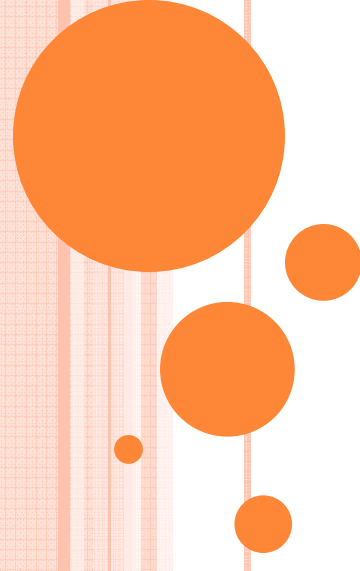


ACCOUNTING AND ADAPTIVE EVALUATION, NEUSE AND TAR-PAMLICO NUTRIENT STRATEGIES

Nutrient Scientific Advisory Board, 3/4/11



Rules Compliance Accounting

Strategy Progress Accounting

Strategy Adaptive Evaluation



NEUSE, TAR NUTRIENT STRATEGIES

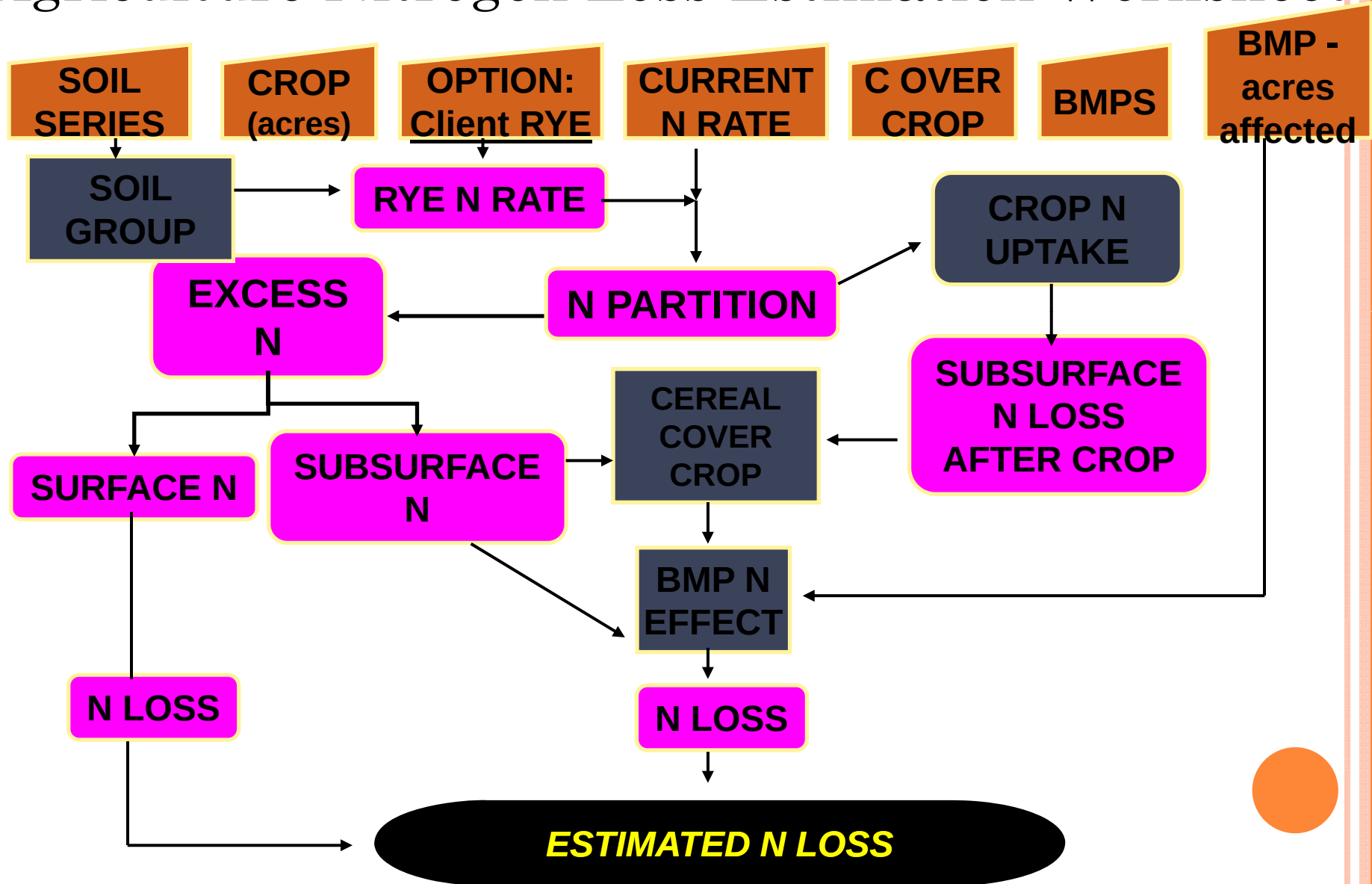
RULES COMPLIANCE ACCOUNTING

	Agriculture	New Development Stormwater	Point Source
<i>When?</i>	Annually	Once for Permit	Annually
<i>Who?</i>	LACs ›BOC	Developer	Association of Dischargers
<i>What?</i>	County N lb/yr Edge-of-Field	Project N, P lb/ac/yr to surface conveyance or project boundary	N, P lb/yr End-of-Pipe
<i>To Whom?</i>	DWQ › EMC	Local Government	DWQ



