



**Florida Department of Environmental Protection**

# **Total Maximum Daily Loads and Basin Management Action Plans**

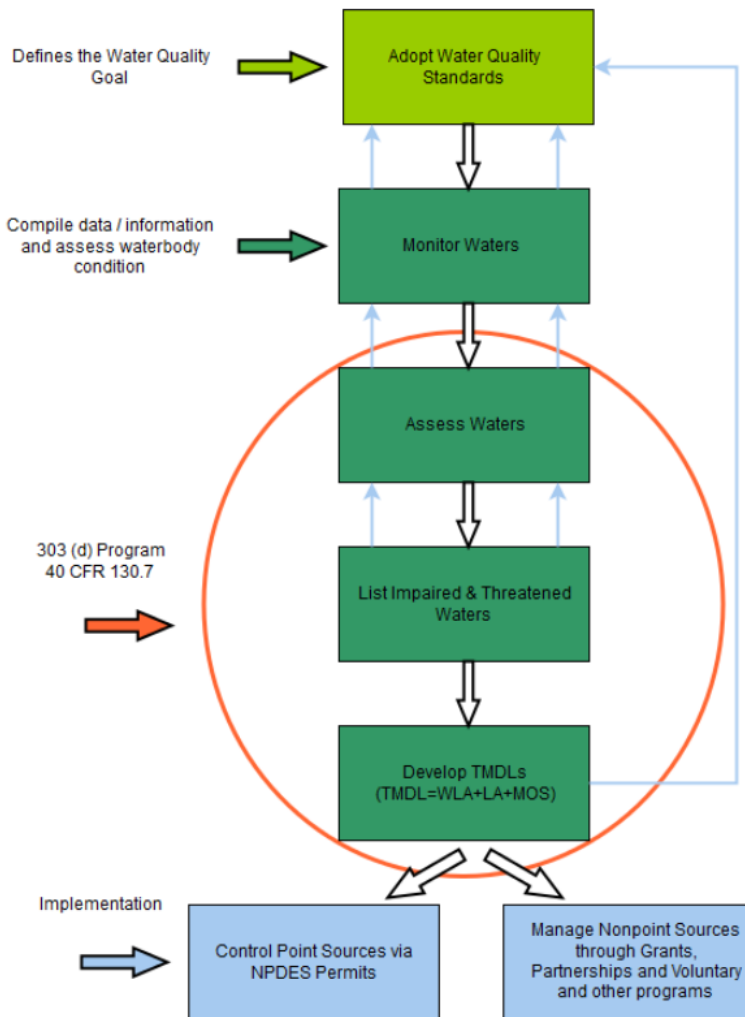
**November 16, 2018**





# Federal Requirements

Clean Water Act (CWA): 33 U.S.C. §1251 et seq. (1972) water quality-based approach



- Section 303(d) requires states to:
  - Identify waters that are impaired or in danger of becoming impaired
  - Calculate and allocate pollutant reduction levels necessary to meet approved water quality standards

- Section 319(h) addresses nonpoint sources
  - provides funds to state to implement approved nonpoint source management programs

<https://www.epa.gov/tmdl/overview-identifying-and-restoring-impaired-waters-under-section-303d-cwa>



# Total Maximum Daily Load (TMDL)

TMDL =

Maximum amount of a pollutant that a waterbody can assimilate without causing exceedances of water quality standards.

TMDL is a *Restoration Target*

$$\text{TMDL} \cong \sum \text{WLAs}_{\text{NPDES wastewater}} + \sum \text{WLAs}_{\text{NPDES stormwater}} + \sum \text{LAs} + \text{MOS}$$

