

Numeric Nutrient Criteria for Florida Estuaries

2015 Environmental Permitting
Summer School

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OVERVIEW

- *Update on estuarine NNC*
- *Recent work on tidal creeks*
- *Example application of estuarine NNC*

**OVER LAST 3
YEARS, THE
DEPARTMENT
ADOPTED NNC BY
RULE FOR
MAJORITY OF
STATE'S
ESTUARIES**

**– Southwest Florida and Keys in
December 2011**

- Clearwater Harbor, Tampa Bay, Sarasota Bay, Charlotte Harbor, Caloosahatchee Estuary, Southwest Coast, Florida Bay, Florida Keys, and Biscayne Bay

**– Florida Panhandle in November
2012**

- Perdido Bay, Pensacola Bay, Choctawhatchee Bay, St. Andrews Bay, St. Joseph Bay, and Apalachicola Bay

– Miscellaneous Estuaries in April 2013

- Loxahatchee River, Lake Worth Lagoon, Halifax River, Guana River/Tolomato River/Matanzas River, Nassau River, Suwannee River, Waccasassa River, Withlacoochee River, and Springs Coast

"THE PATH FORWARD"

- *This left gaps, and as part of "Path Forward" Agreement with EPA, Florida committed to submit NNC for all Florida estuaries by Aug 1, 2013*
- *Chapter 2013-71, Laws of Florida required the Department to Calculate interim NNC*
- *Establish the NNC by rule or final order by December 1, 2014 (this rulemaking)*
- *EPA approved all of the NNC, including those in August 1 Report, on September 24, 2013*

PROCESS

- *Reference Period Approach was primary method used to develop NNC*
- *Identifies times and areas where estuary was healthy and well balanced, and establish NNC to maintain community health*
- *Also used "Reference Waters Approach"*
- *NNC are based on TMDLs in some cases*

October 27, 2014

Notice of Change/Withdrawal

DEPARTMENT OF ENVIRONMENTAL PROTECTION

RULE NO.: RULE TITLE:

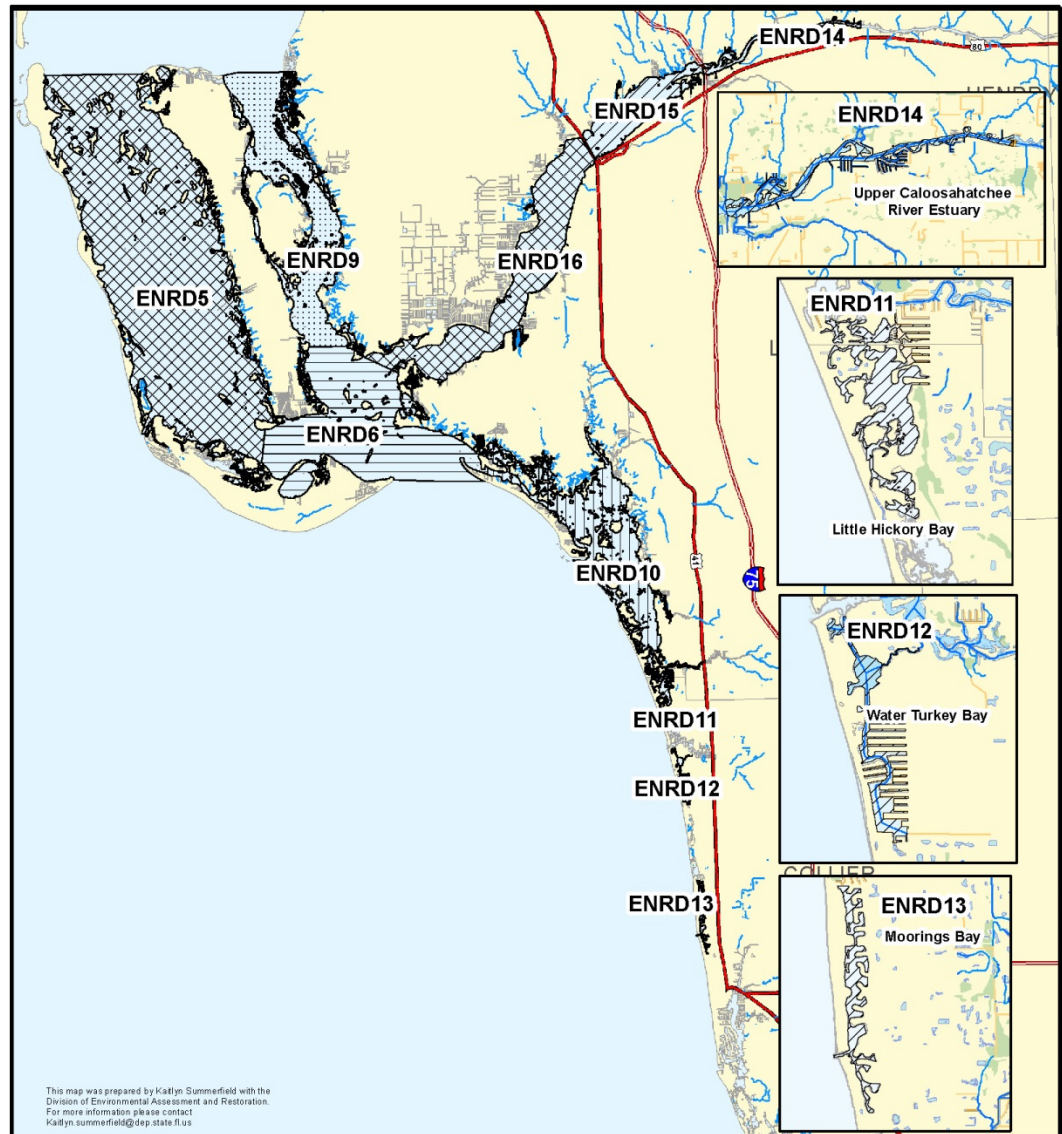
62-302.532 Estuary-Specific Numeric Interpretations
of the Narrative Nutrient Criterion