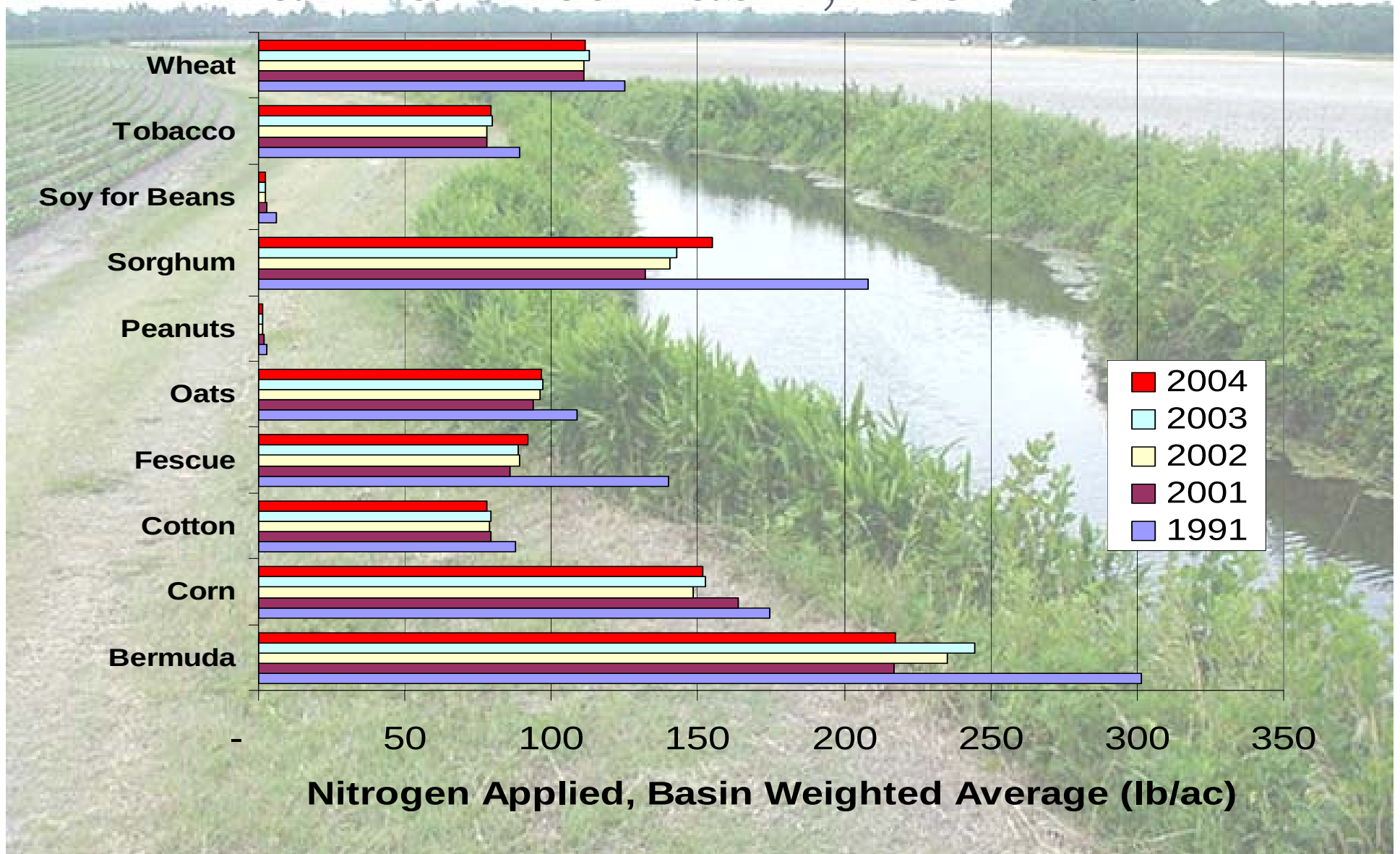
Rules Compliance Accounting

Agriculture Nitrogen Loss Estimation Worksheet

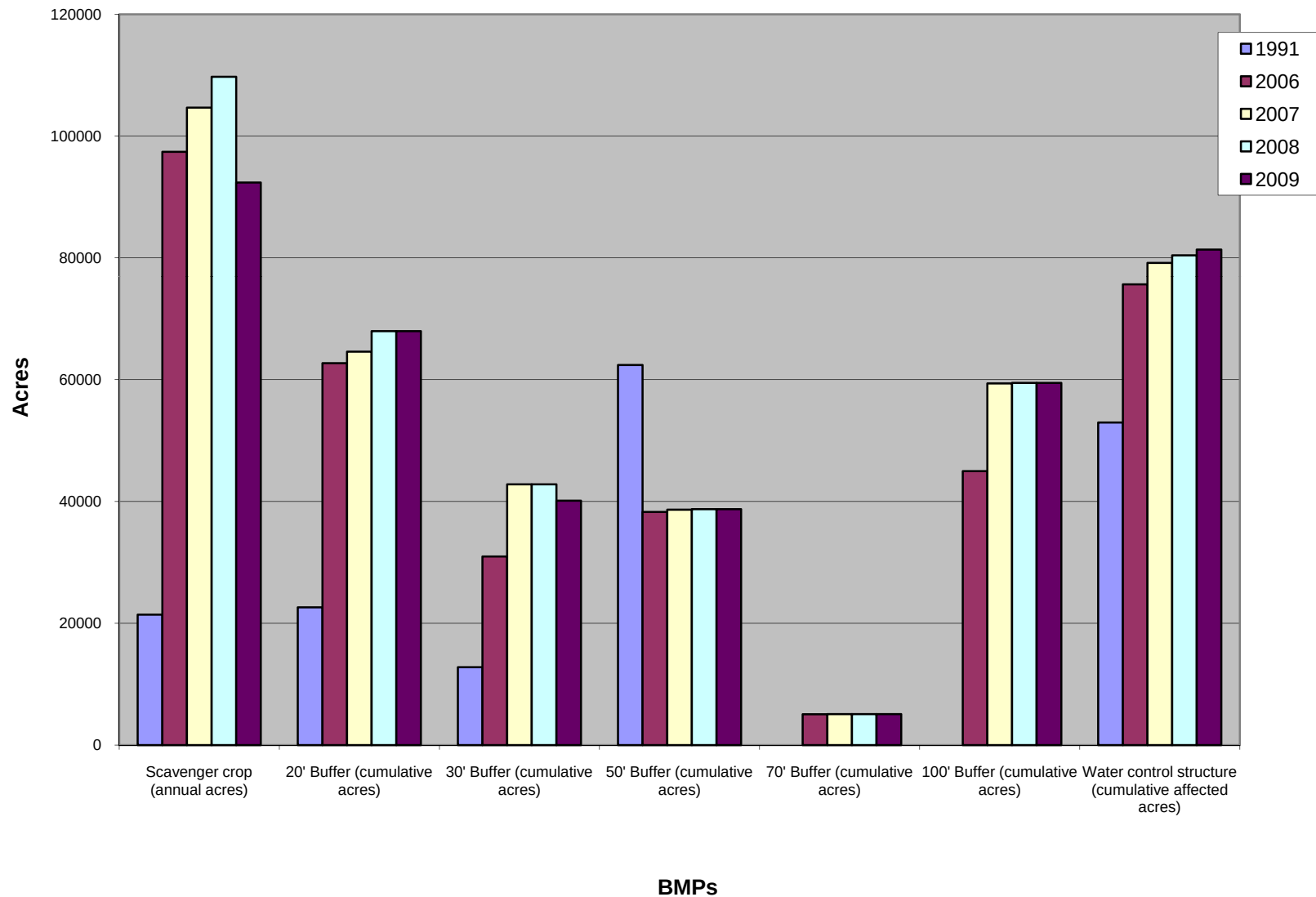


