



Florida Department of Environmental Protection

2017 Update to the Florida Keys Assessment and Reasonable Assurance Document (FKRAD)

November 17, 2017

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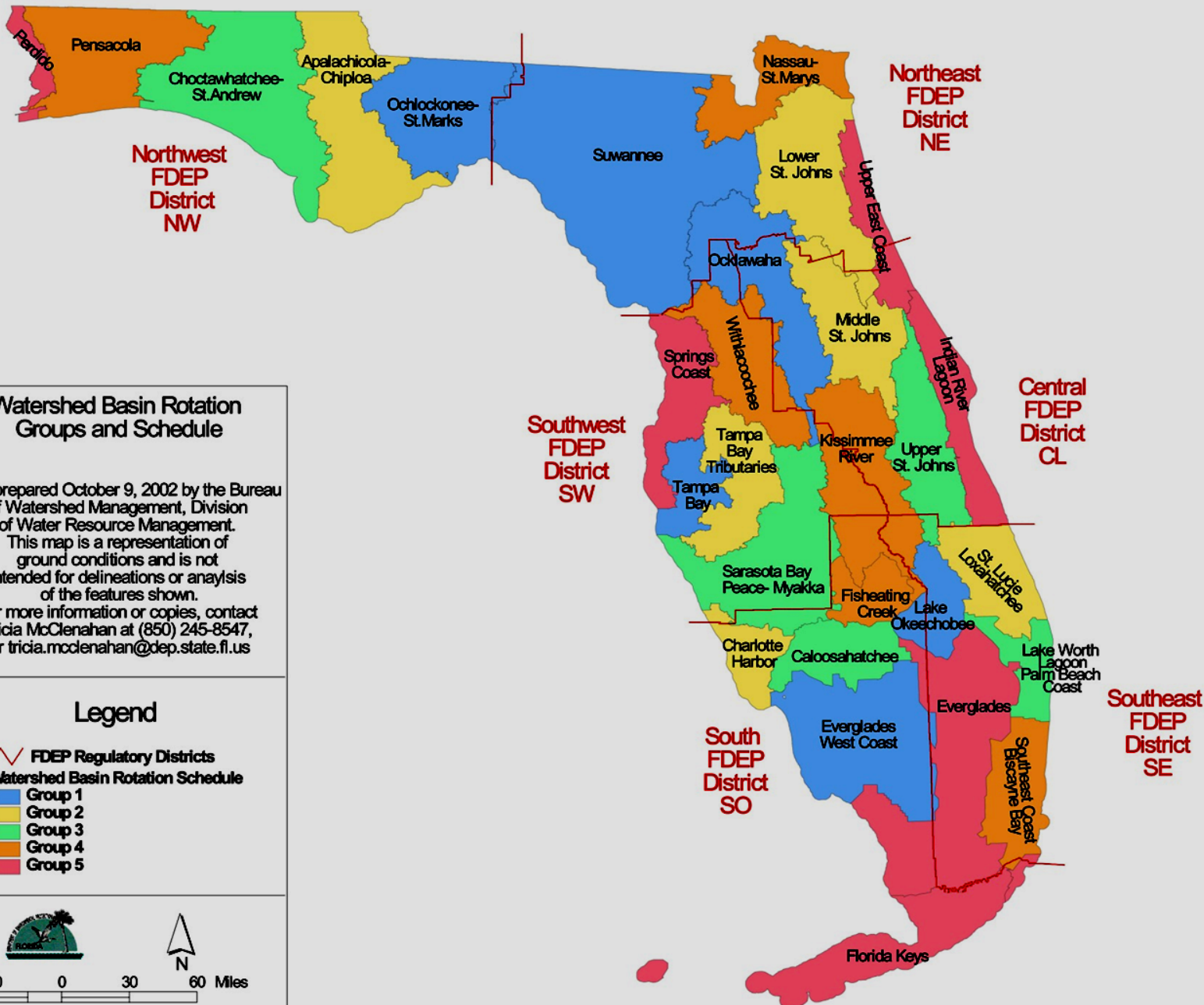
Topics

- Group 5 – Basin Assessment Update
- FKRAD update requirements
- Draft FKRAD update document
- Water quality monitoring in the Halo Zone
- Schedule
- Action items



Watershed Management Approach

- **Section 303(d) of the Federal Clean Water Act requires states to submit lists every two years of waterbodies that do not meet water quality standards, including designated uses**
 - “Impaired Waters”
- **Florida Department of Environmental Protection (DEP) implements the Total Maximum Daily Load (TMDL) Program as part of Watershed Management Approach**
 - Started in July 2000
 - Assessment
 - TMDL Development
 - Basin Management Action Plan (BMAP) Implementation
 - Watershed Restoration
- **Watershed Approach established a cycle that rotates through all basins in the state over five-year period**
 - Divided the state’s basins into groups





Waterbody Identification Number - WBID



Assessment Unit (waterbody)

- Assessment performed using data within a WBID boundary (assessment unit)

WBID Boundary Line



Designated Uses Addressed by Assessment

- **Aquatic Life**
 - Metals, Turbidity, Pesticides, Biological Assessment
- **Primary Contact and Recreation**
 - Bacteria, Beach Advisories
- **Fish and Shellfish Consumption**
 - Pathogenic Bacteria, Mercury, Shellfish Classification
- **Drinking Water**
 - Metals, Pesticides, Bacteria

**Water Quality Standards 62-302 Florida Administrative Code (F.A.C).
Impaired Waters Rule 62-303 F.A.C.
Numeric Nutrient Criteria (NNC) Implementation Document**



Watershed Management Cycle

- Each basin group is assessed every 5 years
- Group 5 Adopted Lists:
 - Cycle 1 = 2009
 - Cycle 2 = 2012
 - Cycle 3 = 2018

Assessment Process:

- Previous Cycle Summary Assessment = (Cycle 1 + Cycle 2)
- Evaluate Cycle 3 Assessment
 - = Current Cycle Assessment

Cycle Rotation	Basin Group	Planning Period	Verified Period
1	1	1989 - 1998	1/1/1995 - 6/30/2002
1	2	1991 - 2000	1/1/1996 - 6/30/2003
1	3	1992 - 2001	1/1/1997 - 6/30/2004
1	4	1993 - 2002	1/1/1998 - 6/30/2005
1	5	1994 - 2003	1/1/1999 - 6/30/2006
2	1	1995 - 2004	1/1/2000 - 6/30/2007
2	2	1996 - 2005	1/1/2001 - 6/30/2008
2	3	1997 - 2006	1/1/2002 - 6/30/2009
2	4	1998 - 2007	1/1/2003 - 6/30/2010
2	5	1999 - 2008	1/1/2004 - 6/30/2011
3	1	2000 - 2009	1/1/2005 - 6/30/2012
3	2	2002 - 2011	1/1/2007 - 6/30/2014
3	3	2003 - 2012	1/1/2008 - 6/30/2015
3	4	2004 - 2013	1/1/2009 - 6/30/2016
3	5	2005 - 2014	1/1/2010 - 6/30/2017



Assessment Category Descriptions

- **Category 1 – Not Impaired (attains ALL uses)**
- **Category 2 – Meets Standards; Not Impaired**
- **Category 3 – Insufficient Data (3a, 3b, 3c)**
- **Category 4 – Does not meet standards, but a TMDL is not needed (4a, 4b, 4c, 4d, 4e)**
- **Category 5 – Does not meet standards; Impaired by a pollutant**



