



# BISCAYNE BAY REASONABLE ASSURANCE PLAN: A PLAN TO RESTORE THE HEALTH AND RESILIENCE OF BISCAYNE BAY



Pamela Sweeney - Senior Manager

Division of Environmental Resources Management (DERM)

SFRPC | February 28, 2025



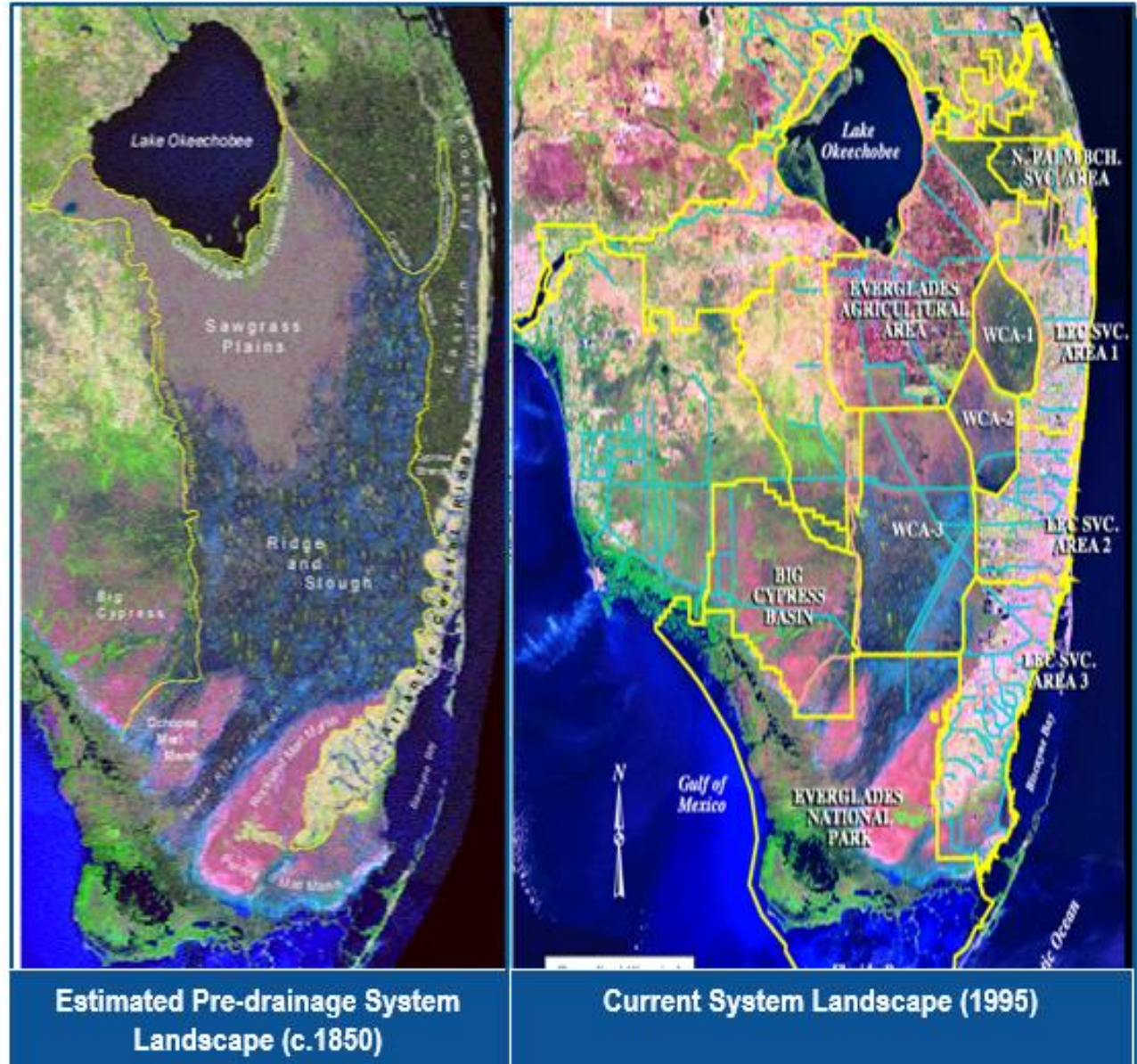
# AGENDA

- Brief Overview of Biscayne Bay
  - Natural History
  - Management
- Why a Reasonable Assurance Plan?
  - What is the state of Biscayne Bay health?
  - What compliance issues are we facing?
- What is a Reasonable Assurance Plan?
  - What options do we have to address our issues?
  - How is this effort being coordinated?
  - What role do stakeholders play in development and implementation of the RAP?
  - Benefits & Commitments
- Q&A