Nitrogen Application Rates

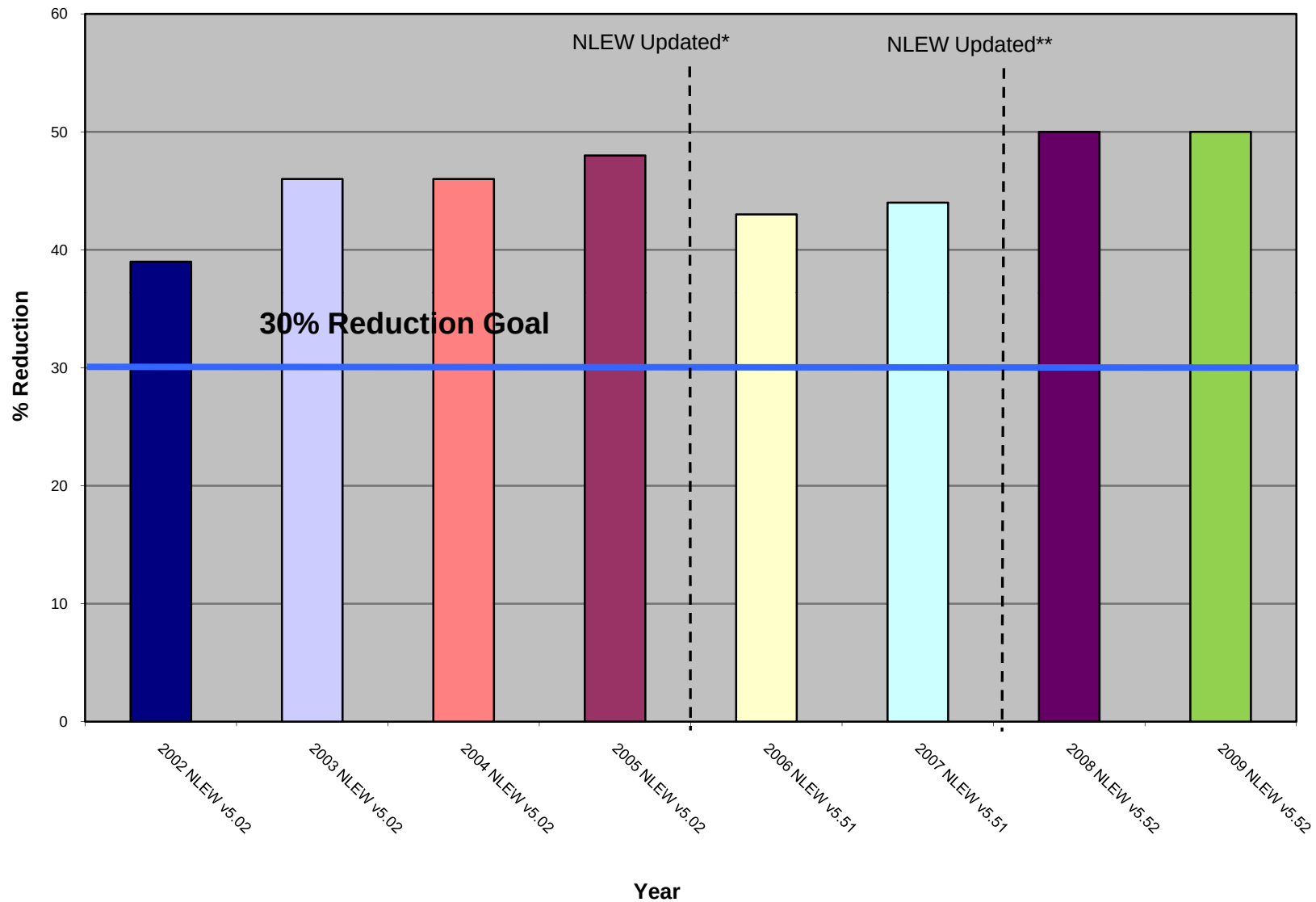
Tar-Pamlico Basin, 1991-2004



AGRICULTURAL BMP IMPLEMENTATION VS. 