List Description

- **Verified List – Only Category 5 assessments**
 - Data meet listing thresholds in 62-303.420, F.A.C.
- **Study List – Category 4d & 4e**
 - Data meet listing thresholds in 62-303.390, F.A.C.
 - Data needed to determine causative pollutant
 - Evaluate adverse trend in nutrients or nutrients response variables, this includes dissolved oxygen
 - Waters to conduct Stressor ID Study that are impaired for biology, but do not have a causative pollutant
- **Delist List – Any category possible, except 5**
 - Waters that meet water quality criteria (Category 2)
 - Data meet delisting thresholds in 62-303.720, F.A.C.
 - Correcting errors (analysis flaw)

<https://floridadep.gov/dear/watershed-assessment-section/content/news-announcements>



Implementation of Revised Criteria

- **Dissolved Oxygen Criteria**
 - Assessment for dissolved oxygen based on “percent saturation” that replaced “milligrams per liter (mg/L)”
- **NNC for streams, lakes, and estuaries (excluding South Florida canals, tidal tributaries, and wetlands).**
- **Fecal Coliform Criteria (U.S. Environmental Protection Agency [EPA] Approved July 24, 2017):**
 - Class II, Marine: Still assess Fecal Coliform, but will also assess Enterococci
 - Class III, Marine: Still assess Enterococci
 - Class I and III, Freshwater: Assess *Escherichia coli*
- **Unionized Ammonia**
 - Replaced with Total Ammonia Nitrogen



Listing Schedule

- **Schedule for revising the Group 5 Lists**
 - **December**– Produce Revised Lists using Impaired Waters Rule (IWR) Run 54, Data Extracted on September 19th
 - **January** – Provide Revised Lists to public for review; Finalize Responses to Comments
 - **January 31, 2018** - Finalize Lists for Adoption, Brief Upper Management, Prepare Secretarial Order



STORET / WIN Updates

- **Information form mapping to WIN is provided at:**

ftp://ftp.dep.state.fl.us/pub/outgoing/STORET/WIN_Communication/

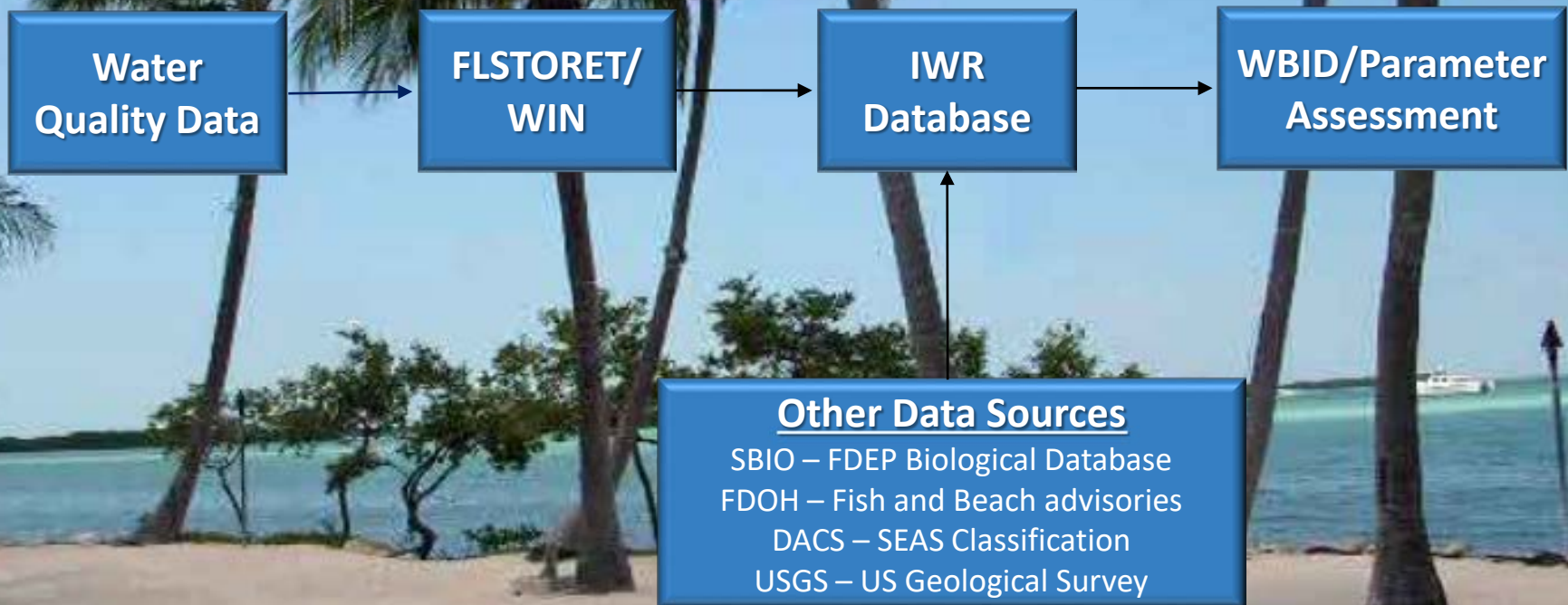
- Includes MDQS, data templates, frequently asked questions (FAQs), and a flow diagram

- **Contact your STORET/WIN Coordinators with questions on WIN implementation**

District	Coordinator	Phone	E-mail
Central & Statewide	Tommy Adams	850-245-8467	Thomas.l.adams@dep.state.fl.us
Northeast & Northwest	Justin Nelson	850-245-8510	Justin.m.nelson@dep.state.fl.us
South & Southeast/WQX Coordinator	Kyle Ferris	850-245-8049	Lisa.Schwenning@dep.state.fl.us
Southwest/SPA Coordinator	Lisa Schwenning	850-245-8509	Lisa.Schwenning@dep.state.fl.us
WIN Administrator	Julie Zimmerman	850-245-8508	Julie.Zimmerman@dep.state.fl.us

