



ST. ANDREW & ST. JOSEPH BAYS
ESTUARY PROGRAM
at FSU PANAMA CITY

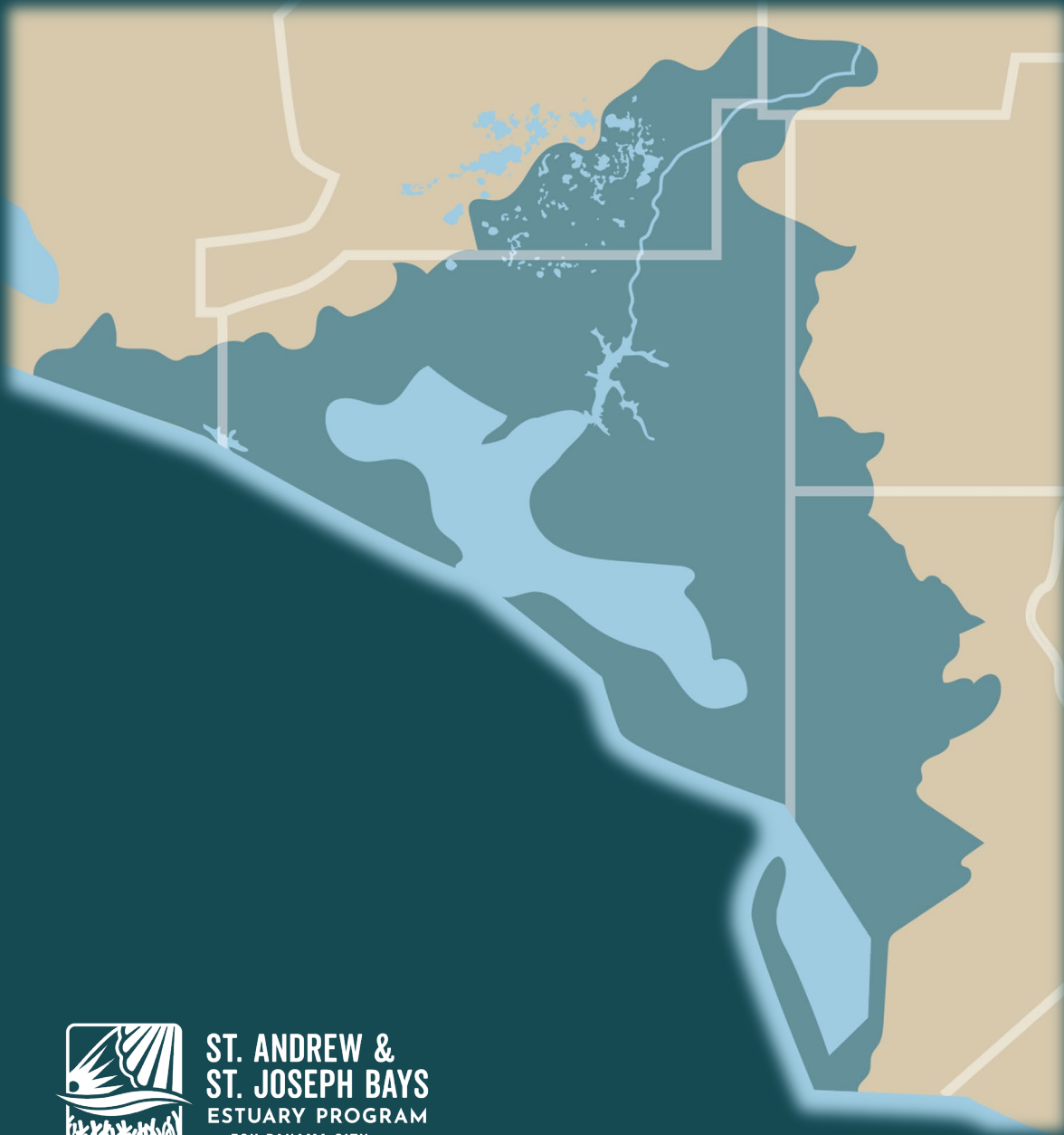
SCIENCE AND TECHNICAL COMMITTEE

08.20.2026

AGENDA

- Welcome
- Living shoreline suitability Analysis
- HAB Monitoring Network
- Bay Guardians
- Announcements





LIVING SHORELINE SUITABILITY

- **Model based on the VIMS Shoreline Management Model (SMM) v5.1**
 - A geospatial model run in ArcGIS that recommends strategies for tidal shoreline erosion control"
<https://www.vims.edu/ccrm/advisory/ccrmp/bmp/smm/>
- Combines 13 metrics to assess the appropriate method of shoreline protection

Bank Height	Riparian Land Use
Beach/Wide Beach	Sand Spits and Man-Made Canals
Fetch Model	Shoreline Structures (e.g. rip rap)
Near Shore Bathymetry	Submerged Aquatic Vegetation
Permanent Structures and Roads	Tidal Marsh
Public Boat Ramps	Tributary Designation



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CHALLENGES

Model was originally built to be used in ArcMap, but that program was retired in March 2026

Because of this, adaptations have been made to use the model in ArcPro.....led to delays as troubleshooting continued

On the right track now!