1991, TAR-PAMLICO RIVER BASIN (Ac)



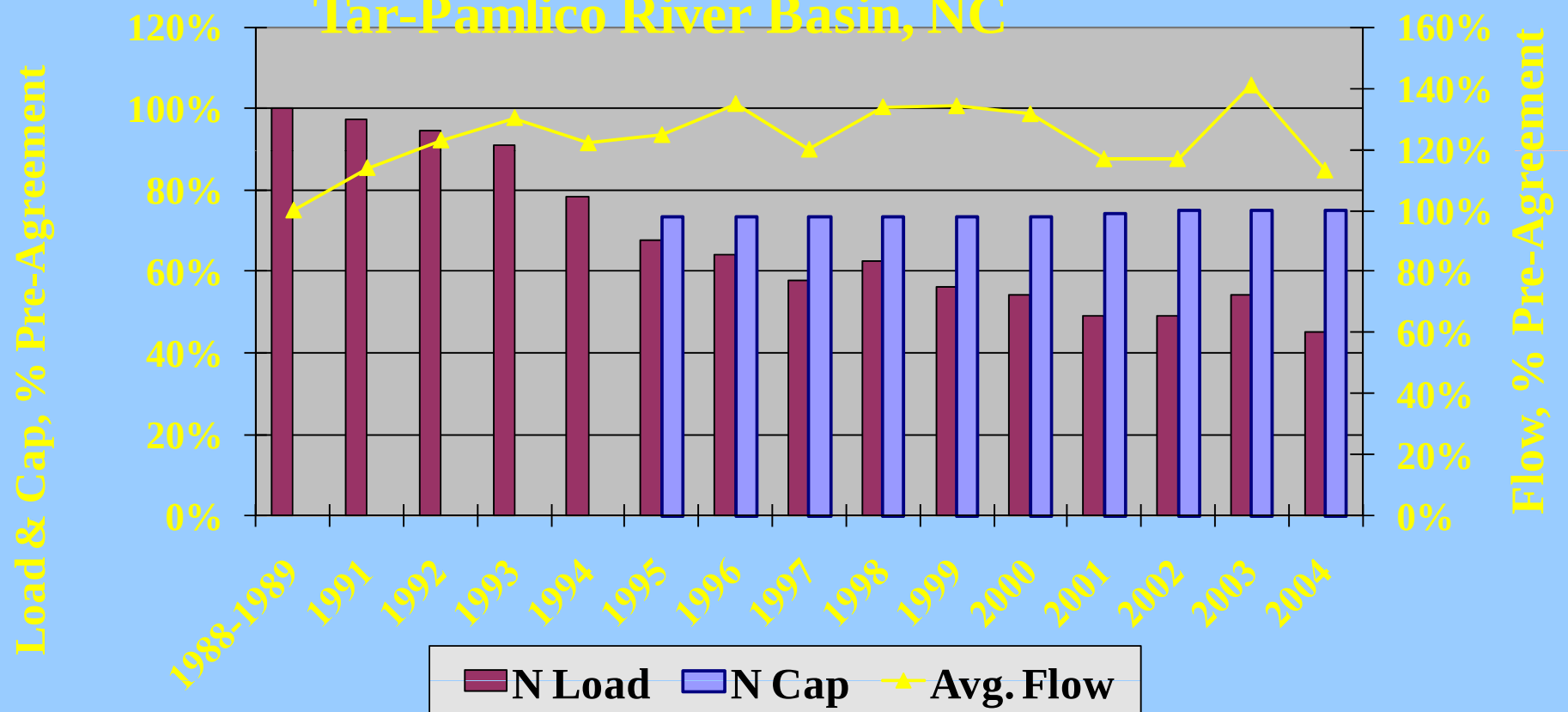
COLLECTIVE AGRICULTURAL N LOSS REDUCTION VS. 1991, TAR-PAMLICO RIVER BASIN (%)



