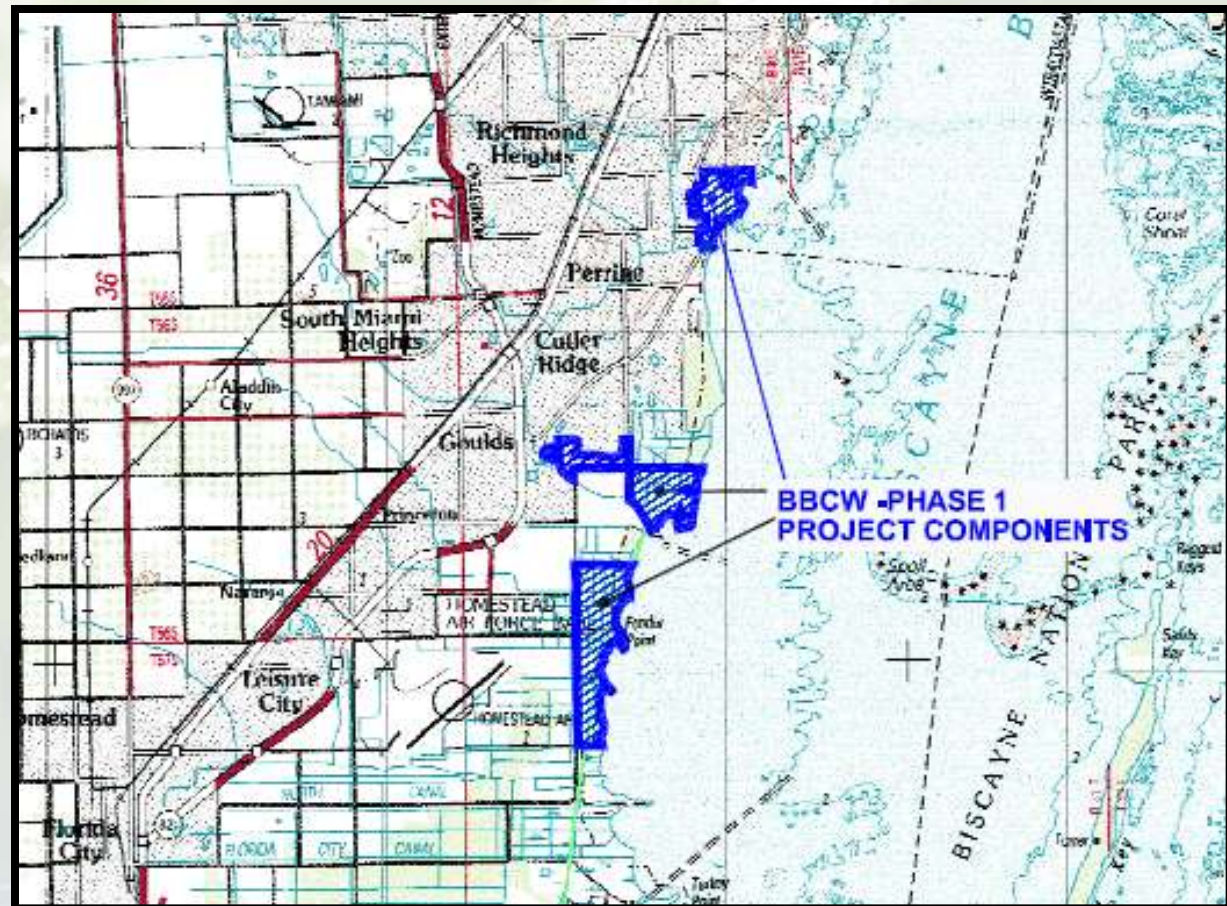
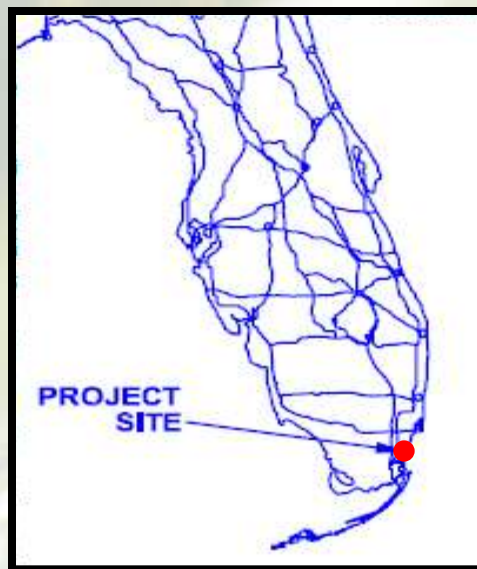




Biscayne Bay Water Resource Rulemaking

Brenda Mills
Lead Planner
Policy and Coordination Department

Location of Biscayne Bay and CERP Project Area



Biscayne Bay

- Ecosystem Characteristics
 - Large system with numerous/diffuse inflow sources
 - Existing hydrology is highly altered, lacks natural wetland transition zone (salinity gradient)
 - Biological resources located within the marine environment of the Bay
 - Ground water flow also an important consideration

Wetland/Tidal Creek Inflow



Florida Bay

Everglades supports large estuarine area.