Sum of wastewater point source loadings within basin

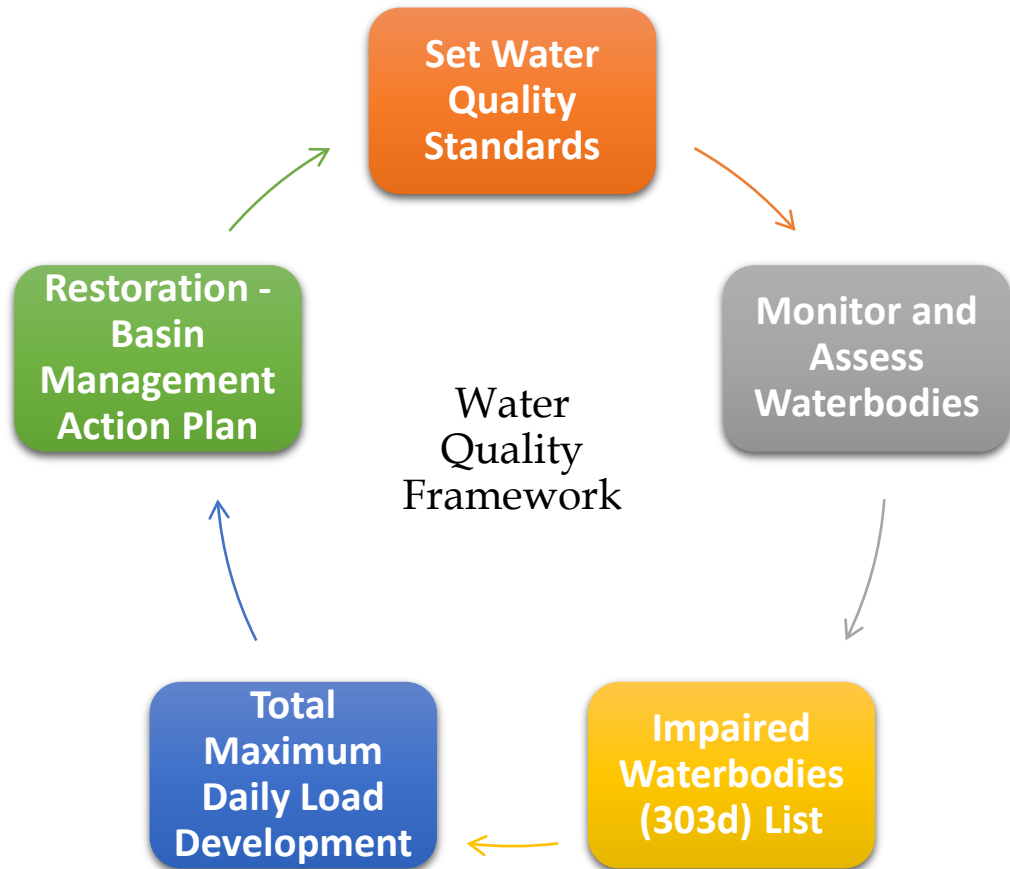
Municipal Separate Storm Sewer Systems (MS4)

