

# Local Solutions to Our Water Quality Crisis



Florida SouthWestern State College  
Lifelong Learning Institute  
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# Agenda

- Why the estuary is so important to our economy and lifestyles
- What threatens our estuary
- What we don't know can hurt us
- Water quality standards
- Action/Solutions
- Summary
- Water Atlas
- Q&A, discussion

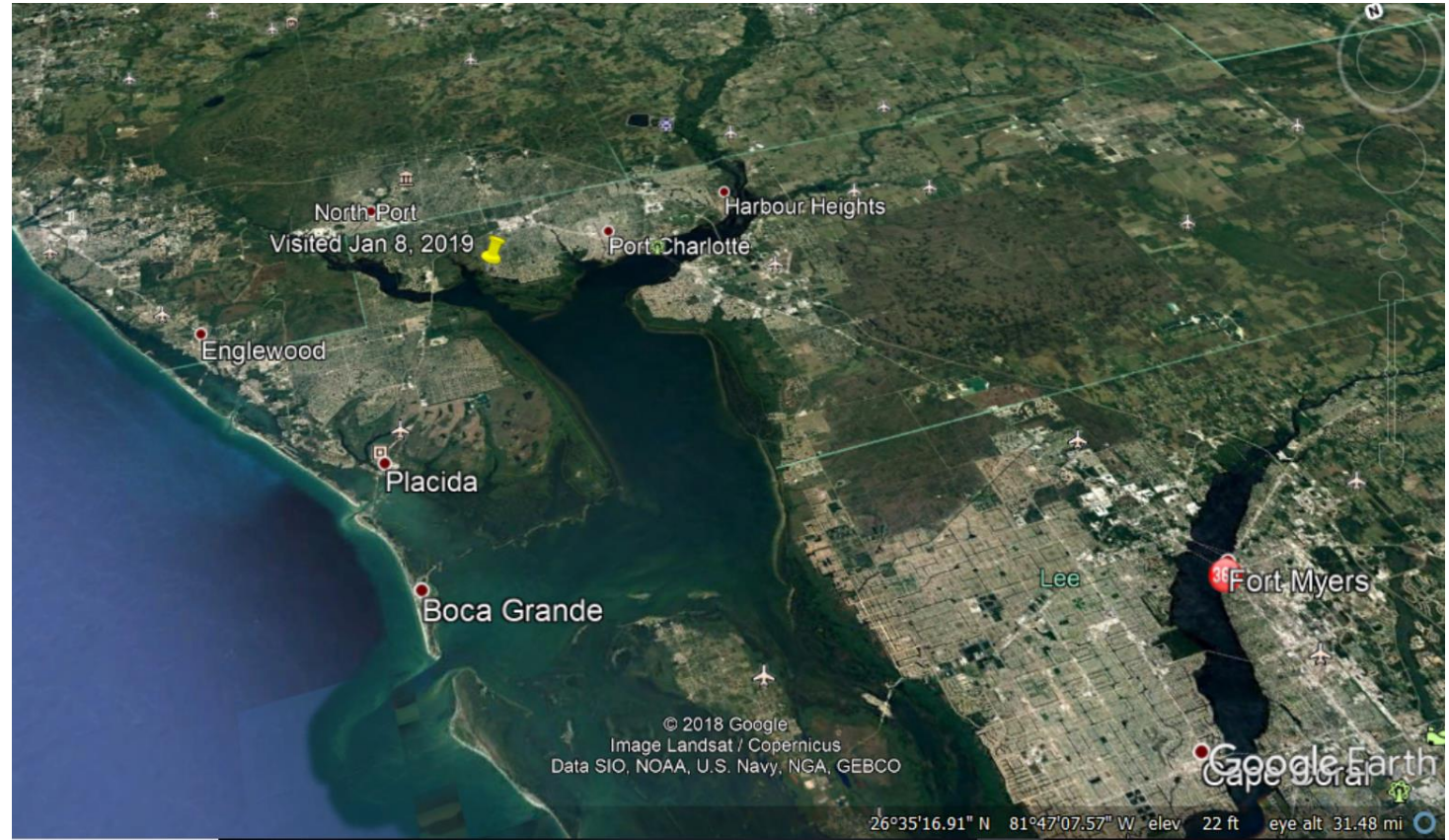


Photo credit: Wikipedia Florida Mangroves

# Its about the Estuary

Where freshwater and saltwater mix, brackish water

- Valuable habitat for nursery fisheries
- Economic and lifestyle value – recreational fishing, seafood, boating, birding, aesthetics