SMM MODEL STATUS

1. Gathering data



5. Test model



2. Preparing data



6. Finalize model



3. Shoreline delineation



7. Build public tool



4. Fetch Model



Completed



In Progress



Not Started

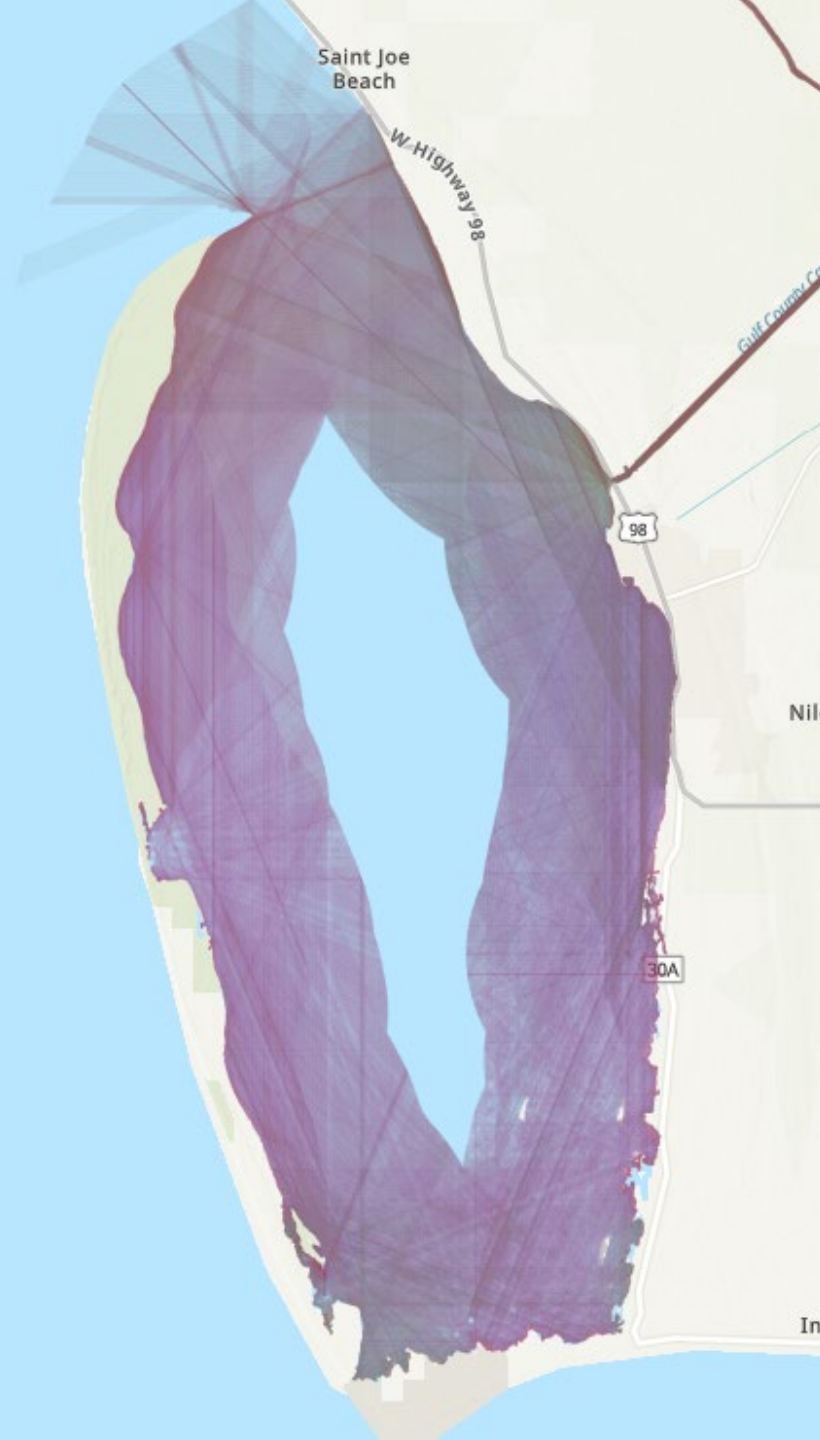
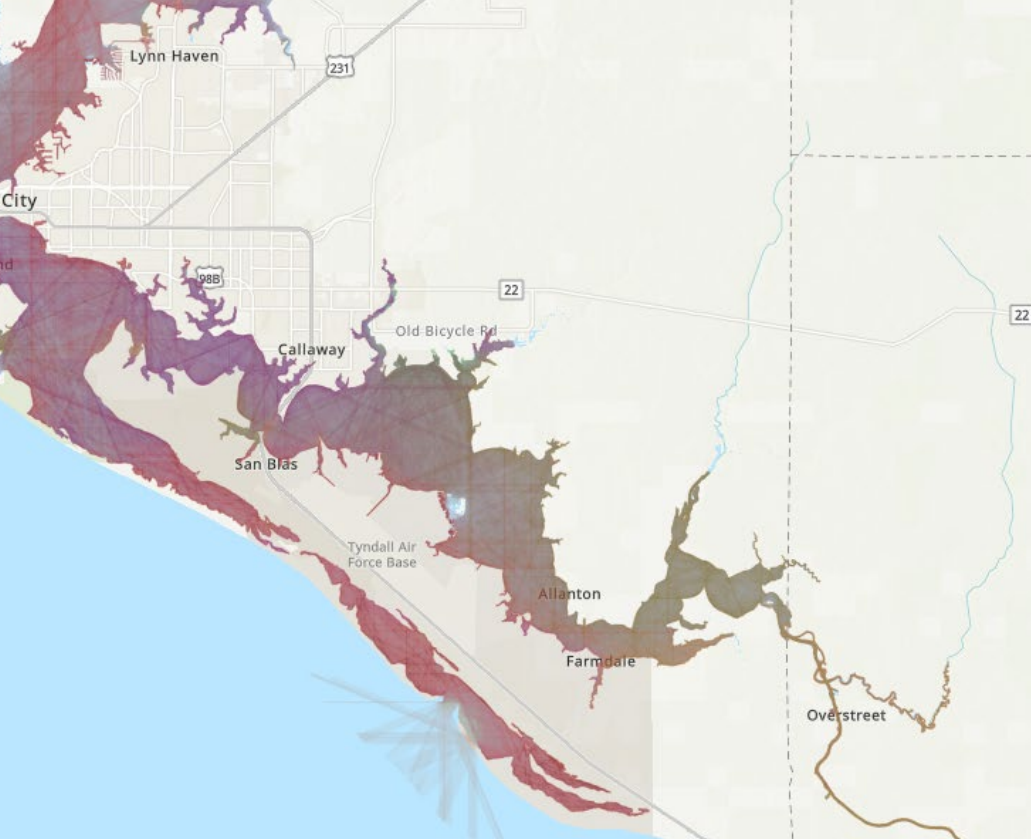