Nonpoint Sources



# Florida's Requirements

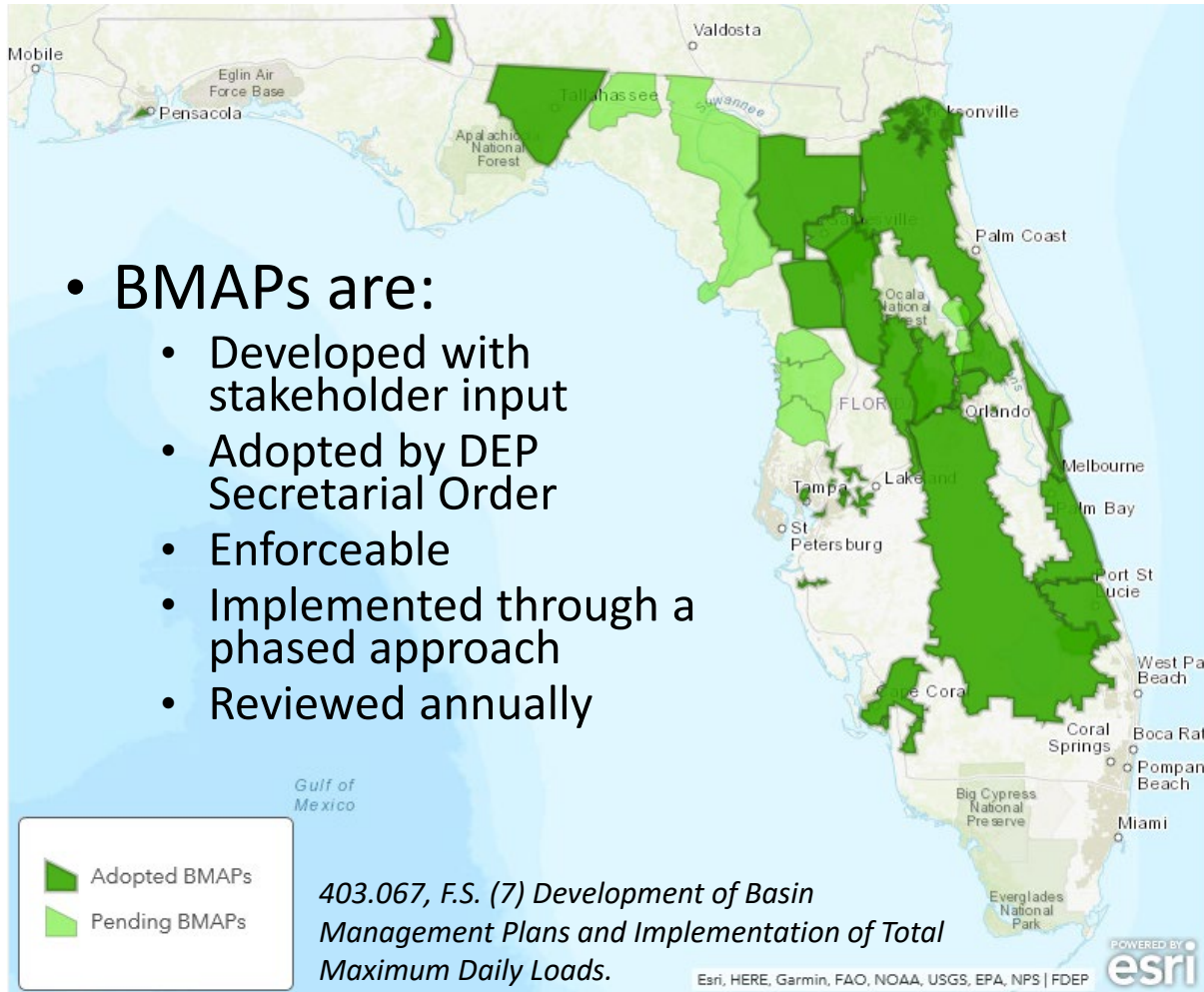
- Section 403.067, Florida Statute (F.S.) established the Florida Watershed Restoration Act in 1999
- Section 373.4595, F.S. - Northern Everglades and Estuaries Protection Program (NEEPP)
- Chapter 373, Part VIII - Outstanding Florida Springs (OFS)





# Basin Management Action Plan (BMAP)

- One of DEP's methods for restoring water quality in an impaired water body



<https://floridadep.gov/dear/water-quality-restoration/content/basin-management-action-plans-bmaps>