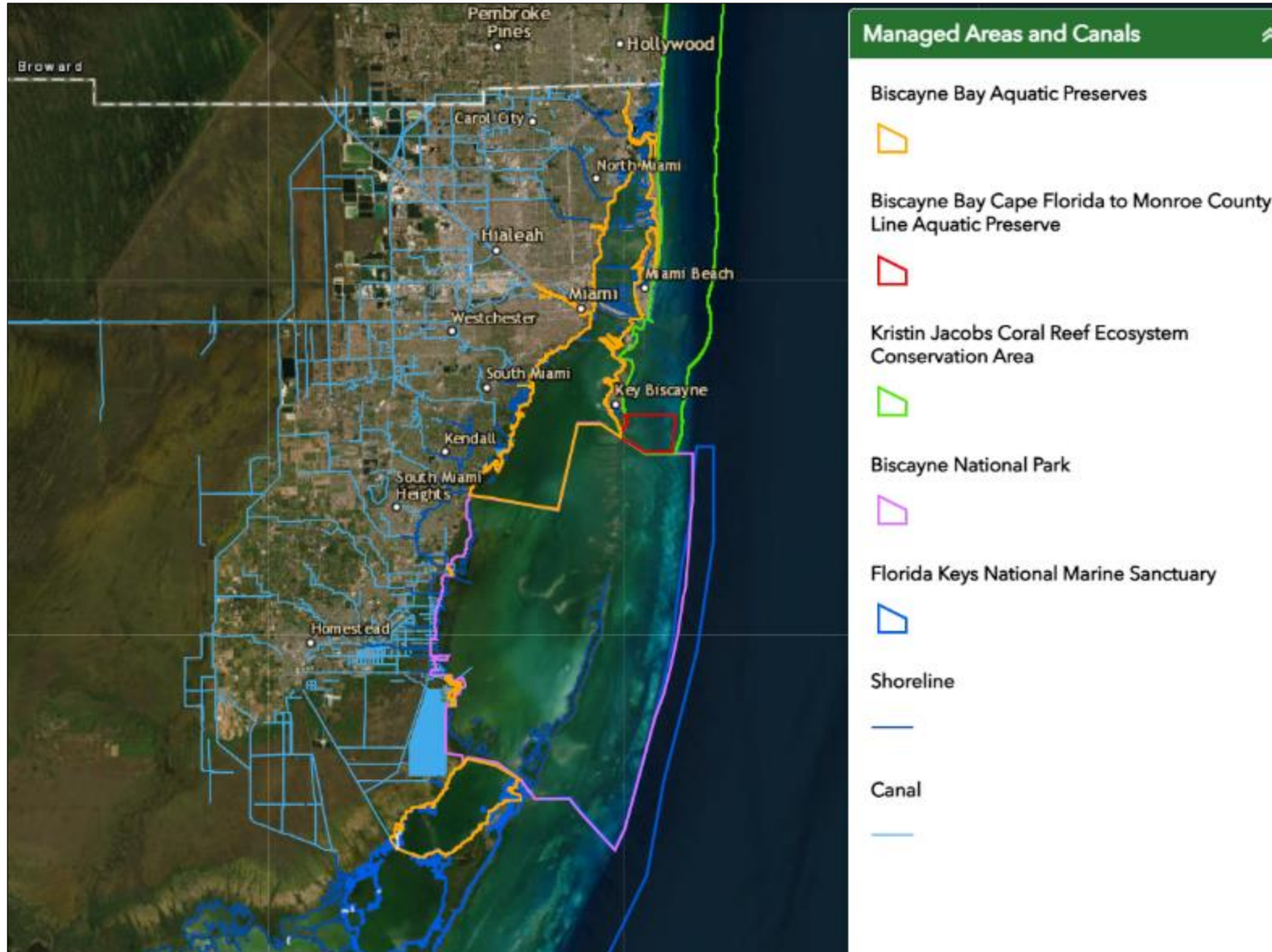


# NATURAL HISTORY OF BISCAYNE BAY

- Kissimmee-Okeechobee-Everglades watershed originally drained ~ 18,000 square miles of land
- “Watershed is an area of land that drains to a common endpoint.” (UF-IFAS)
- Water-dominated “River of Grass” (*Pa-hay-okee*)
- Biscayne Bay was formed between 5,000 – 2,400 years ago
- Diverse flora and fauna
- Nutrient poor (oligotrophic) system
- Abundant water supply, providing sheetflow to the coast

