

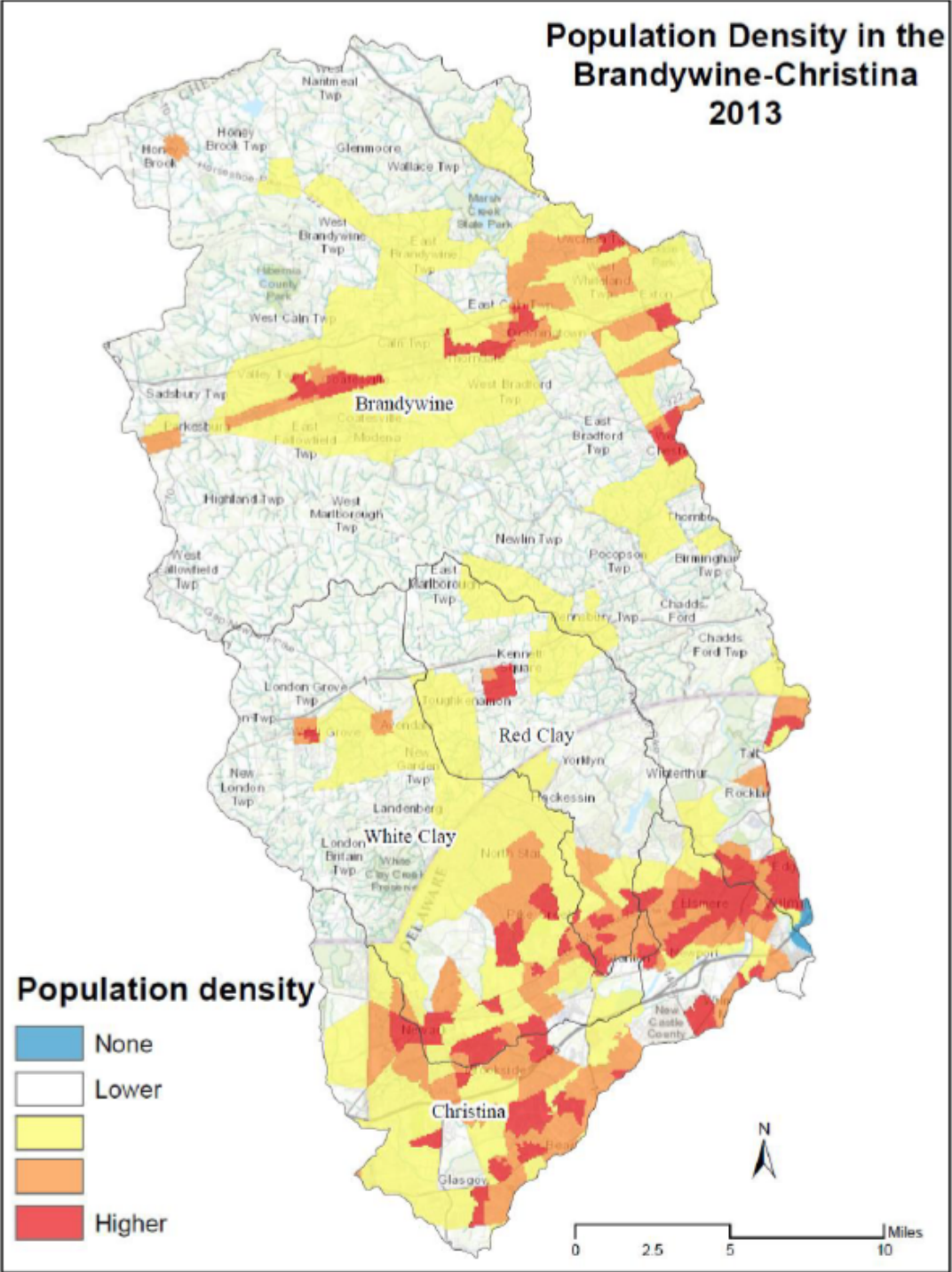
Brandywine-Christina Watershed Trends (1995-2015)

Outline

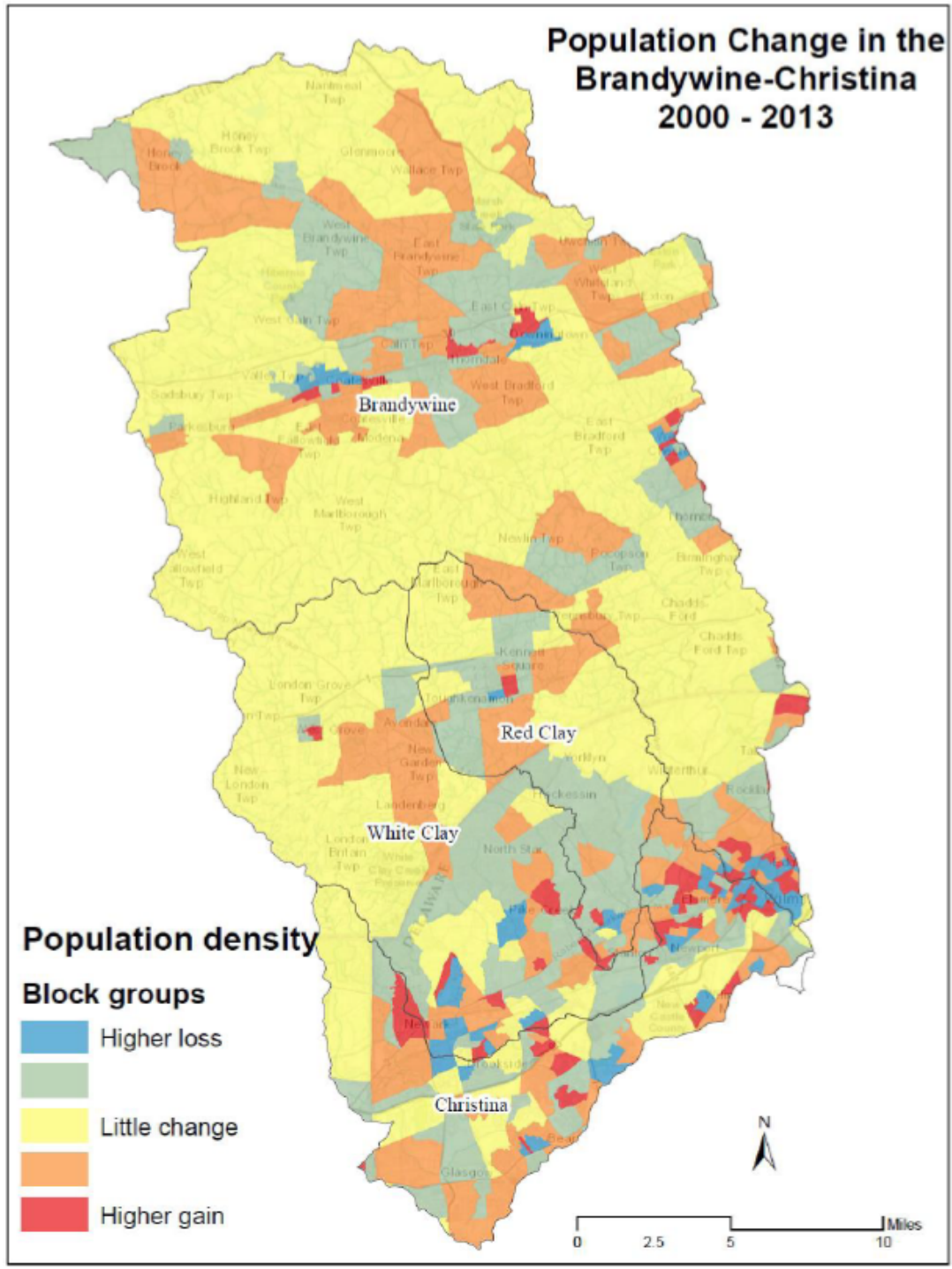
- Population
- Land Use
- Water Quality
 - DO, Bacteria, N, P, TSS
 - Temporal/Spatial
 - Seasonality
 - Turbidity
 - Water Temperature
- Streamflow
 - Drought
 - Flood

Population

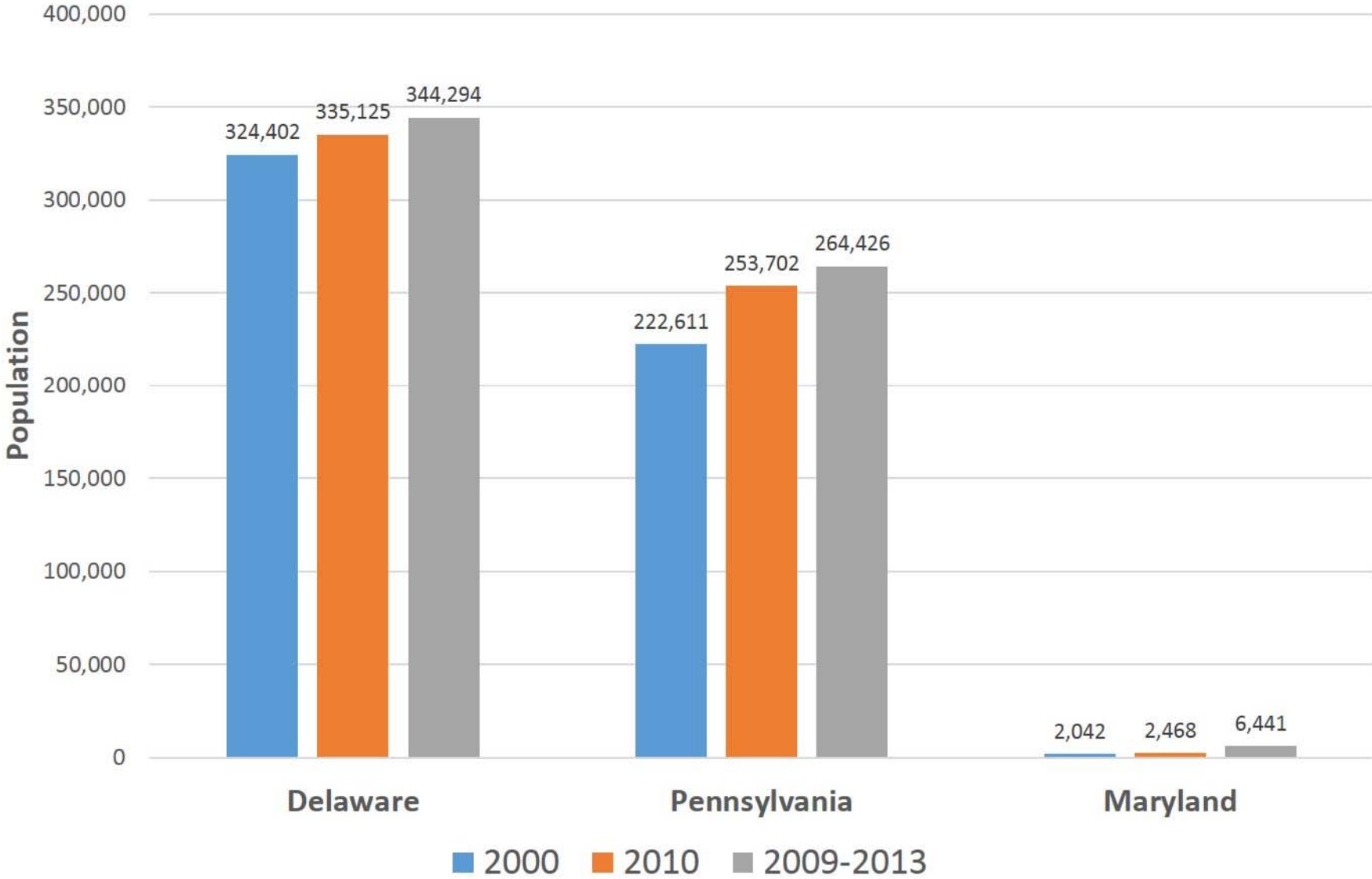
Population Density in the Brandywine-Christina 2013