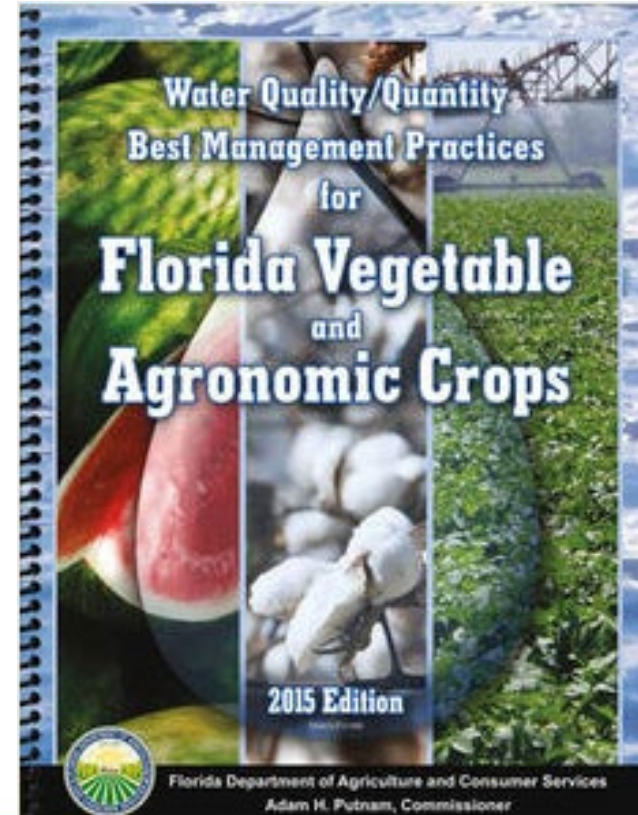




# Agriculture and BMAPs

- Agricultural producers within a BMAP must:
  - Enroll in Florida Department of Agriculture and Consumer Services (FDACS) Best Management Practices (BMPs);  
or
  - Monitor Water Quality For Compliance
- Benefits of FDACS enrollment:
  - Presumption of Compliance
  - Eligibility for cost-share funding
  - Technical assistance
  - Improved Water Quality

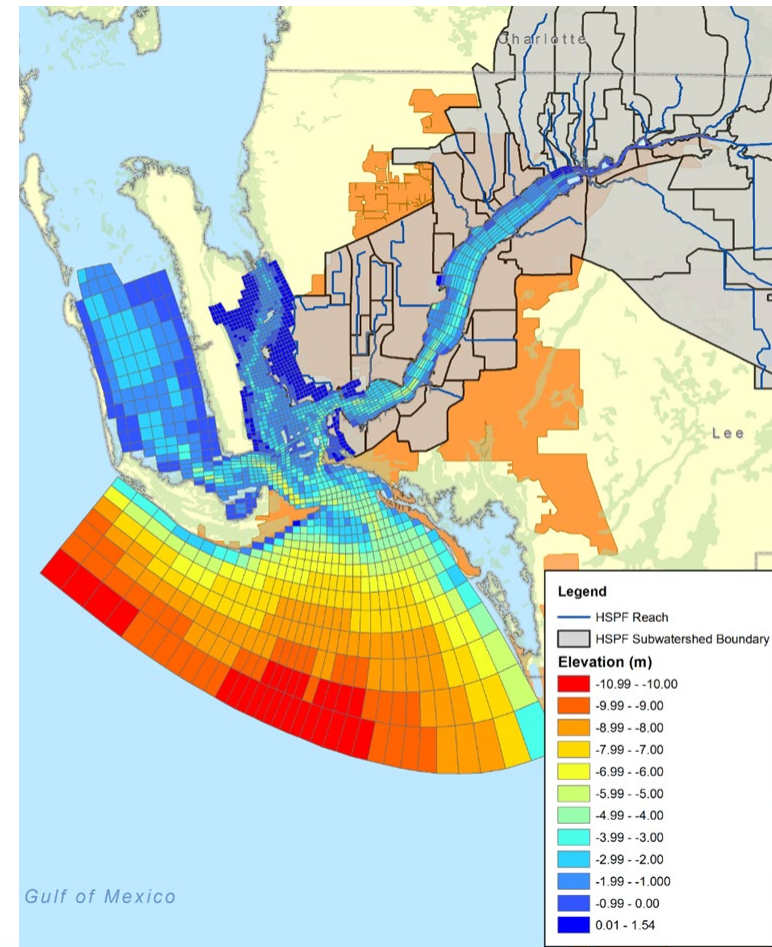
<http://www.freshfromflorida.com/Business-Services/Water/Agricultural-Best-Management-Practices>