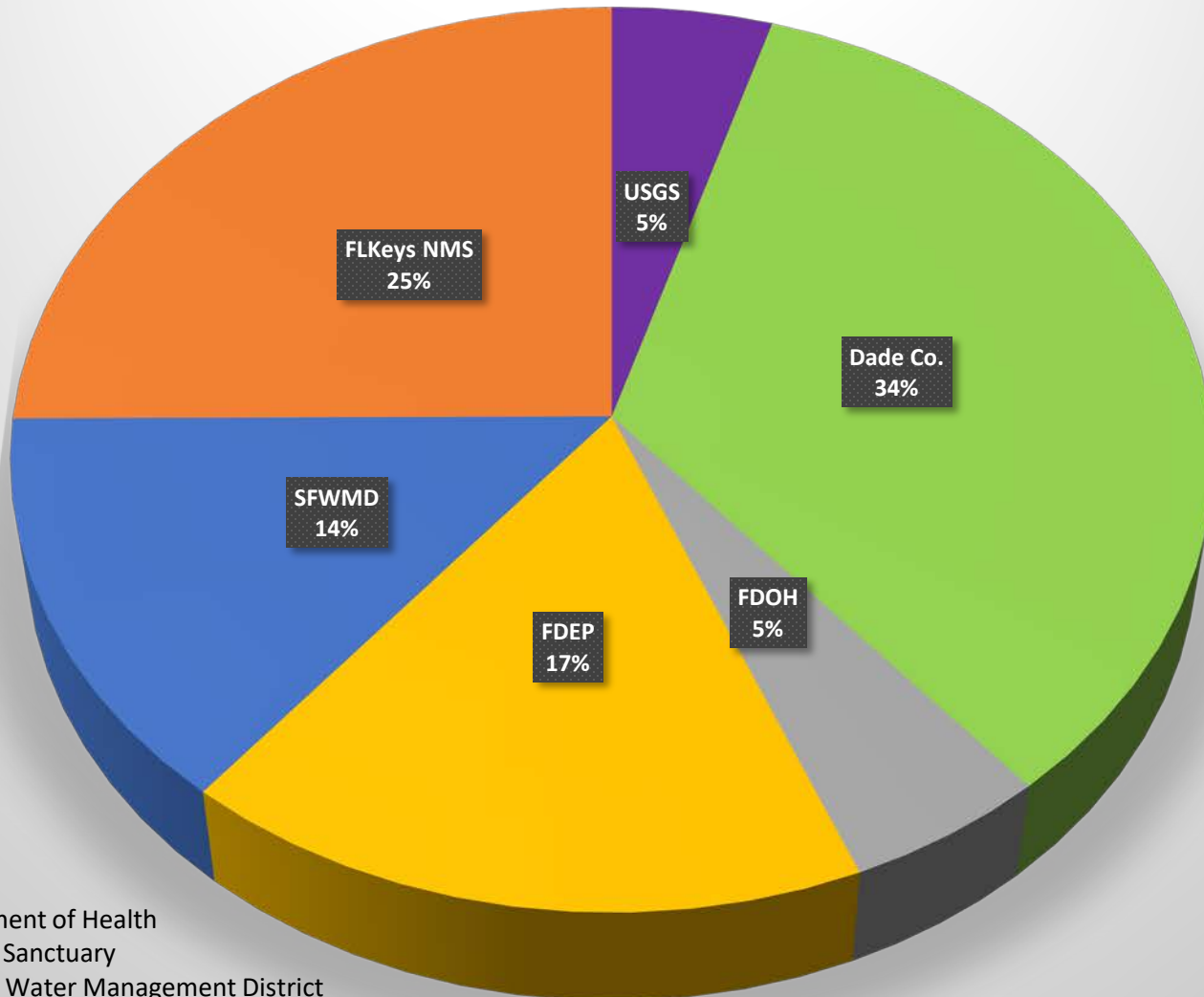


Process for Water Quality Assessment





Florida Keys Data Providers % for the Verified Period



FDOH: Florida Department of Health
NMS: National Marine Sanctuary
SFWMD: South Florida Water Management District
USGS: U.S. Geological Survey



Watershed Assessment Webpage

Updated Watershed Assessment Section Webpage

<https://floridadep.gov/dear/watershed-assessment-section>

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Watershed Assessment Section

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Watershed Assessment Section Quick Links

- News and Announcements
- Assessment Lists
- Contacts
- Impaired Waters Rule (IWR)

The core function of the Watershed Assessment Section is to use the best available information to identify waterbodies and water segments (WBIDs) that are not meeting the applicable water quality standards and designated uses based on the Impaired Waters Rule Chapters 62-303 and 62-302, Florida Administrative Code (F.A.C.).

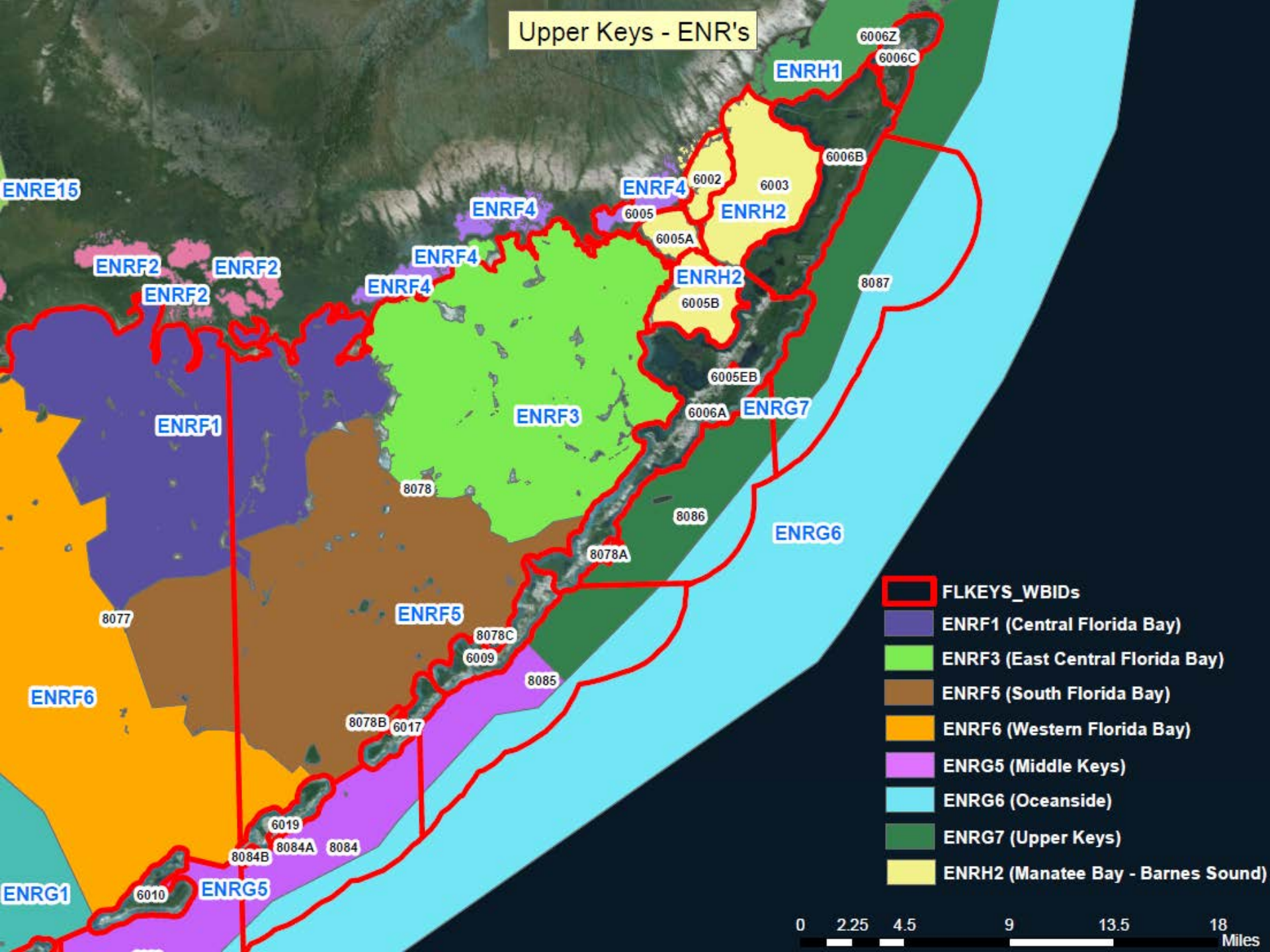
How often are WBIDs assessed?

