

Numeric Nutrient Criteria: *Coming to a State Near You*



Coastal, Environmental, Marine & Water Resources Engineering

Numeric Nutrient Criteria Presentation Outline

What are Numeric Nutrient Criteria (NNC) and why is EPA pushing them?

History of NNC development

Status of NNC by State

How NNCs impact shipyards

Florida Case Study

Issues and Recommendations

United States
Environmental Protection
Agency

Office of Water
4304

EPA 822-R-98-002
June 1998



National Strategy for the Development of Regional Nutrient Criteria

June 1998



Numeric Nutrient Criteria

What are NNC?

Historically nutrient standards have been narrative

"... in no case shall nutrient concentrations of body of water be altered so as to cause an imbalance in natural populations of flora or fauna".



Numeric Nutrient Criteria

What are NNC?

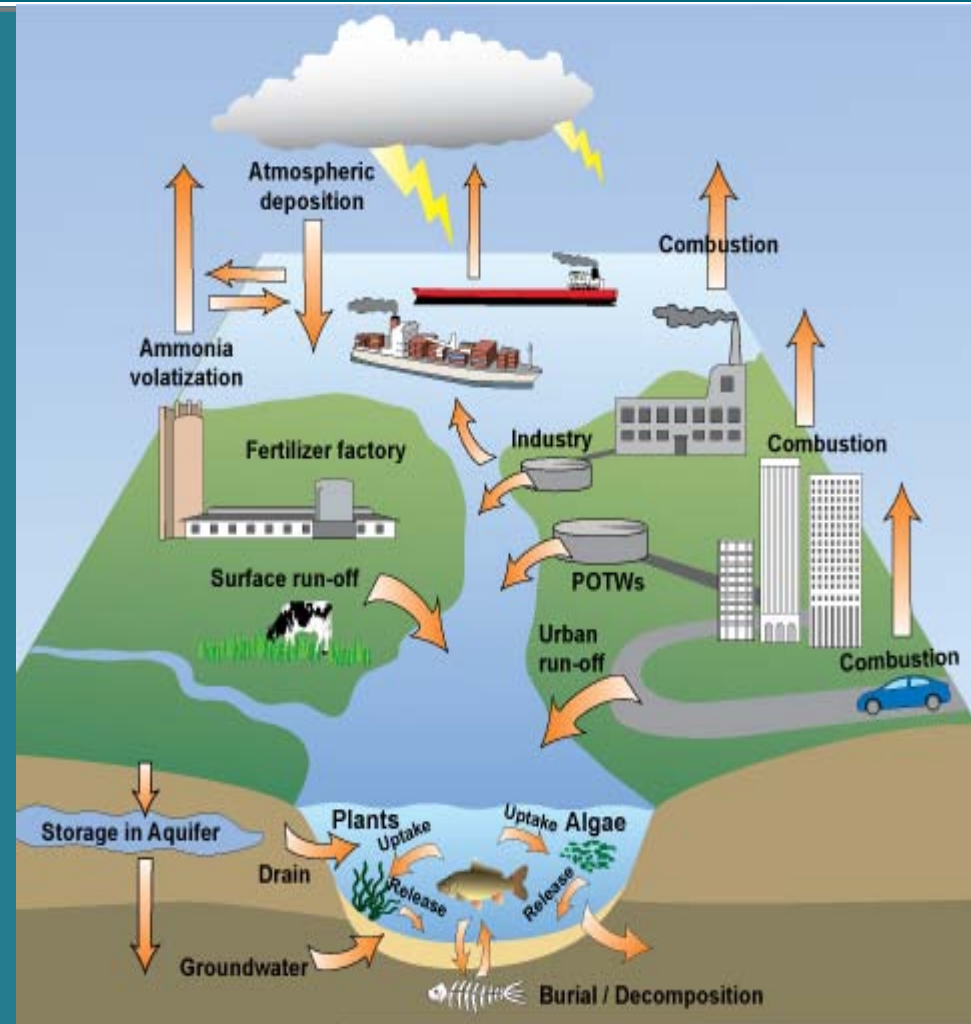
EPA seeks to establish criteria for four parameters