# Modeling – TMDLs and BMAPs

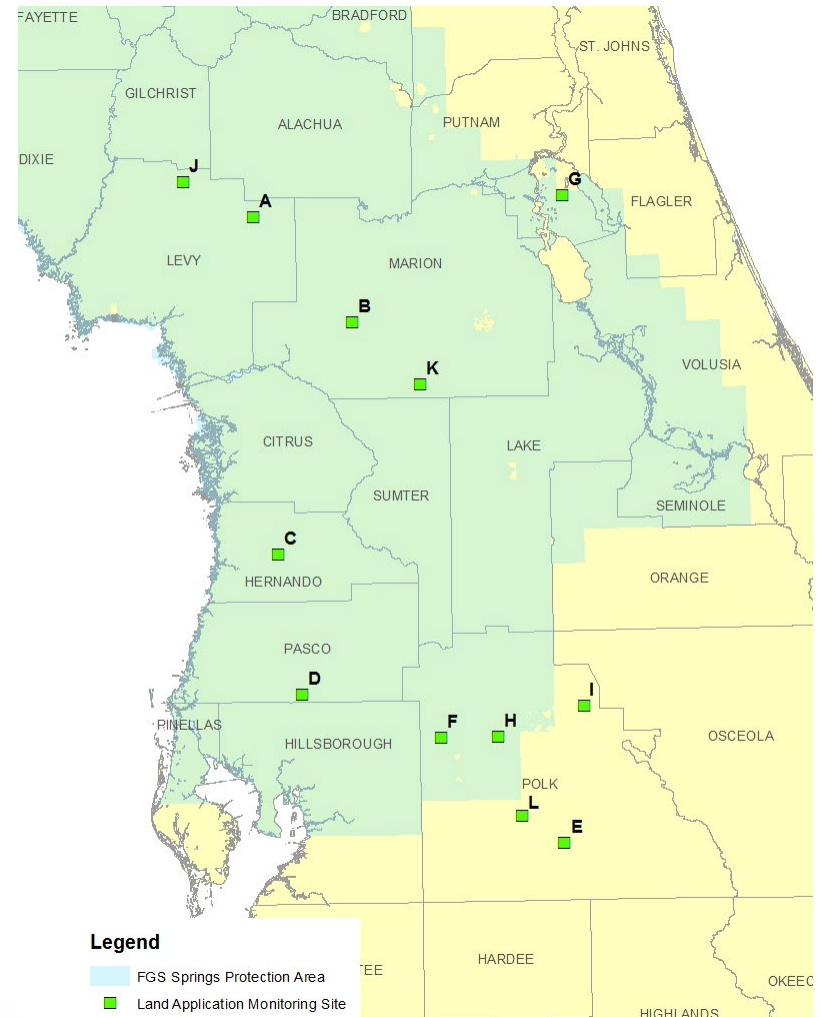
- TMDLs developed using a range of techniques
  - simple mass balance calculations to complex water quality modeling approaches
- Fate and transport models based on best available data
  - Land Use
  - Rainfall data
  - Runoff Coefficients (ROCs)\*
    - coefficient relating the amount of runoff to the amount of precipitation received
  - Event Mean Concentrations (EMCs)\*
    - flow-weighted average concentration for a rainfall-runoff event
    - pollution load mass/runoff volume
- \*EMCs, ROCs for LU categories, not specific parcels
- Distance from impaired waterbody influences pollutant attenuation





# Additional Watershed Studies

- For BMAPs, we often need more info and implement additional studies
- Study on environmental impacts of septage land application
  - 12 representative septage land application sites
  - Provide information on nitrogen and phosphorus levels in groundwater
  - Evaluate the conditions that contribute to higher nutrient levels



