Mosquito Management Wade Brennan Carly Dufficy Public Works Stormwater Kayla Quinn Air & Water Quality John Morgan	MMS: 33 MMS/FYN: 29 PWS/NEST: 9 AWQ: 2

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Permit Citation/ SWMP Element	**Permit Requirement/Quantifiable SWMP Activity**	**Number of Activities Performed**	**Documentation / Record**	**Entity Performing the Activity**	**Comments**
	Special events: Number of participants	25805	I:\HHSBC\Mosquito_shared\Clear Point Data Collection\ Outreach I:\EnvSBC\ WaterCore\ Planning & Regulatory\ENVIRONMENTAL\ WATER QUALITY PLANNING\Outreach\NPDES Outreach\2024 I:\PDSBC\EPD\ Air and Water Quality\Water Quality\2024 Water Quality Dashboard.xlsx	Mosquito Management Wade Brennan Carly Dufficy Public Works Stormwater Kayla Quinn Air & Water Quality John Morgan	MMS: 4243 MMS/FYN: 5866 PWS/NEST: 5696 AWQ: 10000

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Permit Citation/ SWMP Element	**Permit Requirement/Quantifiable SWMP Activity**	**Number of Activities Performed**	**Documentation / Record**	**Entity Performing the Activity**	**Comments**
	Number of visitors to stormwater-related pages	139267	I:\HHSBC\Mosquito_shared\Outreach\NPDES\2024\Re_ Website Hits Request.pdf I:\EnvSBC\ WaterCore\ Planning & Regulatory\ENVIRONMENTAL\ WATER QUALITY PLANNING\Outreach\NPDES Outreach\2024 I:\PDSBC\EPD\ Air and Water Quality\Water Quality\2024 Water Quality Dashboard.xlsx	Mosquito Management Wade Brennan Public Works Stormwater Kayla Quinn Air & Water Quality John Morgan	MMS: 15414 PWS: 118558 AWQ: 5295 MMS: Per Communi-cations PWS: Water Atlas
	FYN: Brochure/Flyers/Fact sheets distributed	2082	I:\CSBC\CoopExt\PROGRAMS\ Horticulture\NPDES Reporting Data\2024 NPDES	UF/IFAS Extension Staff Forest Hecker & Ashley Ellis	HOA presentations, FFL HOA Consults, Neighborhood Grant visits
	FYN: Neighborhood presentations: Number conducted	36	I:\CSBC\CoopExt\PROGRAMS\ Horticulture\NPDES Reporting Data\2024 NPDES	UF/IFAS Extension Staff Forest Hecker & Ashley Ellis	HOA presentations, FFL HOA Consults, Neighborhood Grant visits
	FYN: Neighborhood presentations: Number of participants	956	I:\CSBC\CoopExt\PROGRAMS\ Horticulture\NPDES Reporting Data\2024 NPDES	UF/IFAS Extension Staff Forest Hecker & Ashley Ellis	Treasure Quest, UF Blogs, Library Displays

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Permit Citation/ SWMP Element	**Permit Requirement/Quantifiable SWMP Activity**	**Number of Activities Performed**	**Documentation / Record**	**Entity Performing the Activity**	**Comments**
	FYN: Public displays (e.g., kiosks, storyboards, posters, etc.)	34	I:\CSBC\CoopExt\PROGRAMS\Horticulture\NPDES Reporting Data\2024 NPDES	UF/IFAS Extension Staff Forest Hecker & Ashley Ellis	Interviews, + Radio shows: 2 x per month = 24, plus 52 weekly repeats
	FYN: Radio or television Public Service Announcements (PSAs)	76	I:\CSBC\CoopExt\PROGRAMS\Horticulture\NPDES Reporting Data\2024 NPDES	UF/IFAS Extension Staff Forest Hecker & Ashley Ellis	Youth Activities (Counts Summer Camp Activities)
	FYN: School presentations: Number conducted	7	I:\CSBC\CoopExt\PROGRAMS\Horticulture\NPDES Reporting Data\2024 NPDES	UF/IFAS Extension Staff Forest Hecker & Ashley Ellis	Youth Activities (Counts Summer Camp Activities)
	FYN: School presentations: Number of participants	190	I:\CSBC\CoopExt\PROGRAMS\Horticulture\NPDES Reporting Data\2024 NPDES	UF/IFAS Extension Staff Forest Hecker & Ashley Ellis	Public registration FFL Seminars & Workshops
	FYN: Seminars/Workshops: Number conducted	68	I:\CSBC\CoopExt\PROGRAMS\Horticulture\NPDES Reporting Data\2024 NPDES	UF/IFAS Extension Staff Forest Hecker & Ashley Ellis	Public registration FFL Seminars & Workshops
	FYN: Seminars/Workshops: Number of participants	993	I:\CSBC\CoopExt\PROGRAMS\Horticulture\NPDES Reporting Data\2024 NPDES	UF/IFAS Extension Staff Forest Hecker & Ashley Ellis	Master Gardener related events and training
	FYN: Special events: Number conducted	21	I:\CSBC\CoopExt\PROGRAMS\Horticulture\NPDES Reporting Data\2024 NPDES	UF/IFAS Extension Staff Forest Hecker & Ashley Ellis	Master Gardener related events and training

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Permit Citation/ SWMP Element	**Permit Requirement/Quantifiable SWMP Activity**	**Number of Activities Performed**	**Documentation / Record**	**Entity Performing the Activity**	**Comments**
	FYN: Special events: Number of participants	636	I:\CSBC\CoopExt\PROGRAMS\Horticulture\NPDES Reporting Data\2024 NPDES	UF/IFAS Extension Staff Forest Hecker & Ashley Ellis	Master Gardener related events and training
Part III.A.6 Summary	Provide an evaluation of the Stormwater Management Program according to Part VI.B.2 of the permit.				
	Strengths: FYN: Numbers held steady even with devastating local impacts from Hurricanes Helene & Milton. Site visits related to the Neighborhood Initiative Grant Program (money to implement community level Florida-Friendly Landscaping changes) increased from 3 to 12 neighborhoods interested in the program. MMS: Number of events completed exceeded department expectations. PWS: Outreach engagements form relationships that foster multiple meetings with community decision makers to enact change. AWQ: Joint effort.				
	Limitations: FYN: Many opportunities and speaker requests in January - April but then with a huge seasonal population they drop off a cliff. Working to build programs and work with professionals during the summer months. MMS: Lack of public displays (posters, billboards, etc.) PWS: Ability to assist residents not in a planned community are limited. NEST Program Coordinator left position in September. AWQ: Staff availability				
	SWMP revisions implemented to address limitations: FYN: Held two large Master Gardener Volunteer training events to get volunteers trained to deal with singular homeowner visits and advice so Community Educator could focus on communities and neighborhood level events. MMS: We can set goals to work with communications, fleet, etc. to get more signage out. Also, if social media posts count for public displays, this number would change to FY=70, CY=66. PWS: The NEST Coordinator developed a rebate program that will allow residents to construct small-scale BMPs that will reduce stormwater discharge to natural systems and improve water quality. This program went live in January 2025. AWQ: None at this time.				
Part III.A.7.a	**Illicit Discharges and Improper Disposal — Inspections, Ordinances, and Enforcement Measures**				
	Report amendments to legal authority in Year 4.				
	Year 4 ONLY: Attach a report on amendments to applicable legal authority	☐	N/A		
Part III.A.7.c	**Illicit Discharges and Improper Disposal — Investigation of Suspected Illicit Discharges and/or Improper Disposal**				
	Report on the proactive inspection program, including the number of inspections conducted by the permittee, the number of illicit activities found, and the number and type of enforcement actions taken.				
	Proactive inspections for suspected illicit discharges	1800	I:\EnvSBC\WaterCore\Operations\FOG Program\Performance Measures 2024 I:\PDSBC\EPD\Air and Water Quality\Water Quality\2024 Water Quality Dashboard.xlsx	Public Utilities Engineering David Pouso Air & Water Quality John Morgan	PUE: 1658 AWQ: 142 PUE: An additional 212 Re-Inspections conducted

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Permit Citation/ SWMP Element	**Permit Requirement/Quantifiable SWMP Activity**	**Number of Activities Performed**	**Documentation / Record**	**Entity Performing the Activity**	**Comments**
	Illicit discharges found during a proactive inspection	40	I:\EnvSBC\ WaterCore\ Operations\ FOG Program\ Performance Measures 2024 I:\PDSBC\EPD\ Air and Water Quality\Water Quality\2024 Water Quality Dashboard.xlsx	Public Utilities Engineering David Pouso Air & Water Quality John Morgan	PUE: 2 AWQ: 38 PUE: 2 – referred to AWQ for follow-up
	NOV/WL/citation/fines issued for illicit discharges found during proactive inspection	13	I:\EnvSBC\ WaterCore\ Operations\ FOG Program\ Performance Measures 2024 I:\PDSBC\EPD\ Air and Water Quality\Water Quality\2024 Water Quality Dashboard.xlsx	Public Utilities Engineering David Pouso Air & Water Quality John Morgan	PUE: 0 AWQ: 13 PUE: 115 Re-Inspection Notices issued for lack of grease removal device maintenance.
	Report on the reactive investigation program as it relates to responding to reports of suspected illicit discharges, including the number of reports received, the number of investigations conducted, the number of illicit activities found, and the number and type of enforcement actions taken.				
	Reports of suspected illicit discharges received	50	I:\PDSBC\EPD\ Air and Water Quality\Water Quality\2024 Water Quality Dashboard.xlsx	Air & Water Quality John Morgan	
	Reactive investigations of reports of suspected illicit discharges etc.	50	I:\PDSBC\EPD\ Air and Water Quality\Water Quality\2024 Water Quality Dashboard.xlsx	Air & Water Quality John Morgan	

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Permit Citation/ SWMP Element	**Permit Requirement/Quantifiable SWMP Activity**	**Number of Activities Performed**	**Documentation / Record**	**Entity Performing the Activity**	**Comments**
	Illicit discharges etc. found during reactive investigation	29	I:\PDSBC\EPD\ Air and Water Quality\Water Quality\2024 Water Quality Dashboard.xlsx	Air & Water Quality John Morgan	
	NOV/WL/citation/fines issued for illicit discharges etc. found during reactive investigation	13	I:\PDSBC\EPD\ Air and Water Quality\Water Quality\2024 Water Quality Dashboard.xlsx	Air & Water Quality John Morgan	
	Report the type of training activities, and the number of permittee personnel and contractors trained (both in-house and outside training) within the reporting year.				
	Personnel trained	655	I:\EnvSBC\WaterCore\Asset Management\CMOM\SSORP\SSORP Staff Training Data I:\PDSBC\EPD\ Air and Water Quality\Water Quality\2024 Water Quality Dashboard.xlsx \\bccshare.bcc.scgov.local\shared\EnvSBC\WaterCore\Watershed Planning\NPDES\Training	Public Utilities Engineering David Pouso Air & Water Quality John Morgan Public Works Stormwater Rene Janneman	PUE: 252 AWQ: 12 PWS: 391 PUE: Public Utilities developed 2 online training modules to be used for new staff onboarding and as an annual refresher. 126 staff completed Part I-Overview of the Sanitary Sewer Overflow Response Plan. 126 staff completed Part II-Spill Sampling PWS: 2024 IDDE & Spill Prevention Training

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Permit Citation/ SWMP Element	**Permit Requirement/Quantifiable SWMP Activity**	**Number of Activities Performed**	**Documentation / Record**	**Entity Performing the Activity**	**Comments**
	Contractors trained				The County does not use contractors to perform this activity.
Part III.A.7.d	**Illicit Discharges and Improper Disposal — Spill Prevention and Response**				
	Report on the spill prevention and response activities, including the number of spills addressed.				
	Hazardous and non-hazardous material spills responded to	15	https://scfd.imagetrendelite.com/Elite/Organizationscfd/	Fire Department Special Operations Johnny Rigney	
	Report the type of training activities, and the number of permittee personnel and contractors trained (both in-house and outside training) within the reporting year.				
	Personnel trained	471	https://app.targetsolutions.com/auth/index.cfm?action=login.showlogin&customerid=11009&customerpath=sarasotacountyfd&msg= I:\PDSBC\EPD\Air and Water Quality\Water Quality\2024 Water Quality Dashboard.xlsx \\bccshare.bcc.scgov.local\shared\EnvSBC\WaterCore\Watershed Planning\NPDES\Training	Fire Department Special Operations Johnny Rigney Air & Water Quality John Morgan Public Works Stormwater Rene Janneman	FDSO: 68 AWQ: 12 PWS: 391 FDSO: Minimum of 20 hours per team member PWS: 2024 IDDE & Spill Prevention Training
	Contractors trained				The County does not use contractors to perform this activity.

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Part III.A.7.e	**Illicit Discharges and Improper Disposal — Public Reporting**				
	Report on the public education and outreach activities that are performed or sponsored by the permittee within the permittee's jurisdiction to encourage the public reporting of suspected illicit discharges and improper disposal of materials, including the type and number of activities conducted, the type and number of materials distributed, and the number of website visits (if applicable).				
	Brochures/Flyers/Fact sheets distributed	21582	I:\EnvSBC\ WaterCore\ Planning & Regulatory\ENVIRONMENTAL\ WATER QUALITY PLANNING\Outreach\NPDES Outreach\2024 I:\PDSBC\EPD\ Air and Water Quality\Water Quality\2024 Water Quality Dashboard.xlsx	Public Works Stormwater Kayla Quinn Air & Water Quality John Morgan	PWS: 21176 AWQ: 406 PWS: Included NEST calendar (13000)
	Neighborhood presentations: Number conducted	8	I:\EnvSBC\ WaterCore\ Watershed Planning\NEST\ NPDES Info\2024 Folder I:\PDSBC\EPD\ Air and Water Quality\Water Quality\2024 Water Quality Dashboard.xlsx	Public Works NEST Mollie Holland Air & Water Quality John Morgan	PWS: 7 AWQ: 1

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	Neighborhood presentations: Number of participants	268	I:\EnvSBC\ WaterCore\ Watershed Planning\NEST\ NPDES Info\2024 Folder I:\PDSBC\EPD\ Air and Water Quality\Water Quality\2024 Water Quality Dashboard.xlsx	Public Works NEST Mollie Holland Air & Water Quality John Morgan	PWS: 248 AWQ: 20
	Newspapers & newsletters: Number of articles/notices published	3	I:\EnvSBC\ WaterCore\ Planning & Regulatory\ENVIRONMENTAL\ WATER QUALITY PLANNING\Outreach\NPDES Outreach\2024 I:\PDSBC\EPD\ Air and Water Quality\Water Quality\2024 Water Quality Dashboard.xlsx	Public Works Stormwater Kayla Quinn Air & Water Quality John Morgan	PWS: 1 AWQ: 2 AWQ: Neighborhood Connect
	Newsletters: Number of newsletters distributed	2	I:\PDSBC\EPD\ Air and Water Quality\Water Quality\2024 Water Quality Dashboard.xlsx	Air & Water Quality John Morgan	Neighborhood Connect

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	Public displays (e.g., kiosks, storyboards, posters, etc.)	8	I:\EnvSBC\ WaterCore\ Planning & Regulatory\ENV IRONMENTAL\ WATER QUALITY PLANNING\Out reach\NPDES Outreach\2024	Public Works Stormwater Kayla Quinn	
	Radio or television Public Service Announcements (PSAs)	5	I:\EnvSBC\ WaterCore\ Planning & Regulatory\ENV IRONMENTAL\ WATER QUALITY PLANNING\Out reach\NPDES Outreach\2024	Public Works Stormwater Kayla Quinn	
	Seminars/Workshops: Number conducted	6	I:\EnvSBC\ WaterCore\ Watershed Planning\NEST\ NPDES Info\2024 Folder I:\PDSBC\EPD\ Air and Water Quality\Water Quality\2024 Water Quality Dashboard.xlsx	Public Works NEST Mollie Holland Air & Water Quality John Morgan	PWS: 1 AWQ: 5

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	Seminars/Workshops: Number of participants	191	I:\EnvSBC\ WaterCore\ Watershed Planning\NEST\ NPDES Info\2024 Folder I:\PDSBC\EPD\ Air and Water Quality\Water Quality\2024 Water Quality Dashboard.xlsx	Public Works NEST Mollie Holland Air & Water Quality John Morgan	PWS: 46 AWQ: 145
	Special events: Number conducted	10	I:\EnvSBC\ WaterCore\ Planning & Regulatory\ENVIRONMENTAL\ WATER QUALITY PLANNING\Outreach\NPDES Outreach\2024 I:\PDSBC\EPD\ Air and Water Quality\Water Quality\2024 Water Quality Dashboard.xlsx	Public Works Stormwater Kayla Quinn Air & Water Quality John Morgan	PWS: 8 AWQ: 2 PWS: Alligator Creek Festival and NEST Calendar Presentation

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	Special events: Number of participants	16038	I:\EnvSBC\ WaterCore\ Watershed Planning\NEST\ NPDES Info\2024 Folder I:\PDSBC\EPD\ Air and Water Quality\Water Quality\2024 Water Quality Dashboard.xlsx	Public Works NEST Mollie Holland Air & Water Quality John Morgan	PWS: 6038 AWQ: 10000
	Number of visitors to stormwater-related pages	123853	I:\EnvSBC\ WaterCore\ Planning & Regulatory\ENVIRONMENTAL\ WATER QUALITY PLANNING\Outreach\NPDES Outreach\2024 I:\PDSBC\EPD\ Air and Water Quality\Water Quality\2024 Water Quality Dashboard.xlsx	Public Works Stormwater Kayla Quinn Air & Water Quality John Morgan	PWS: 118558 AWQ: 5295 PWS: Water Atlas AWQ: Communi-cations
Part III.A.7.f	**Illicit Discharges and Improper Disposal — Oils, Toxics, and Household Hazardous Waste Control**				
	Report on the public education and outreach activities that are performed or sponsored by the permittee within the permittee's jurisdiction to encourage the proper use and disposal of oils, toxics, and household hazardous waste, including the type and number of activities conducted, the type and number of materials distributed, the amount of waste collected / recycled / properly disposed, and the number of Web site visits (if applicable).				

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	Brochures/Flyers/Fact sheets distributed	2966	Standard flyer distribution for mobile collection events+ curbside collection postcard mailers	Solid Waste Brian Mangum	9 mobile collection events – 1 master copy sent to community POC or printing and distribution; 2957 residents were sent curbside postcard mailers
	Household Hazardous Waste (HHW) Collection Day: Events	585	Weigh Station Landfill Software (Paradigm	Solid Waste Brian Mangum	Posted collection days on website: BR – 281, JR – 0, CC - 304
	HHW Collection Day: Amount of waste collected/recycled/disposed (tons)	306.6	Weigh Station Landfill Software (Paradigm)	Solid Waste Brian Mangum	
	Neighborhood presentations: Number conducted	4	\\bccshare.bcc.scgov.local\shared\EnvSBC\WaterCore\Watershed Planning\NPDES\Annual Reports	Solid Waste Hunter Jensen	
	Neighborhood presentations: Number of participants	1077	\\bccshare.bcc.scgov.local\shared\EnvSBC\WaterCore\Watershed Planning\NPDES\Annual Reports	Solid Waste Hunter Jensen	

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	School presentations: Number conducted	9	\\bccshare.bcc.scgov.local\shared\EnvSBC\WaterCore\Watershed Planning\NPDES\Annual Reports	Solid Waste Hunter Jensen	
	School presentations: Number of participants	872	\\bccshare.bcc.scgov.local\shared\EnvSBC\WaterCore\Watershed Planning\NPDES\Annual Reports	Solid Waste Hunter Jensen	
	Seminars/Workshops: Number conducted	1	\\bccshare.bcc.scgov.local\shared\EnvSBC\WaterCore\Watershed Planning\NPDES\Annual Reports	Solid Waste Hunter Jensen	
	Seminars/Workshops: Number of participants	16	\\bccshare.bcc.scgov.local\shared\EnvSBC\WaterCore\Watershed Planning\NPDES\Annual Reports	Solid Waste Hunter Jensen	
	Special events: Number conducted	58	Weigh Station Landfill Software (Paradigm)	Solid Waste Brian Mangum	
	Special events: Number of participants	1447	Weigh Station Landfill Software (Paradigm)	Solid Waste Brian Mangum	
	Number of visitors to stormwater-related pages	8407	Call Center Webmaster	Communications Ken Weiss	

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Permit Citation/ SWMP Element	**Permit Requirement/Quantifiable SWMP Activity**	**Number of Activities Performed**	**Documentation / Record**	**Entity Performing the Activity**	**Comments**
Part III.A.7.g	**Illicit Discharges and Improper Disposal — Limitation of Sanitary Sewer Seepage**				
	Report on the type and number of activities undertaken to reduce or eliminate SSOs and inflow/ infiltration, the number of SSOs or inflow / infiltration incidents found and the number resolved, and the name of the owner of the sanitary sewer system within the permittee's jurisdiction. Report only the SSOs and inflow / infiltration incidents into the MS4. *Note: If the permittee does not own the sanitary sewer system, delete "activity to reduce/eliminate SSOs and I&I."*				
	Owner of the sanitary sewer system	Sarasota County Government Public Utilities- Report Reflects only County Owned Facilities			
	Activity to reduce/eliminate SSOs and I&I: (description)	CMOM Plan Submitted and Implementation in progress.	I:\EnvSBC\ WaterCore\ Operations\ Utility Ops\ Reportable Events\NPDES Data 2024	Public Utility Operations Patricia Nihart	-Capacity Verification Report -Bee Ridge WRF conversion to AWT underway
	Activity to reduce/eliminate SSOs and I&I: (description)	External Cleaning and televising/ assessments	I:\EnvSBC\ WaterCore\ Operations\ Utility Ops\ Reportable Events\NPDES Data 2024	Public Utility Operations Patricia Nihart	-Cleaned and Televised Approximately 737070 LFT of Gravity Main
	Activity to reduce/eliminate SSOs and I&I: (description)	1	I:\EnvSBC\ Water Core\ Operations\ FOG Program\ Sanitary Sewer Overflows	Public Utilities Engineering David Pouso	Annual Update to Sanitary Sewer Overflow Response Plan
	Activity to reduce/eliminate SSOs and I&I: (description)	3-Investigated FOG blockages in sanitary system	I:\EnvSBC\ Water Core\ Operations\ FOG Program\ Sanitary Sewer Overflows	Public Utilities Engineering David Pouso	Distributed 1397 bilingual residential flyers in residential areas.
	SSO incidents discovered	107	I:\EnvSBC\ WaterCore\ Operations\ Utility Ops\ Reportable Events	Public Utility Operations Patricia Nihart	

SECTION VII. STORMWATER MANAGEMENT PROGRAM (SWMP) SUMMARY TABLE					
A.	**B.**	**C.**	**D.**	**E.**	**F.**
Permit Citation/ SWMP Element	**Permit Requirement/Quantifiable SWMP Activity**	**Number of Activities Performed**	**Documentation / Record**	**Entity Performing the Activity**	**Comments**
	SSO incidents resolved	107	I:\EnvSBC\ WaterCore\ Operations\ Utility Ops\ Reportable Events	Public Utility Operations Patricia Nihart	
	Inflow / infiltration incidents discovered	63	I:\EnvSBC\ WaterCore\ Operations\ Utility Ops\ Reportable Events\NPDES Data 2024	Public Utility Operations Patricia Nihart	
	Inflow / infiltration incidents resolved	73	I:\EnvSBC\ WaterCore\ Operations\ Utility Ops\ Reportable Events\NPDES Data 2024	Public Utility Operations Patricia Nihart	
Part III.A.7 Summary	For activities required by Part III.A.7: Provide an evaluation of the Stormwater Management Program according to Part VI.B.2 of the permit.				
	Strengths: PUO: Large scale lining projects currently planned. The County has given notice to private property owners contributing to inflow or found with defective laterals in need of repair or replacement. The County developed a maintenance program for the air release system. This program is on-going. PUE: The FOG Program continues to track the reduction in the percentage of system blockages since the Program's implementation. Since January 2020, 16,591,485 gallons of grease were hauled to approved disposal sites, lessening the potential of grease entering the County's sewer system.				
	Limitations: PUO: Large system with many components, areas of high I/I issues, gravity pipe condition, manhole condition, force main and vacuum condition, and lift station condition all needing to be reviewed and addressed. PUE: None at this time.				
	SWMP Revisions implemented to address limitations: PUO: The County has an established lift station rehabilitation program, which is part of the County's continuous maintenance program. Large scale lining projects planned. smoke testing in areas of known high I/I. County has given notice to private property owners contributing to inflow or found with defective laterals in need of repair or replacement, continued monitoring of this project, Implementation of the CMOM. PUE: None at this time				
Part III.A.8.a	**Industrial and High-Risk Runoff — Identification of Priorities and Procedures for Inspections**				
	Report on the high-risk facilities inventory, including the type and total number of high-risk facilities. Report on the high-risk facilities inspection program, including the number of inspections conducted and the number and type of enforcement actions taken.				

SECTION VII. STORMWATER MANAGEMENT PROGRAM (SWMP) SUMMARY TABLE							
A.	**B.**		**C.**			**D.**	**E.**	**F.**
Permit Citation/ SWMP Element	**Permit Requirement/Quantifiable SWMP Activity**		**Number of Activities Performed**			**Documentation / Record**	**Entity Performing the Activity**	**Comments**
	Type of Facility	**Number of Facilities**	**Number of Inspections**	**Enforcement Actions**				
	Operating municipal landfills	1	1	0		I:\PDSBC\EPD\ Air and Water Quality\Water Quality\2024 Water Quality Dashboard.xlsx	Air & Water Quality John Morgan	
	Hazardous waste treatment, storage, disposal and recovery (HWTSDR) facilities	0	0	0		I:\PDSBC\EPD\ Air and Water Quality\Water Quality\2024 Water Quality Dashboard.xlsx	Air & Water Quality John Morgan	
	EPCRA Title III, Section 313 facilities (TRI)	7	5	0		I:\PDSBC\EPD\ Air and Water Quality\Water Quality\2024 Water Quality Dashboard.xlsx	Air & Water Quality John Morgan	
	Facilities determined as high-risk by the permittee	102	90	0		I:\PDSBC\EPD\ Air and Water Quality\Water Quality\2024 Water Quality Dashboard.xlsx	Air & Water Quality John Morgan	
Part III.A.8.b	**Industrial and High-Risk Runoff — Monitoring for High Risk Industries**							
	Report the number of high-risk facilities sampled.							
	High-risk facilities sampled							
Part III.A.8 Summary	For activities required by Part III.A.8: Provide an evaluation of the Stormwater Management Program according to Part VI.B.2 of the permit.							
	Strengths: Limited Sampling.							
	Limitations: Staff turnover and training time.							
	SWMP revisions implemented to address limitations: Department coordination.							
Part III.A.9.a	**Construction Site Runoff — Site Planning and Non-Structural and Structural Best Management Practices**							
	Report the number of permittee and private pre-construction site plans reviewed for stormwater, erosion, and sedimentation controls, and the number approved.							

SECTION VII. STORMWATER MANAGEMENT PROGRAM (SWMP) SUMMARY TABLE					
A.	**B.**	**C.**	**D.**	**E.**	**F.**
Permit Citation/ SWMP Element	**Permit Requirement/Quantifiable SWMP Activity**	**Number of Activities Performed**	**Documentation / Record**	**Entity Performing the Activity**	**Comments**
	PERMITTEE SITES: Construction site plans reviewed	10	eBuilder Database	Capital Projects Dara Walker	
	PERMITTEE SITES: Construction site plans approved	10	eBuilder Database	Capital Projects Dara Walker	
	PRIVATE SITES: Construction site plans reviewed	160	Accela Database	Land Development Services Anthony Fantauzzo	
	PRIVATE SITES: Construction site plans approved	92	Accela Database	Land Development Services Anthony Fantauzzo	
	Report the number of development permit applicants notified of the ERP and CGP, and the number of applicants who confirmed ERP and CGP coverage.				
	Notified of ERP stormwater permit requirements	92	Accela Database	Land Development Services Anthony Fantauzzo	
	Confirmed ERP coverage	92	Accela Database	Land Development Services Anthony Fantauzzo	
	Notified of CGP stormwater permit requirements	92	Accela Database	Land Development Services Anthony Fantauzzo	
	Confirmed CGP coverage	92	Accela Database	Land Development Services Anthony Fantauzzo	
Part III.A.9.b	**Construction Site Runoff — Inspection and Enforcement**				
	Report on the inspection program for privately-operated and permittee-operated construction sites, including the number of active construction sites during the reporting year, the number of inspections of active construction sites, the percentage of active construction sites inspected, and the number and type of enforcement actions / referrals taken.				
	PERMITTEE SITES: Active construction sites	7	eBuilder Database	Capital Projects Dara Walker	5 Complete 2 In Progress or Active

SECTION VII. STORMWATER MANAGEMENT PROGRAM (SWMP) SUMMARY TABLE					
A.	**B.**	**C.**	**D.**	**E.**	**F.**
Permit Citation/ SWMP Element	**Permit Requirement/Quantifiable SWMP Activity**	**Number of Activities Performed**	**Documentation / Record**	**Entity Performing the Activity**	**Comments**
	PERMITTEE SITES: Pre-, During, and Post inspections of active construction sites for E&S and waste control BMPs	10	eBuilder Database	Capital Projects Dara Walker	5 Complete 2 in Progress or Active
	PERMITTEE SITES: Percentage of active construction sites inspected	100%	eBuilder Database	Capital Projects Dara Walker	2 In Progress or Active
	PRIVATE SITES: Active construction sites	361	Accela Database	Land Development Services Anthony Fantauzzo	
	PRIVATE SITES: Pre-, During, and Post inspections of active construction sites for E&S and waste control BMPs	1059	Accela Database	Land Development Services Anthony Fantauzzo	
	PRIVATE SITES: Percentage of active construction sites inspected	100%	Accela Database	Land Development Services Anthony Fantauzzo	
	Enforcement Action	2	Accela Database	Land Development Services Anthony Fantauzzo	
Part III.A.9.c	**Construction Site Runoff — Site Operator Training**				
	Report the type of training activities, the number of inspectors, site plan reviewers and site operators trained (both in-house and outside training).				
		DEP Certification	**Annual Training**		
	Permittee construction site inspectors	5	9	FDEP Database eBuilder Database	Land Development Services Anthony Fantauzzo Capital Projects Dara Walker	LDS: 5/5 CP: 0/4

SECTION VII. STORMWATER MANAGEMENT PROGRAM (SWMP) SUMMARY TABLE						
A.	**B.**		**C.**	**D.**	**E.**	**F.**
Permit Citation/ SWMP Element	**Permit Requirement/Quantifiable SWMP Activity**		**Number of Activities Performed**	**Documentation / Record**	**Entity Performing the Activity**	**Comments**
	Permittee construction site plan reviewers	2	11	FDEP Database \\bccshare.bcc.scgov.local\shared\EnvSBC\WaterCore\Watershed Planning\NPDES\Annual Reports\2024 Annual Report	Land Development Services Anthony Fantauzzo Public Works Stormwater Rene Janneman	LDS: 2/2 PWS: 9
	Permittee construction site operators		4	eBuilder Database	Capital Projects Dara Walker	
Part III.A.9 Summary	For activities required by Part III.A.9: Provide an evaluation of the Stormwater Management Program according to Part VI.B.2 of the permit.					
	Strengths: LDS: Land Development Services' inspectors are very vigilant when it comes to the inspection of stormwater, erosion, and sedimentation control best management practices. CP: Sarasota County Capital Projects inspectors are vigilant in all inspections of stormwater management and best practices.					
	Limitations: LDS: Short staffed. CP: Trying to uphold stormwater management and best practices with contractors.					
	SWMP revisions implemented to address limitations: LDS: Continual training and annual refreshers for inspection of stormwater, erosion, and sedimentation control best management practices. CP: Proper communication and follow through in order to achieve best results.					

SECTION VIII. CHANGES TO THE STORMWATER MANAGEMENT PROGRAM (SWMP) ACTIVITIES (Not Applicable In Year 4)		
A.	**Permit Citation/ SWMP Element**	**Proposed Changes to the Stormwater Management Program Activities Established as Specific Requirements Under Part III.A of the Permit (Including the Rationale for the Change) — REQUIRES DEP APPROVAL PRIOR TO CHANGE IF PROPOSING TO REPLACE OR DELETE AN ACTIVITY.**
		N/A
B.	**Permit Citation/ SWMP Element**	**Changes to the Stormwater Management Program Activities NOT Established as Specific Requirements Under Part III.A of the Permit (Including the Rationale for the Change)**
		N/A

SECTION IX. TMDL Status Report

A. YEAR 1 Provide a table summarizing the status of the TMDL process. Include a list of prioritized TMDLs and their monitoring and implementation schedule; and include the Identification number of the outfall prioritized for TMDL monitoring.

WBID Number	Segment/ Waterbody/ Basin	Pollutant of Concern	TMDL DEP / EPA	Percent Reduction (WLA)	Priority Rank	Monitoring Summary / BPCP Due Date	Supplemental SWMP Due Date
	N/A		☐ / ☐		1	(*Year 3 AR*)	(*Year 4 AR; N/A) if BPCP*)
			☐ / ☐				
			☐ / ☐				

B. YEAR 3 and annually thereafter, provide a summary of the estimated load reductions that have occurred for the pollutant(s) of concern being discharged from the MS4 to the TMDL water body during the reporting period and cumulatively since the date the Supplemental SWMP was implemented.

Year 3: Submit a Monitoring data summary or BPCP (if applicable).

Year 4: Submit a Supplemental SWMP (if applicable).

Note: Previously prioritized waterbodies with approved TMDL Implementation Plans may be reported in this section.

WBID Number	Pollutant of Concern	Monitoring Summary / BPCP Submitted	Supplemental SWMP Submitted	Projected load reductions OR Actual load reductions to date
	N/A	(*Year 3 AR*)	(*Year 4 AR; N/A if BPCP*)	

C. Provide a brief statement as to the status of TMDL implementation according to Part VIII.B. of the permit (e.g. status of monitoring to validate WLA):

See Appendix: TMDL Summary

APPENDIX A

Sarasota County 2024 NPDES MS4 Annual Report

1. AMBIENT WATER QUALITY OF BAYS
2. AMBIENT WATER QUALITY OF WATERSHEDS
3. OYSTER MONITORING
4. SEAGRASS MONITORING
5. SCALLOP MONITORING
6. RAINFALL MONITORING

Year 6

Sarasota County 2024 NPDES MS4 Annual Report

1. AMBIENT WATER QUALITY OF BAYS

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Ambient Water Quality of Bays (Year 6)

Sarasota County NPDES MS4 Annual Report for 2024

The ambient water quality monitoring of bays is critical to understanding bay health, the effectiveness of pollutant reduction measures, and the state of aquatic ecosystems. Healthy bays are intrinsically valuable and support marine life, fisheries, and ecotourism. Sarasota County takes a holistic approach to watershed management that encompasses the management of stormwater, wastewater, onsite septic systems, and reports of pollution; these are all factors that significantly influence the status and trends exhibited in bay water quality.

Status of Water Quality Monitoring Plan Implementation

Sarasota County conducts ambient water quality monitoring for the County, the City of Sarasota, the Town of Longboat Key, the City of Venice, and the Florida Department of Transportation (FDOT). Bay sampling was consistent with the approved Sarasota County water quality monitoring plan with no changes in frequency, monitoring locations, or sampling conditions. In 2024, ambient monthly water quality monitoring occurred throughout all bays in Sarasota County. The data and analysis for all bays sampled are available on the Sarasota County Water Atlas at the links below:

Water Quality Trends and Hotspots

Data Download Report

Bay Condition Reports

Summary of Results

Bay Condition Index Score Reports are displayed on the Sarasota Water Atlas. As noted in Figure 1, these reports provide a rapid visual assessment of the water quality in each bay for the selected year based upon the analysis of priority water quality indicators: chlorophyll-*a*, total nitrogen, and total phosphorus. The state's Numeric Nutrient Criteria (NNC) is the determination for a **Caution** or **Pass** score. If one of the prioritized indicators is above the NNC for that indicator the bay is assigned a **Caution** score. A **Pass** score is obtained when all three indicators are below the NNC. In addition, **Pass** is divided into two categories; **Good** denotes regulatory thresholds are being met while **Excellent** signifies concentrations that are much lower than the NNC.

Many other analyses are also conducted for the bay conditions index scoring including dissolved oxygen concentration, true color, biochemical oxygen demand, light attenuation, ammonia, total Kjeldahl nitrogen, nitrate/nitrite, pH, salinity, temperature, and turbidity. The analysis and raw data for these analytes are available on the Sarasota

Water Atlas (link above) along with the statistical analysis of rainfall, seagrass, and impervious surface within the respective watershed.

In 2024 only four bays achieved a **Pass** rating, a slight decline from 2023 when all six bays achieved a **Pass** rating. Sarasota Bay, Roberts Bay, Little Sarasota Bay and Blackburn Bay all remained in the **Pass** category for 2024, while Dona/Roberts Bay and Upper Lemon Bay shifted to the **Caution** category, with both bays experiencing marked increases in Chlorophyll-a and Total Nitrogen compared to 2023. Although four of the six total bays maintained a **Pass** rating, all six bays experienced slight increases in all three condition indicators. Sarasota County experienced a very active hurricane season in 2024, with Invest 90 in June 2024 and three consecutive named storms. Tropical Storm Debby, Hurricane Helene and Hurricane Milton impacted the area during the months of August, September and October 2024 respectively, likely contributing to the increases in nutrient levels recorded in the bays for the period in question.

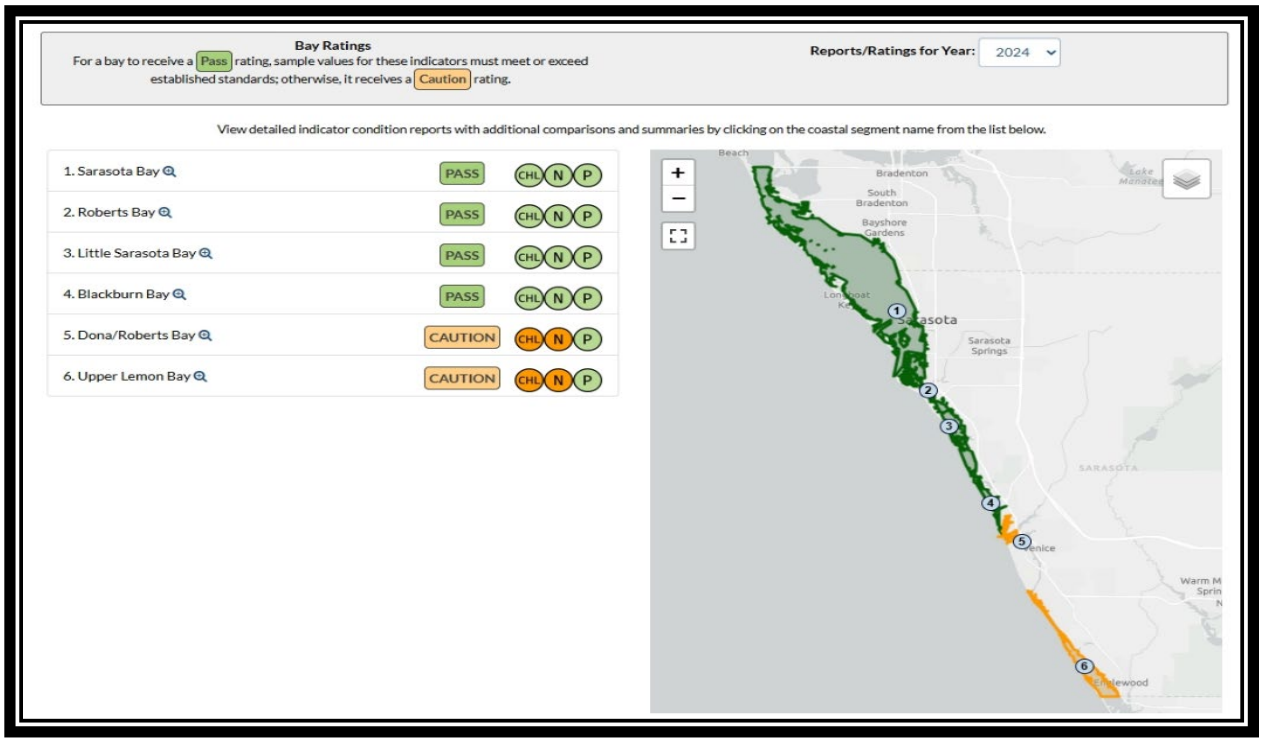

Figure 1 *Sarasota Bay Water Atlas Bay Conditions Index Score Report for 2024*

Sarasota Bay Increased Chlorophyll-a

Remaining mostly stable throughout the period of record, Sarasota Bay has maintained an overall **Pass** rating for the sixth consecutive year. Chlorophyll-a began to display a slight uptick in measured levels from 2022 to 2023, though maintaining a rating of **Excellent** for this indicator. In 2024, Sarasota Bay experienced a slightly greater increase in chlorophyll-a levels with an arithmetic mean of 5.93 ug/L compared to 3.82 ug/L in 2023, shifting chlorophyll-a indicator status to a rating of **Good** for 2024 from a rating of **Excellent** in 2023 (Figures 2 and 3). The decline in water quality from 2023 to 2024 is likely attributed to an active hurricane season, with three named storms bringing record rainfall, flooding, storm debris and increased nutrient runoff to the area beginning in August 2024. The bays are actively recovering, and the county will continue to monitor Sarasota Bay as watershed improvements are implemented.

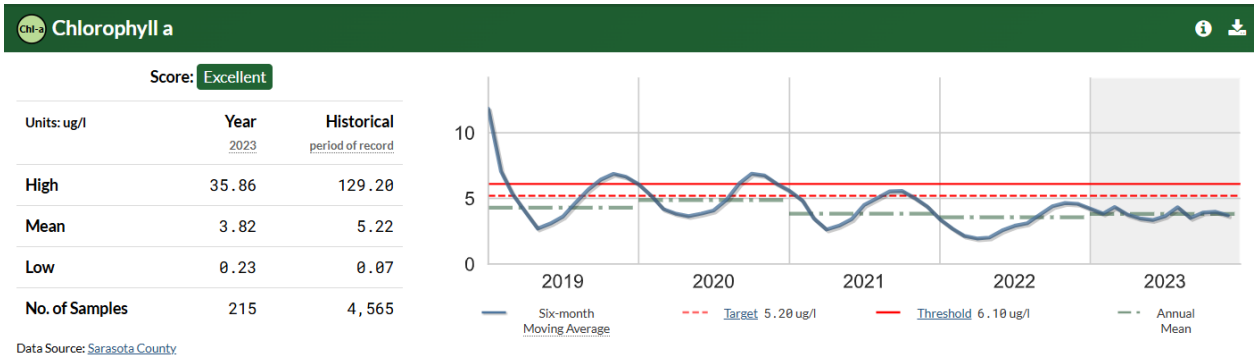

Figure 2 *Sarasota Bay 2023 Chlorophyll-a Results*

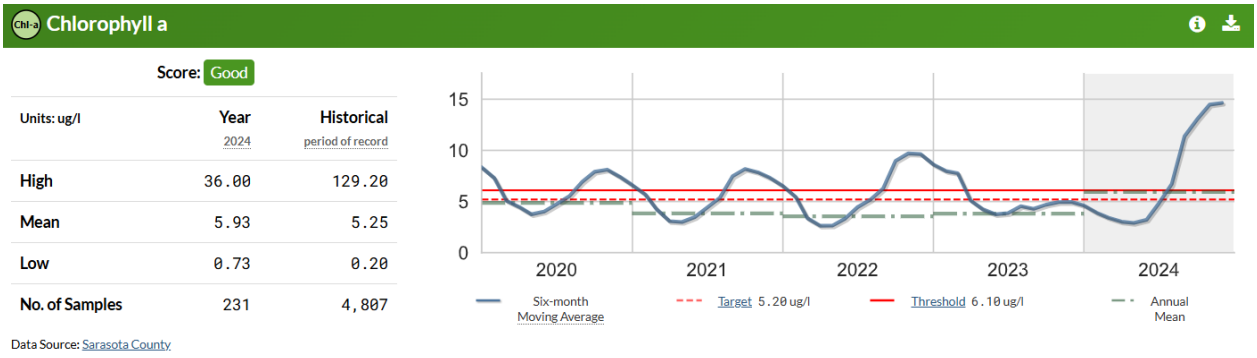

Figure 3 *Sarasota Bay 2024 Chlorophyll-a Results*

Roberts Bay Increased Chlorophyll-a

As of 2024, Roberts Bay has maintained an overall **Pass** rating for the sixth consecutive year with continuously fluctuating chlorophyll-a levels across the period of record. Chlorophyll-a levels improved greatly from 2022 to 2023, with annual mean chlorophyll-a measurements declining from 9.08 ug/L to 5.01 ug/L. In 2024, Roberts Bay experienced yet another increase in chlorophyll-a, with an arithmetic mean of 8.51 ug/L (Figures 4 and 5), shifting chlorophyll-a indicator status from a rating of **Excellent** to a rating of **Good.** The decline in water quality from 2023 to 2024 is likely attributed to an active hurricane season, with three named storms bringing record rainfall, flooding, storm debris and increased nutrient runoff to the area beginning in August 2024. The bays are actively recovering, and the county will continue to monitor Roberts Bay as watershed improvements are implemented.