- Charlotte Harbor/Estero Bay
- Water Turkey Bay
- Apalachicola Bay and Alligator Harbor

SINCE
NOVEMBER
PROPOSED
NNC

- *DEP conducted three public workshops on the NNC for the estuaries at issue*
- *The Department received constructive verbal and written comments, which have been addressed in the final proposed Rule.*
- *DEP responded on February 19, 2015 to these comments*

ESTUARINE NUTRIENT REGIONS



This map was prepared by Kaitlyn Summerfield with the Division of Environmental Assessment and Restoration. For more information please contact Kaitlyn.summerfield@dep.state.fl.us

Estuary Nutrient Regions

Label, Estuary Segment

- ENRD5, Charlotte Harbor/Estero Bay, Pine Island Sound
- ENRD6, Charlotte Harbor/Estero Bay, San Carlos Bay
- ENRD9, Charlotte Harbor/Estero Bay, Malacha Pass
- ENRD10, Charlotte Harbor/Estero Bay, Estero Bay (including Tidal Imperial River)
- ENRD11, Charlotte Harbor/Estero Bay, Little Hickory Bay
- ENRD12, Charlotte Harbor/Estero Bay, Water Turkey Bay
- ENRD13, Charlotte Harbor/Estero Bay, Moorings Bay
- ENRD14, Charlotte Harbor/Estero Bay, Upper Caloosahatchee River Estuary
- ENRD15, Charlotte Harbor/Estero Bay, Middle Caloosahatchee River Estuary
- ENRD16, Charlotte Harbor/Estero Bay, Lower Caloosahatchee River Estuary