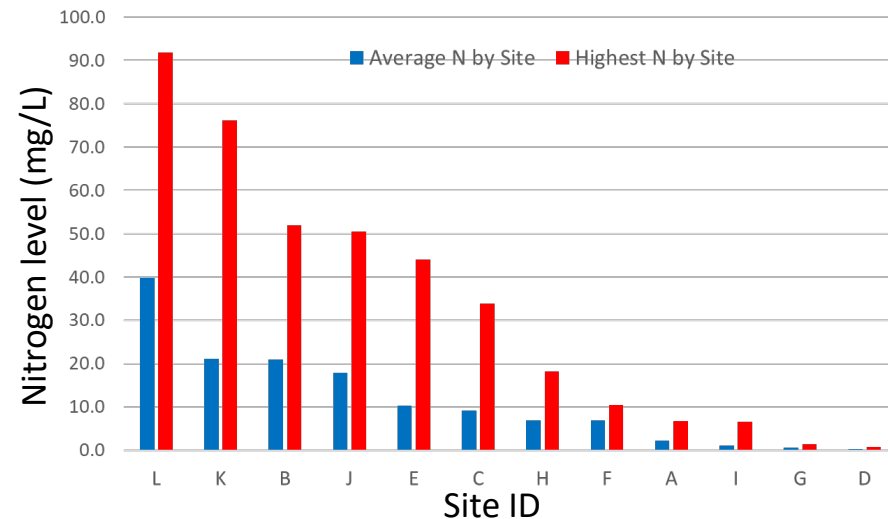
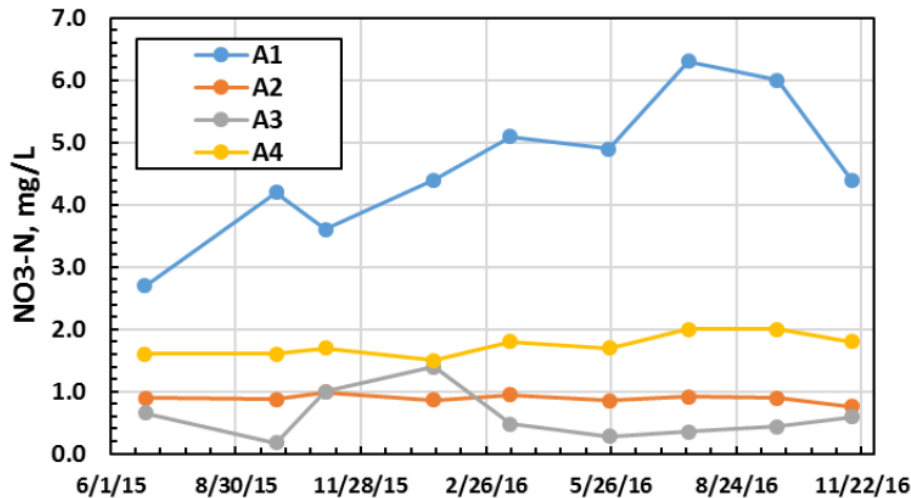




# Additional Watershed Studies, cont.

- Varied conclusions related to elevation of and temporal trends in nutrient concentrations.

Site A, Floridan



- Other BMAP studies on nutrient levels in groundwater, nutrient budgets, etc. have been conducted.



# Springs BMAPs and Biosolids

- Florida Springs and Aquifer Protection Act (Section 373.811, F.S) prohibits specific activities in priority focus areas (PFAs) including
  - Land application of Class A or Class B domestic wastewater biosolids not in accordance with a **DEP-approved nutrient management plan** establishing the rate at which all biosolids, soil amendments, and sources of nutrients at the land application site can be applied to the land for crop production while minimizing the amount of pollutants and nutrients discharged to groundwater or waters of the state.
- Additional requirements apply to newly-permitted and existing biosolids and septage application sites upon permit renewal.
  - Agricultural operations must be **enrolled in the FDACS BMP program**.
  - Effective nutrient management practices must be ongoing at the application zones in the permit.
  - Groundwater **monitoring for nitrate** is required for all biosolids and septage land application sites in the PFA
    - not required under some specific circumstances of reduced application rates



# Contact Information



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