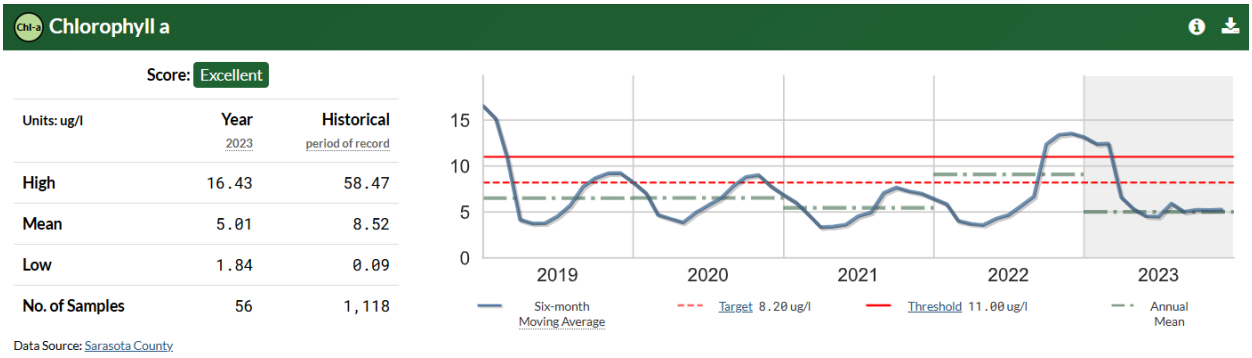

Figure 4 *Roberts Bay 2023 Chlorophyll-a Results*

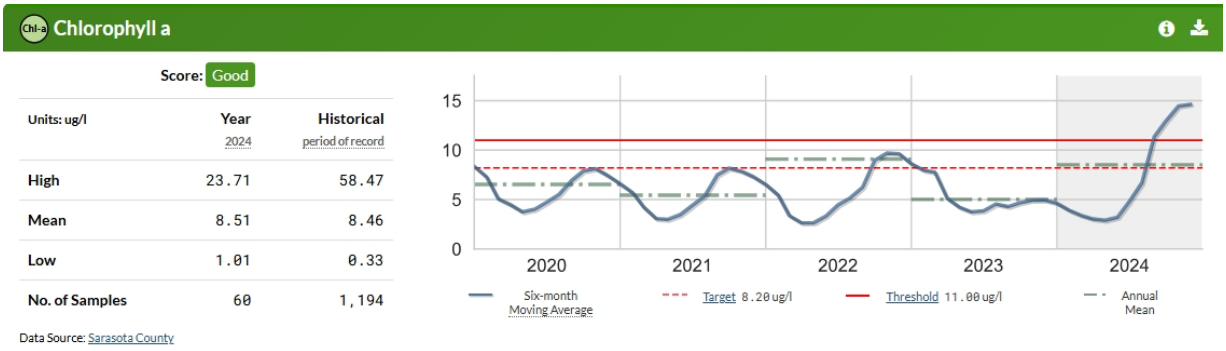

Figure 5 *Roberts Bay 2024 Chlorophyll-a Results*

Roberts Bay Increased Total Nitrogen

Roberts Bay experienced an increase in total nitrogen in 2024, from an arithmetic mean of 0.370 mg/L in 2023 to 0.467 mg/L in 2024 (Figures 6 and 7), shifting total nitrogen indicator status from a rating of **Excellent** to a rating of **Good.** Total nitrogen maintained a rating of **Excellent** from 2020 through 2023, falling to **Good** in 2024 for the first time in four years. The decline in water quality from 2023 to 2024 is likely attributed to an active hurricane season, with three named storms bringing record rainfall, flooding, storm debris and increased nutrient runoff to the area beginning in August 2024. The bays are actively recovering, and the county will continue to monitor Roberts Bay as watershed improvements are implemented.

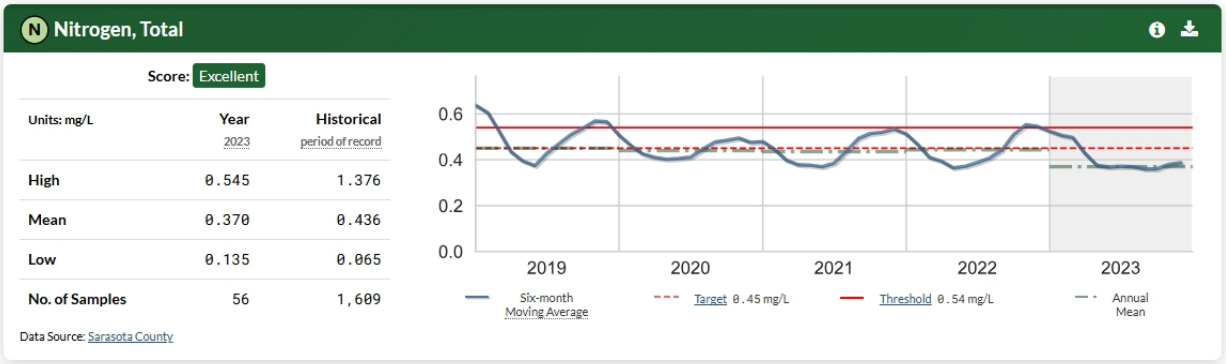

Figure 6 *Roberts Bay 2023 Total Nitrogen Results*

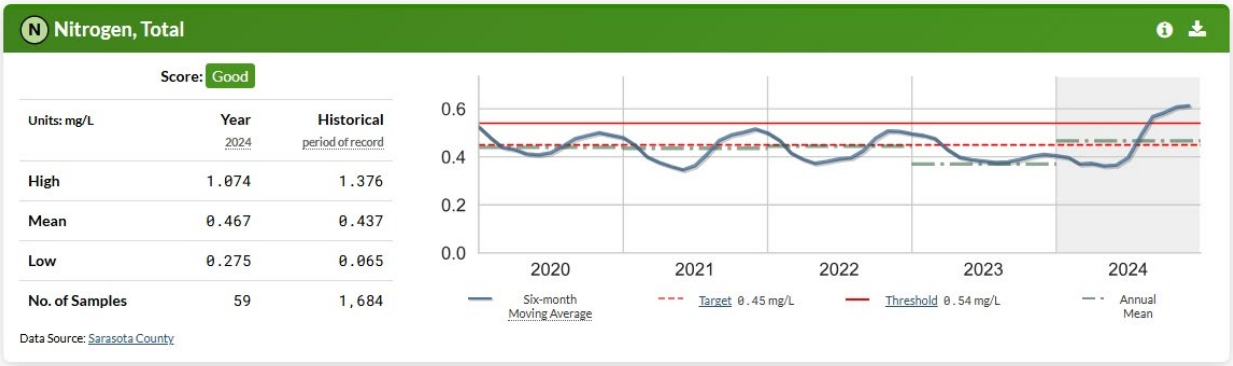

Figure 7 *Roberts Bay 2024 Total Nitrogen Results*

Little Sarasota Bay Increased Chlorophyll-a

Though still receiving a **Pass** rating for 2024, Little Sarasota Bay experienced an increase in chlorophyll-a compared to 2023. This increase shifted chlorophyll-a indicator status for Little Sarasota Bay from a rating of **Excellent** in 2023 to **Good** in 2024 (Figures 8 and 9). Mean chlorophyll-a levels increased from 5.59 ug/L in 2023 to 8.91 ug/L in 2024. Sarasota County was directly affected by three consecutive storms during the 2024 hurricane season, bringing record rainfall and resulting in increased nutrient loads to all bays. The bays are actively recovering, and watershed improvements will continue to be implemented and monitored by Sarasota County. Little Sarasota Bay also experienced slight increases in total nitrogen and total phosphorus levels, though these indicators maintained an **Excellent** rating for 2024. An update to the Little Sarasota Bay Watershed Management Plan is underway that will produce a list of potential best management practices to continue improving water quality.

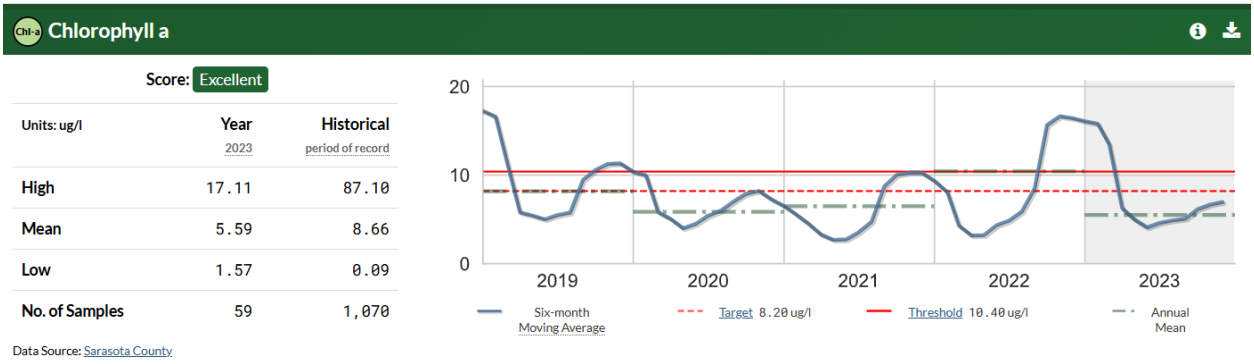

Figure 8 *Little Sarasota Bay 2023 Chlorophyll-a Results*

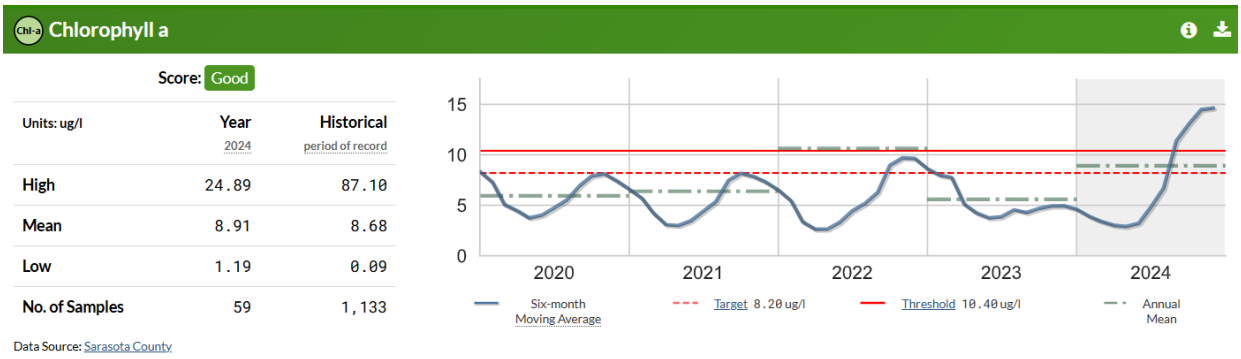

Figure 9 *Little Sarasota Bay 2024 Chlorophyll-a Results*

Blackburn Bay Increased Total Nitrogen

In 2024 Blackburn Bay experienced a slight increase in total nitrogen, with an arithmetic mean of 0.385 mg/L compared to 0.327 mg/L in 2023 (Figures 10 and 11), shifting total nitrogen indicator status from a rating of **Excellent** in 2023 to a rating of **Good** for 2024. Total nitrogen levels in Blackburn Bay have remained relatively stable across the period of record, with the bay maintaining no less than a **Good** rating for total nitrogen from 2015 to the present. The decline in water quality from 2023 to 2024 is likely attributed to an active hurricane season, with three named storms bringing record rainfall, flooding, storm debris and increased nutrient runoff to the area beginning in August 2024. The bays are actively recovering, and the county will continue to monitor Blackburn Bay as watershed improvements are implemented. Blackburn Bay is included in an update to the Little Sarasota Bay Watershed Management Plan that is underway that will produce a list of potential best management practices to continue improving water quality.

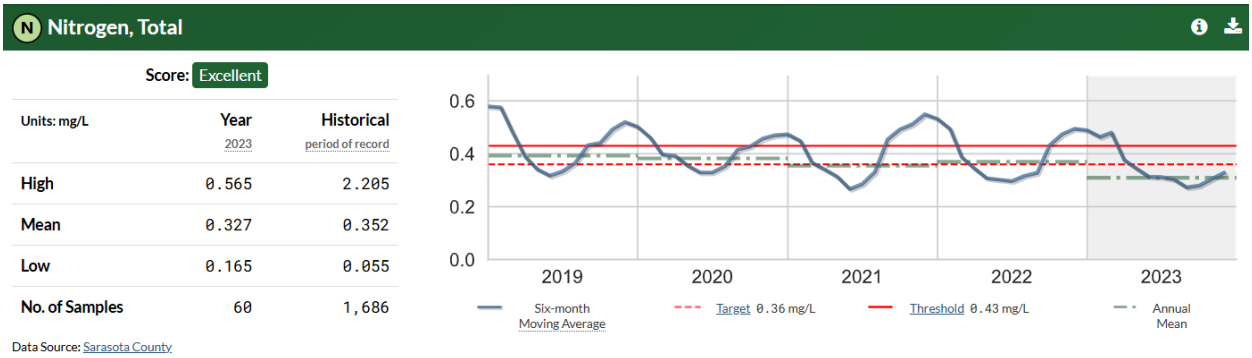

Figure 10 *Blackburn Bay 2023 Total Nitrogen Results*

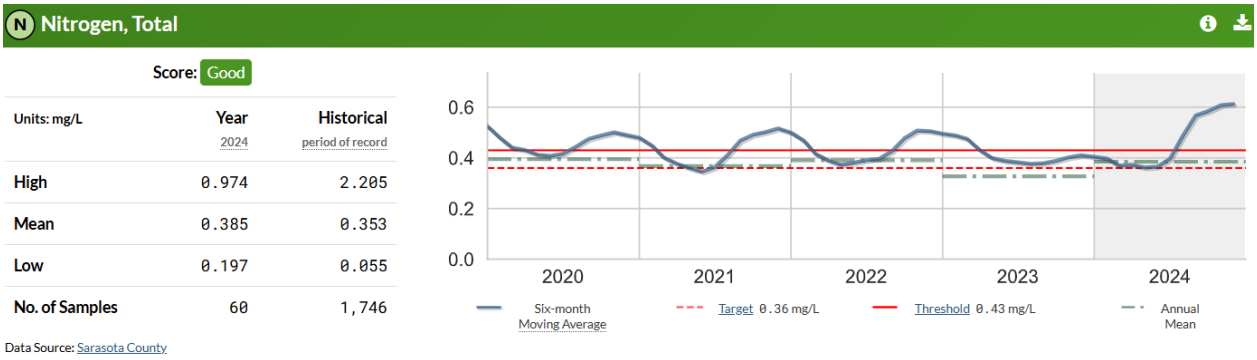

Figure 11 *Blackburn Bay 2024 Total Nitrogen Results*

Dona Bay/Roberts Bay Increased Chlorophyll-a

Dona/Roberts Bay experienced a significant increase in chlorophyll-a levels in 2024, with an arithmetic mean of 7.83 ug/L up from 3.81 ug/L in 2023 (Figures 12 and 13), over double the previous year's average, shifting chlorophyll-a indicator status from a rating of **Excellent** in 2023 to a rating of **Caution** for 2024. Dona/Roberts Bay began experiencing a decrease in mean chlorophyll-a levels from 2021 through 2023, with chlorophyll-a indicator status improving to **Excellent** for 2022 and 2023 before increasing drastically, shifting the overall bay condition to a rating of **Caution** for 2024. The decline in water quality from 2023 to 2024 is likely attributed to an active hurricane season, with three named storms bringing record rainfall, flooding, storm debris and increased nutrient runoff to the area beginning in August 2024. The bays are actively recovering, and the county will continue to monitor Dona/Roberts Bay as watershed improvements are implemented.

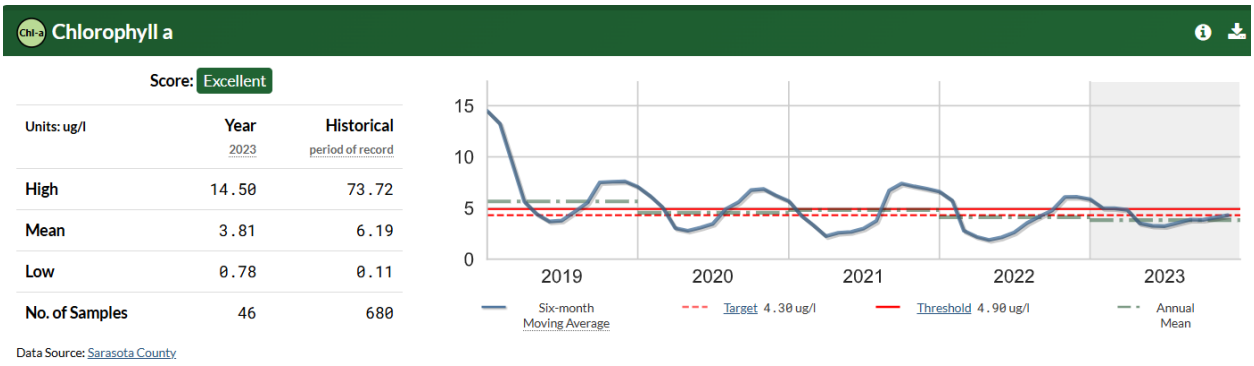

Figure 12 *Dona/Roberts Bay 2023 Chlorophyll-a Results*

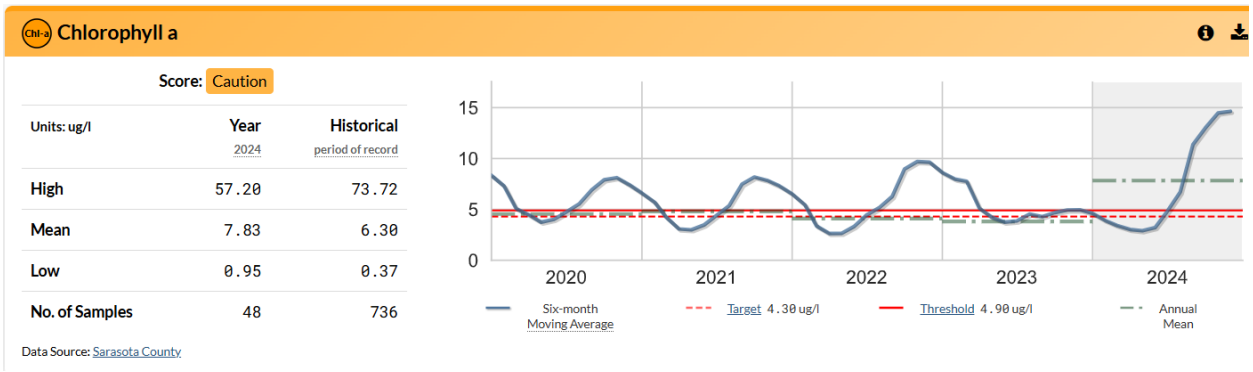

Figure 13 *Dona/Roberts Bay 2024 Chlorophyll-a Results*

Dona Bay/Roberts Bay Increased Nitrogen

In 2024 Dona/Roberts Bay experienced a slight increase in total nitrogen from an arithmetic mean of 0.344 mg/L in 2023 to 0.492 mg/L in 2024 (Figures 14 and 15), shifting total nitrogen indicator status from a rating of **Excellent** to **Caution**, contributing to the shift of the overall bay condition from **Pass** to **Caution** along with chlorophyll a. The decline in water quality from 2023 to 2024 is likely attributed to an active hurricane season, with Invest 90 followed by three named storms bringing record rainfall, flooding, storm debris and increased nutrient runoff to the area beginning in June 2024. The bays are actively recovering, and the county will continue to monitor Dona/Roberts Bay as watershed improvements are implemented.

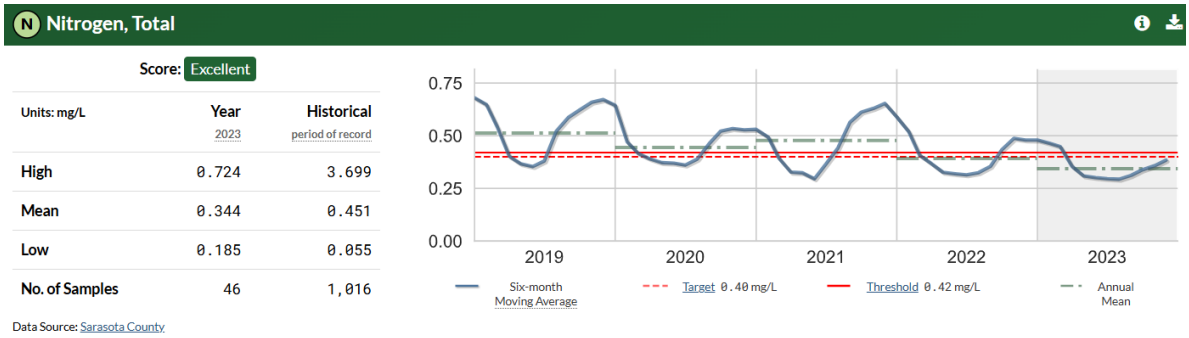

Figure 14 *Dona/Roberts Bay 2023 Total Nitrogen Results*

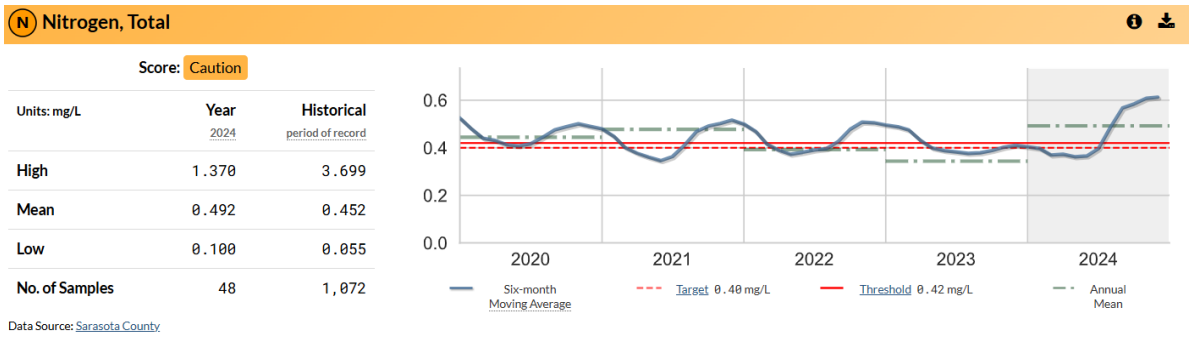

Figure 15 *Dona/Roberts Bay 2024 Total Nitrogen Results*

Upper Lemon Bay Increased Chlorophyll-a

In 2024 Upper Lemon Bay experienced a significant increase in chlorophyll-a (Figures 16 and 17) from an arithmetic mean of 5.55 ug/L in 2023 to 17.41 ug/L in 2024, exceeding the DEP numeric nutrient criteria for this waterbody, shifting chlorophyll-a indicator status from a rating of **Excellent** to **Caution** and contributing to the shift in the overall bay condition from **Pass** to **Caution** status along with total nitrogen. The annual mean for chlorophyll-a in 2024 was triple the annual mean for the previous year, and the high value of 310.90 ug/L in September 2024 set a new record for the historical period. The decline in water quality from 2023 to 2024 is likely attributed to an active hurricane season, with three named storms bringing record rainfall, flooding, storm debris and increased nutrient runoff to the area beginning in August 2024. The County will continue to monitor Upper Lemon Bay as watershed improvements are implemented. The Lemon Bay Watershed Management Plan is being updated and will produce a list of potential best management practices to improve water quality.

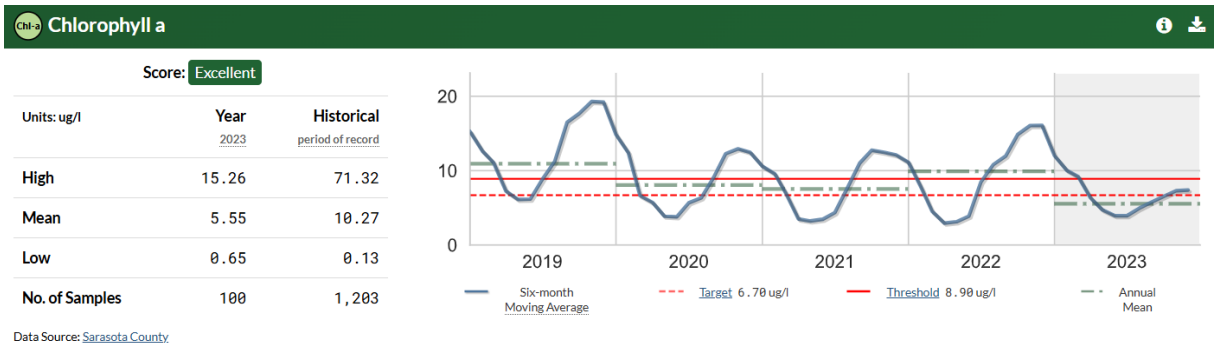

Figure 16 *Upper Lemon Bay 2023 Chlorophyll-a Results*

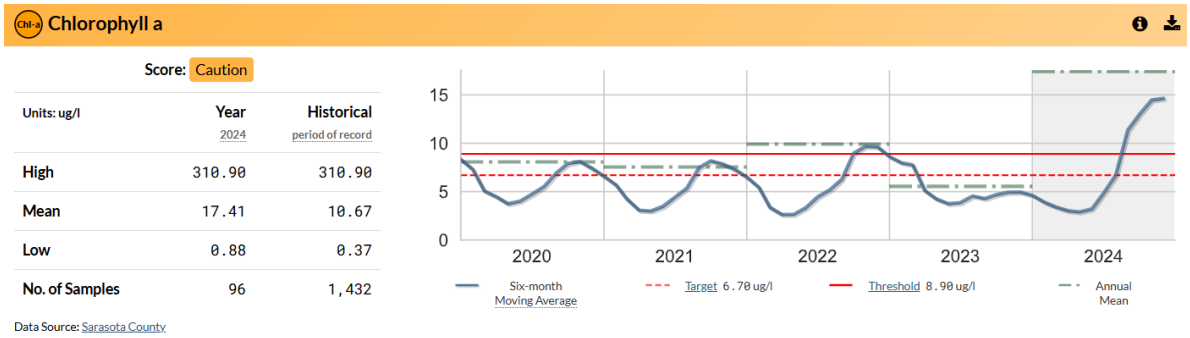

Figure 17 *Upper Lemon Bay 2024 Chlorophyll-a Results*

Upper Lemon Bay Increased Nitrogen

In 2024 Upper Lemon Bay experienced an increase in total nitrogen (Figures 18 and 19) from an arithmetic mean of 0.515 mg/L in 2023 to 0.568 mg/L in 2024, shifting total nitrogen indicator status from a rating of **Excellent** to **Caution**, contributing to the shift in the overall bay condition from **Pass** to **Caution** status along with chlorophyll-a. The decline in water quality from 2023 to 2024 is likely attributed to an active hurricane season, with three named storms bringing record rainfall, flooding, storm debris and increased nutrient runoff to the area beginning in August 2024. The Lemon Bay Watershed Management Plan is being updated and will produce a list of potential best management practices to improve water quality.

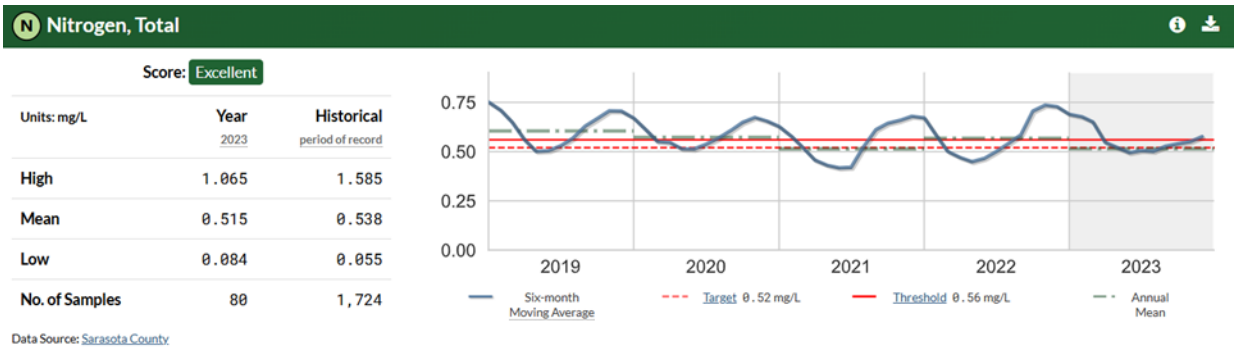

Figure 18 *Upper Lemon Bay 2023 Total Nitrogen Results*

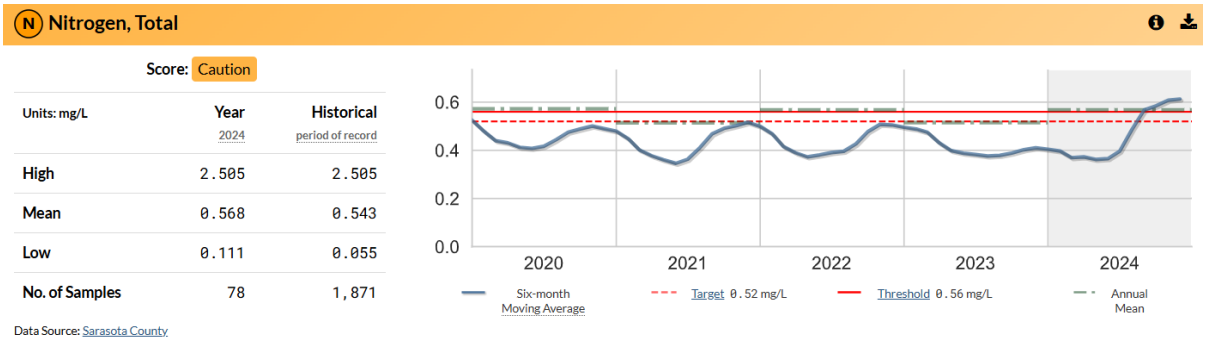

Figure 19 *Upper Lemon Bay 2024 Total Nitrogen Results*

Long-term Assessment – Conditions and Trends

Bay conditions in tandem with trends help to determine the overall water quality health of each bay. Sarasota Bay information can be found on the Sarasota Water Atlas at the links below:

Bays Condition Reports - Sarasota.WaterAtlas.org (usf.edu)

Water Quality Trends and Hotspots - Sarasota.WaterAtlas.org (usf.edu)

The Bay Conditions and Indices Report is shown in Figure 20, and the Key is found below. The prioritized water quality indicators are chlorophyll-*a*, total nitrogen, and total phosphorus. For prioritized indicators, a score of **Excellent** denotes concentrations that meet or are better than the target concentration, and a score of **Good** denotes regulatory thresholds are being met. A score of **Caution** denotes that an indicator does not meet thresholds. Bay conditions and indices illustrate the overall health of the bay as a whole and follow the **Pass** or **Caution** method as referenced in the sections above. Each bay receives an overall **Pass** or **Caution** rating which is dependent on the state's Numeric Nutrient Criteria.

Trends are depicted in Figures 21-38 and the Map Legend is below. The water quality parameters addressed are chlorophyll-a, total nitrogen, and total phosphorus for the ten-year period 2015-2024. Bay trends allow Sarasota County to identify areas with increasing trends of water quality indicators, which is critical for successful watershed and bay management. The results of the ambient water quality monitoring of bays provide a scientific basis for stormwater management. Though water quality improvements were realized in 2023, there are areas where the long-term trends for nutrients of concern are increasing.

Conditions and Indices Report Key

Pass

Caution

Good

Excellent

Map Legend

Increasing Trend, Larger Rate **Declining**

Increasing Trend, Smaller Rate **Declining**

No Trend

Decreasing Trend, Smaller Rate **Improving**

Decreasing Trend, Larger Rate **Improving**

Sarasota County Watershed Boundary

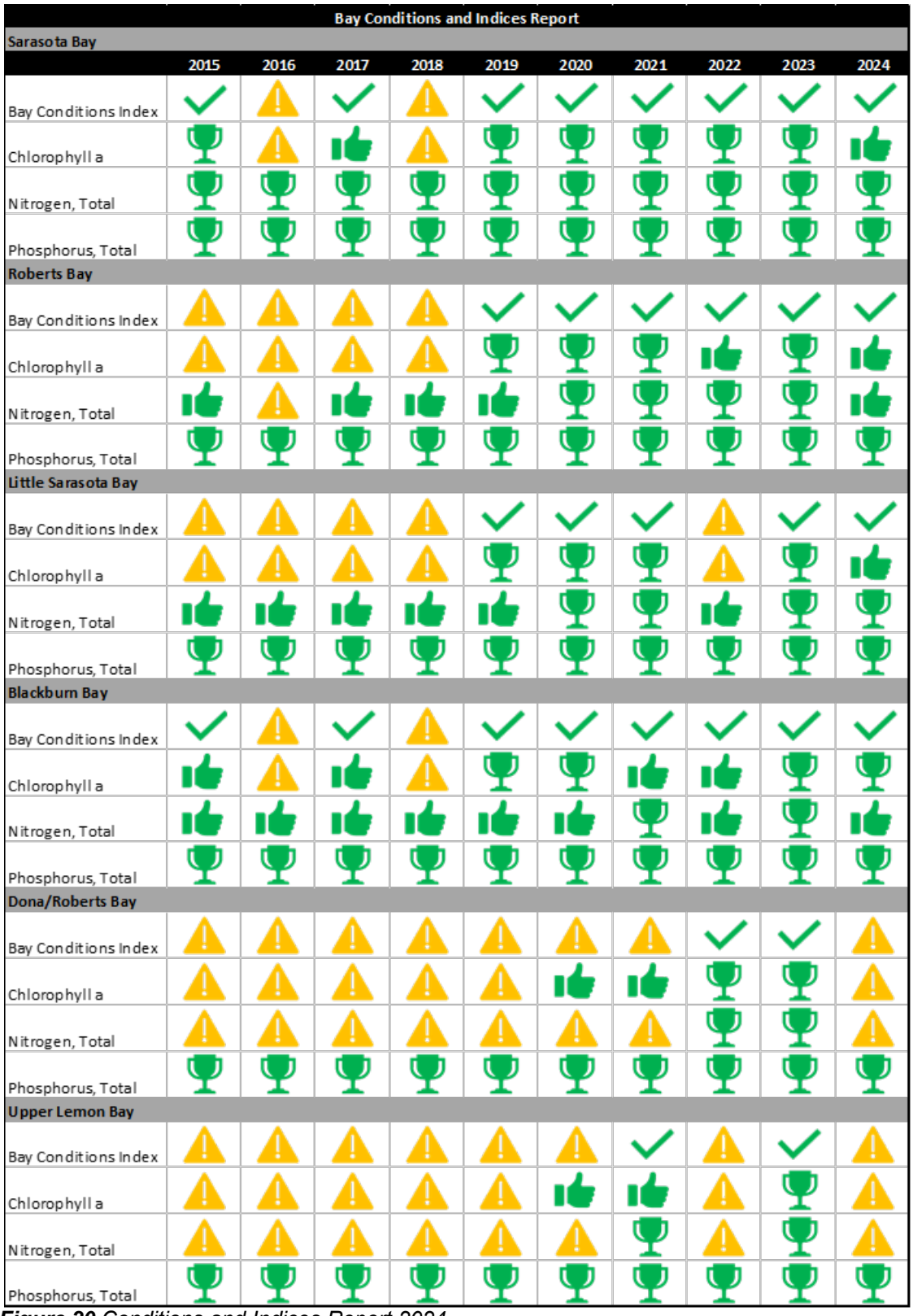

Figure 20 *Conditions and Indices Report 2024*

Sarasota Bay

Long-Term Trends

The Sarasota Bay Water Atlas trend pages for the ten-year period 2015-2024 are displayed in figures 21-23. Sarasota Bay has maintained a **Pass** rating for the sixth consecutive year. Chlorophyll-a and total nitrogen display slight increases from the previous year, while ten-year trends display no trend at some sites and decreasing trends at others. Total phosphorus remains stable with seven sites displaying no trend and the remaining eight sites displaying decreasing trends.

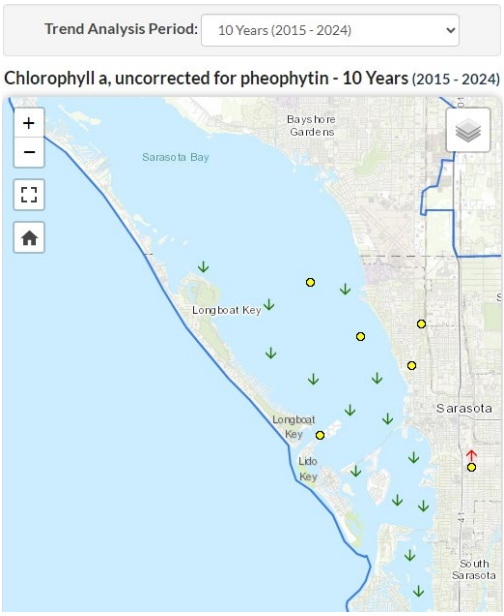

Figure 21 *Sarasota Bay Chlorophyll-a 2015-2024*

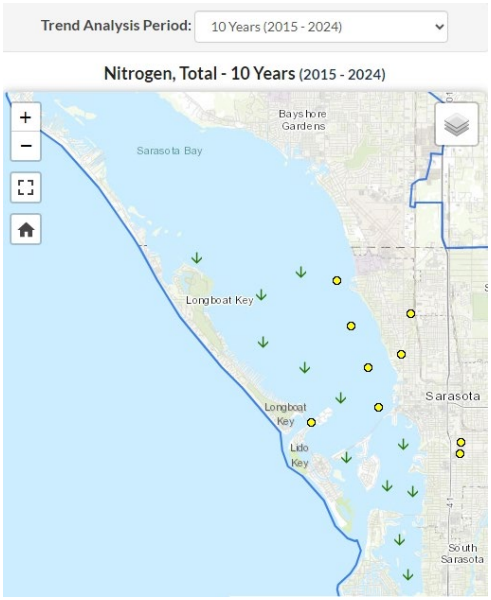

Figure 22 *Sarasota Bay Total Nitrogen 2015-2024*

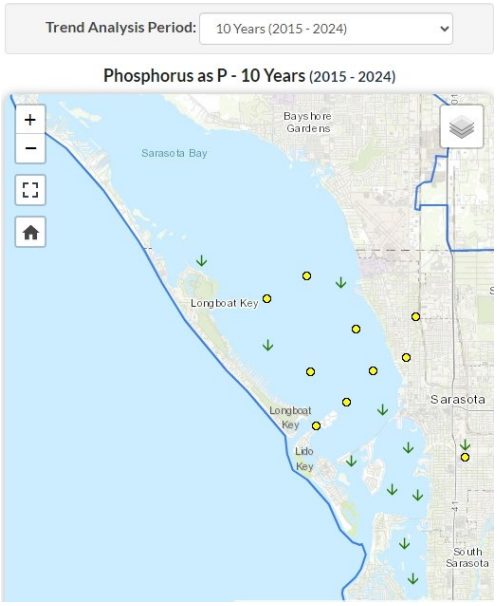

Figure 23 *Sarasota Bay Total Phosphorus 2015-2024*

Roberts Bay

Long-Term Trends

The Roberts Bay Water Atlas trends for the ten-year period 2015-2024 are displayed in Figures 24-26. Roberts Bay has shown great improvement and has maintained a **Pass** rating for the sixth consecutive year. Chlorophyll-a, total nitrogen and total phosphorus all display decreasing trends for the ten-year trend period.

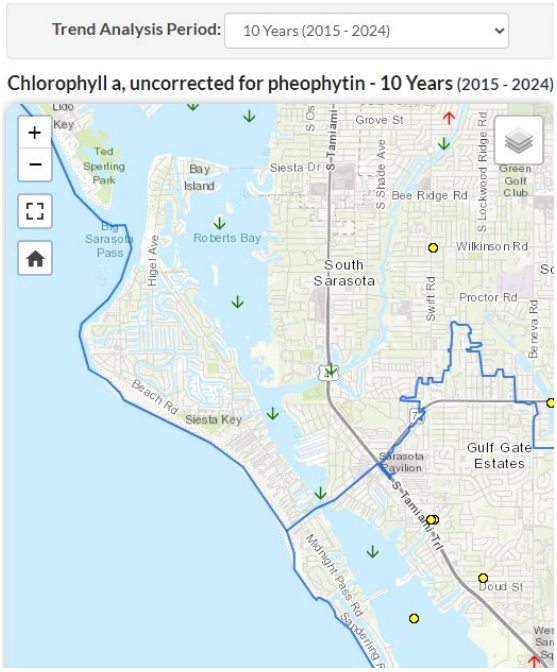

Figure 24 *Roberts Bay Chlorophyll-a 2015-2024*

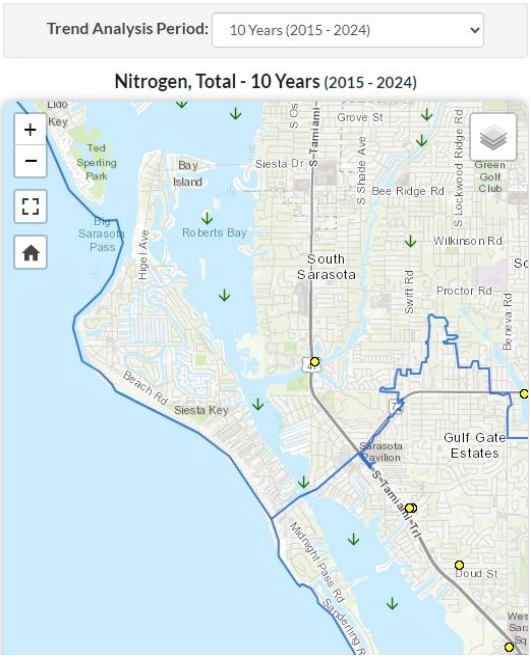

Figure 25 *Roberts Bay Total Nitrogen 2015-2024*

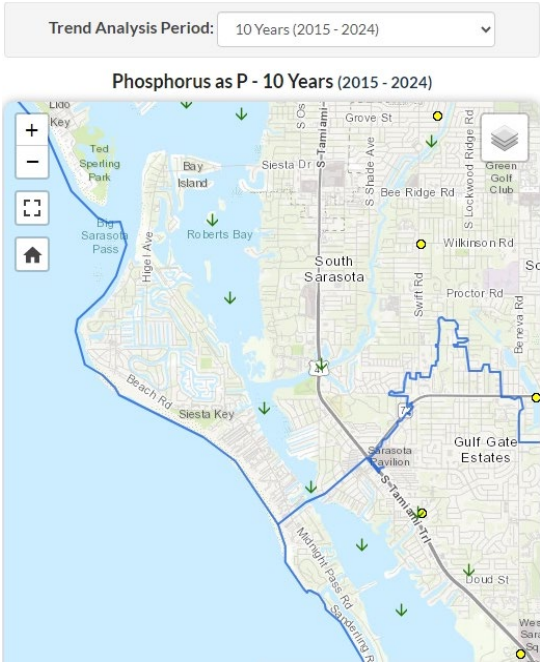

Figure 26 *Roberts Bay Total Phosphorus 2015-2024*

Little Sarasota Bay

Long-Term Trends

The Little Sarasota Bay Water Atlas trend pages for the ten-year period 2015-2024 are displayed in figures 27-29. Little Sarasota Bay maintains a **Pass** rating for the second consecutive year, though levels for all indicators increased from the previous year. Over the ten-year period, chlorophyll-a displays decreasing trends at all but one site (14-1), with this site displaying no trend. Total phosphorus also displayed decreasing trends at all but one site (14-5), with this site displaying no trend. Total nitrogen displayed decreasing trends at all sites for the ten-year trend period.