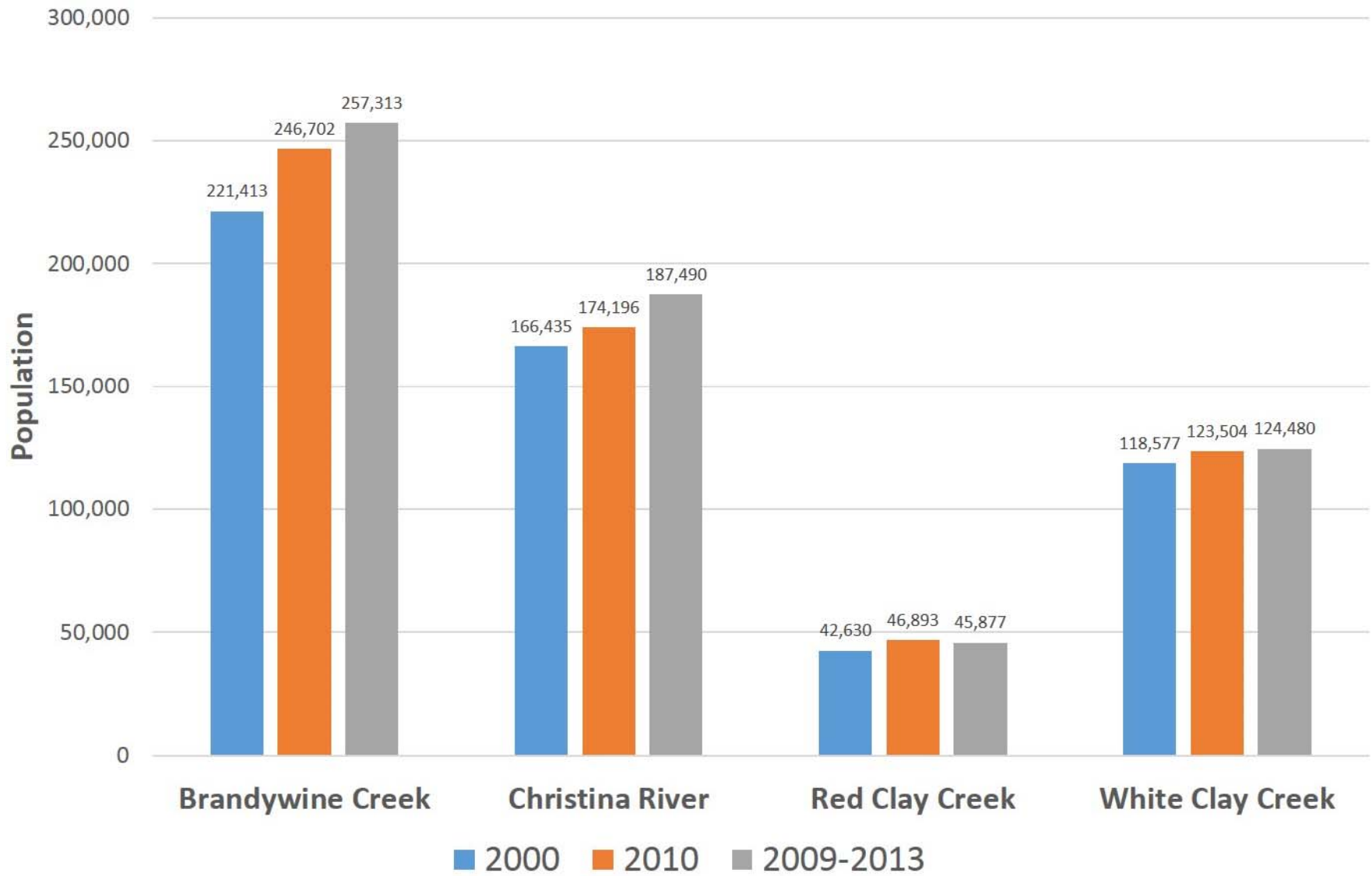
Population Change in the Brandywine-Christina 2000 - 2013



Population in the Brandywine-Christina, by State 2000 to 2013

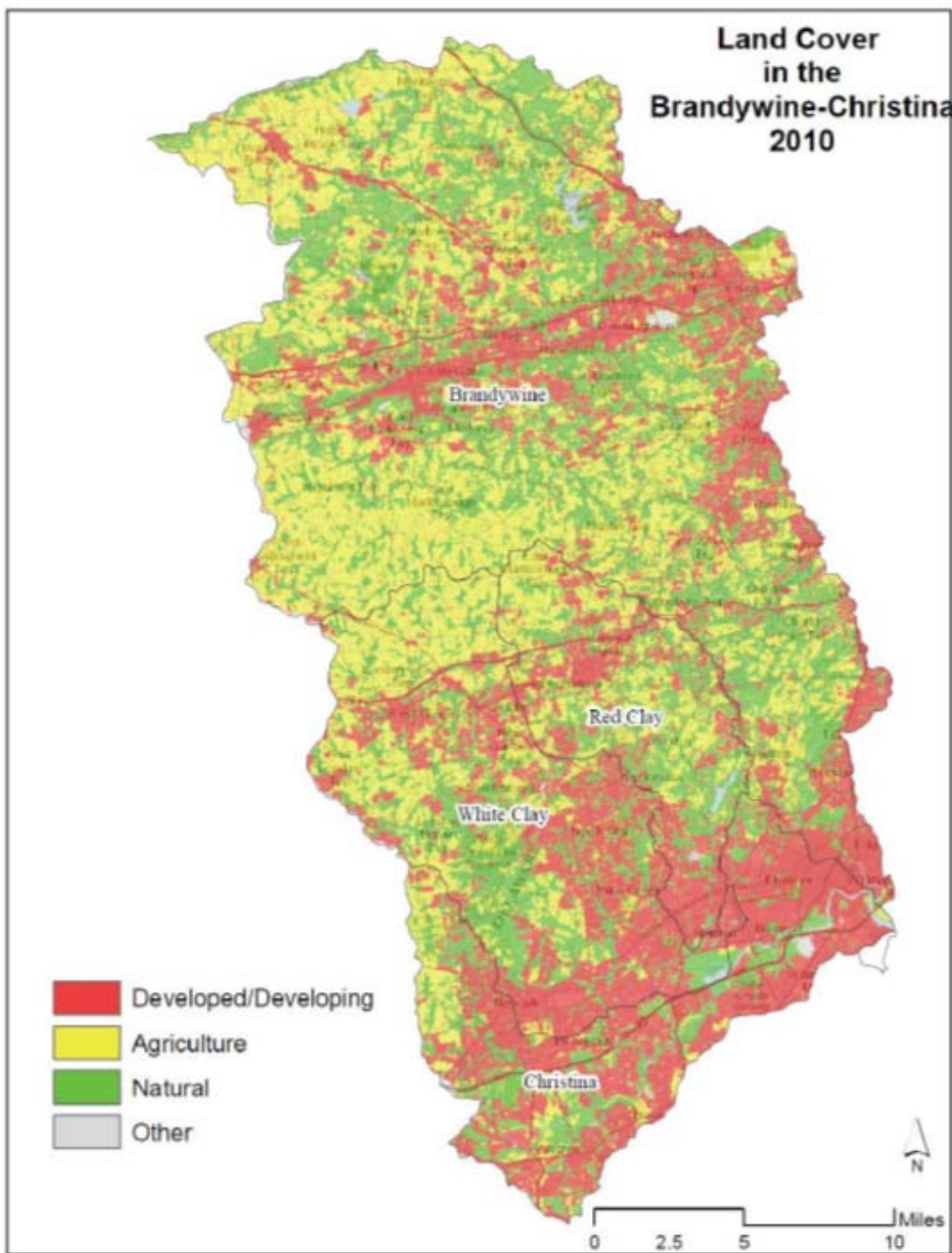


Population in the Brandywine-Christina, by Watershed 2000 - 2013

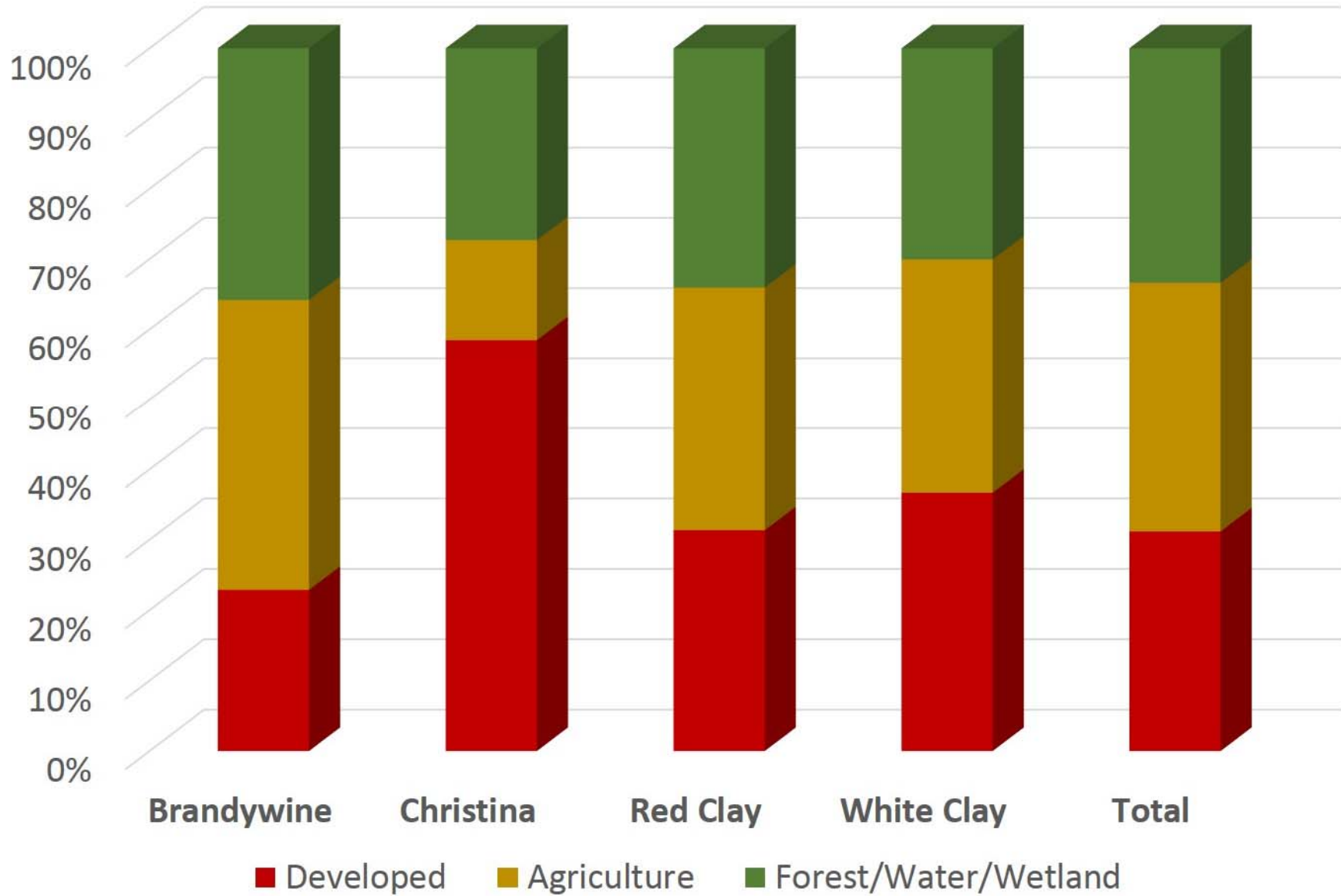


Land Use

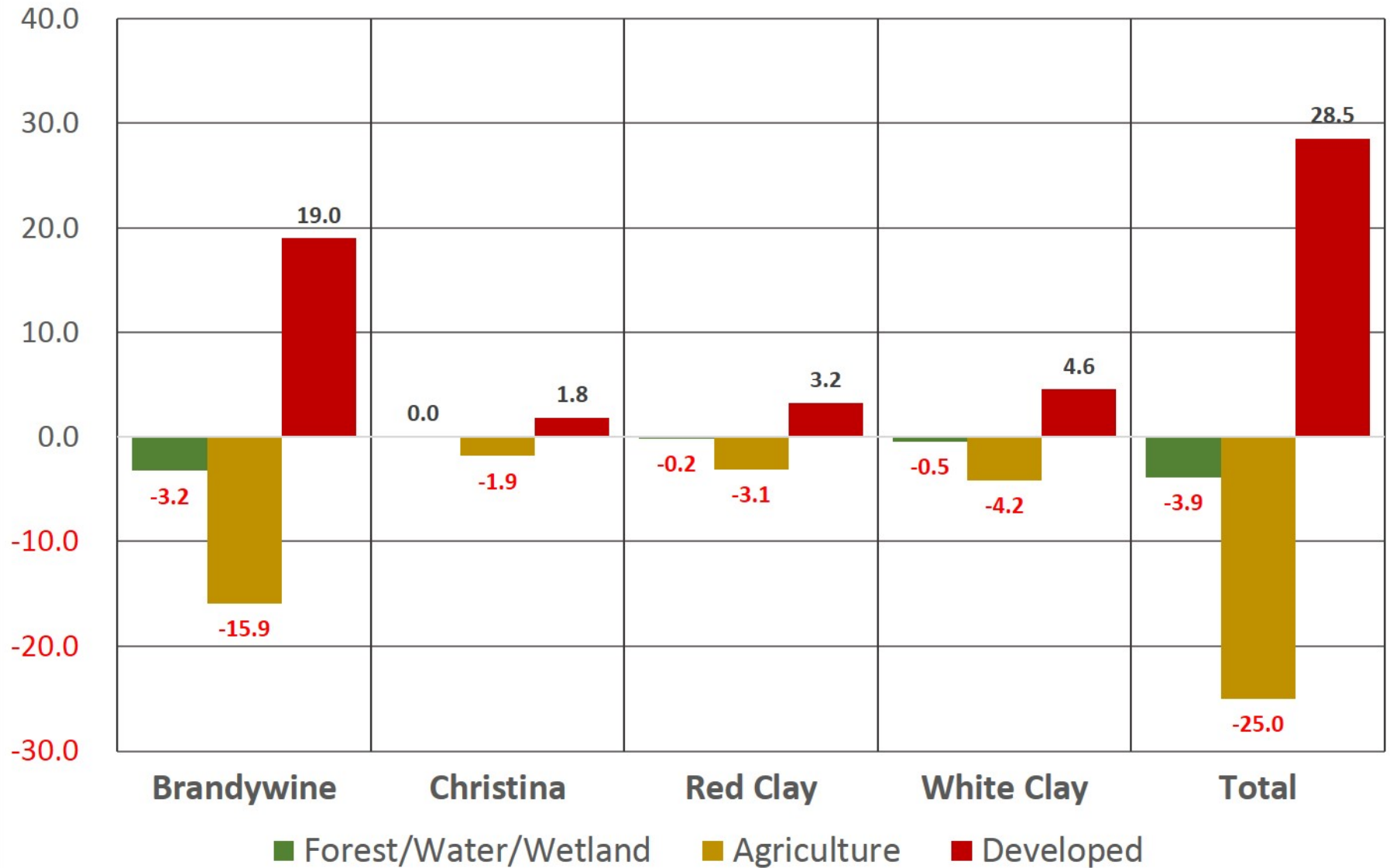
Land Cover in the Brandywine-Christina 2010