Biscayne Bay



Biscayne Bay

Estuarine area limited to mangrove fringe and near shore.

Concerns regarding freshwater inflows Biscayne Bay

- Land use changes significantly altered freshwater inflows to Bay
- Projects focus on redistributing existing flows
- Projects to increase flows in some areas
- How to ensure existing and increased freshwater flows are protected from allocation?

Water Resource Protection Rules

- SFWMD implements regulatory directives through rules
- Rules developed through compliance with statutory authority
- Rules have to be
 - Authorized by legislation
 - Can't be arbitrary or capricious



Summary Activities: 2003-2007

- The SFWMD evaluated different approaches to establish rules to protect minimum flows and levels for freshwater entering the Central Biscayne Bay.
 - Initiated studies
 - Held workshops
 - Contacted experts and arranged interviews
 - Compiled bibliography and literature reviews
 - Documented results in series of reports/publications

Summary Activities: 2003-2007, cont

- No clear link between biological resources and (freshwater inflows) salinity were identified to define “significant harm”
- Necessary to establish technical basis for minimum flow and level of freshwater inflows
 - Concerns that “rest of the bay” should be protected
 - Significant harm was not sufficient to protect restoration-type flows
 - SFWMD needs to protect CERP Biscayne Bay Coastal Wetlands project flows to Bay

■

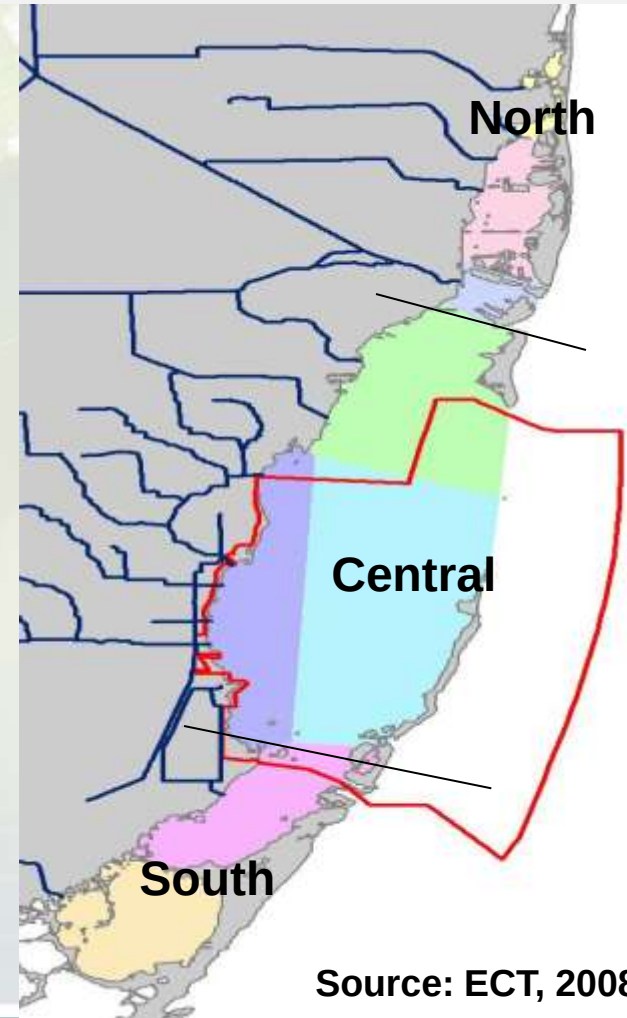
Rule development “Back to the Drawing Board”

- Revised objectives
 - Evaluate surface water flows for entire Bay
 - Protect to higher standard than significant harm threshold
- Assess available science
- Look at other water resource rules to meet objective
 - Minimum flows and levels
 - Restricted allocations
 - Reservation

2008 Activities

- Bay divided into 8 subregions based on water resource attributes
- Developed water budget for each subregion
- Compiled available science linking salinity to biological resources
- Drafted technical summary document and appendices
- Held independent peer review in October 2008 to evaluate existing science linking salinity to biological resources

Biscayne Bay's 8 subregions



Source: ECT, 2008

Focus on Identifying Salinity-Resource Links

- Link between salinity and biological resource is critical. For each subregion,
 - Different resources exist
 - Different ecological functions found – marine vs. estuarine
 - Available science varies
 - No specific resource identified with clear salinity threshold