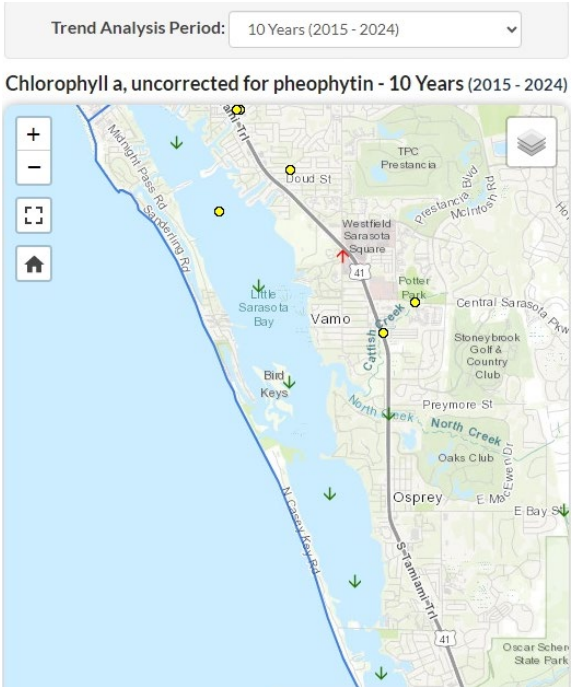

Figure 27 *Little Sarasota Bay Chlorophyll-a 2015-2024*

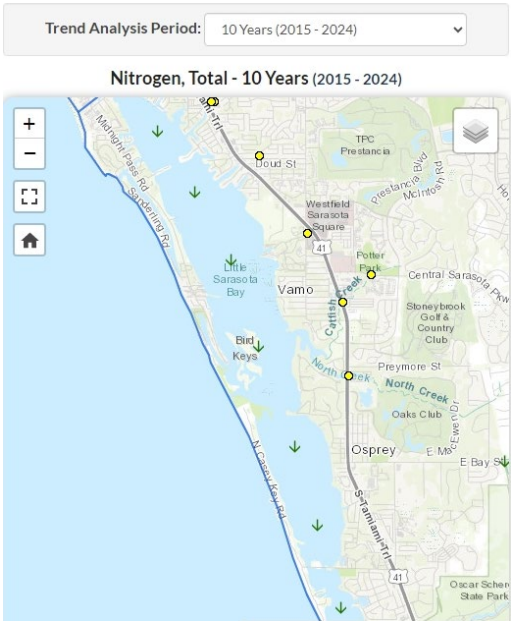

Figure 28 *Little Sarasota Bay Total Nitrogen 2015-2024*

Figure 29 *Little Sarasota Bay Total Phosphorus 2015-2024*

Blackburn Bay

Long-Term Trends

The Blackburn Bay Water Atlas trend pages for the ten-year period 2015-2024 are displayed in Figures 30-32. Blackburn Bay has maintained a **Pass** rating for the sixth consecutive year. Chlorophyll-a displays improving decreasing trends at all sites, while total nitrogen displays improving decreasing trends at all but one site (16-5), with this site displaying no trend. Total phosphorus displays no trend at sites 16-1, 16-3 and 16-5 with decreasing trends at sites 16-2 and 16-4.

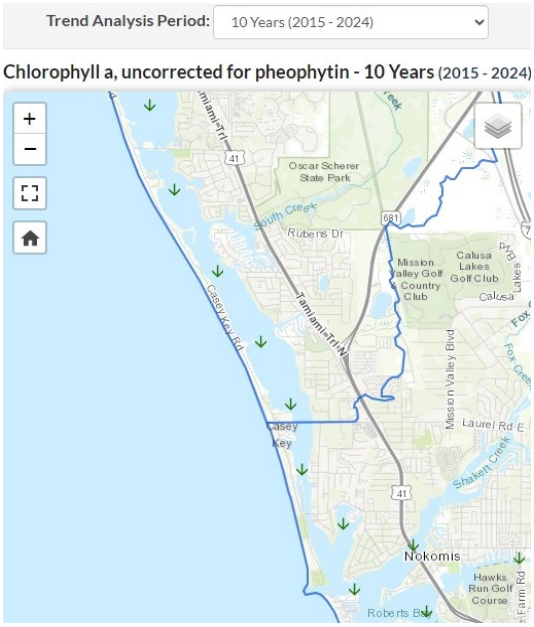

Figure 30 *Blackburn Bay Chlorophyll-a 2015-2024*

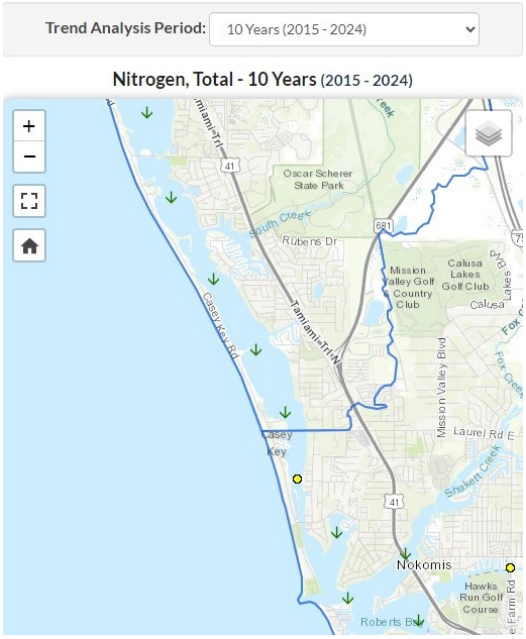

Figure 31 *Blackburn Bay Total Nitrogen 2015-2024*

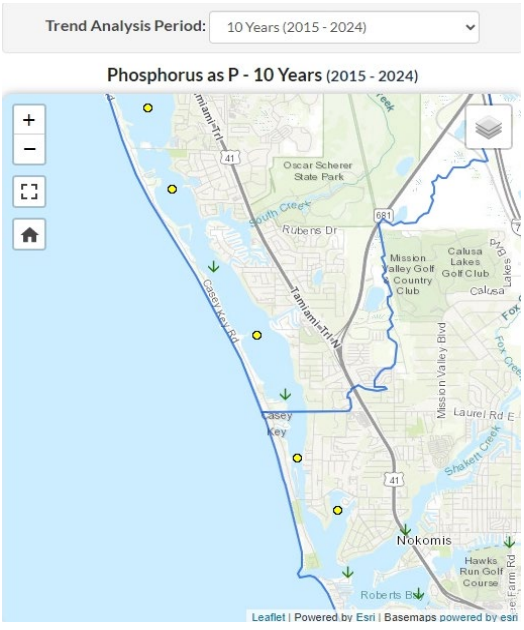

Figure 32 *Blackburn Bay Total Phosphorus 2015-2024*

Dona Bay/Roberts Bay

Long-Term Trends

The Dona Bay/Roberts Bay Water Atlas trend pages for the ten-year period 2015-2024 are displayed in figures 33-35. Following improvements in chlorophyll-a and total nitrogen from 2021-2023, Dona/Roberts Bays improved to and maintained a **Pass** rating for 2022 and 2023. In 2024, Dona/Roberts Bays again fell to a **Caution** rating due to increases in both chlorophyll-a and total nitrogen. Although for the ten-year period, all sites displayed decreasing trends for both indicators, individual sample site annual averages increased from the previous year. Total phosphorus remains stable, maintaining a **Pass** rating across the entire ten-year period, displaying improving decreasing trends at all but one site, with the remaining site displaying no trend for the ten-year period.

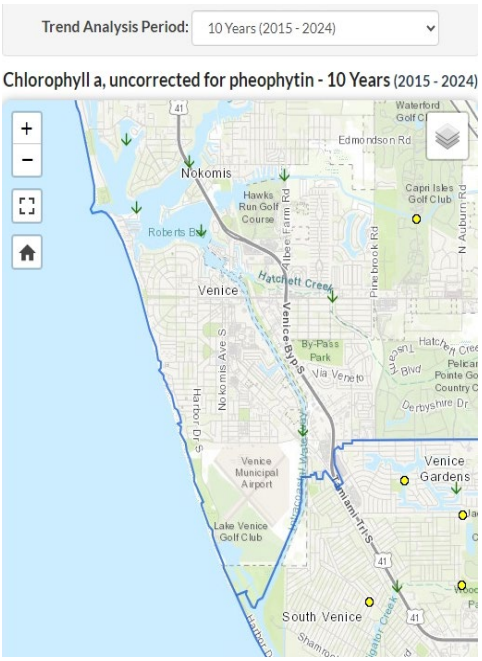

Figure 33 *Dona Roberts Bay Chlorophyll-a 2015-2024*

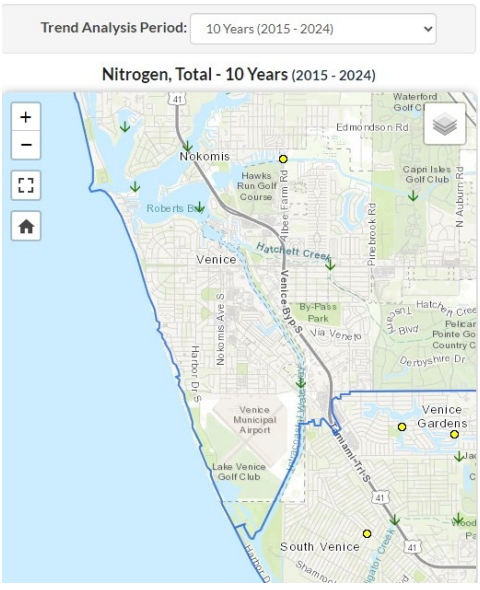

Figure 34 *Dona Roberts Bay Total Nitrogen 2015-2024*

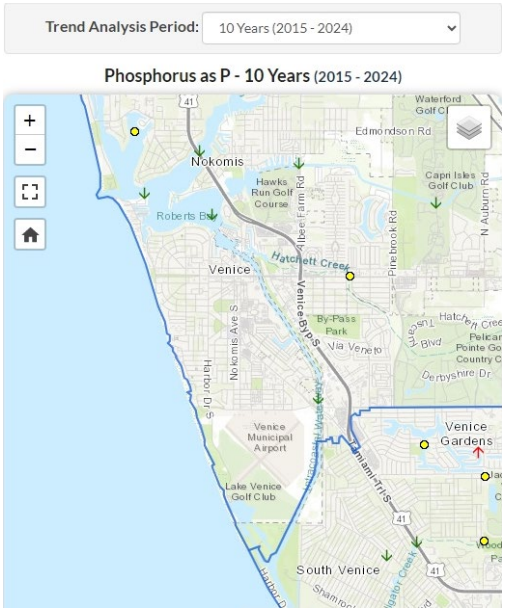

Figure 35 *Dona Roberts Bay Total Phosphorus 2015-2024*

Upper Lemon Bay

Long-Term Trends

The Lemon Bay Water Atlas trend pages for the ten-year period 2015-2024 are displayed in Figures 36-38. Lemon Bay showed great improvement in 2023, achieving an overall **Pass** rating with all indicators achieving an **Excellent** rating. In 2024 Lemon Bay experienced increases in both chlorophyll-a and total nitrogen, shifting the bay to a **Caution** rating. Chlorophyll-a displayed improving decreasing conditions at all sites, though levels increased substantially from 2023. Total nitrogen displayed improving decreasing trends at three northern sites, with the remaining two southern sites displaying no trend. Total phosphorus maintains a pass rating for the entire ten-year period, also displaying decreasing trends at all sites.

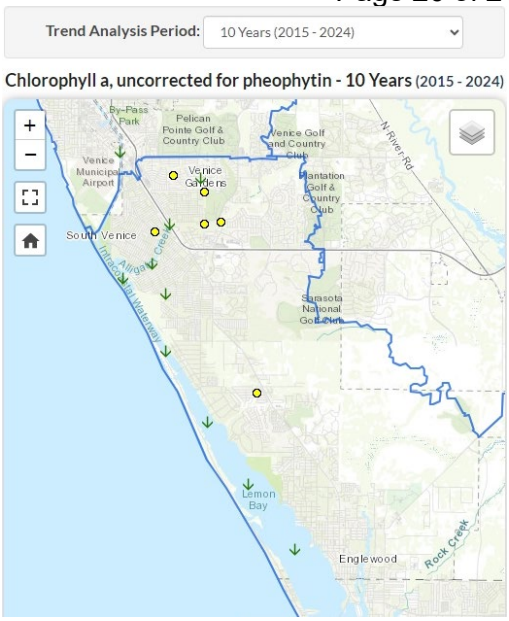

Figure 36 *Upper Lemon Bay Chlorophyll-a 2015-2024*

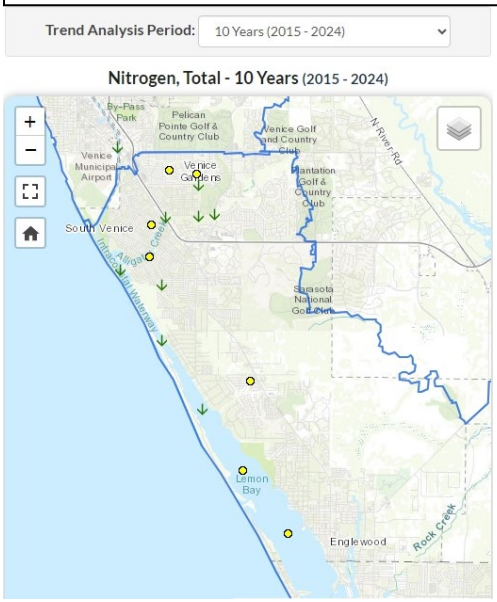

Figure 37 *Upper Lemon Bay Total Nitrogen 2015-2024*

Figure 38 *Upper Lemon Bay Total Phosphorus 2015-2024*

Relationship of Data to Stormwater Management Plan

The results of the ambient water quality monitoring of the bays provide a scientific basis for watershed and stormwater management. Figure 20 on page 13 highlights overall bay conditions and improvements that have been realized over the last ten-year period. Although bay conditions have improved, the overall trends have not reversed since the inception of monitoring in 1995. In 2024 four bays maintained a **Pass** rating and two others shifted to **Caution**. Sarasota Bay has had variable chlorophyll-a values; Sarasota Bay received a **Caution** rating for this parameter in 2016 and 2018 following high red tide counts across the county, with levels improving and maintaining a rating of **Excellent** from 2019-2023; in 2024 chlorophyll-a levels increased, shifting this indicator to a rating of **Good** with the bay as a whole maintaining a **Pass** rating. Dona Bay / Roberts Bay fell to a **Caution** rating for 2024 with chlorophyll-a improving from **Caution** in 2019 to **Excellent** through 2023, subsequently declining again in 2024. Dona Bay/Roberts Bay also experienced an increase in total nitrogen in 2024, shifting this indicator from a rating of **Excellent** for 2022 and 2023 to **Caution** for 2024. Despite these improvements in water quality, Upper Lemon Bay has consistently struggled to maintain healthy water quality for chlorophyll-a and total nitrogen. The years 2021 and 2023 are the only years during the 10-year trend period that Lemon Bay received a **Pass** rating, although current trends predict improving conditions.

Trends and analyses highlighted in this report will be used to identify portions of the MS4 that are potentially suitable for the implementation of additional BMPs or increased monitoring. Since 2010, the majority of Sarasota County bays have met or exceeded regulatory standards. The two exceptions are Dona Bay / Roberts Bay and Upper Lemon Bay, which both exhibited elevated levels of total nitrogen and chlorophyll-a. Completed and ongoing County Watershed Management Plans updates and Stormwater projects to reduce these elevated levels are ongoing. These include the ongoing Little Sarasota Bay and Lemon Bay Watershed Management Plan updates, the upcoming Dona and Lemon Bay Watershed Management Plan updates, and the Dona Bay Hydrologic Restoration projects. The Watershed Management Plans are intended to be updated on a five-year cycle.

Year 6

Sarasota County 2024 NPDES MS4 Annual Report

2. AMBIENT WATER QUALITY OF WATERSHEDS

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Sarasota County NPDES MS4 Annual Report 2024

The ambient water quality monitoring of creeks is one of the most important aspects of stormwater pollution evaluation and management. Stormwater transports pollutants across watersheds via creeks to the bays. Quantifying the concentration of pollutants provides an understanding of the conditions and trends of waterbodies over time and the identification of strategies that lead to water quality improvements. Sarasota County monitors water quality through the analysis of priority analytes: chlorophyll-***a*****,** nitrogen**,** phosphorus, and dissolved oxygen saturation.

Sarasota County conducts ambient water quality monitoring for Sarasota County, the City of Sarasota, the Town of Longboat Key, the City of Venice, and the Florida Department of Transportation (FDOT). In 2024, Sarasota County conducted monthly sampling at 71 stations in creeks and flowing waterways throughout the County, as demonstrated in Table 1 and Figure 1. Most sampling stations are in Impaired and TMDL waterbody priority drainage basins.

Sarasota County endured heavy rainfall caused by four separate storm systems in 2024 producing a combined total of nearly 63 inches of rain:

- On June 11th, Invest 90 brought 10 inches in 24 hours,
- On August 5th, Hurricane Debby brought approximately 18 inches in 48 hours,
- On September 26th, Hurricane Helene brought approximately 7.5 inches of stormwater and damaging storm surge, and
- On October 9th, Hurricane Milton made landfall in the County, causing devastating storm surge and sand deposition in residential and stormwater systems alike.

Status of Water Quality Monitoring Plan Implementation

2024 Sampling Sites

There were no sampling site changes in 2024.

This section will outline all sampling sites in the watersheds for 2024. Table 1 is a summary of these sampling sites. Sampling was consistent with the approved Sarasota County Water Quality Monitoring Plan.

Table 1 *Sampling Stations Within Each Watershed 2024*

Creek Basin Name	WBID	TMDL or Impaired	Number of Sampling Stations
Alligator Creek	2030, 2030A	TMDL	12
Catfish Creek	1984	TMDL	2
Clower Creek	1975A	TMDL	2
Cow Pen Slough	1924	Impaired	8
Curry Creek	2009A	TMDL	3
Elligraw Bayou	1975, 1975E	TMDL, with Matheny	2
Forked Creek	2039	TMDL	2
Gottfried Creek	2049	TMDL	2
Hatchett Creek	2015, 2015A	Impaired	1
Hudson Bayou	1953	Impaired	2
Matheny Creek	1975 B, C	TMDL, with Elligraw	2
North Creek	1984AB	Impaired	1
South Creek	1982, 1982A	TMDL	1
Phillippi Creek	1937	TMDL	13
Phillippi Creek	1947	Impaired	2
Phillippi Creek – Cooper Creek	1930A	Impaired	1
Phillippi Creek – Clark Lake	1971, 1971A	Impaired	2
Whitaker Bayou	1936	Impaired	2
Woodmere Creek	2042	TMDL	1
Big Slough	1976	TMDL	1
Clay Gully	1972AB	Impaired	1
Deer Prairie Slough	1978	Impaired	1
Howard Creek	1940	Impaired	1
Myakka River	1991C	TMDL	5
Little Salt Creek – Formerly Warm Mineral Springs - Spring Run	2026 Formerly 2026A	Impaired for DO	1
TOTAL			71

Summary of Results

Each creek receives either a **Pass** or **Caution** rating. These ratings are assigned based on the performance of prioritized indicators: chlorophyll-*a*, nitrogen, phosphorus, and dissolved oxygen saturation. The rating system is based on numeric nutrient criteria predefined by the state standards and considers water quality in both freshwater and marine stream ecosystems. The overall status for each creek along with the status of each priority analyte are shown below (Figure 1).

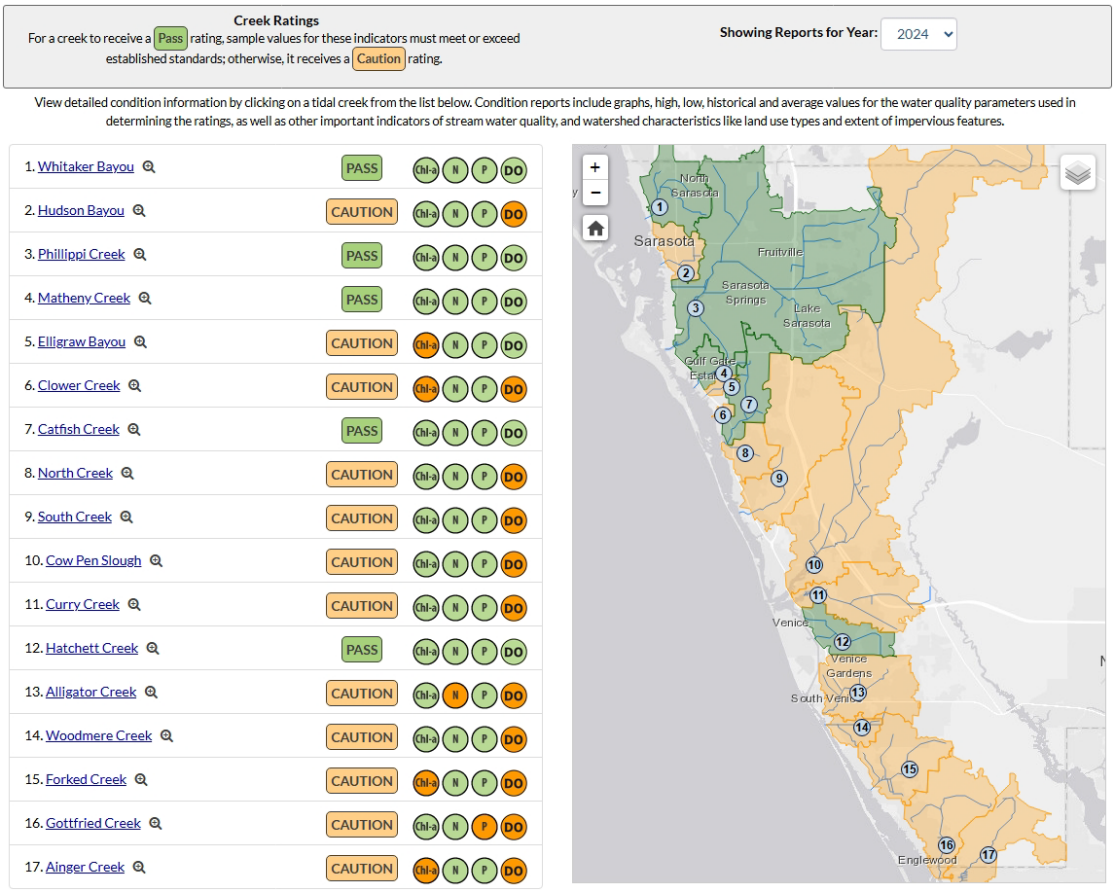


Figure 1 *Creek Locations Within Each Watershed 2024*

Figures in this report show several changes in specific watershed conditions that occurred in water quality throughout Sarasota County in 2024 as depicted on the Sarasota Water Atlas. This information is found on the Creek Conditions page.

Hudson Bayou

Although dissolved oxygen levels in the fresh portion of Hudson Bayou remained in the pass category for 2024, dissolved oxygen levels in the tidal portion of Hudson Bayou declined in 2024. Hudson Bayou maintained a **Pass** rating for Dissolved Oxygen (DO) from 2013-2021, with levels dropping in 2022, recovering in 2023 and dropping again in 2024 resulting in a **Caution** rating. The five-year rolling average is shown in Figure 2. According to the data provided, the tidal portion of the bay is sampled directly by Florida Department of Environmental Protection (FDEP). While there is no graphic for the year 2023 this data verified an average DO of 66% for 2023 as opposed to an average of 52.9% for 2024.

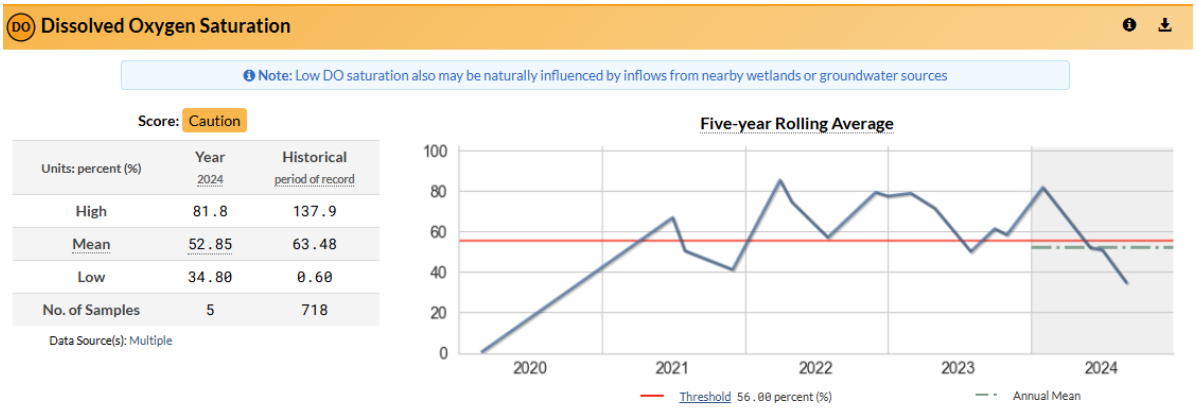


Figure 2 *Hudson Bayou Tidal Portion Dissolved Oxygen Results 2024*

Phillippi Creek

Dissolved oxygen levels for the freshwater portion of Phillippi Creek remained in the **Pass** rating for 2024, and the tidal portion increased from **Caution** in 2023 to **Pass** for 2024. The annual mean in 2023 was 46.4%, which greatly increased in 2024 to 92.56%. The tidal portion of Phillippi Creek maintained a **Caution** rating for dissolved oxygen levels in 2014, 2016-2019, 2021, and again in 2023. The five-year rolling average for the tidal portion of Phillippi Creek is shown in Figures 3 and 4.

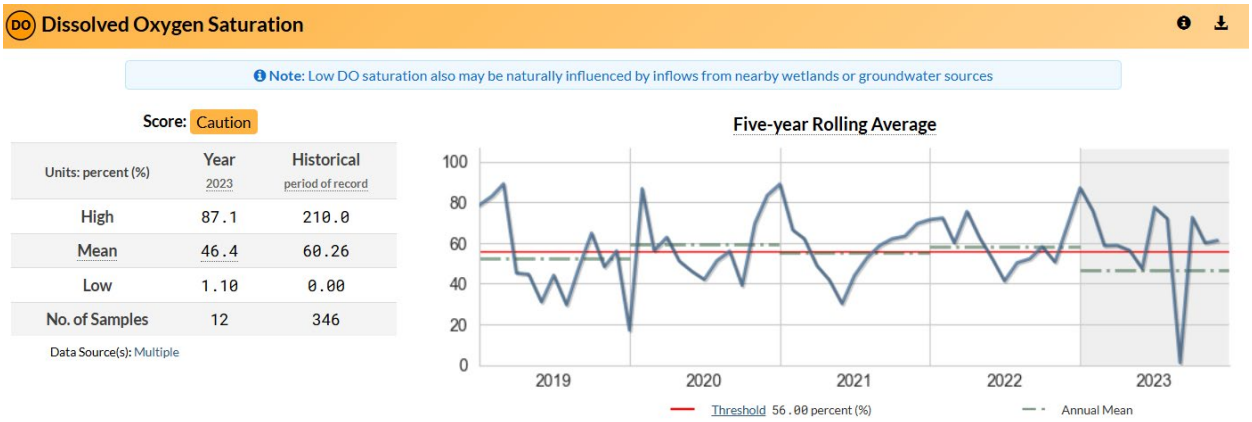


Figure 3 *Phillippi Creek Tidal Portion Dissolved Oxygen Results 2023*

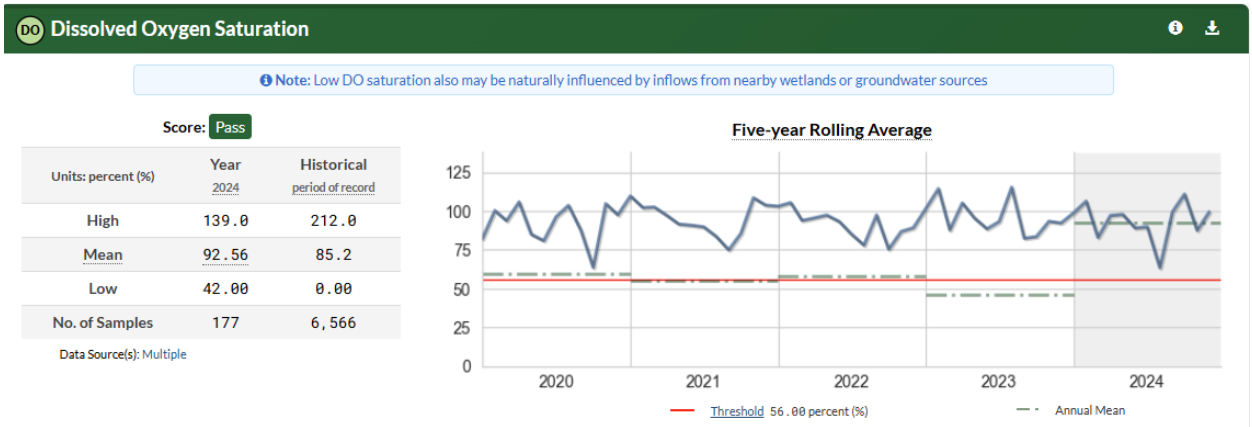


Figure 4 *Phillippi Creek Tidal Portion Dissolved Oxygen Results 2024*

Elligraw Bayou

In 2023 the two County sampling sites in Elligraw Bayou, both within the freshwater portion of the waterbody, were miscategorized as tidal on the NPDES 2023 Annual Report, which changes the FDEP threshold criteria. Elligraw Bayou has consistently remained a **Caution** rating due to chlorophyll-*a* and dissolved oxygen results. Comparing all results anew, the chlorophyll-*a* measured in 2023 received a **Pass** rating with an annual mean of 15 ug/L while the results for 2024 demonstrate a decline to a **Caution** rating, reporting an annual mean of 23.3 ug/L. This is shown in Figures 5 and 6.

The dissolved oxygen status for 2023 became a **Pass** rating with the updated criteria and remained a **Pass** for 2024.

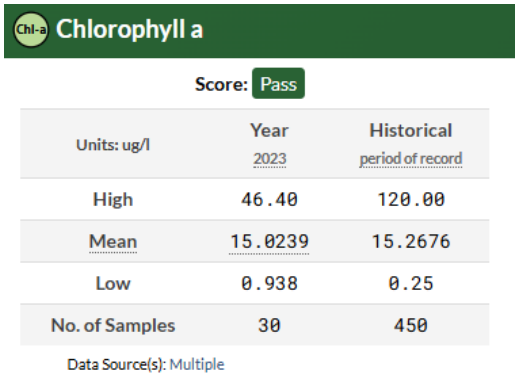


Figure 5 *Elligraw Bayou Chlorophyll-a Results 2023*

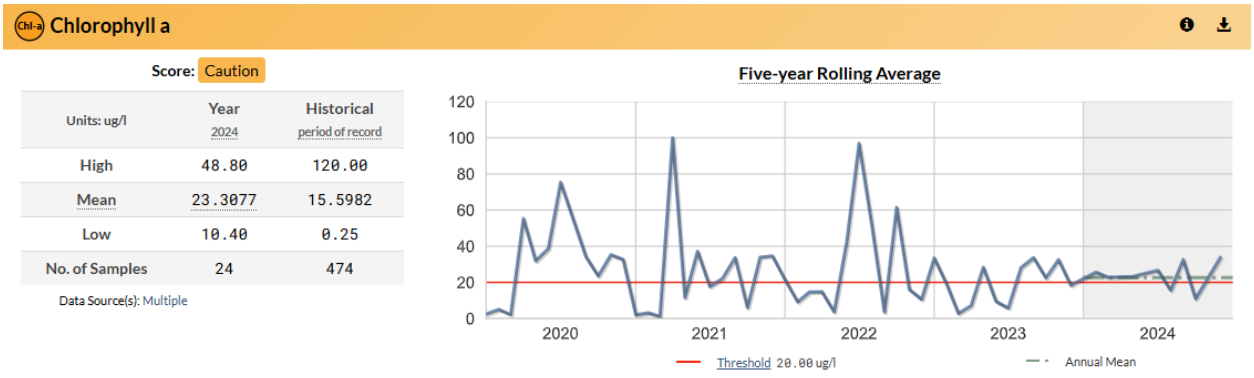


Figure 6 *Elligraw Bayou Chlorophyll-a Results 2024*

Clower Creek

Clower Creek freshwater portion showed a water quality increase from 2023 to 2024 while Clower Creek tidal portion reported a decrease in water quality. While the category status did not change for any parameter between the years the data verifies these trends. All freshwater data remained a **Pass** rating. The tidal parameters remained in the **Caution** category for 2024. The tidal chlorophyll-*a* increased by 26% in 2024, dissolved oxygen decreased by 10.5%, and total nitrogen results increased by 5%.

This data will be represented in tabular rather than graphical format.

Table 2 *Clower Creek Results for 2023 and 2024*

Site Location		Parameter	Pass or Caution	2023	2024
Fresh Portion Site CLO		Chlorophyll-a ug/L	Pass	Mean 7.62 Max 14.7	Mean 11.78 Max 25.8
		Dissolved Oxygen %	Pass	Mean 33.96 Max 106.7	Mean 40.6 Max 101.9
		Total Nitrogen mg/L	Pass	Mean 1.573 Max 2.0	Mean 1.346 Max 2.0
Tidal Portion Site CLO-CCDB		Chlorophyll-a ug/L	Pass	Mean 6.09 Max 15.0	Mean 10.60 Max 24.0
		Dissolved Oxygen %	Caution	Mean 39.47 Max 76.09	Mean 28.99 Max 72.27
		Total Nitrogen mg/L	Caution	Mean 1.187 Max 1.593	Mean 1.245 Max 1.62

North Creek

North Creek tidal portion remained in the **Caution** category for 2024. Chlorophyll-*a* levels were fairly consistent, ranging from an annual mean of 11.5 ug/L in 2023 to 12.6 ug/L in 2024. Dissolved oxygen levels were also steady with an annual mean of 11.84% saturation in 2023 and an annual mean of 14.16% saturation in 2024, maintaining a **Caution** rating for this parameter in 2024**.** Total nitrogen was steady with an annual mean of 1.63 mg/L in 2023 and an annual mean of 1.53 mg/L in 2024. These results will be presented in Table 3 and Figures 7-10.

Table 3 *North Creek Tidal Portion Results 2023-2024*

Site Location	Parameter	2023	Pass or Caution	2024	Pass or Caution
Tidal Portion Site NOR	Chlorophyll-a ug/L	Mean 11.50 Max 16.0	Caution	Mean 12.60 Max 24.2	Caution
	Dissolved Oxygen %	Mean 15.49 Max 44.3	Caution	Mean 19.70 Max 46.51	Caution
	Total Nitrogen mg/L	Mean 1.63 Max 2.23	Pass	Mean 1.53 Max 2.20	Pass

North Creek continued

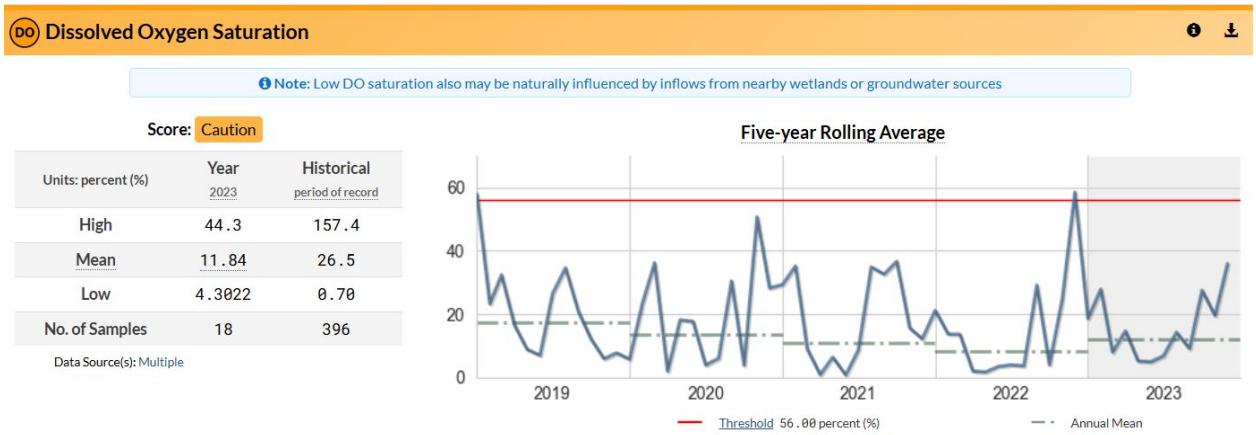


Figure 7 *North Creek Tidal Portion Dissolved Oxygen Results 2023*

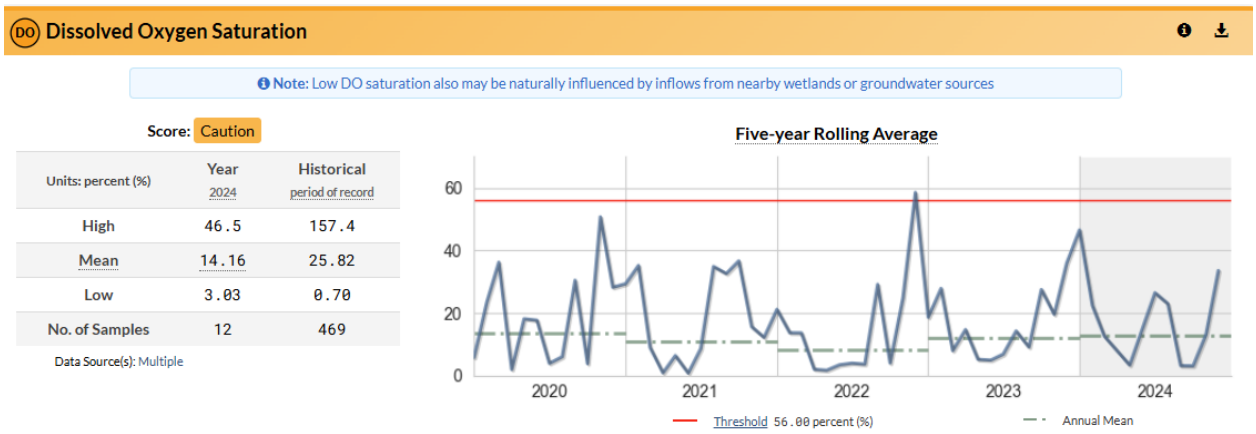


Figure 8 *North Creek Tidal Portion Dissolved Oxygen Results 2024*

North Creek continued

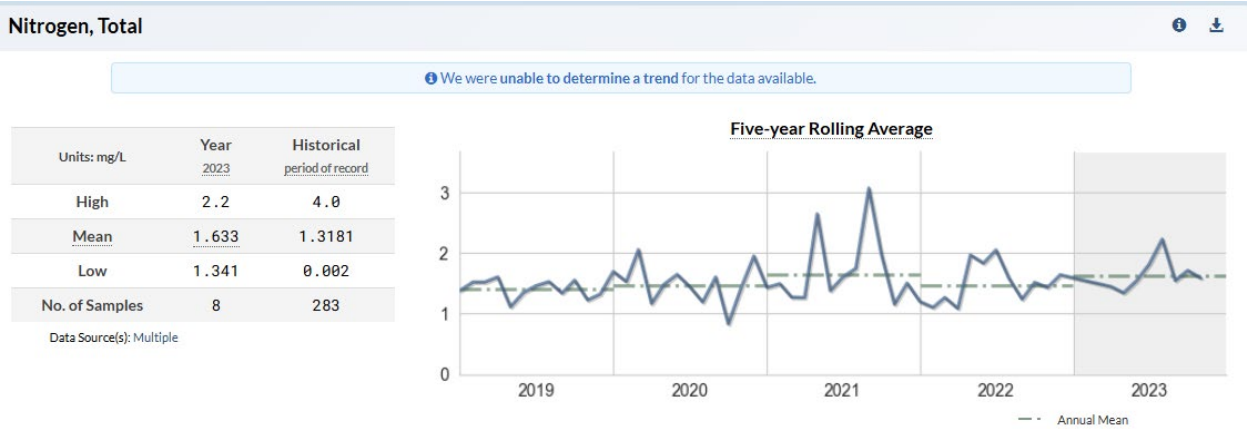


Figure 9 *North Creek Tidal Portion Total Nitrogen Results 2023*

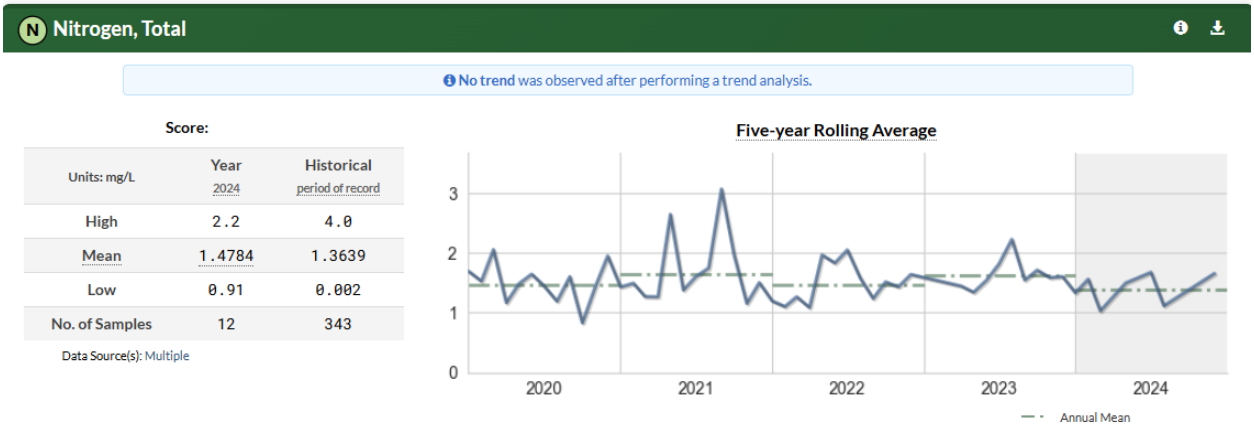


Figure 10 *North Creek Tidal Portion Total Nitrogen Results 2024*

South Creek

The freshwater portion of South Creek experienced a decrease in dissolved oxygen levels in 2024, declining from an annual mean of 52.22% saturation in 2023 to 33.22% saturation in 2024. This shifts the dissolved oxygen status from a **Pass** to **Caution** rating for 2024. South Creek maintained an overall **Pass** rating for six consecutive years prior to the decline in 2024. The five-year rolling average is shown in Figures 11 and 12.

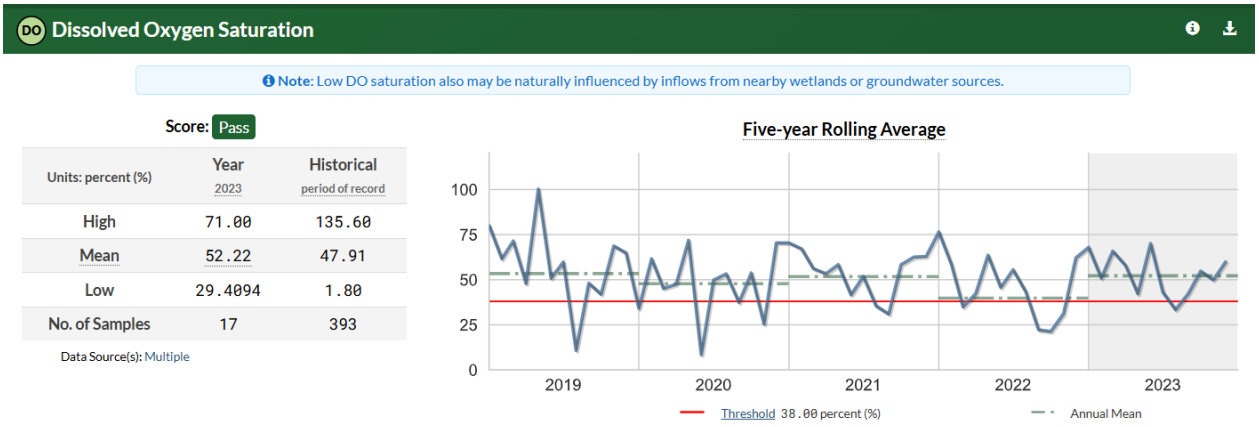


Figure 11 *South Creek Fresh Portion Dissolved Oxygen Results 2023*

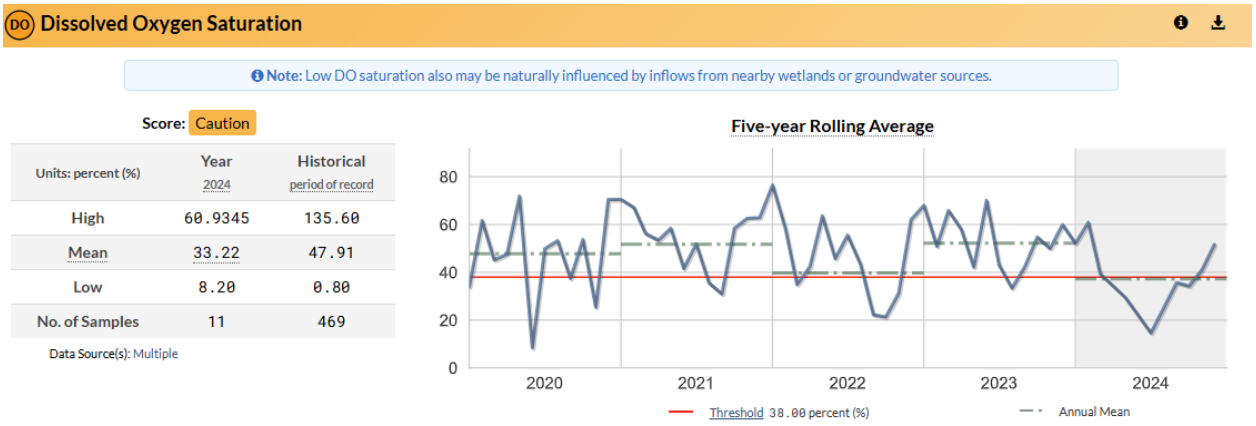


Figure 12 *South Creek Fresh Portion Dissolved Oxygen Results 2024*

Cow Pen Slough

Cow Pen Slough experienced a decrease in dissolved oxygen levels in 2024, declining from an annual mean of 54.29% saturation in 2023 to 32.15% saturation in 2024, shifting dissolved oxygen status from a **Pass** rating to **Caution** for 2024. Prior to the decline in 2024, Cow Pen Slough maintained an overall **Pass** rating from 2011-2023. The five-year rolling average is shown in figures 13 and 14.