Causative Parameters

Nitrogen and Phosphorus

Response Parameters

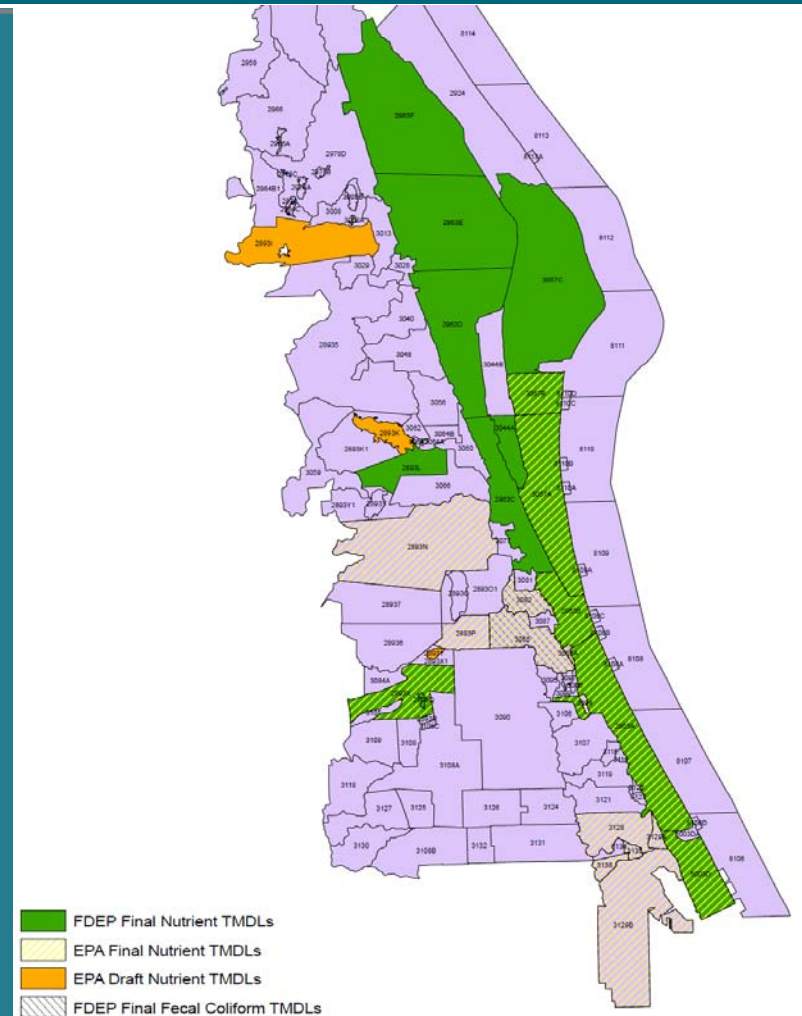
Chlorophyll a and Clarity



Numeric Nutrient Criteria

Why is EPA pushing their development?

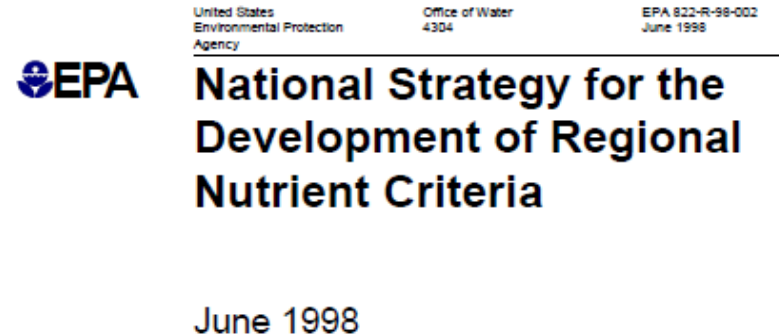
1. Faster development of TMDLs;
2. quantitative targets to support trading;
3. easier to write NPDES permits;
4. quantification of success; and
5. measureable baseline to assess progress.



