



**Charlotte County's  
Exceptional Estuaries & Waterways:  
Ideas for Restoring & Safeguarding Them**

**Mangrove Chapter, FNPS – January 11, 2022**

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# What are We Talking About?

## Purposes:

- Education & Awareness
- Call to Action

## Topics:

- Economic & Lifestyle Values of Our Estuaries & Waterways
- Our Water Quality Crisis in the Making
- Lessons Learned from Indian River Lagoon
- Causes & Solutions of Water Quality Problems
- 5 Essential Elements of Solution - & Gaps
- How You Can Help
- Take Home Messages



*Photo: FCF Flats*

# What's the Value of Our Estuaries & Waterways?

Healthy Estuaries are Necessary for Our Economy & Lifestyles.

## Our Estuaries are Where:

- Most Fish are Born & Raised
- Wildlife Thrives
- Locals & Tourist Recreate
- Aesthetic Enjoyment is Derived
- Marine, Seafood & Tourism Industries are Supported
- Waterfront Property Values Depend



# Do We Have a Water Quality Crisis in the Making?

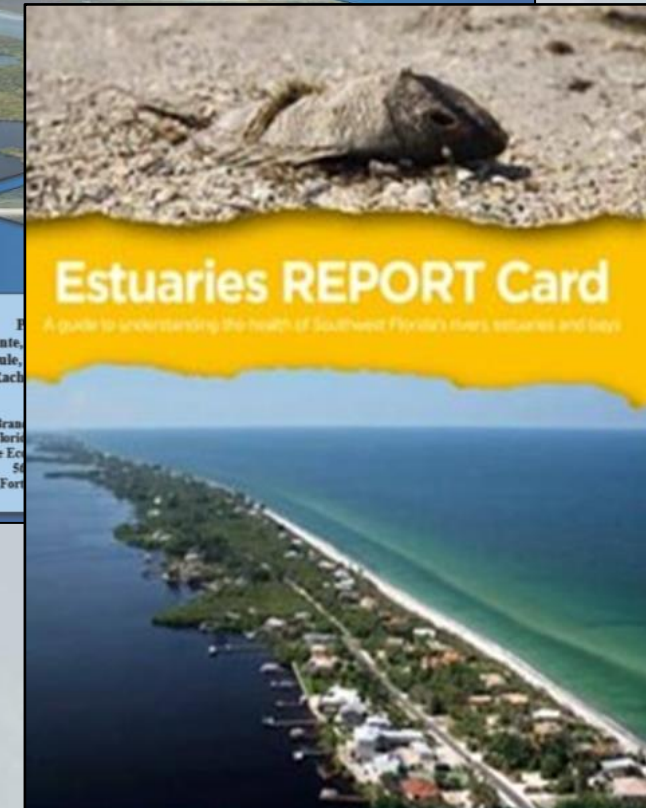
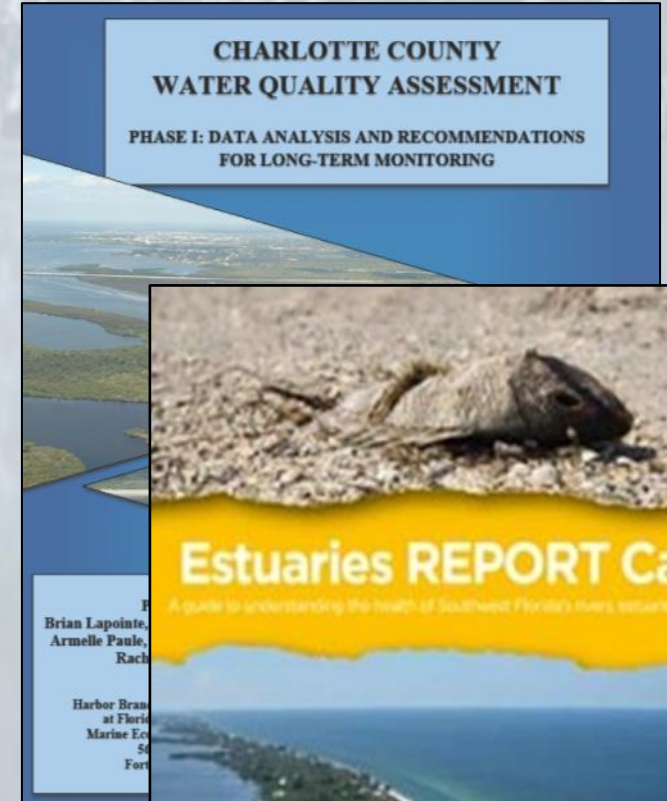
## Are Our Estuaries the Next to Fall?

