

Canal Water Quality Restoration in the Florida Keys: One More Piece of the Puzzle in the Overall Restoration of South Florida

George Neugent – Monroe
County Commissioner

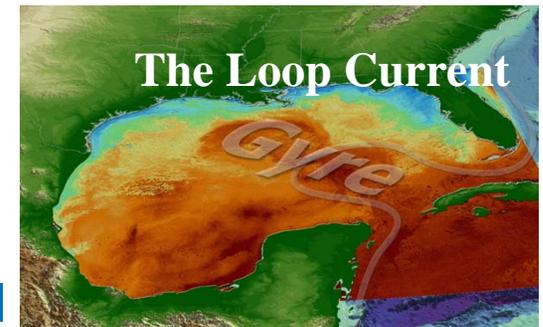
Mike Forster – Islamorada Village
of Islands Councilman

Gus Rios – Environmental
Administrator FDEP South
District Marathon



South Florida Ecosystem

1. Complex network extending from the Chain of Lakes south of Orlando to the coral reefs off the Florida Keys
2. Special designation areas including Florida Outstanding Waters, a National Marine Sanctuary, and numerous state and federal parks, preserves, and wildlife refuges
3. All of these special areas are interconnected
4. The health of the Florida Keys waters is an integral part of the overall health of the South Florida Ecosystem



Clean Water is Critical to the Economy of the Florida Keys and South Florida

1. The **coral reef tract** in the Florida Keys is the third largest barrier reef in the world, and the only living barrier reef adjacent to continental US
2. More than **two million individuals per year** visit the **Florida Keys** to enjoy water related activities, including snorkeling, diving, and fishing
3. These water related activities support **70 percent of tourism** in the Florida Keys
4. The Florida Keys reef environment generates more than **70,000 jobs** and **\$6 billion dollars** in economic activity annually



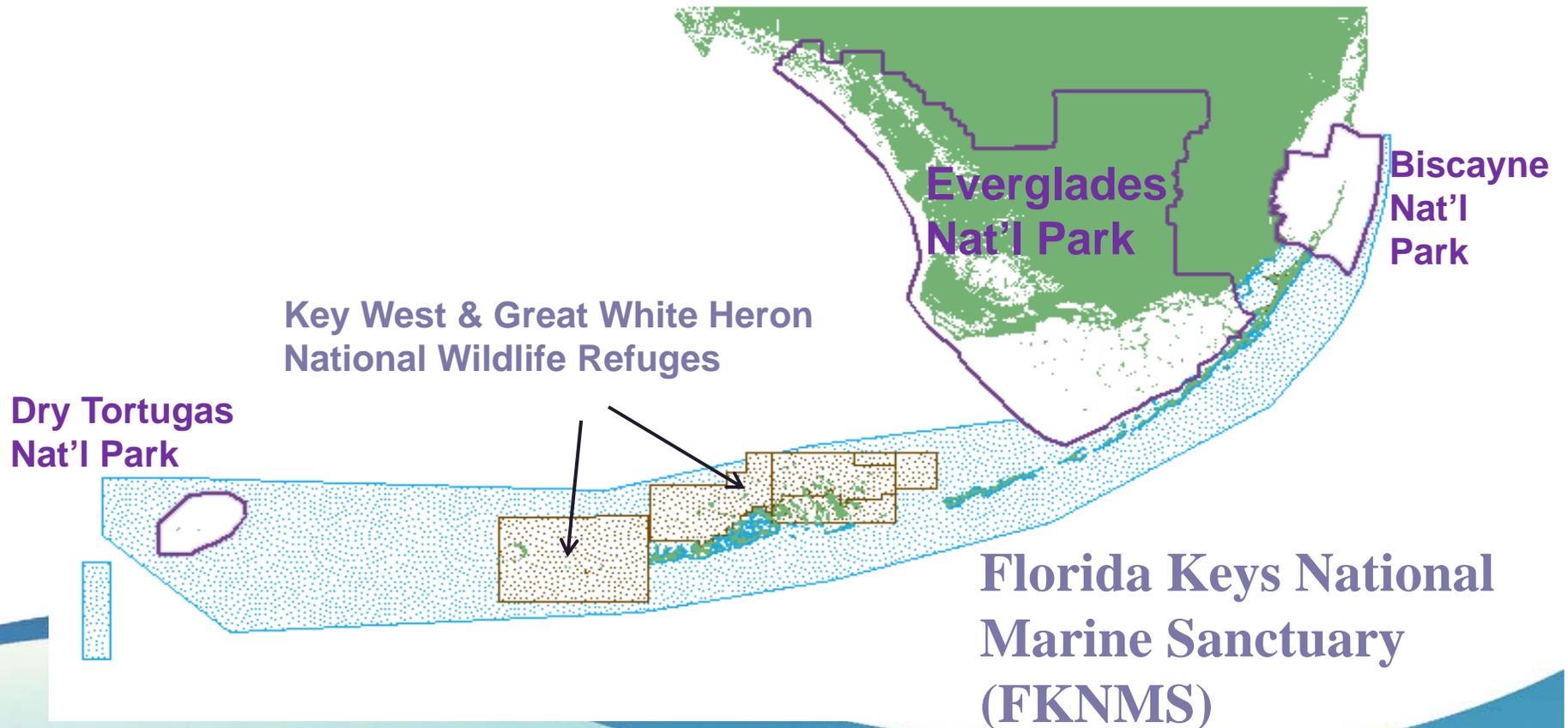
Clean Water is Critical to the Economy of the Florida Keys and South Florida (continued)