Land Cover in the Brandywine-Christina (%), 2010



Land Cover Change in the Brandywine-Christina (Square Miles) 1996 - 2010

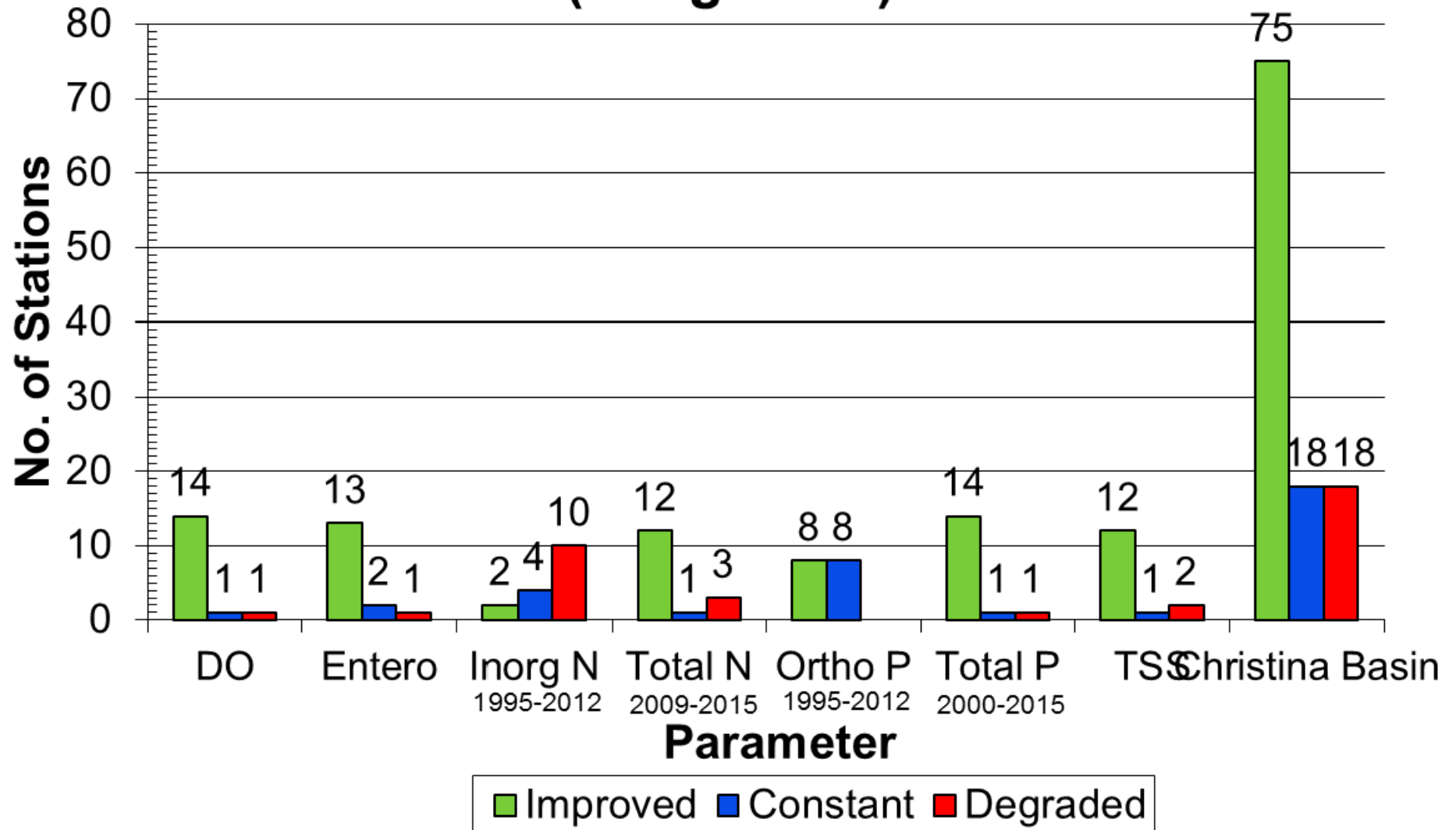


Water Quality

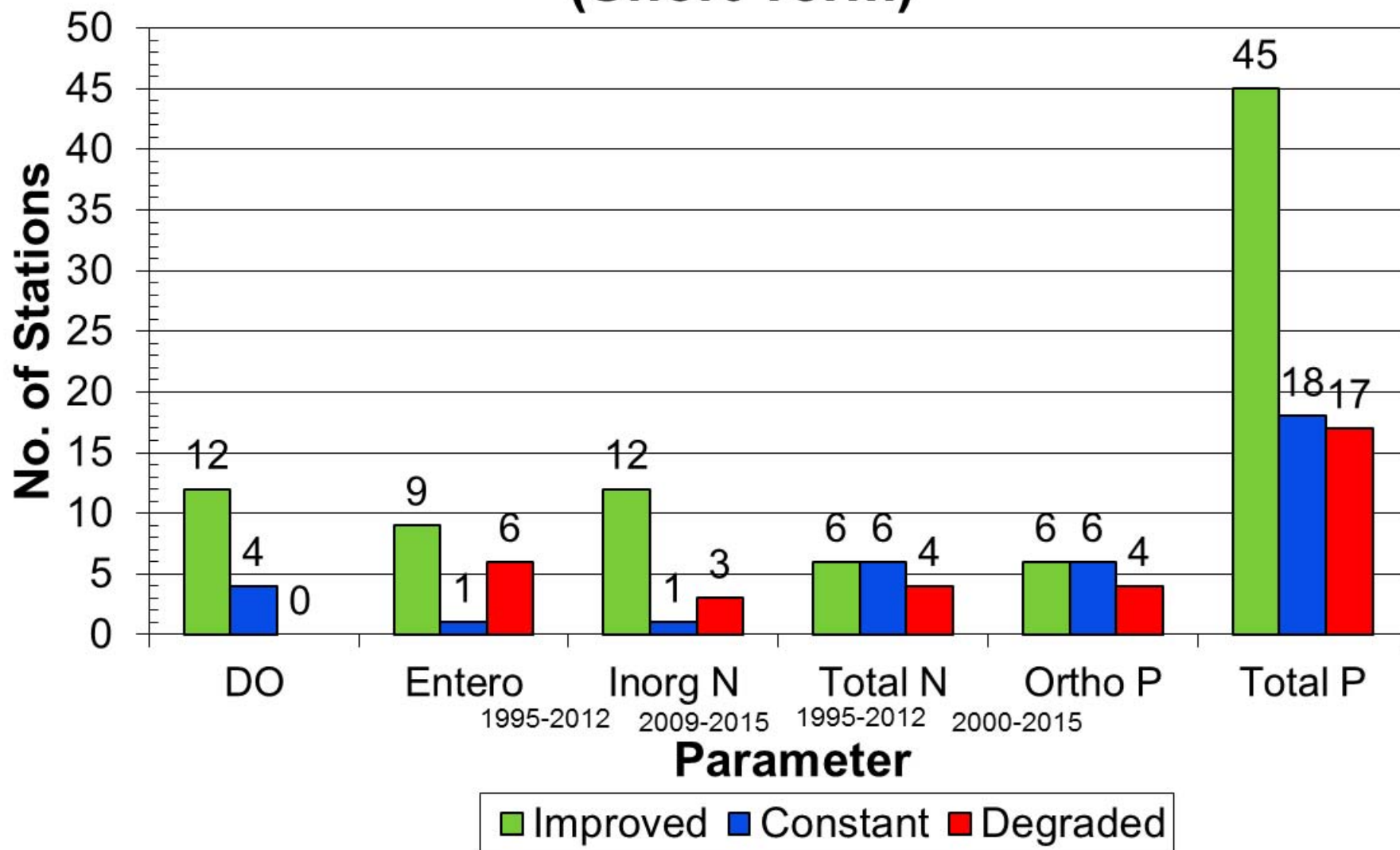


Brandywine-Christina
DNREC STORET
Water Quality
Monitoring Stations

Brandywine-Christina Basin Water Quality Trends 1995-2015 (Long Term)

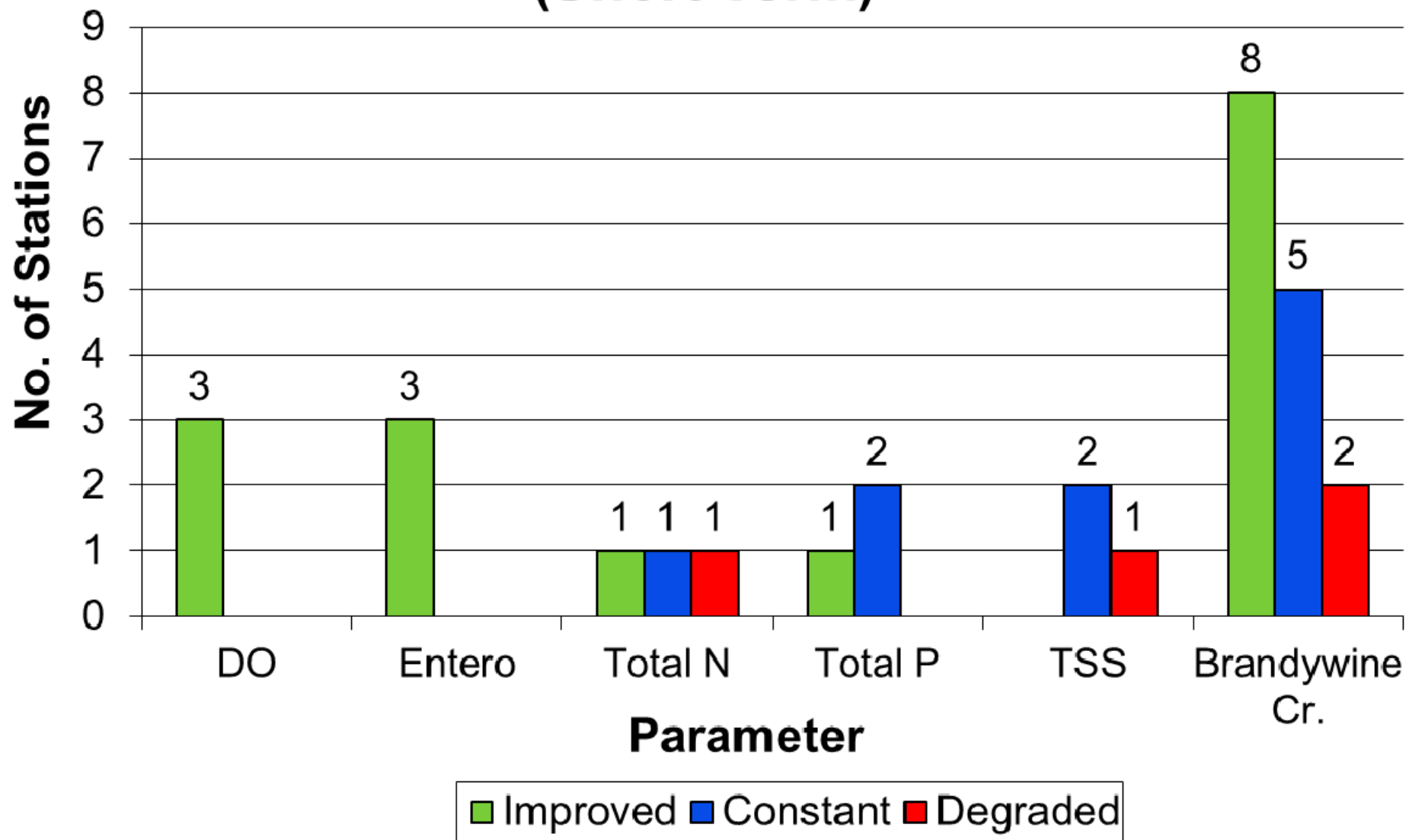


Brandywine-Christina Basin Water Quality Trends 2005-2015 (Short Term)