### Water Quality Studies Include:

- 2015 FDEP FL Numeric Nutrient Criteria Adopted
- 2016 Charlotte Co. Water Quality Assessment
- 2017 Conservancy of SW FL Estuary Report Card
- 2018 CHNEP 2018 Water Quality Status Reports
- 2021 Calusa Waterkeeper SWF Water Quality
- Current FDEP State's Impaired Waters List
- Recent Filamentous Algae Blooms
- Long Term Fish Resiliency Studies

On-Going Lessons from Indian River Lagoon

2021 Opinion Dr. Aaron Adams, Bonefish Tarpon Trust



# Charlotte Harbor Macroalgae is Increasing Significantly.

Since 2012, Scientists from FWC Fisheries, FDEP Aquatic Preserves & IFAS Sea Grant Observed Widespread Macroalgae “Blooms”:

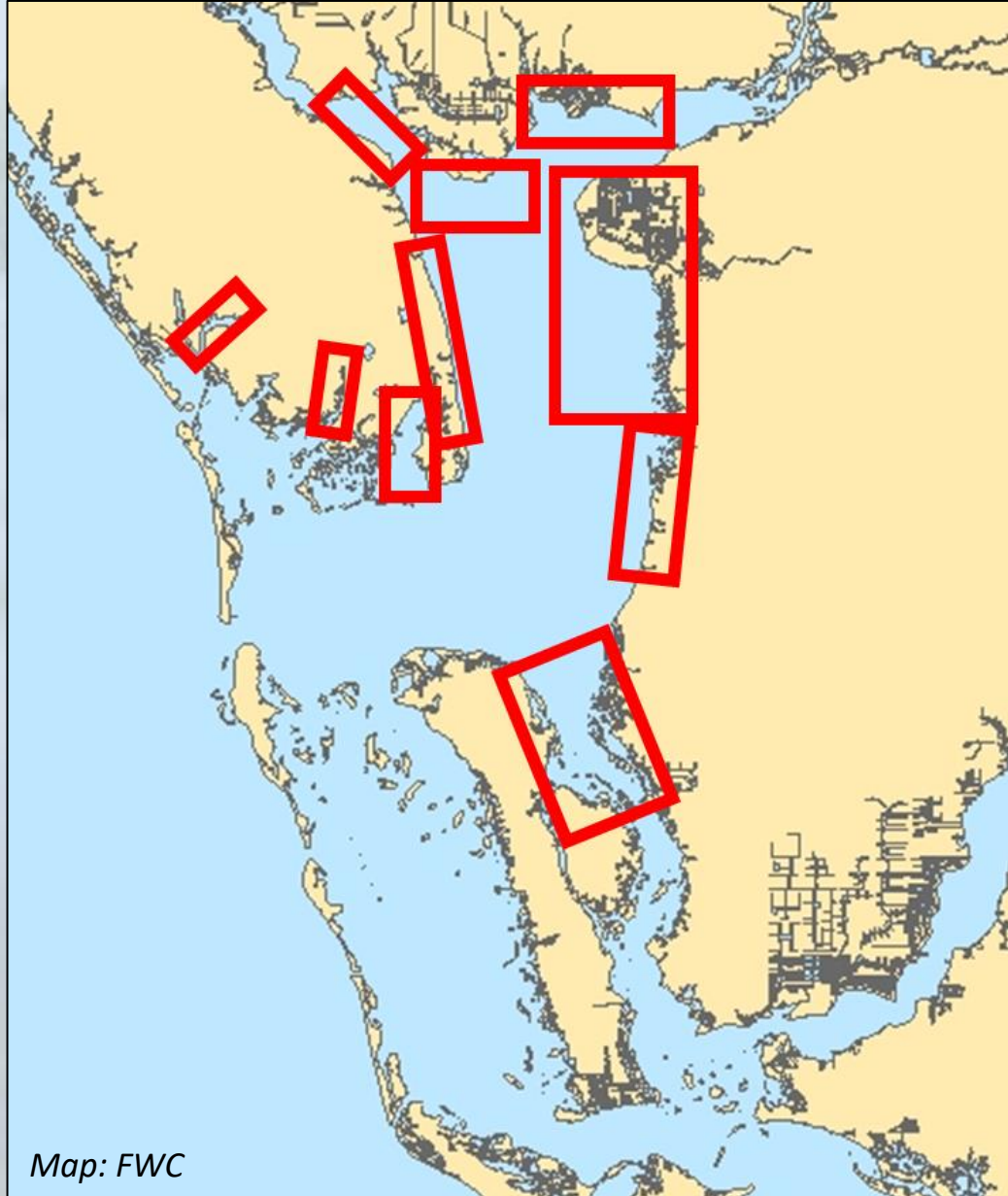
- Historically – Green Filamentous Algae was Rare in Charlotte Harbor
- 2012 – Tippecanoe Bay & Hog Is
- 2015 – Tippecanoe Bay, Hog Island, Grassy Point & West Shore
- 2019 – Coral Creek
- 2019–2021 – Charlotte Harbor East Shore (All) & Matlacha Pass (North), Shallow & Deep