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FETCH MODEL

- | | | | |
|------------------------------------|-------------------------------------|---|---|
| 1.Fetch Prep | ☒ | 5. Manual Processing of | ☒ |
| 2.Landwater polygon for Study area | ☒ | Arcs | |
| 3.Manual Processing | ☒ | 6. Fetch Analysis |  |
| 4.Select Water Arcs | ☒ | 7. Manual Processing-Dissolve Fetch for SMM | ☒ |





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HAB NETWORK



VINCE BISHOP AND JACKSON KISSEL, BOTH FROM CAPE SAN BLAS, WORK WITH SECRET HOLMES, FROM THE FLORIDA PANHANDLE MARITIME INSTITUTE, AND DAN CATIZONE FROM US GEOLOGICAL SURVEY AND ANOTHER VOLUNTEER TO PLACE A DEAD DOLPHIN ON A STRETCHER OUT OF ST. JOSEPH BAY. [JULIA CUNNINGHAM | CONTRIBUTED]

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[ENVIRONMENT](#) | [LOCAL NEWS](#) | [NEWS](#) | [OUTDOORS](#)

Dolphin strandings likely due to red tide

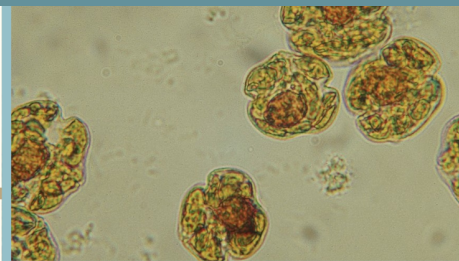
By David Adlerstein • May 11, 2026

- Bad Red Tide last year
- Partnership Florida Red Tide Mitigation & Technology Development Initiative

HAB NETWORK

HARMFUL ALGAL BLOOMS (HAB)

OVERVIEW



Karenia brevis, Mote Marine Laboratory

About HABs

Harmful algal blooms (HABs) occur when certain types of phytoplankton grow rapidly and produce toxins or otherwise disrupt the environment, sometimes turning the water discolored or foul-smelling. Along the coast of the SAB watershed, the most well-known HAB is "Florida red tide," caused by the single celled photosynthetic dinoflagellate *Karenia brevis*.

- *Karenia brevis* naturally occurs offshore but can be carried to coastal waters by wind and currents.
- It can harm marine life by releasing "brevetoxins".

HAB Monitoring Network

The FWC routinely monitors *K. brevis* across the state. This citizen science monitoring initiative led by St. Andrew and St. Joseph Bays Estuary Program is designed to serve as an "early warning" to our communities and to inform Mote Marine Laboratory in testing technologies that will mitigate the impacts of *K. brevis* blooms.

As a volunteer, you will:

- Take water samples to monitor for Harmful Algal Blooms (HABs)
- Complete a short training
- Take samples from shore or by boat
- Take samples to central locations for drop off when convenient



APPLY AT:
sasjbep.org/water-monitoring-volunteer-form



QUESTIONS? SEND US AN E-MAIL:



Email
estuaryprogram@pc.fsu.edu

HARMFUL ALGAL BLOOMS (HAB)

MONITORING



Collecting Data

1. PICK UP YOUR KIT

Pick up your collection kit from the Gulf County Welcome Center or from the St. Andrew and St. Joseph Bays Estuary Program at FSU Panama City.

Gulf County Welcome Center: 150 Captain Fred's Pl, Port St Joe, FL 32456
FSU Panama City: 4750 Collegiate Dr, Panama City, FL 32405

2. COLLECT

Follow the [Collection Instructions](#) to secure your sample.

3. COMPLETE THE SURVEY

[Complete the HAB survey](#) in order for your sample data to be counted!

[Survey Link: https://arcg.is/OK5nLz2](https://arcg.is/OK5nLz2)



COMPLETE SURVEY

View Results

Check where samples have been taken and see provisional count results on the **HAB Dashboard!**

[HAB Dashboard Link:](https://lnk.bio/s/sasjbep/habdashboard)
<https://lnk.bio/s/sasjbep/habdashboard>



VIEW RESULTS



QUESTIONS? SEND US AN E-MAIL:



Email
estuaryprogram@pc.fsu.edu

HAB NETWORK



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**Thank you for volunteering
to monitor HABs!**

Kit contents

- 8 labeled scintillation vials with lugols drop already added
- Amber bottle
- Methods cheat sheet

HAB survey



Methods Cheat Sheet

1. Rinse amber bottle 3 times with site water
 - a. Note- Do not use scintillation vials to directly collect samples
2. Collect surface water with the amber bottle
3. Pour sample water from 1 location into 1 scintillation vial.
 - a. Note- Vials have lugols solution preloaded which may stain!
4. Complete HAB survey & take photos (see QR code).
5. Empty amber bottle
6. Proceed to the next station if sampling multiple sites & repeat.

Sample drop off

Return samples and kit after sampling to:

- Gulf County: Gulf County TDC
- Bay County: SASJBEP @ FSU Panama City- 2nd floor Office Building



QUESTIONS? GIVE US A CALL

Jessica Graham
850-770-2149

Ryann Rossi
850-770-2147

A school of fish swimming diagonally across a teal background. The fish are dark blue silhouettes, varying in size and orientation, creating a sense of movement from the top left towards the bottom right.