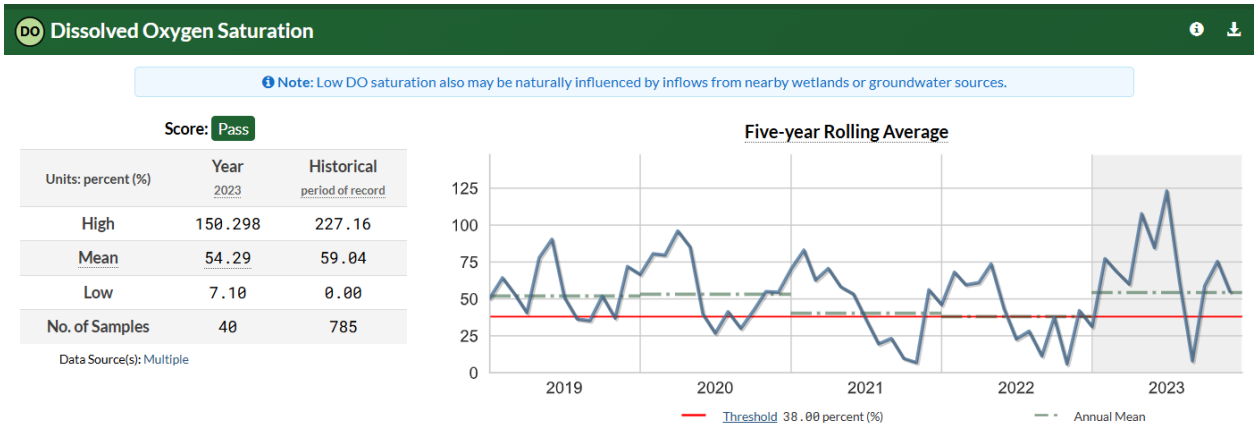


Figure 13 *Cow Pen Slough Fresh Portion Dissolved Oxygen Results 2023*

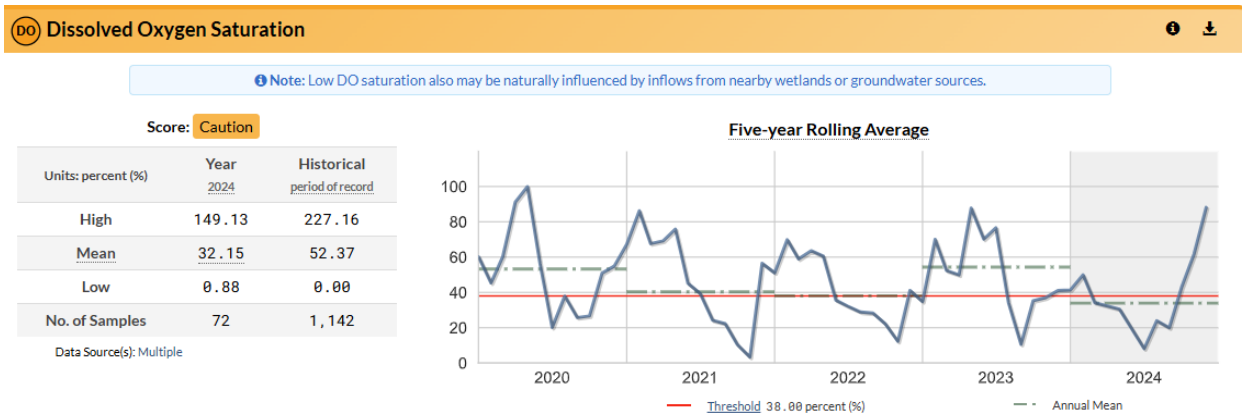


Figure 14 *Cow Pen Slough Fresh Portion Dissolved Oxygen Results 2024*

Curry Creek

The tidal portion of Curry Creek was steady with dissolved oxygen remaining in the **Caution** category. The freshwater portion of Curry Creek experienced a decrease in dissolved oxygen levels in 2024 yet remained with a **Pass** rating. Dissolved oxygen levels decreased from an annual mean of 56.92% saturation in 2023 to 38.42% saturation in 2024. Curry Creek maintained a **Pass** rating for dissolved oxygen from 2011-2021, 2023, and 2024. The five-year rolling average is shown in Figures 15 and 16.

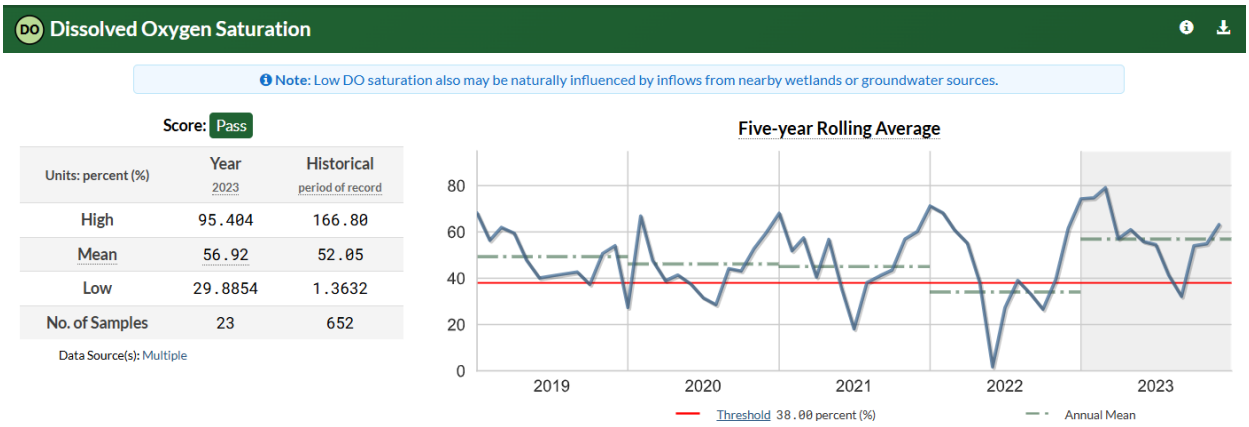


Figure 15 *Curry Creek Dissolved Oxygen Results 2023*

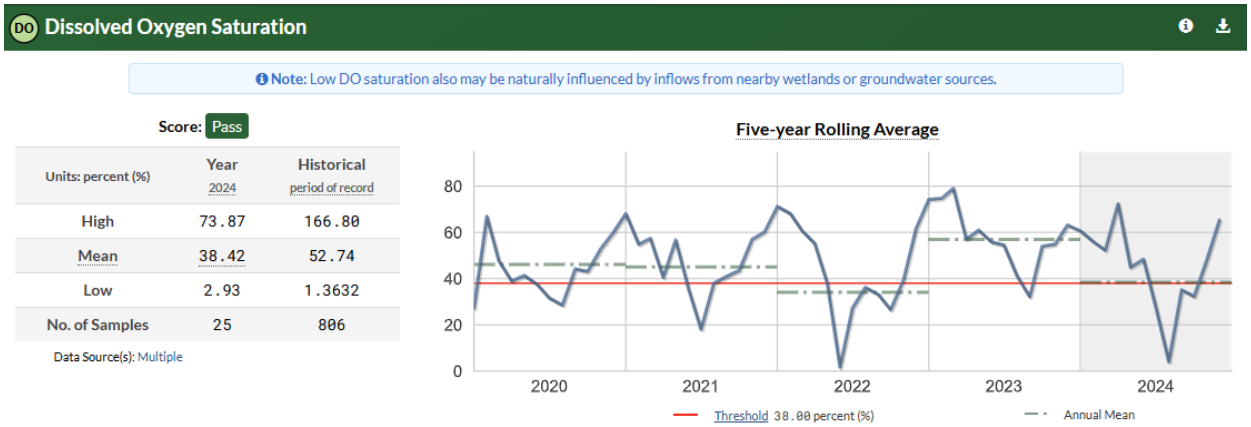


Figure 16 *Curry Creek Dissolved Oxygen Results 2024*

Alligator Creek

Overall, Alligator Creek maintained a **Caution** rating for 2024. The indicator status for all parameters in the tidal portion of Alligator Creek remained consistent from 2023 to 2024: Chlorophyll-*a*, nitrogen, and phosphorus retained a **Pass** rating, and dissolved oxygen maintained a **Caution** rating. The freshwater portion of Alligator Creek experienced a decrease in both chlorophyll-*a* and dissolved oxygen levels. Chlorophyll-*a* levels decreased from an annual mean of 23.53 ug/L in 2023 to 18.8 ug/L in 2024, bringing the rating up from a **Caution** in 2023 to a **Pass** in 2024. Dissolved oxygen levels decreased from an annual mean of 69.26% saturation in 2023 to 35.23% saturation 2024, with the creek maintaining a **Caution** rating for this parameter. Total nitrogen levels remained a **Caution** rating between 2023 and 2024, with an annual average of 1.9 mg/L, which is just above the FDEP threshold of 1.65 mg/L. However, the system did show improvement; the high result in 2023 was 14.4 mg/L whereas the high result reported in 2024 was 4.2 mg/L. The five-year rolling averages are shown in Figures 17-20.

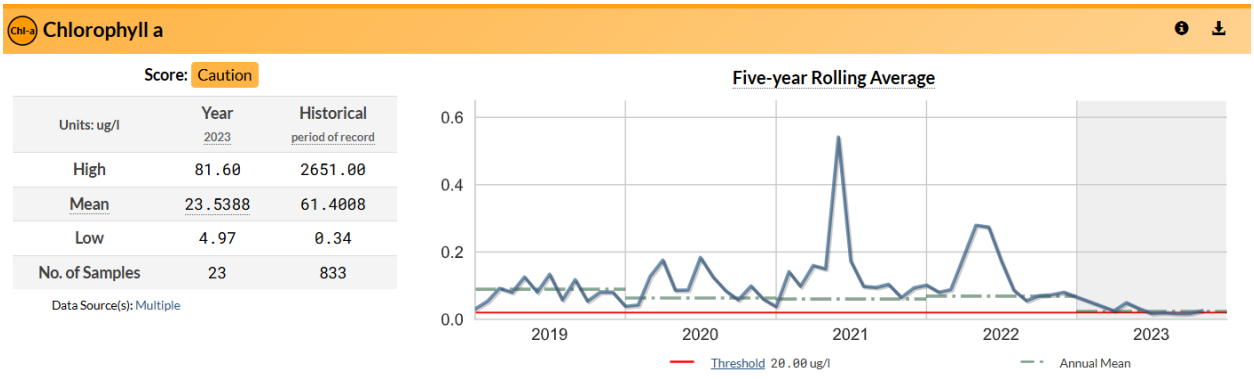


Figure 17 *Alligator Creek Fresh Portion Chlorophyll-a Results 2023*

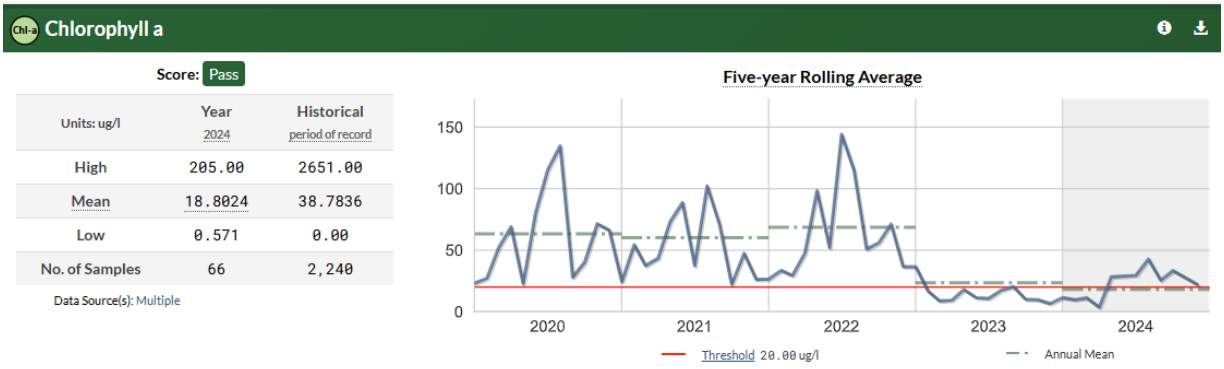


Figure 18 *Alligator Creek Fresh Portion Chlorophyll-a Results 2024*

Alligator Creek continued

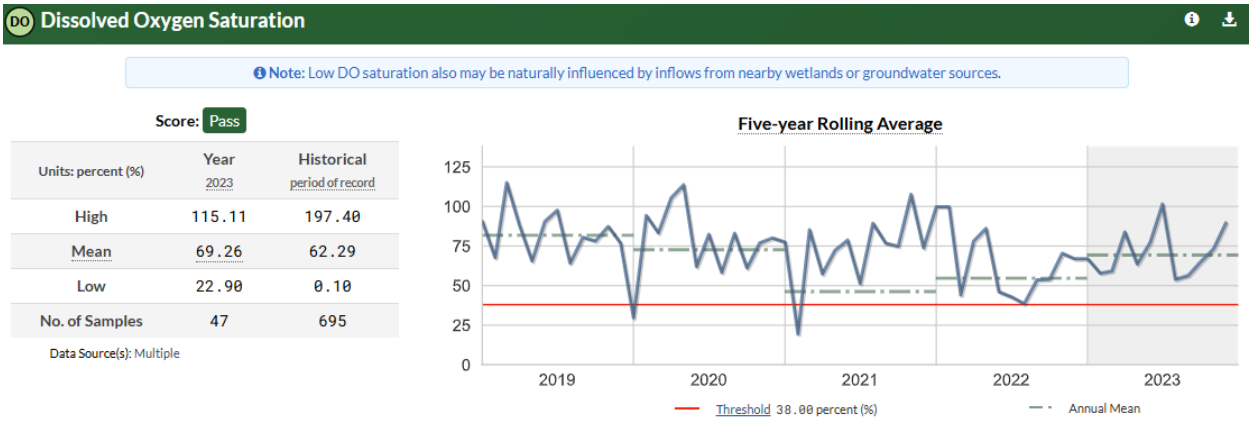


Figure 19 *Alligator Creek Fresh Portion Dissolved Oxygen Results 2023*

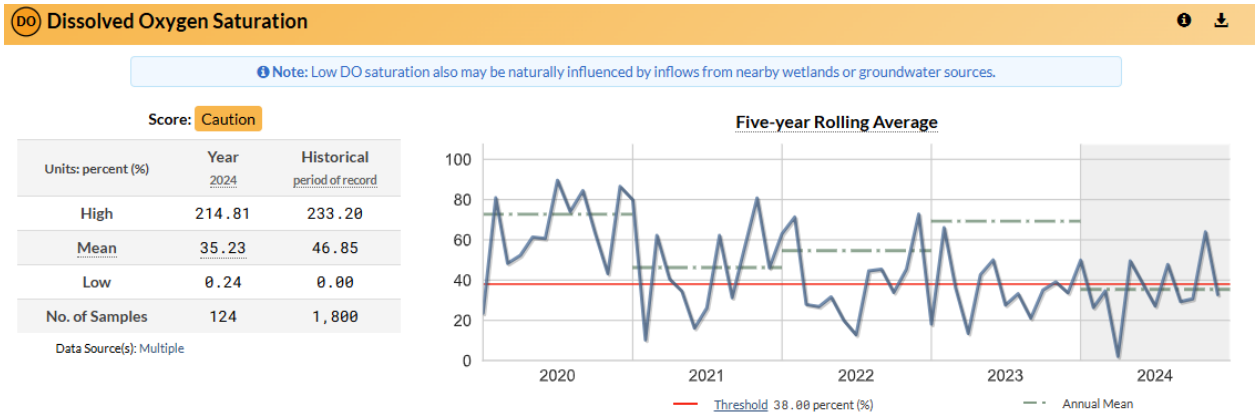


Figure 20 *Alligator Creek Fresh Portion Dissolved Oxygen Results 2024*

Woodmere Creek

Woodmere Creek experienced an increase in dissolved oxygen levels in 2024, with the annual mean doubling from 24.73% saturation in 2023 to 43.47% saturation in 2024. Although the mean levels for this parameter improved greatly in 2024, dissolved oxygen levels remained a **Caution** rating, thus maintaining an overall rating of **Caution** for Woodmere Creek. The last time Woodmere Creek received an overall **Pass** rating was in 2020. The five-year rolling averages are shown in Figures 21 and 22 .

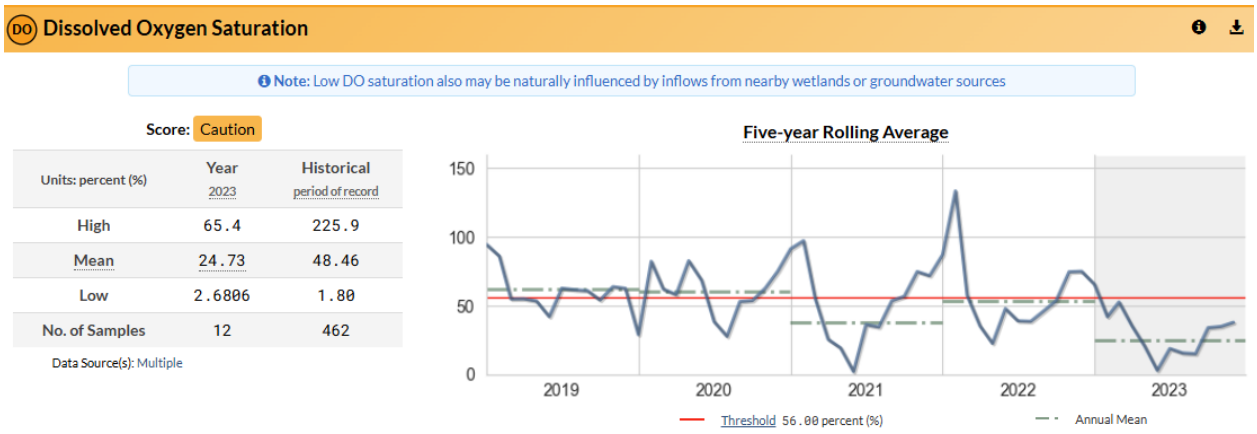


Figure 21 *Woodmere Creek Dissolved Oxygen Results 2023*

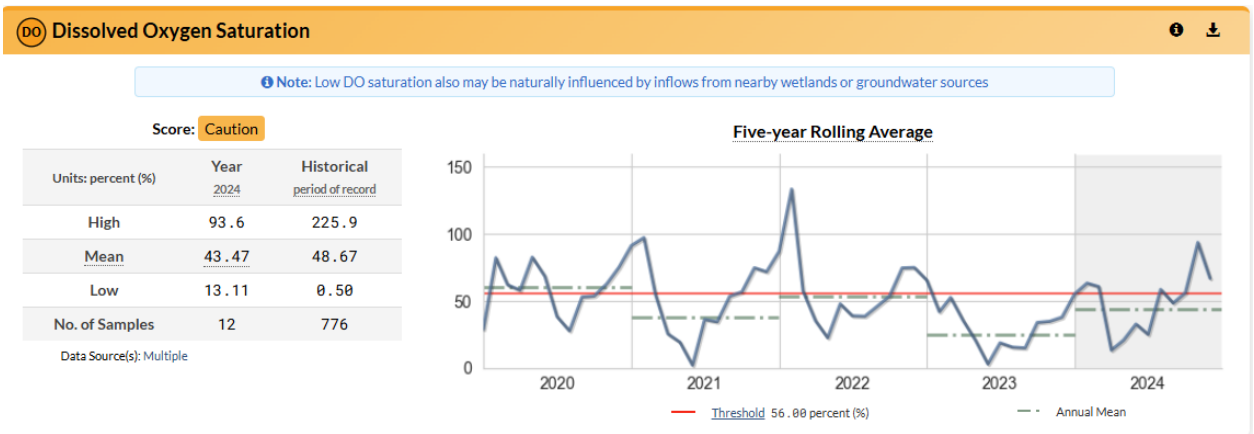


Figure 22 *Woodmere Creek Dissolved Oxygen Results 2024*

Forked Creek

Forked Creek experienced a decrease in water quality with increased chlorophyll-*a* values and a decrease in dissolved oxygen levels in 2024. Chlorophyll-*a* levels increased from an annual mean of 8.56 ug/L in 2023 to 18.27 ug/L in 2024, shifting chlorophyll-*a* status from a rating of **Pass** in 2023 to a rating of **Caution** in 2024. Dissolved oxygen levels decreased from an annual mean of 37.8% saturation in 2023 to 18.41% saturation in 2024, maintaining a rating of **Caution** for this parameter. The five-year rolling averages are shown in Figures 23-26.

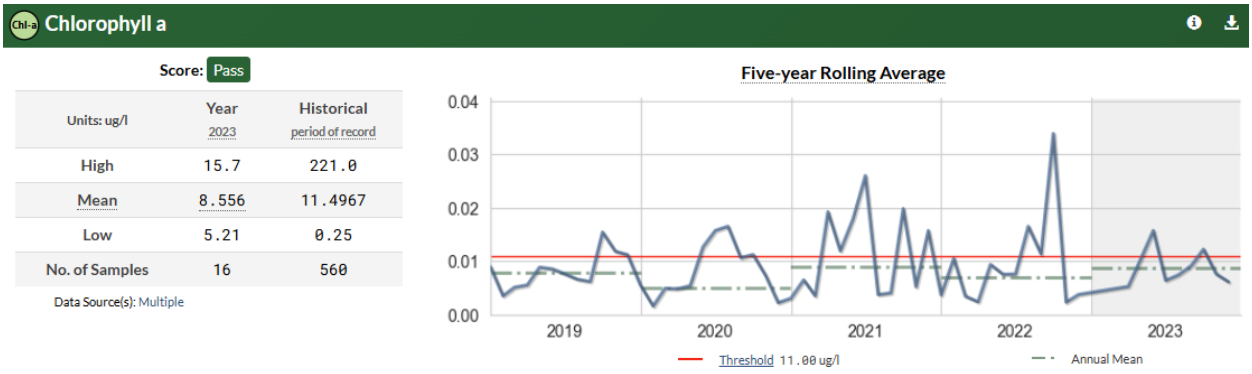


Figure 23 *Forked Creek Chlorophyll-a Results 2023*

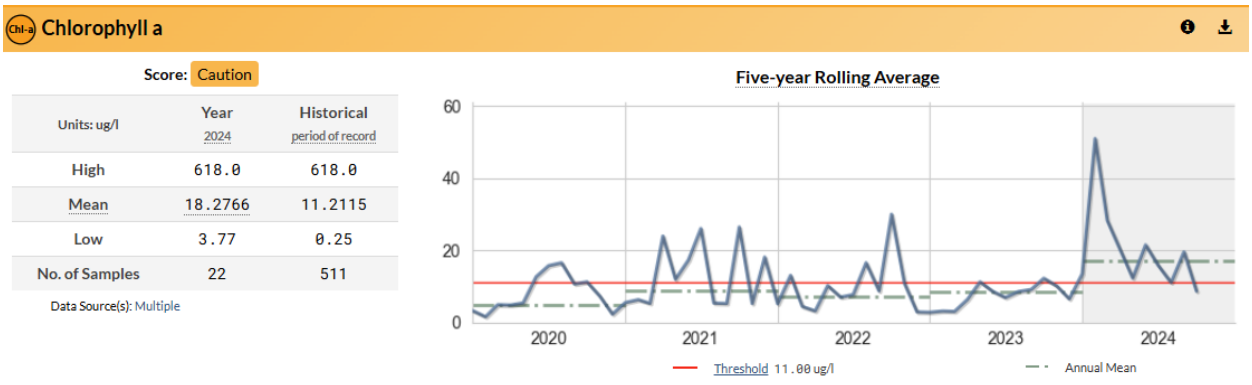


Figure 24 *Forked Creek Chlorophyll-a Results 2024*

Forked Creek continued

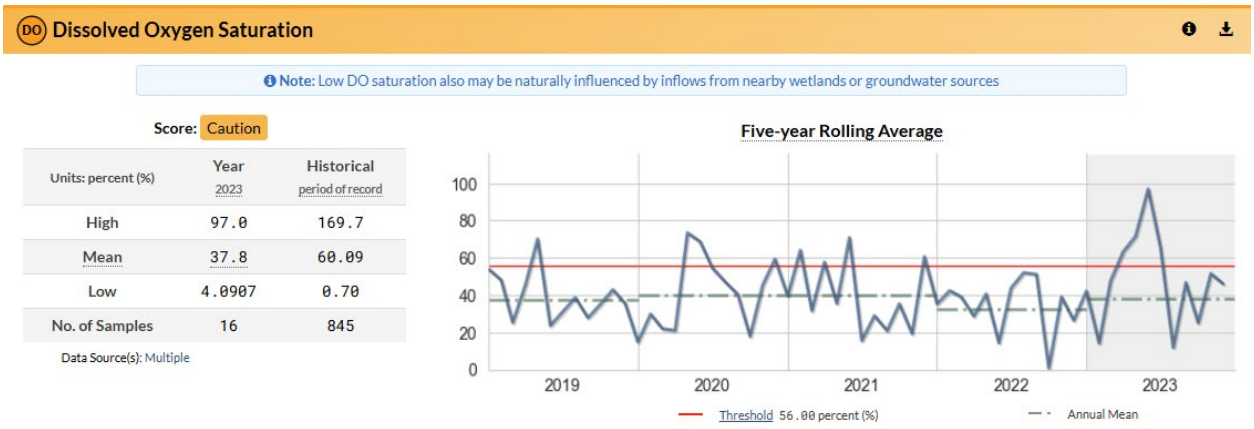


Figure 25 *Forked Creek Dissolved Oxygen Results 2023*

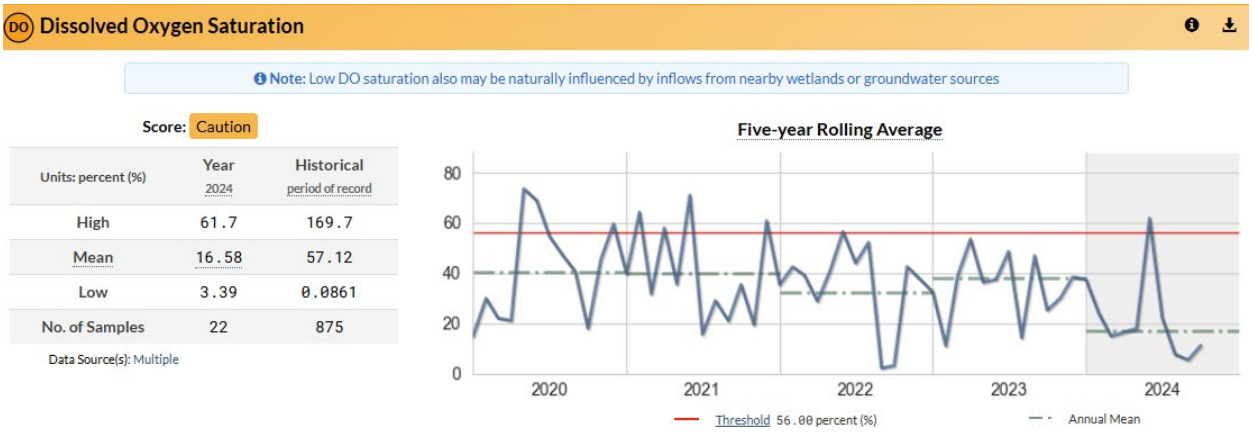


Figure 26 *Forked Creek Dissolved Oxygen Results 2024*

Gottfried Creek

Water quality overall declined in Gottfried Creek in 2024. In the tidal portion of the creek the water quality remained fairly consistent for all parameters, while the freshwater portion experienced a decrease in water quality. Total phosphorus levels increased in the freshwater portion of the creek, from an annual mean of 0.463 mg/L in 2023 to 0.540 mg/L in 2024, changing the rating from **Pass to Caution**. The only year Gottfried Creek received a **Pass** for total phosphorus was 2023. Dissolved oxygen levels decreased substantially from an annual mean of 20.98% in 2023 to 9.65% in 2024, maintaining a rating of **Caution** for the freshwater portion of the creek. The five-year rolling averages are shown in Figures 27-30.

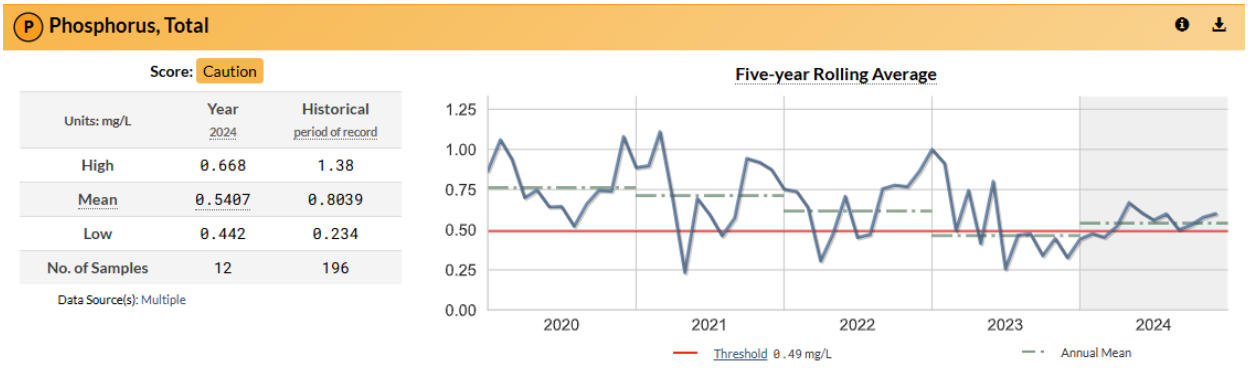


Figure 27 *Gottfried Creek Freshwater Portion Total Phosphorus Results 2023*

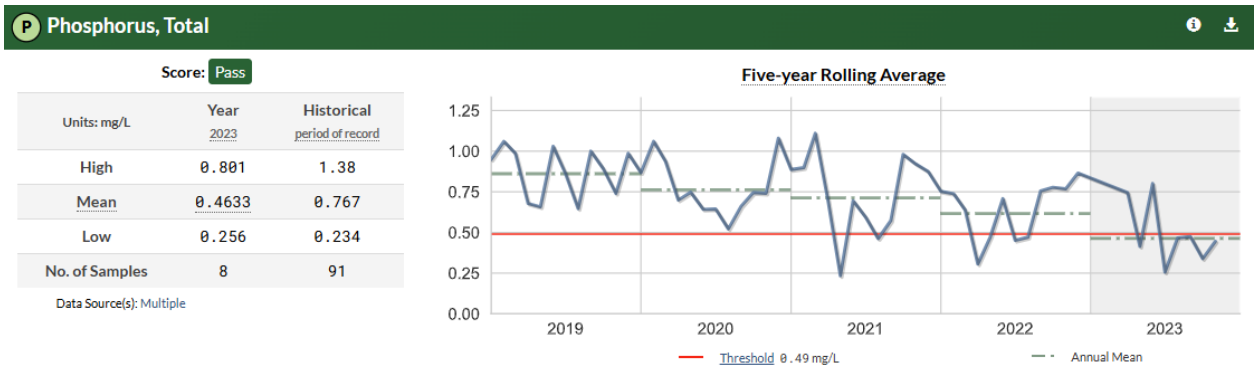


Figure 28 *Gottfried Creek Freshwater Portion Total Phosphorus Results 2024*

Gottfried Creek continued

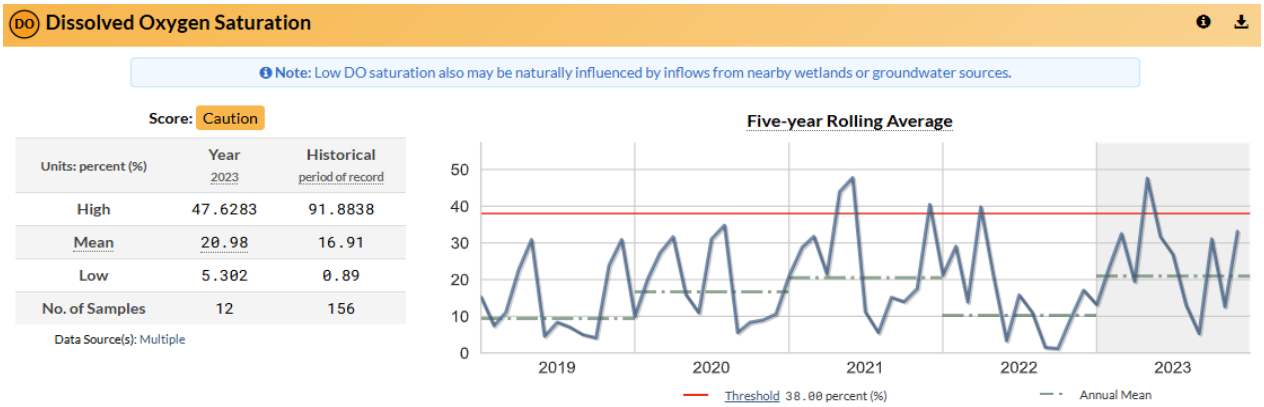


Figure 29 *Gottfried Creek Freshwater Portion Dissolved Oxygen Results 2023*

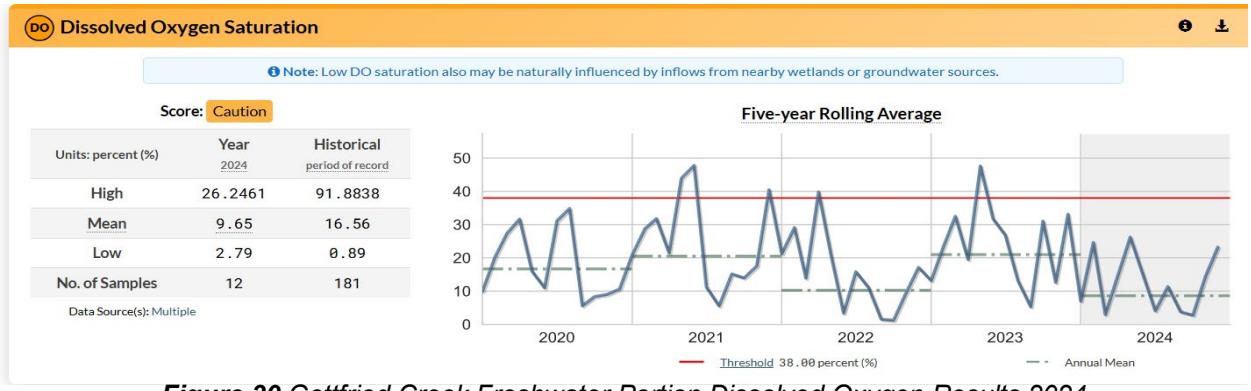


Figure 30 *Gottfried Creek Freshwater Portion Dissolved Oxygen Results 2024*

Long-Term Assessment of Watersheds – Conditions and Trends

The period of record from 1998 to 2024 for all watershed conditions is available on the Sarasota County Water Atlas Creek Conditions Report. This report will focus on the trend period 2015-2024. Most consistent **Caution** ratings are observed in the currently prioritized TMDL waterbodies of Gottfried Creek, Alligator Creek, Elligraw Bayou, and Clower Creek. Phillippi Creek is a prioritized TMDL waterbody that received a **Pass** for 2024. Monthly sampling is conducted in these watersheds and there are established plans for water quality improvements. This program aims to capture the condition of these creeks as they are actively managed to eliminate their impaired status.

Watershed conditions illustrate the overall health of the watershed and highlight the prioritized water quality parameters of chlorophyll-*a*, total nitrogen, total phosphorus, and dissolved oxygen. Figure 31 is located on the next page and outlines the watershed conditions. Each watershed receives either a **Pass** or **Caution** rating which is dependent on the state's numeric nutrient criteria. Pass indicates that the parameter meets standard threshold limits, while a Caution score relates to a parameter that does not meet thresholds.

Trends are depicted in Figures 32-36 and the map legend is below. The water quality parameters addressed are chlorophyll-*a,* total nitrogen, total phosphorus, and dissolved oxygen for the ten-year period 2015-2024. Watershed trends allow Sarasota County to identify areas with increasing trends of water quality indicators which are critical for successful watershed and bay management. The results of the ambient water quality monitoring of watersheds provide a scientific basis for stormwater management. Though some water quality improvements were realized in 2024, there continue to be areas where the long-term trends are increasing for nutrients of concern.

MAP LEGEND	
↑	Increasing Trend, Larger Rate Declining
↑	Increasing Trend, Smaller Rate Declining
○	No Trend
↓	Decreasing Trend, Smaller Rate Improving
↓	Decreasing Trend, Larger Rate Improving

Creek Conditions

Creek Conditions	Whitaker Bayou	Hudson Bayou	Phillippi Creek	Matheny Creek	Elligraw Bayou	Clower Creek	Catfish Creek	North Creek	South Creek	Cowpen Slough	Curry Creek	Hatchett Creek	Alligator Creek	Woodmere Creek	Forked Creek	Gottfried Creek	Ainger Creek
2015	Pass	Pass	Caution	Pass	Caution	Caution	Pass	Caution	Pass	Pass	Pass	Pass	Caution	Caution	Caution	Caution	Pass
2016	Pass	Pass	Caution	Pass	Caution	Caution	Pass	Caution	Pass	Pass	Pass	Pass	Caution	Pass	Caution	Caution	Pass
2017	Caution	Caution	Caution	Pass	Caution	Caution	Pass	Caution	Caution	Pass	Pass	Pass	Caution	Caution	Caution	Caution	Pass
2018	Caution	Pass	Caution	Pass	Caution	Caution	Caution	Caution	Pass	Pass	Pass	Pass	Caution	Pass	Caution	Caution	Caution
2019	Caution	Pass	Caution	Pass	Caution	Pass	Pass	Caution	Pass	Pass	Pass	Pass	Caution	Pass	Caution	Caution	Caution
2020	Caution	Pass	Pass	Pass	Caution	Caution	Caution	Caution	Pass	Pass	Pass	Pass	Caution	Pass	Caution	Caution	Pass
2021	Pass	Pass	Caution	Pass	Caution	Caution	Pass	Caution	Pass	Pass	Pass	Pass	Caution	Caution	Caution	Caution	Caution
2022	Pass	Caution	Pass	Pass	Caution	Caution	Pass	Caution	Pass	Pass	Caution	Pass	Caution	Caution	Caution	Caution	Caution
2023	Pass	Pass	Caution	Pass	Pass	Caution	Pass	Caution	Pass	Pass	Pass	Pass	Caution	Caution	Caution	Caution	Caution
2024	Pass	Caution	Pass	Pass	Caution	Caution	Pass	Caution	Caution	Caution	Caution	Pass	Caution	Caution	Caution	Caution	Caution

Watershed Condition Indicators

Chlorophyll	Whitaker Bayou	Hudson Bayou	Phillippi Creek	Matheny Creek	Elligraw Bayou	Clower Creek	Catfish Creek	North Creek	South Creek	Cowpen Slough	Curry Creek	Hatchett Creek	Alligator Creek	Woodmere Creek	Forked Creek	Gottfried Creek	Ainger Creek
2015	Pass	Pass	Pass	Pass	Caution	Pass	Pass	Caution	Pass	Pass	Pass	Pass	Caution	Pass	Pass	Caution	Pass
2016	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Caution	Pass	Caution	Pass	Pass
2017	Pass	Pass	Pass	Pass	Caution	Pass	Pass	Caution	Pass	Pass	Pass	Pass	Caution	Pass	Caution	Caution	Pass
2018	Caution	Pass	Pass	Pass	Caution	Pass	Caution	Caution	Pass	Pass	Pass	Pass	Caution	Pass	Pass	Pass	Pass
2019	Caution	Pass	Pass	Pass	Caution	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Caution	Pass	Pass	Pass	Pass
2020	Caution	Pass	Pass	Pass	Caution	Pass	Caution	Caution	Pass	Pass	Pass	Pass	Caution	Pass	Pass	Pass	Pass
2021	Pass	Pass	Pass	Pass	Caution	Pass	Pass	Caution	Pass	Pass	Pass	Pass	Caution	Pass	Pass	Caution	Pass
2022	Pass	Pass	Pass	Pass	Caution	Pass	Pass	Caution	Pass	Pass	Pass	Pass	Caution	Pass	Pass	Pass	Pass
2023	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Caution	Pass	Pass	Pass	Pass	Caution	Pass	Pass	Pass	Pass
2024	Pass	Pass	Pass	Pass	Fresh	Caution	Pass	Caution	Pass	Pass	Pass	Pass	Pass	Pass	Caution	Pass	Caution

Nitrogen	Whitaker Bayou	Hudson Bayou	Phillippi Creek	Matheny Creek	Elligraw Bayou	Clower Creek	Catfish Creek	North Creek	South Creek	Cowpen Slough	Curry Creek	Hatchett Creek	Alligator Creek	Woodmere Creek	Forked Creek	Gottfried Creek	Ainger Creek
2015	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Caution	Pass	Pass	Caution	Pass
2016	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Caution	Pass	Pass	Pass	Pass	Caution	Pass	Pass	Caution	Pass
2017	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Caution	Pass	Pass	Caution	Pass
2018	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Caution	Pass	Pass	Caution	Pass
2019	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Caution	Pass	Pass	Pass	Pass
2020	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Caution	Pass	Pass	Pass	Pass	Caution	Pass	Pass	Pass	Pass
2021	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Caution	Pass	Pass	Pass	Pass
2022	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Caution	Pass	Pass	Pass	Pass
2023	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Caution	Pass	Pass	Pass	Pass
2024	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Fresh	Pass	Pass	Pass	Pass

Phosphorus	Whitaker Bayou	Hudson Bayou	Phillippi Creek	Matheny Creek	Elligraw Bayou	Clower Creek	Catfish Creek	North Creek	South Creek	Cowpen Slough	Curry Creek	Hatchett Creek	Alligator Creek	Woodmere Creek	Forked Creek	Gottfried Creek	Ainger Creek
2015	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Caution	Pass
2016	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Caution	Pass
2017	Pass	Caution	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Caution	Pass
2018	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Caution	Pass
2019	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Caution	Pass
2020	Pass	Pass	Pass	Pass	Caution	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Caution	Pass
2021	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Caution	Pass
2022	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Caution	Pass
2023	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
2024	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Caution	Pass

Dissolved Oxygen	Whitaker Bayou	Hudson Bayou	Phillippi Creek	Matheny Creek	Elligraw Bayou	Clower Creek	Catfish Creek	North Creek	South Creek	Cowpen Slough	Curry Creek	Hatchett Creek	Alligator Creek	Woodmere Creek	Forked Creek	Gottfried Creek	Ainger Creek
2015	Pass	Pass	Pass	Pass	Caution	Caution	Pass	Caution	Pass	Pass	Pass	Pass	Caution	Caution	Caution	Caution	Pass
2016	Pass	Pass	Caution	Pass	Caution	Caution	Pass	Caution	Pass	Pass	Pass	Pass	Caution	Pass	Caution	Caution	Pass
2017	Caution	Pass	Caution	Pass	Caution	Caution	Pass	Caution	Caution	Pass	Pass	Pass	Caution	Caution	Caution	Caution	Pass
2018	Caution	Pass	Caution	Pass	Pass	Caution	Pass	Caution	Pass	Pass	Pass	Pass	Caution	Pass	Caution	Caution	Caution
2019	Pass	Pass	Caution	Pass	Caution	Pass	Pass	Caution	Pass	Pass	Pass	Pass	Caution	Pass	Caution	Caution	Caution
2020	Pass	Pass	Pass	Pass	Caution	Caution	Pass	Caution	Pass	Pass	Pass	Pass	Caution	Pass	Caution	Caution	Pass
2021	Pass	Pass	Caution	Pass	Caution	Caution	Pass	Caution	Pass	Pass	Pass	Pass	Caution	Caution	Caution	Caution	Caution
2022	Pass	Caution	Pass	Pass	Caution	Caution	Pass	Caution	Pass	Pass	Caution	Pass	Caution	Caution	Caution	Caution	Caution
2023	Pass	Pass	Tidal	Pass	Fresh Pass	Caution	Pass	Caution	Pass	Pass	Pass	Pass	Caution	Caution	Caution	Caution	Caution
2024	Pass	Tidal	Pass	Pass	Pass	Caution	Pass	Caution	Caution	Pass	Caution	Pass	Caution	Caution	Caution	Caution	Caution

Figure 31 Sarasota County Creek Conditions 2024

Coastal Creek North Program

Figure 32 and the following page describes the long-term trends for the Coastal Creeks North program.