2008 Peer Review: Key Findings

- Information gaps exist
 - Spatial dynamics and mapping for biological resources
 - Seasonal pattern analyses
 - Finer scale salinity patterns
- Salinity could be an “indicator” to link to biological resource requirements
 - Link between biological resources and salinity not clear for each subregion
- Hypersalinity identified as a “key concern” for Bay
- The Technical Report and Peer Review can be found at:
<http://webboard.sfwmd.gov/default.asp?BoardID=NSTDPR>

Regulatory Tools Available to Protect the Water for Biscayne Bay



- Minimum flows and levels
- Identify point at which further withdrawals will cause “significant harm” to the water resources of the area
- Restrict water use
- Change operation
- Build capital projects

Regulatory Tools Available to Protect the Water for Biscayne Bay

■ Restricted Allocation Area Rules

- Identifies specific geographic areas and canal conveyance systems from which allocations are restricted
- Applicable to natural systems with variable freshwater needs
- Appropriate when higher level of protection than significant harm needed
- Based on scientific linkage and public interest to protect water resource
- Rule is acceptable to Corps to demonstrate water provided by CERP projects is protected

Regulatory Tools Available to Protect the Water for Biscayne Bay

- Areas where Restricted Allocation Area Rules in place
 - Everglades
 - Lake Okeechobee
 - Central Florida
 - Loxahatchee River



Regulatory Tools Available to Protect the Water for Biscayne Bay

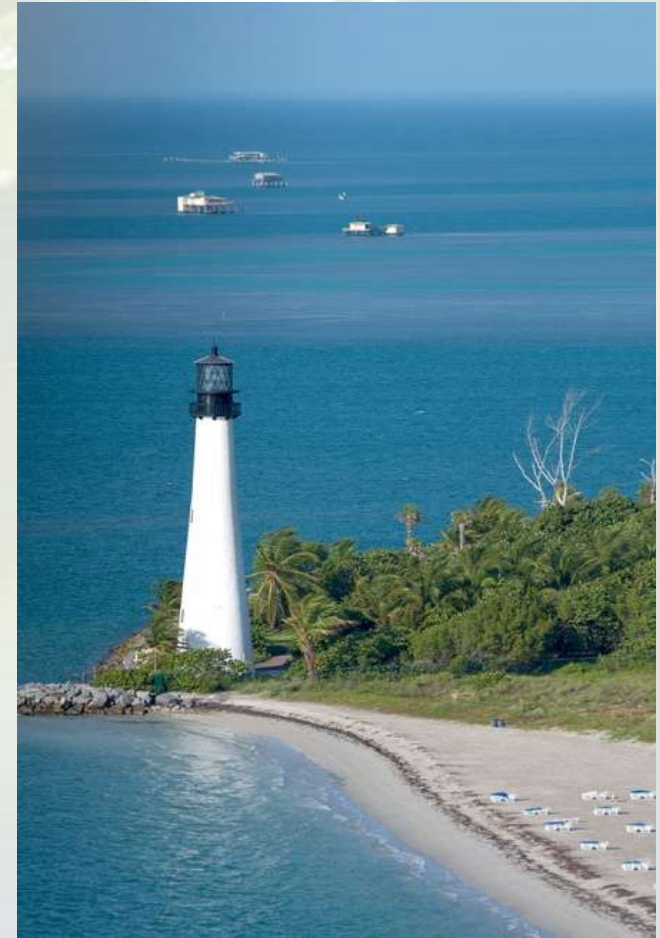


■ Water Reservation

- Restrict water use by reserving water for *protection of fish and wildlife or for public health and safety*
- Existing legal uses protected, unless contrary to the public interest

Regulatory Tools Available to Protect the Water for Biscayne Bay

- Water Reservation
 - Determine if the proposed linkage between hydrology (salinity) and water for fish & wildlife is scientifically sound
 - Can be applied when higher level of protection than minimum flow and level needed
 - Rule is acceptable to Corps to demonstrate water provided by CERP projects is protected



Current Status of Rule Development

- Compiling additional salinity data to understand the location, frequency and duration of hypersaline events
- Gathering additional data about salinity responses of fish and wildlife to identify where in Bay clear link can be established
- Send any new data, reports or publications to: *mhunt@sfwmd.gov*

Next Steps



- Meet with stakeholders to review existing data to support rule development
- Seek direction from Governing Board on rule type(s) to initiate
- Initiate rule development in 2010 per Governing Board direction
- Rule development
 - Public process
 - Governing Board/WRAC direction
 - Rule adoption



Questions