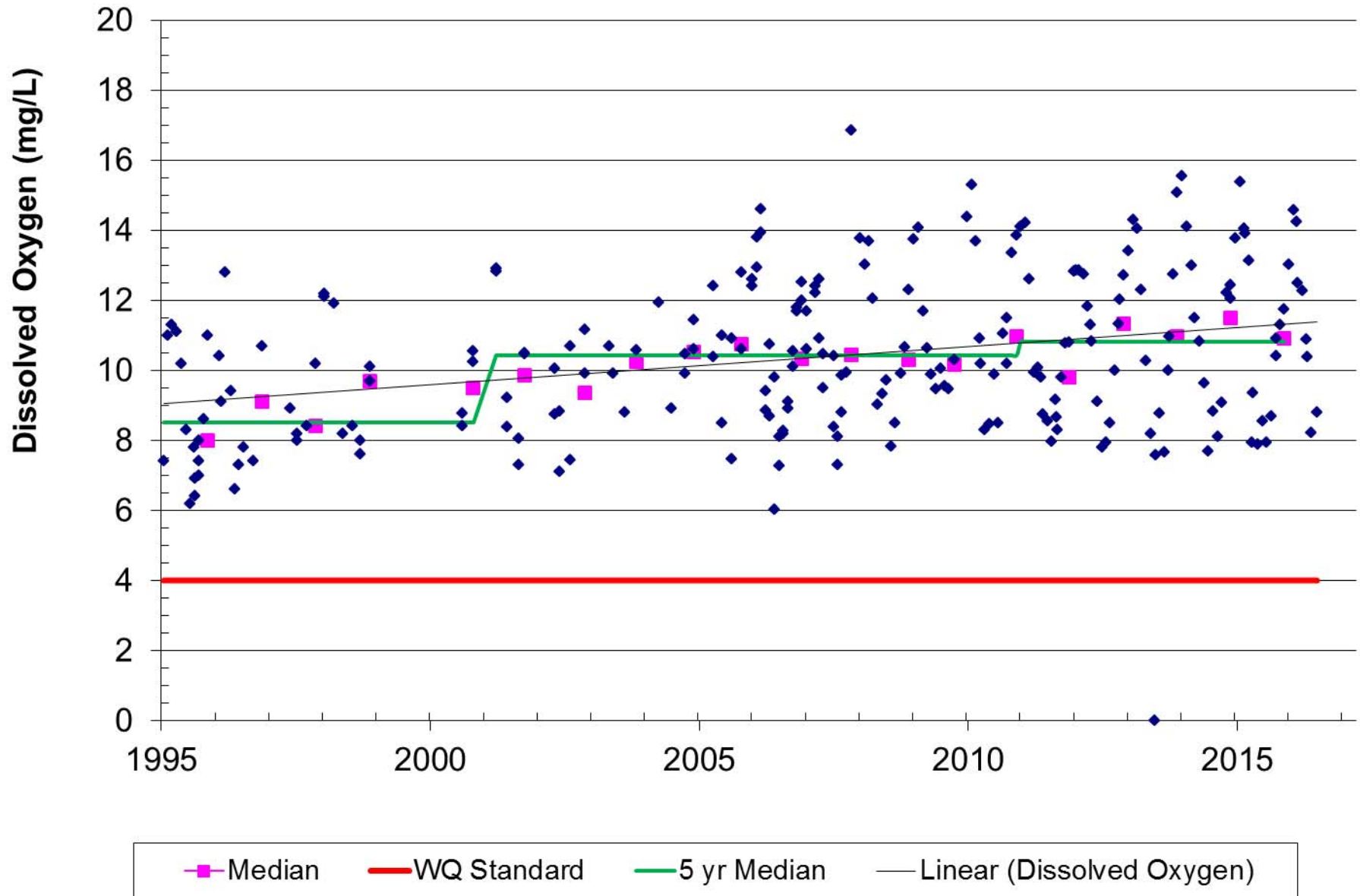


Brandywine Creek
Water Quality Trends
1995 - 2015

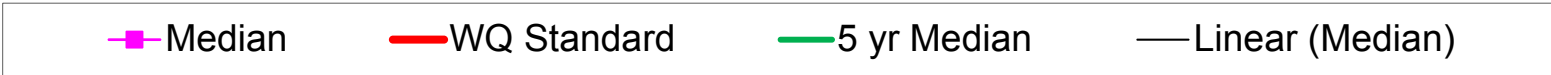
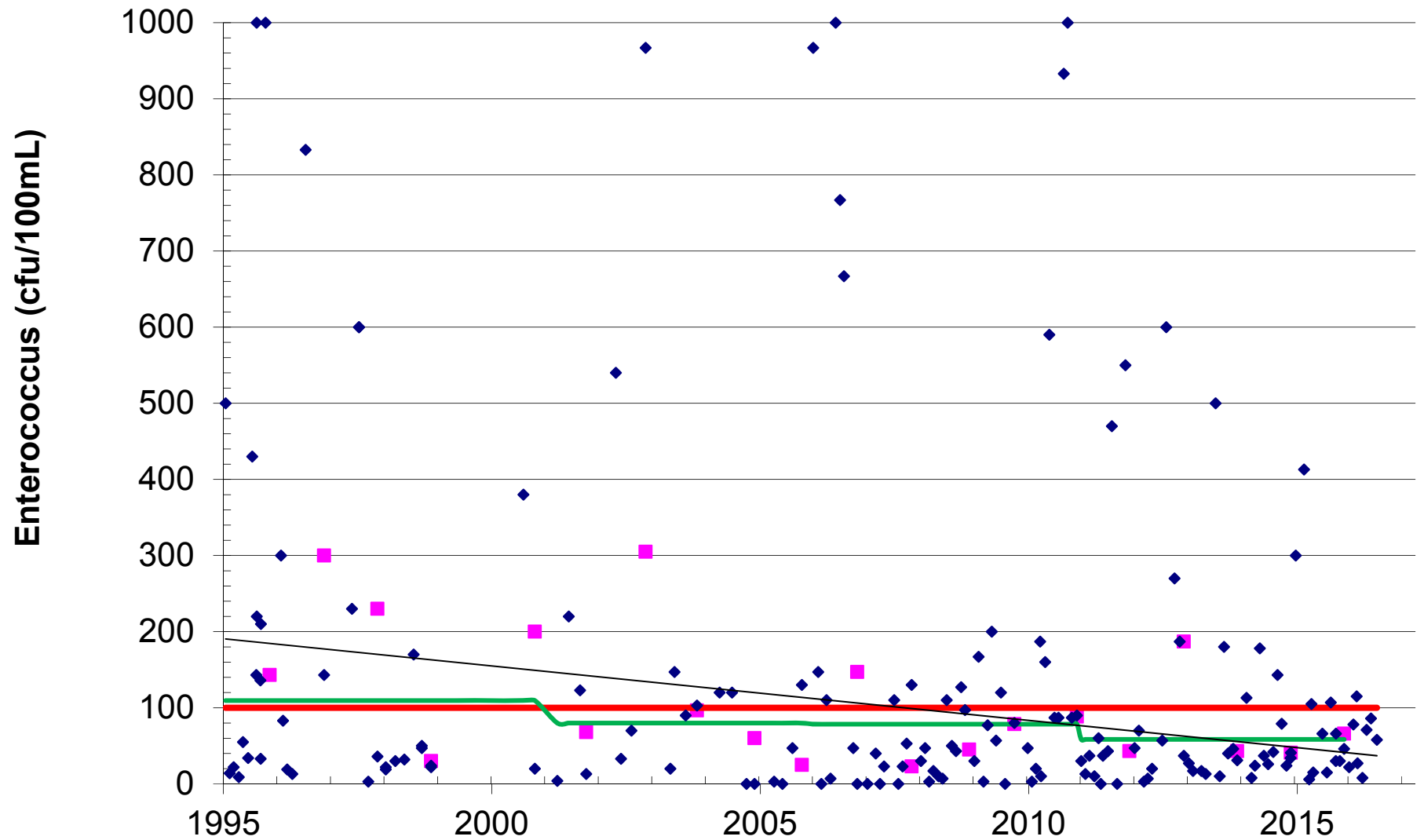
Brandywine Creek Water Quality Trends 2005-2015 (Short Term)