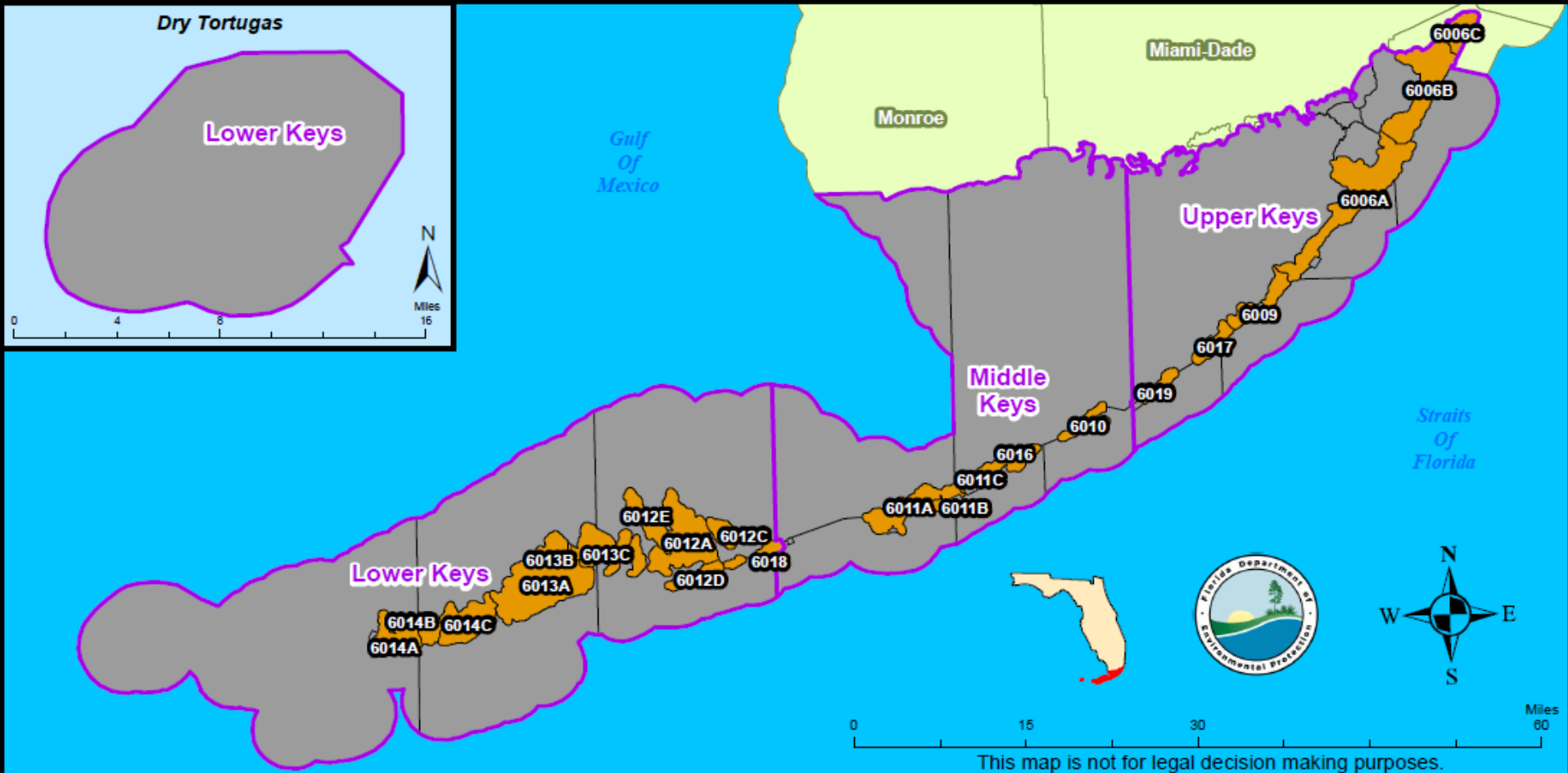
DEP's watershed management approach is an established five-phase cycle that rotates through 29 basins throughout the state over a five-year period (all WBIDs will be assessed once every five years).

What are the designated uses addressed during the assessment?

The designated uses that are addressed during the assessment process can be classified in one of the categories below. The

Upper Keys - ENR's

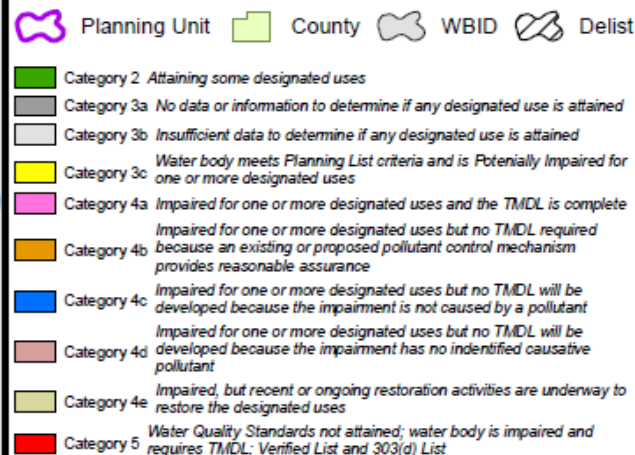




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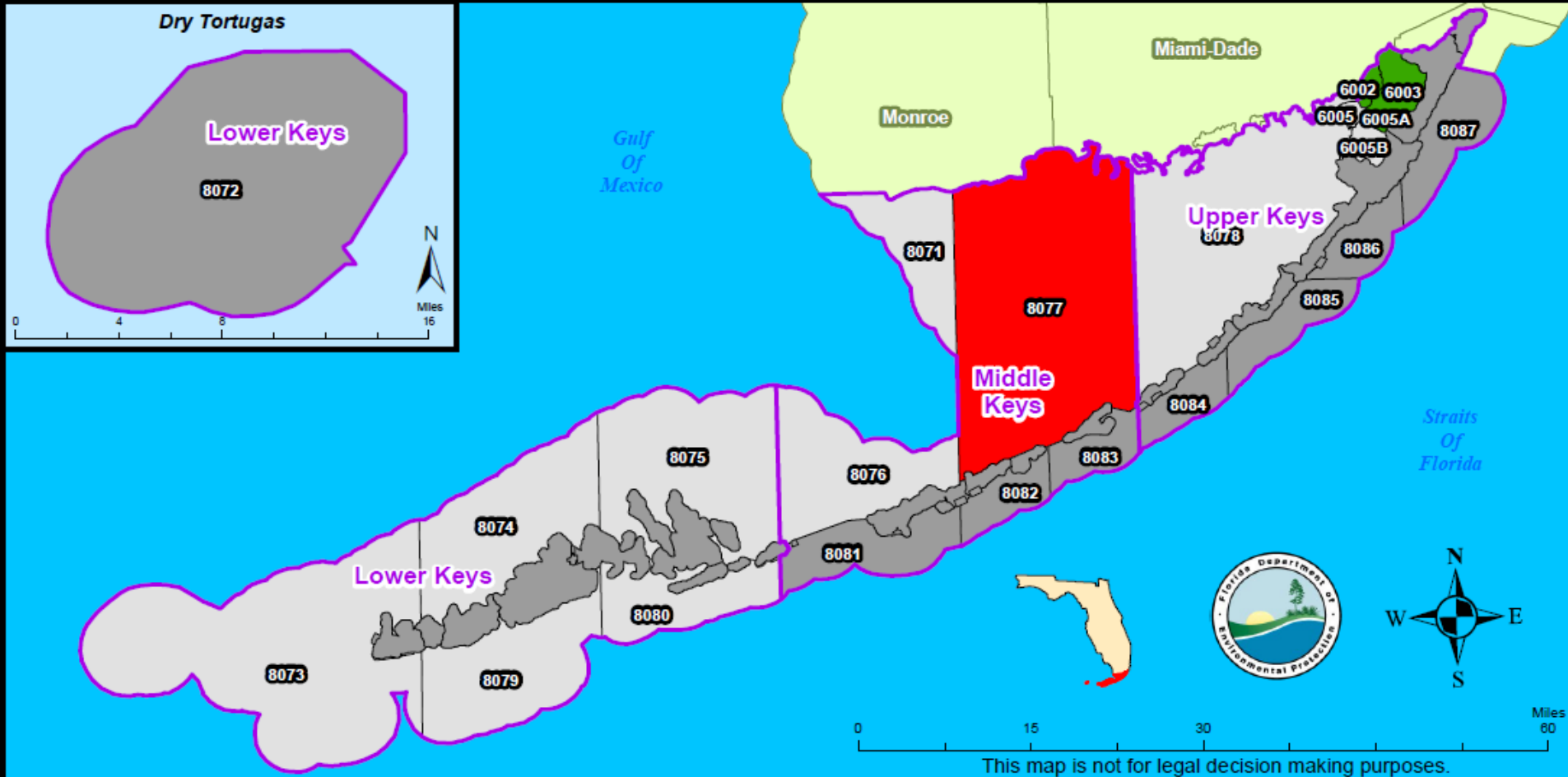
Florida Keys