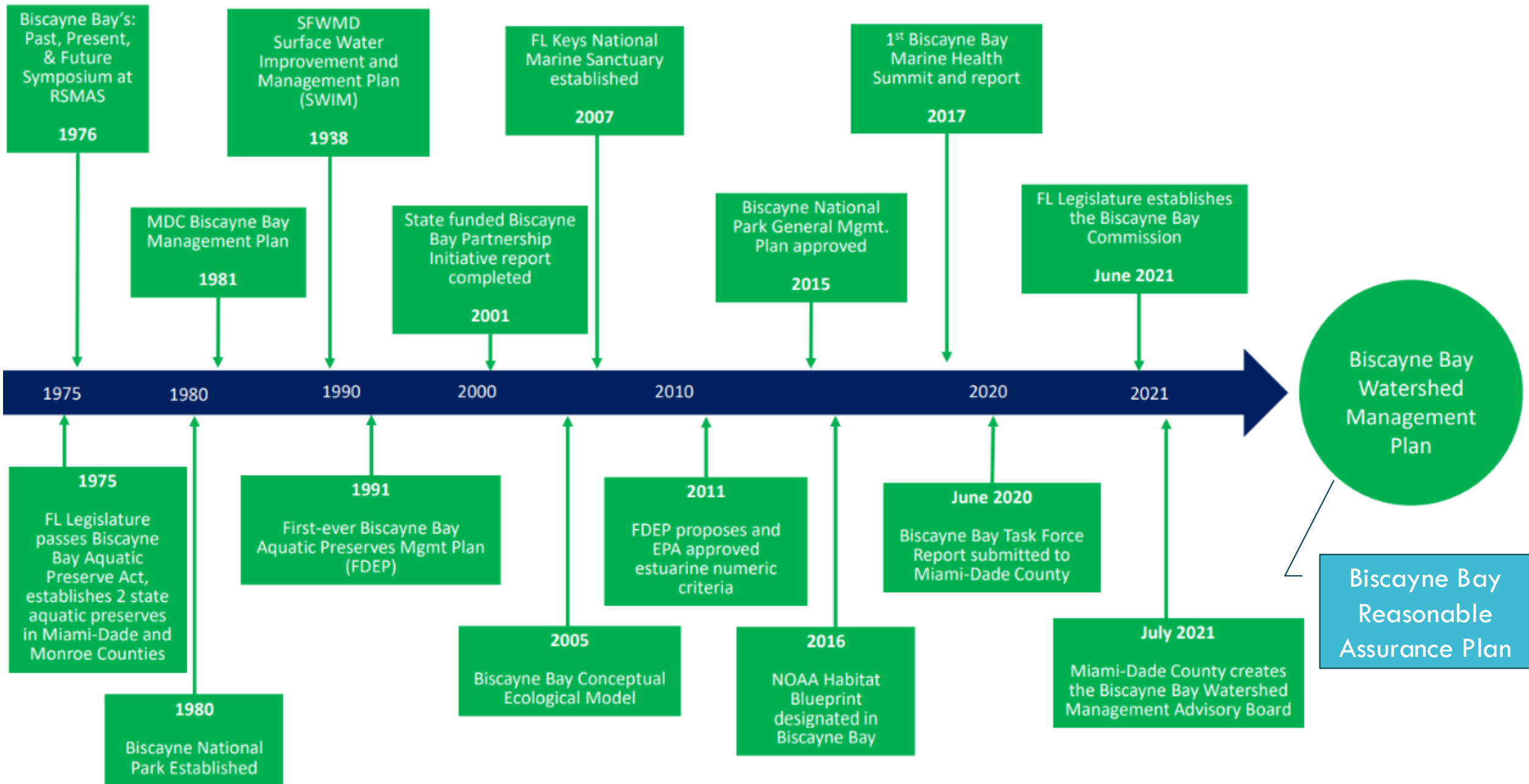


# MANAGEMENT OF BISCAYNE BAY



Miami-Dade County DERM long-term ambient monitoring includes:

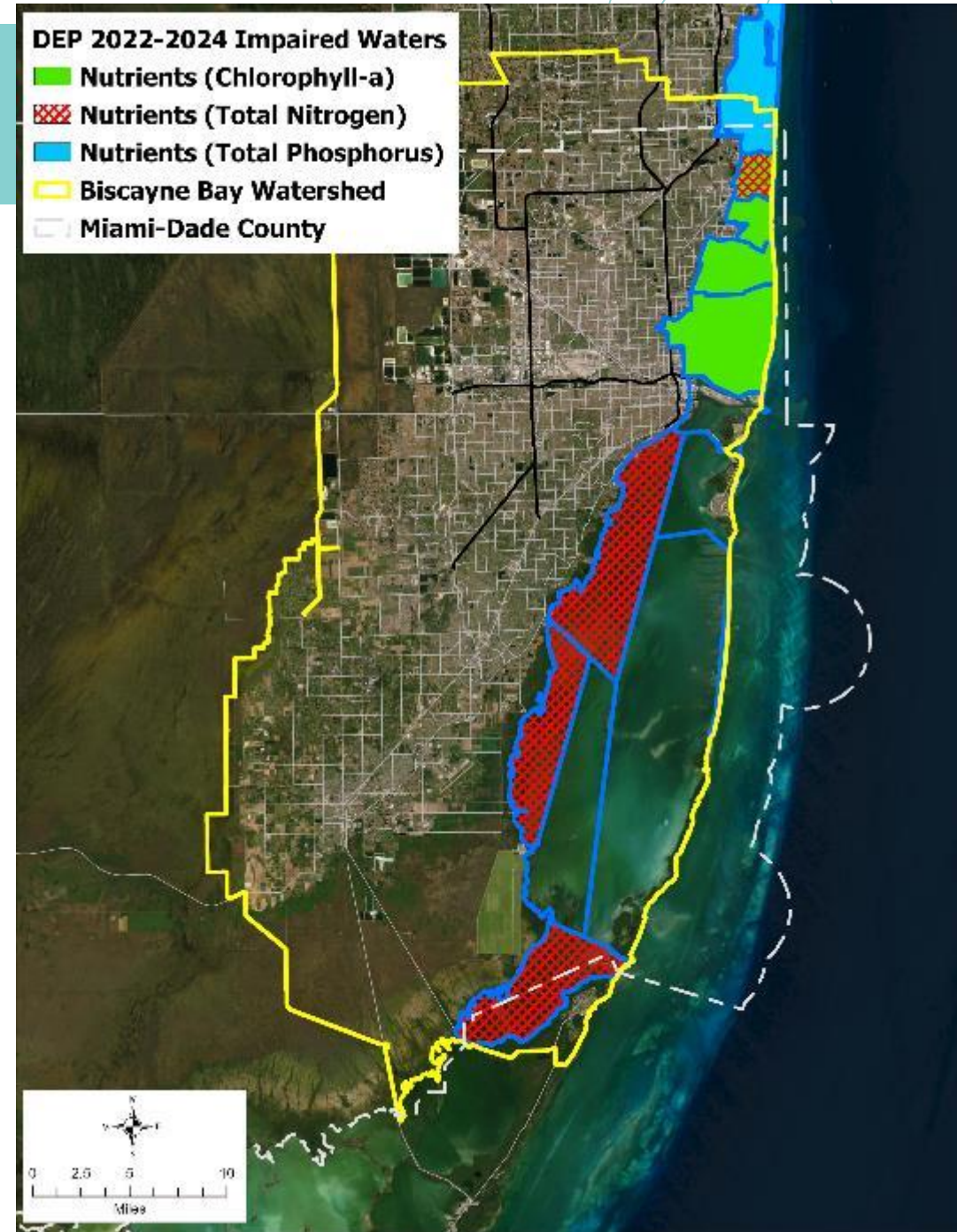
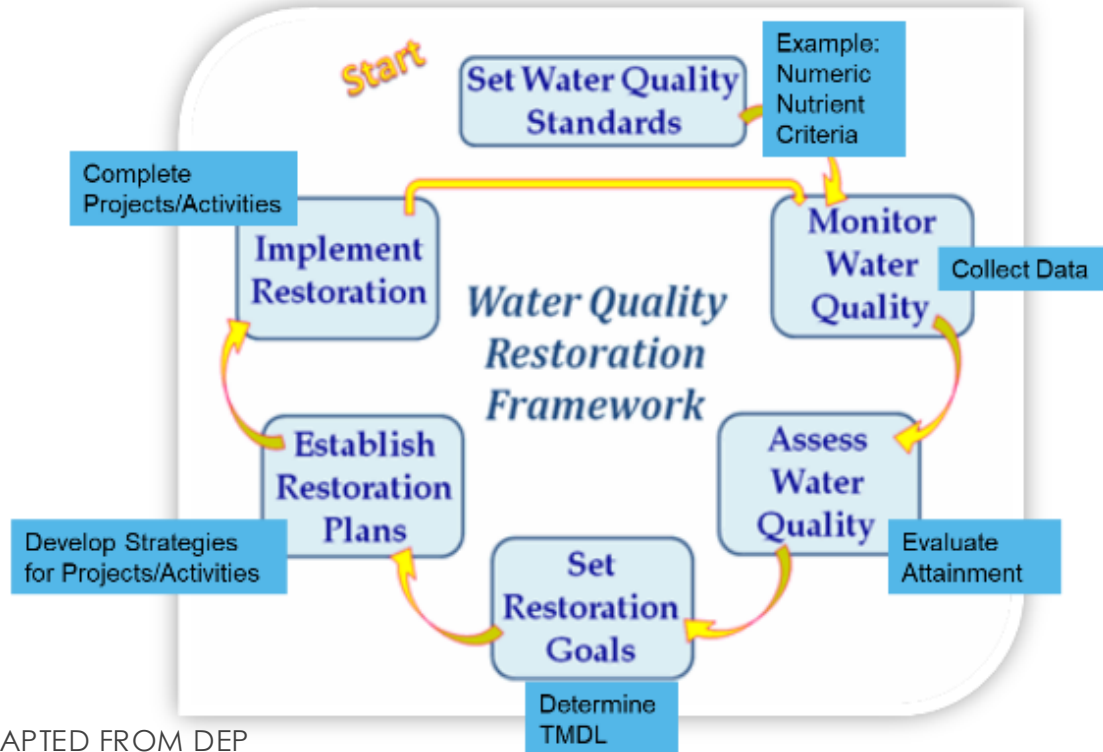
- Surface water and groundwater monitoring
  - 137 surface water sites
- Habitat monitoring
  - Over 450 submerged aquatic vegetation monitoring sites