HAB Survey

HAB NETWORK

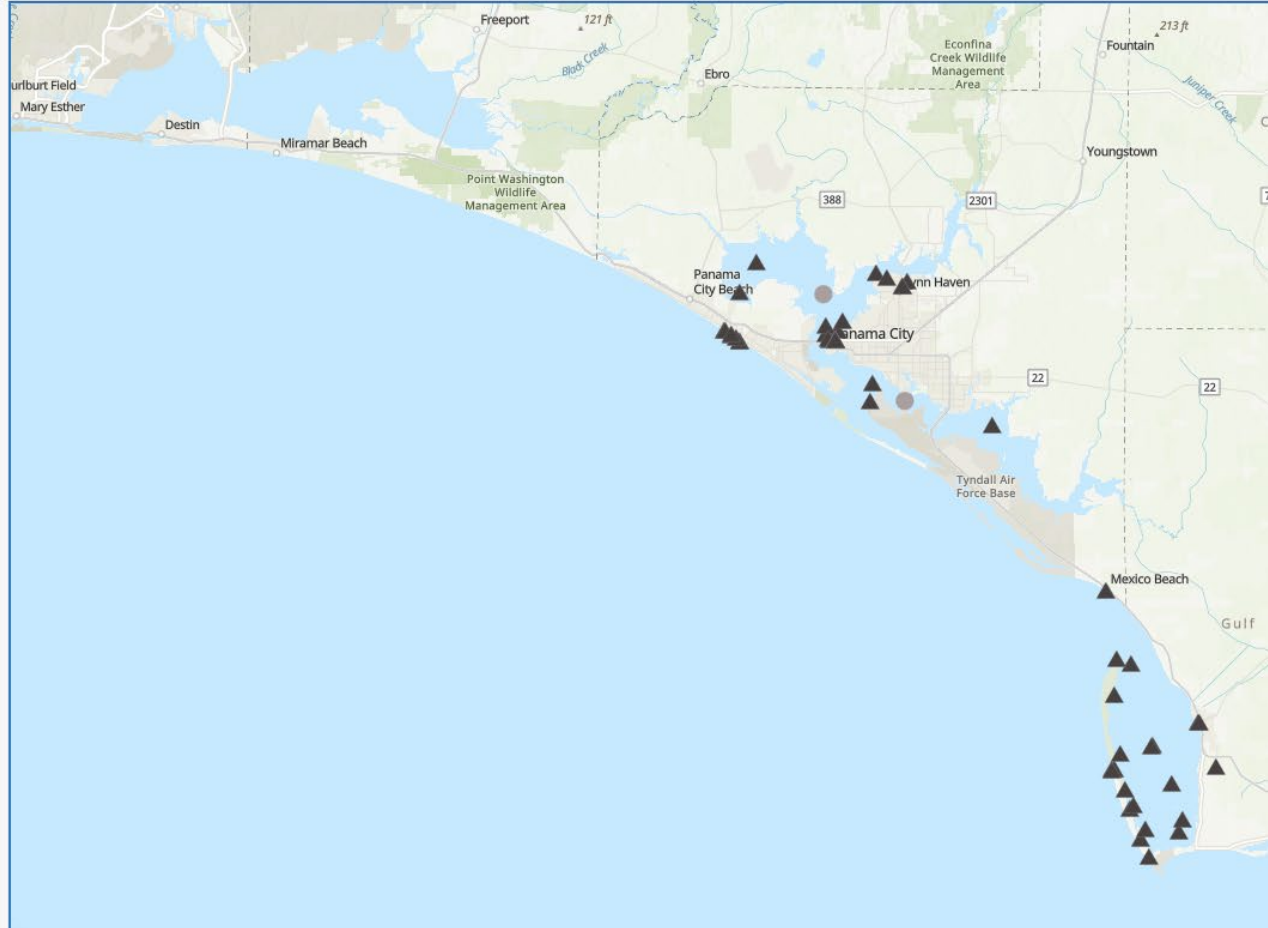
HAB Sample Tracker

Managed by the St. Andrew and St. Joseph Bays Estuary Program

Unofficial *Karenia brevis* counts (cells/liter). Data have not been verified by FWC.

Unofficial Count

- > 100,000,000 (high)
- > 100,000 - 1,000,000 (medium)
- > 10,000 - 100,000 (low)
- > 1,000 - 10,000 (very low)
- 0 - 1,000 (not present/background)
- ▲ TBD



<https://cosspp.maps.arcgis.com/apps/dashboard/b27d249f701145bcaac138024079a423#>