Numeric Nutrient Criteria

History of NNC Development

1. 1998 - National Strategy for Development of Regional Nutrient Criteria
2. 2001 National Action Plan
3. 2007 Memo to States identifying EPA commitment to NNC and desire to accelerate adoption
4. Florida Consent Decree



Numeric Nutrient Criteria National Status (2008)

Numeric Nutrient Standards Status by Year	4 Parameters 4 Waterbody Types ¹	1+ Parameters 1+ Entire Waterbody Types ²	1+ Parameters Selected Waters ³	No Numeric Criteria ⁴
1998	0	6	7	37
2008	0	7	18	25
2008 Numeric Nutrient Standards Status by Waterbody Type	4 Parameters 4 Waterbody Types ⁵	1+ Parameters 1+ Entire Waterbody Types ⁶	1+ Parameters Selected Waters ⁷	No Numeric Criteria ⁴
Lakes/Reservoirs	0	6	13	31
Rivers/Streams	0	5	9	36
Estuaries (24 eligible States)	0	3	7	14
Wetlands	0	0	4	46

1. Adopted numeric criteria for all four parameters for all waterbody types.
2. Adopted numeric criteria for one or more parameters for at least one entire waterbody type.
3. Adopted numeric criteria for one or more parameters for selected waters in one or more waterbody types.
4. Has not adopted numeric criteria.
5. Adopted numeric criteria for all four parameters for the entire waterbody type.
6. Adopted numeric criteria for one or more parameters for the entire waterbody type.
7. Adopted numeric criteria for one or more parameters for selected waters in a waterbody type.

Numeric Nutrient Criteria

How can NNC Impact Shipyards?