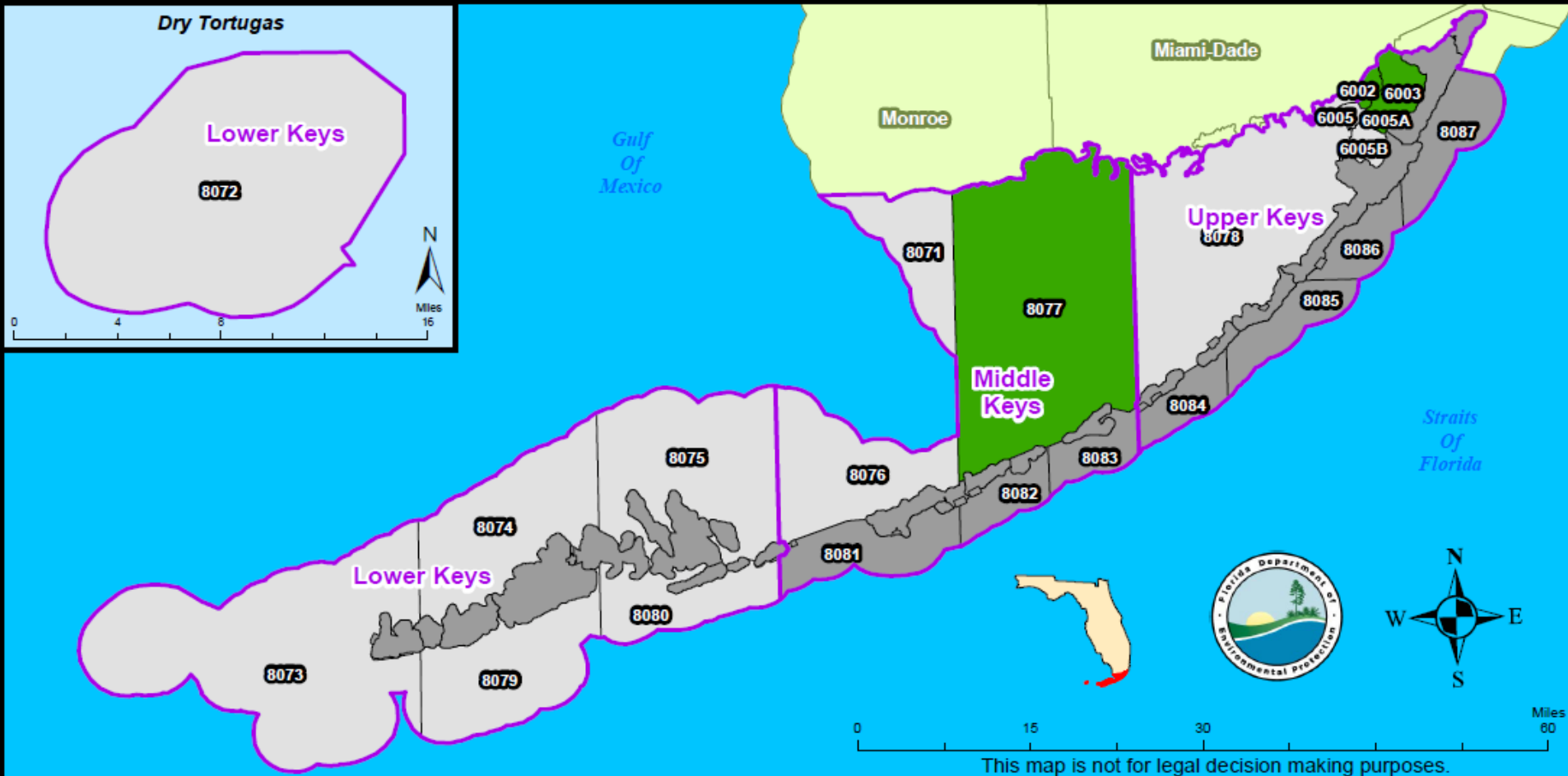
Nutrients (Other Information) Integrated Assessment