Estuary Nutrient Regions

October 2014

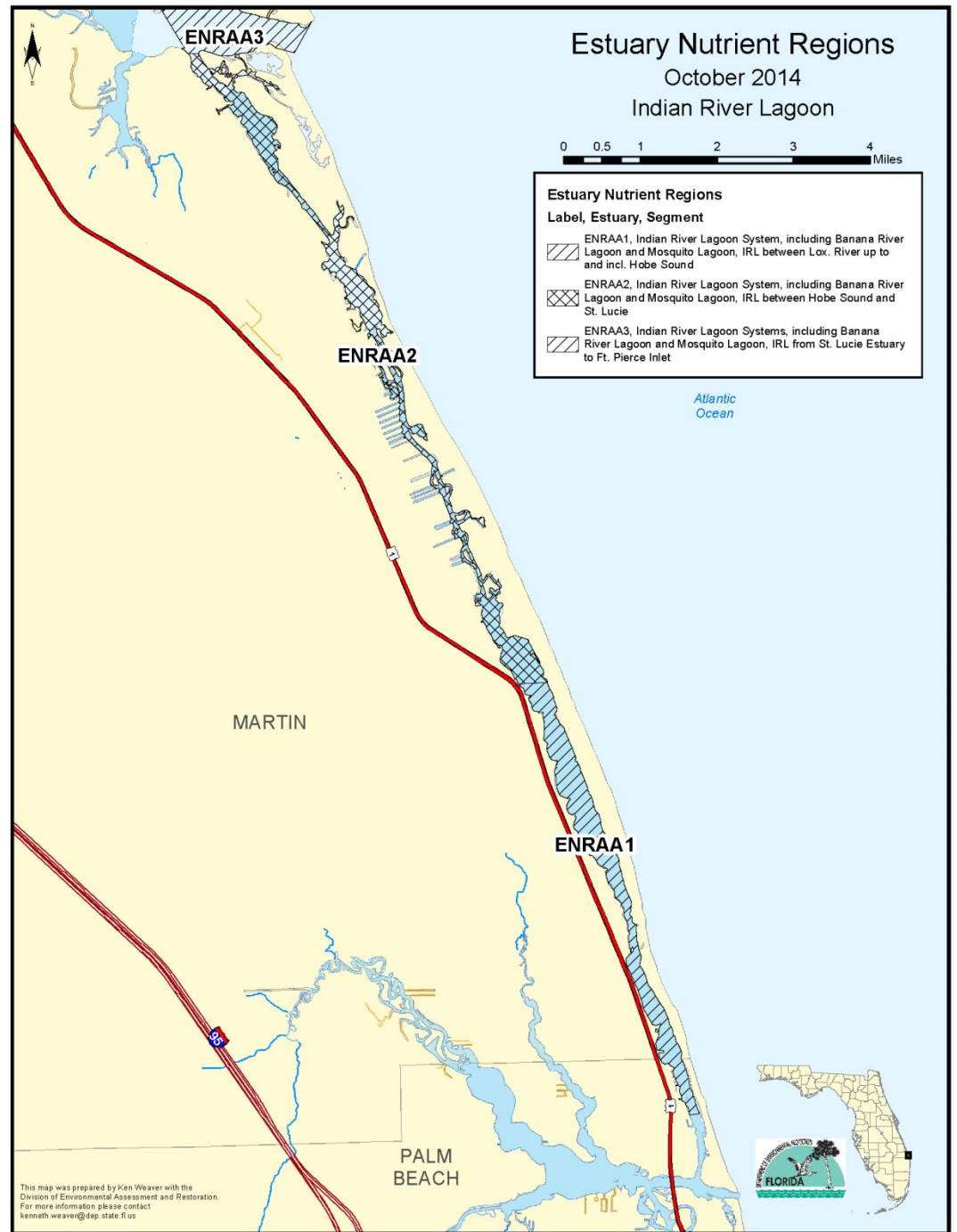
Charlotte Harbor/Estero Bay

Map 2 of 2

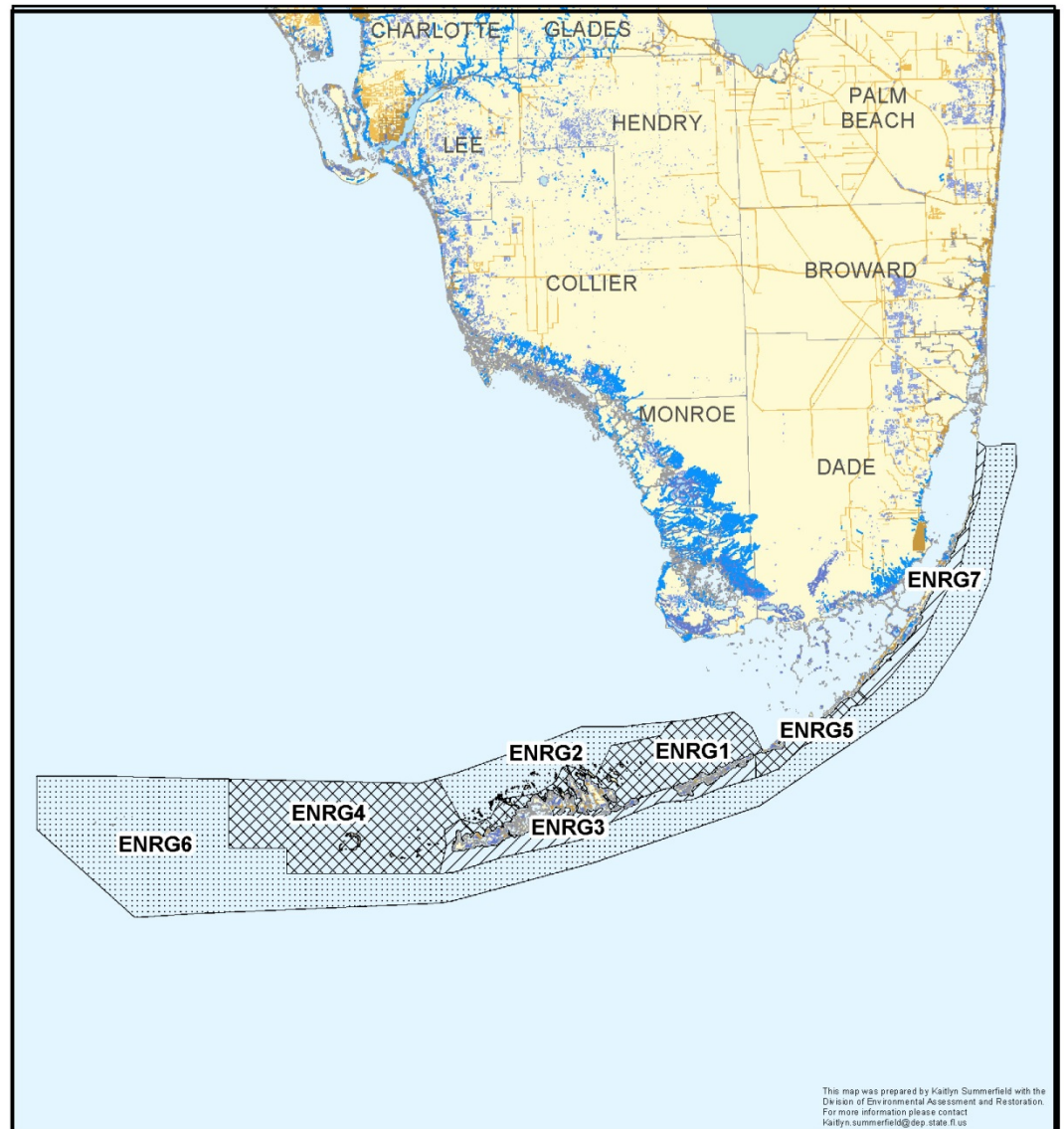


0 2.25 4.5 9 13.5 18 Miles

ESTUARINE NUTRIENT REGIONS



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Estuary Nutrient Regions

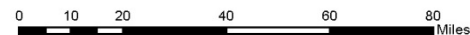
October 2014

Florida Keys

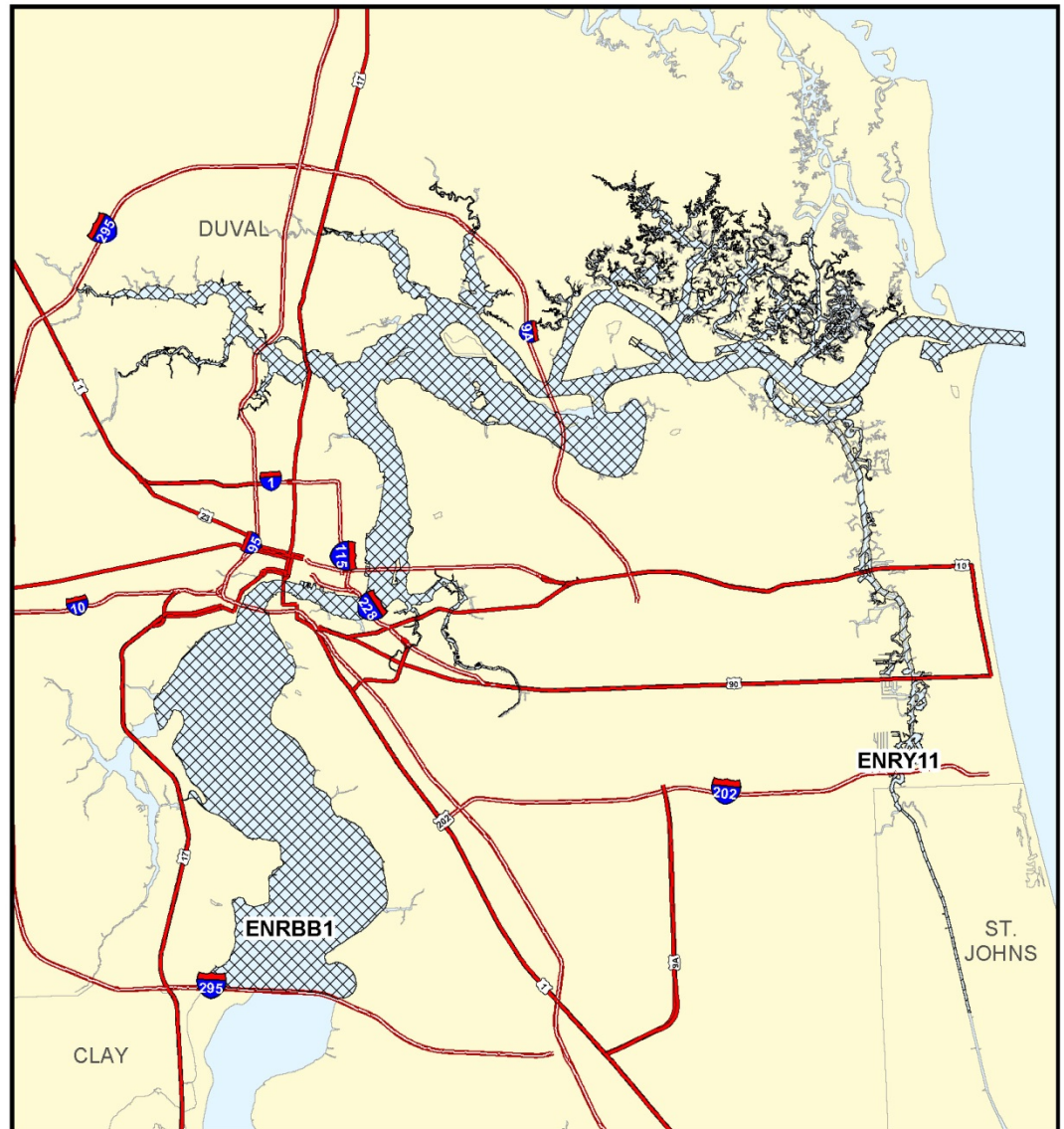
Estuary Nutrient Regions

Label, Estuary, Segment

-  ENRG01, Florida Keys, Back Bay
-  ENRG02, Florida Keys, Backbay
-  ENRG03, Florida Keys, Lower Keys
-  ENRG04, Florida Keys, Marquesas
-  ENRG05, Florida Keys, Middle Keys
-  ENRG06, Florida Keys, Ocean side
-  ENRG07, Florida Keys, Upper Keys





ESTUARINE NUTRIENT REGIONS



Estuary Nutrient Regions

Label, Estuary, Segment

-  ENRBB1, Lower St. Johns River and Tributaries (predominantly marine), Lower St. Johns River and Tributaries (predominantly marine)
-  ENRY11, Intracoastal Waterway (ICWW), ICWW from north Tolomato River to St. Johns River

Estuary Nutrient Regions

October 2014

Lower St. Johns River



This map was prepared by Ken Weaver with the Division of Environmental Assessment and Restoration. For more information please contact: kenneth.weaver@dep.state.fl.us

0 1 2 4 6 8 Miles

DEP NNC TRACKER

- *DEP has developed a web-based geographic tool, NNC Tracker that can be used to view the NNC applicable to waterbodies throughout Florida.*
- *Select from among a variety of views and data layers, and locate a waterbody or area of interest to view information about the waterbody and the applicable nutrient criteria.*
- *NNC Tracker is available from DEP's portfolio of online interactive maps at <http://fdep.maps.arcgis.com/home>*