# ASSESSING WATERBODIES - FLORIDA DEP

## IDENTIFYING & ADDRESSING IMPAIRED WATERS

- State and Federal Legislation
  - Section 303(d) of the Federal Clean Water Act
  - Impaired Waters Rule (IWR), Ch. 62-303, F.A.C.
  - Surface Water Quality Standards, Ch. 62-302, F.A.C.
  - Florida Watershed Restoration Act, Ch. 403.067, F.S.
- Class III Waters: Fish Consumption, Recreation, Propagation and Maintenance of a Healthy, Well-Balanced Population of Fish and Wildlife



# 2024 BISCAYNE BAY REPORT CARD


## Status of Biscayne Bay Health

**Biscayne Bay Report Card 2024**

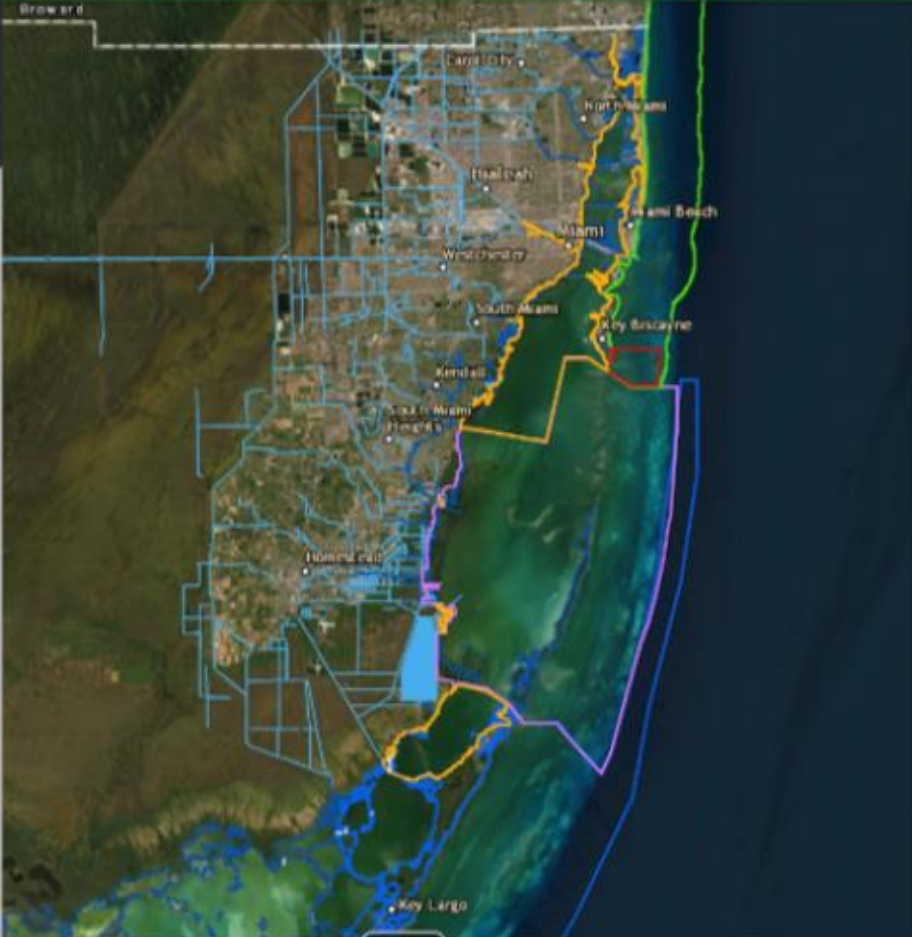
MDC Biscayne Bay

Overview Water Monitoring Habitat Monitoring Biscayne Bay Report Card 2024 Restoring Biscayne Bay Combined Water Quality Total Phosphorus Total Nitrogen Chlorophyll\_a