Local Solutions to Our Water Quality Crisis-  
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# Threats to Water Quality

- Water high in dissolved nutrients can create algae blooms and reduced oxygen
- Algae blooms can shade out seagrass, coral, etc. and cause their death
- Decomposing algae uses dissolved oxygen needed by other organisms > dead zones (Northern Gulf, Indian River Lagoon, Sunshine Lake)
- Septic causes more than 2/3 of Florida's water quality problems
- Nutrient runoff Residential and Agricultural
- Red tide naturally occurring, but like blue-green algae, it can be fueled by ag and residential nutrients
- Warming climate makes matters worse – forecast: a Boom in Blooms

# Dead Zones





# Problem in the Making

## FWC Fisheries Local Field Lab

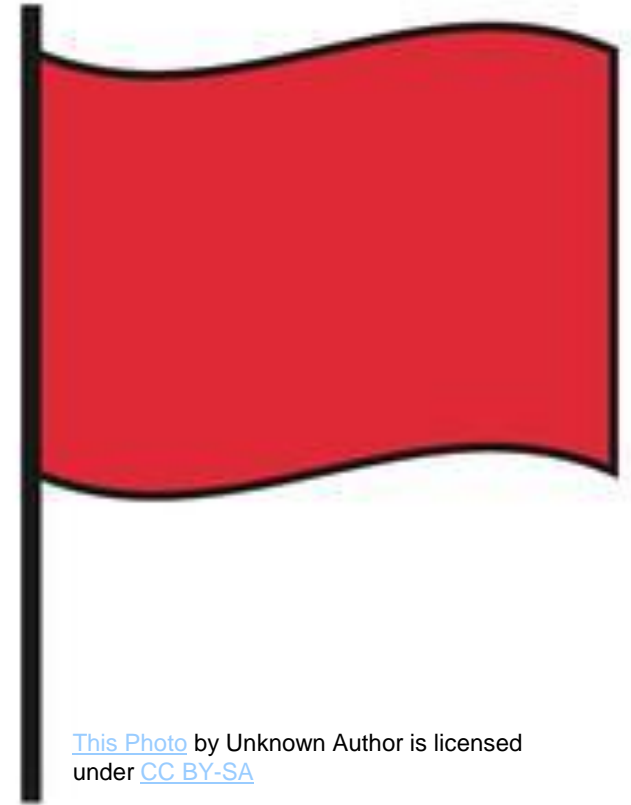
- Fish resilient to “disturbances” (hurricanes, cold spells, red tide)
- Not resilient to consistently stressful environment
- Similarities Indian River Lagoon and Charlotte Harbor

Recent WQ reports startling news:

- CHNEP
- Conservancy of SW Florida
- Florida DEP draft of impaired waterways

# What we don't know can hurt us

- Charlotte County does not evaluate estuary water
- There is no routine monitoring for water quality in internal waterways (exception: Sunshine Lake is monitored, analyzed and evaluate)
- We need a better system