# Locations of Recent Filamentous Algae Blooms in Charlotte Harbor:



Photo: FWC



Map: FWC

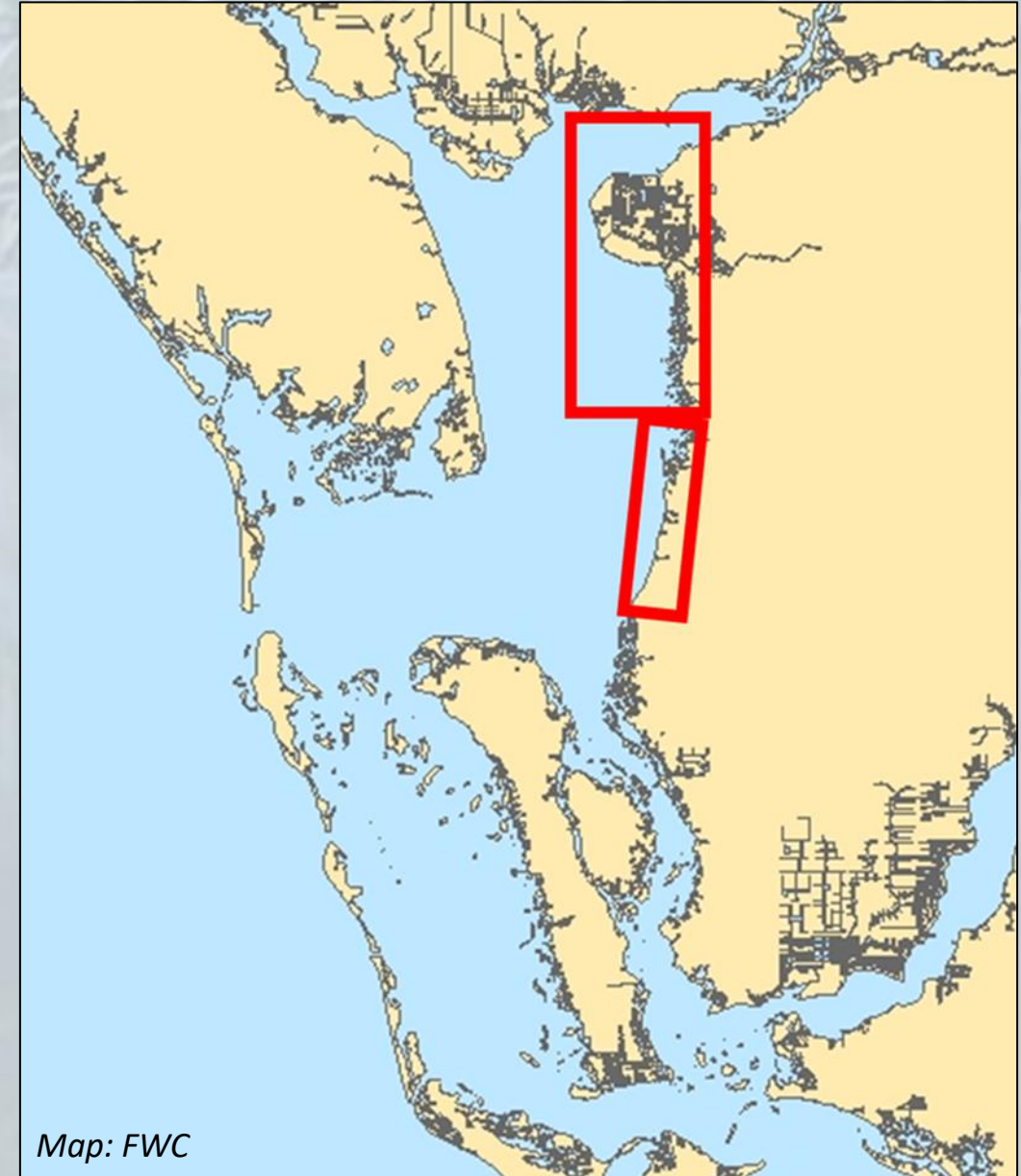


Photo: FWC

# Longest & Largest Macroalgae “Bloom” = East Charlotte Harbor

– 2019 to Present:

Note: At times, outbreak covered most of east shore of Charlotte Harbor – from shallow backwaters to deep open harbor habitats 3 m deep.



# What Lessons Have We Learned from Indian River?

## Some Hard Lessons:

- Chronic Water Quality Problems Can Lead to Irreparable “Tipping Points”.
- Algae Blooms Can Kill Seagrasses – Permanently – by Blocking Sunlight.
- Nutrients Reaching the Estuary (brackish water) are a Bigger Problem than Red Tide (salt water) or Blue Green Algae (fresh water).