BAY GUARDIANS



BAY GUARDIANS

1

Two citizen-based water quality monitoring programs

2

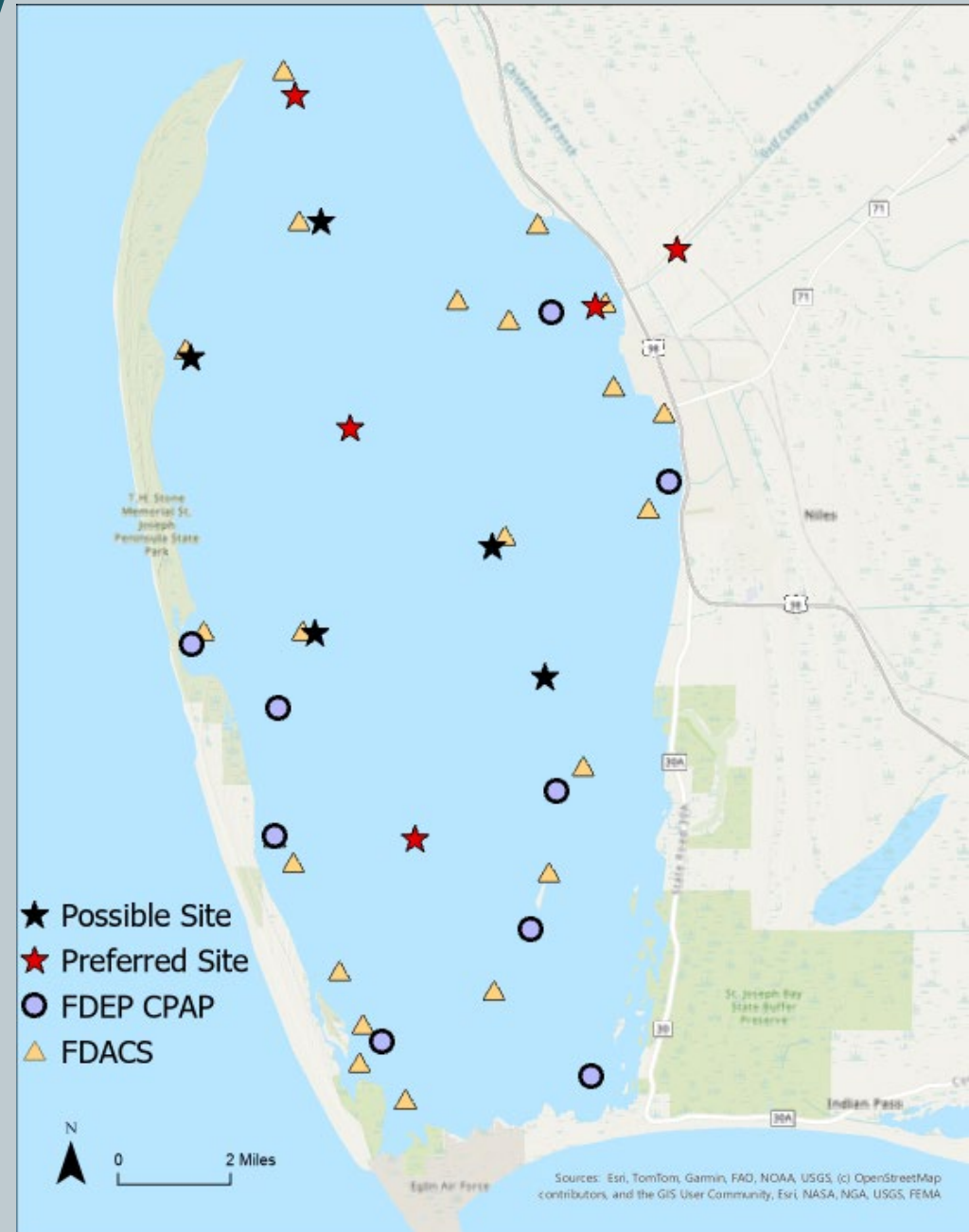
Evaluation of existing monitoring stations + addition of temporary monitoring stations to evaluate accuracy of condition assessment in sub-bays

3

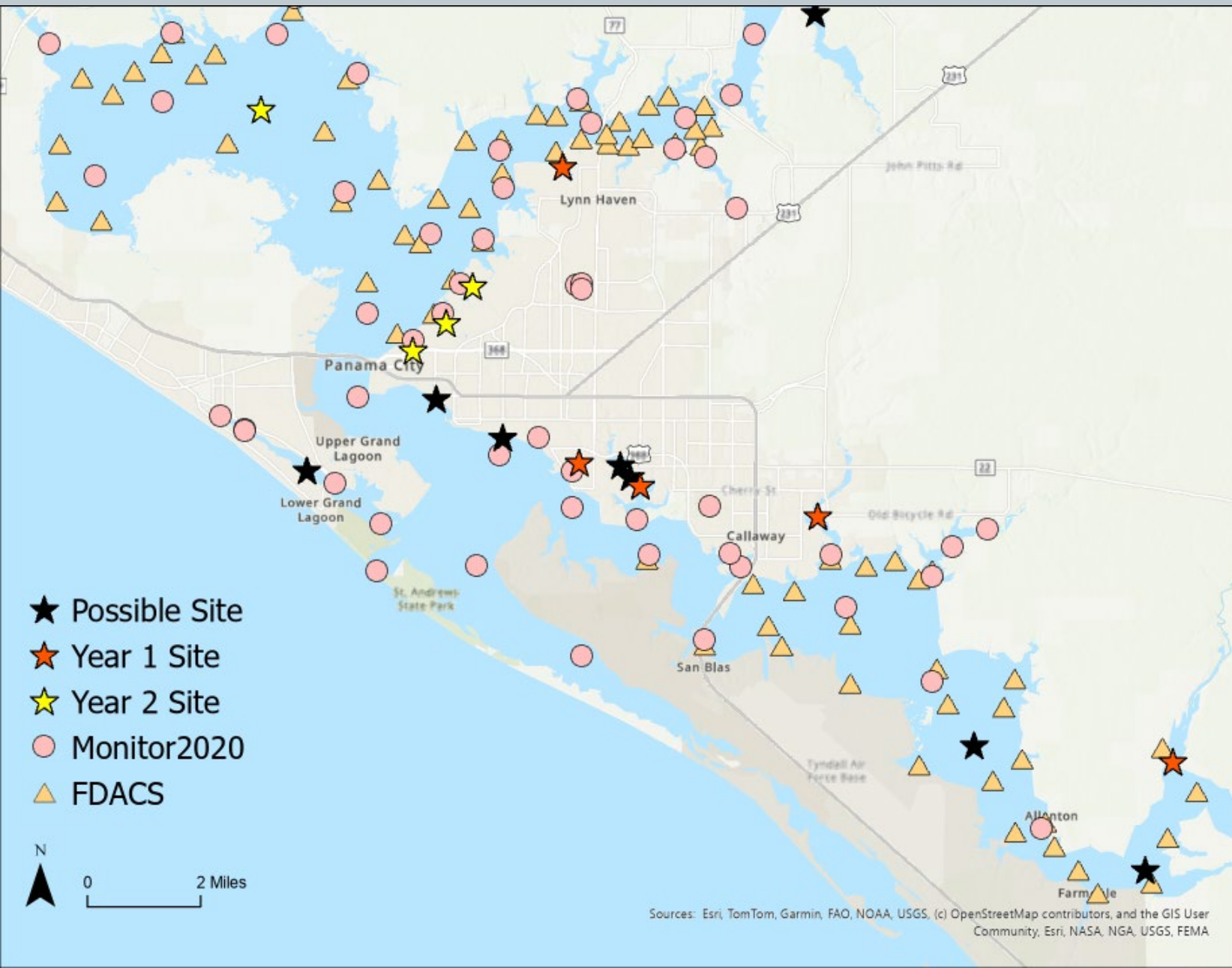
Development of a public dashboard to provide up to date water quality assessments