NPDES Facility Permit

Domestic WWTP

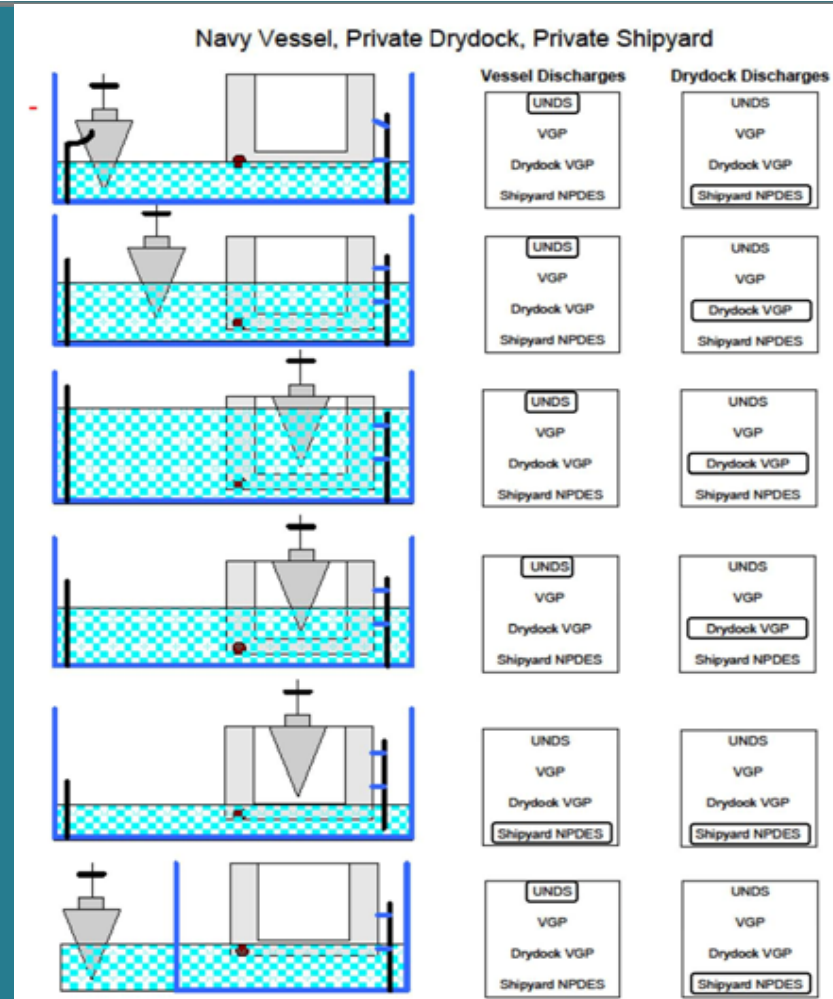
Dry Dock Discharges

Graving Dock Discharges

Ballast Water Discharges

Fire Protection Water

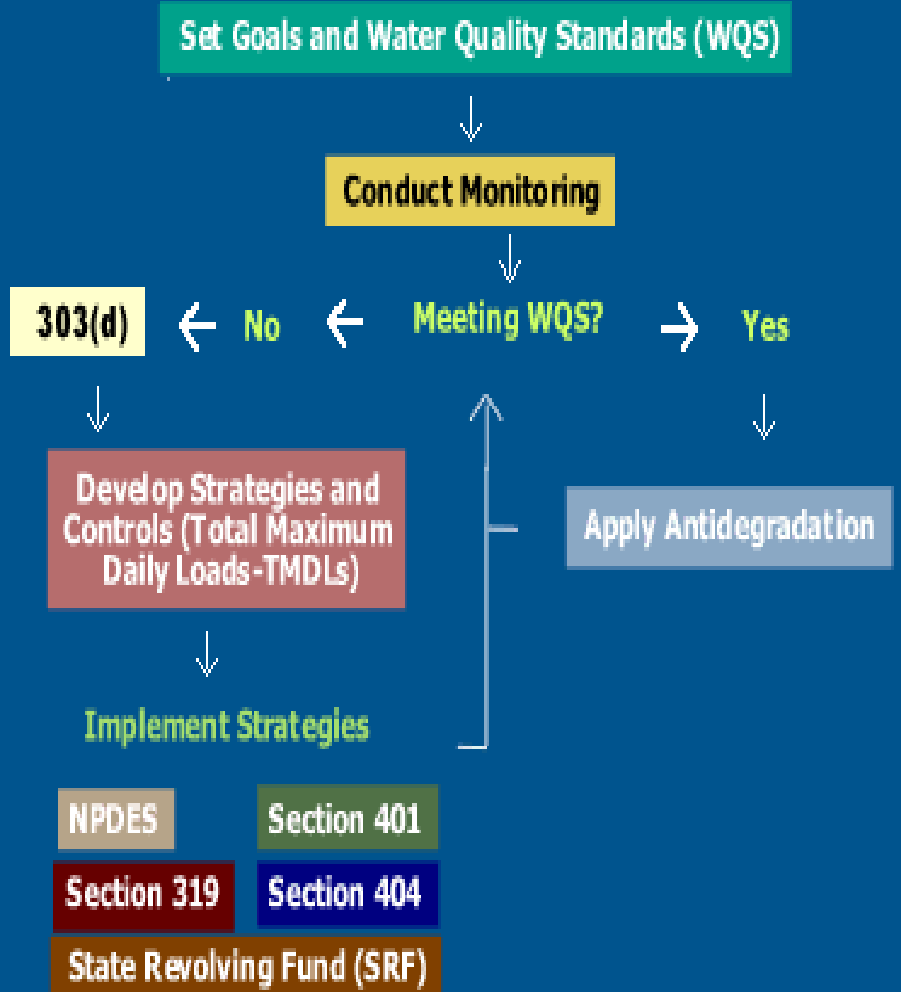
Multi-Sector General NPDES Permit (MSGP)