Biscayne Bay Report Card 2024 - Overview



*"Biscayne Bay is both the blue heart of our county and an economic powerhouse, generating \$64B of economic value each year. Protecting our Bay not only increases the quality of life for our residents, serving as an aquatic playground for local boaters,*



**Managed Areas and Canals**

- Biscayne Bay Aquatic Preserves
- Biscayne Bay Cape Florida to Monroe County Line Aquatic Preserve
- Kristin Jacobs Coral Reef Ecosystem Conservation Area
- Biscayne National Park
- Florida Keys National Marine Sanctuary
- Shoreline
- Canal

# STATUS OF THE HEALTH OF BISCAYNE BAY

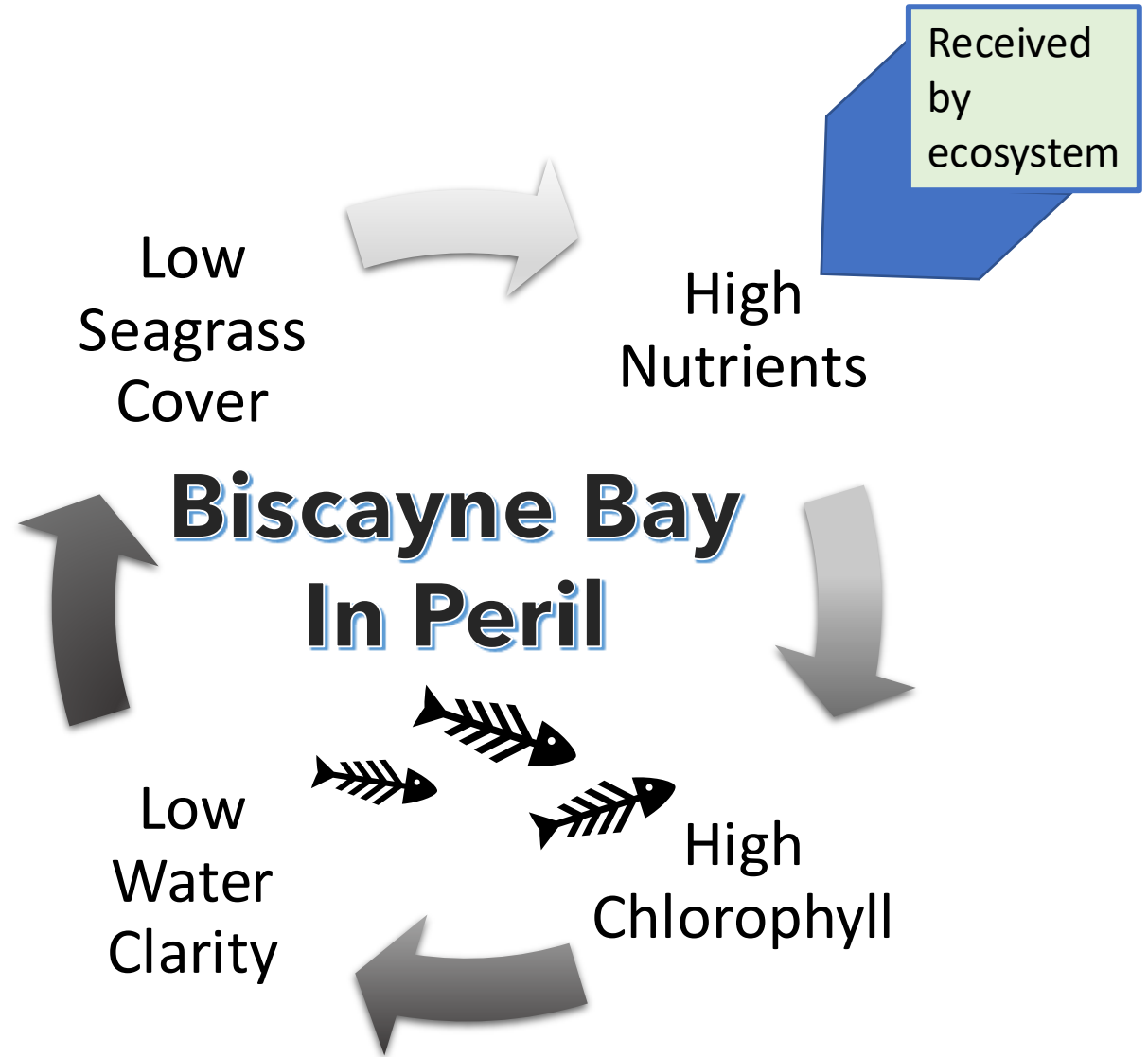
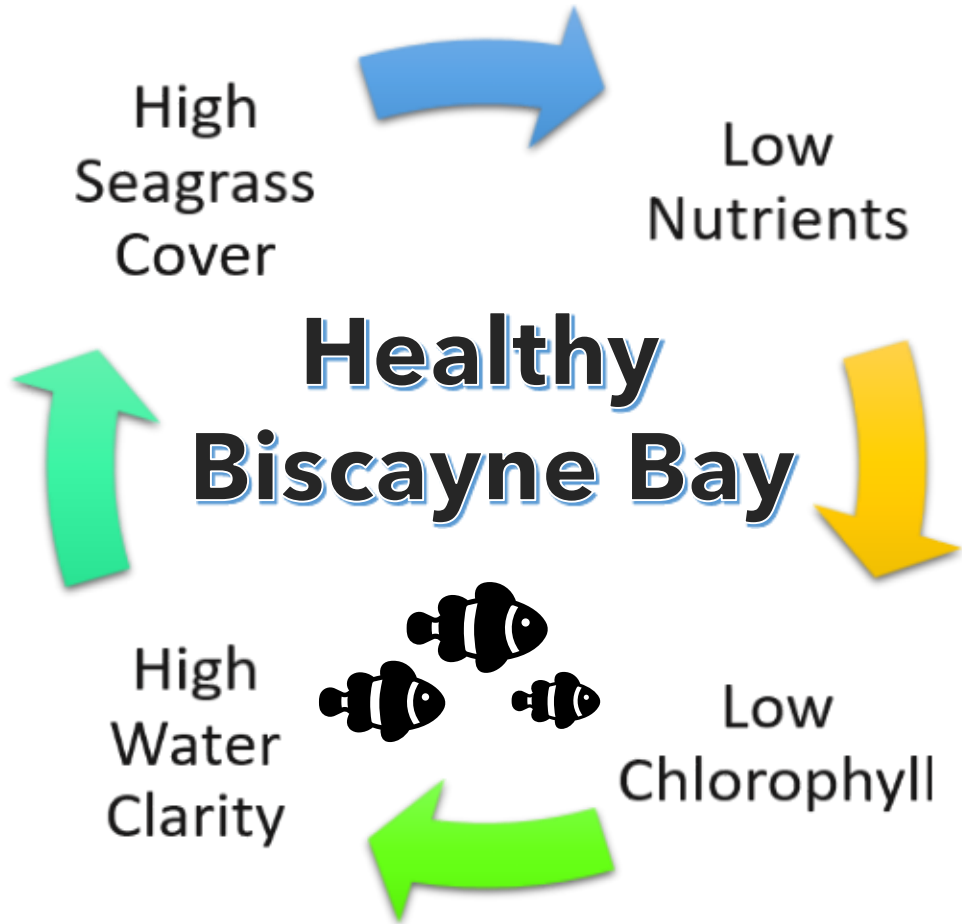
Biscayne Bay Report Card 2024