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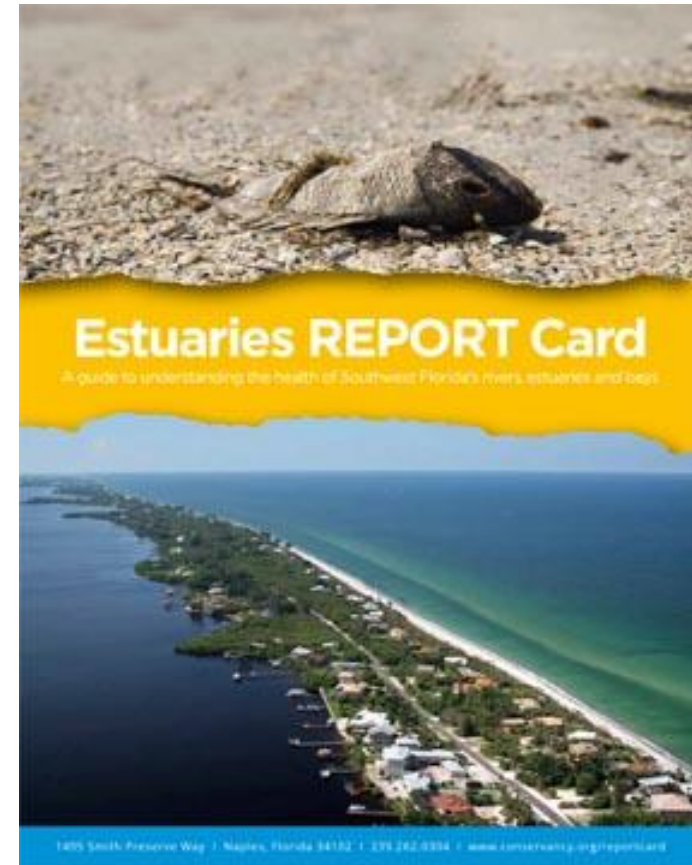
# Estuary Water Quality Standards

- Surface water quality standards established by the state DEP
- Specific to locations i.e. Tidal Myakka, Charlotte Harbor, Tidal Peace river
- See sample Tidal Myakka River
- Nutrients
  - Phosphorus
  - Nitrogen
  - Chlorophyll
- Fecal coliform bacteria
- Dissolved oxygen
- Turbidity



# Current Impairments

- Most pervasive problems being dissolved oxygen, nutrients, and metals. (Conservancy of SW Florida Report Card)
- Bacteria & nutrients (CHNEP Status Report)
- Fecal Coliform, Myakka Cutoff, etc. DEP impaired water rule – draft assessment





# Action/Solutions

- ***Effective local water quality monitoring program***
- ***Eliminate Septic systems***
- ***Eliminate nutrient runoff***
- ***Native landscapes***
- ***Upgrade reclaimed water***
- ***Mitigate climate change***

