Local Estuary Water Quality: challenges, solutions

Soil and Water Conservation District Board of Supervisors
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Its all about the Estuary (Tidal Myakka River shown here)

- Where freshwater and saltwater mix, brackish water
- Valuable habitat for nursery fisheries
- Economic and lifestyle value – recreational fishing, seafood, boating, birding, aesthetics

Threat 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 2/3of Florida's water quality problems
- Nutrient runoff Residential and Agricultural

- Red tide naturally occurring, but can be fueled by ag and residential nutrients
- Warming climate makes matters worse – forecast: a Boom in Blooms

Problem in the Making

FWC Fisheries Local Field Lab

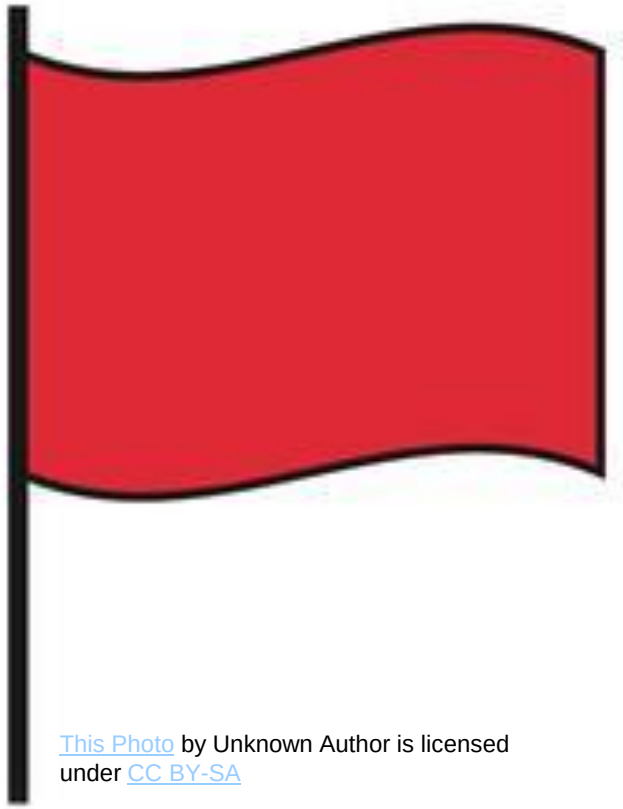
- Fish resilient to “disturbances” (hurricanes, cold spells, red tide)
- Not resilient to consistently stressful environment
- Similarities Indian River Lagoon and Charlotte Harbor

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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Action/Solutions

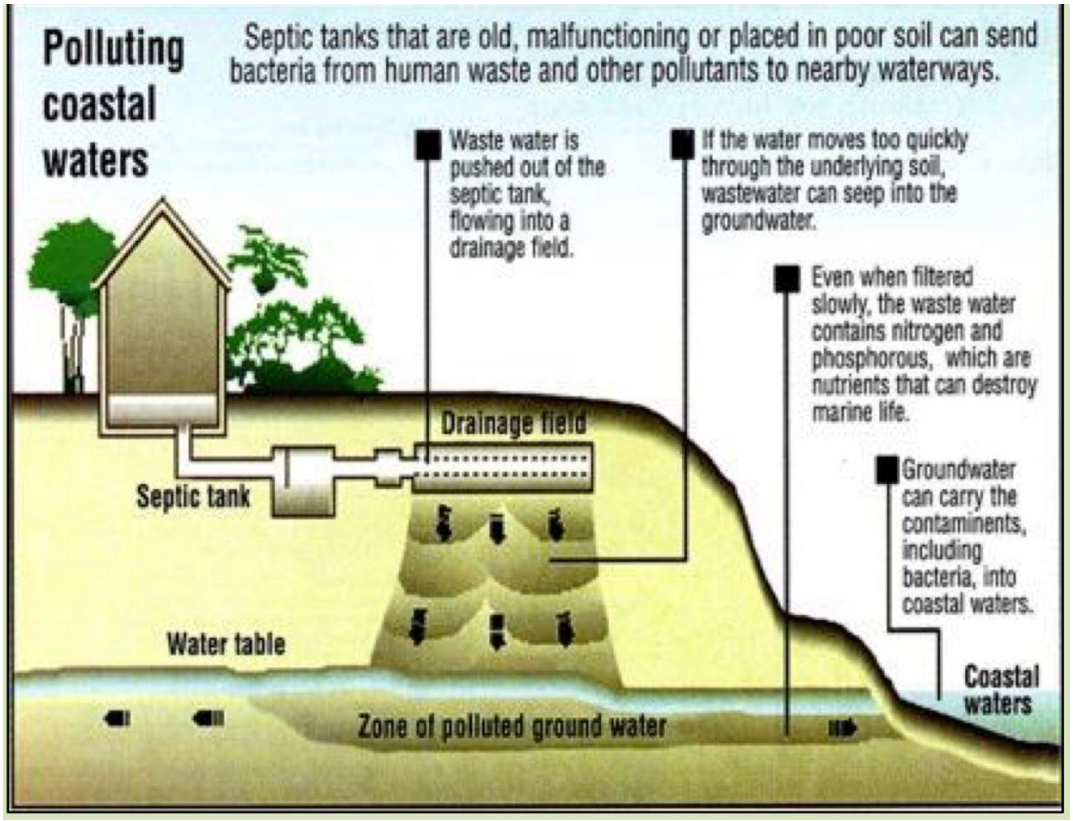
- ***Create an effective local water quality program***
- ***Eliminate Septic systems***
- ***Eliminate runoff***
- ***Native landscapes***
- ***Upgrade reclaimed water***
- ***Mitigate climate change***