Chlorophyll-a

Total Phosphorus

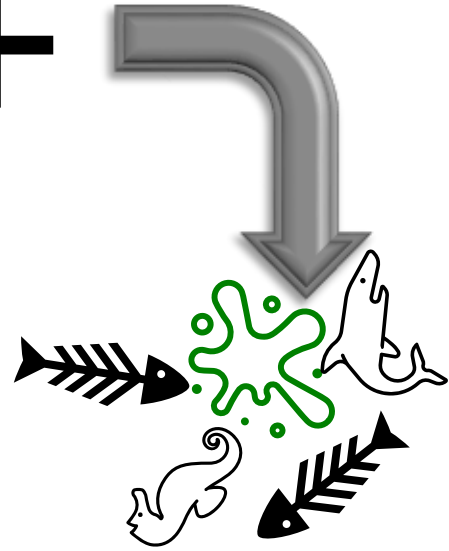
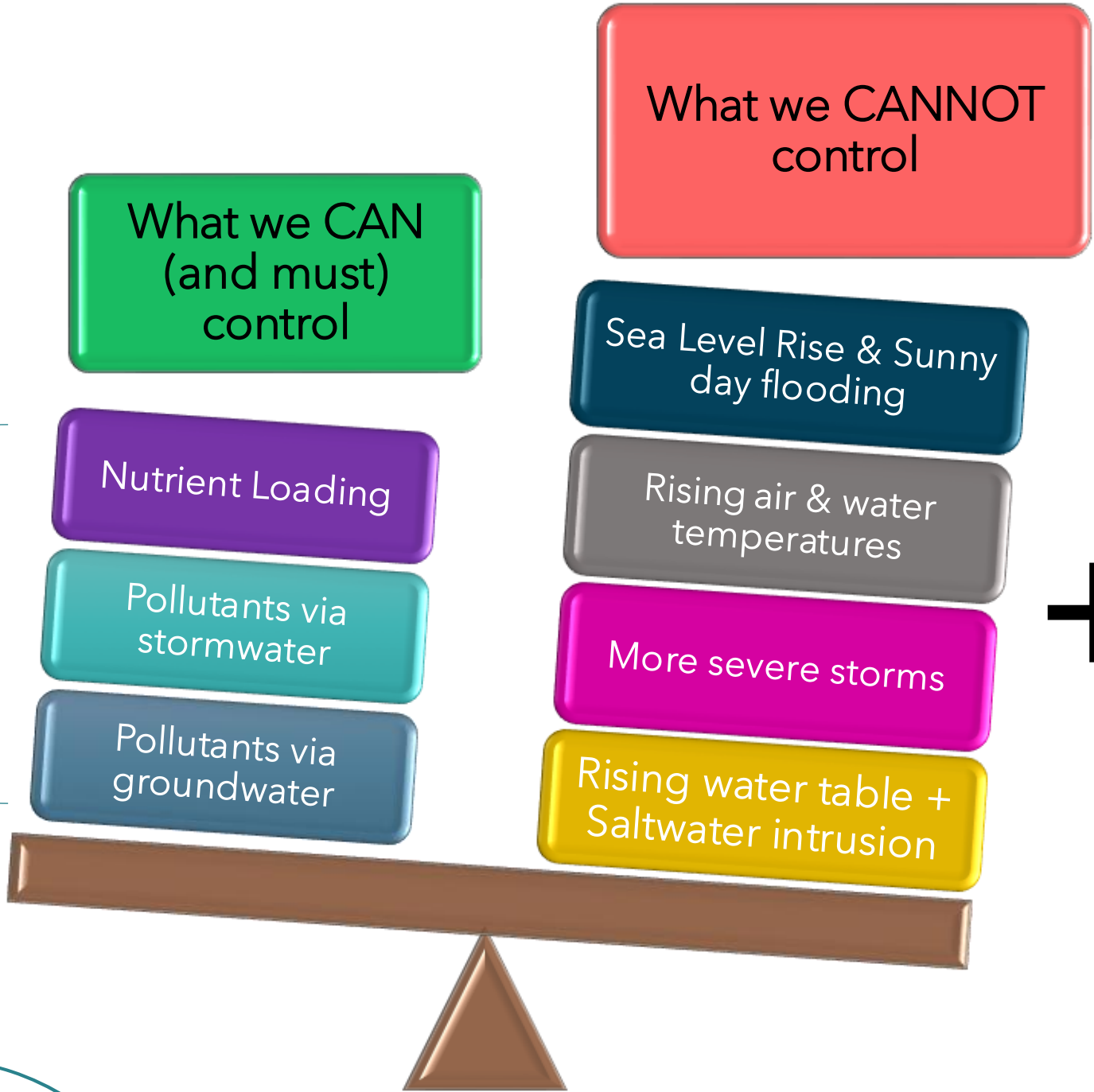
Total Nitrogen