- Once Severely Degraded, an Estuary Cannot be Repaired in a Timely or Affordable Way – If Ever.



*Photo: Everglades Trust*



# What are the Causes & Solutions of Our Water Quality Problems?

## Causes:

- Excess Nutrients from Human Activities & Climate Change
- Wastewater & Stormwater Runoff
- Warming Waters
- Intensifying Rainfall
- Sea Level Rise



Photos: FDEP

## Solutions:

- Monitor & Report Nutrient Levels – in All Waterways
- Manage Wastewater & Stormwater
- Reduce & Keep Nutrients Below Prescribed Levels
- Reverse Global Warming

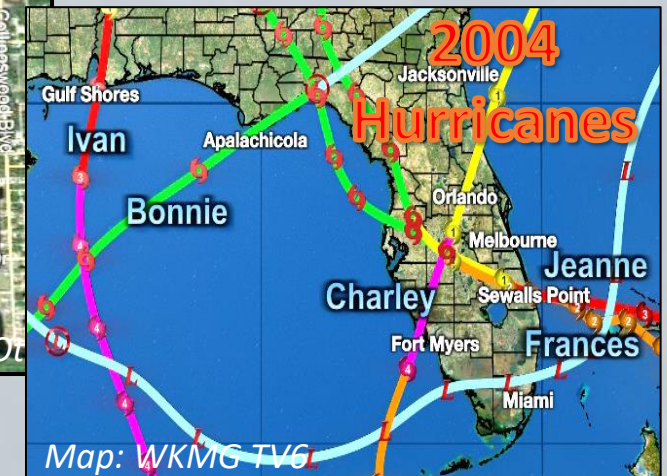
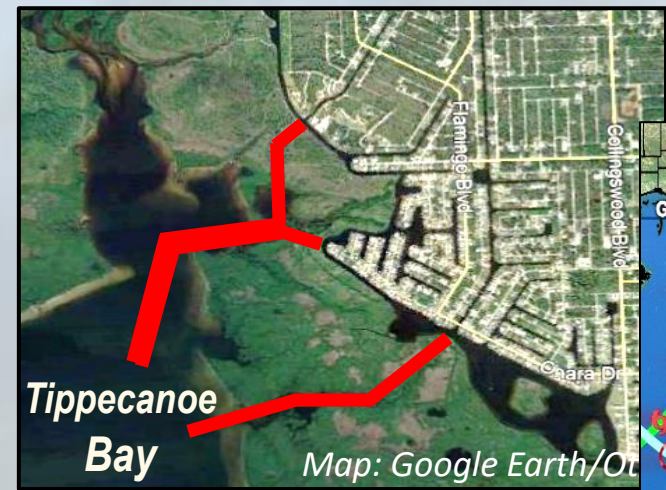