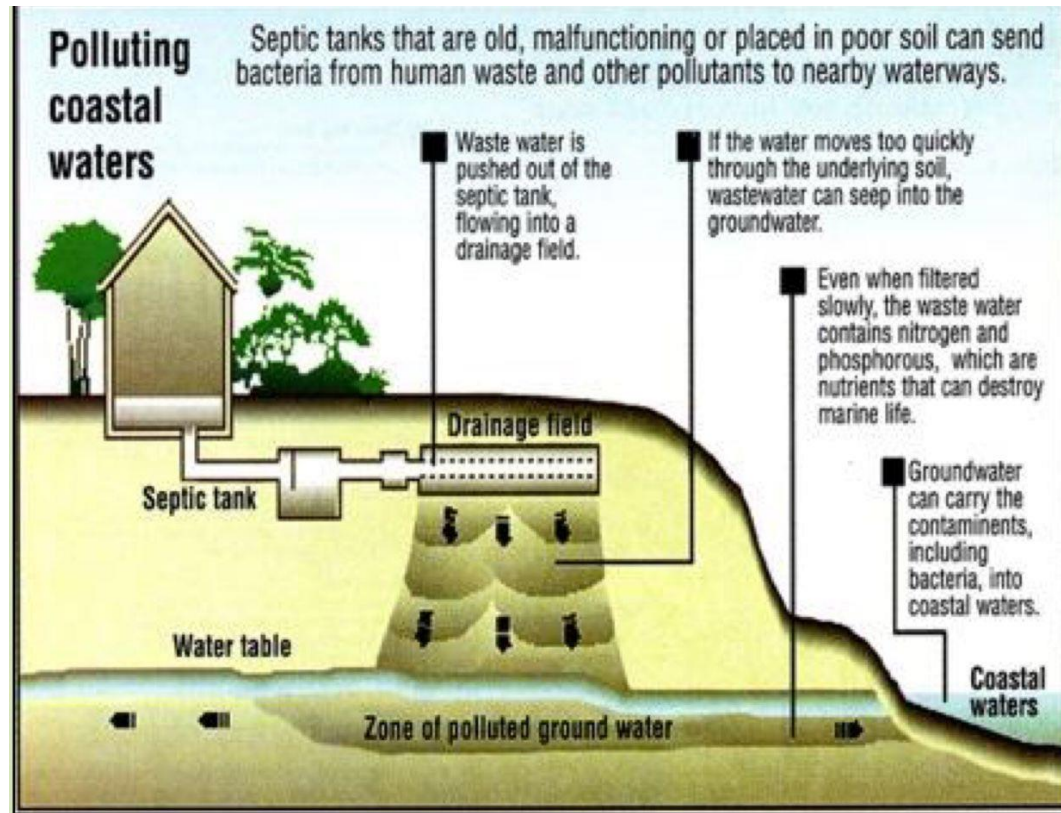


# *Create an effective local water quality monitoring program*

## Outcomes:

- Waterways in, and adjoining the estuary, get sampled
- Analysis is performed using state standards as the criteria for acceptable levels of nutrients
- Someone in authority looks at the results and makes decisions about action to be taken
- Reports are generated and distributed so the public can be assured our interests are being served

# *Eliminate Septic systems*



- Florida soils and geography unsuitable for septic tanks
- Responsible for over 2/3 water quality issues
- Replace septic systems with sewers
  - Anywhere near waterway
  - Benefits ALL, funded by ALL residents and businesses

# *Eliminate Nutrient Runoff*



Almost every drop of rain or irrigation either

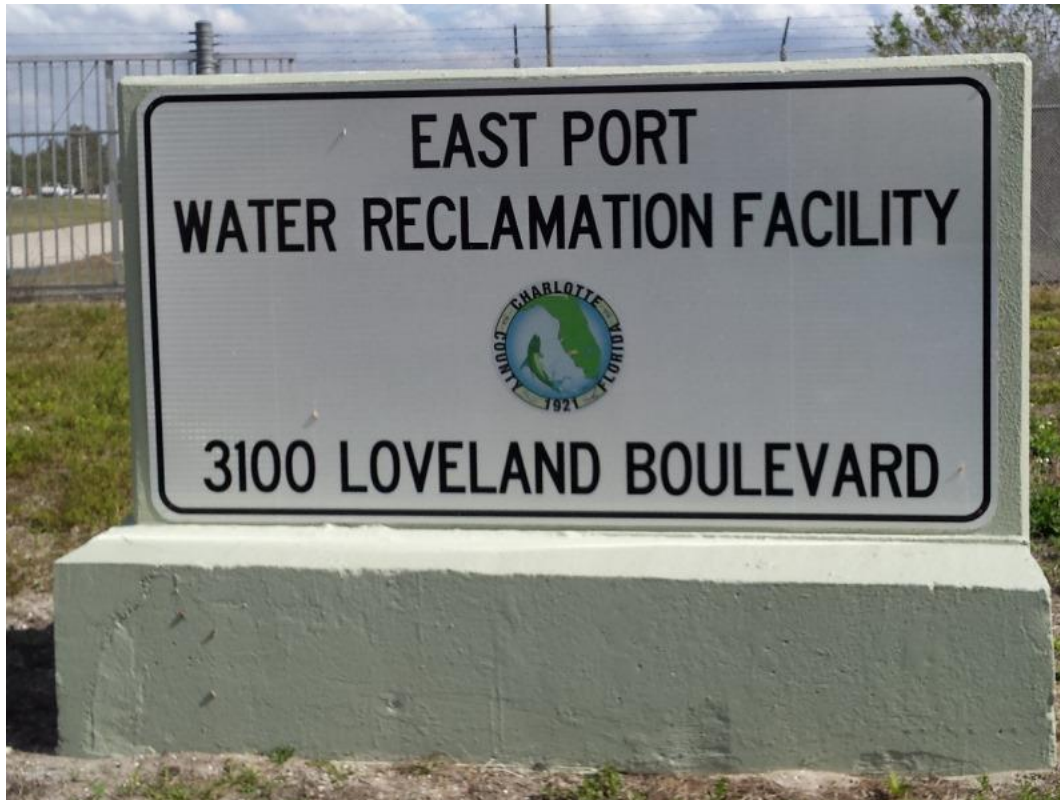
- Goes into ground (good), or
  - Becomes runoff carrying nutrients to our waterways (bad)
- Stormwater budget
  - Eliminate untreated agricultural runoff