Catchment 1:			Stormwater Load Calculation			
Total acreage of catchment 1 =		ac				
First BMP's TN removal rate =		%	First BMP's TP removal rate =		%	
Second BMP's TN removal rate =		%	Second BMP's TP removal rate =		%	
Third BMP's TN removal rate =		%	Third BMP's TP removal rate =		%	
TOTAL TN REMOVAL RATE =	0	%	TOTAL TP REMOVAL RATE =	0	%	
(1) Type of Land Cover	(2) Catchment Acreage	(3) S.M. Formula (0.46 + 8.3I)	(4) Average EMC of TN (mg/L)	(5) Column (2) * (3) * (4)	(6) Average EMC of TP (mg/L)	(7) Column (2) * (3) * (6)
Transportation impervious			2.60		0.19	
Roof impervious			1.95		0.11	
Managed pervious			1.42		0.28	
Wooded pervious			0.94		0.14	
Area taken up by BMP			1.95		0.11	
Fraction Impervious (I) =			Pre-BMP TN Load (lb/yr) =		Pre-BMP TP Load (lb/yr) =	
Total Area of Development =			Pre-BMP TN Export (lb/ac/yr) =		Pre-BMP TP Export (lb/ac/yr) =	
			Post-BMP TN Load (lb/yr) =		Post-BMP TP Load (lb/yr) =	
			Post-BMP TN Export (lb/ac/yr) =		Post-BMP TP Export (lb/ac/yr) =	