Photo: FDEP

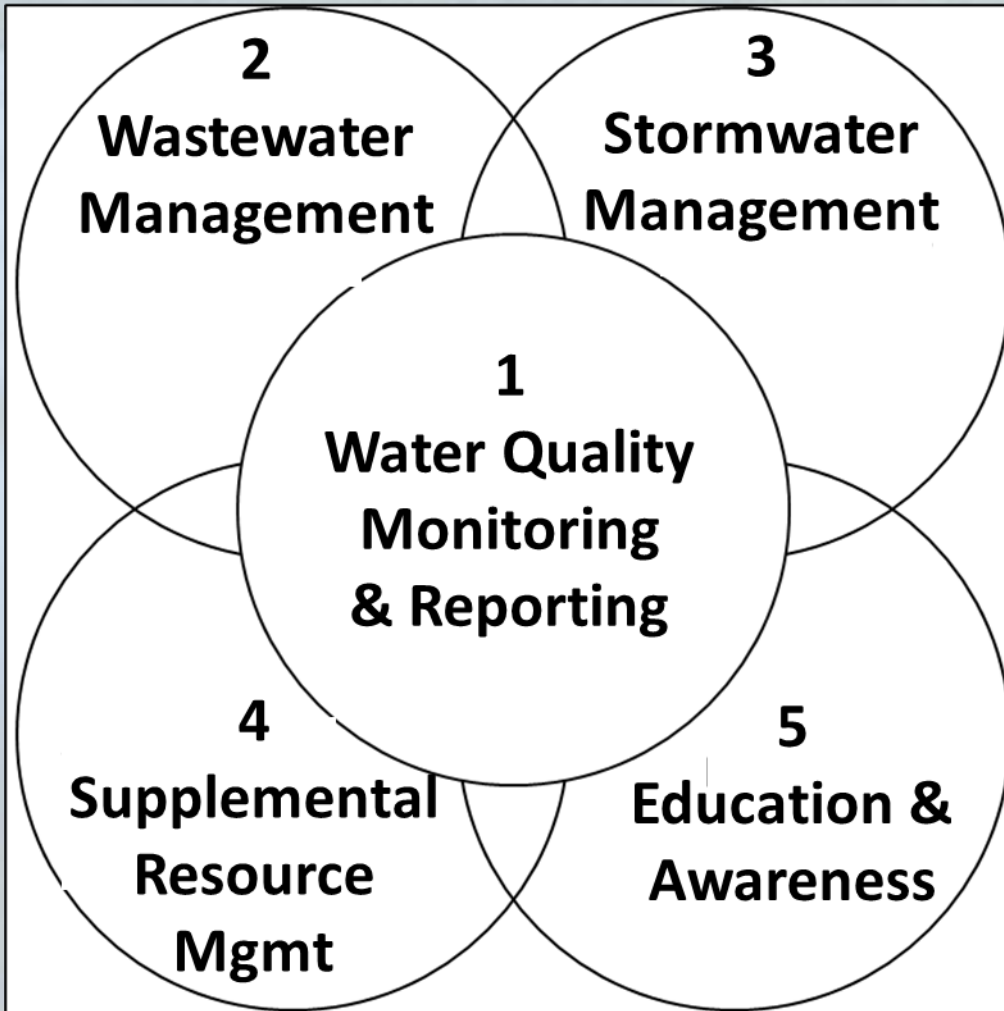
# Effective Solutions Require Strong Local Action.

Needed: County Responsible for Changes & Solutions, But:

- Local “Problem within a Problem” = Water Quality & Institutional
- Mixed Messages – Water Quality & Waterways are High Priority, But:
  - ~ History of Not Implementing Needed Actions – Timely or Effectively
  - ~ Very Few Dollars Committed to Needed Actions
- Organizational Silos – Separate Stormwater & Wastewater Depts
- Neglecting Our Natural World:
  - ~ Disavowing Global Warming & Responsibility for Solutions
  - ~ Championing Dredging in Aquatic Preserve & State Park



# What are 5 Essential Elements of Effective Water Quality Management?



1. Central Element = Water Quality Monitoring & Reporting – All Other Water Resource Actions Depend on it.
2. Wastewater = Primary Cause & Solutions.
3. Stormwater = Primary Cause & Solutions.
4. Supplemental = Climate Adaptations & Mitigation; Habitat Restoration & Native Landscapes – Essential but Secondary
5. Education & Awareness = Keys to Acceptance, Transparency, Accountability & Support.