Creek Water Quality Trends Report				
	Total Nitrogen	Dissolved Oxygen	Total Phosphorus	Chlorophyll a
South Creek				
SOU-2	↓	○	↓	↓
North Creek				
NOR	○	↓	↓	↓
Catfish Creek				
CAT	○	↓	○	○
CAT-2	○	↓	○	○
Clower Creek				
CLO	○	○	○	↑
Elligraw Bayou				
ELL	○	○	↓	○
Matheny Creek				
MAT-1	○	↓	○	○
MAT-2	○	○	↓	○
Hudson Bayou				
HUD-2	○	↓	↓	↑
HUD-3	○	○	○	○
Whitaker Bayou				
WH-1	○	○	○	○
WH-2	○	○	○	○

Figure 32 *Coastal Creeks North Trends 2015-2024*

South Creek received a **Caution** rating for 2024, with dissolved oxygen levels being the only contributing factor in the shift from a rating of **Pass** for the previous six years. Though all other condition parameters experienced increases in 2024, they continue to meet or exceed threshold values.

North Creek received a **Caution** rating for 2024 which is consistent with results since 2011. Results for chlorophyll-*a* have remained consistent receiving a **Caution** rating in 2011, 2014-2015, 2017-2018, and 2020-2024. Nitrogen received a **Caution** rating for the years 2016-2020 and has received a **Pass** rating for the fourth year in a row, while total phosphorus has passed since 2011. Dissolved oxygen has received a **Caution** rating every year since 2011.

Catfish Creek received a **Pass** rating for 2024 and has achieved this status four years in a row. Nitrogen, phosphorus, and dissolved oxygen have received **Pass** ratings since 2014. Although chlorophyll-*a* received a **Pass** rating in 2021-2023, this parameter received a **Caution** rating in 2018 and 2020 and currently displays no trend.

Clower Creek received a **Caution** rating for 2024; the only year since 2011 that Clower Creek received a **Pass** rating was 2019. This waterbody has received a **Pass** rating for chlorophyll-*a*, nitrogen, and phosphorus since 2011, although chlorophyll-*a* levels increased in 2024, shifting chlorophyll-*a* status back to a rating of **Caution**. Dissolved oxygen received a **Caution** rating from 2011-2018 and 2020-2024.

Elligraw Bayou received a **Caution** rating in 2024. Chlorophyll-*a* received a **Caution** rating every year since 2011, except for 2016. Nitrogen has consistently received a **Pass** rating since 2011 and currently displays no trend. Phosphorus has also received a **Pass** rating every year since 2011, except for 2020. Dissolved oxygen is variable, receiving a **Pass** rating in 2011 and 2018, and a **Caution** rating from 2012-2017 and 2019-2023. Elligraw Bayou currently has a TMDL issued for Total Nitrogen.

Matheny Creek received a **Pass** rating for 2024. Matheny Creek has maintained a **Pass** rating for all parameters every year since 2011. Dissolved oxygen and total phosphorus display decreasing trends at sites MAT-1 and MAT-2 respectively; all other parameters display no trend for 2024. More information is available in the Matheny Creek Basin Master Plan located on the Sarasota County Water Atlas website.

Hudson Bayou received a **Caution** rating for 2024, declining from a rating of **Pass** in 2023. In 2022, dissolved oxygen received a **Caution** rating for the first time since 2012. Chlorophyll-*a* and nitrogen have maintained a **Pass** rating since 2011, while phosphorus has maintained a **Pass** rating since 2018.

A notable water quality improvement is within the Whitaker Bayou watershed. Whitaker Bayou received a **Pass** rating for 2024. Whitaker Bayou's water quality has remained consistent since improving to a **Pass** rating in 2021. Chlorophyll-*a* levels improved to receive a **Pass** rating in 2021, while dissolved oxygen has received a **Pass** rating since 2019. Nitrogen and phosphorus have received a **Pass** rating since 2011.

Coastal Creek South Program

Trends for the Coastal Creeks South Program can be found in Figure 33 and described below.

Creek Water Quality Trends Report	Total Nitrogen	Dissolved Oxygen	Total Phosphorus	Chlorophyll a
Gottfried Creek				
GOT-2	↓	○	↓	↑
GOT-3	↓	○	↓	↓
Forked Creek				
FOR-2	○	○	○	○
Woodmere Creek				
WOD	↓	↓	↓	↓
Curry Creek				
CC-2	○	○	↓	↓
CC-3	↓	○	↓	○
Hatchett Creek				
HAT-1	↓	○	○	↓
Alligator Creek				
ALL	↓	○	↓	↓
ALL-2	↓	○	○	○
ALL-3	○	○	↓	↓

Figure 33 *Coastal Creeks South Trends 2015-2024*

Gottfried Creek received a **Caution** rating in 2024 and has maintained this rating since 2011. Chlorophyll-*a* results have been variable; this parameter received a **Caution** rating in 2015, 2017, and 2021. Total nitrogen received a **Caution** rating in 2012 and 2015-2018, however, the trend is improving. Total phosphorus and dissolved oxygen have consistently remained in the **Caution** category since at least 2011.

Forked Creek received a **Caution** rating for 2024 and has maintained this rating since at least 2011. Total nitrogen has received a **Pass** rating since 2011 and the trend remains steady, currently displaying no trend. Total phosphorus has maintained a **Pass** rating since 2011 and shows an improving water quality trend. Chlorophyll-*a* has passed continuously since 2018 while dissolved oxygen has remained in the **Caution** category from 2014-2024.

Woodmere Creek received a **Caution** rating for 2024 due to fluctuating dissolved oxygen results. Dissolved oxygen was in the **Caution** category from 2012-2015, 2017, and 2021-2023. Chlorophyll-*a,* total nitrogen, and total phosphorus concentrations met or were below DEP NNC values since at least 2011.

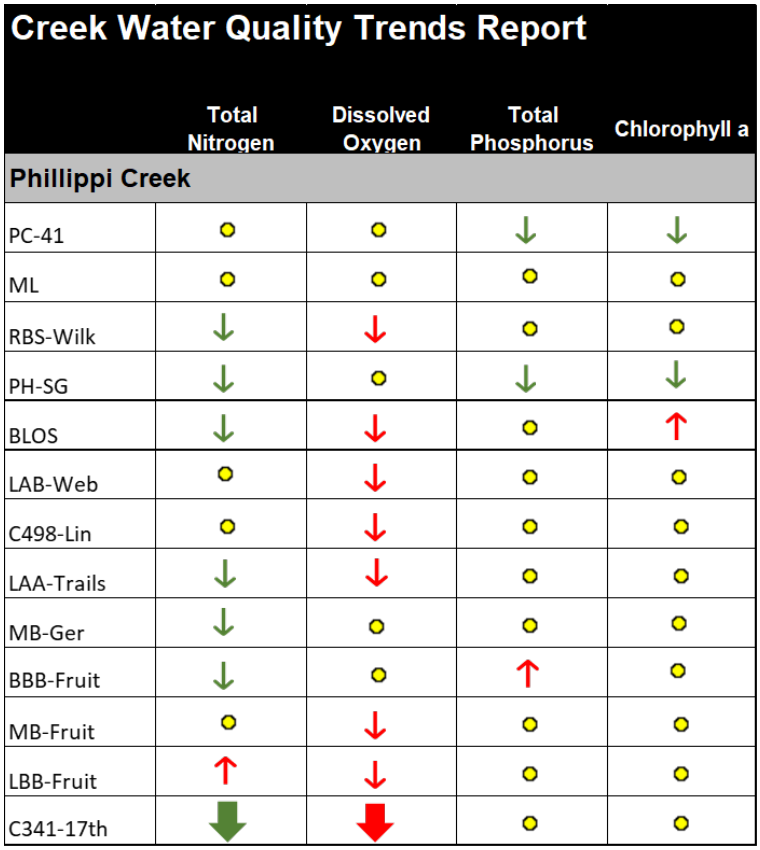
Curry Creek received a **Caution** rating for 2024 due to low dissolved oxygen levels, shifting from a rating of **Pass** in 2023. Conditions for Curry Creek improved to **Pass** for 2023 from **Caution** in 2022; in fact, 2022 was the only year since 2011 to realize **Caution** conditions due to low dissolved oxygen, until declining again in 2024. Total nitrogen displays no trend for site CC-2 and an improving trend for site CC-3. Total phosphorus has maintained a **Pass** rating since 2011 and displays an improving trend.

Hatchett Creek received a **Pass** rating for 2024 and has maintained this rating since 2013. Both total nitrogen and chlorophyll-a currently display decreasing trends while total phosphorus and dissolved oxygen currently display no trend.

Alligator Creek received a **Caution** rating for 2024 and has remained in this category since at least 2011. Chlorophyll-*a* and dissolved oxygen received a **Caution** rating from 2014-2023, with chlorophyll-a improving to a rating of **Pass** in 2024. Total nitrogen has maintained a **Caution** rating from 2013-2024. The trend for total nitrogen indicates improving water quality. Total phosphorus has remained in the **Pass** category from 2011-2024.

Phillippi Creek Program

Figure 34 depicts the conditions and trends in Phillippi Creek.



Creek Water Quality Trends Report				
	Total Nitrogen	Dissolved Oxygen	Total Phosphorus	Chlorophyll a
Phillippi Creek				
PC-41	○	○	↓	↓
ML	○	○	○	○
RBS-Wilk	↓	↓	○	○
PH-SG	↓	○	↓	↓
BLOS	↓	↓	○	↑
LAB-Web	○	↓	○	○
C498-Lin	○	↓	○	○
LAA-Trails	↓	↓	○	○
MB-Ger	↓	○	○	○
BBB-Fruit	↓	○	↑	○
MB-Fruit	○	↓	○	○
LBB-Fruit	↑	↓	○	○
C341-17th	↓	↓	○	○

Figure 34 *Phillippi Creek Trends 2015-2024*

Phillippi Creek has a variable history for dissolved oxygen receiving a **Caution** rating for 2023 and improving to a **Pass** rating in 2024. A **Caution** rating was attained in 2014, 2016-2019, 2021, and 2023; furthermore 8 out of 13 sampling locations show a declining trend for dissolved oxygen. The parameters chlorophyll-*a,* nitrogen, and phosphorus have all received a **Pass** rating since at least 2011 for Phillippi Creek as a whole. In addition, 6 out of 13 sampling locations exhibit a declining trend for total nitrogen. Site Mirror Lake, ML, displays no trend for total phosphorus and chlorophyll-*a*, and site BBB-Fruit shows that total phosphorus is increasing. This waterbody has current TMDLs for fecal coliform bacteria, total nitrogen, total phosphorus, and biochemical oxygen demand.

Cow Pen Slough Program

Figure 35 depicts the Cow Pen Slough trends between 2014-2023.

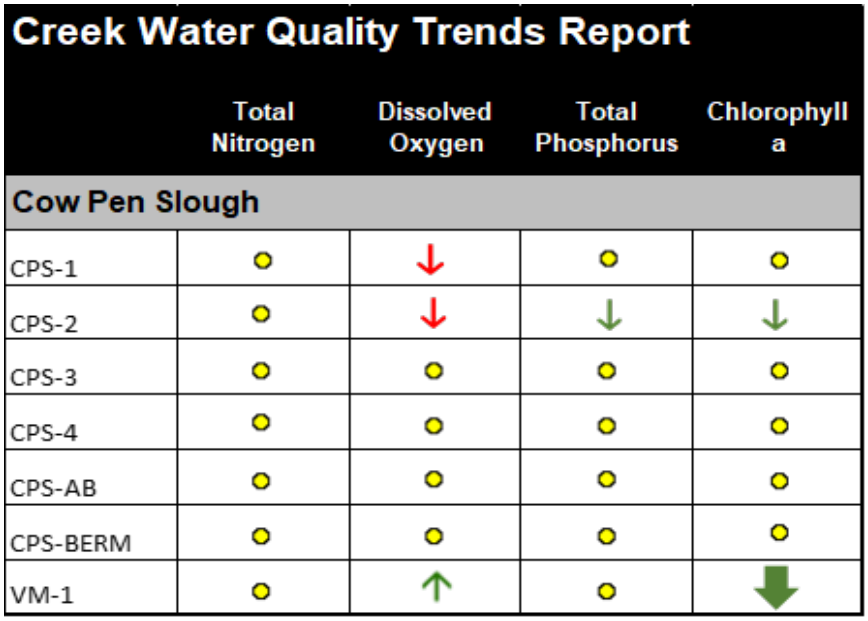


Figure 35 *Cow Pen Slough Trends 2015-2024*

Cow Pen Slough received a **Caution** rating for 2024 due to a decline in dissolved oxygen saturation. Cow Pen Slough has consistently received a **Pass** rating since 2011; 2024 is the first year in the period since 2011 to have received a **Caution** rating. Several sites within Cow Pen Slough display no trend for the ten-year period. Others are showing improvements in water quality parameters. Dissolved oxygen at sites CPS-1 and CPS-2 show a decreasing trend for dissolved oxygen, the only parameter to have influenced the creek's shift to **Caution** in 2024.

Alligator Creek Program

Figure 36 and the following page describes the overall conditions and trends for Alligator Creek.

Creek Water Quality Trends Report	Total Nitrogen	Dissolved Oxygen	Total Phosphorus	Chlorophyll a
Alligator Creek				
ALL	↓	○	↓	↓
ALL-2	↓	○	○	○
ALL-3	○	○	↓	↓
Venice Gardens Lakes				
VG-1	○	○	○	○
VG-5	○	○	↑	↓
Briarwood Waterway				
BW-HEAD	↓	○	○	○
Siesta Waterway				
SW-TAIL	○	○	↓	○

Figure 36 *Alligator Creek Trends 2015-2024*

A TMDL was issued for Alligator Creek in 2006 and addresses total nitrogen. Alligator Creek and the nearby waterbodies of Venice Gardens Lakes and Siesta Waterway currently have greater total nitrogen levels than the FDEP threshold. Total nitrogen at sites ALL-3, VG-1, VG-5 and SW-Tail all display a stable no trend. Sites ALL, ALL-2 and BW-Head display favorable decreasing trends for this parameter for the ten-year period 2015-2024. The Alligator Creek system is routinely in the **Caution** category for total nitrogen, chlorophyll-*a,* and dissolved oxygen. Total phosphorus remains in the **Pass** category and demonstrates an improving trend.

Relationship of Data to Stormwater Management Plan

The analysis and review of ambient water quality data provides insight into the complex relationships between the water quality of watersheds, basins, bays, and monitored stormwater projects. Water quality data is valuable when estimating the effects of rainfall, understanding the movement and concentration of pollutants, and prioritizing waterbodies for pollutant reduction management. Sarasota County continues to be committed to enhancing the analysis and utilization of ambient water quality data. The County is actively working towards modifying dashboards on the Sarasota County Water Atlas. An update in 2021 resulted in the inclusion of hotspot analysis and a percentile ranking of similar waterbodies. This analysis will allow for better understanding of stormwater pollution and enhanced evaluation of best management practices that can be implemented to reduce pollutants.

Conditions, trends, and analysis highlighted in this report will be used to identify portions of the MS4 that are potentially suitable areas for the implementation of additional BMPs or increased investigation. Monitoring conditions and trends allows Sarasota County to identify areas of improvement and where problems may be occurring. The results of the ambient water quality monitoring of watersheds provide a scientific basis for stormwater management. These trends are observed when comparing the 28-year trend (1998-2024) to the ten-year trend (2015-2024). The relationship of the water quality data to the stormwater management plan indicates improving trends for some parameters while showing additional measures are needed in some areas to fully recover our waterbodies.

The data and analysis for all watersheds sampled is available on the Sarasota County Water Atlas at the links below:

Creek Conditions Report.

Water Quality Trends and Hotspots

Data Download Report

Year 6

Sarasota County 2024 NPDES MS4 Annual Report

3. OYSTER MONITORING

Oyster Monitoring (Year 6)

Sarasota County NPDES MS4 Annual Report for 2024

Healthy creeks and their receiving bays are intrinsic to Sarasota County's economy, quality of life, and marine life. As a monitoring tool, the percentage of live oysters indicates the effects of watershed management on salinity regimes. Oysters have long been recognized as key bio-indicators of the ecological health of marine and estuarine ecosystems. Changes in oyster health can provide an early warning of potential adverse impacts associated with hydrologic alterations occurring throughout the watershed. Monitoring percent live oyster coverage is a simple, cost-effective tool to document changes and provide watershed managers with information that can be used to design projects that will minimize or reverse adverse impacts.

Summary of Monitoring Data from the 2024 Reporting Year

The results of oyster monitoring conducted in 2024 were consistent, with most sites decreasing in percent live oysters. Fifteen sites changed categories. The following sites dropped from the excellent to the good rating: the upstream Alligator Creek Site (AL2), the downstream Ainger Creek Site (ANG1), the downstream Curry Creek site (CC1), the Dona Bay Site (DB1), the upstream Gottfried Creek site (GOT3), the upstream Hudson Bayou site (HUD2), the North Creek Site (NC1), the Roberts Bay site (RB1) all of the Phillippi and Shakett Creek Sites. The upstream Curry Creek site (CC2) moved from the cautionary to the good category. Out of the twenty-five monitored stations, the percentage of live oysters decreased at twenty-two sites and increased at three sites.

Long Term Assessment

Oysters fill a crucial environmental niche. Oyster beds provide a habitat for many types of marine fauna, such as oyster drills, conch, mud crabs, other bivalves, and specialized fish. An individual oyster can filter between 4 and 40 liters of water daily, providing a valuable water quality function. Water clarity has been observed to increase immediately downstream of oyster beds.

Oyster monitoring provides a quick annual assessment of the percent live oysters at established stations. A team of local scientists developed the rating system. Each station receives an excellent, good, or caution rating.

Twenty-three stations received a good rating in 2024. The new Blackburn Point and North Creek sites (NC1) were in the cautionary rating. Table 1 provides a color-coded depiction of the percent live conditions from 2014 to 2024. The Sarasota Water Atlas has an interactive map with all oyster sampling sites and their trends.

Percent Live Oysters by Year										
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Alligator Creek (AL1)	65	81	77			56	51	51	57	56
Alligator Creek (AL2)	73	49	47			57	50	58	80	61
Ainger Creek (ANG1)	72	80	87			86	70	72	88	68
Ainger Creek (ANG2)	73	76	70			55	71	36	75	58
Blackburn Point (BLK1)									41	37
Curry Creek (CC1)	45	53	52	80	87	85	66	67	76	56
Curry Creek (CC2)	38	35	23	64	59	88	54	61	47	50
Dona Bay (DB1)	79	70	80	86	79	86	80	61	77	53
Forked Creek (FRK1)	81	82								
Forked Creek (FRK2)	85	87	74			83	80	43	55	65
Gottfried Creek (GOT1)	86	80	80			82	75	61	73	74
Gottfried Creek (GOT2)	75	78	58			75	44	57	70	61
Gottfried Creek (GOT3)	55	64	55			65	75	55	84	64
Hudson Bayou (HUD1)	87	88	86		86	81	90	86	63	53
Hudson Bayou (HUD2)	63	70	69		82	95	75	65	76	70
Lyons Bay (LYB1)	84	77	88	82	86	78	75	76	63	59
North Creek (NC1)	85	81		84	81	88	84	77	81	46
Phillippi Creek (PH1)	79	85	80	79	69	85	84	55	82	56
Phillippi Creek (PH2)	83	88	80	71	69	84	88	69	83	56
Phillippi Creek (PH3)	67	55	48	51	57	68	72	58	81	53
Roberts Bay (RB1)	77	74	86	82	87	67	17	22	100	55
South Creek (SC1)	67	82	78	61	67	81	84	75	56	50
South Creek (SC2)	62	69	68	68	75	78	84	47	66	56
Shakett Creek (SKC1)	88	83	62	86	71	56	84	83	89	71
Shakett Creek (SKC2)	65	74	49	91	59	34	88	86	86	59
Shakett Creek (SKC4)	35	22	10	64	41	39	64	84	85	63
	Excellent	(>75%)	**Good**	(50-75%)	**Caution**	(<50%)				

Table 1. Sarasota County - Percent Live Oysters

a. 2018 and 2019 had prolonged harmful algal blooms, and sampling was not conducted at some stations.

Most results indicate that monitored oysters remain in good condition throughout the monitoring period. However, during years with excessive rainfall, the percentage of live oysters decreases. This year, our area experienced a wet season with above-average rainfall from four tropical systems. The above-average rainfall caused excessive freshwater inputs to our monitoring areas and likely contributed to a decrease in the percentage of live oysters across most sites.

Relationship of Data to Stormwater Management Plan

The results of the oyster monitoring program provide a factual foundation for watershed and stormwater management decision-making. Although significant improvements in water quality and stormwater management have been accomplished, the data indicate that hydrologic alterations, including increased stormwater volumes, continue to cause mortality and population declines in certain areas. This can decrease the natural water filtering and quality improvement functions that oysters generally provide in healthy estuarine ecosystems.

Completed hydrologic improvement projects include Dona Bay Phase 1, Celery Fields Regional Stormwater Treatment Facility, and Catfish Creek Regional Stormwater Facility.

Year 6

Sarasota County 2024 NPDES MS4 Annual Report

4. SEAGRASS MONITORING

Status of Seagrass Monitoring 2024

Background

County Seagrass Monitoring

Since 2006, Sarasota County has annually monitored seagrass sites throughout the county in the winter to coincide with aerial mapping efforts and greater water clarity. In 2024, Sarasota County updated the annual seagrass monitoring methodology to align with other monitoring programs in the state by surveying during the seagrass growing season (June through September) to capture maximum cover of submerged aquatic vegetation. In 2024, some seagrass sites were surveyed later (October and November) due to delays from storm events as Sarasota County experienced a very active hurricane season.

During the 2024 annual survey, all bays (8 bay segments and 40 bay sub-segments) were monitored for a total of 160 sites. Of these sites, 40 were fixed and 120 were random. Survey sites are located where seagrass is indicated as present by most recent aerial mapping efforts. Data regarding seagrass percent cover, seagrass species percent, seagrass blade length, drift algae cover, epiphyte abundance level, sediment type, and other biological observations are collected. This data set characterizes the changes in seagrass health over time and the variation of healthy seagrass across the County's bays.

SWFWMD Seagrass Mapping

The Southwest Florida Water Management District (SWFWMD) has conducted aerial seagrass mapping since 1988. The data is used for status and trends of seagrass acreage. National Estuary Programs (NEPs) use the data to set targets based on the concept that excessive nitrogen causes algae blooms that shade seagrass and reduce acreage. Although not part of the Sarasota County NPDES MS4 monitoring plan, seagrass mapping by the SWFWMD is related to the County program and is included in this analysis.

The analysis of the seagrass monitoring and mapping programs is intended to identify where pollutants are adversely affecting surface water quality and to target additional pollutant loading reductions. In addition to serving as an indicator of pollutants, seagrass also provides intrinsic economic and ecological value to the community by processing nutrients, stabilizing sediments, and providing habitat for fish and other organisms.

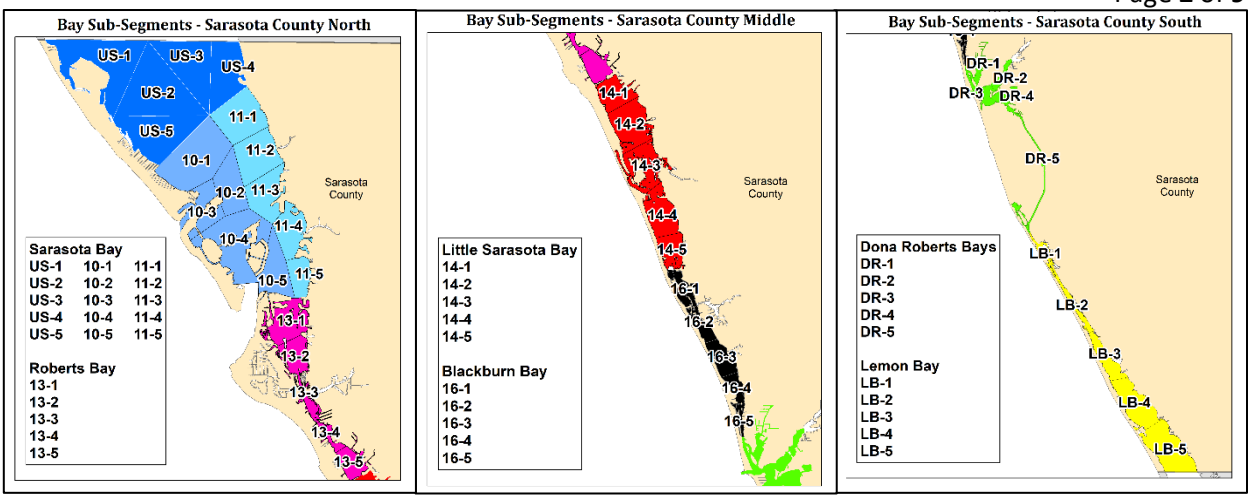


Figure 1. Sarasota County Bays, Segments, and Sub-Segments.

Sarasota Bay has three segments (US, 10, and 11) and the other bays have one bay segment each as follows: Roberts Bay – Segment 13; Little Sarasota Bay – Segment 14, Blackburn Bay – Segment 16; Dona Roberts Bays – Segment DR; and Lemon Bay – Segment LB. Each bay segment has five sub-segments numbered 1 to 5.

Results of Seagrass Monitoring

Desirable conditions are increasing density of seagrass coverage and increasing seagrass blade lengths. Conditions that are considered undesirable are increasing epiphyte density, increasing amounts of drift algae, and increasing abundances of Caulerpa algae. Species changes do not contribute to the score since this reflects seagrasses shifting in composition and not overall seagrass abundance gains or losses. A change in species composition is not considered a positive or negative factor in scoring. As one species decreases in abundance the abundance of another species will likely increase due to succession.

The Sarasota County Seagrass Monitoring Scorecard (Table 1) identifies the 5-year trend for 10 monitoring characteristics. Beneficial characteristics are problematic if they are declining, and conversely undesirable characteristics are a problem if they are increasing. The score is a sum of positive characteristics which has a value of +1 (green) plus the sum of negative characteristics (red) which has a value of -1 assigned to each. Bays that have a negative score exhibit conditions that indicate unhealthy overall trends for that bay system. Neutral or positive scores indicate the bay system is stable or showing overall health improvements.

Table 1. 2024 Sarasota County Seagrass Scorecard

2024 Sarasota County Seagrass Monitoring Scorecard 5-Year Trend							
Seagrass Health Characteristics		Sarasota Bay	Roberts Bay	Little Sarasota Bay	Blackburn Bay	Dona Roberts Bay	Lemon Bay
Beneficial Characteristics	Seagrass Density Trend	–	–	–	–	↓	↑
	Thalassia Blade Length Trend	↑	↑	–	–	–	–
	Syringodium Blade Length Trend	–	–	–	–	–	–
	Halodule Blade Length Trend	↑	–	–	–	–	↑
Undesirable Conditions	Drift Algae Trend	–	↓	↓	–	↓	–
	Epiphyte Trend	–	↓	–	↓	↓	–
	Caulerpa Trend	↑	–	↓	–	–	–
Score		1	3	2	1	1	2
Species Changes (Not Scored)*	Thalassia Abundance Trend	–	–	–	–	↑	–
	Syringodium Abundance Trend	–	↓	↓	↓	–	–
	Halodule Abundance Trend	–	↑	↑	–	–	↑

Based on Sarasota County's seagrass assessments, all bays exhibited positive trends in seagrass health in 2024 with Roberts Bay showcasing the highest overall score. The positive trends in Roberts Bay include an increase in average Thalassia blade length and the decrease of two undesirable conditions: epiphytic coverage and drift algae. Increases in seagrass health indicate favorable water quality conditions resulting from pollutant reduction efforts and best management practices (BMP).

Little Sarasota Bay and Lemon Bay were found to have an equal number of positive trends (2) and no negative trends. Little Sarasota Bay experienced a decrease in undesirable conditions (less drift algae and Caulerpa) and Lemon Bay showed an increase in beneficial characteristics (greater seagrass density and Halodule blade length).

Sarasota Bay, Blackburn Bay, and Dona/Roberts Bay ranked the lowest in overall assessed seagrass health but still had positive scores indicating these bays are exhibiting seagrass health improvements. While Sarasota Bay did have an increase in Caulerpa abundance, an undesirable trait, the bay also had an increase in Thalassia and Halodule blade lengths. Blackburn Bay and Dona/Roberts Bay were found to have a decrease in epiphytic coverage, with Dona/Roberts Bay also exhibiting a decrease in drift algae. Dona/Roberts Bay was the only area to exhibit a decrease in seagrass density.

The overall seagrass health improvements seen in all bays may be attributed to the shift of the seagrass survey window to summer, when seagrass is at its peak growth. However, the SWFWMD aerial imagery, which flies in the winter, also showed seagrass improvements across Sarasota County's bays.

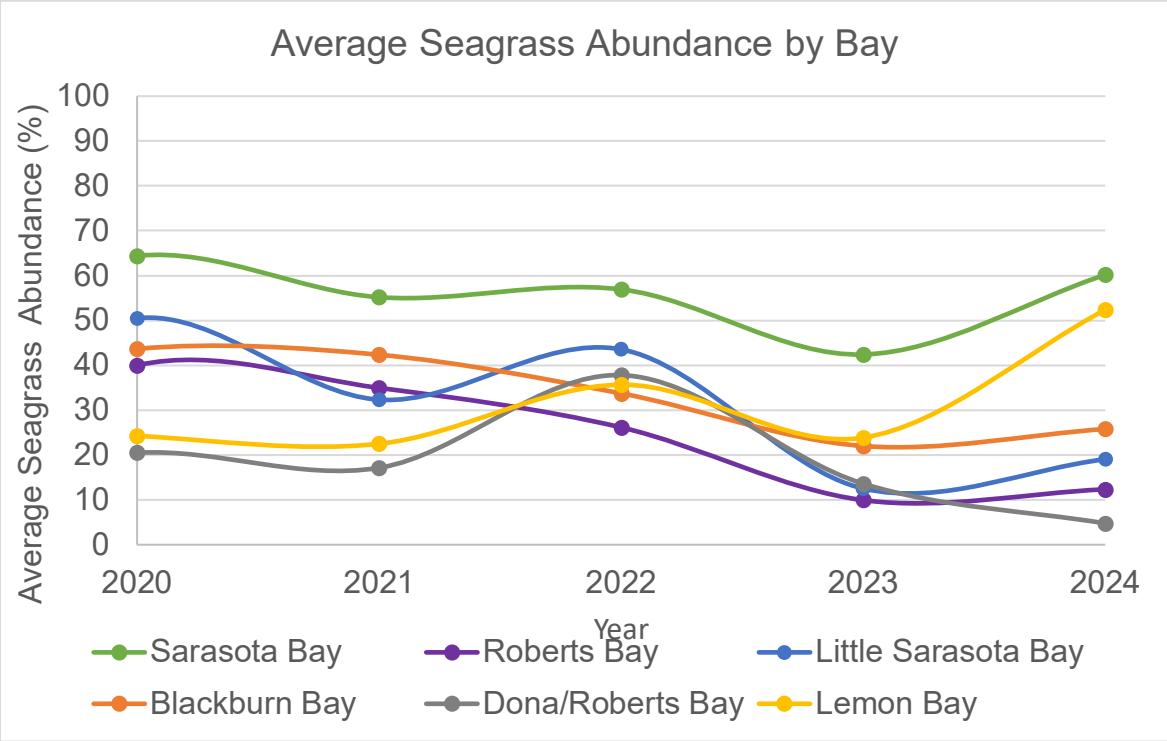


Figure 2. Average seagrass abundance by bay from 2020 to 2024.

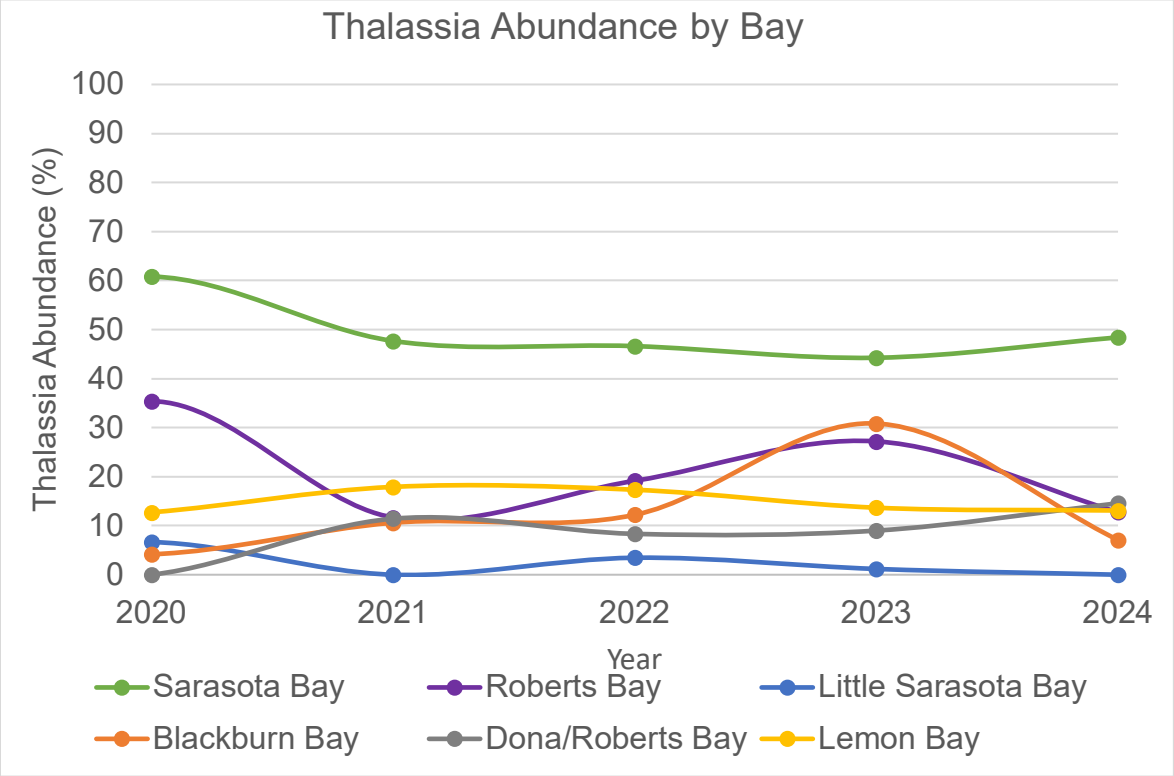


Figure 3. Average Thalassia Abundance by Bay from 2020 to 2024.

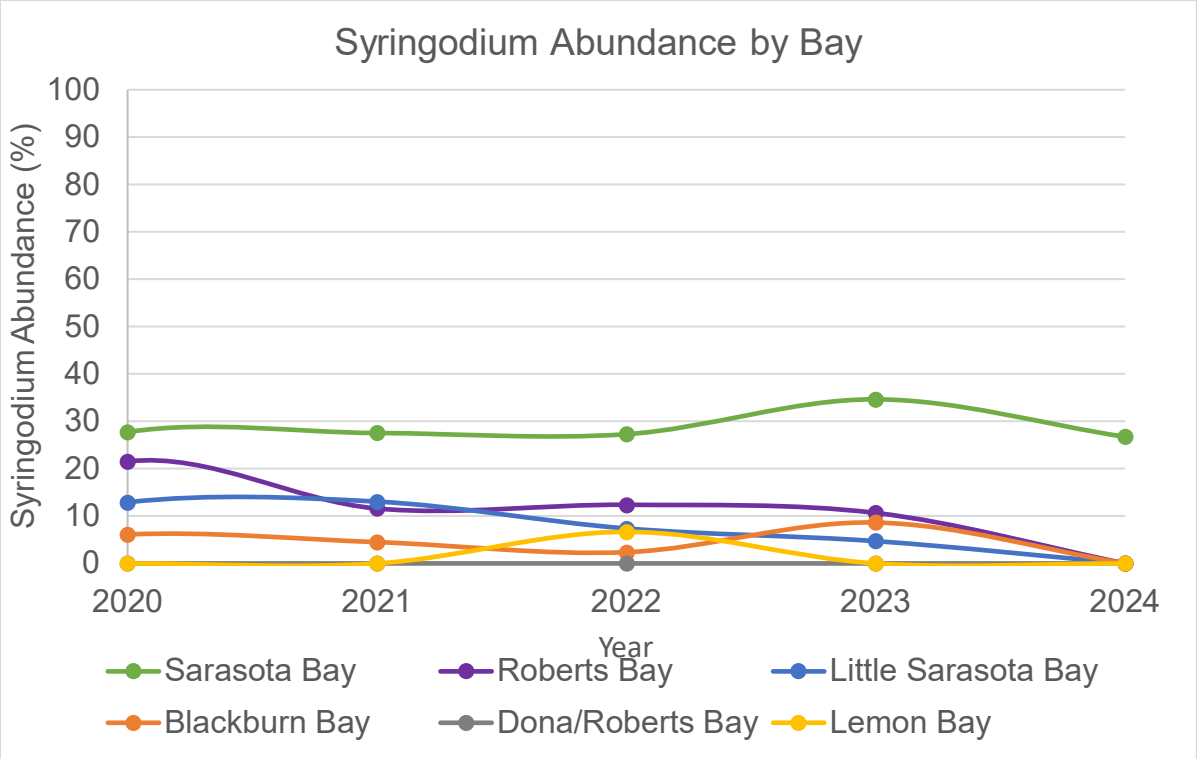


Figure 4. Average Syringodium Abundance by Bay from 2020 to 2024.

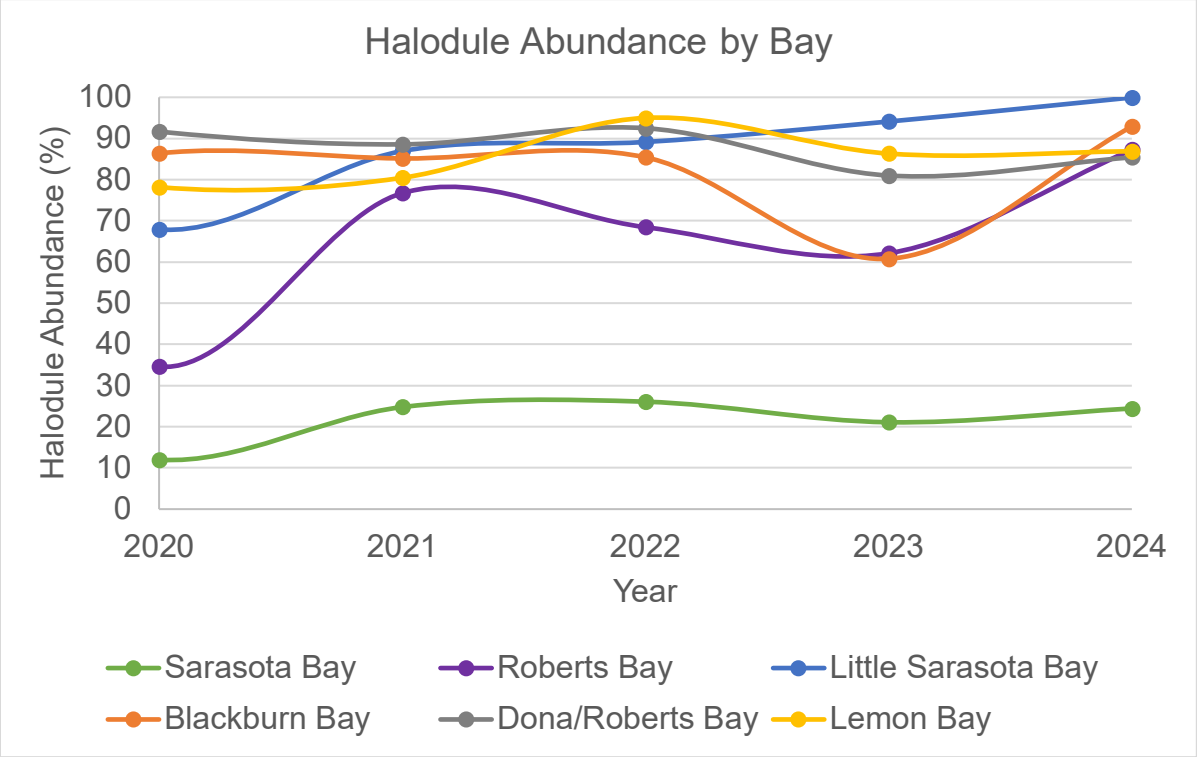


Figure 5. Average Halodule Abundance by Bay from 2020 to 2024.

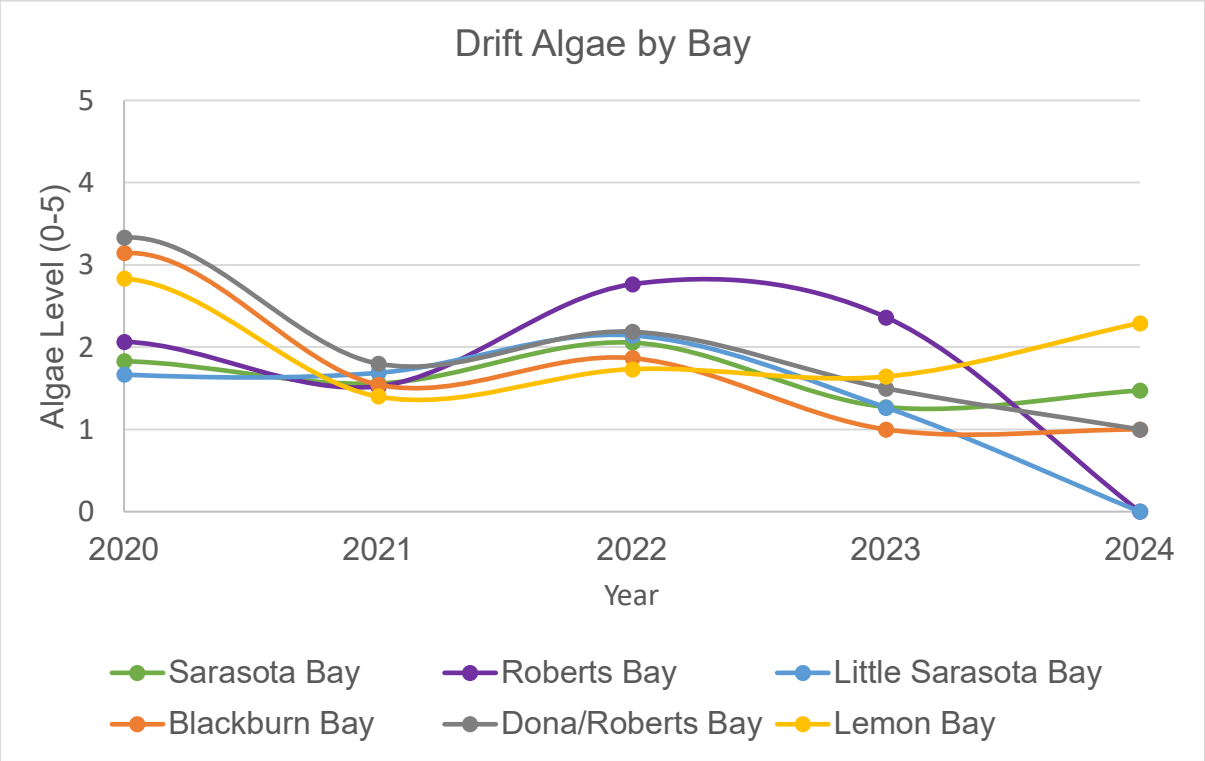


Figure 6. Average Drift Algae Level by Bay from 2020 to 2024.

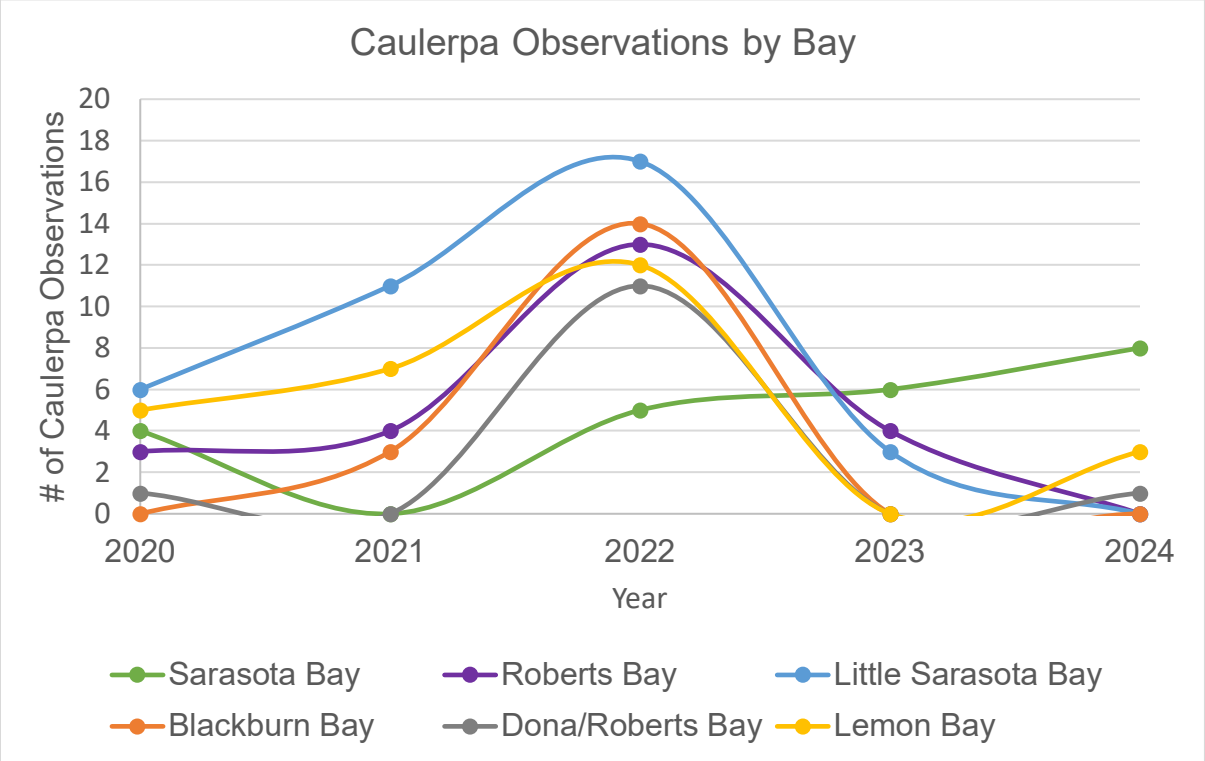


Figure 7. Number of Caulerpa observations by Bay from 2020 to 2024.