1. The Keys are considered the “fishing capital of the world,” generating hundreds of world records and billions of dollars of economic impact
2. Coral reef areas and seagrass beds provide **critical nursery and feeding habitat** for many commercially and recreationally valuable fish and shellfish species, such as grouper, snapper, stone crab, and spiny lobster
3. **Coral reef and seagrass health is directly linked to near shore marine water quality.** Both corals and seagrasses thrive in areas where water is clear, low in nutrients, and high in dissolved oxygen



Water Quality Protection Program (WQPP)

The FKNMS WQPP is an important component of the overall South Florida Ecosystem Restoration Program. The WQPP was created in 1992 to identify and implement priority corrective actions to protect, maintain and restore water quality in the FKNMS.



The Water Quality Protection Program Steering Committee

1. Collaborative effort among federal, state, local governments, and stakeholders
2. Steering Committee sets guidance and policy for development and implementation
3. Steering Committee: EPA, FDEP, NOAA, NPS, FWC, ACOE, SFWMD, TNC, DEO, FCAA, Monroe County, Islamorada Village of Islands, Marathon, City of Marathon, Key Colony Beach, Key West and Layton, local stakeholders



Water Quality Protection Program

Corrective Actions and Accomplishments

- Working with state, county, municipalities, and local stakeholders to address:

1. Wastewater Master Plan Implementation

- a) ~ 72% of the Keys are in compliance with advanced wastewater/best available treatment regulations
- b) Working toward 100% compliance by December 31, 2015

2. Stormwater Master Plan Implementation

- a) Marathon combined stormwater and wastewater collection and treatment systems
- b) All other local governments implementing stormwater master plans

Replaced
➤ 25,000 septic tanks
➤ 4,000 cesspits
➤ 900 shallow wells



Water Quality Protection Program

Corrective Actions and Accomplishments (continued)

3. Vessel Discharge

- a) All state waters in the FKNMS designated a **No Discharge Zone** under Clean Water Act (2002) and federal waters by NOAA (2010)
- b) Monroe County participating in FWC Pilot Program for managed mooring fields
- c) Clean Vessel Act funding for sewage pump-outs
- d) DEP Clean Marina Program



4. Residential Canals

- a) Canal Management Master Plan (CMMP) completed with input from the public and included a complete inventory of all the Florida Keys canals
- b) Initiating implementation of the CMMP – 2014



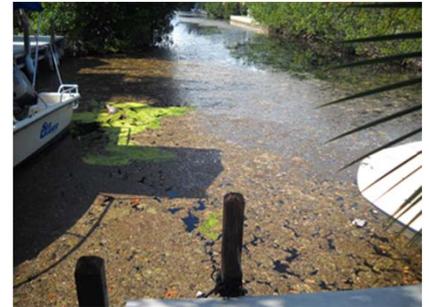
Monroe County
Canal Management Master Plan (CMMP)



Prepared By:
AMEC Environment & Infrastructure, Inc.
Prepared For:
Monroe County, EPA, the
WQPP Steering Committee and WQPP Canal Restoration Advisory Subcommittee
September 20, 2013

Canal Water Quality Restoration is a High Priority

1. Many canals in the Keys do not meet the State's minimum water quality criteria and have been identified as impaired waters in the Reasonable Assurance Document (FKRAD, December 2011)
2. These impaired waters must be addressed in accordance with Section 303(d) of the Clean Water Act and State rules
3. Wastewater treatment and storm water management will reduce land-based discharges to the canals, but will not eliminate restricted tidal flushing and accumulation of organic debris
4. To address these water quality problems additional actions must be implemented



Canal Restoration Advisory Subcommittee

- Water Quality Protection Program Steering Committee appointed a Canal Restoration Advisory Subcommittee to address water quality issues in the canals
 - George Neugent - Monroe County
 - Susan Sprunt – Islamorada Village of Islands
 - John DeNeale – Key Colony Beach
 - George Garrett – City of Marathon
 - Skip Haring – City of Layton
 - Charlie Causey – Florida Keys Environmental Fund
 - Alison Higgins – Key West
 - Billy Causey and Scott Donahue – NOAA FKNMS
 - Steven Blackburn – USEPA
 - John Hunt – FWC
 - Gus Rios – FDEP
 - Annie McGreenery – FWC (Non-voting staff)
 - Rhonda Haag – Monroe County (Non-voting; staff support)
 - Wendy Blondin – AMEC (Non-voting; consultant)