# Ideas for “K to Gray” Education & Awareness Campaign:

## Audiences:

- School Kids
- College Students
- Adults
- New Residents
- Elected Officials
- Staff

## Example Materials:

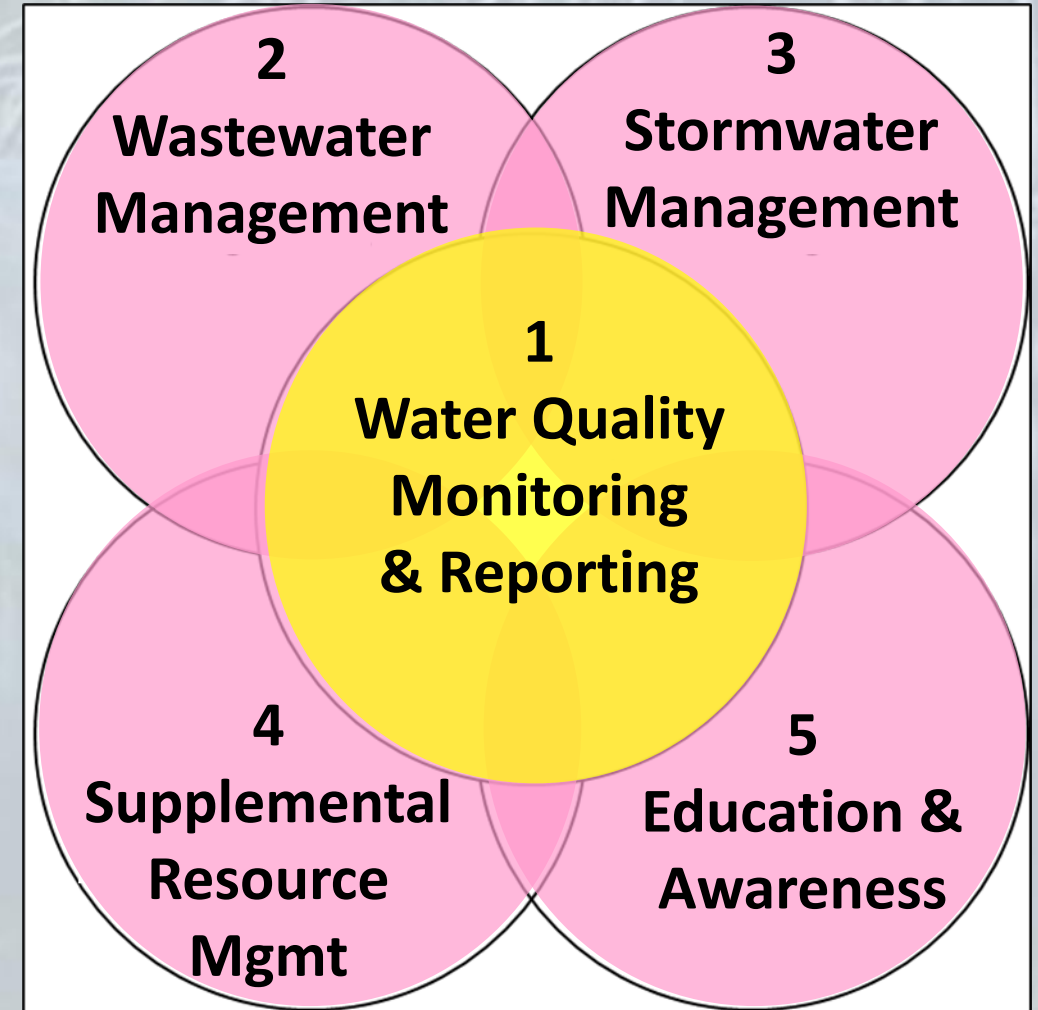
- Estuaries & You – Importance to Economy & Lifestyles.
- Water Pollution Basics – Sources & Solutions.
- History & Future of Human Impacts to Our Estuaries –
  - ~ How Development Puts Our Estuaries at Risk &
  - ~ How to Manage Future Growth to Reduce Risks.
- Water Quality Monitoring & Reporting – Why it’s Critical.
- Managing Water to Meet State Standards – How it Works.
- Wastewater & Stormwater – Projects & Budgets 101.
- Retrofitting Wastewater & Stormwater Systems – Why We Must.
- Florida Friendly Landscaping – for Waterways & Wildlife.