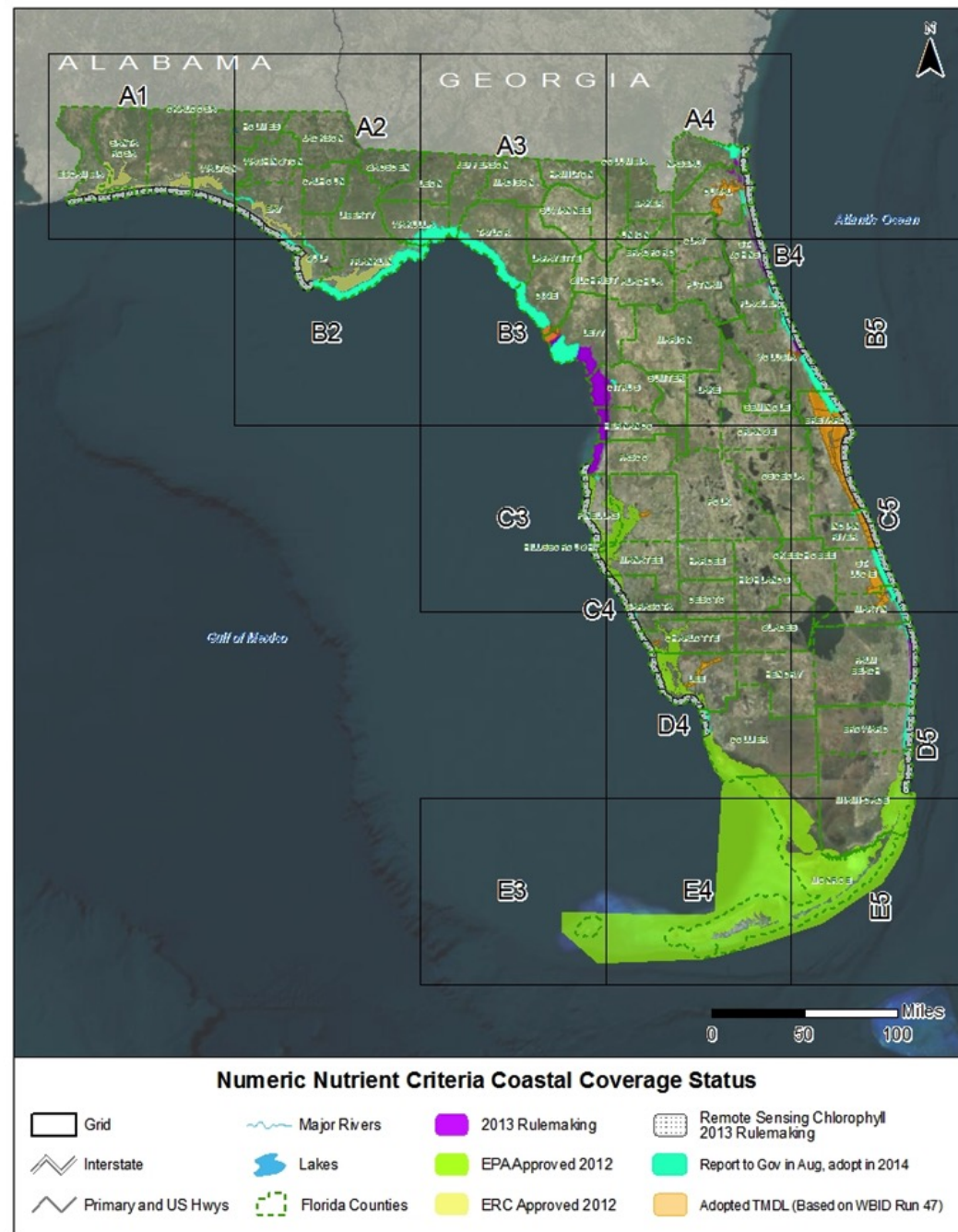
DEP NNC TRACKER

- *Five NNC related GIS layers have been added to DEP's GIS data library.*
- *The layers can be accessed through the FDEP GeoData Directory at <http://www.dep.state.fl.us/gis/datadir.htm>.*
- *DEP will update these data layers as new site specific NNC are approved by the State and EPA.*