BAY GUARDIANS- ST. JOSEPH BAY

- Support establishment of 5 new stations for water quality monitoring by volunteers!
- SASJBEP will coordinate the volunteers

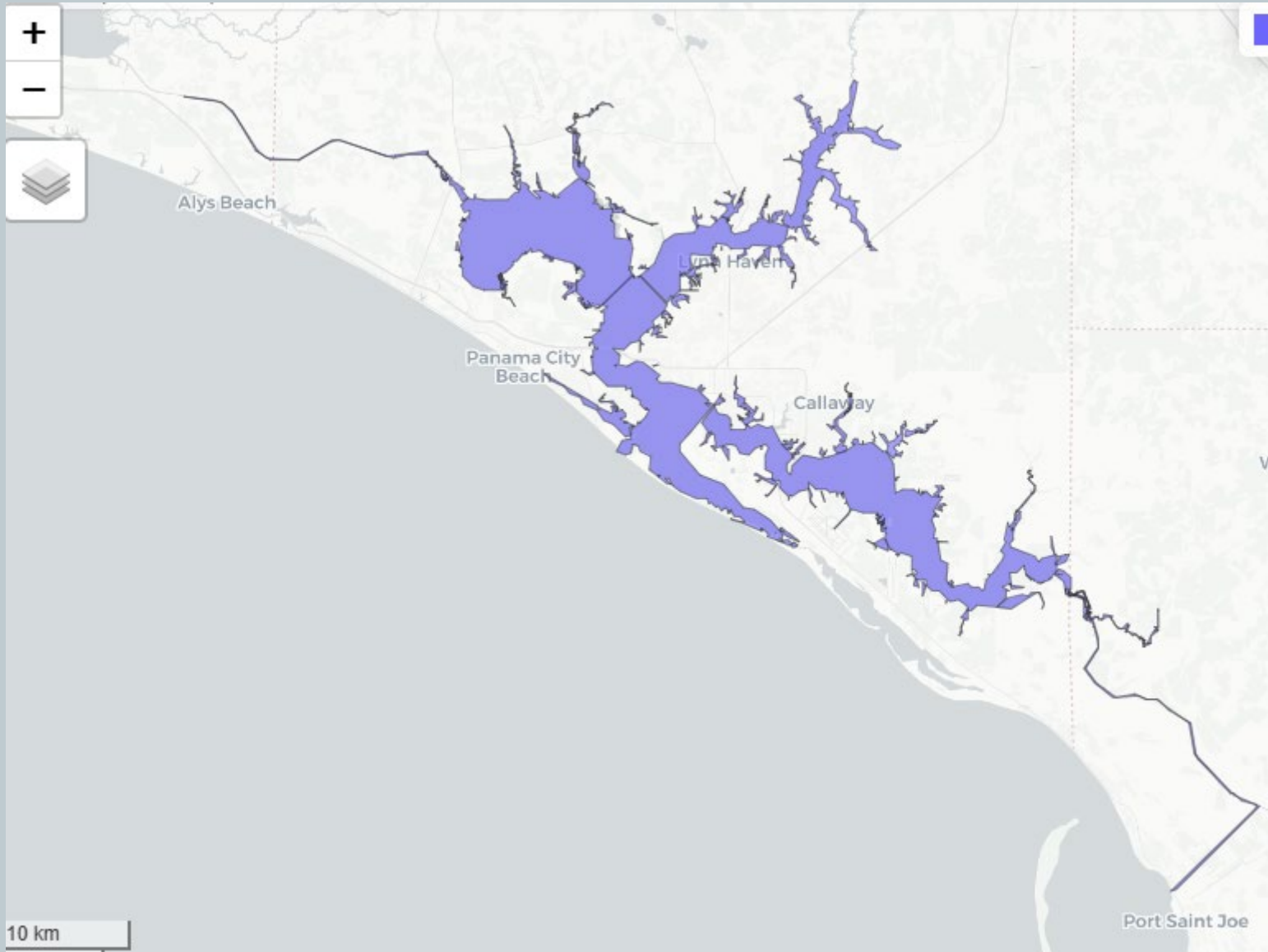


BAY GUARDIANS- ST. ANDREW BAY



- Support Bay Watch to continue monitoring and recruit volunteers!
- SASJBEP will monitor 4-5 stations to evaluate accuracy of condition assessment in sub-bays and bayous

BAY GUARDIANS- ST. ANDREW BAY



- Spatially Balanced Survey Design to determine ideal # and location of stations to measure quality of the Bay
- Have 3 different approaches to explore:
 - 1 giant polygon
 - Bay segments
 - Bay segment + bayous
- More on this in October!