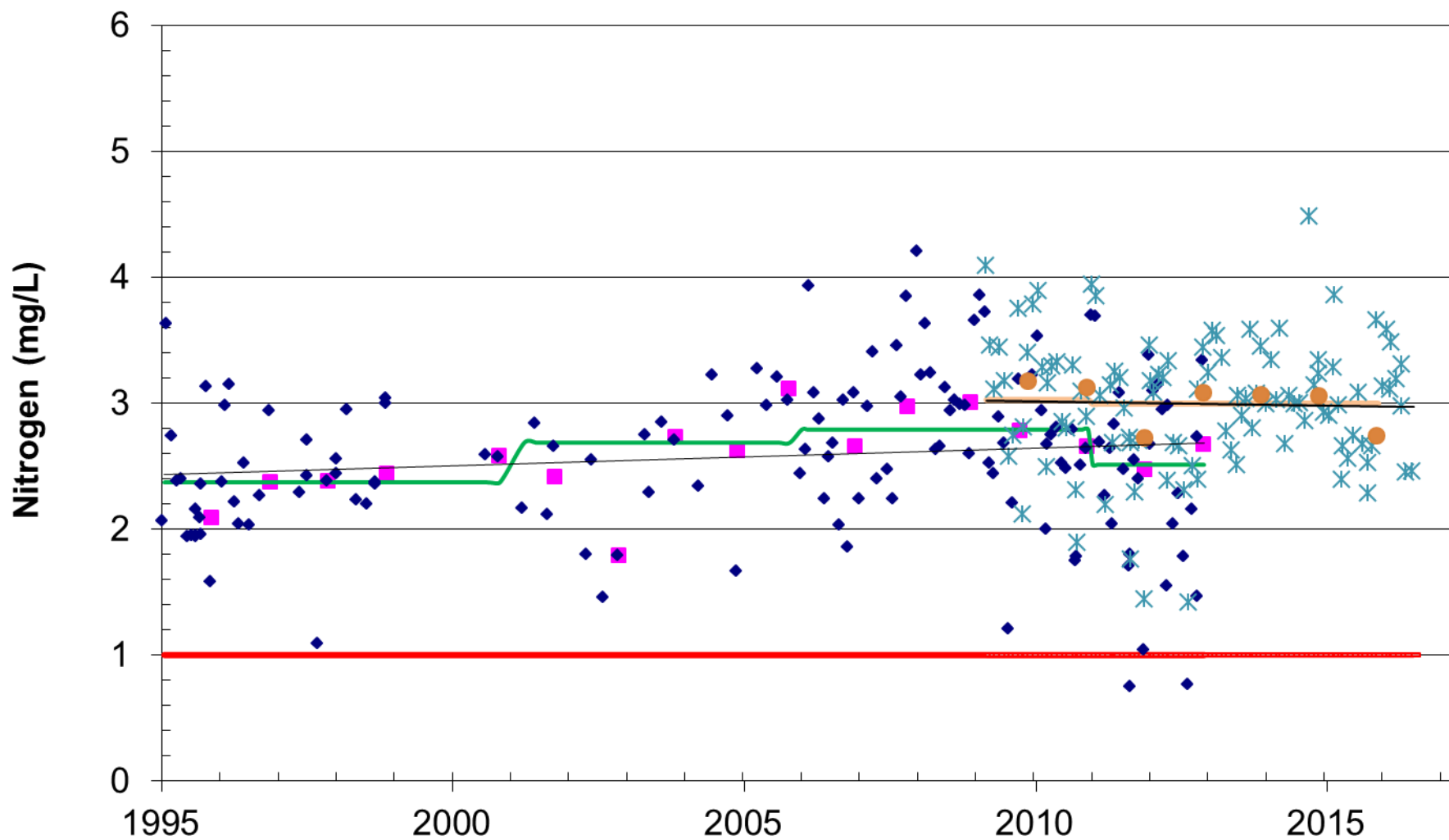
Brandywine Creek at New Bridge Road



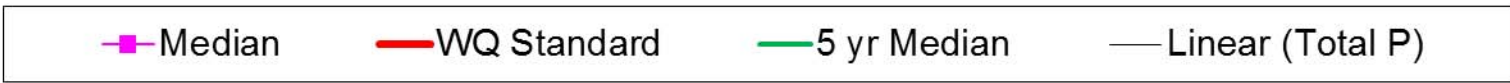
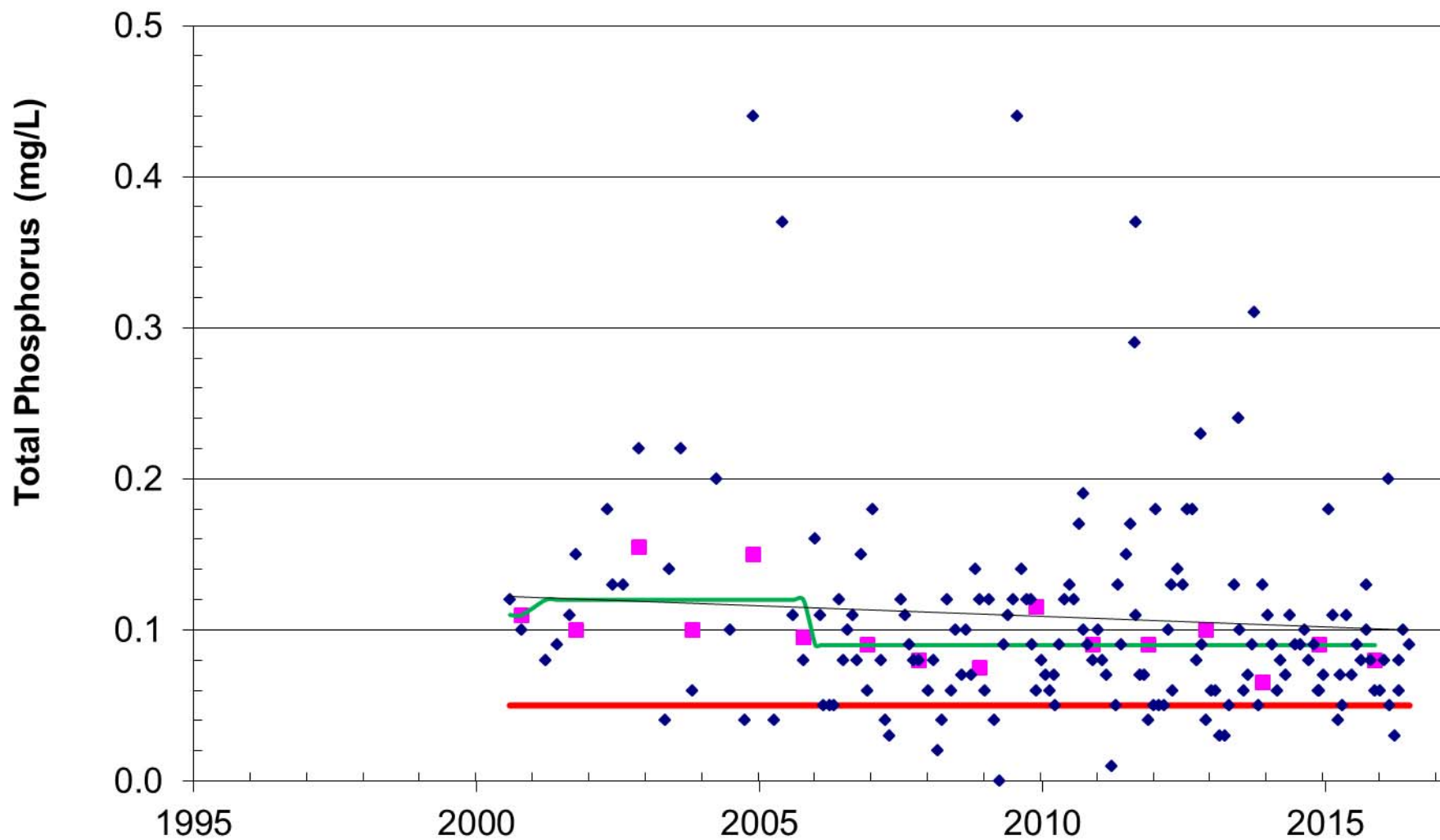
Brandywine Creek at New Bridge Road



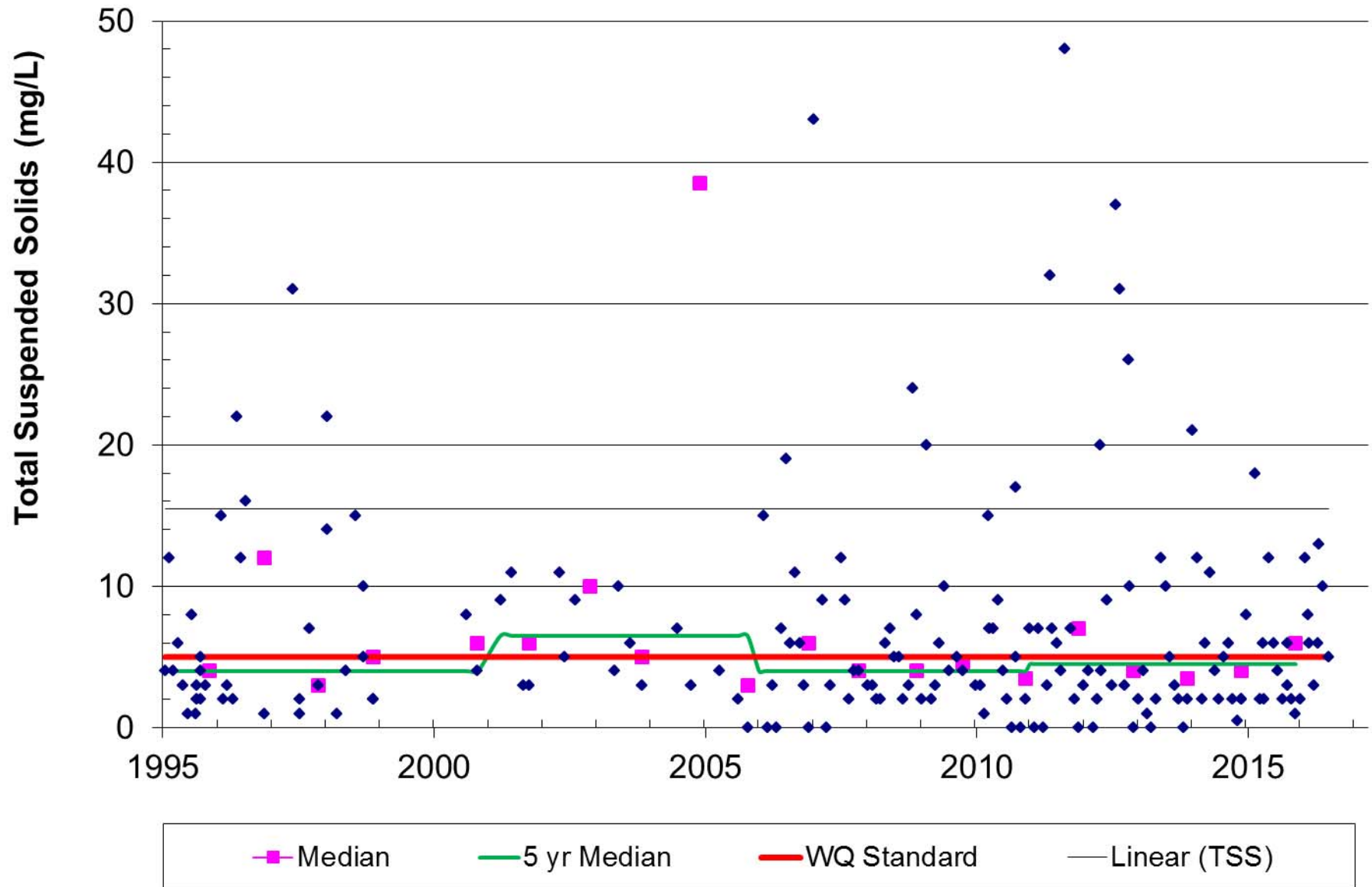
Brandywine Creek at New Bridge Road



Brandywine Creek at New Bridge Road

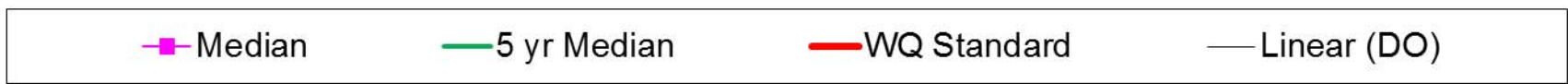


Brandywine Creek at New Bridge Road

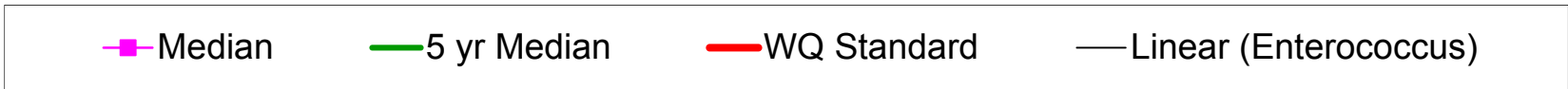
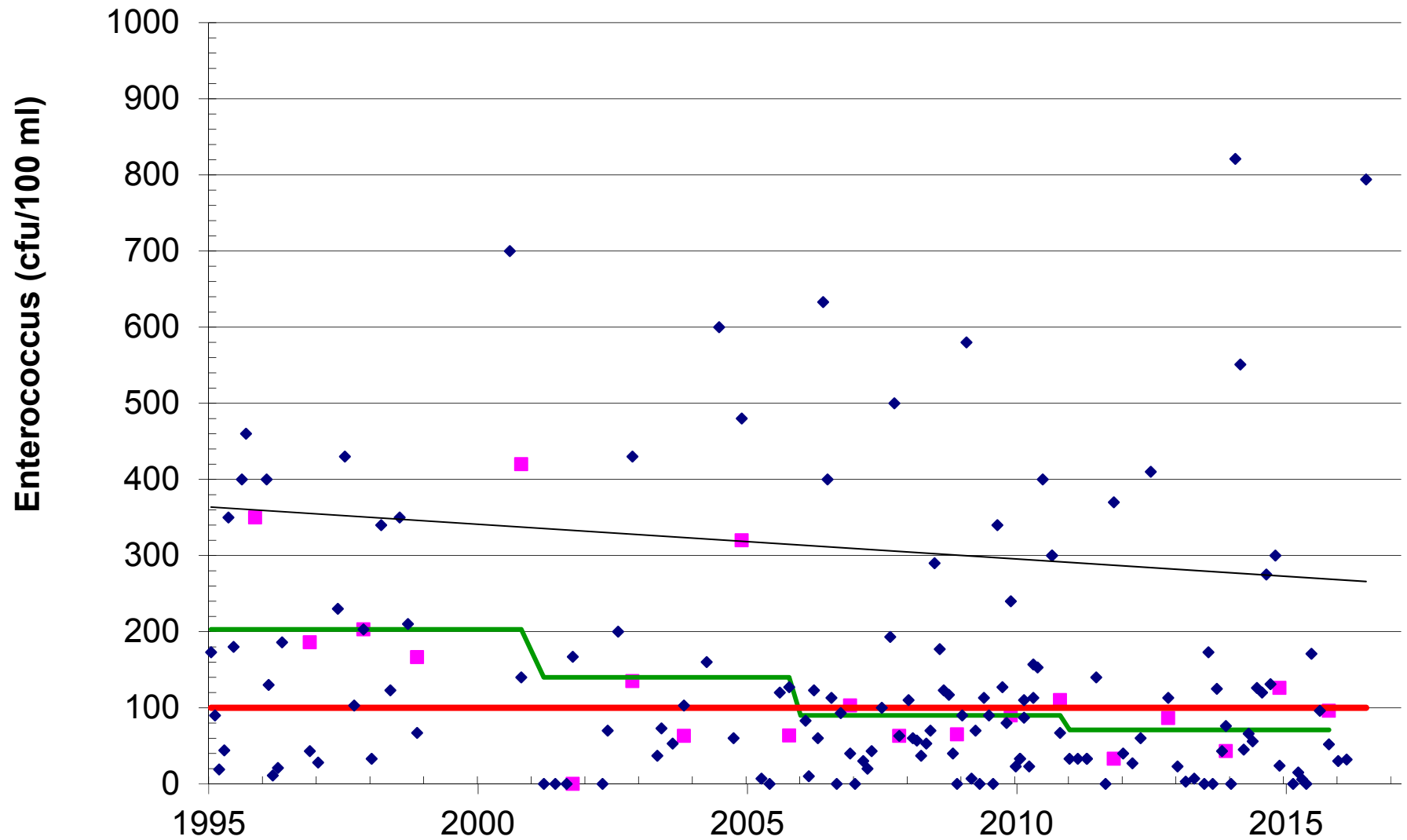