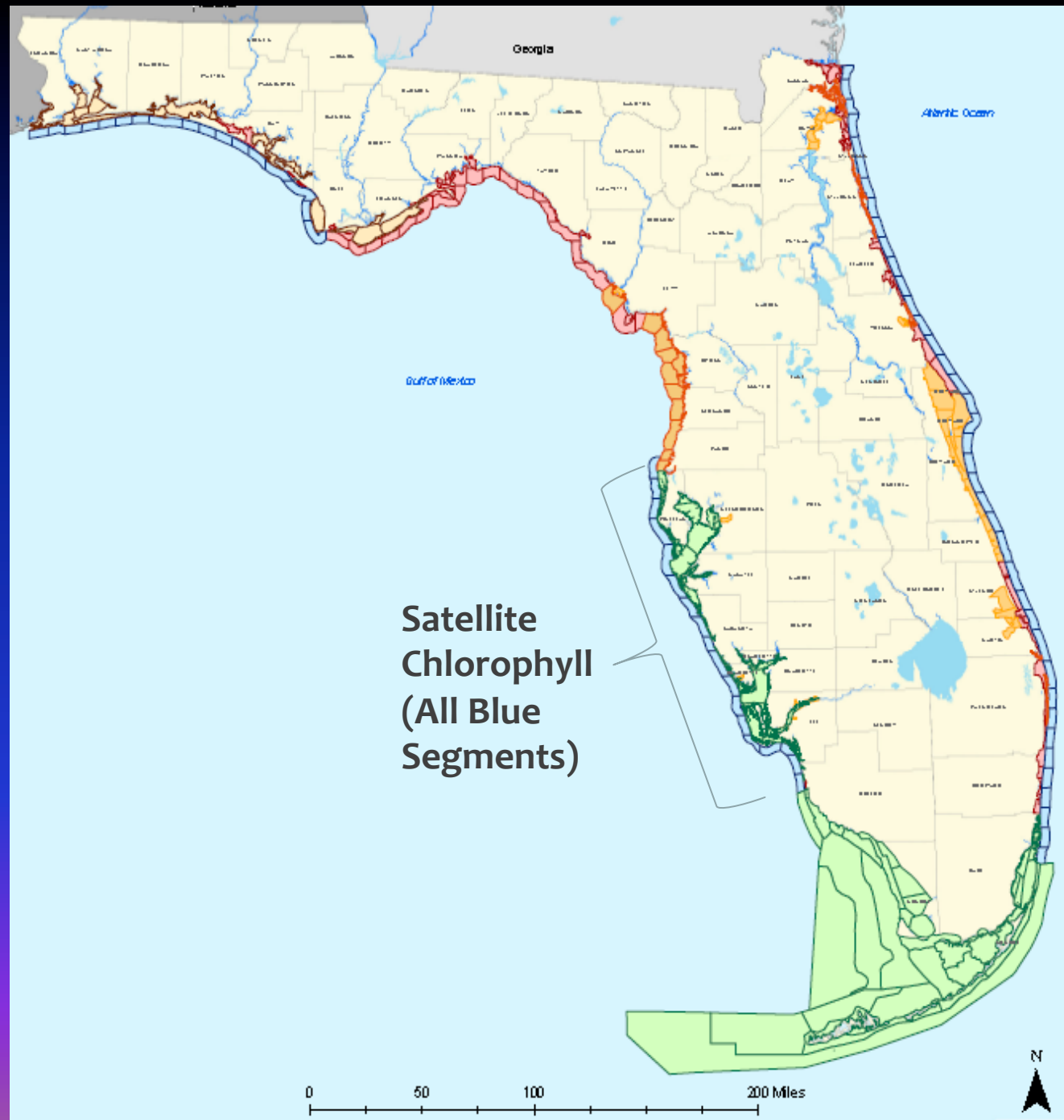
COASTAL NNC

- *Proposing satellite imagery-based chlorophyll a criteria for coastal segments*
- *Based on EPA's proposed 2012 criteria using current healthy chlorophyll a levels*
- *Excluded data from red tide events*
- *Does not include TN or TP*

Coastal NNC



Coastal NNC



TIDAL CREEKS

62-302.532 Estuary-Specific Numeric Interpretations of the Narrative Nutrient Criterion.

(1) Estuary-specific numeric interpretations of the narrative nutrient criterion in paragraph 62-302.530(47)(b), F.A.C., are in the table below. The concentration-based estuary interpretations are open water, area-wide averages. **Nutrient and nutrient response values do not apply to wetlands or to tidal tributaries that fluctuate between predominantly marine and predominantly fresh waters** during typical climatic and hydrologic conditions.

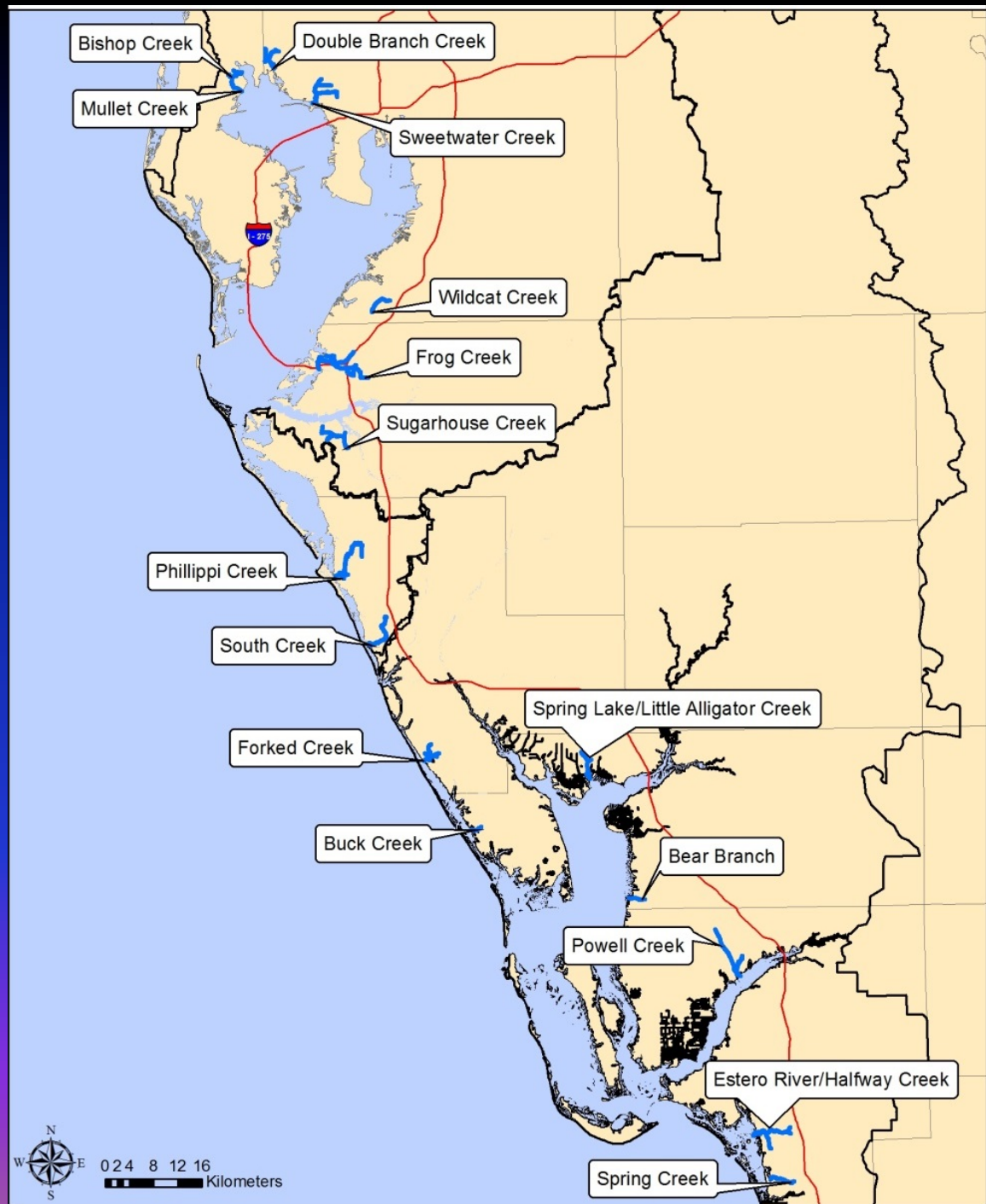
TIDAL CREEKS ARE EXPECTED TO POSSESS WATER QUALITY CHARACTERISTICS THAT DIFFER FROM FRESHWATER SYSTEMS AND THE OPEN ESTUARY.