Canal Management Master Plan Completion

1. The Canal Management Master Plan provided a conceptual **framework for canal restoration** and management including prioritization and development of feasible strategies to improve water quality
2. Canals were ranked using a scoring criteria process for **prioritization for need for water quality improvement**
3. **Water Quality Ranking: 131 Poor, 180 Fair, 171 Good**
4. Restoration technologies evaluated for each canal
5. Monroe County coordinating canal restoration efforts - web link:

<http://www.monroecounty-fl.gov/index.aspx?NID=598>



Monroe County
Canal Management Master Plan (CMMP)



Prepared By:
AMEC Environment & Infrastructure, Inc.
Prepared For:
Monroe County, EPA, the
WQPP Steering Committee and WQPP Canal Restoration Advisory Subcommittee
September 20, 2013

Canal Restoration Demonstration Program

1. WQPP Canal Restoration Advisory Committee overseeing a restoration demonstration program
2. Objectives
 - a) Evaluate the effectiveness of each technology
 - b) Obtain realistic permitting, scheduling, and cost information for future restoration planning and grant application purposes
3. Monroe County funding **\$5 million** for canal restorations for at least one of each of the 5 technologies recommended in the CMMP
4. Islamorada Village of Islands funding **\$100,000**



Demonstration Canal Selection Process

1. Only poor water quality canals with the highest priority for restoration were selected
2. Selection criteria
 - a) Ease of permitting
 - b) Ease in implementation
3. Grouped canals by applicable technology
 - a) Weed barriers to minimize additional organic accumulation
 - b) Removal of accumulated organics
 - c) Culvert connections to facilitate flushing
 - d) Backfilling to remove deep stagnant zones
 - e) Circulation pumping systems to facilitate flushing
4. Stakeholder meetings held to involve the public



Selected Demonstration Canals

Monroe County

1. #266 Doctor's Arm, Big Pine Key – Weed Barrier and Organic Removal
2. #290 Between Avenues I and J, Big Pine Key – Organic Removal
3. #287 Atlantic Estates, Big Pine Key – Weed Barrier
4. #459 Boca Chica Ocean Shores, Geiger Key – Culvert Installation
5. #277 Tropical Bay, Big Pine Key – Culvert Installation
6. #278 Eden Pines, Big Pine Key – Pumping System
7. #29 Sexton Cove, Key Largo – Backfilling

Islamorada Village of Islands

1. #137 Treasure Harbor, Plantation Key – Weed Barrier and Aerators
2. #148 Mate-Lido Beach, Lower Matecumbe – Weed Barrier

Canal Restoration Activities Require State and Federal Permits

1. Steering Committee requested a **designated staff member** be assigned to a permitting team for the canal restoration

2. Meeting held in Jan 2014 with FDEP, SFWMD, ACOE, NOAA Fisheries, and FKNMS staff. There is a joint application process, but separate State and federal permits are required
 - a) Identified permit requirements and **discussed ways to streamline the application review process**
 - b) Each restoration technology was discussed and **key issues identified**



US Army Corps of Engineers



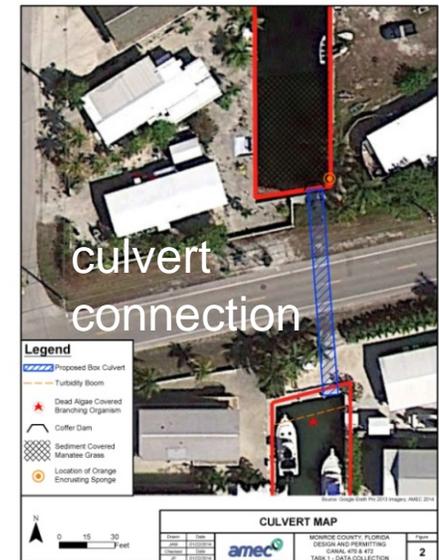
Permitting Process

1. SFWMD ERP

- a) Permit as environmental restoration or enhancement projects, if qualify; no mitigation required
- b) SFWMD encourages pre-application meetings and site visits with sufficient lead time

2. US Army Corps of Engineers (ACOE)

- a) Standard permit required; nationwide permits in the Keys only available for FKNMS restoration projects where the FKNMS is co-applicant
- b) The ACOE requires consultation with NOAA Marine Fisheries Service (NMFS) for construction work in tidal waters.



Milestones in the Canal Restoration Schedule

1. Complete design, permits and initiate construction for demonstration projects by end of 2014
2. EPA grant to conduct pre- and post-water quality monitoring to evaluate restoration effectiveness initiated September 2013 - **Need systems in place to monitor**
3. **FDEP grant for Geiger Key culvert design/permit must be completed June 30, 2014**
4. Address impaired waters in the canals in accordance with USEPA and FDEP compliance schedules (FKRAD and Section 303(d) of the CWA)



Need Assistance in Streamlining the Permitting Process

1. Need assistance in seeking ways to expedite the permitting process
 - a) Permit as restoration projects
 - b) Expedite the NOAA Fisheries consultation review time. **Review time for consultations estimated at 4-6 months or longer. The long timeframe for approval may affect project completion schedules**
2. **We appreciate your support in moving the canal restoration projects forward**