# BISCAYNE BAY RESILIENCE AND THE RAP

What we DO Control:  
- Flooding  
- Erosion



Julia Tuttle Basin, 5/31/2017 – Southwest Direction

2020 Fish Kill – North bay



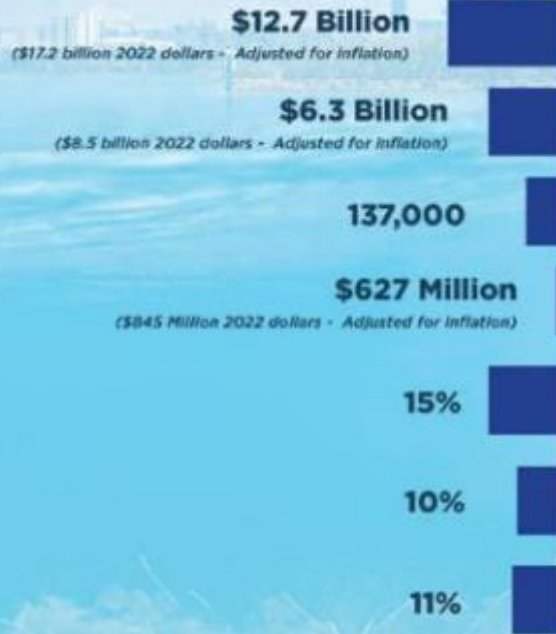
2020 Algal Bloom – North bay canals





# Comparison - 2005 to 2023 Biscayne Bay Economic Study

**2004 Annual Economic Contributions**  
(2004 Dollars)



*(\$17.2 billion 2022 dollars - Adjusted for inflation)*

*(\$8.5 billion 2022 dollars - Adjusted for inflation)*

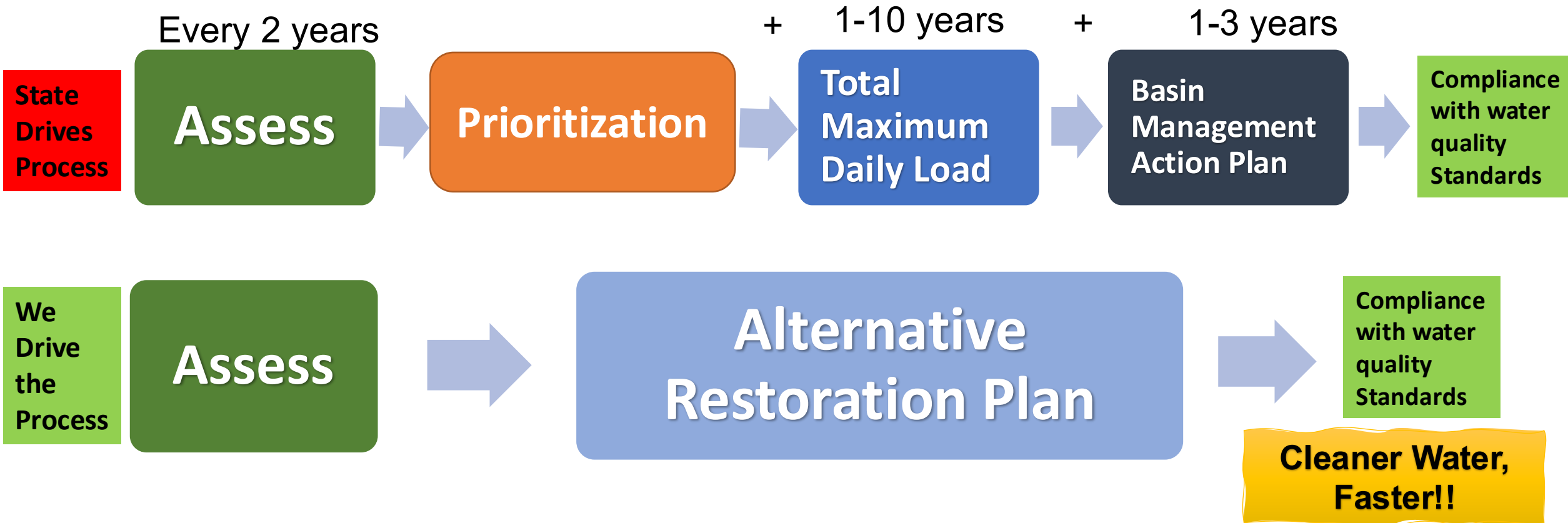
*(\$845 Million 2022 dollars - Adjusted for inflation)*