SWFWMD Seagrass Monitoring

In early 2024, SWFWMD conducted aerial photography of seagrass and created maps of patchy and continuous seagrass. While this report focuses on Sarasota County, SWFWMD's aerial mapping data includes portions of adjacent counties where bay systems cross county lines. Sarasota County compiled the SWFWMD seagrass acreage data from the five most recent aerial mapping surveys and the first aerial mapping survey from 1988. In addition, the seagrass targets created by the NEPs were used to assess the bays for successful watershed management. The NEP boundaries were matched up to the SWFWMD delineations to the best extent possible.

Trends

Sarasota County bays showed a significant gain of 17% in seagrass acreage from 2022 to 2024. The increase from 11,190 acres to 13,061 acres resulted in a total gain of 1,871 acres. Table 2 shows trends in seagrass acreage from 2022 to 2024 and target attainment for seagrass in six Sarasota County bays. Four bays showed an increase in seagrass acreage, no bays exhibiting seagrass loss, and two bays (Roberts and Lemon Bay) showed a negligible change since 2022. The four bays with increases ranged from +3% to +24% with Sarasota Bay having the largest gain of 1,833 acres and Dona/Roberts Bay having the smallest gain of 15 acres.

Targets

Table 2 shows which bays achieved the seagrass targets established by the Sarasota Bay Estuary Program and Coastal & Heartland National Estuary Partnership. These targets were also used by the Florida Department of Environmental Protection to create water quality standards for nitrogen, phosphorus, and chlorophyll in bays. While there was no seagrass acreage loss in any of the bays, five of the six bay systems are below their seagrass acreage targets. Sarasota Bay is the only bay above target, but Sarasota County as a whole remains above target for seagrass coverage.

The seagrass acreage maps from SWFWMD (Table 3) indicate that Lemon Bay displayed the most negative conditions as there was no gain in seagrass and acreage is well below the target. This suggests that additional pollutant reduction practices should be implemented in the Lemon Bay watershed. Roberts Bay, Little Sarasota Bay, Dona/ Roberts Bay, and Blackburn Bay remain waterbodies of concern as they are below target statuses of seagrass acreage and had little or negligible gain. Sarasota Bay is above target and had a positive trend in seagrass acreage indicating watershed protection practices are working.

Table 2. SWFWMD Seagrass Acreage of bays in Sarasota County

SWFWMD Seagrass Acreage							
Year	Sarasota Bay	Roberts Bay	Little Sarasota Bay	Blackburn Bay	Dona & Roberts Bay	Lemon Bay	Total
1988	6,323	334	533	411	77	3,433	11,111
2016	10,659	361	806	390	198	4,173	16,587
2018	10,326	349	610	295	48	3,825	15,453
2020	8,077	332	608	307	48	2,491	9,372
2022	7,591	300	578	294	32	2,395	11,190
2024	9,424	304	603	305	47	2,378	13,061
Acreage Change	+1,833	+4	+25	+11	+15	-17	1,871
Trend	Increase	No Trend	Increase	Increase	Increase	No Trend	Increase
Trend Variance %	24%	1%	4%	3%	46%	-1%	17%
Target	7,269	348	702	447	112	3,762	12,769
Target Status	Above	Below	Below	Below	Below	Below	Above
Target Variance	+2,155	-44	-99	-142	-65	-1,384	+292
Target Variance %	+30%	-13%	-14%	-32%	-58%	-37%	+2%

Table 3. SWFWMD Scorecard

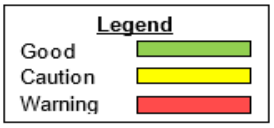
Legend
Positive Trend
Negative Trend

2024 SWFWMD Trend Scorecard						
Bay	**Sarasota Bay**	**Roberts Bay**	**Little Sarasota Bay**	**Blackburn Bay**	**Dona Roberts Bay**	**Lemon Bay**
Trend Variance	+24%	+1%	+4%	+3%	+46%	-1%
Target Variance	+30%	-13%	-14%	-32%	-58%	-39%
Score	Gain, above target	No trend, below target	Small gain, below target	Small gain, below target	Gain, below target, small overall acreage	No trend, below target

Table 4 below combines the results from Sarasota County seagrass monitoring program and the SWFWMD seagrass mapping program. The bays are ranked from 1 to 6 with the largest numbers being top priorities. Lemon Bay is the top priority for stormwater retrofits based on the two seagrass monitoring programs. Roberts Bay, Little Sarasota Bay, Blackburn Bay, and Dona/Roberts Bay are trending toward a state of caution. These bays should also be considered for stormwater improvements and would benefit from general outreach for preserving seagrass meadows in these systems. Sarasota Bay was the only bay to receive both a good health assessment score and good SWFWMD acreage mapping score.

Table 4. Cumulative Scorecard

2024 Cumulative SWFWMD and Sarsota County Scorecard						
Bay	**Sarasota Bay**	**Roberts Bay**	**Little Sarasota Bay**	**Blackburn Bay**	**Dona Roberts Bay**	**Lemon Bay**
County Monitoring						
SWFWMD Mapping						
Rank	**1**	**5**	**2**	**3**	**4**	**6**



Long Term Analysis / Relationship to the Stormwater Management Program

Healthy, extensive seagrass is a well-established indicator of water quality in estuaries. Pollutant load modeling provides evidence that stormwater runoff and the associated dry weather baseflow are the largest contributors of pollutants. Therefore, reducing stormwater pollution to the maximum extent practicable through the implementation of BMPs is recommended to restore seagrass, to improve or eliminate impaired bodies of water, and retain the great value of economic and recreational benefits that seagrass provides for Sarasota County.

The Sarasota County seagrass monitoring program, used in conjunction with the SWFWMD seagrass mapping program, has identified and prioritized problematic trends and conditions where additional pollution reduction actions are needed. Managing water quality is a top priority for Sarasota County's Stormwater Environmental Utility.

Additional seagrass monitoring results and analysis are available in several locations on the Sarasota County Water Atlas website including:

- Sarasota Seagrass: https://www.sarasota.wateratlas.usf.edu/seagrass/#seagrass
- Bay Conditions: https://www.sarasota.wateratlas.usf.edu/bay-conditions/
- Stormwater NPDES: https://sarasota.wateratlas.usf.edu/npdes/?section=Reports

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Sarasota County 2024 NPDES MS4 Annual Report

5. SCALLOP MONITORING

Scallop Monitoring Program
Reporting and Assessment of Monitoring Results

Scallops were once abundant in Sarasota County's bays. In 2008, the County began a program to monitor our scallop populations. The Scallop Monitoring Program is part of a larger National Pollutant Discharge Elimination System (NPDES) monitoring plan intended to measure the effectiveness of the County's Stormwater Management Plan on watersheds. The bay scallop (*Argopecten irradians)* is an indicator species that is particularly sensitive to freshwater influences and poor water quality. The County's program includes spat collection and adult surveys. In the past it included the survival rates of caged adults, but scallops have not been available for that portion of the program since 2020. These efforts are in partnership with the Florida Fish and Wildlife Research Institute (FWRI), Mote Marine Laboratory, and Sarasota Bay Watch.

Summary of Monitoring Data from 2024 Reporting Year

A. SPAT MONITORING

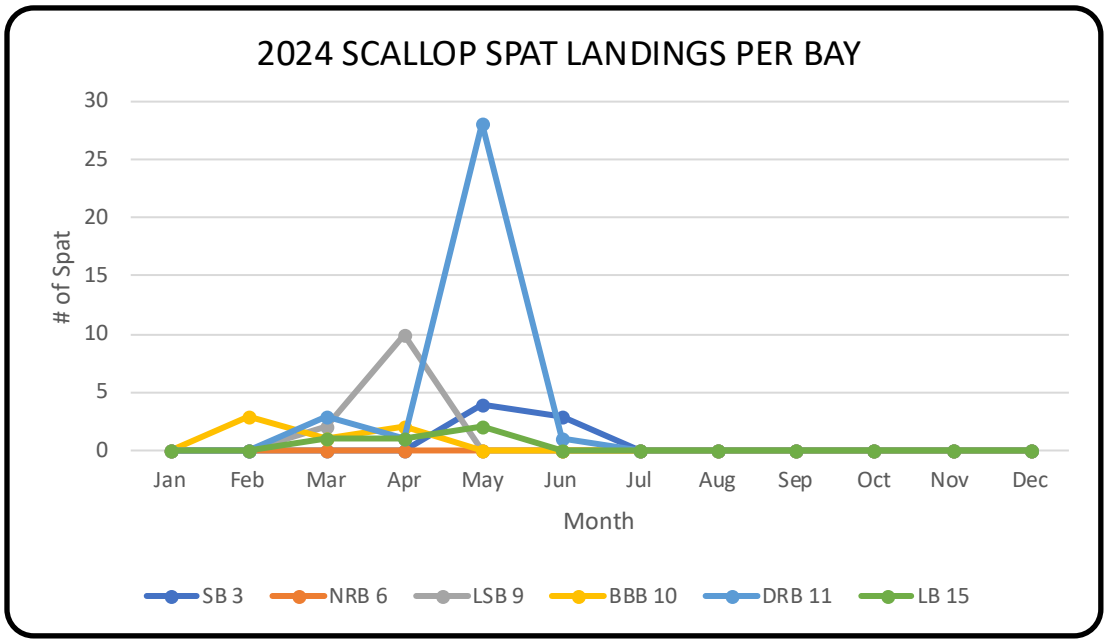

Figure 1: 2024 Monthly Scallop Spat Landings - Per Bay (SB 3-Sarasota Bay, NRB 6-North Roberts Bay Sarasota, LSB 9-Little Sarasota Bay, BBB 10-Blackburn Bay, DRB 11-Dona & Roberts Bay, LB 15-Lyons Bay)

Spat are scallops in their larval state; they use fine threads to attach themselves to seagrass blades. Citrus bags mimic seagrass and are deployed in seagrass beds to attract spat at each monitoring station. Monitoring stations are located in each of the County's six bays identified above.

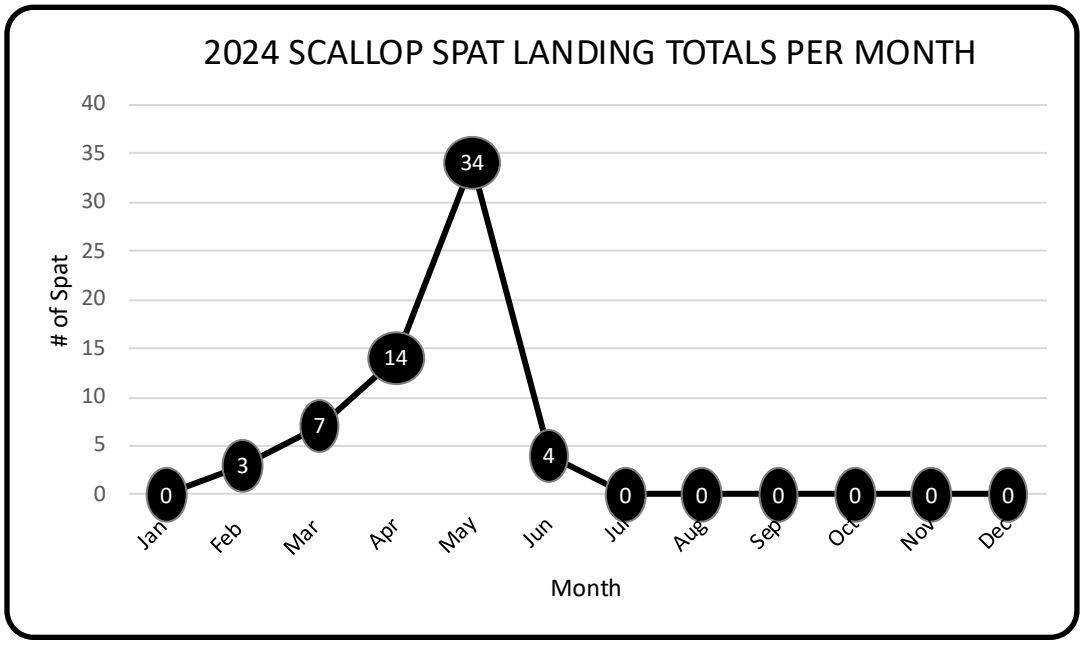

Figure 2: Monthly Scallop Spat Landings - All Bays

In 2024, there was a county-wide total of 62 spat landings. This is only 13% as many spat as were counted in 2023 (62 vs. 471). Peak spat landings occurred in May, which is typical, although timing can vary; in 2010 the peak occurred in February. The bulk of the spat landings, 34 (Fig. 2) was collected in May, with a combined 48 collections in April and May. Landings were nearly nonexistent for the remainder of the year. This decrease in spat landings coincides with the increased freshwater contribution to the bays in late 2024, which was overall a wet year with more than 10 inches above the average annual rainfall. The magnitude of rainfall is further discussed in Section D.

Spat were present in all bays except for North Roberts Bay. Dona & Roberts Bays (33) and Little Sarasota Bay (12) were the most productive, relative to the other bays, and all bays except Little Sarasota Bay showed decreases from 2023.

B. ADULT SCALLOP SURVEY SITES

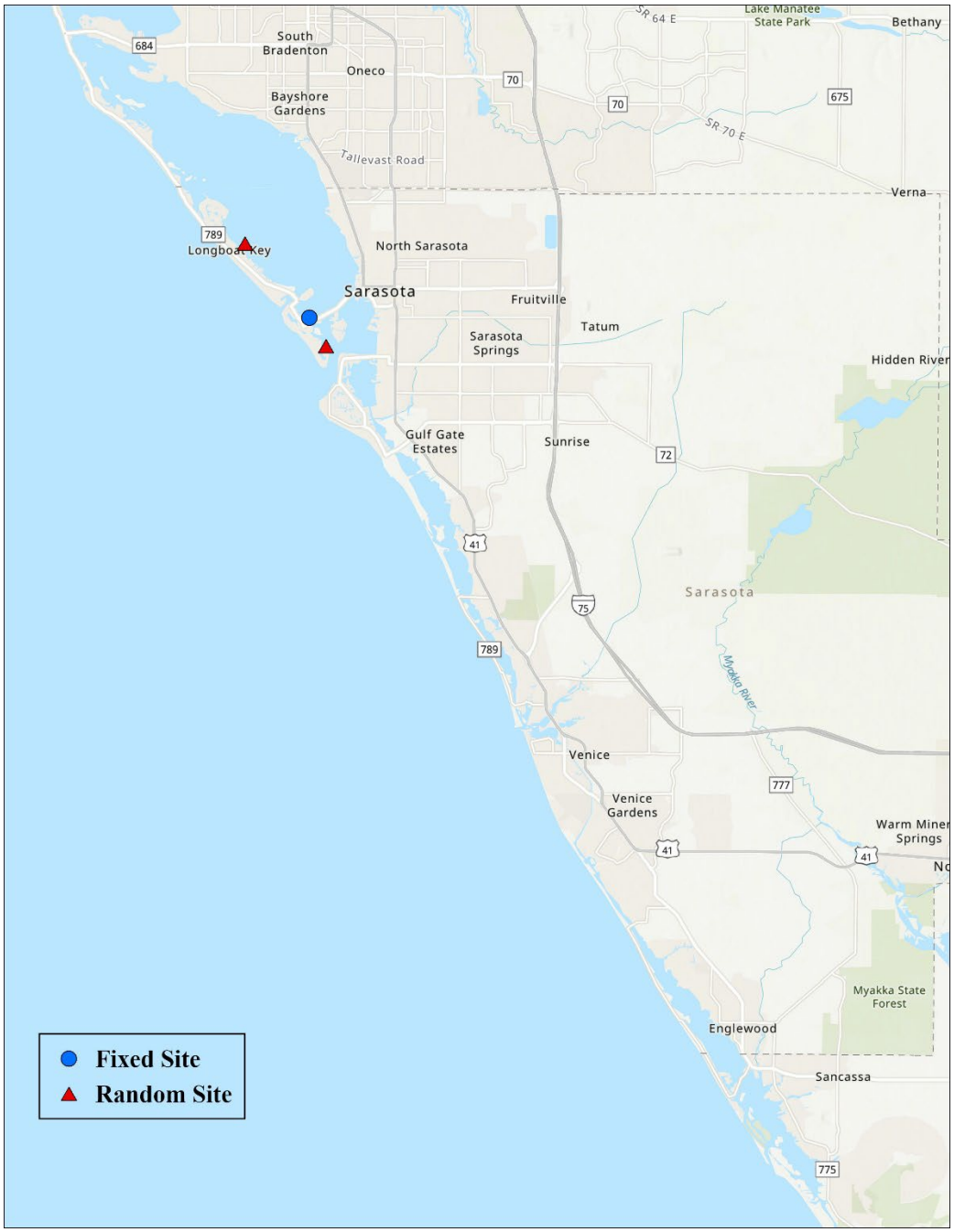

Figure 3: 2024 Fixed and Random Survey Sites

In 2024, staff completed 3 adult scallop surveys, not reaching our annual goal of 30 due to several hurricanes and related reduced visibility. The 3 sites surveyed included 1 fixed and 2 random sites, 4 scallops were found.

Habitat data were collected at each of the sites to inform future trends and analysis. Data regarding seagrass species diversity, percent cover, blade length, quantity and diversity of drift algae, epiphytic growth accumulation, and other biotic and abiotic site characteristics were collected.

C. CAGE PROGRAM

The scallop cage program is designed to reintroduce scallops to potentially suitable areas or places in which scallops have disappeared. Adult scallops are placed in cages and the cages then put out in seagrass beds. The cages provide a safe environment for the scallops to live and reproduce.

No adult scallops were available from Mote Marine Laboratory in 2024 to support the cage program.

D. RAINFALL

Total rainfall in 2024 was 63.0", which is above the historical average of 52.63" for Sarasota County. Rainfall was nearly nonexistent in November and December, while June, August and October were well above the monthly averages. Both August and October 2024 rainfall amounts were more than double the average rainfall in those months. The rainfall for August 2024 is the 8th highest monthly rainfall total in the long-term dataset. Generally, data from dry years tends to show an increase in spat landings and numbers of adult scallops found during surveys.

The total rainfall was well above the historical average (Fig. 4), seven months were drier than normal, including November, December and March through May. Typically, less rainfall in the spring, when spat landings are most likely to occur, results in high spat landings.

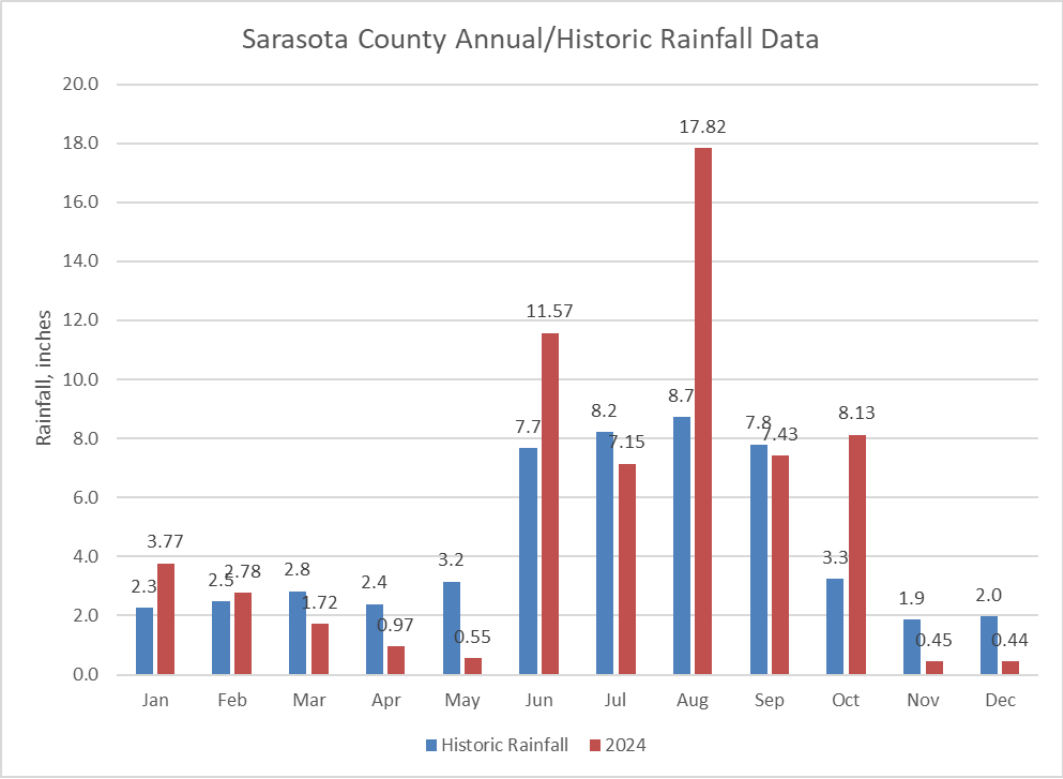

Figure 4: Annual vs Historic Monthly Rainfall Data. *Data source:* [*Southwest Florida Water Management District*]

Most County bays are narrow and generally shallow, making the effect of rainfall a significant contributing factor to the health of scallops. Heavy rainfall can drop the salinity levels substantially in a short period of time. Scallops have a narrow optimal range of salinity tolerance, between 20-30 ppt. and can only withstand extreme changes for a few hours. For this reason, spat monitoring and adult survey sites are selected to avoid areas impacted by direct freshwater inputs such as the mouths of creeks.

E. RED TIDE

Red tide algal blooms can cause low oxygen levels in our bays as they die. The dead algae sinks to the bay floor and absorbs oxygen as it decomposes. This low oxygen condition is called hypoxia. Scallops are very sensitive to environmental factors and cannot survive in hypoxic conditions.

The Florida Fish and Wildlife Conservation Commission (FWC) conducts weekly red tide monitoring in the Gulf of Mexico. Figure 5 shows locations where the red tide organism *Karenia brevis* was detected in waters in and around Sarasota County in 2024.

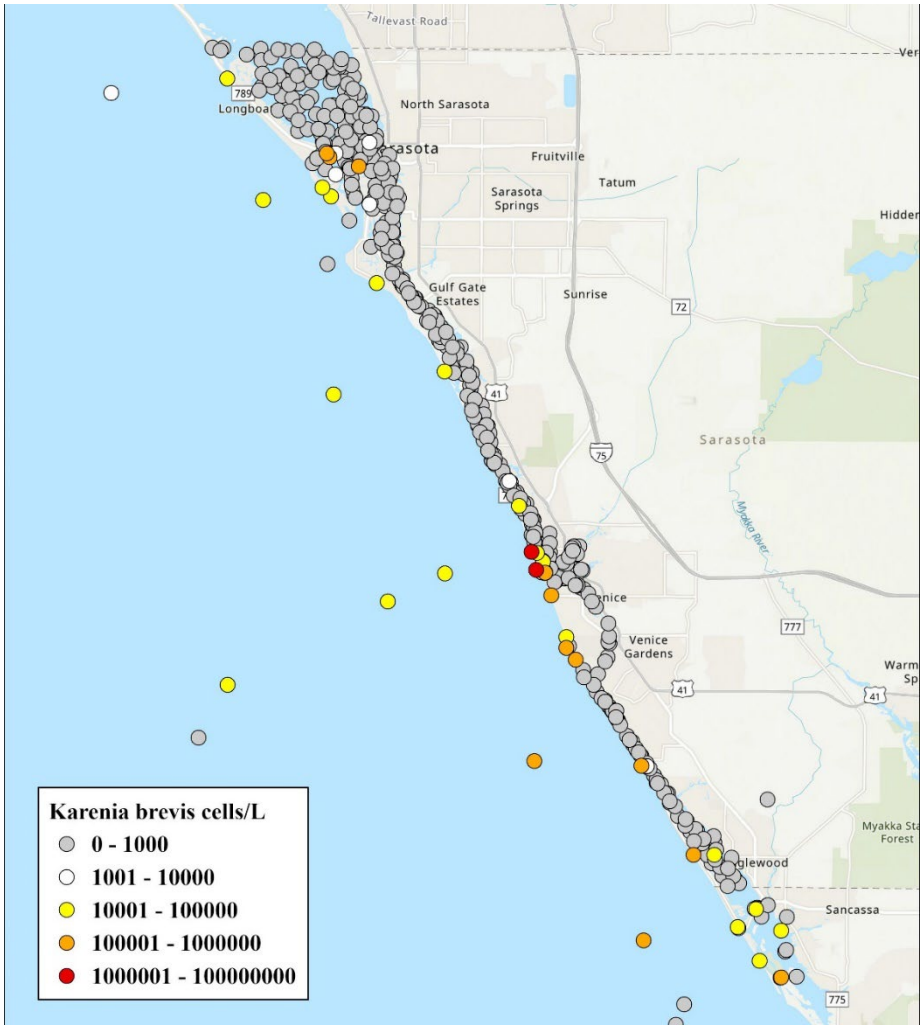

Figure 5: 2024 FWC Red Tide Detections

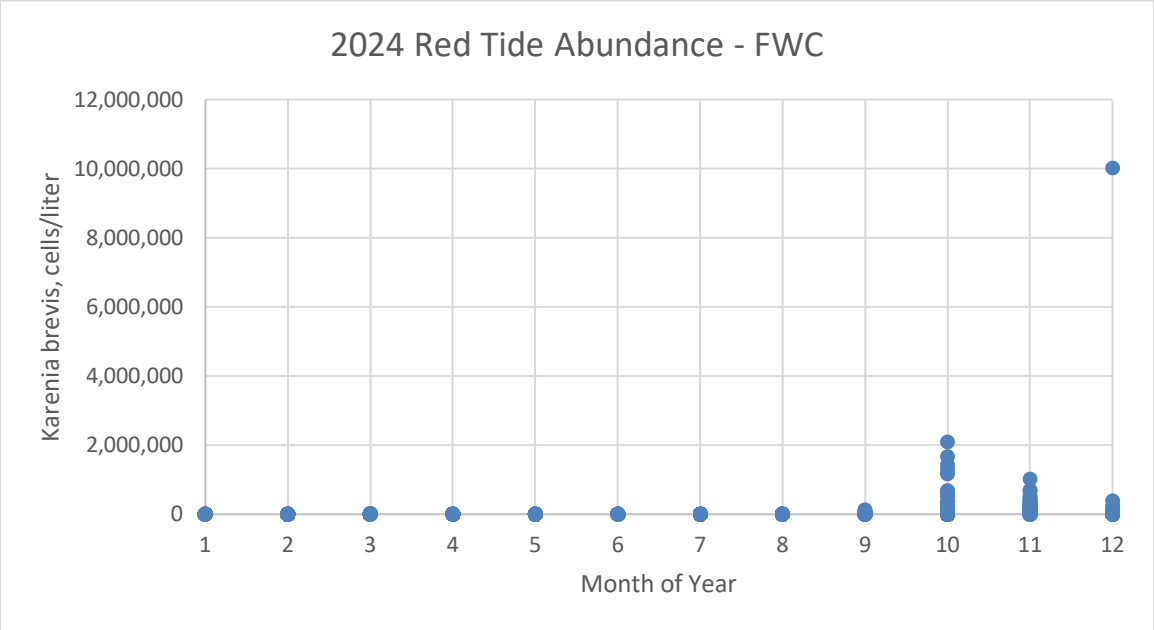

Figure 6: FWC Monthly Red Tide Abundance for 2024 (preliminary data), *Data source: Florida Fish & Wildlife Conservation Commission*

Figure 6 shows monthly red tide abundance as measured by FWC (preliminary data), with most observations in October through December.

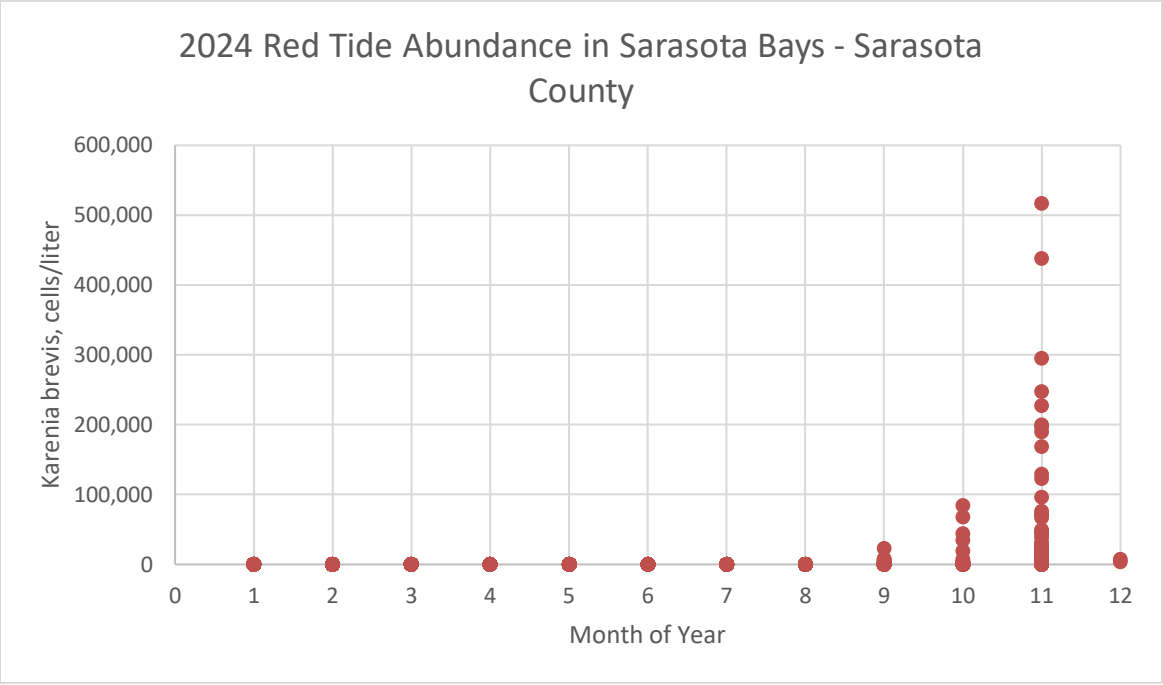

Figure 7: 2024 Red Tide Abundance in Sarasota Bays

The FWC Gulf samples collected near Sarasota County showed high detection levels (>1,000,000 cells/L) primarily in October and December, with a single sample in December at Bowmans Beach showing over 10 million cells. Sarasota County measures red tide within its bays as part of its monthly monitoring program. County data was similar

to that collected in the Gulf, with elevated detection values from October through December and detections few to nonexistent for the remaining months in the year.

Long Term Assessment

F. ANNUAL SPAT LANDINGS TREND DATA

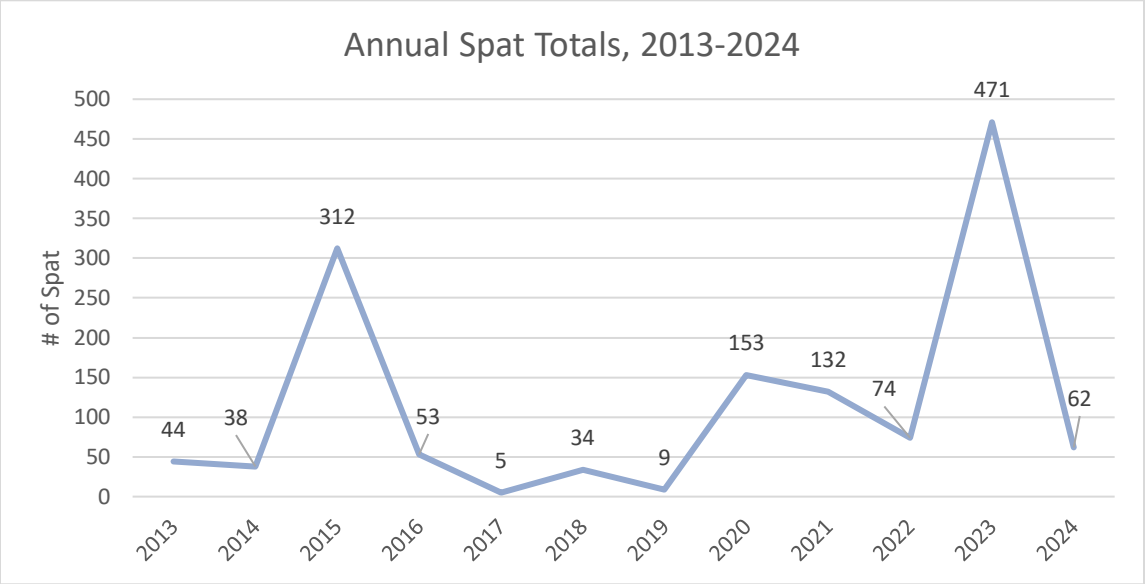

Figure 8: Annual Scallop Spat Landings

In partnership with the Florida and Wildlife Research Institute (FWRI), the spat monitoring program began in 2008 with 15 monitoring sites throughout the County bays. In 2012, FWRI shifted the focus of their program and could no longer provide direct support to the County. To continue the program, Mote Marine Laboratory collaborated with the County and the monitoring sites were reduced to 10; due to lack of staff the sites were further reduced to 6 in 2013. Today there continue to be 6 fixed monitoring sites.

Total spat landings decreased dramatically from 471 in 2023 to 62 in 2024, an 86.8% decrease. While the bulk of the 2024 landings occurred in May, spat were recorded at monitoring sites during 5 of the 12 months. In comparison, spat were recorded during 9 of 12 months in 2023. This is significant to note as even a single spat landing indicates a scallop population occurring locally. The lack of even a single landing during the summer months is typical of our local pattern. In addition, historically very few landings occur from August through December.

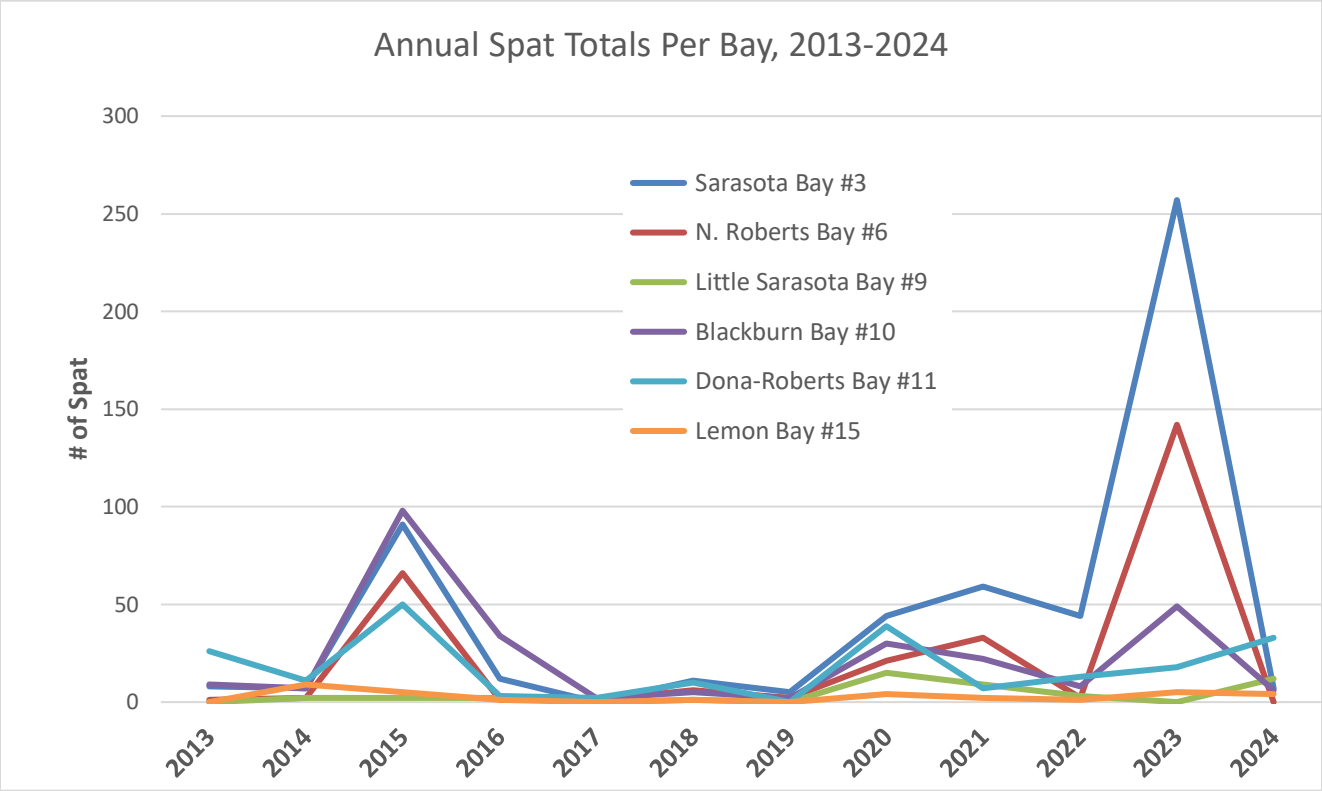

Figure 9: Annual Scallop Spat Landings Per Bay

In 2024, spat landings were recorded at all but one of our 6 monitoring stations (Fig. 9). The overall number of landings decreased markedly from 2023; Sarasota Bay no longer experienced the highest number of landings, replaced by Dona-Roberts Bays with 33. Little Sarasota Bay also showed an increase in spat landings, from 0 in 2023 to 12 in 2024. Spat landings in North Roberts Bay decreased from 142 in 2023 to 0 in 2024.

G. TRANSECT SURVEY TREND DATA

Adult scallop transect surveys have been conducted from 2008 to 2024, except for 2018 when a significant and persistent red tide outbreak on Sarasota County's coast prevented monitoring. During 2017-2024, survey data were collected at 16 fixed monitoring sites and 160 random sites, as shown in Fig. 10.

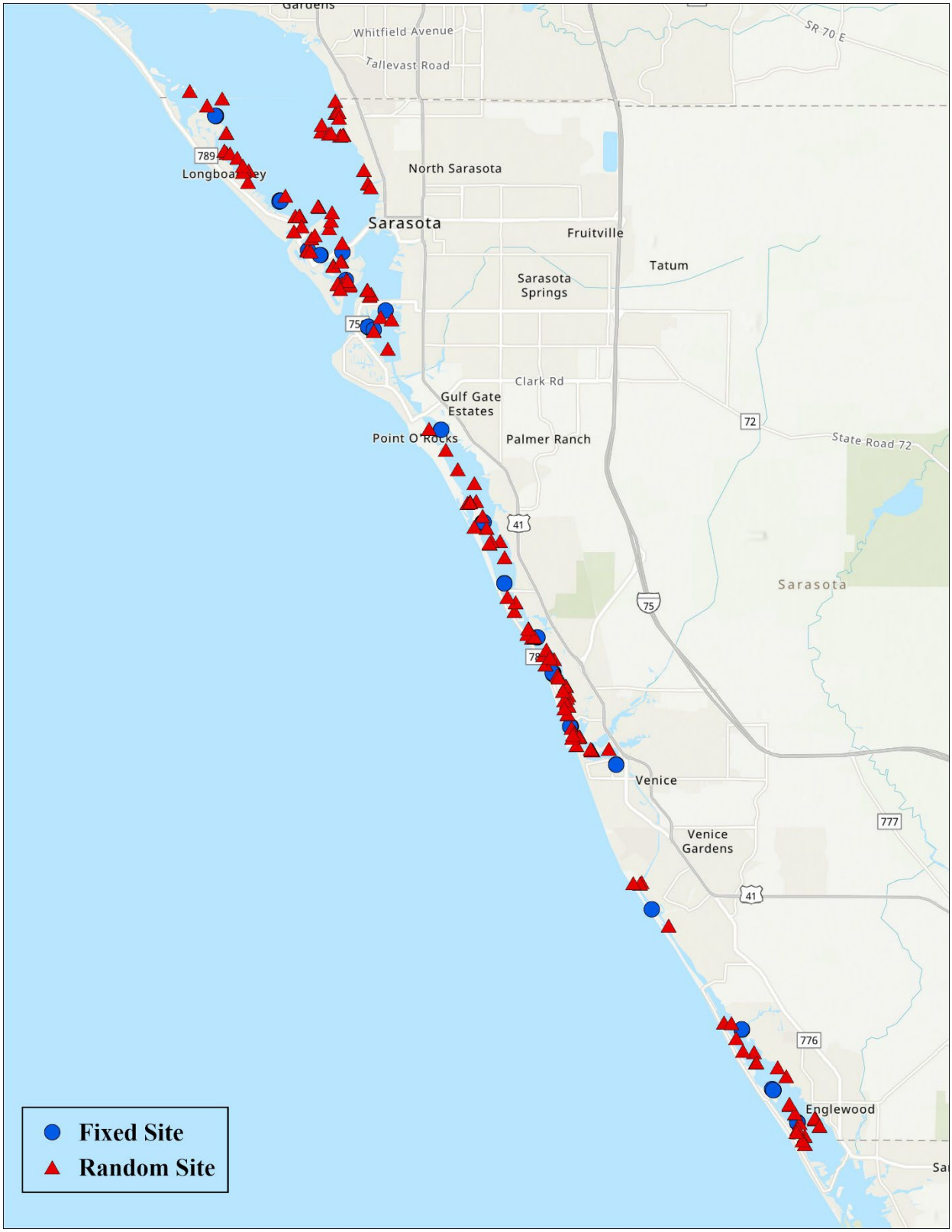

Figure 10: Transect Survey Sites 2017-2024

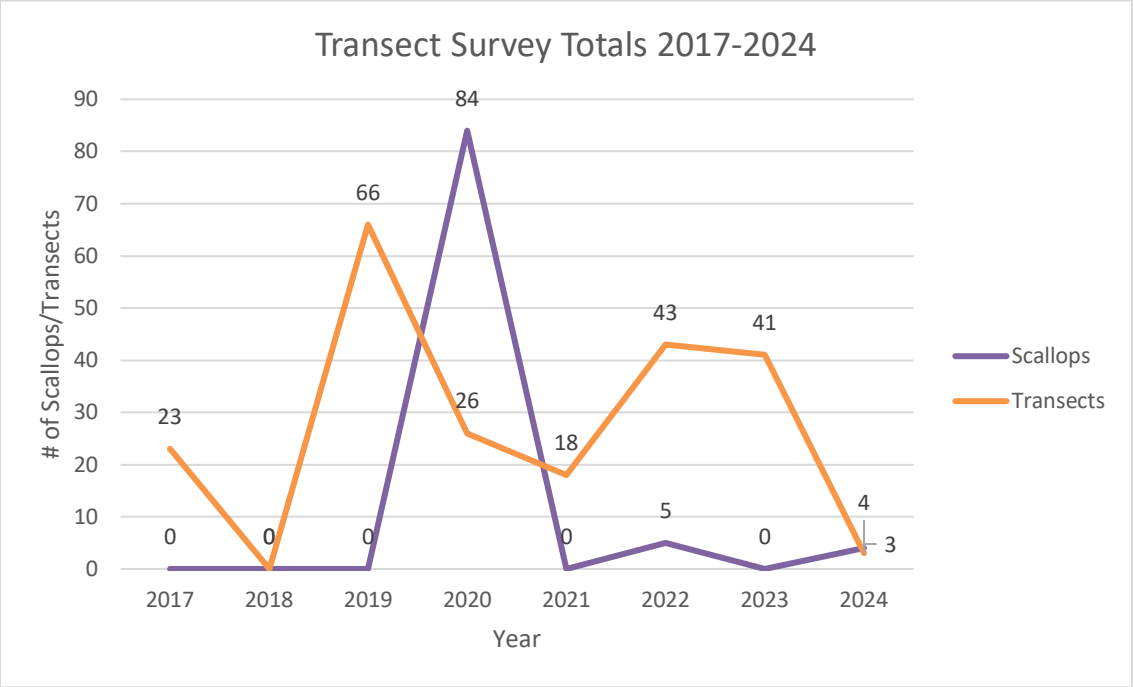

Figure 11: Adult Scallop Survey Totals

Note: For the health and safety of staff no transect surveys were conducted in 2018 due to a significant and persistent red tide bloom.

From 2008 to 2017 the number of annual adult survey sites ranged between 13 to 33 using the 100m transect method, with the survey window limited to four full days. In 2019, we switched to the rapid survey method used in our seagrass monitoring program. In this method, a 50-foot radius is surveyed around a fixed point, and specific habitat data are also collected as previously outlined. In 2024, staff completed 3 site surveys, fewer than the 41 sites surveyed in the previous year. This reduction of samples is related to several hurricanes and related reduced visibility. In 2024, a total of 4 scallops were observed (Fig. 11).