# *Native landscapes*



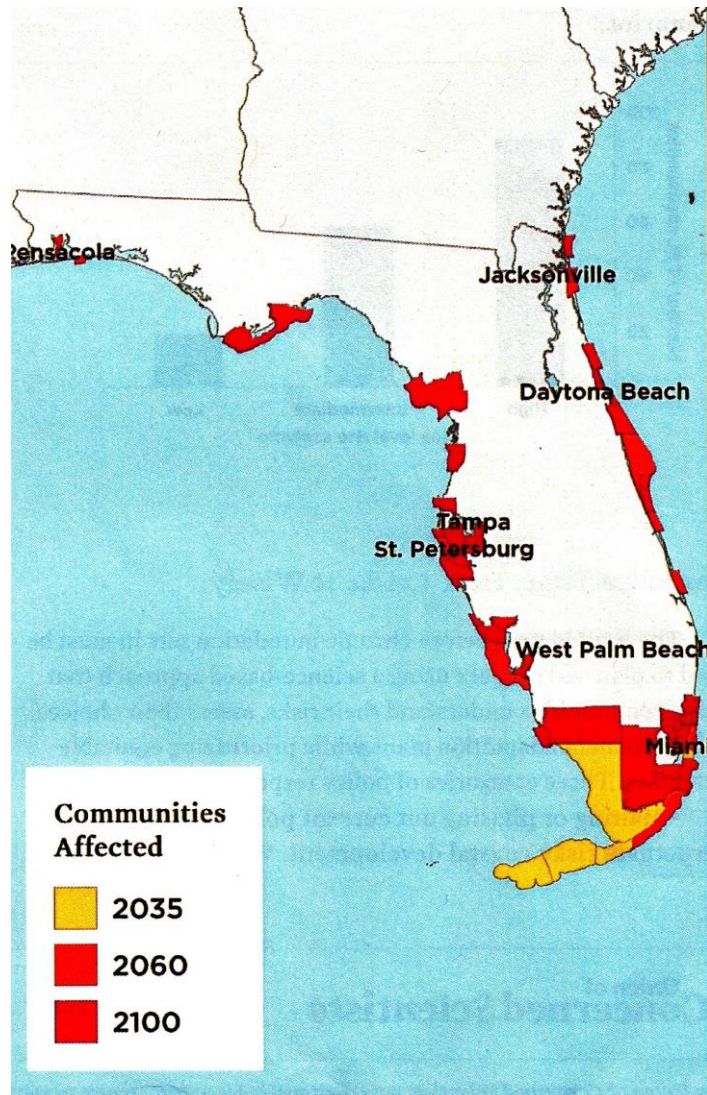
- Native landscapes don't use fertilizers (nutrients) or irrigation (which becomes runoff).
- Beyond plants: permeable surfaces
- Sequester carbon
- Extension office - Florida Friendly Landscape program

# *Upgrade reclaimed water*



- Using water more than once: important conservation concept
- Reclaimed water can retain high levels of nutrients which
  - If absorbed by lawn, garden, farm - good
  - If runs into canals and adjacent waters is bad
- Advanced water treatments remove all nutrients

# Mitigate climate change



- County's comprehensive plan 2021: must account for sea level rise and climate change
- Adaptive mitigation proposal: draws down excess carbon while helping residents adapt to changing climate