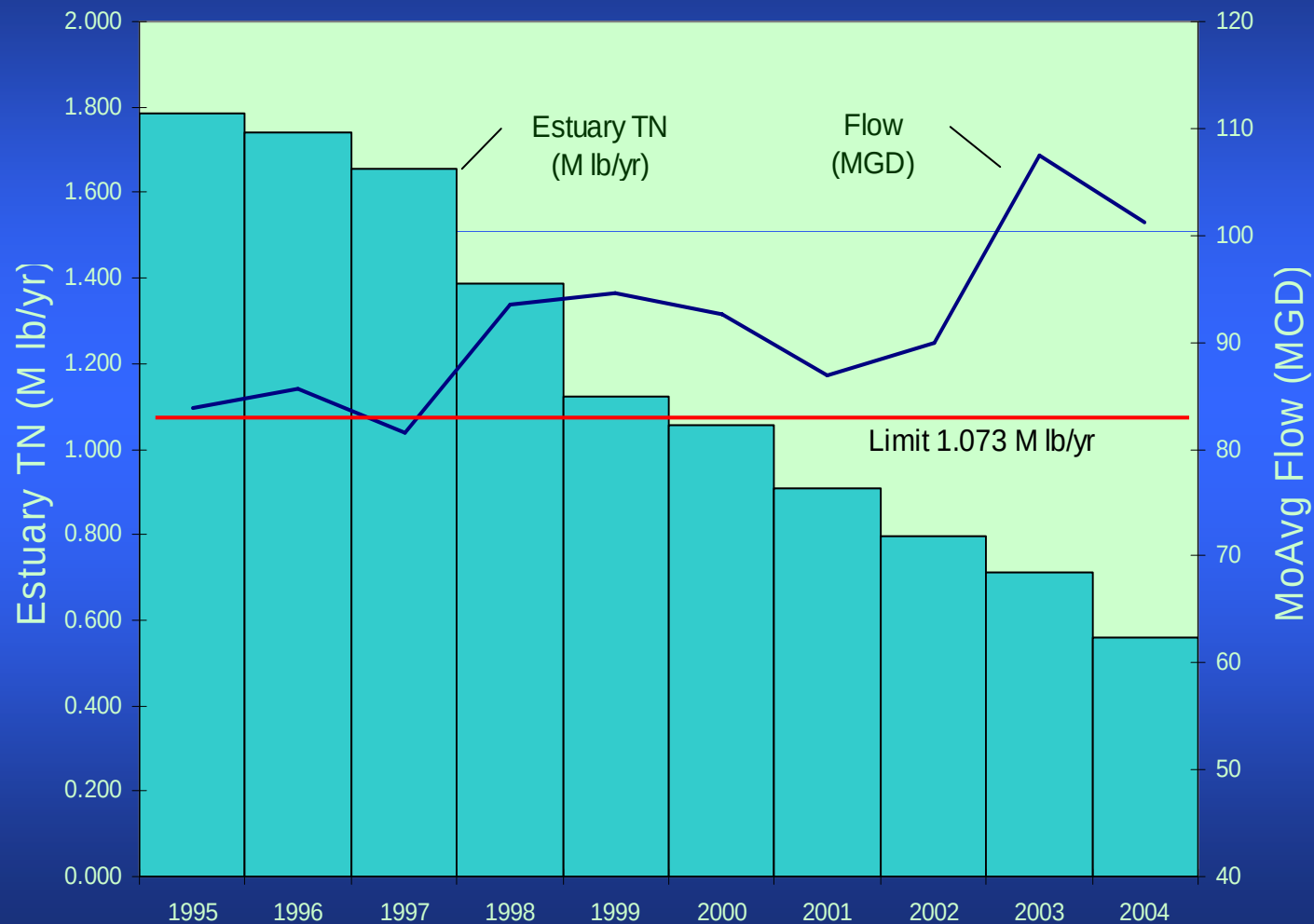
Rules Compliance Accounting

Point Source Association E-O-P Nitrogen Loads, Tar-Pamlico River Basin, NC



NEUSE COMPLIANCE ASSOCIATION PERFORMANCE, 1995-2004

- 69% reduction at estuary vs. 1995
- ~ 50% of allocation, 2004



STRATEGY PROGRESS ACCOUNTING TO DATE

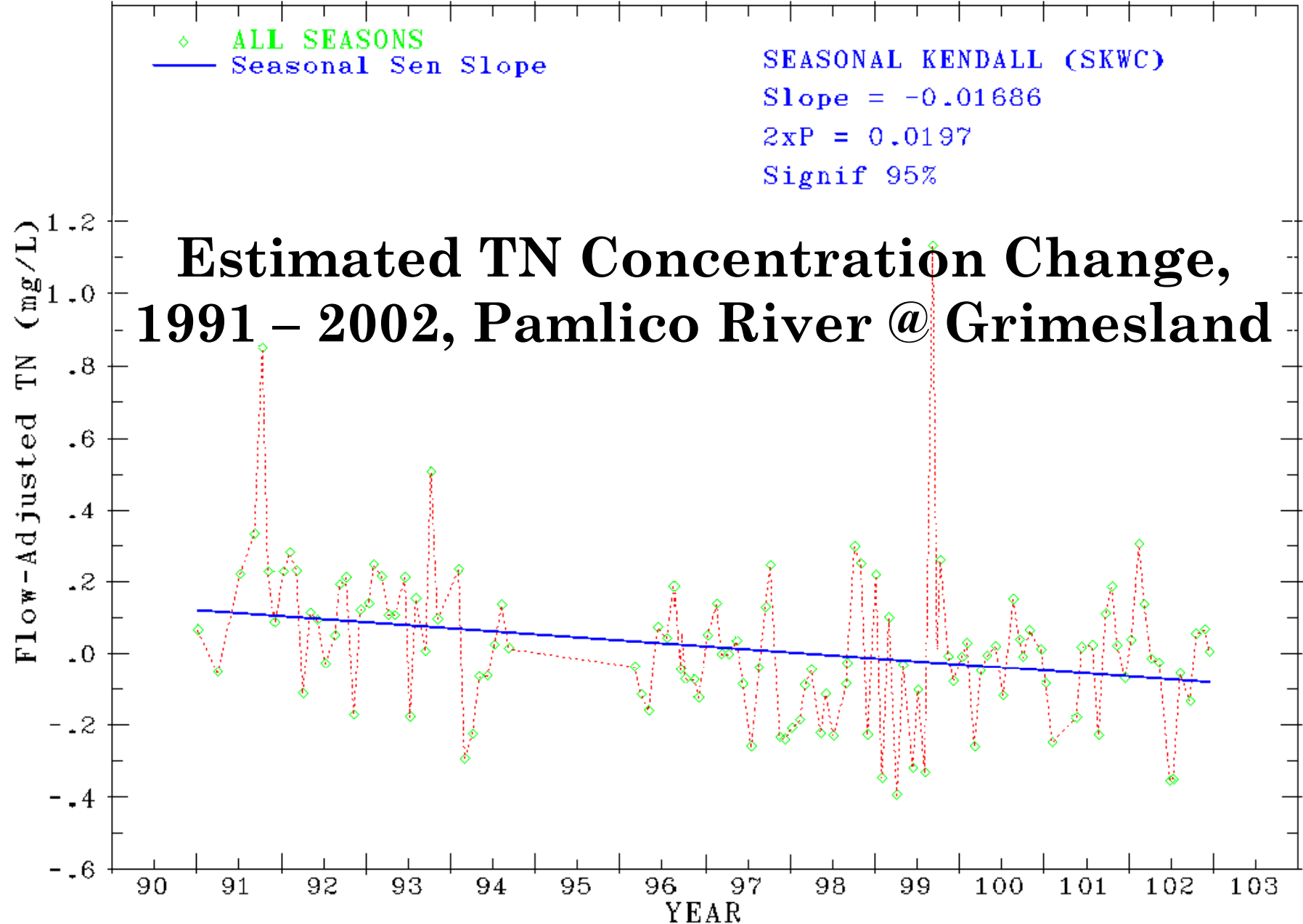
- Periodic
- Public
- Conservative

Trends in:

- Estuary Loads
- Estuary Concentrations
- Use Support



Grimesland



Estimated TN Mass Loads at Ft. Barnwell, 1991 - 2006

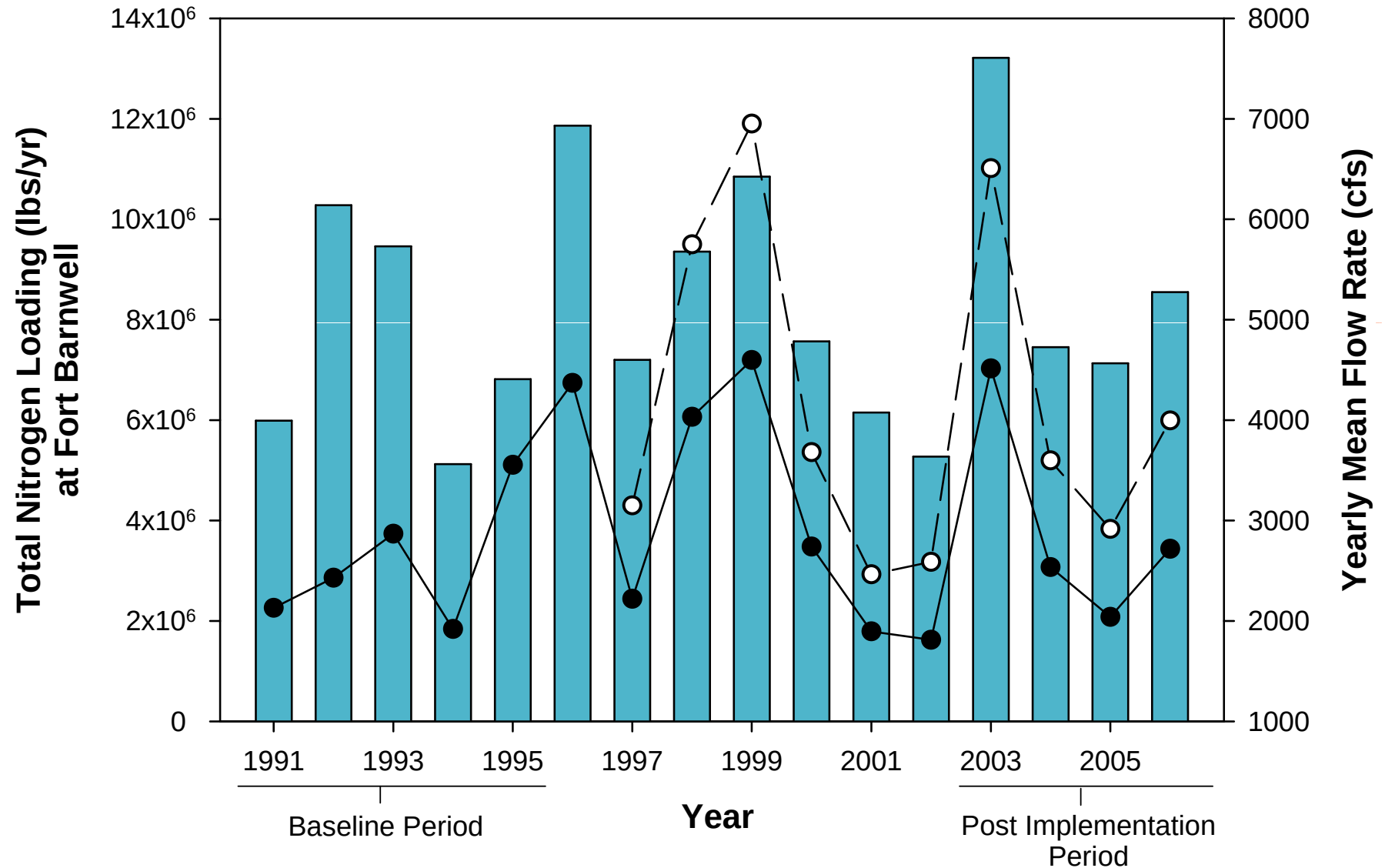
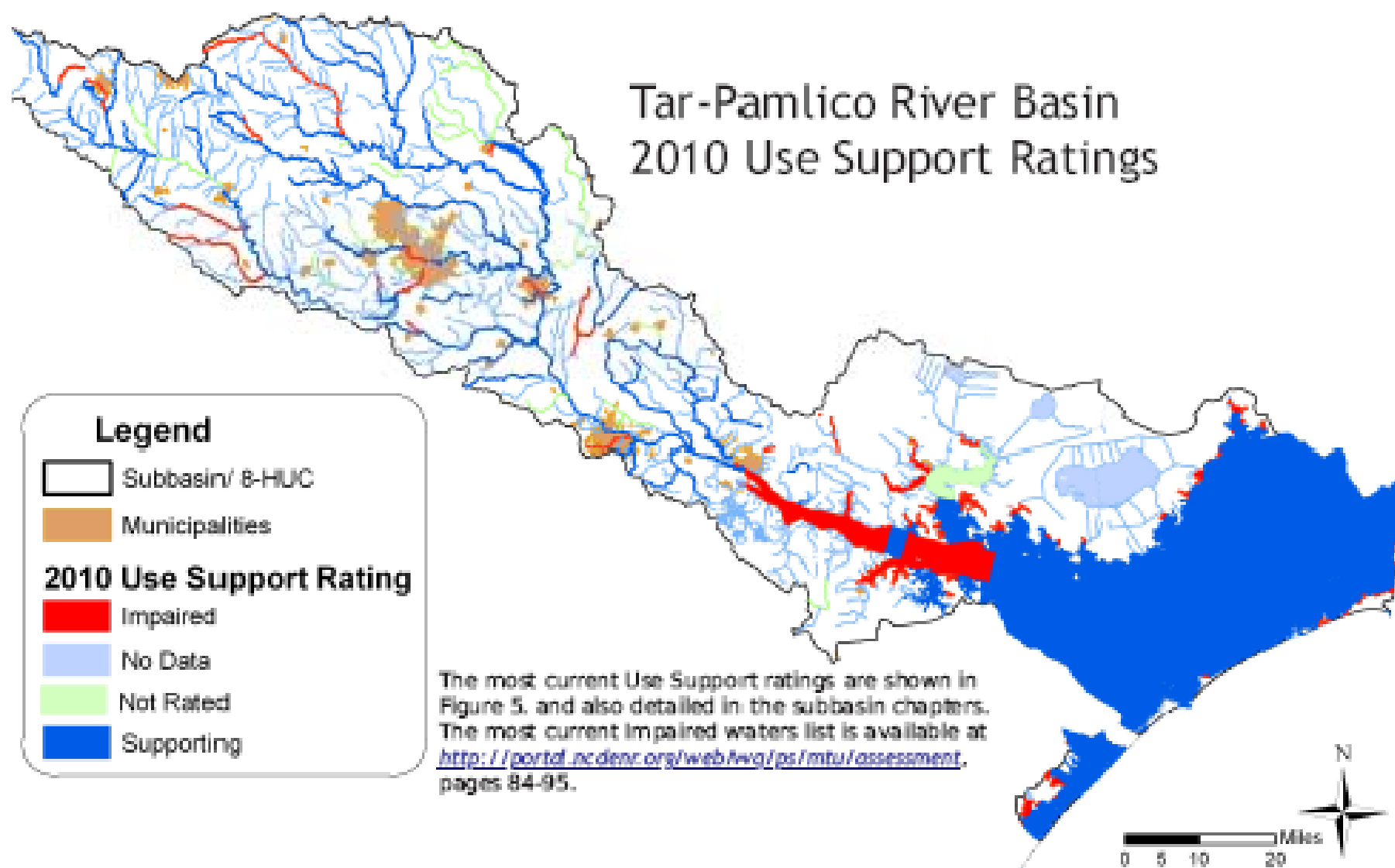
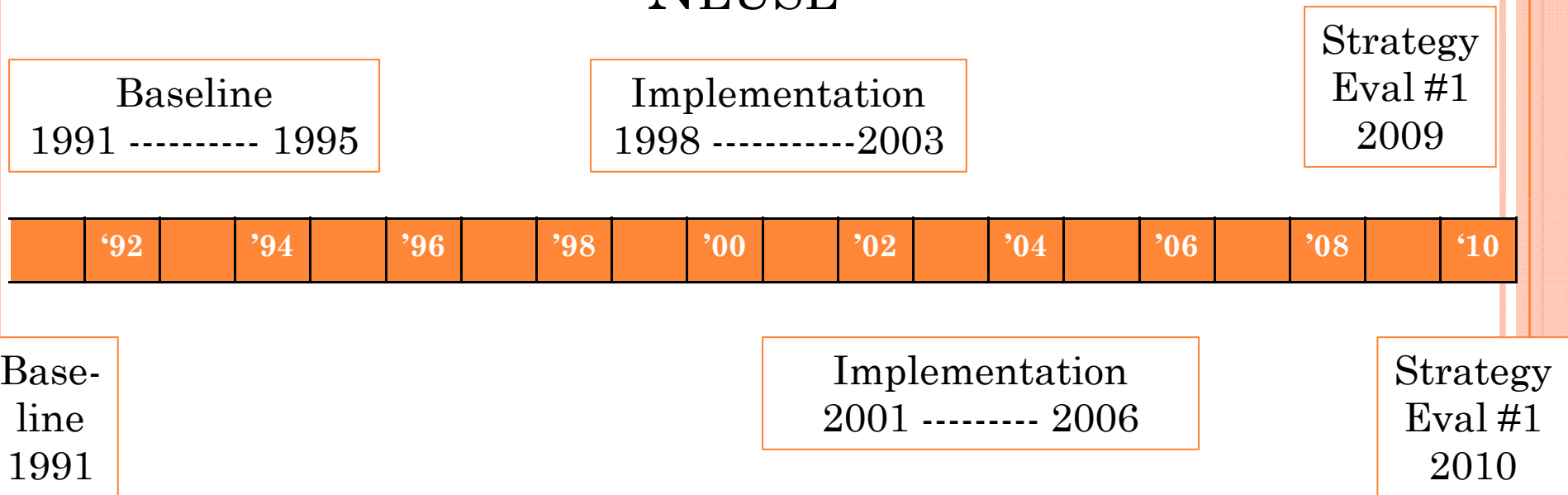


FIGURE 5. BASINWIDE 2010 USE SUPPORT RATINGS



NEUSE, TAR ADAPTIVE EVALUATIONS

NEUSE



TAR-PAMLICO



ADAPTIVE EVALUATIONS UNDER NEUSE, TAR STRATEGIES

Focus

- Gaps in strategy coverage
- Research needs
- Improvements to rules accounting, compliance

Not Considered

- More stringent requirements
- Remodeling of estuaries



JORDAN IMPLEMENTATION TIMELINE

- Buffers: 2009 →
- New Dev't: 2012 →
- Agriculture: 2012 → 2015 - 2018
- Point Source: 2016 →
- Existing Development:
 - **Upper New Hope** 2015 → 2023 → ?
 - **Haw, Lower New Hope** 2018 → ?