PROJECT GOAL

- *The overall project goal is to develop management level criteria to protect the biological integrity of tidally influenced creeks in Southwest Florida*
- *Potential for providing information for eventual NNC development*

- Three Estuaries
- Six Counties
- Over 100 Miles of Coastline



DATA COLLECTION

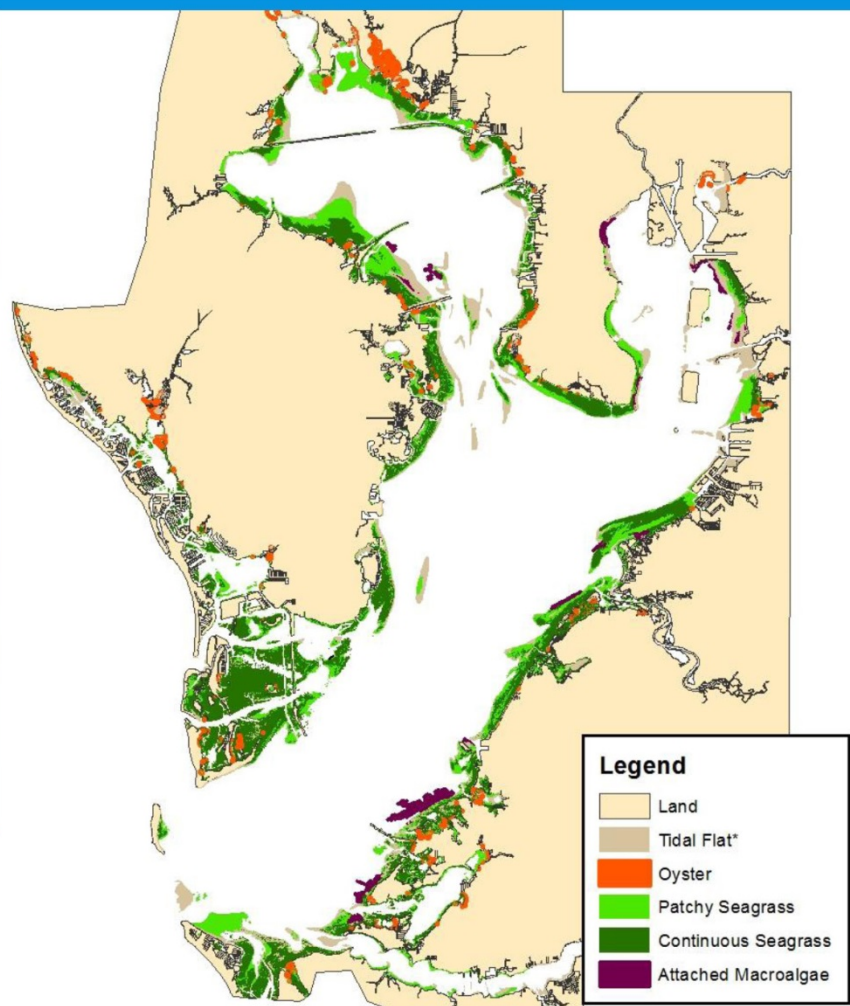


- *Watershed characterization*
- *In-stream habitat characterization*
- *Water quality*
- *Fish collection*

TAMPA BAY

- *Original targets established in 1994 (seagrass) and loadings (1996)*
- *EPA TMDL – 1998*
- *Reasonable Assurance – 2002*
- *NNC – 2013*
- *Successful collaboration - Nitrogen Management Consortium*

- *Results have been extremely positive*



2014 Acreage: 40,294.71

Habitat	Code	Acreage
Patchy Seagrass	9113	16,366.54
Continuous Seagrass	9116	23,928.16
Attached Macroalgae	9121	986.79
Oyster	6540	131.42
Tidal Flat*	6510	14,813.48

* Acreage not final and subject to change