BAY GUARDIANS- DASHBOARD



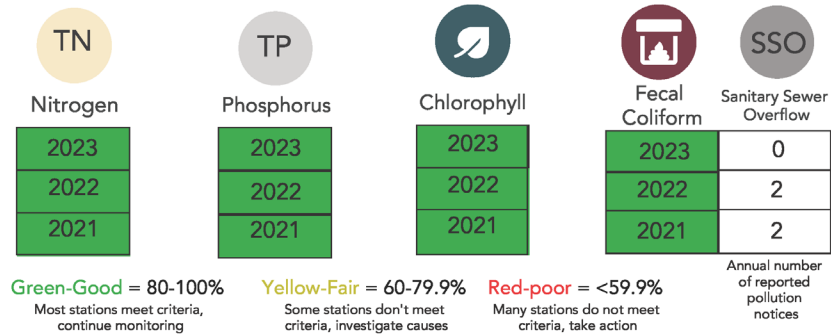
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Water Quality Report for St. Joseph Bay 2021-2023

Several organizations monitor water quality in St. Joseph Bay including Florida Department of Environmental Protection (FDEP), Northwest Florida Water Management District, and Florida Department of Agriculture and Consumer Services (FDACS). Water quality parameters measured include water chemistry (salinity, dissolved oxygen, temperature, total suspended solids, turbidity), nutrients (total nitrogen-TN, total phosphorus-TP, chlorophyll), and fecal coliform. This report focuses on status and trends of TN, TP, chlorophyll and fecal coliform.

The St. Andrew and St. Joseph Bays Estuary Program (SASJBEP) has used the data provided by partners and analyzed it to determine trends in water quality over time across the Bay. The information presented in this report focuses on nutrient concentrations in comparison to the standards determined by the FL Department of Environmental Protection (FDEP) called numeric nutrient criteria and concentrations of fecal coliform.

Annual Water Quality Scores



Results based on FDEP water quality criteria Rules 62-302.531, 62-302.532
Score= % of stations meeting water quality standards averaged across the year

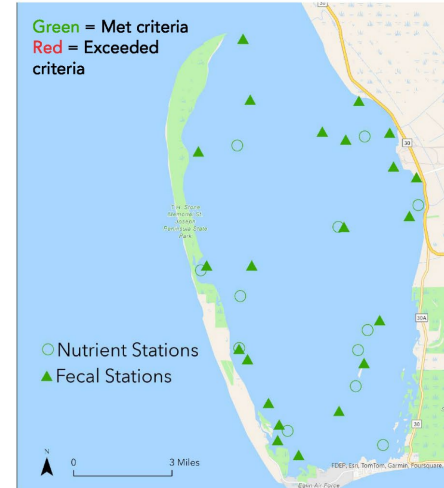
Potential Sources of Nutrients and Bacteria

Nutrients, like Nitrogen and Phosphorus, are essential for plant and animal growth but too much or too little can impact the balance of a system. Chlorophyll is the molecule responsible for photosynthesis and a measure of how much algae is present. Fecal coliform is a measure of potential contamination from pathogenic microorganisms that could impact human health.



Individual Station Trends

This maps indicates whether stations met the criteria in 2023.



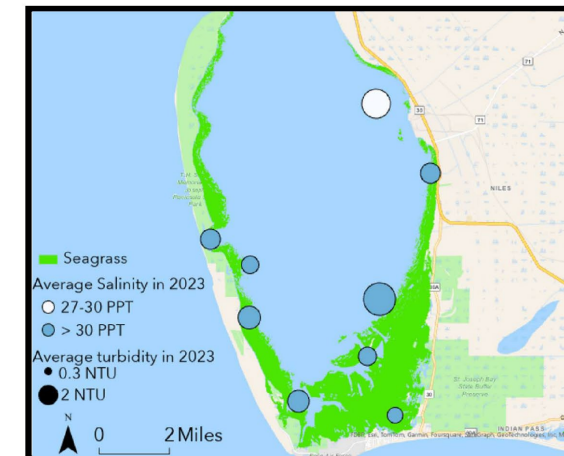
FDACS routinely monitors FC (Fecal Coliform, a measure of bacteria) at the stations indicated by triangles and no stations had readings over 800 cfu/100ml in 2023.

DEP routinely monitors the stations indicated by open circles for nutrients including TN (total nitrogen), TP (total phosphorus), and CHL (chlorophyll). These stations all meet the NNC for each in 2023.



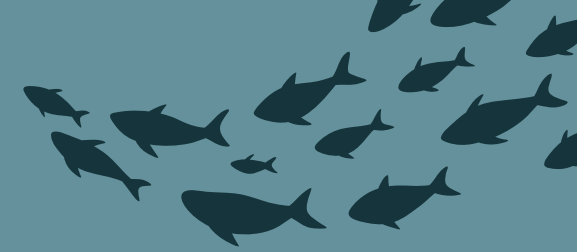
Water Clarity & Salinity

In 2023, salinity and turbidity varied throughout the Bay. Salinity is important for species such as scallops which require the right environmental conditions to flourish. Turbidity is indicator for water clarity, with smaller values representing clearer water and larger values representing more cloudy or turbid water.



Note: seagrass layer is from 2019.

ANNOUNCEMENTS





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ST. ANDREW AND ST. JOSEPH BAYS ESTUARY PROGRAM

SEPTEMBER 26, 2026

PANAMA CITY BEACH CONSERVATION PARK
100 CONSERVATION DRIVE, PANAMA CITY BEACH, FL

**RACE
FOR THE
BAYS
2026**

10K - 5K - FUN RUN

10K & 5K - 7:30am start - \$35
Fun Run - 8:30am start - \$25

Run or walk to show your support for the bays!