Numeric Nutrient Criteria

Clean Water Act Implications

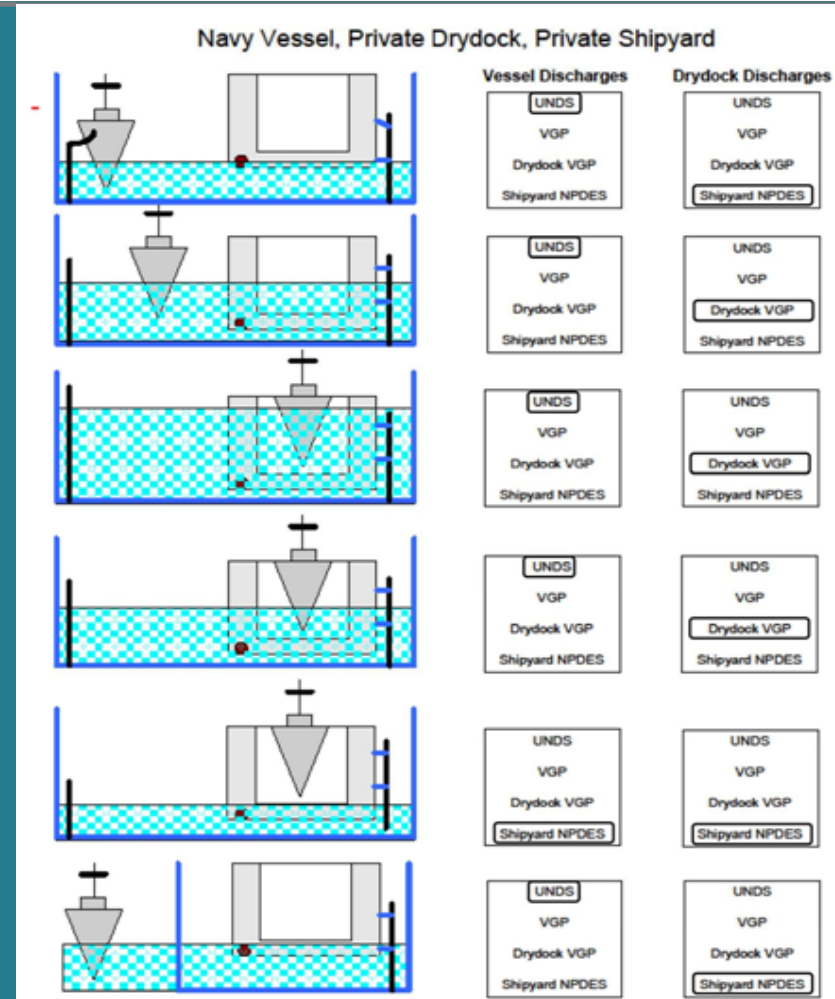
1. Water Quality Standards
2. Monitoring
3. Listing - 303(d) Program
4. Total Maximum Daily Load (TMDL)
5. Implementation
 - a) NPDES Program



Numeric Nutrient Criteria

How can NNC Impact Shipyards?

1. Additional waterbodies listed as impaired for nutrients
2. Additional TMDLs for nutrients
3. Potential end of pipe effluent limitations (NNC)
4. MSGP has limitations for impaired waterbodies or waterbodies with TMDLs



Numeric Nutrient Criteria

How can NNC Impact Shipyards?

MSGP: Discharges to Impaired Waters

- a. prevent all exposure to stormwater of the pollutant(s) for which the waterbody is impaired
- b. document that the pollutant(s) for which the waterbody is impaired is not present at your site
- c. without a TMDL
 - i. meet standard at EOP
- d. with TMDL
 - i. capacity left over for discharge