Create an effective local water quality program

Outcomes:

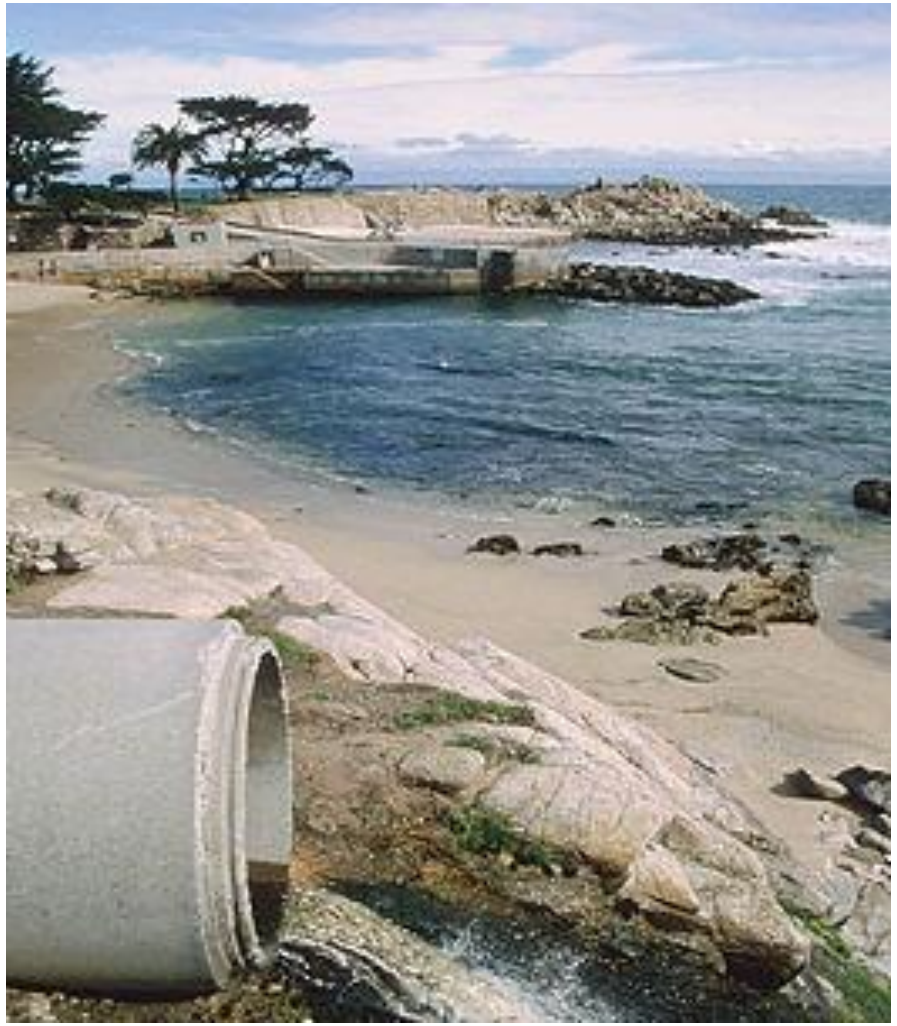
- Waterways in, and adjoining the estuary, get sampled
- Analysis is performed using state standards as the criteria for acceptable levels of nutrients
- Someone in authority looks at the results and makes decisions about action to be taken
- Reports are generated and distributed so the public can be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