This trail run will take you over the marsh and through the woods of Panama City Beach Conservation Park.

All proceeds will go to benefit the St. Andrew and St. Joseph Bays Estuary Program.

**REGISTER BEFORE 8/28
TO GET A T-SHIRT!**



Register to run, volunteer, or become a sponsor at:
WWW.SASJBEP.ORG/RACEFORTHEBAYS



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RAFFLE & PRIZE DONATIONS NEEDED

FOR
RACE FOR THE BAYS
&
HISTORY CLASS'S
POURING LOVE
BINGO

The St. Andrew and St. Joseph Bays Estuary Program is seeking donations for raffle baskets and prizes at upcoming fundraising events!

Your donation helps raises funds for programs that protect and restore the St. Andrew Bay Watershed through:

- Resiliency projects
- Habitat restoration
- Water quality improvement
- Community stewardship and volunteer programs
- and more!

**YOUR BUSINESS WILL BE
RECOGNIZED FOR YOUR
GENEROUS CONTRIBUTION!**

TO DONATE, CONTACT:

Aleighsa Schwinn, Outreach Specialist
Email: amwright@fsu.edu or Call: (850) 770-2198

ANNOUNCEMENTS

- SASJBEP is the recipient of Pouring Love at History Class for the month of September!
- Join us for bingo & an auction on Sunday 9/13 @ 1pm!

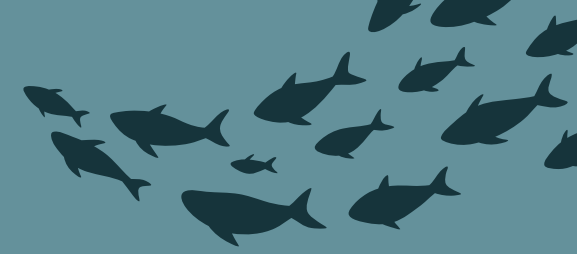


Pouring Love for the Bays!

September is packed with ways to celebrate and support our bays! From **National Estuaries Week** and **International Coastal Cleanup Day** to the return of **Race for the Bays**, there's no shortage of ways to get involved. And this year, we're also the honored recipient of **Pouring Love**, a month-long fundraising campaign hosted by **History Class Brewing Company** in support of the Estuary Program!

Bring your family and friends out throughout September to enjoy a drink, grab a bite, and show some love for our local waterways. Then, save the date for the **History Class Bingo & Raffle for the Estuary Program on Sunday, September 13 at 1 p.m.** We hope to see you there!

ANNOUNCEMENTS



Tentative schedule:

September 10

October 8

November 12



ANNOUNCEMENTS

Mark Your Calendars!

2026 Lake Powell Cleanup / Sept. 19th



Email LPCA08@gmail.com for info...

<https://www.facebook.com/LakePowellCommunityAlliance>

INTERNATIONAL COASTAL CLEANUP 2026

9-19-26
8:00-11:00 am

Brought to you by The Friends of St. Joseph Bay Preserves

Join us at the following locations on Saturday, September 19th to help reduce litter and debris in our coastal areas. Please bring sun protection & a water bottle. Gloves & bags will be provided.

*Park entry fees waived for cleanup participants

- George Core Lighthouse Park
- Salinas Park
- Cape Palms Park Beach Access
- T.H. Stone Memorial St. Joseph Peninsula State Park
- William J "Billy Joe" Rish Recreation Area

For more information visit www.stjosephbaypreserve.org or follow The Friends of St. Joseph Bay Preserves on Facebook.

ANNOUNCEMENTS



BAY AMBASSADORS
Kickoff Meeting!

The Estuary Program's Bay Ambassadors are kicking off the 2026-2027 school year with a brunch party! Help us plan out our events for the year, meet people, and make friends!

Previous Projects:

- Marsh Grass Nursery
- Vertical Oyster Garden Assembly
- Marine Debris Cleanups
- Monofilament Recycling Tubes

High school students ages 14-18 welcome!

Join us and become an ambassador for the bay!

When:
SAT, AUG 22nd
10:00am CDT

Where:
FSU Panama City
Holley Building; Room A301

AUG. 22ND 10 AM

Join Us!

lnk.bio/s/sasjbep/jointhetoc
or scan here:



Teen Outreach Committee → Bay Ambassadors

ANNOUNCEMENTS



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VOLUNTEERS NEEDED!

We're looking for volunteers for two
new water monitoring programs in
Bay and Gulf Counties!

BAY GUARDIANS

Take water samples to monitor and track water
quality parameters

- Extensive training
- Samples must be taken by boat
- Higher level of commitment and
responsiveness (*consistently available
monthly on specific days*)
- Coordination with St. Andrew Bay Watch
staff

HAB MONITORING

Take water samples to monitor for Harmful
Algal Blooms (HABs) like "Florida red tide"

- Short training
- Samples may be taken from shore or boat
- Samples can be taken when convenient
(daily, weekly, monthly) and dropped off at
central locations



APPLY AT:
[sasjbep.org/water-
monitoring-
volunteer-form](https://sasjbep.org/water-monitoring-volunteer-form)



QUESTIONS? SEND US AN E-MAIL:



Email
estuaryprogram@pc.fsu.edu

REMINDER: NEXT MEETING WILL BE IN AUGUST!

A large number of small, dark blue fish silhouettes are scattered across the slide. Some are in the top right corner, some are in the bottom left corner, and others are scattered throughout the background, creating a sense of movement and depth.

February 19	Subbasin Prioritization and Project ideas
April 16	CSTARS
August 20	Living shoreline suitability analysis for St. Andrew Bay
October 15	Water Quality, New Project Ideas, NCCA results
December 17	Year in Review

THANK YOU!

Email: jgraham6@fsu.edu

Phone: 850-770-2149



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Pinfish media