Photo: Independent School Parent

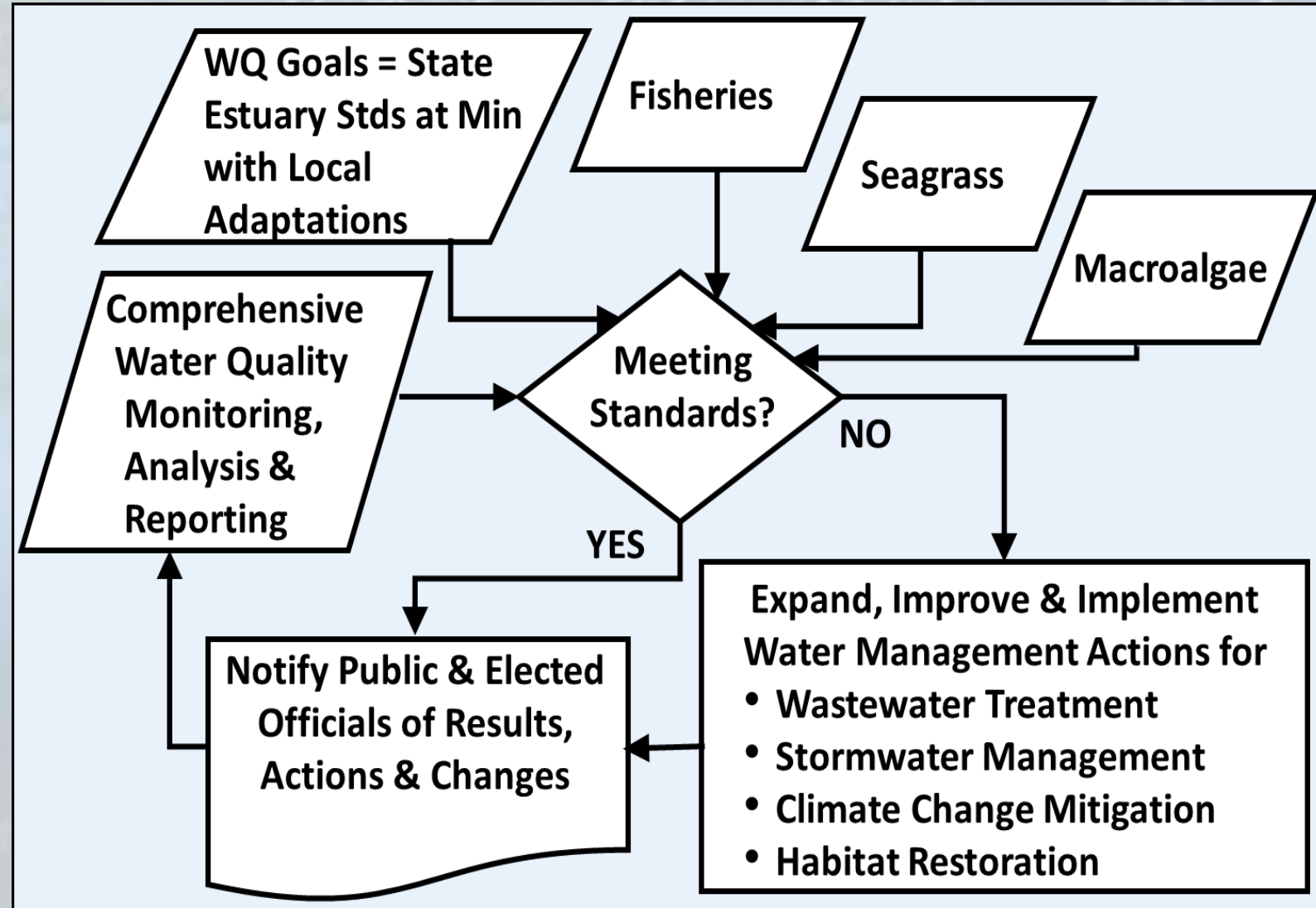
# Gaps in Our Current Water Quality Restoration Approach:

1. Water Quality Monitoring & Reporting = Priority & 1st Project of New County Water Quality Manager.
2. Wastewater = Separate Dept “Silo”.
3. Stormwater = Separate Dept “Silo”.
4. Supplemental = Denial of Climate Causes & Responsibility for Mitigation Action.
5. Education & Awareness = No Action to Date.



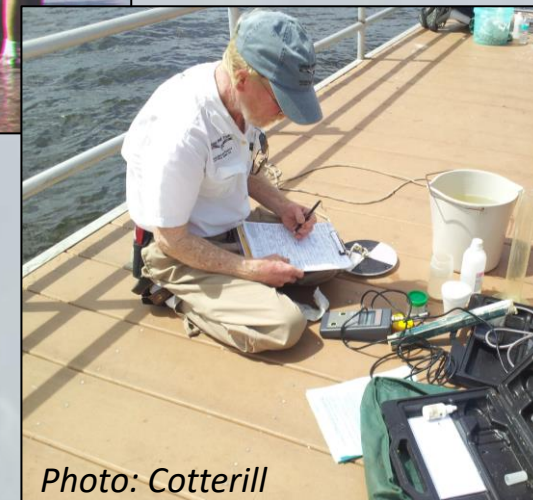
# And – We Must Manage Our Waters to Meet State Standards – at a Minimum:

- Use State Standards as Our Water Quality Goals.
- Adapt State Standards to Local Waters – Be Stricter Where Needed.
- Use Science & Data Based Decision Process.
- Work Together to Achieve Healthy, Sustainable Estuaries.



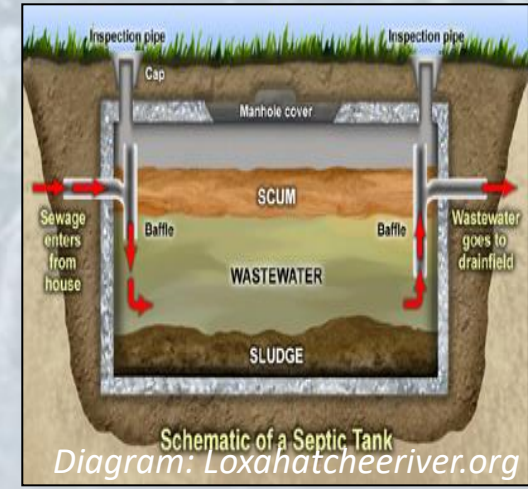
# What Can We Do to Help?

- Plant Native & Florida Friendly & Reforest – Good for Water & Climate.
- Maintain Septic Systems.
- Pressure County to Act on Effective Water Quality & Climate Mitigation Programs.
- Keep Learning – About Our Natural World & Local Issues & Actions.
- Participate in Volunteer Education, Science & Political Action Activities.
- Take Action – Encourage Elected Officials & Agencies to Make Good Choices – & Vote.



## Specifically, We Can:

- Keep Our Septic Systems Pumped & Working Right.
- Join Campaign to Save Tippecanoe Bay.
- Learn About Venice Rookery Microforest Project.
- Attend Meeting about New Proposed County Water Quality Program – Jan 20 @ 5:30 pm in Englewood @ Dever Rec Center.
- Attend Organizational Meeting for New Peace & Myakka WaterKeeper – Likely Mid-March @ Tippecanoe II Preserve.





# What are the Take Home Messages?

- Our Estuaries are at Tipping Point = Threat to Economy & Lifestyles.
- We Know the Causes & Solutions for the Water Quality Problems.
- To Date, County Actions Show Neglect for Our Natural World.
- Recent County Actions Show Promise, But We Need More Proactive Action – Now.
- There are Many Things You Can Do to Help – Please Pick 1 & Start.



*Photo: Tess*

# Where Can We Find More Information?

**Presentations, Summaries, Reports & Current Science Links:**

**<https://ecopapak.org>**

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