Red Clay Creek
Water Quality Trends
1995 - 2015

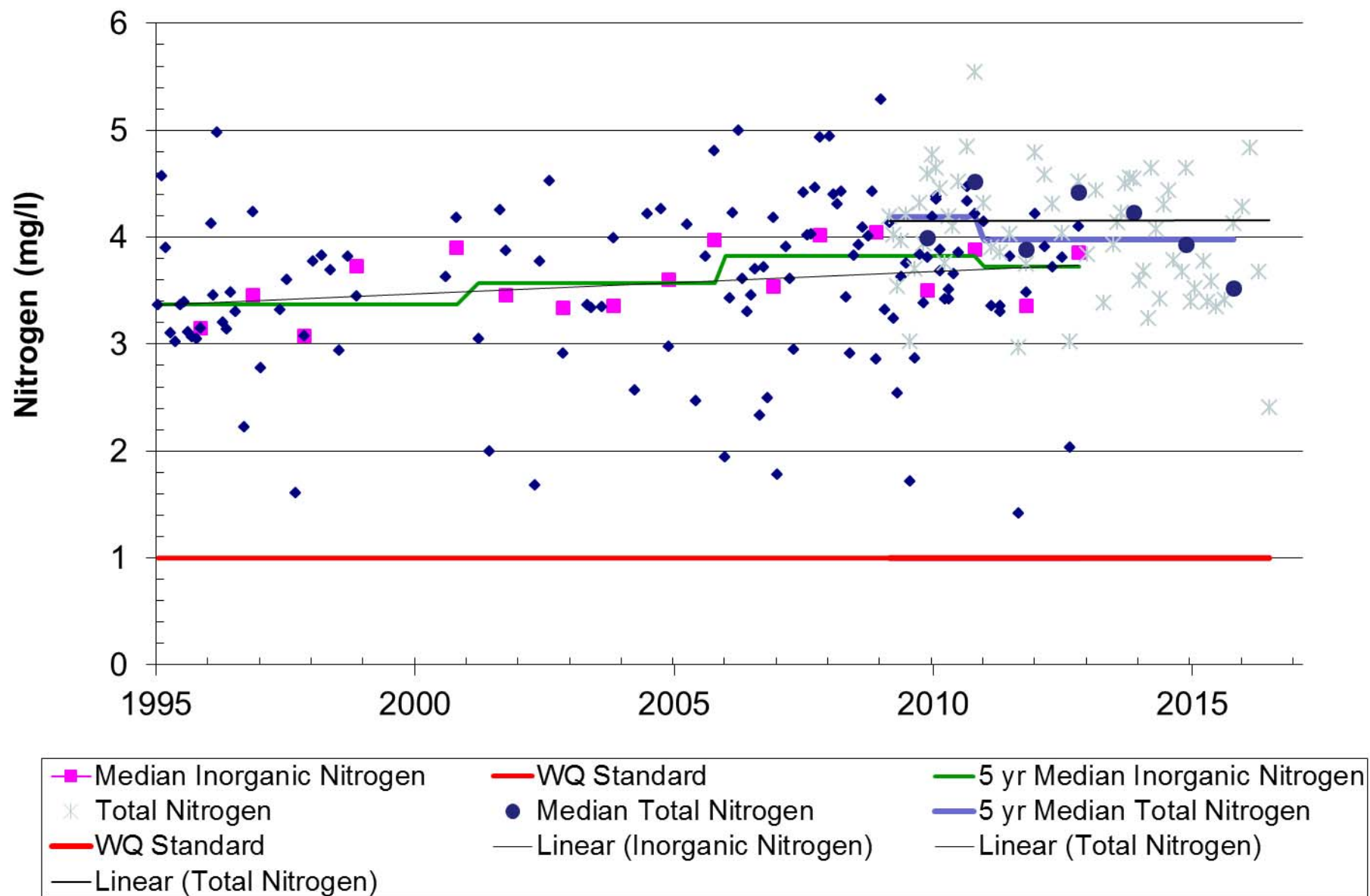
Red Clay Creek at Barley Mill Road, Ashland



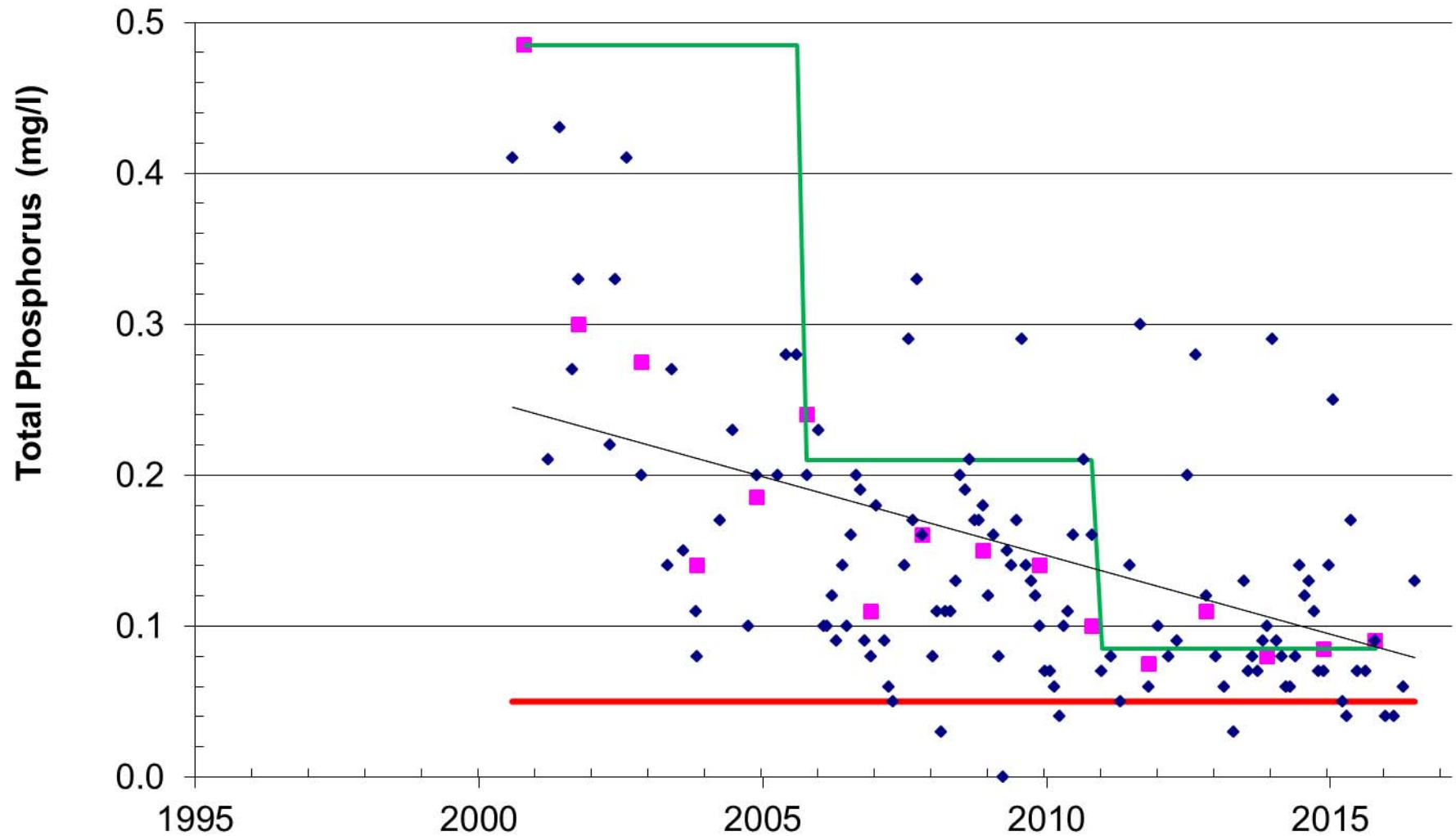
Red Clay Creek at Barley Mill Road, Ashland



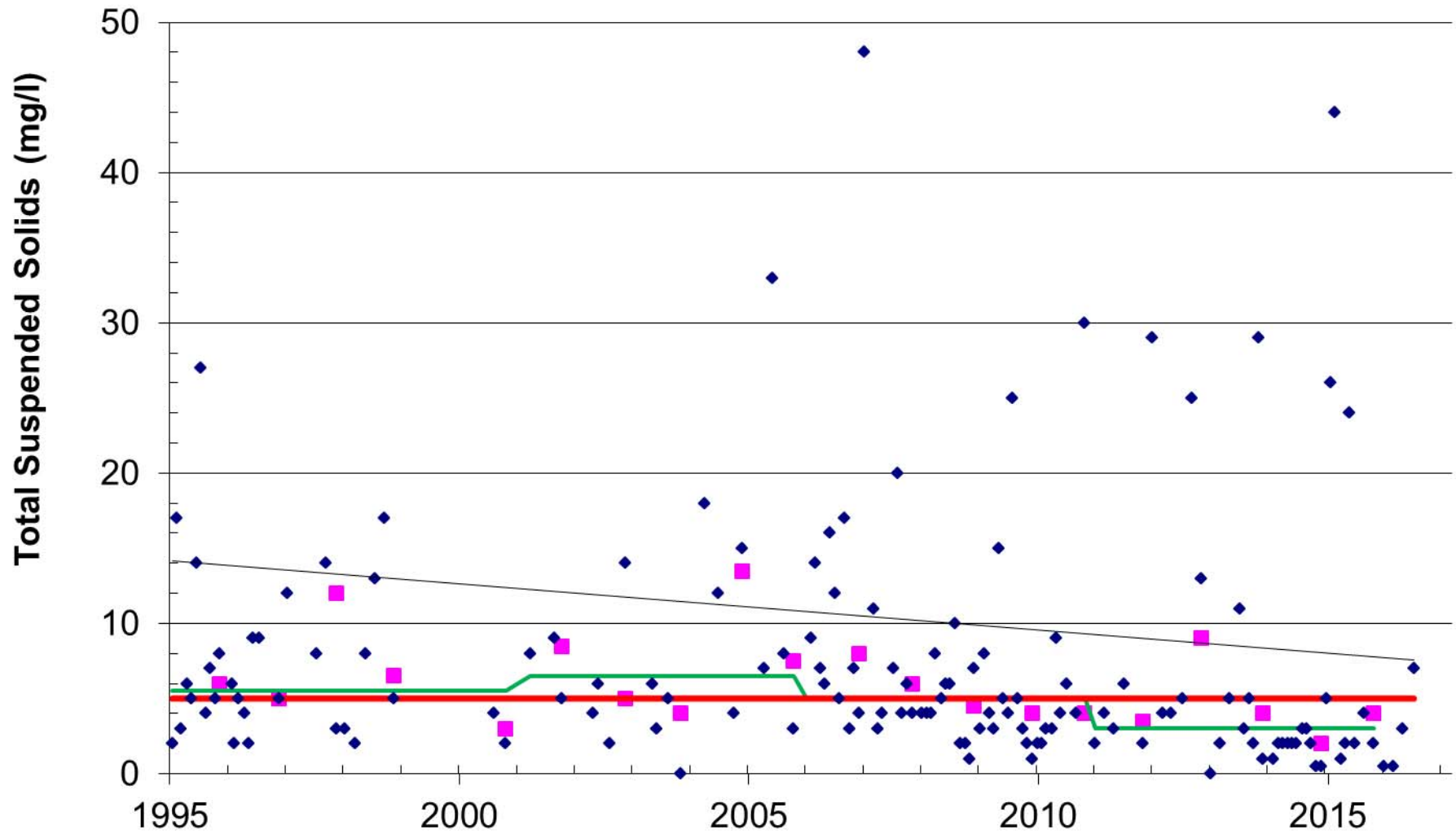
Red Clay Creek at Barley Mill Road, Ashland