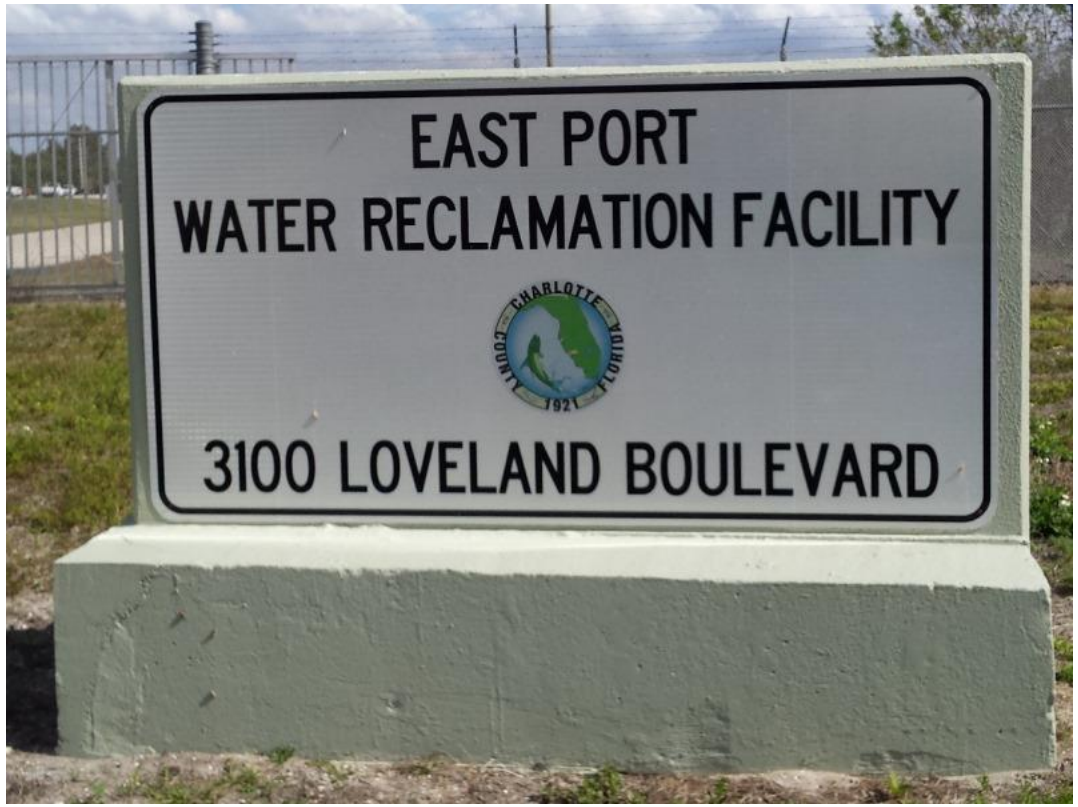
Native landscapes

Native landscapes don’t use fertilizers (nutrients) or irrigation (which becomes runoff).

Sequester carbon

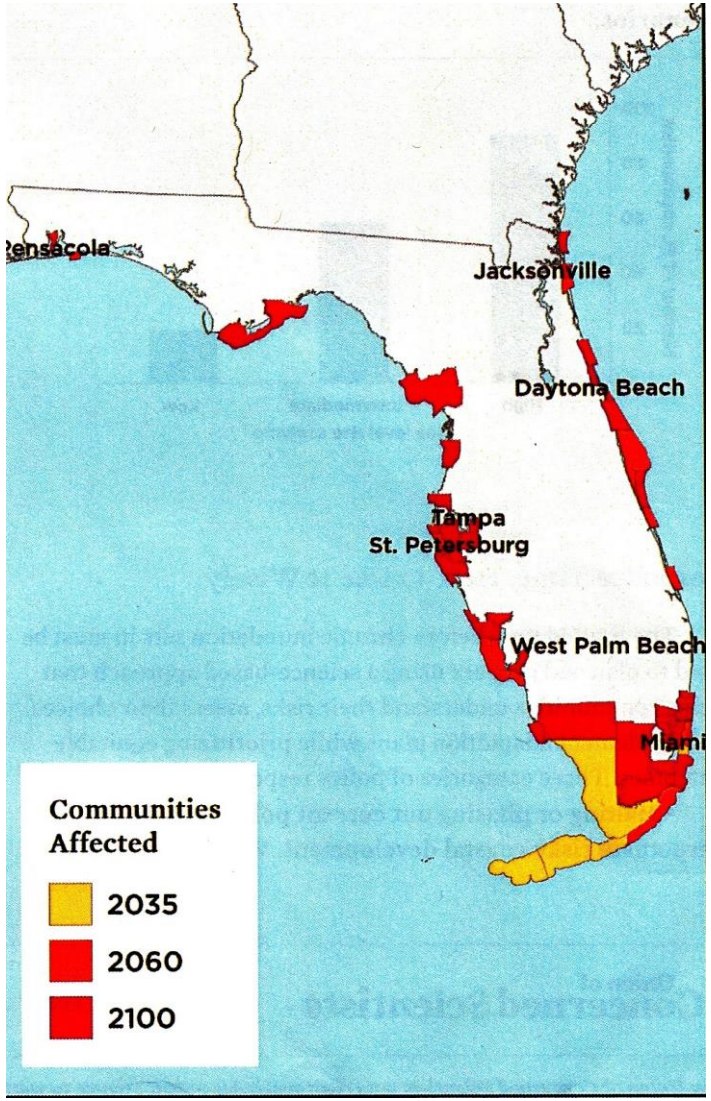
Extension office - Florida Friendly Landscape program

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

Safeguard and Preserve our Estuary

Water Quality Evaluation

- Do it in estuaries– Charlotte Harbor, Tidal Myakka River, Lemon Bay, PLUS internal waterways
- Analyze it
- Report to public
- Act proactively

- Eliminate septic systems
- Stormwater budgets
- Eliminate ag runoff
- Native landscapes, pervious walks, driveways, rain barrels, mulch
- Upgrade and expand reclaimed water
- Adaptive Mitigation

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