Nutrient Reasonable Assurance WBIDs

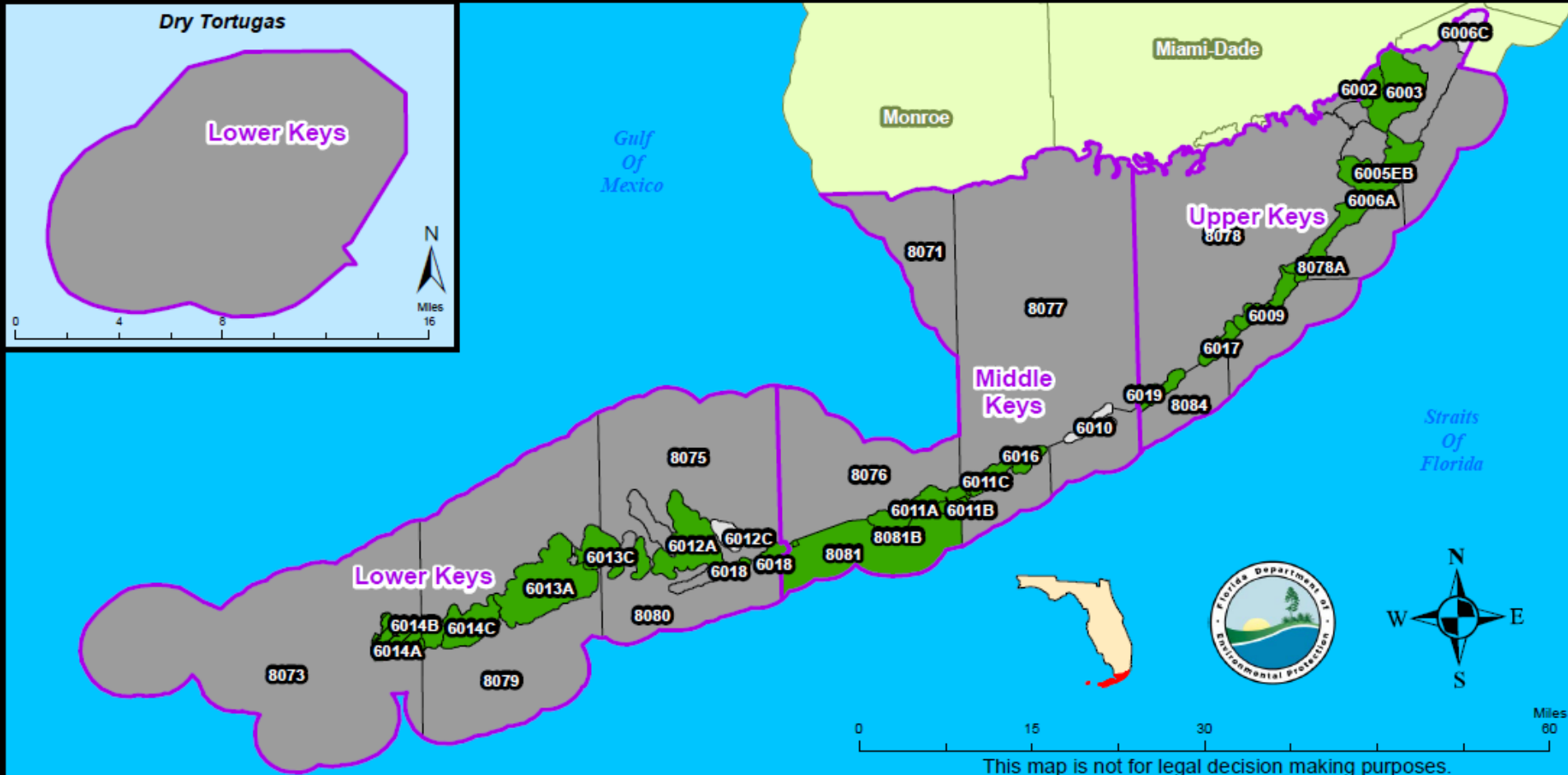
6006A	South Key Largo	6013C	Cudjoe Key
6006B	Middle Key Largo	6013D	Little Knock Key
6006C	North Key Largo	6014A	Key West
6009	Plantation Key	6014B	Stock Island
6010	Long Key	6014C	US Naval Air
6011A	Vaca Key	6016	Duck Key
6011B	Key Colony	6017	Upper Matecumbe
6011C	Grassy Key	6018	Bahia Honda State
6012A	Big Pine Key	6019	Lower Matecumbe
6012C	No Name Key		
6012D	Long Beach		
6012E	Big Torch Key		
6013A	Saddlebunch Keys		
6013B	Sugarloaf		





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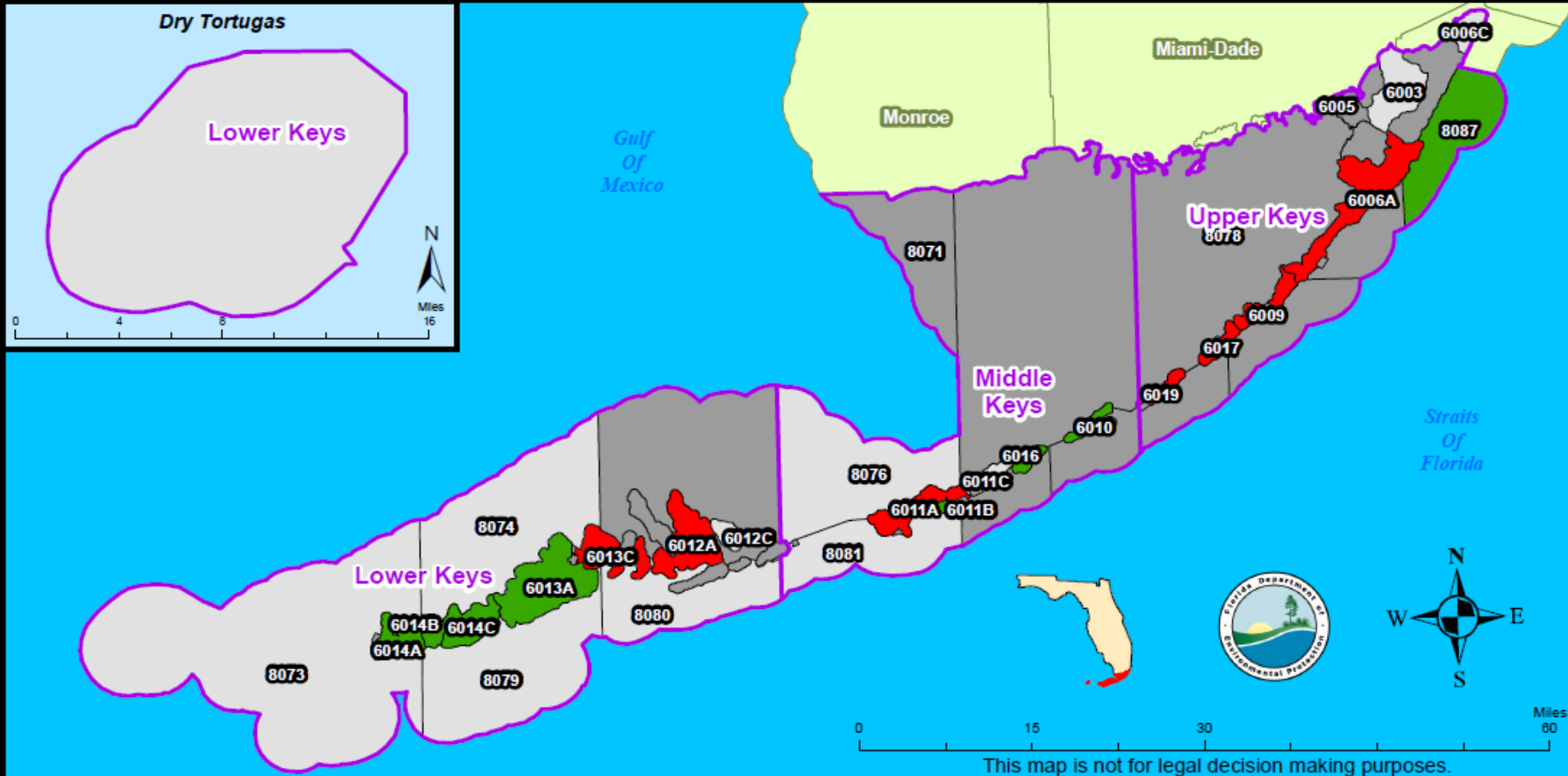