Red Clay Creek at Barley Mill Road, Ashland



Red Clay Creek at Barley Mill Road, Ashland



—■— Median

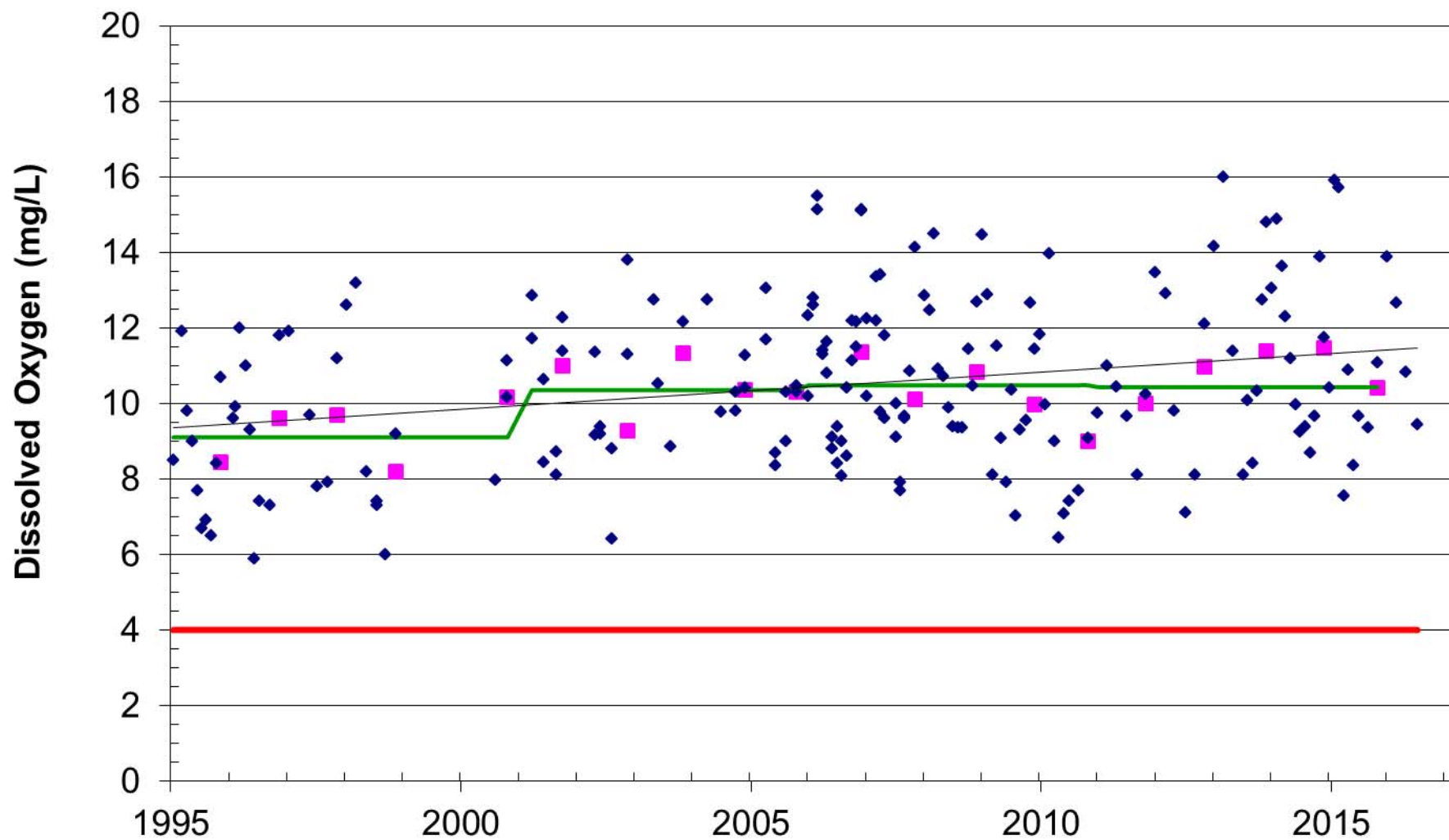
—■— 5 yr Median

—■— WQ Standard

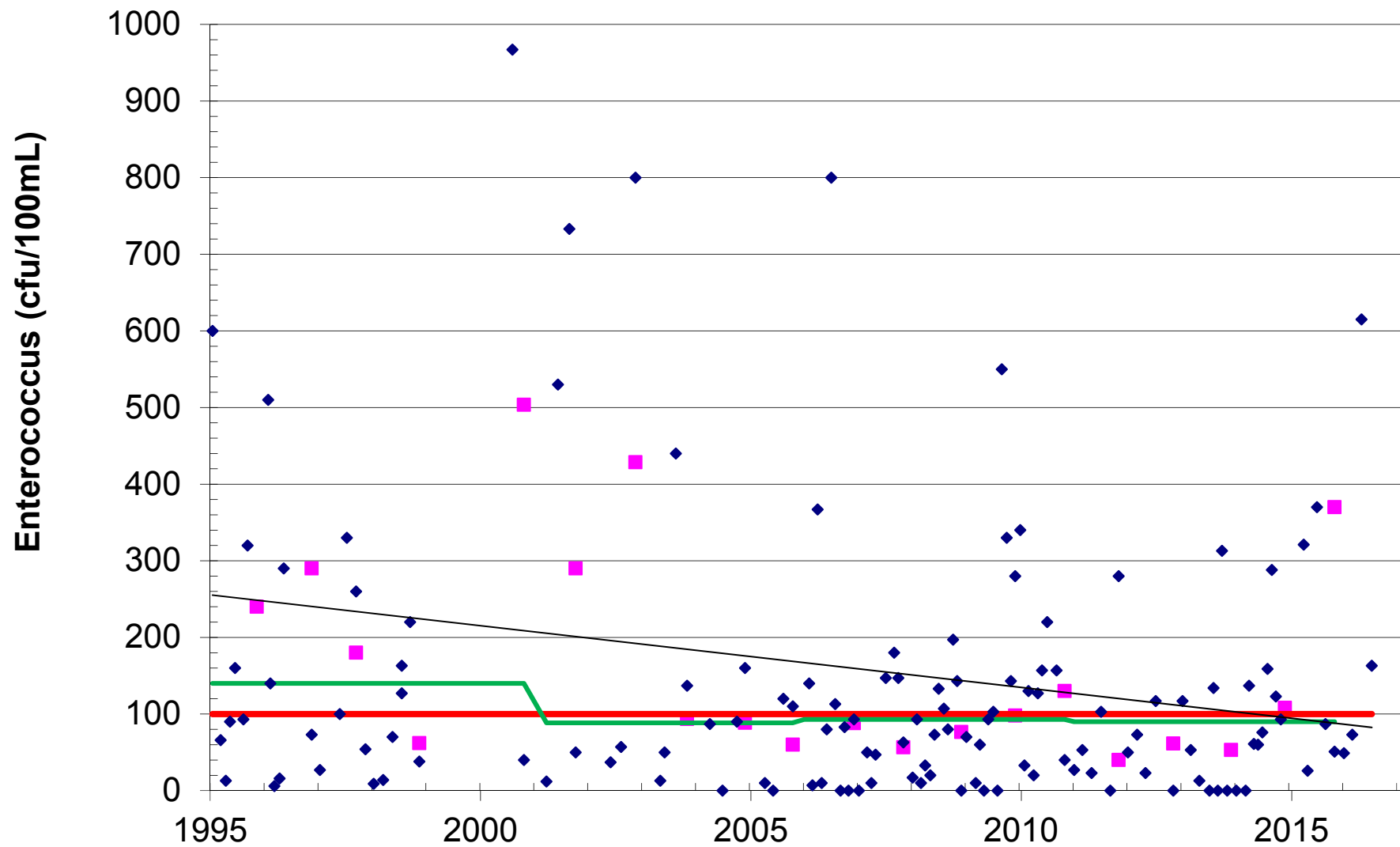
—■— Linear (TSS)