Relationship of Data to Stormwater Management Plan

Sarasota County continues to support watershed management projects that have a positive impact on the conditions of County bays. The County achieves this by properly designed, constructed, operated, and maintained stormwater structural controls and projects utilizing natural systems restoration to remove pollutants before they reach the bay, thereby improving water quality. Mitigating or reducing discharges of pollutants to surface waters is the key to the management plan. More abundant scallop habitat is part of a web of complex environmental factors needed to support sustainable scallop populations. Managing the stormwater system to reduce unnaturally large freshwater volumes and associated excessive nutrients is expected to result in a greater abundance and survival of bay scallops in Sarasota County.

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Sarasota County 2024 NPDES MS4 Annual Report

6. RAINFALL MONITORING

Rainfall Monitoring (Year 6)

Sarasota County NPDES MS4 Annual Report for 2024

Sarasota County analyzes rainfall data and uses it in conjunction with ambient water quality monitoring, biological monitoring, and pollutant load modeling to assess the overall effectiveness of the Stormwater Management Program (SWMP).

Rainfall is the driving force for stormwater pollution and is an important cause of stream impairment. Due to the importance of rainfall, Sarasota County analyzes data from multiple sources, which includes the Southwest Florida Water Management District (SWFWMD), and the Sarasota County Automated Rainfall Monitoring Systems (ARMS). This report summarizes the monitoring data sources, annual rainfall, long-term assessment, and analysis within the SWMP of rainfall for the 2024 reporting year. Although not included in calculations for this report, radar-based data is also available on the Sarasota Water Atlas and is provided by the St. Johns River Water Management District (SJRWMD).

Summary of Rainfall Monitoring Data Sources

1) The Southwest Florida Water Management District (SWFWMD) collects and maintains a comprehensive inventory of historic and current time-series data within the Hydrologic Data Section of the District's Data Collection Bureau (DCB). SWFWMD rainfall summary files are available online and produce summaries for various geographic areas that include counties, district regions, and USGS primary drainage basins. Data can be provided based upon average monthly total, calendar-year, or wet/dry-season, and is available from 1915 to present. For methodology, data summary, and request of raw data, information is available at: https://www.swfwmd.state.fl.us/resources/data-maps

2) The Sarasota County Automated Rainfall Monitoring Systems (ARMS) is composed of County-operated remote monitoring stations that record rainfall and water level information throughout Sarasota County and transmit data in real-time to a central receiving station. Data is recorded hourly, with rainfall recorded in increments of 0.10 inch. This data is displayed through both raw data and advanced mapping/analysis tools on the Sarasota County Water Atlas. A link has been included below for details. https://www.sarasota.wateratlas.usf.edu/rainfall/latest/

3) Rainfall estimates are based on Doppler weather radar images that are calibrated with actual precipitation measurements to estimate rainfall amounts for each of the 2 x 2-kilometer grid cells in the region. Data is provided by the St. Johns River Water Management District. The data is available for basins and watersheds and is also shown for water quality conditions in a creek system or individual bay. Data are available on the Sarasota Water Atlas at: https://sarasota.wateratlas.usf.edu/rainfall/estimates/

Annual Rainfall

In 2024 the County received 63 inches of rainfall (Figure 1). This was more than the 2014-2023 long-term average of 53.8 inches of precipitation and also more than the period of record average of 52.8 inches. The 2024 rainfall was 19% more than the period of record average of 52.8 inches and was a 44% increase from the rainfall totals in 2023 of 35.68 inches. A large contribution to the 2024 rainfall was numerous storms: Invest 90 in June, Hurricane Debby in August, Hurricane Helene in September and Hurricane Milton in October. August had the highest rainfall totals in 2024 with 17.83 inches, which is about 9 inches above the long-term average for the month and can be attributed to Hurricane Debby.

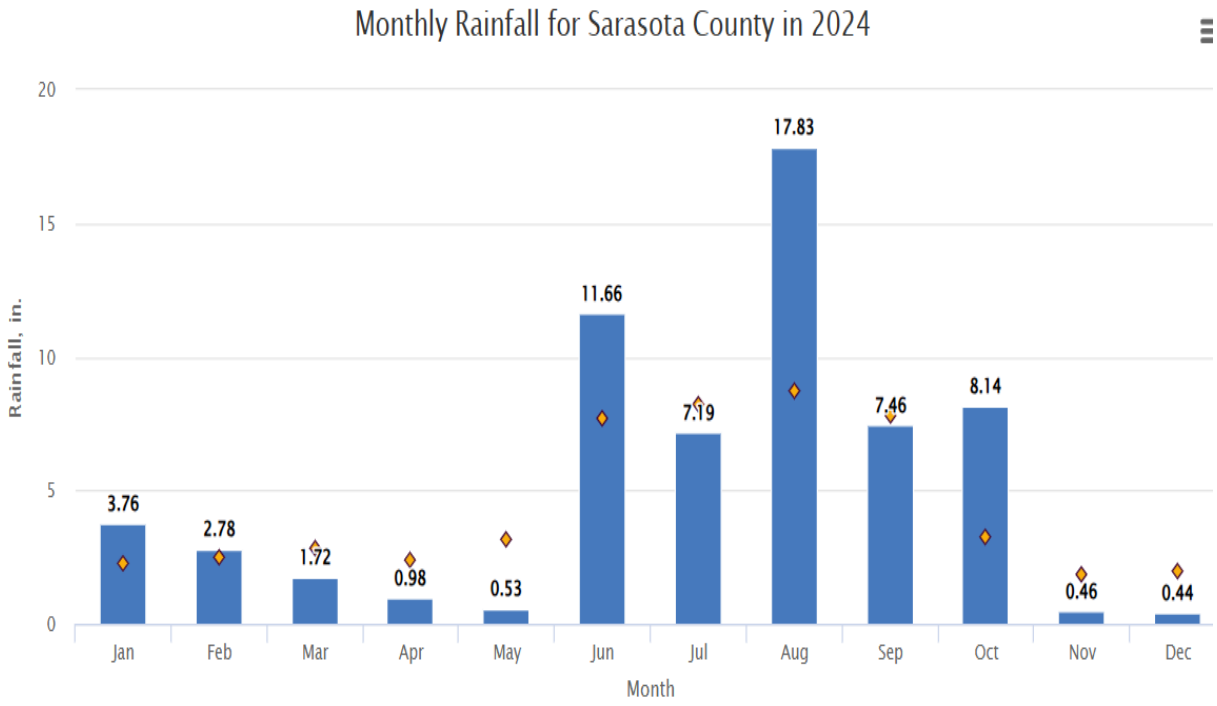

Figure 1 *Sarasota County Monthly Rainfall 2024*

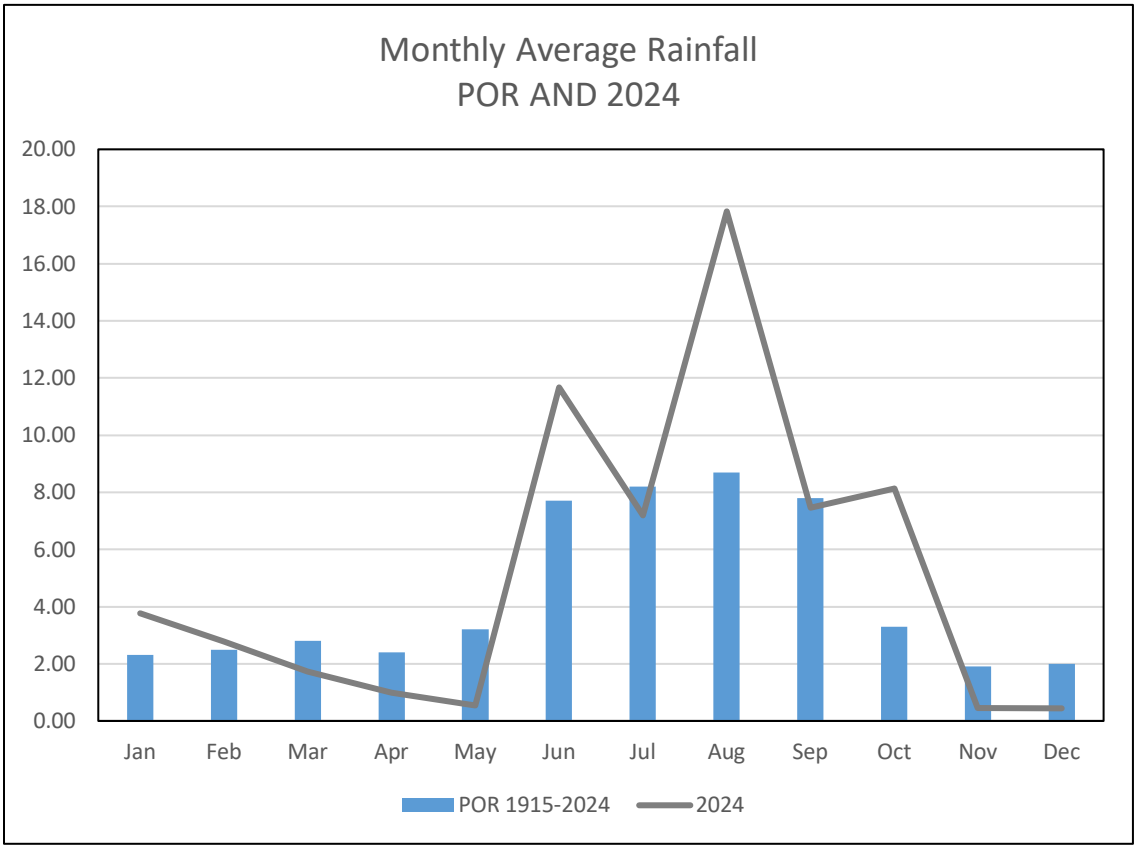

Figure 2 *Sarasota County Monthly Rainfall Average Comparison Period of Record (1915-2024) to 2024*

Long-term Assessment

Sarasota County has a long-term average rainfall of approximately 53 inches per year based on data provided by SWFWMD; the average typically varies each year, as shown in Figure 3. The years 2013 to 2018 experienced wetter years while 2019 to 2021 had rainfall at or below the 10-year average. Despite Hurricane Idalia bringing 9.6 inches of rainfall in August alone, 2023 was the driest year on record with 35.6 inches of rain. Approximately 63 inches of rainfall was observed in 2024 with Hurricanes Invest 90, Debby, Helene, and Milton. Wet and dry periods influence loading, circulation, and dilution of stormwater pollutants in streams and bays.

The County is increasingly evaluating and pursuing stormwater management techniques that are inspired by nature, including natural channel design restoration. Natural systems exhibit increased stability, can lead to improved water quality outcomes, and establish adaptive floodplains that evolve through natural processes which erode, transport, filter, and deposit materials in a more controlled manner.

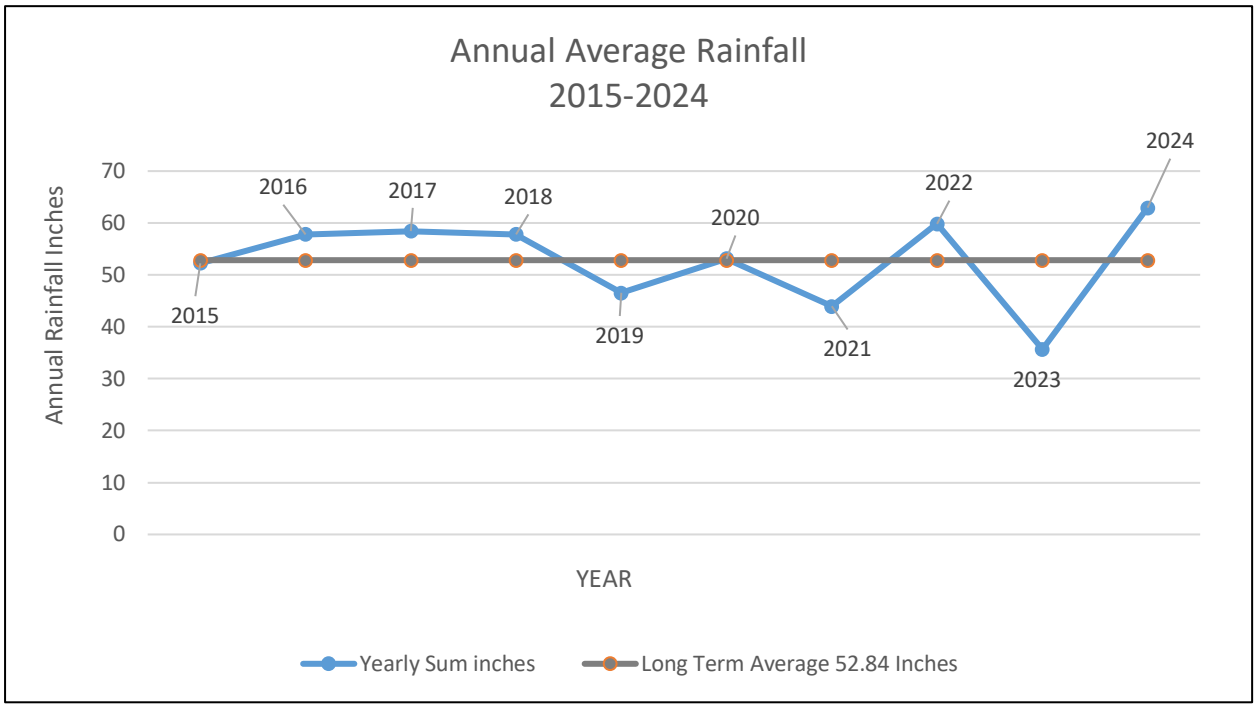

Figure 3 *Sarasota County Annual Rainfall 2015-2024*

Relationship of Data to the Stormwater Management Plan

Area-specific rainfall data can provide insight into the complex relationships between the water quality of creeks, basins, bays, and monitored stormwater projects. Rainfall data has been and continues to be valuable when analyzing water quality data, understanding the movement and concentration of pollutants, and when approaching the reduction of pollutants to the maximum extent practicable. Increasingly, air and water temperature will be important variables to examine when analyzing long-term rainfall and adapting stormwater management to address challenges. The County is progressively evaluating stormwater management techniques to mitigate the effects of more frequent and intense storm events, higher water tables, and flashier systems.

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APPENDIX B

Sarasota County 2024 NPDES MS4 Annual Report

TMDL SUMMARY REPORT

Table of Contents

Report Objectives

One objective of the National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Permit is to ensure that discharges for pollutants identified in a Total Maximum Daily Load (TMDL) waterbody are reduced to the Maximum Extent Practicable (MEP) through implementation of a Stormwater Management Program (SWMP). Sarasota County remains committed to reducing pollutant loads in TMDL waterbodies and continues to make progress as detailed in this status report.

Sixteen TMDLs (Table 1) have been established in Sarasota County by the U.S. Environmental Protection Agency. The TMDL documents are available on the Sarasota County Water Atlas.

The County is actively working on the remediation of five TMDL waterbodies: Alligator Creek, Phillippi Creek, Gottfried Creek, Elligraw Bayou, and Clower Creek.

Table 1 *Current Sarasota County TMDL and Regulatory Load Reduction Targets*

Waterbody	WBID(s)	Pollutant of Concern (TMDL Source)	TMDL Load Reduction
Alligator Creek	2030	Nitrogen (EPA)	28%
Big Slough	1976	Bacteria (EPA)	26%
Catfish Creek	1984	Nitrogen (EPA)	51%
Clark Lake (Phillippi Tributary)	1971	Nitrogen (EPA)	21%
		Phosphorus (EPA)	80%
Clower Creek	1975A	Bacteria (EPA)	76%
Curry Creek	2009A	Nitrogen (EPA)	63%
Elligraw Bayou	1975	Bacteria (EPA)	70%
		Biochemical Oxygen Demand (EPA)	71%
		Nitrogen (EPA)	29%
Forked Creek	2039	Nitrogen (EPA)	20%
Gottfried Creek	2049	Bacteria (FDEP)	74%
		Biochemical Oxygen Demand (EPA)	16%
		Nitrogen (EPA)	2%
Mud Lake Slough	1958	Bacteria (EPA)	93%
Myakka River (at Big Slough)	1991C	Nitrogen (EPA)	56%
		Phosphorus (EPA)	67%
Myakka River (between lakes)	1981B	Biochemical Oxygen Demand (EPA)	11%
		Nitrogen (EPA)	4%
		Phosphorus (EPA)	12
North Creek	1984A	Nitrogen (EPA)	47%
Phillippi Creek	1937	Bacteria (EPA)	98%
		Biochemical Oxygen Demand (EPA)	70%
		Nitrogen (EPA)	70%
		Phosphorus (EPA)	70%
South Creek	1982A	Nitrogen (EPA)	48%
Woodmere Creek	2042	Nitrogen (EPA)	55%

This report is structured to provide updates directly responding to regulatory documents established by the County. Each regulatory document will be named in the opening paragraph pertaining to the TMDL waterbody of concern.

The analysis and data for all creeks sampled are available on the Sarasota County Water Atlas found at the links below:

www.sarasota.wateratlas.usf.edu/creek-conditions

www.sarasota.wateratlas.usf.edu/trends-and-hotspots/

www.sarasota.wateratlas.usf.edu/datadownload

Outreach Materials

County staff have developed numerous visual materials to educate the public regarding water quality. All outreach materials have been made available online and can be found in the Community Resources page on the Sarasota County Water Atlas.

Sarasota County has a long-standing contract with the Science and Environment Council (SEC) to conduct additional outreach in priority watersheds. The SEC has developed five three-sided, free-standing kiosks featuring water quality issues, solutions, and watershed awareness. Panels for five impaired tidal creek watershed maps have been developed: Whitaker Bayou, Phillippi Creek, North/South/Catfish Creeks, Shakett/Curry Creeks, and Alligator/Forked/Gottfried Creeks. Seven additional panels have also been developed for personal pollution issues: plastics, unflushables, pervious pavement, reuse irrigation, septic/sewer leaks, fertilizer, and pet waste.

SEC deployed the five kiosks to high traffic public locations for periods of 120 days. Each of the five kiosks was rotated to separate locations throughout the County during the year, including libraries, public offices, and other high foot traffic locations in the watersheds of Sarasota County. Kiosks were strategically positioned at each location to intercept the most traffic. An example of the kiosks is shown below in figure 1.

Figure 1 *Educational Kiosk for priority watersheds*

SEC also developed and coordinated theater screen ad campaigns featuring best practices for fertilizer use and prevention of plastic and floatable pollution. Ads were shown on screen at all shows at Sarasota Film Society Cinemas (Burns Court and Lakewood Ranch). SEC developed five fertilizer screen ads and five plastic pollution ads. Each series of five-screen ads ran before all movies at both Sarasota Film Society Cinemas. Five unique screen ads were run in each of 2 separate, three-month campaigns - one in Spring 2024 and one Summer 2024. Overall, ten unique screen ads ran over six months (24 weeks) total during spring and summer of 2024, reaching an estimated 590,980 individuals.

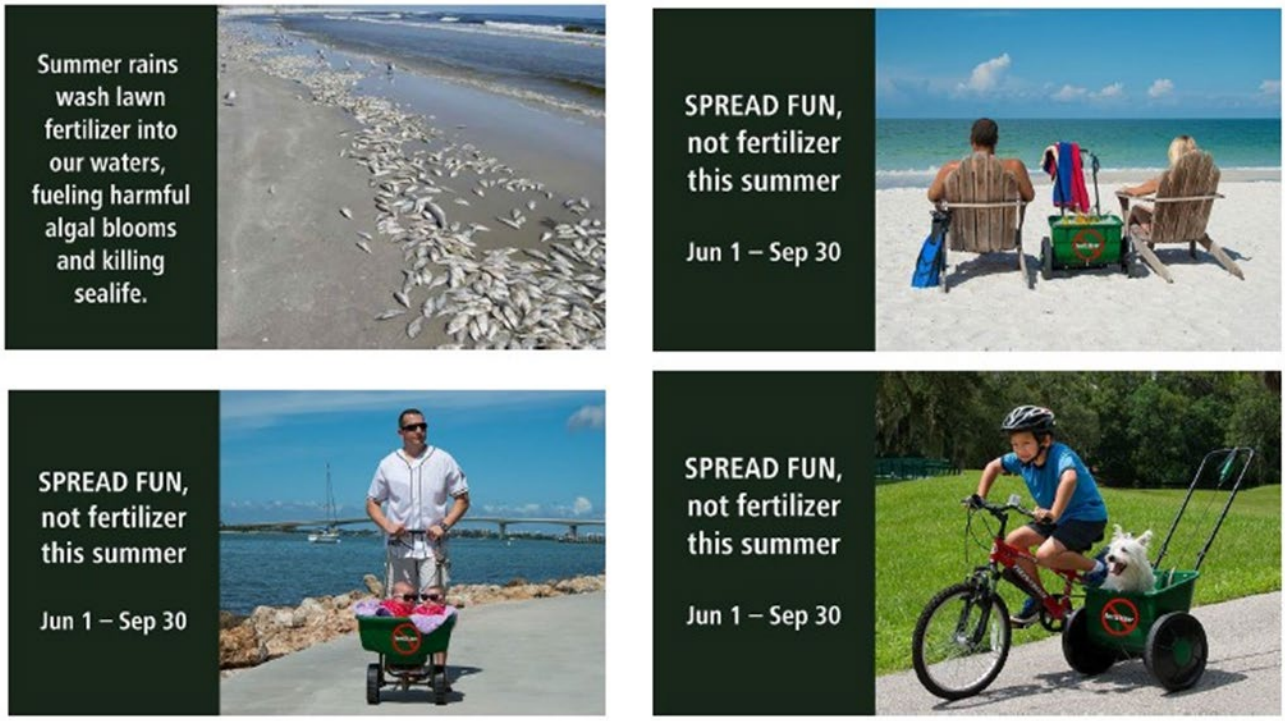

Figure 2 *Fertilizer Movie Screen Ads*

Bacteria Pollution Materials

Outreach materials relating to bacteria pollution include the *Scoop the Poop* video and Poop Fairy signs that can be found on the Water Atlas Community Resources page Pick Up Pet Waste & Litter.

The Water Atlas contains a page for residents to report pollution to allow for direct report of public concerns. The form is straightforward and includes a large text area for observations.

Limit Fertilizer, Pesticides, and Watering

The Community Resources page also has information on how residents can Limit Fertilizer, Pesticides, & Watering. There are many tips presented here as well as an information card titled "*Keep our Bay Blue not Green"*. "*Protect Our Creeks and Bays"* in Figure 3 below is an example of outreach reminding irrigation customers that reuse water may already contain nutrients.

Figure 3 *Example of Signage Produced by Sarasota County for Priority Waterbodies*

Fats, Oils, and Grease Management Ordinance

On July 9th, 2019, Sarasota County Fats, Oils, and Grease (FOG) Management Ordinance was adopted to aid in the reduction of Sanitary Sewer Overflows (SSOs), bacteria loadings, and potential damage to central sanitary sewer system equipment. The ordinance was made effective January 1, 2020, allowing for the establishment of the FOG Management Program. This program regulates food service establishments and their associated grease management practices, Best Management Practices (BMPs), and outreach material. The goal of the FOG program is to reduce the number and severity of sanitary sewer overflows thus lowering the microbiological pollutants entering the waterways.

Figure 4 *Fats, Oils, and Grease Outreach Materials to Aid in SSO Reduction*

Sanitary Sewer System Overflow Investigations

Sarasota County's Air and Water Quality Division is involved in various activities related to reducing environmental pollution and protecting water quality. This division investigates potential incidents related to private lift stations in response to citizen complaints. Citizen concerns pertaining to fecal pollution issues in the watersheds are typically investigated within a 24-hour period and water quality samples are collected when warranted. Investigations are followed by appropriate action with the station owner if necessary. All county abnormal event SSOs are reported to the division as well as the Florida Department of Environmental Protection (FDEP) per state reporting requirements.

Sarasota County prioritized the reduction of sanitary sewer overflows and entered a Consent Order with the FDEP in 2019. This commits the county to making substantial wastewater collection and transmission system improvements over the next five years. On January 14, 2020, the Board of County Commissioners approved a $3,947,220 contract for consulting services to assist in the implementation of the Capacity, Management, Operations, and Maintenance (CMOM) Program for the wastewater collection system. The most current CMOM manual was completed in September 2020 and best management practices are ongoing.

Effective July 1, 2021, the FDEP is responsible for implementing the Florida Statutes and regulations applicable to Onsite Sewage Treatment and Disposal Systems (OSTDS). Under Florida's Clean Waterways Act of 2020, the County Health Department offices will continue to do the permitting and land inspection for septic tanks.

Alligator Creek TMDL

In March of 2006, the U.S. Environmental Protection Agency issued a draft TMDL for nutrients in Alligator Creek (WBID 2030) located in the Lemon Bay Watershed. This TMDL was developed using the criteria set forth in the EPA *Draft TMDL Nutrient and Dissolved Oxygen Sarasota Bay/Charlotte Harbor 2006* document and used the Lemon Bay Watershed Model for pollutant load determinations. The TMDL allocated a reduction of total nitrogen by 28% from the estimated existing load of 5,370 kg/year to a target load allocation of 3,857 kg/year. Nitrogen is the nutrient addressed in the TMDL as it is a limiting factor for phytoplankton productivity in Lemon Bay.

In 2014, the County identified Alligator Creek as a TMDL priority waterbody for total nitrogen. This status update will speak to all *TMDL BMP Strategy* items as outlined in the *Alligator Creek WBID 2030 TMDL Implementation Plan,* dated October 9, 2018.

Alligator Creek documents can be found at the links below:

- Letter from Sarasota County to FDEP establishing a TMDL Monitoring and Assessment Plan 10-14-2015
- Alligator Creek WBID 2030 TMDL Implementation Plan 9-21-2018
- *Draft TMDL Nutrient and Dissolved Oxygen Sarasota Bay/Charlotte Harbor 2006*

Wastewater Systems in Alligator Creek Watershed

Figure 5 below spatially displays the abnormal events (SSOs) within the centralized sewer collection system and the locations of septic parcels within the Alligator Creek watershed.

Centralized Sewer Services

Sarasota County has 7,620 Utilities customers within this watershed. In 2024, spills totaling 300 gallons of wastewater were reported in the Alligator Creek watershed due to abnormal event SSOs; no wastewater was reported as recovered in DEP Pollution Notices. There were no reported reclaimed overflows in 2024. A full list of all reported abnormal events for 2024 is available upon request. The list was utilized to generate the wastewater data and maps displayed in this document and details the date, location, and estimated volume of each event.

Septic Systems

In 2024 there were 4,749 likely and/or known septic areas within this watershed. This is visually demonstrated in Figure 5.

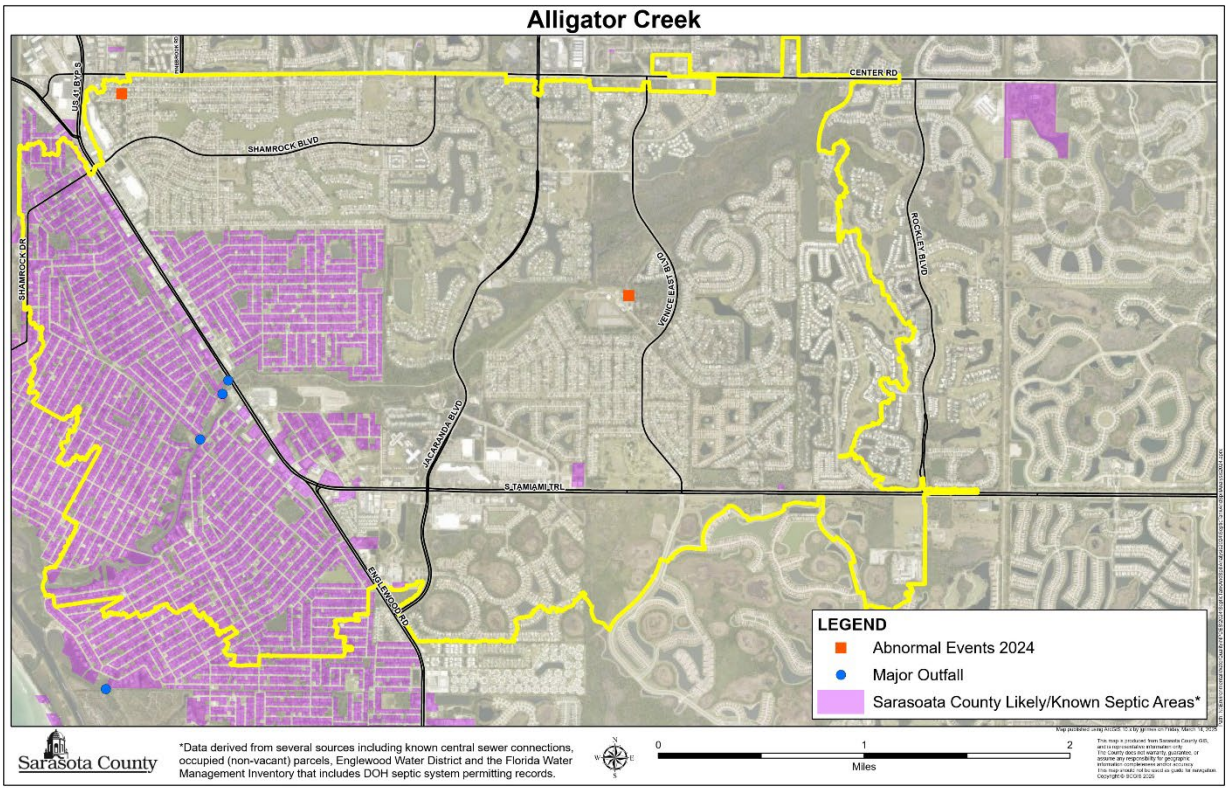

Figure 5 *Abnormal Events, Likely/Known Septic Areas, and Major Outfalls in Alligator Creek in 2024*

Projects in Alligator Creek Watershed

Lemon Bay Watershed Management Plan

Sarasota County entered into a contract with Environmental Science Associates in August 2024 and began work on the management plan December 2024. This plan update will focus on flooding, water quality, best management practices, and projects to improve the watershed. The estimated completion date for the Lemon Bay Watershed Management Plan update is July 2026.

Venice Gardens Water Reclamation Facility

Sarasota County continues to proactively maintain and repair the wastewater collection system within this basin and the larger County service area. The County continuously evaluates the collection system by using both visual and video inspection on a rotating basis to assess maintenance and replacement needs. The Sarasota County Board of Commissioners voted unanimously to expand the Venice Gardens Water Reclamation Facility from 3 million gallons per day to 6 million gallons per day and convert it to Advanced Wastewater Treatment (AWT). The design phase for this project is 90% complete. A groundbreaking ceremony is scheduled for summer 2025. The estimated completion date is December 2027 with an estimated cost of $200 million.

Briarwood Stormwater Treatment Facility

The Briarwood Stormwater Treatment Facility (BSTF), completed in 2011, was designed to improve the water quality in the Venice Gardens Lake system by incorporating physical solids separation, biological treatment, and stormwater harvesting to treat stormwater prior to discharging into Alligator Creek, and ultimately Lemon Bay. Sarasota County received 63 inches of rainfall during 2024. An estimated 0.18 kg of total nitrogen was removed from the BSTF in 2024 which is a 0.01% TN reduction. The TMDL reduction target per the EPA Draft TMDL is 1,503 kg. The Total Nitrogen reduction data is incomplete due to adjustments to the maintenance schedule causing the pumps to be off-line. This equipment is in the process of coming back on-line in the near future for 2025.

Alligator Creek Stream Restoration Project

The County has partnered with WSP USA Inc., Black & Veatch, and Mote Marine Laboratory on the design of the Alligator Creek Stream Restoration project. The county initiated the study of the Alligator Creek project in 2021. This project entails stream restoration and bank stabilization through a natural channel design, which will reconfigure the existing canal to a more meandering natural stream. The project includes the reconfiguration of approximately 2.3 miles of creek corridor and adjacent wetlands, including bank stabilization to improve water quality, restore habitat, and prevent further erosion. The 90% project plans were submitted by the consultant and are currently under review by the county.

Sampling in Alligator Creek Watershed

Ambient Water Quality Monitoring

Ambient water quality monitoring occurred throughout 2024 for the Briarwood Stormwater Treatment Facility, Venice Gardens Lakes, Alligator Creek, Siesta Waterway, Briarwood Waterway, and Lemon Bay. The monitoring data for all creeks and bays are available on the Sarasota Water Atlas where analysis, trends, and conditions are shown. Water quality monitoring data has also been entered into the FDEP Watershed Information Network (WIN) database.

Outreach and Community Engagement in Alligator Creek Watershed

Outreach and community engagement in neighborhoods surrounding Alligator Creek took several different avenues in 2024. Meetings with individual Home Owners Associations (HOAs) regarding pond and landscape BMPs continued with a focus on overall nutrient management and reduction. To reach residents outside of organized communities, public displays were installed at public libraries and the south County Administration Center featuring material on fertilizer, plastic pollution reduction, and the Alligator Creek Stream Restoration Project. Additionally, a large community gathering, the fifth annual Alligator Creek Fest, was hosted at the South Venice Yacht Club. Local residents of the Alligator Creek Watershed were able to learn and engage as a community on the topics of nutrient pollution, landscaping, and water conservation in order to better protect, improve, and preserve Alligator Creek. The festival heavily focused on educating the community with 11 educational booths about the condition of regional natural resources and how to protect those resources by reducing nutrient and plastic pollution. Over 340 community members participated in the event. The county also hosted a Healthy Ponds Workshop where HOA Board members learned BMPs to improve the health of their stormwater ponds. 15 HOA board members from the Alligator Creek watershed attended the workshop.

The County's Neighborhood Environmental Stewardship Team (NEST) Program continues to conduct outreach to the residents near the Venice Gardens Lake system to educate them on how nutrient loading can contribute to further eutrophication of the lakes, and on introducing shoreline vegetation to aid in nutrient uptake.

The NEST Program continues to partner with the University of Florida and local non-profits to administer the Healthy Ponds Collaborative (HPC) Program. The HPC program involved numerous local subject matter experts to provide detailed step-by-step information on methods to reduce overall nutrient inputs to the local stormwater system. This partnership has also authored the Healthy Ponds Guide, which is a best management practice guidebook for communities on how to maintain their stormwater system and enhance the functionality to further improve water quality.

The Alligator Creek watershed has approximately 11 active HOA/Community Associations. Four of those communities are currently participating in the NEST/Healthy Pond Collaborative Program to effectively reduce nutrient contributions to the watershed.

Total participating communities in the watershed now equals over 75% of the watershed acreage. Proposed projects included fertilizer reduction (education to the community and fertilizer contractors), irrigation audits to conserve water and limit nutrient leaching, and shoreline planting to intercept excess nutrients. In mid-2024, two more communities began participating in the Healthy Ponds Collaborative. One of the new community participants, Pelican Point Golf and Country Club, is located at the headwaters of Alligator Creek and is the largest planned community in the watershed. Additionally, Jacaranda West HOA, consisting of approximately 900 residents, is another one of the largest communities in the Alligator Creek watershed. In 2024 they fully embraced shoreline naturalization and planted a "micro-forest" along a barren shoreline to emphasize the importance of a natural, vegetated shoreline, and will also be embarking on planting their adjacent pond.

Phillippi Creek TMDL

In August of 2010, the U.S. Environmental Protection Agency (EPA) issued a TMDL for fecal coliform bacteria in Phillippi Creek; in July 2011 the EPA issued a TMDL for total nitrogen, total phosphorus, and biochemical oxygen demand (BOD) for Phillippi Creek (WBID 1937) located in the Sarasota Bay Watershed. The fecal coliform TMDL was determined using the geometric mean criteria whereas the Dissolved Oxygen, total nitrogen, and total phosphorus TMDLs were developed by EPA using the Spatially Integrated Model for Pollutant Loading Estimates (SIMPLE) model. Data was obtained using observations from sample sites within the Phillippi Creek Watershed.

The TMDL allocated a reduction of fecal coliform by 98%, a reduction of total nitrogen by 70% from the estimated existing load of 201 $(lb/day)^2$, a reduction of total phosphorus by 70% from the estimated existing load of 56 $(lb/day)^2$ and a reduction of 70% BOD from the existing load of 618 $(lb/day)^2$.

The fecal coliform bacteria TMDL was based upon a water quality assessment that utilized Version 35 of FDEP's Integrated Water Resources database and Sarasota County data. In 2014, the County identified Phillippi Creek as a TMDL priority with a focus on the reduction of bacteria. This status update will speak to *Schedule for BMP Implementation* as outlined in the *Phillippi Creek Bacterial Pollution Control Plan*, dated March 2018.

More information can be found on the Sarasota County Water Atlas at the links below:

Total Maximum Daily Loads for Fecal Coliforms in Phillippi Creek (WBID 1937) August 2010

Total Maximum Daily Loads for Dissolved Oxygen and Nutrients in Phillippi Creek (WBID 1937) July 2011

WBID 1937: Phillippi Creek Bacterial Pollution Control Plan

Wastewater Systems in Phillippi Creek Watershed

Figure 6 below spatially displays the abnormal event SSOs within the centralized sewer collection system and the locations of septic parcels within the Phillippi Creek watershed.

Centralized Sewer Services

Sarasota County Utilities has 41,007 recorded customers using centralized sewer in this area. In 2024, there were 850,649 gallons of wastewater spilled due to abnormal event SSOs with 85,608 gallons of wastewater reported as recovered in DEP Pollution Notices. 4,700 gallons of reclaimed spills were reported in the Phillippi Creek watershed; zero gallons of reclaimed water were reported as recovered.

Septic Systems

In 2024 there were 7,090 likely and/or known septic areas in the Phillippi Creek area as shown in Figure 6 below.

In 2000 Sarasota County embarked on the Phillippi Creek Septic System Replacement Program in an effort to connect homeowners to the centralized sewer system. This project has been put on hold until further improvements and upgrades are completed at the wastewater plants to accommodate the extra flow. As of 2024, this project is approximately 65% complete. Approximately 15,137 total parcels have been identified for septic system removal over the life of the project. Currently 9,935 septic systems have been removed.

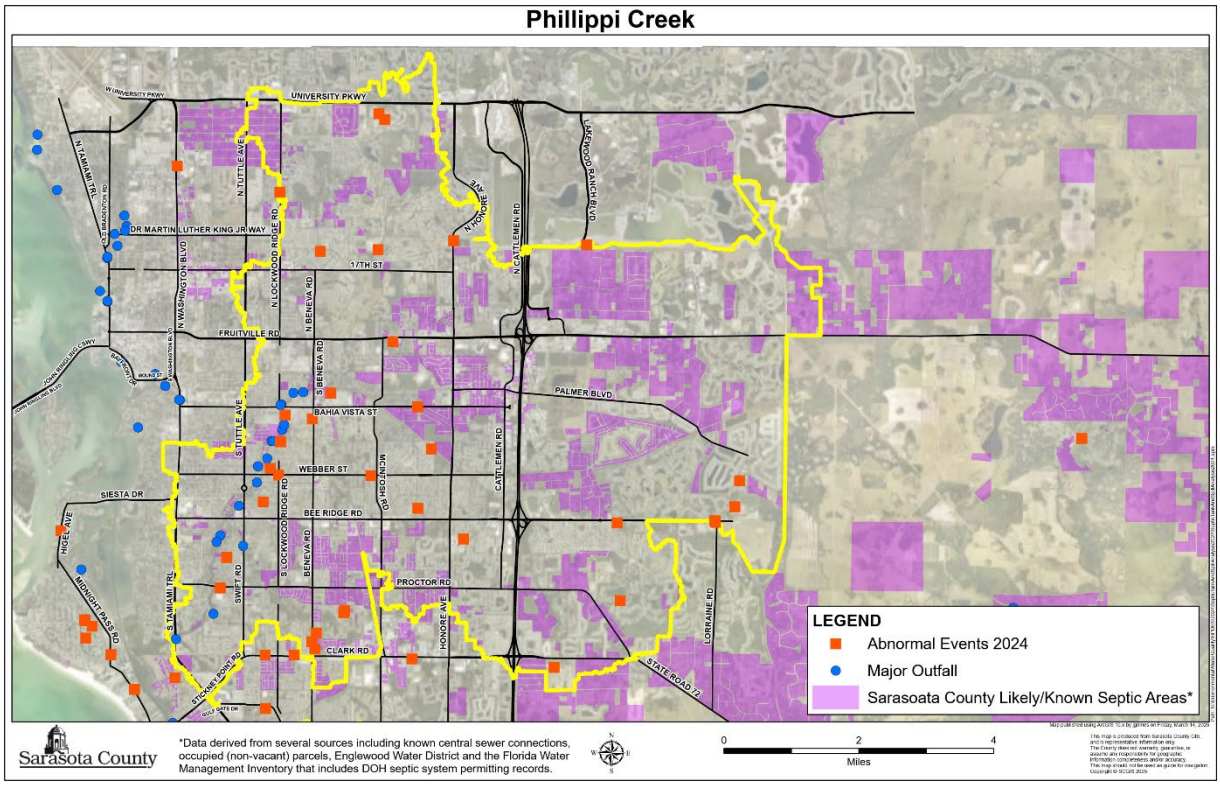

Figure 6 Abnormal Events, Likely/Known Septic Areas, and Major Outfalls in Phillippi Creek in 2024

Projects in Phillippi Creek Watershed

Bee Ridge Advanced Wastewater Treatment Facility

Sarasota County continues to proactively maintain and repair the wastewater collection system within this basin and the larger County service area. The County continuously evaluates the collection system by using both visual and video inspection on a rotating basis to assess maintenance and replacement needs. In addition to collection system maintenance, operational testing permits have been issued on two aquifer recharge wells at the Bee Ridge Water Reclamation Facility; they have been in use since June 2024. The intent of the wells is to address wet weather disposal issues. In addition to the recharge wells, in 2019 the Sarasota County Board of Commissioners voted unanimously to expand the Bee Ridge Water Reclamation Facility to 18 million gallons per day and

convert it to Advanced Wastewater Treatment (AWT). Construction on the facility began March 22, 2022; the estimated cost is $250M. The construction is proceeding ahead of schedule with an estimated completion date of August 2025.

Watershed Management Plans

In April 2024 the county entered into a contract with Jones Edmunds and Associates to update the Little Sarasota Bay Watershed Management plan. This plan update will focus on flooding, water quality, best management practices, projects to improve the watershed, and Midnight Pass. The Midnight Pass portion of the plan will address methods of keeping the pass open, water quality, seagrasses, and wildlife in the bay. The estimated completion date for the plan update is December 2025.

Phillippi Creek NW Tributaries Project

This project entails stream restoration through natural channel design to improve water quality by addressing excess nutrients, habitat and fisheries restoration, bank stabilization to reduce erosion and sedimentation, and reduction of future maintenance costs. The County has partnered with WSP USA Inc. for the design and permitting of this project. The total length of potential stream restoration is approximately 24 miles. Stream restoration protocols include but are not limited to bank stabilization, introduction of meanders to reduce velocity, step pools, planted terraces and floodplain reconnection. In addition, the use of permeable reactive barriers for denitrification of stormwater will be considered during design. This project supports the Board of County Commissioners' direction to improve water quality in priority waterbodies by benefitting the community and the environment with pollutant load reduction to Phillippi Creek. Because of the large area it is being designed in 3 phases with an anticipated design completion date in 2028. The phase 1 design assessment study is underway, and investigations are in progress for which canals may be excluded from the study limits.

Bobby Jones Wetland Project

The City of Sarasota completed the Bobby Jones Wetland Project in collaboration with Sarasota County and SWFWMD in December 2023. Although SWFWMD released the site from monitoring the County is responsible for maintaining the wetland system .

Sampling in Phillippi Creek Watershed

Ambient Water Quality Monitoring

The ambient water quality monitoring program has been utilized to analyze trends in bacteria concentration and refine the investigation of potential sources of bacterial pollution. The sampling program includes 16 monthly sample sites which monitor coastal Phillippi Creek as well as freshwater creeks. All analysis and data are available to the public on the Sarasota County Water Atlas website. The primary investigation of bacterial pollution sources was conducted by microbial source tracking and the results of that exercise are described in the paragraph below.

Targeted Microbial Source Tracking

Microbial source tracking was conducted in the Phillippi Creek watershed in the spring of 2018. Multiple proxy data sets (biological, chemical, DNA) were used to increase the likelihood that analyses would demonstrate absence/presence of influence from anthropogenic sources. Results indicated that while there were both anthropogenic and dog sources of bacteria at the sampling sites, levels of human DNA did not indicate an overwhelming single source of human influence that could be explained by an illicit connection or failing septic systems, but rather a general ambient condition from occasional homeless encampments.