# What's a concerned citizen to do?

## Action in own sphere

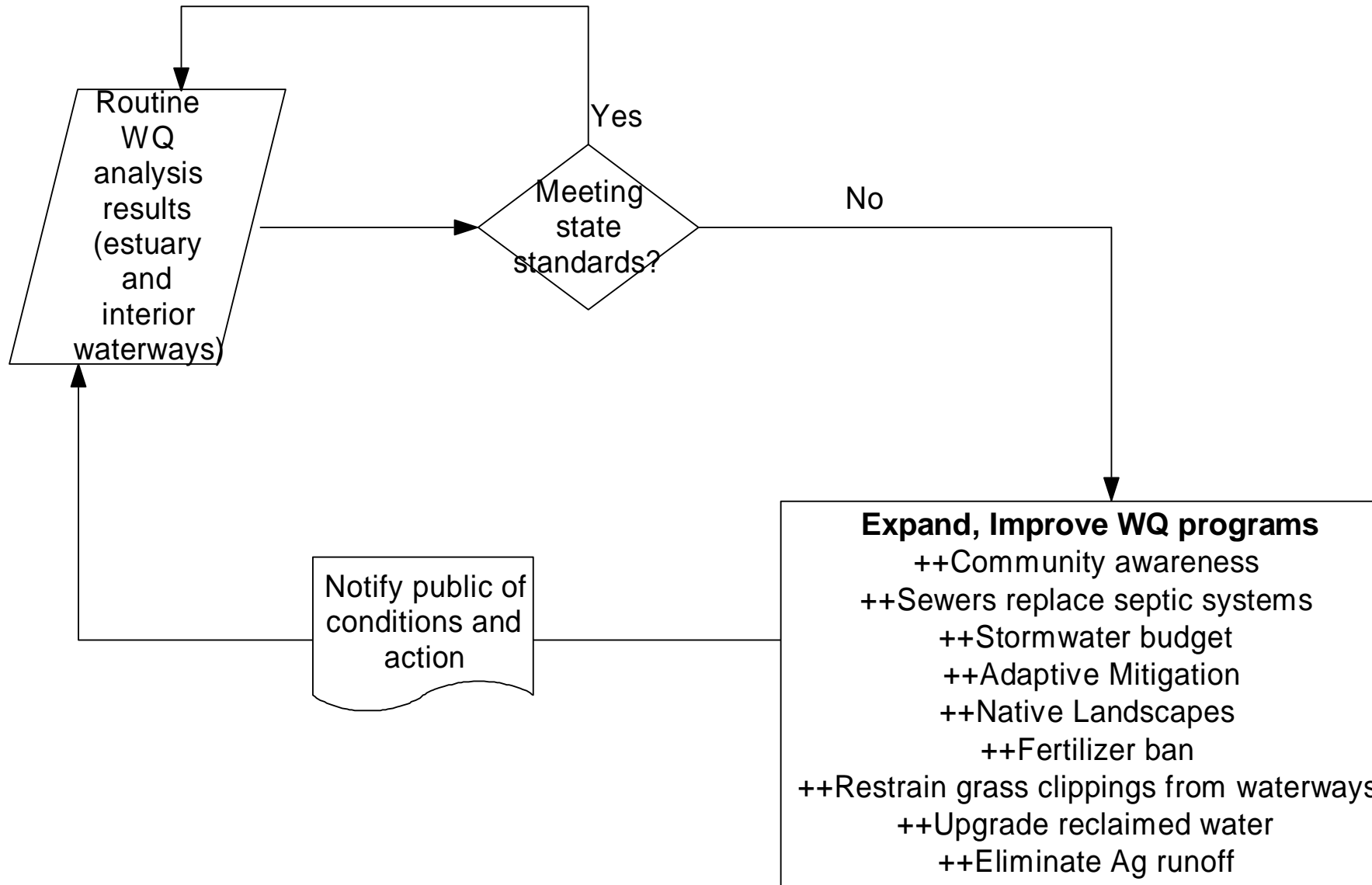
- Awareness
- Native and permeable landscapes

## Act as community

- Awareness
- Lift requirements that create nutrient runoff
- Enlightened developments

## Influence government

- Replace septic with sewers, fund with community wide tax
- Expand and upgrade re-claimed water
- Development plans: stormwater budgets and adaptive mitigation
- Fertilizer bans, enforced
- Landscape codes



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- Charlotte Harbor proper:

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- Lemon Bay Basin:

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