Numeric Nutrient Criteria Florida Case Study

Streams and Lakes

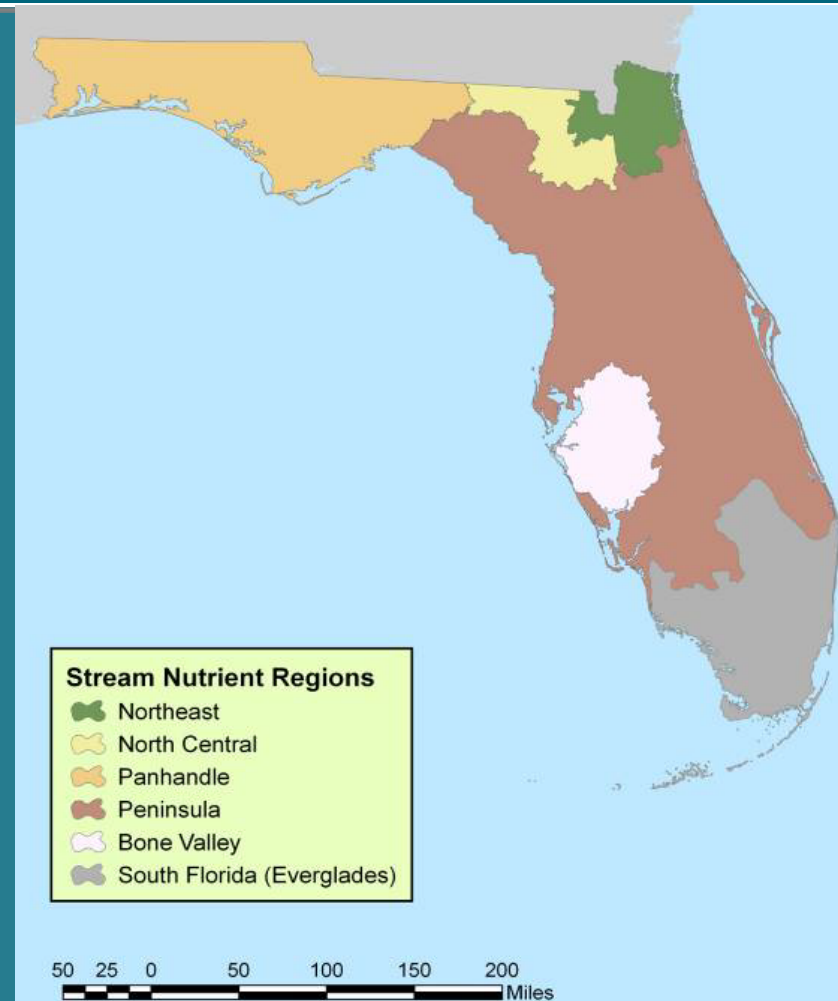
Draft January 15, 2010

Final November 14, 2010

Estuaries

Draft Nov 2011

Final August 2012



Numeric Nutrient Criteria

Florida Case Study

St. John's River Watershed; ^{PN} (EDA Code: ¹ S180x)
 Protective TN Load for the Estuary: ² 4,954,662 kg y⁻¹
 Protective TP Load for the Estuary: ³ TBD

Less than 50%	1.205	1.41	0.107	TBD
50.1–60.0%	1.205	1.17	0.107	TBD
60.1–70.0%	1.205	1.00	0.107	TBD
70.1–80.0%	1.205	0.88	0.107	TBD
80.1–90.0%	1.205	0.78	0.107	TBD
90.1–100%	1.205	0.70	0.107	TBD

Tampa Bay Watershed ^{BV} (EDA Code: ¹ G070x)
 Protective TN Load for the Estuary: ² 1,289,671 kg y⁻¹
 Protective TP Load for the Estuary: ³ TBD

Less than 50%	1.798	1.11	0.739	TBD
50.1–60.0%	1.798	0.93	0.739	TBD
60.1–70.0%	1.798	0.80	0.739	TBD
70.1–80.0%	1.798	0.70	0.739	TBD
80.1–90.0%	1.798	0.62	0.739	TBD
90.1–100%	1.798	0.56	0.739	TBD

Numeric Nutrient Criteria

Summary of Key Issues

1. NNC will be very low in relation to typical discharge levels
2. Concentration approach limits options for regional management
3. How NNC are implemented will significantly alter level of impact
4. How will NNC be tied to existing NPDES permits and new NPDES permits

Numeric Nutrient Criteria

What could NSRP do?

1. Monitor progress of NNC regionally to see timing and content of proposed criteria
2. Provide organizational comments, technical and policy
3. Monitor how criteria will be implemented relative to NPDES permits

Questions?



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