**2022 Annual Economic Contributions**  
(2022 Dollars)





# Pathways to Restoration



Both pathways have the same goal:  
Water Quality Restoration

# WHAT ARE THE ELEMENTS OF A RAP?

- Description of the impaired waterbody and water quality and aquatic ecological goals
- Determine appropriate water quality target for pollutant reductions
  - Chlorophyll-a and nutrients - nitrogen & phosphorus
- Determine method to assign stakeholder loadings
- Estimate load reductions that are needed to attain water quality standards
- Identify completed, ongoing, or planned projects to address pollutant sources and develop schedule for implementation
- Engage stakeholders and broader public
- Provide assurance of funding sources for projects
- Develop monitoring plan to measure progress
- Provide a commitment to take additional actions if the planned activities do not adequately address the impairment



THE PROCESS WILL IDENTIFY NUTRIENT REDUCTIONS NEEDED TO REDUCE LOADING (POINT SOURCE & NON-POINT SOURCES)

# Why is Miami-Dade County Coordinating the RAP Effort?

---

- Commitment from Mayor Levine Cava and Board of County Commissioners'
  - Taking on expense of technical lift required to fulfill RAP requirements
  - Rather than trying to share costs for RAP development, stakeholder focus can be placed on project implementation
- Outcomes from Biscayne Bay funding for innovative projects
- NPDES permit holder with 32 co-permittees



# Benefits of a RAP



## STAKEHOLDER DRIVEN

- Local entities control the pathway to restoration
- Develop a plan prior to state or federal action
- Collaborative



## ENHANCES PUBLIC RELATIONS

- Support from elected officials
- Support from non-governmental organizations
- Greater understanding of the significance of your efforts



## FASTER PATH TO RESTORATION

- Minimizes regulatory process
  - Reduces time it takes to get to “Cleaner Water, Faster”
- \* Statutory protections that support restoration (e.g., state rules requiring advanced wastewater treatment)



## FUNDING OPPORTUNITIES

- Several state and federal funding sources prioritize those waterbodies with a BMAP or RAP

# Commitments of a RAP



## PROJECT IMPLEMENTATION

- Forecasting and completing projects
- Monitoring for improved Bay health



## FUNDING PROJECTS

- Municipal-level funding
- State and Federal funding
- Partnerships with the County and fellow municipalities



## MEETING NUTRIENT ALLOCATIONS

- Agreeing to abate nutrient loading with projects based on quantifiable loads
- Prepared to be part of the solution



## COLLABORATION

- Remain engaged with the County, fellow municipalities and other stakeholders



# SUMMARY

- Biscayne Bay segments designated impaired by the State for nutrients (TN, TP) and chlorophyll
  - This means Biscayne Bay is not attaining standards to protect its designated uses as Class III Waters.
- Impairments are addressed through establishing either a TMDL & BMAP (state directed) or an Alternative Restoration Plan, like a RAP (voluntary)
- RAPs are adopted by final order of the Secretary of DEP
- For RAP approval by DEP and EPA, we must demonstrate that we can meet nutrient reduction goals through projects and policies.
  - **The RAP will only provide reasonable assurance to the extent we work together to provide it.**
- **An approved RAP to review:**
  - [Mosquito Lagoon Reasonable Assurance Plan \(RAP\) | Florida Department of Environmental Protection](#)
- **Stay tuned:**
  - [Biscayne Bay Watershed Management Advisory Board \(County\)](#)
  - [Biscayne Bay Commission \(State\)](#)



THANK YOU!

PAMELA.SWEENEY@MIAMIDADE.GOV  
[www.miamidade.gov/BiscayneBay](http://www.miamidade.gov/BiscayneBay)

Concerned? Report it: [Baywatch@miamidade.gov](mailto:Baywatch@miamidade.gov)  
or 305-372-6955



@miamidadeRER

# Biscayne Bay Reasonable Assurance Plan: Reducing Time to Completion

## Leadership

- Strong support of Mayor, Board of County Commissioners, Biscayne Bay Watershed Management Advisory Board (county), Biscayne Bay Commission (state), Stakeholders
- Financial support

## Expertise

- Experience and expertise in RAP development and approval

## Technical Services

- Procurement for technical services through the County's EDP process
  - Modeling
  - Nutrient-reducing project identification

## Coordination & Engagement

- Close coordination with DEP & Milestone Decision Memos
- Engagement with key stakeholders (those who are party to the RAP - municipalities, agencies, industries)
- Engagement with interested parties (academia and agencies, non-governmental organizations, the public at large)

## Key Tasks and Milestones To Date

- Plan of Study (POS)
  - POS outlines the development of the information needed in the RAP and provides an agreed-upon path forward
  - POS Final Draft + DEP Decision Memo
- Procurement of Technical Services
- Meetings with Key Stakeholders
- Meetings with Technical Experts