Florida Keys *Bacteria Integrated Assessment*

- Planning Unit
 County
 WBID
 Delist
- Category 2: Attaining some designated uses
 - Category 3a: No data or information to determine if any designated use is attained
 - Category 3b: Insufficient data to determine if any designated use is attained
 - Category 3c: Water body meets Planning List criteria and is Potentially Impaired for one or more designated uses
 - Category 4a: Impaired for one or more designated uses and the TMDL is complete
 - Category 4b: Impaired for one or more designated uses but no TMDL required because an existing or proposed pollutant control mechanism provides reasonable assurance
 - Category 4c: Impaired for one or more designated uses but no TMDL will be developed because the impairment is not caused by a pollutant
 - Category 4d: Impaired for one or more designated uses but no TMDL will be developed because the impairment has no identified causative pollutant
 - Category 4e: Impaired, but recent or ongoing restoration activities are underway to restore the designated uses
 - Category 5: Water Quality Standards not attained; water body is impaired and requires TMDL; Verified List and 303(d) List

Impaired Beach WBIDs (Not visible at Map Scale)

- 8073E South Beach (Key West)
- 8073H Smathers Beach
- 8078A Harry Harris County Park
- 8080B Bahia Honda Oceanside
- 8081B Sombrero Beach





Contacts

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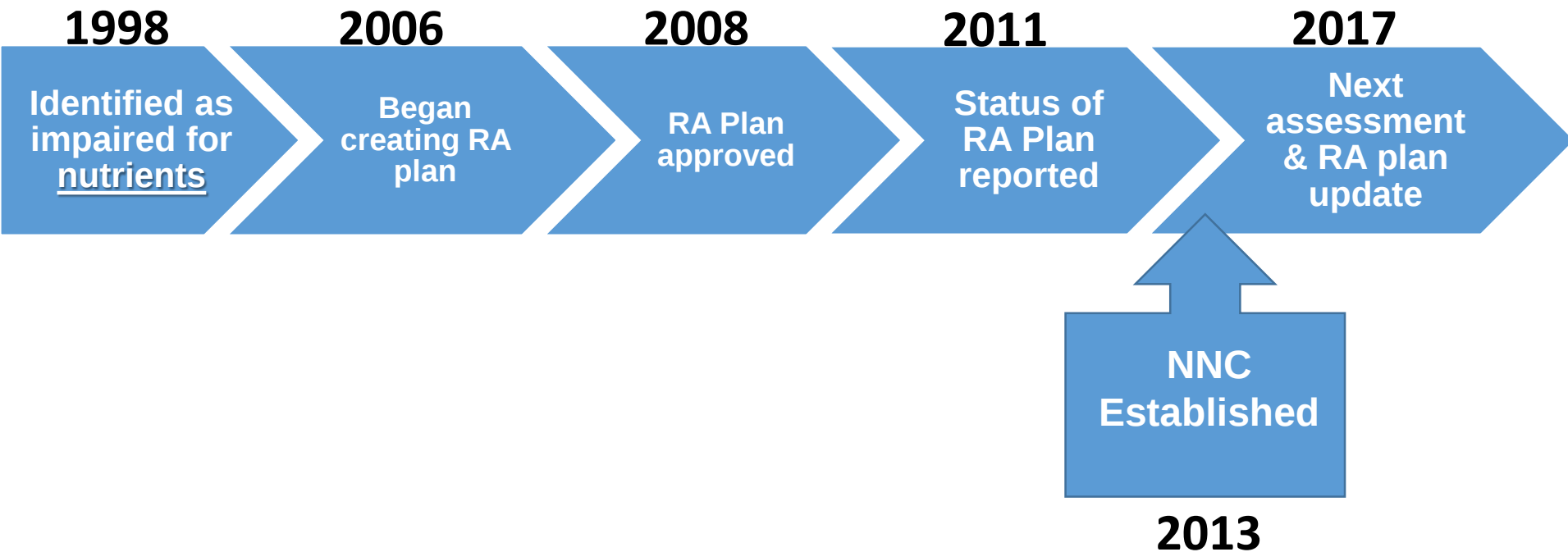
FDEP Websites:

WAS: <https://floridadep.gov/dear/watershed-assessment-section/content/assessment-lists>

Basins 411: <https://floridadep.gov/dear/watershed-assessment-section/content/basin-411-0>



FL Keys RA Plan Background





FL Keys RA Document (RAD)

- **Four sections and reports**
 - **Northern Keys**
 - Lower Matecumbe, Upper Matecumbe, Windley, Plantation, Radabob, and Largo Keys
 - **Central Keys**
 - Vaca Key, Long Point Key, Crawl Key, Grassy Key, Duck Key, and Long Key
 - **South Central Keys**
 - Boca Chica Key, Saddlebunch Key, Sugarloaf Key, Cudjoe Key, Summerland Key, Ramrod Key, Big Torch Key, Big Pine Key, Long Beach, No Name Key, and Bahia Honda Key
 - **South Keys**
 - Key West and a portion of Stock Island



Components of FL Keys RA Plan

- **Implement sufficient nutrient control mechanisms to return the nearshore waters to the water quality targets.**
- **Perform monitoring to assess progress**
 - Halo Zones (Bubble WBIDs) (within 500 meters from shore)
 - Immediate nearshore waters (within 5,600 meters from shore)
 - Nearshore (>5,600 meters from shore)
- **Report on progress**
- **Achieve target conditions in the Halo Zones by 2020**



2011 Assessment

- **RA Update - Report focused on status of projects**
 - 68 projects completed, others in progress
- **Some improving water quality seen in nearshore waters (within 5,600 meters of shore)**
- **Dissolved oxygen (DO) identified as not being met in some WBIDs**
 - Applied 4.0 mg/L marine DO criterion
 - Impairments were associated with monitoring locations within canals
 - Placed in assessment category 4e



2017 Assessment

- **FKRAD Update – Will need status of projects**
- **Evaluate Halo Zones for FKRAD**
 - More monitoring will be needed, some done by DEP
- **DO Status**
 - New marine DO criteria
 - **Daily >42%**
 - **Weekly >51%**
 - **Monthly >56%**
 - Some may attain the new criterion



FKRAD Update Requirements

- Document actions taken since 2011
- Address DO impairment
- Approach to monitoring and reporting results
- Schedule to meet water quality targets and restoration goals



Status of RA Compliance

What we know now:

1. As of 2011 update, 68 of 126 projects were completed by stakeholders
2. More projects have been completed or are due to be completed by 2020
3. We don't have sufficient data in all areas to assess for nutrients
4. The nutrient data we do have were not collected from the points of compliance (halo zone boundary area)
5. We have some data from the inland/canal waters that are above the nutrient thresholds



Status of RA Compliance

What we DON'T know:

1. Are water quality targets being achieved?
2. Are the restoration projects and activities working?
3. Is more work necessary?