Outreach and Community Engagement in Phillippi Creek Watershed

The NEST Program continues to seek out additional ways to engage residents and provide meaningful and simple changes to improve water quality. In addition to community meetings throughout the watershed, the SEC has enhanced outreach efforts by rotating large, educational, three-sided kiosks throughout the watershed at County buildings and public events; these are demonstrated in figure 1. Kiosks identified the impacts of not disposing of pet waste properly, as well as the impacts of improper care and maintenance of septic systems and offered tips and solutions to avoid those impacts. The weekly farmer’s market that is held directly adjacent to the creek was attended on two separate occasions with educational displays on plastic pollution and how to reduce plastic use. Outreach and public awareness campaigns continued to provide education on septic system maintenance and homeowner responsibility for sewage treatment services. 9 HOA Board members from the Phillippi Creek watershed were in attendance.

Gottfried Creek TMDL

In March of 2010, the Florida Department of Environmental Protection (FDEP) issued a TMDL for fecal coliform bacteria, total nitrogen, and BOD for Gottfried Creek (WBID 2049) located in the Charlotte Harbor Watershed. This TMDL was developed using the criteria set forth in the EPA *Draft TMDL Nutrient and Dissolved Oxygen Sarasota Bay/Charlotte Harbor 2006* document and used the Lemon Bay Watershed Model for pollutant load determinations.

The TMDL allocated a reduction of total nitrogen by 2% from the estimated existing load of 3025 kg/year to a target load allocation of 2966 kg/year. The TMDL allocated a reduction of BOD by 16% from the estimated existing load of 7012 kg/year to a target load allocation of 5876 kg/year, and a reduction of fecal coliform by 74%. The fecal coliform TMDL was established as a result of data developed by the FDEP indicating an average concentration of 478 counts/100mL during the 2005-2008 period of observation; there is an allowable concentration of 400 counts/100mL.

This status update will speak to all *Future Proactive Prevention Actions* as outlined in the *Final Summary of Results, Walk the WBID Exercise, Gottfried Creek (WBID 2049) October 2015*. The *Walk the WBID* exercise was conducted to bring together stakeholders, conduct a field inspection, and determine action items to reduce fecal coliform bacteria.

Gottfried Creek documents can be found at the links below:

- *Draft TMDL Nutrient and Dissolved Oxygen and Coliforms In Sarasota Bay/Charlotte Harbor 2006*
- *EPA TMDL For Dissolved Oxygen in Gottfried Creek in Sarasota Bay June 2006*
- *Walk the WBID Exercise, Gottfried Creek WBID 2049 October 2015*
- *FDEP Fecal Coliform TMDL for Gottfried Creek, WBID 2019 March 2010*

Wastewater Systems in Gottfried Creek Watershed

Figure 7 below demonstrates the abnormal event SSOs within the centralized sewer collection system and the locations of septic parcels within the Gottfried Creek watershed.

Centralized Sewer Services

Sarasota County Utilities has 3,934 recorded customers using centralized sewer in Gottfried Creek. No wastewater spills were reported in this area for 2024. Wastewater collection systems within the watershed were properly maintained in 2024.

Septic Systems

In 2024 there were an estimated 83 likely and/or known septic parcels in the Gottfried Creek watershed, as shown in Figure 7.

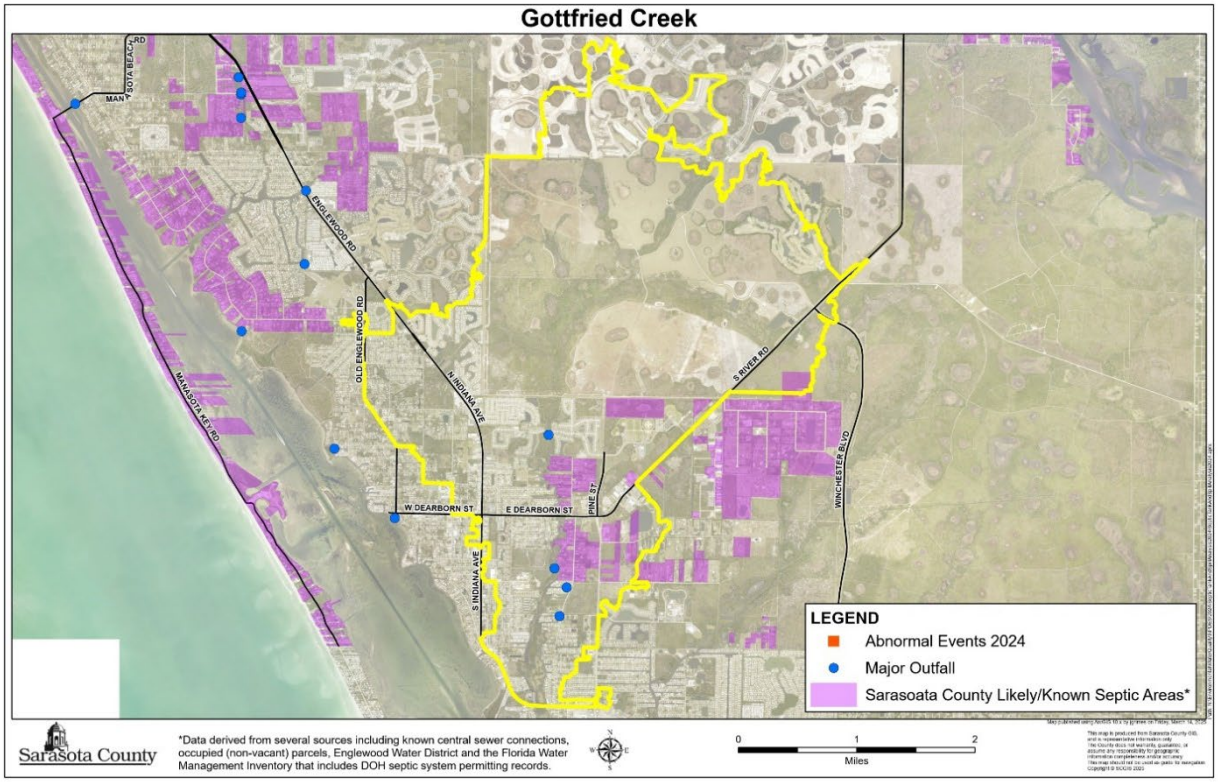

Figure 7 *Abnormal Events, Likely/Known Septic Areas, and Major Outfalls in Gottfried Creek in 2024*

Sampling in Gottfried Creek Watershed

Ambient monthly sampling has been conducted at two sites, GOT-2 and GOT-3, since 2006. These sites are monitored for nitrogen, phosphorus, chlorophyll a, total suspended solids, fecal coliform, E. coli, and enterococcus. In 2024 the county embarked on utilizing the targeted approach of Microbial Source Tracking in an effort to discover microbial sources entering and impacting the creek.

Rainfall can have a huge impact regarding microbial contamination in the watersheds. Sarasota County experienced four storms between June and October bringing roughly

63 inches of rain which is 10 inches above the annual average rainfall Table 2 and the graphs below demonstrate the microbiological data sampled in Gottfried Creek during 2024 and long-term trends.

Ambient Water Quality Monitoring

In 2024, monthly samples were collected from two ambient water quality monitoring sites within the Gottfried Creek watershed, GOT-2 and GOT-3.

Table 2 and Figures 7-10 below illustrate the microbiology results for 2024 and over the period 2015-2024. The acceptance criteria as found in the FDEP rule 62-302 for each microbe are: enterococcus 130 cfu/100 ml, E. coli 410 cfu/100 ml, and fecal coliform 800 cfu/100 ml. Some months do show exceedances, however the results did not indicate chronic exceedances over 2000 cfu/100ml for fecal coliform as noted as a threshold in *Future Proactive Prevention Actions* as outlined in the *Final Summary of Results, Walk the WBID Exercise, Gottfried Creek (WBID 2049) October 2015*. Site GOT-2 demonstrates that the results for enterococcus are declining from previous years yet still above the DEP threshold of 130 per 100 ml every month during 2024. While the results are above the DEP allowable value of 130 per 100 ml, the mean has decreased by 55% and the maximum result reported in 2024 decreased by 61%. This site exhibits steady values for fecal coliform and the mean and max results are about half the value from 2023 results.

Site GOT-3 did not have any E. coli exceedances during 2024 with similar results to 2023 with the exception that the maximum value reported decreased in 2024 by 90%. This site also demonstrates stability for fecal coliform values despite one exceedance in February and two exceedances during the rainy season months of June and July.

Table 2 *Gottfried Creek Watershed Ambient Monitoring Results for 2024*

GOT-2				
2024	**MIN**	**MEAN**	**MEDIAN**	**MAX**
Entero (#/100ml)	178	601.3333	312	2014
F. coli (#/100ml)	80	608.1818	490	2100
GOT-3				
2024	**MIN**	**MEAN**	**MEDIAN**	**MAX**
E. coli (#/100ml)	31	162.0833	149.5	364
F. coli (#/100ml)	10	4454.545	260	44000

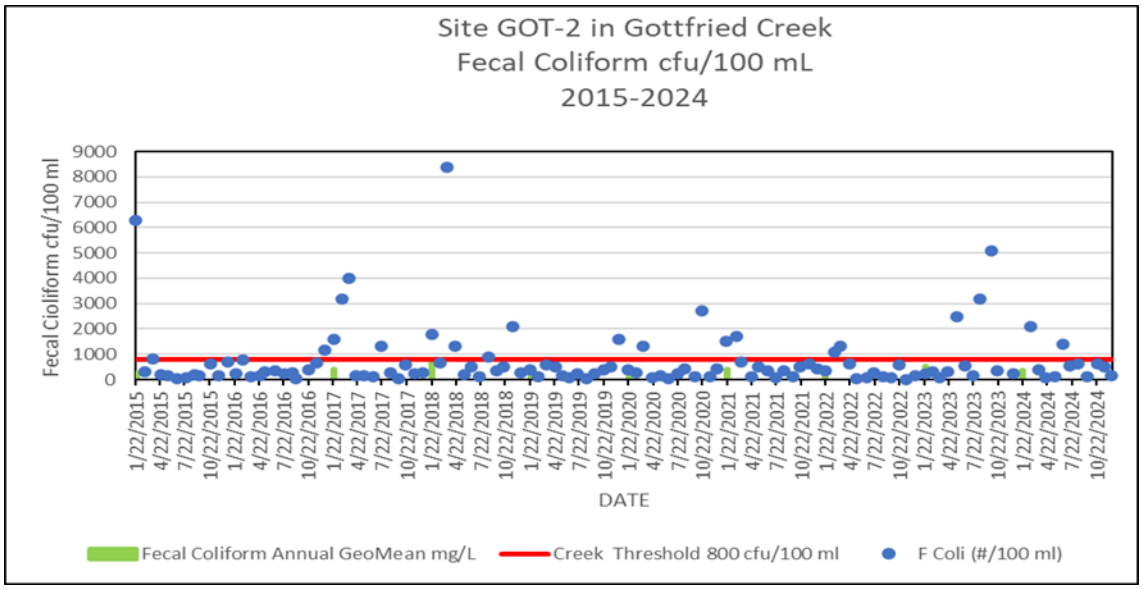

Figure 8 *GOT-2 Fecal Coliform Results 2015-2024*

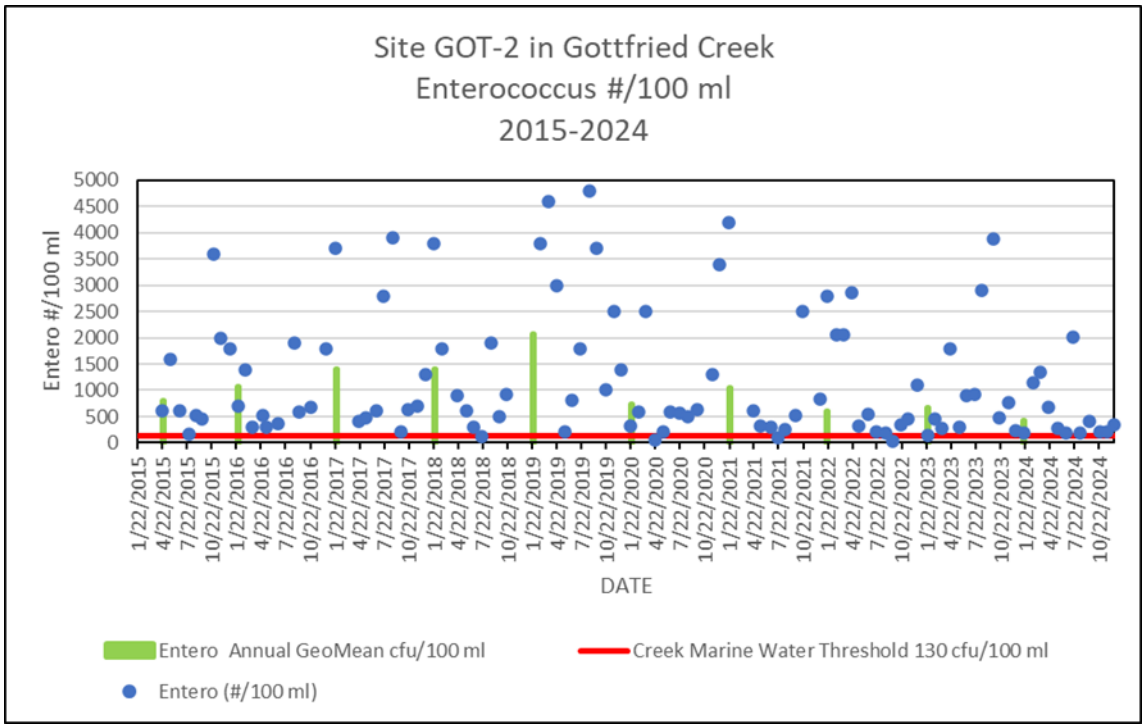

Figure 9 *GOT-2 Enterococcus Results 2015-2024*

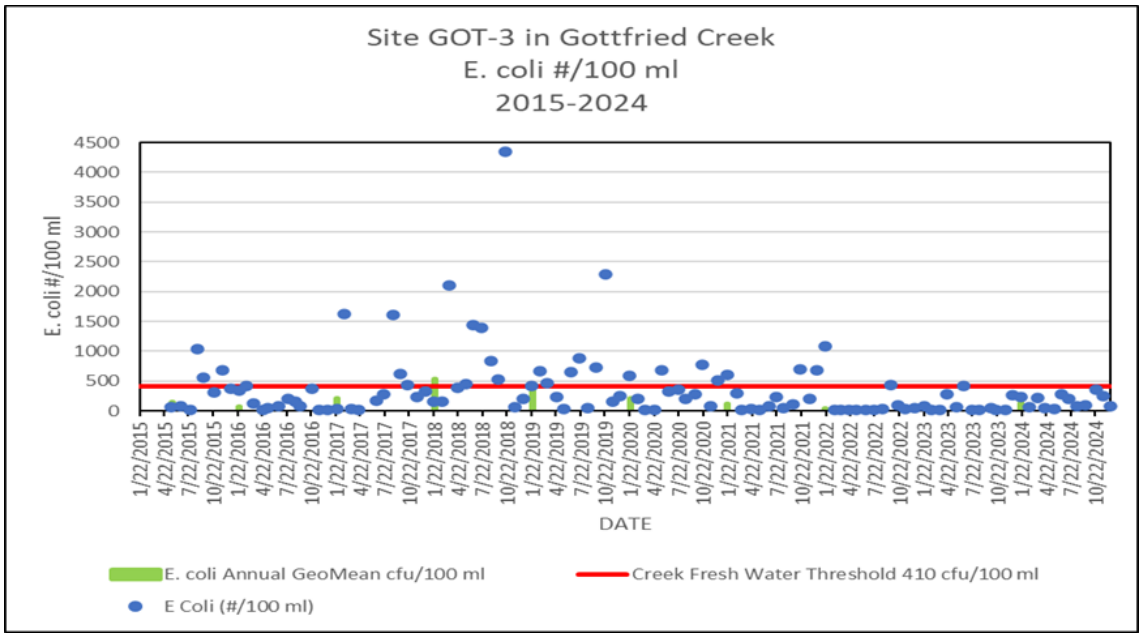

Figure 10 *GOT-3 E. coli Results 2015-2024*

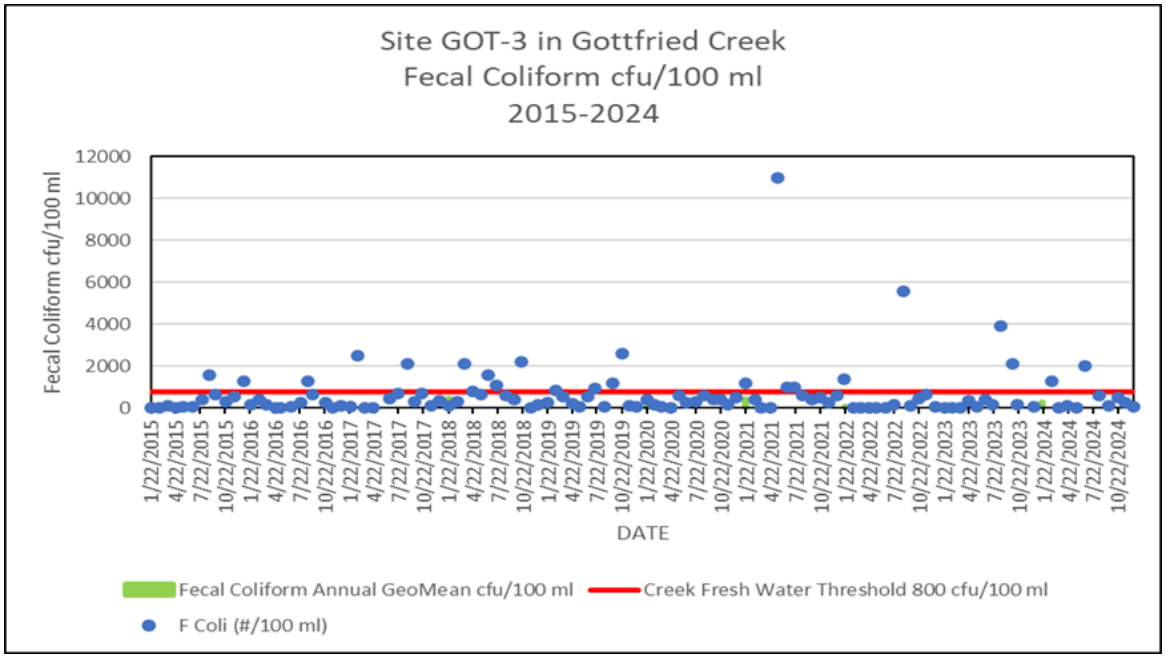

Figure 11 *GOT-3 Fecal Coliform Results 2015-2024*

Targeted Microbial Source Tracking

Targeted Microbial Source Tracking for Gottfried Creek Watershed was sampled July 17, 2024, and February 10, 2025. The sampling event locations were sites GOT-2 and GOT-3 which were sent to Lumin Ultra for Microbial Source Tracking analysis. From these two sampling events the results indicate there was strong evidence of horse DNA present in sampling events from both the July and February sampling events. Indication of contamination from human or canine DNA was not detected in any samples. Stormwater has researched a local ordinance put forth by The Village of Wellington regarding manure regulations and this may be researched in-depth depending upon further test results. More sampling will be conducted in 2025.

Outreach and Community Engagement in Gottfried Creek Watershed

An updated design of a septic and sewage information card that details the importance of regular septic system maintenance and sewage treatment services was provided to the local library for distribution. Additionally, through the NEST program, contacts have been established to receive and respond to public concerns. The county also hosted an HOA Healthy Ponds workshop and 2 HOA Board members from Gottfried Creek watershed attended.

Sarasota County Outreach attended Pioneer Days, a local festival that is adjacent to Gottfried Creek, with educational information on plastic pollution and how to reduce plastic use.

The pet waste campaign will continue through distribution of the pet waste brochure and by conducting outreach programs. Changes to municipal ordinances within the watershed will be considered where appropriate to minimize bacteria loadings.

Sarasota County and the City of North Port continue to provide oversight on development within the watershed in the form of development reviews, inspections, zoning compliance, permitting, and environmental regulation.

Elligraw Bayou TMDL

In March of 2006, the U.S. Environmental Protection Agency issued a draft TMDL for nutrients, BOD, and coliforms (fecal coliform) for Elligraw Bayou (WBID 1975) located in the Little Sarasota Bay Watershed. This TMDL was developed using the criteria set forth in the EPA *Draft TMDL Nutrient and Dissolved Oxygen Sarasota Bay/Charlotte Harbor 2006* document and used the Lemon Bay Watershed Model for pollutant load determinations. This status update will speak to the *Total Maximum Daily Load Monitoring and Assessment Plan*, submitted for FDEP approval on December 16th, 2019. Total Nitrogen is the limiting factor for phytoplankton productivity in Little Sarasota Bay and is the TMDL addressed in the *Assessment Plan.*

The TMDL allocated a reduction of total nitrogen (TN) by 29% from the estimated existing load of 2526 kg/year to a target load allocation of 1799 kg/year, a reduction of BOD by 71% from the estimated existing load of 12931 kg/year to a target load allocation of 3800 kg/year and a reduction of fecal coliform of 70% with a load allocation of 1,323 TN day.

Elligraw Bayou documents can be found at these links below:

- *EPA TMDL For Nutrients, Dissolved Oxygen, and Coliforms in Sarasota Bay/Charlotte Harbor Basin Groups March 2006*
- *Letter County to FDEP TMDL Monitoring and Assessment Plan Elligraw Bayou December 16, 2019*, Document is available upon request

Wastewater Systems in Elligraw Bayou Watershed

Figure 12 below depicts the abnormal event SSOs within the centralized sewer collection system and the locations of septic parcels within the Elligraw Bayou watershed.

Centralized Sewer Services

Sarasota County Utilities has 1,011 recorded customers using centralized sewer in Elligraw Bayou. In 2024, there were no reported wastewater spills due to abnormal event SSOs. No reclaimed water SSOs were reported in the Elligraw Bayou watershed. The collection systems within the watershed were properly maintained in 2024.

Septic Systems

In 2024 there were an estimated 91 likely and/or known septic parcels in the Elligraw Bayou watershed, as shown in Figure 12.

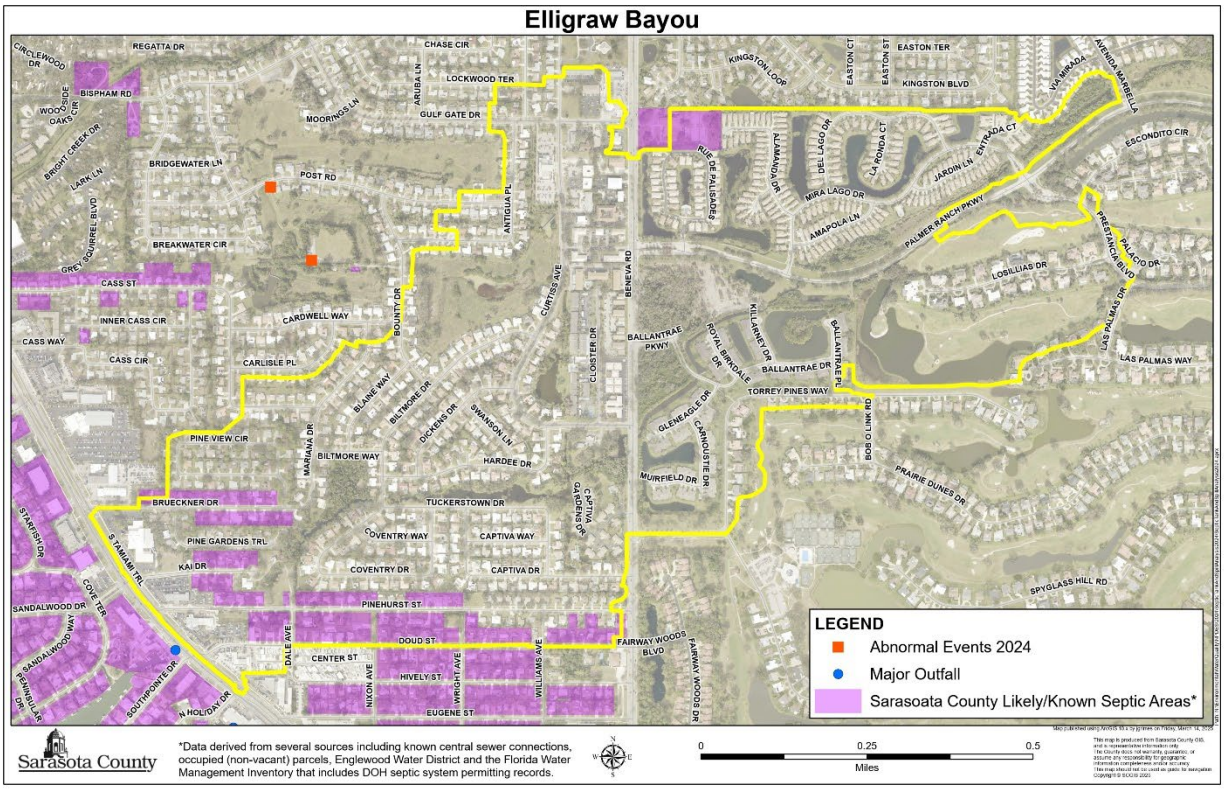

Figure 12 *Abnormal Events, Likely/Known Septic Areas, and Major Outfalls in Elligraw Bayou in 2024*

Sampling in Elligraw Bayou Watershed

Sarasota County conducts monthly ambient monitoring at sites ELL and ELL-Tuck. Site ELL has been sampled since 2006 while site ELL-Tuck is a new addition as of September 2022. Targeted quarterly sampling occurs at sites EL-1, EL-2, EL-3, EL-4, EL-5, EL-6, EL-7, and EL-8. The Elligraw Bayou sampling sites are presented below in figure 13, with the exception of EL-5, which is the most upstream sample in the Catfish Creek basin and serves as background data.

Figure 13 *Sampling sites in Elligraw Bayou*

Ambient Water Quality Monitoring Sampling

Sarasota County samples two ambient monitoring sites on a monthly basis. Site ELL has been sampled since 2006 while ELL-Tuck was first sampled in September 2022.

In 2019, Sarasota County prioritized Elligraw Bayou for total nitrogen reduction. Ambient monitoring results for total nitrogen are shown in Table 3 below. The FDEP has developed numeric nutrient criteria for total nitrogen in freshwater systems as 1.65 mg/L and the current data will be compared against this standard. The event-mean concentration (EMC) annual geomean for total nitrogen at site ELL has remained fairly consistent since 2019. The average for all 6 years is 1.37 mg/L; this is 16.8% lower than the DEP standard of 1.65 mg/L. Although the total nitrogen geomean of 1.47 mg/L for 2024 is the highest seen since 2019, this increase did not significantly influence the overall water quality at site ELL.

There is still not enough data at site ELL-Tuck for a longer-term determination, yet this site does have 29 data points that will be evaluated. The EMC annual geomean is 1.57 mg/L; this is 4.6% lower than the DEP standard. The 2024 total nitrogen annual geomean of 1.74 mg/L demonstrates a decline in water quality from years 2022-2024; the 2024 results at site ELL-Tuck show an increase of 5% above the DEP Target in addition to being 5% above the annual geomean reported from the period 2019-2023.

Table 3 *Elligraw Bayou Watershed Ambient Monitoring Results 2019-2024*

Elligraw Bayou Watershed Ambient Monitoring Results 2019-2024										
Site Name	2019 Annual GeoMean TN mg/L	2020 Annual GeoMean TN mg/L	2021 Annual GeoMean TN mg/L	2022 Annual GeoMean TN mg/L	2023 Annual GeoMean TN mg/L	2024 Annual GeoMean TN mg/L	EMC of the 2019-2024 GeoMean TN mg/L	DEP NNC Target TN 1.65 mg/L	TN mg/L Mean Deviation from Target	TN % Reduction or Increase from Target 1.65 mg/L
ELL	1.30	1.43	1.39	1.26	1.39	1.47	1.37	1.65	-0.28	-16.76768
ELL- Tuck	no data	no data	no data	1.45	1.53	1.74	1.57	1.65	-0.08	-4.646465

*ELL-Tuck monitoring site was established in September of 2022. Results represent the 29 data points from 9/22-12/24.

Targeted Water Quality Monitoring Sampling

Sarasota County continues to manage Elligraw Bayou holistically with consideration to the bacterial and BOD TMDLs, while completing the requirements of the nitrogen TMDL. A targeted monitoring program was implemented in September 2019 and continued throughout 2024 to allow for the estimation of pollutant loading, identification of pollutant sources, and the evaluation of the health of Elligraw Bayou. In September 2019 sites EL-1 through EL-5 were established and in November 2020 sites EL-6 through EL-8 were incorporated into the targeted sampling plan to further investigate the source of excess nitrogen.

The targeted monitoring is being utilized to identify hotspots and regions within the watershed that may be good candidates for additional best management practices. Water quality sampling for the targeted monitoring program occurs quarterly and is in addition to the current ambient monitoring program. Locations of the sites are shown in Figure 13 above. The parameters reported include total nitrogen, total Kjeldahl nitrogen, nitrate-

nitrite, ammonia, total phosphorous, orthophosphate, corrected chlorophyll a, turbidity, BOD, color, specific conductance, dissolved oxygen, fecal coliform, and Escherichia coli.

Reviewing the results from upstream to downstream for the 6-year period 2019-2024, samples taken at EL-4, EL-3, EL-7, and EL-1 show a trend of TN levels above the DEP Numeric Nutrient Criteria (NNC) target (1.65 mg/L) entering the Elligraw Bayou system. Increases in TN begin just downstream of two medium to high-density residential communities and a golf course with permitted surface water management systems, reclaimed water as an irrigation source and central sewer service as shown in Figure 12 above. It is evident that nearly all the additional nitrogen is removed from the bayou before discharging to the bay, as demonstrated by sites ELL and EL-6, (Tables 3 and 4). When comparing results from 2024 to 2023, many sites in 2024 exhibited lower or equal total nitrogen annual geomean values. Sites EL-5, EL-8, EL-3, EL-7, EL-2, and EL-6 demonstrated TN improvements or remained the status quo in 2024. Table 4 demonstrates that the targeted sites within the Elligraw Bayou basin show an 18.9% TN reduction for the whole Bayou when compared to the FDEP NNC criteria of 1.65 mg/L.

Table 4 *Elligraw Bayou Targeted Sampling Sites Nitrogen Results 2019-2024*

Elligraw Bayou Watershed Targeted Monitoring Results 2019-2024										
Site Name	2019 Annual GeoMean TN mg/L	2020 Annual GeoMean TN mg/L	2021 Annual GeoMean TN mg/L	2022 Annual GeoMean TN mg/L	2023 Annual GeoMean TN mg/L	2024 Annual GeoMean TN mg/L	Mean of 2019-2024 Annual GeoMean TN mg/L	DEP NNC Target TN 1.65 mg/L	TN mg/L Mean Deviation from Target	TN % Reduction or Increase from Target 1.65 mg/L
EL-5*	0.92	0.81	0.85	1.13	1.06	1.05	0.962818064	1.65	-0.70	-41.64739003
El-8	no data	1.58	1.74	1.69	1.53	1.42	1.587868609	1.65	-0.02	-3.765538871
EL-4	1.64	1.63	1.37	2.18	1.90	2.29	1.806340417	1.65	0.07	9.475176791
EL-3	1.66	1.62	1.71	2.06	2.07	2.02	1.846296124	1.65	0.16	11.89673481
EL-7	no data	1.82	1.43	1.97	2.23	1.67	1.803761019	1.65	0.19	9.318849634
EL-1	2.29	1.63	1.09	1.81	1.58	1.7	1.644519502	1.65	-0.02	-0.332151411
EL-2	1.43	1.45	1.11	1.67	1.55	1.34	1.413719769	1.65	-0.22	-14.32001401
EL-6	no data	1.04	1.01	1.47	1.03	1.19	1.136086101	1.65	-0.53	-31.14629689
Total GeoMean for all sites 2019-2024 TN mg/L, not including site EL-5							1.60551308	1.65		-2.696177135
Arranged from Upstream to Downstream, Annual GeoMean TN% Reduction for all sites not including site EL-5										-18.87323995

*Sample site EL-5 has been included in Table 4 with an (*) to denote that though this site is part of the targeted monitoring program, it does not fall within the Elligraw Bayou watershed. EL-5 is located within Catfish Creek and only discharges to Elligraw Bayou under very high flow conditions.

Outreach and Community Engagement in Elligraw Bayou Watershed

The majority of the Elligraw Bayou Watershed is privately owned and developed for residential use. The County intends to focus heavily on outreach to increase community engagement and education for pollutant reduction strategies. Planning is underway to explore sediment removal, bank stabilization, and riparian enhancements within the watershed.

In 2023, The NEST Program began participating in a pilot program with one of four communities directly contributing stormwater runoff to Elligraw Bayou. This program uses a biological process similar to the wastewater treatment process where bacteria is added to digest organic materials (muck in this case). Based on the reported improvements in pond clarity and the reduction in the muck layer, in some cases a 75% reduction in depth, a second community began participating in the same trial program in 2024. This second community also installed aeration and additional littoral vegetation to amplify the biological process of nitrogen reduction.

Clower Creek TMDL

In March of 2006, the U.S. Environmental Protection Agency issued a draft TMDL for coliforms (fecal coliform) for Clower Creek (WBID 1975A) located in the Sarasota Bay basin. This TMDL was developed using the criteria set forth in the EPA *Draft TMDL Nutrient and Dissolved Oxygen Sarasota Bay/Charlotte Harbor 2006* document and used the Lemon Bay Watershed Model for pollutant load determinations. The TMDL allocated a 76% reduction for fecal coliforms. In 2019, Sarasota County prioritized Clower Creek for bacteria reduction and FDEP provided *Approval of TMDL Prioritization Plan* on September 23, 2019. This status update will speak to activities conducted in Clower Creek. Greater detail is provided in the *Clower Creek Bacteria Pollution Control Plan (BPCP*) which was implemented in 2021.

The county currently samples one freshwater site to gauge the water quality entering Clower Creek and one tidal site to gauge the water quality leaving Clower Creek. In 2016 FDEP identified E. coli as the standard microbiology parameter for freshwater and this is the impairment for Clower Creek. FDEP also identified Enterococcus as the standard microbiology parameter for tidal waters; current state water quality standards can be found in the FDEP rule 62-302 FAC.

Clower Creek documents can be found at the links below:

- *EPA TMDL For Nutrients, Dissolved Oxygen, and Coliforms in Sarasota Bay/Charlotte Harbor Basin Groups March 2006*
- *Approval of TMDL Prioritization Plan Clower Creek 9-23-2019*
- *Clower Creek Bacteria Pollution Control Plan* - Available upon request

Wastewater Systems in Clower Creek Watershed

Figure 14 below displays the abnormal event SSOs within the centralized sewer collection system and the locations of septic parcels within the Clower Creek watershed.

Centralized Sewer Services

Sarasota County Utilities has approximately 1,220 recorded customers using centralized sewer in Clower Creek. In 2024, there were approximately 20 gallons spilled due to abnormal event SSOs and no gallons recovered documented in the Clower Creek watershed. There were no reported reclaimed water spills in 2024.

Septic Systems

In 2024 there were 22 likely and/or known septic parcels in the Clower Creek watershed, as shown in figure 14.

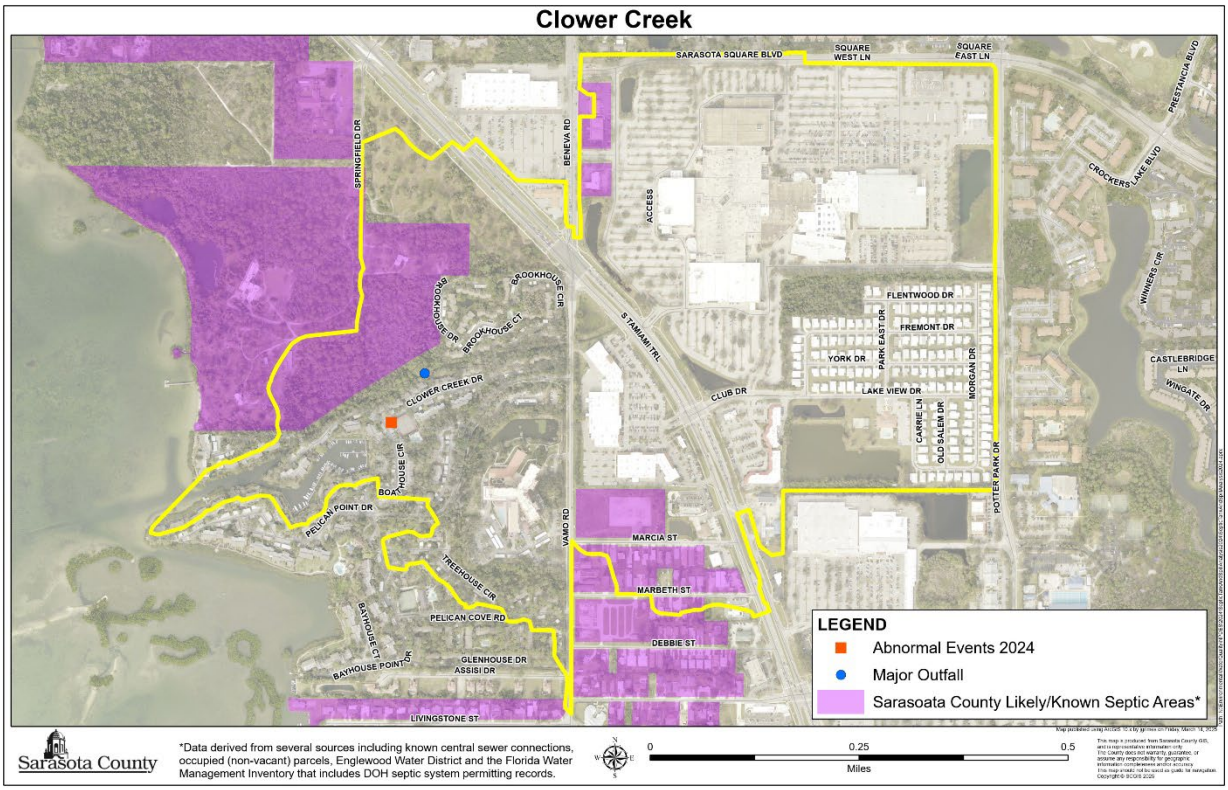

Figure 14 *Abnormal Events, Likely/Known Septic Areas, and Major Outfalls in Clower Creek in 2024*

Sampling in Clower Creek Watershed

Ambient Water Quality Monitoring

Ambient water quality monitoring was carried out in 2024 and will continue within the Clower Creek watershed in 2025. The data will be utilized to analyze trends, make informed pollutant reduction decisions, and will be reported annually for water quality standards and bacterial concentration trends. Sarasota County currently conducts monitoring for both fecal coliform and E. coli in Clower Creek, with data beginning in 2006 for fecal coliform and 2016 for E. coli. Although fecal coliform is no longer a water quality standard for creeks, it is still monitored to provide consistent information about trends.

There were sampling site changes within this watershed beginning in 2022 and continuing through 2024 to be more representative of upstream and downstream conditions. Site CLO was originally sampled from July 2006 and discontinued March 2018 due to local construction; this site was reestablished in September 2022 to capture upstream freshwater conditions. Site CLO-Brook was the alternate site to location CLO during the construction; this was sampled beginning May 2018 and was discontinued September 2022 once CLO was reestablished. The county began sampling site CLO-CCDB in September 2022 to capture downstream tidal conditions and is sampled for enterococcus as per FDEP standards.

Overall, the microbial results for Clower Creek have many similarities between 2024 and 2023. Rainfall can have a huge impact regarding microbial contamination in the watersheds. Sarasota County experienced four storms between June and October bringing roughly 63 inches of rain which is 10 inches above the annual average rainfall. The bacterial monitoring results for 2024 are found below in Table 5. The results are based upon the acceptance criteria as found in the FDEP rule 62-302 for each microbe: E. coli 410 cfu/100 ml, enterococcus 130 cfu/100 ml, and fecal coliform 800 cfu/100 ml.

At site CLO, throughout 2024 there were nine exceedances for E. coli. Unfortunately, the E. coli sample from August collected right after Hurricane Debby was lost due to laboratory error. Even with the storms, the E. coli results are comparable with results from 2023. Fecal coliform had seven exceedances spreading from spring through winter of 2024. Although only 20 gallons of raw sewage was reported lost due to sewer system overflows in Clower Creek, this area had a reported fecal coliform result of 20,000 cfu/100 ml (sampled 8/12/2024), which is three times lower than the 2023 maximum result.

Even with the impacts from storms, microbial results for downstream tidal site CLO-CCDB are similar when comparing 2024 to 2023. There were ten enterococcus exceedances in 2024 and unfortunately the sample from August that was collected right after Hurricane Debby was lost due to laboratory error. The enterococcus results were diminished in 2024 with a maximum result of 5475 per 100 ml compared to the 2023 maximum of 27,000 per 100 ml; 2023 also had nine exceedances. In 2024, site CLO-CCDB had seven fecal coliform exceedances and one sample in January was lost due to laboratory error. The mean and maximum for 2024 fecal results were very comparable to 2023 results and the median is about three times lower than what was reported in 2023.

Table 5 *Clower Creek Watershed Ambient Monitoring Results for 2024*

CLO				
2024	**MIN**	**MEAN**	**MEDIAN**	**MAX**
E. coli (#/100ml)	228	853.5833	705.5	2282
F. coli (#/100ml)	120	2885	1000	20000
CLO-CCDB				
2024	**MIN**	**MEAN**	**MEDIAN**	**MAX**
Entero (#/100 ml)	121	2303.091	1860	5475
F. coli (#/100ml)	50	2770.909	900	22000

Targeted Microbial Source Tracking Monitoring

Targeted monitoring has been conducted to identify hotspots and prime areas for supplemental structural or nonstructural best management practices or activities in the Clower Creek watershed. In the third quarter of 2020, County staff walked the Clower Creek watershed to evaluate potential sources of bacterial pollution.

Microbial source tracking within the watershed was completed in September 2021 and January 2022; the results are displayed below in Figure 15. These results indicate that birds contribute to bacterial loading at every sampling location, while improper handling of dog waste contributes to the bacteria downstream from the residential community of Pelican Cove; no human DNA was detected in any of the samples.

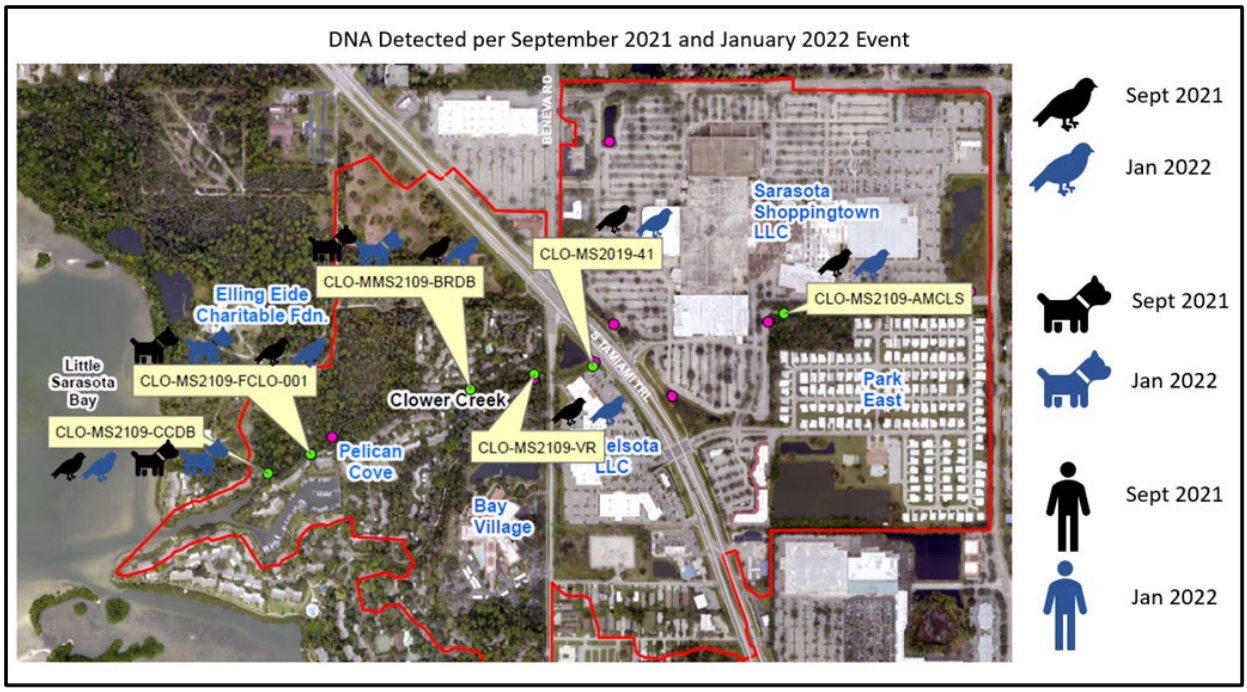

Figure 15 *Microbial Source Tracking Sites and Result Identifiers in Clower Creek 2021 and 2022*

Outreach and Community Engagement in Clower Creek Watershed

The NEST Program has been actively engaging one of three residential communities in the Clower Creek watershed on many issues including pet waste as it relates to this impairment. Educational kiosks have been displayed in the watershed to reinforce the message of properly disposing of pet waste.