Draft FKRAD Update Document

- Section 1. Purpose of update
 - Nutrients and some DO impairments
 - Monitoring and reporting
 - Schedule for targets & goals
- Section 2. Description of impairments





Draft FKRAD Update Document

- Section 3. Water quality and aquatic ecology goals
 - Existing water quality targets
 - Both nutrients and the three DO impairments will be addressed
 - Goal of achieving water quality targets by 2020





Draft FKRAD Update Document

- Section 4. Proposed management actions
 - Completed and activities
 - Estimated load reductions
 - Future growth
 - Schedule = 2020 goal
 - Funding sources
 - Enforcement
 - Commitment to implementation



****Any additional project information/corrections are needed no later than December 15th****



Draft FKRAD Update Document

- Section 5. Monitoring
 - More halo zone data are needed
 - Data uploaded quarterly into WIN
 - Quality control standards must be met
 - Compare results to water quality targets and OFW background concentration targets
- Section 6. Corrective actions
 - Corrective actions and notification processes





Draft FKRAD Update Document

- Feedback needed from you:
 - Additions/corrections to projects
 - Suggested edits to draft document
(previously emailed and posted on DEP FTP site)
 - Implementation schedule (2020)

All feedback needed by December 15th





Water Quality Monitoring in the Halo Zone

- **DEP working with stakeholders on a request for proposals (RFP) for water quality sampling for the 23 WBIDs described in the FL Keys Reasonable Assurance Document**
 - Monroe County, Islamorada, Key Largo Wastewater Treatment District (KLWTD), Florida State Parks, Marathon, Key Colony Beach, Layton, Key West, U.S. Navy, and the Florida Department of Transportation (FDOT)
- **DEP will provide 50% funding and require 50% match from stakeholders**
- **DEP has developed a scope of work and asked the county to issue an RFP and manage the contract**



Addressing the Monitoring Needs for RA Compliance

RFP

- Includes the following:
 - **Locations** - at or near the halo zone, **NOT canals**
 - **Monitoring** – collecting the specified number of samples and analytes from each location for 2 years
 - **Lab services** – analysis for total nitrogen, total phosphorus, and chlorophyll-a
 - **Field services** – measuring dissolved oxygen, temperature, pH, salinity, and specific conductance
 - **Quality Assurance (QA)** – lab analysis and field measurements must adhere to specified methods and follow the DEP QA Rule and standard operating procedures (SOPs)
 - **Data Management** – lab and field data must be uploaded to the DEP statewide database (Watershed Information Network=WIN)



Monitoring Requirements/Considerations

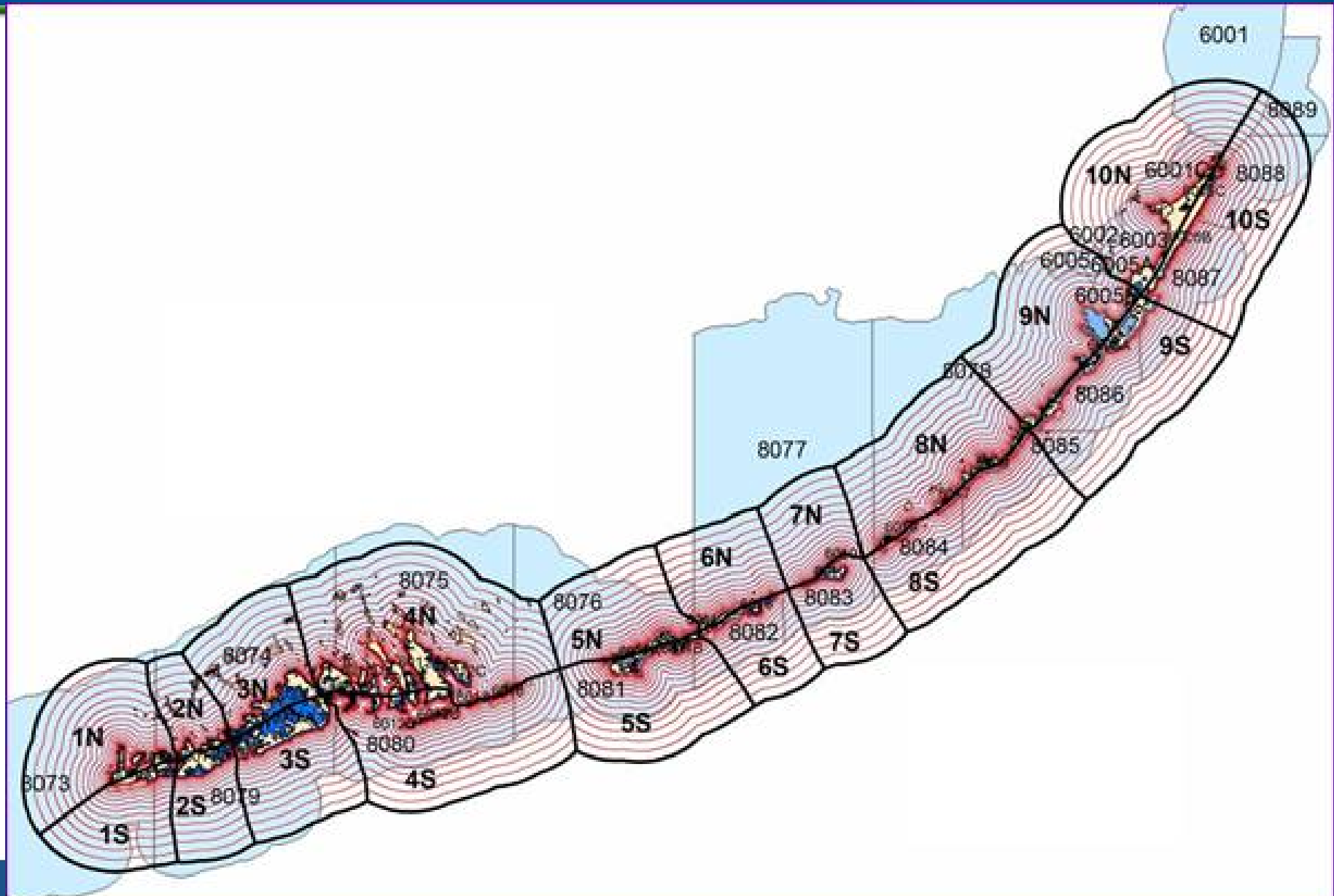
- **Select representative sampling locations**
 - Not looking for “hot spots” with this monitoring
- **Collect samples within different “seasons”**
- **Minimum of 4 samples, prefer from each location**
 - Total nitrogen (TN) and total phosphorus (TP)
 - DEP-approved methods
- **Number of locations varies with size of the WBID and land activities**



FKRAD Compliance Sampling

WBID	Waterbody Name	Number of Stations
6006A	South Key Largo	6
6006B	Middle Key Largo	4
6006C	Upper Key Largo	2
6009	Plantation Keys	4
6010	Long Key	2
6011A	Vaca Key	4
6011B	Key Colony	1
6011C	Grassy Key	2
6012A	Big Pine Key	2
6012C	No Name Key	1
6012D	Long Beach	1
6012E	Big Torch Key	1
6013A	Saddlebunch Keys	4
6013B	Sugarloaf	1
6013C	Cudjoe Key	4
6013D	Little Knockemdown Key	1
6014A	Key West	4
6014B	Stock Island	2
6014C	US Naval Air Station Key West	2
6016	Duck Key	2
6017	Upper Matecumbe Key	4
6018	Bahia Honda State Park	2
6019	Lower Matecumbe Key	4







How does this relate to canal restoration program?

- **Some WBIDs were originally identified as impaired for DO based on data from canals**
 - Many now attain the new DO water quality standard; however we know that some have nutrient concentrations which impact the FKRAD compliance evaluation
- **RFP supplemented to include specific monitoring in the canals with funding from Monroe County (no match from DEP)**
- **Canal monitoring data could be used to identify areas where additional work needs to be done if RA targets are not achieved**



Water Quality Monitoring

Discussion





Finalizing the FKRAD Update

- Process and schedule
- Action items