White Clay Creek
Water Quality Trends
1995 - 2015

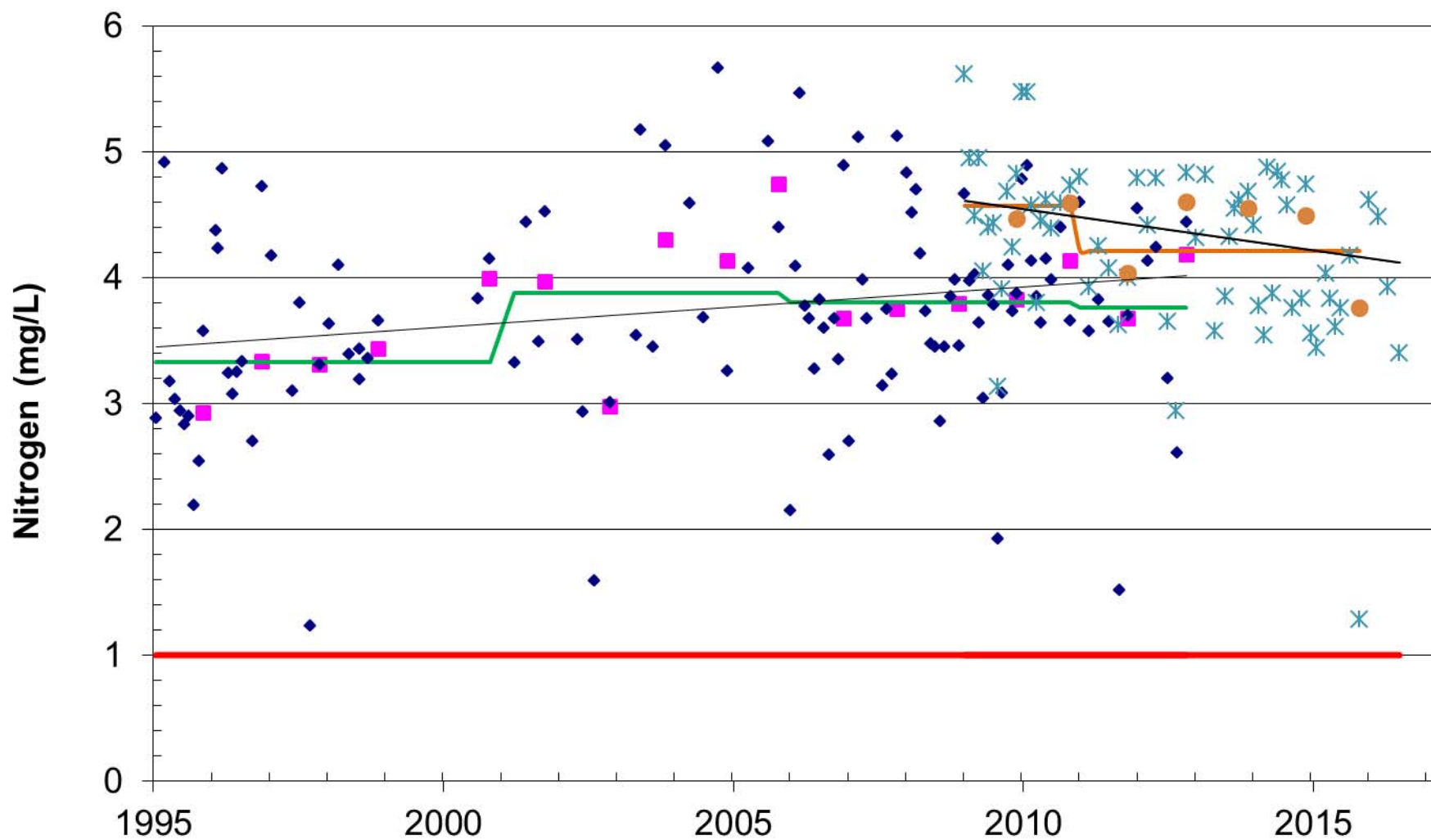
White Clay Creek at Chambers Rock Road



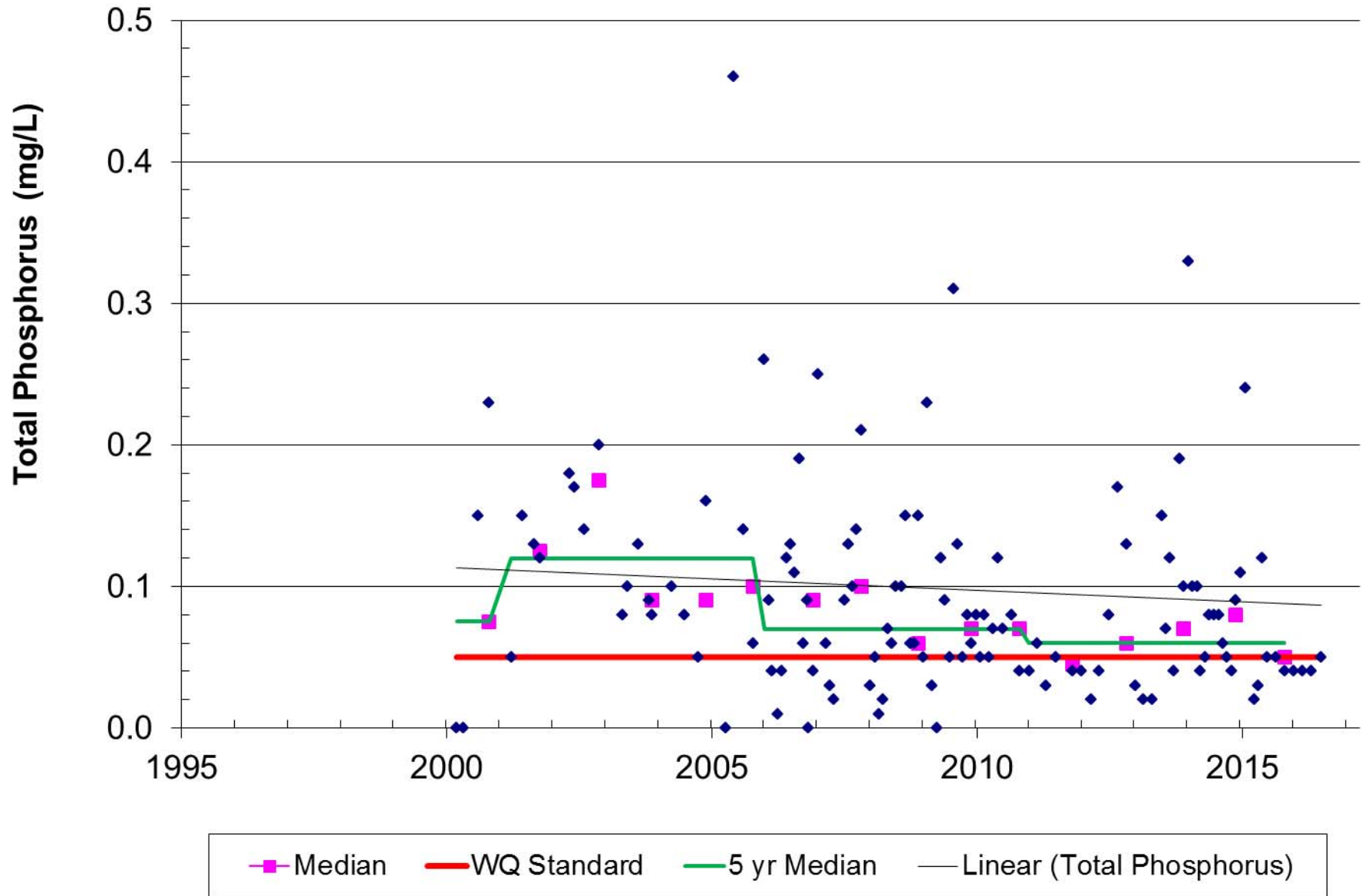
White Clay Creek at Chambers Rock Road



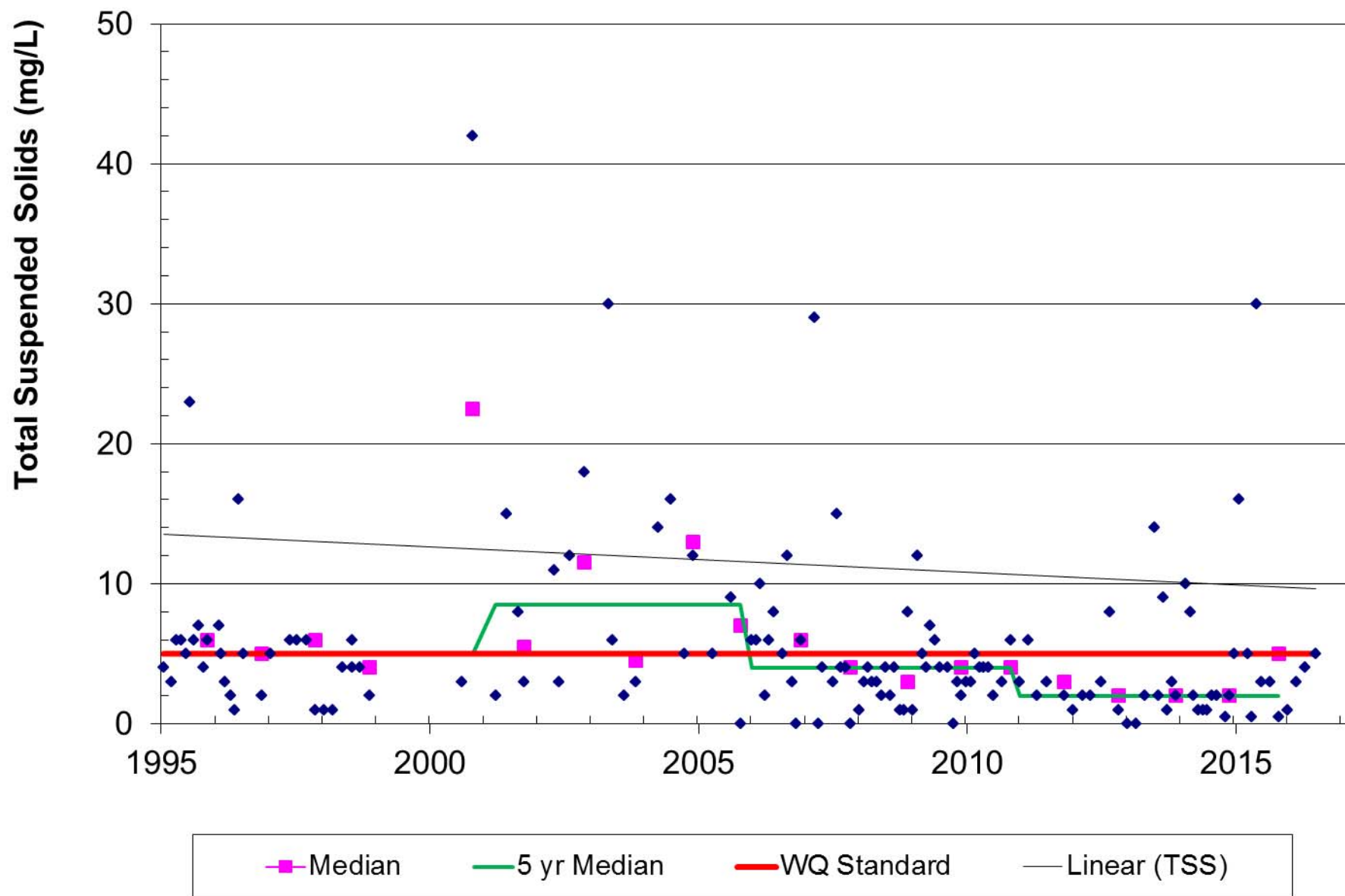
White Clay Creek at Chambers Rock Road



White Clay Creek at Chambers Rock Road

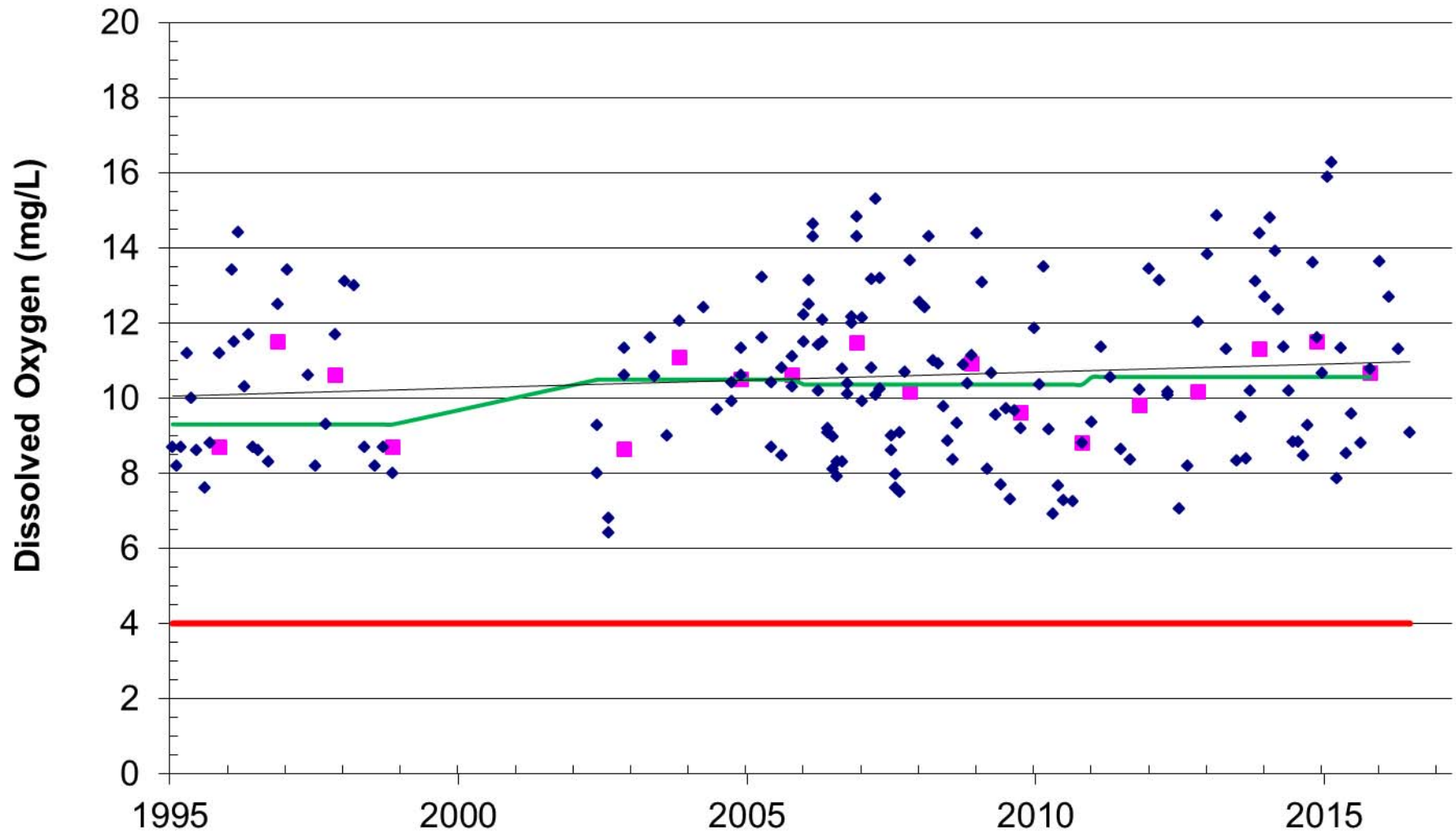


White Clay Creek at Chambers Rock Road



Christina River
Water Quality Trends
1995 - 2015

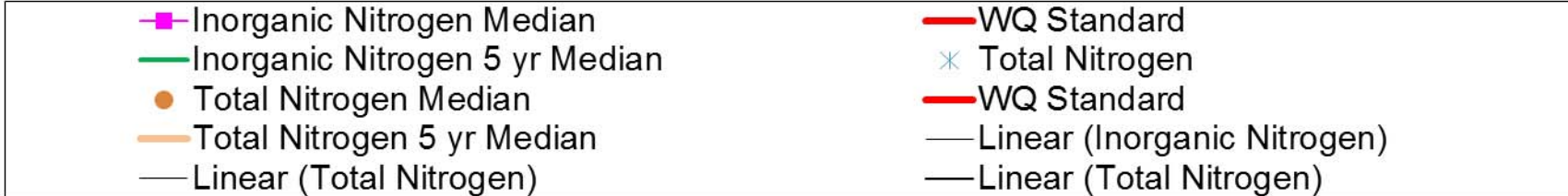
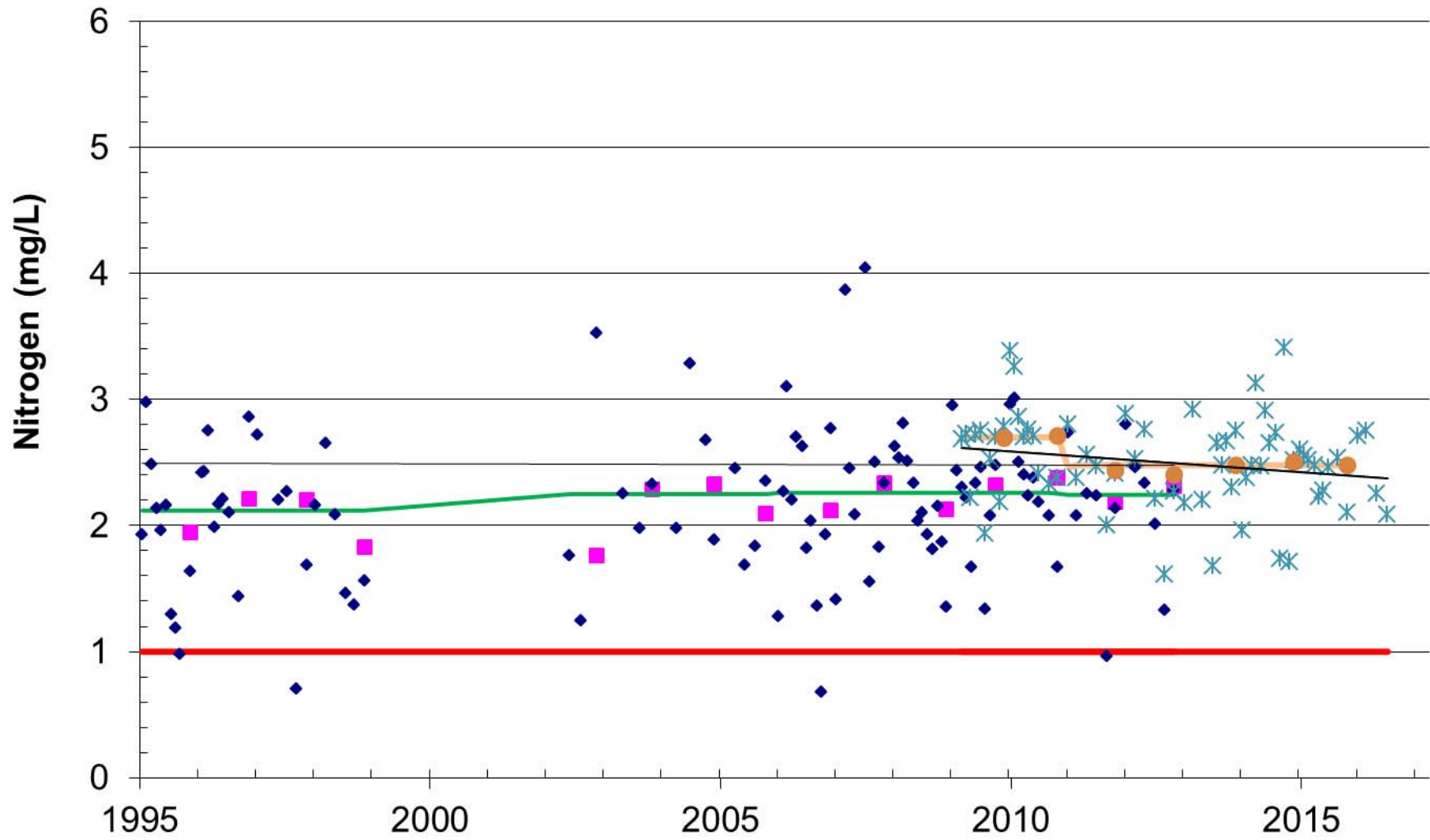
Christina River at Nottingham Rd., Rt. 273



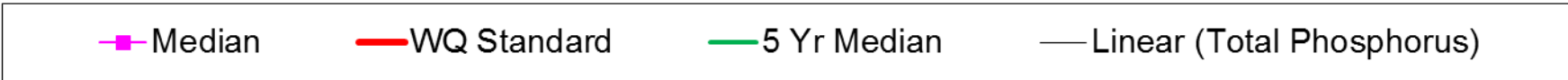
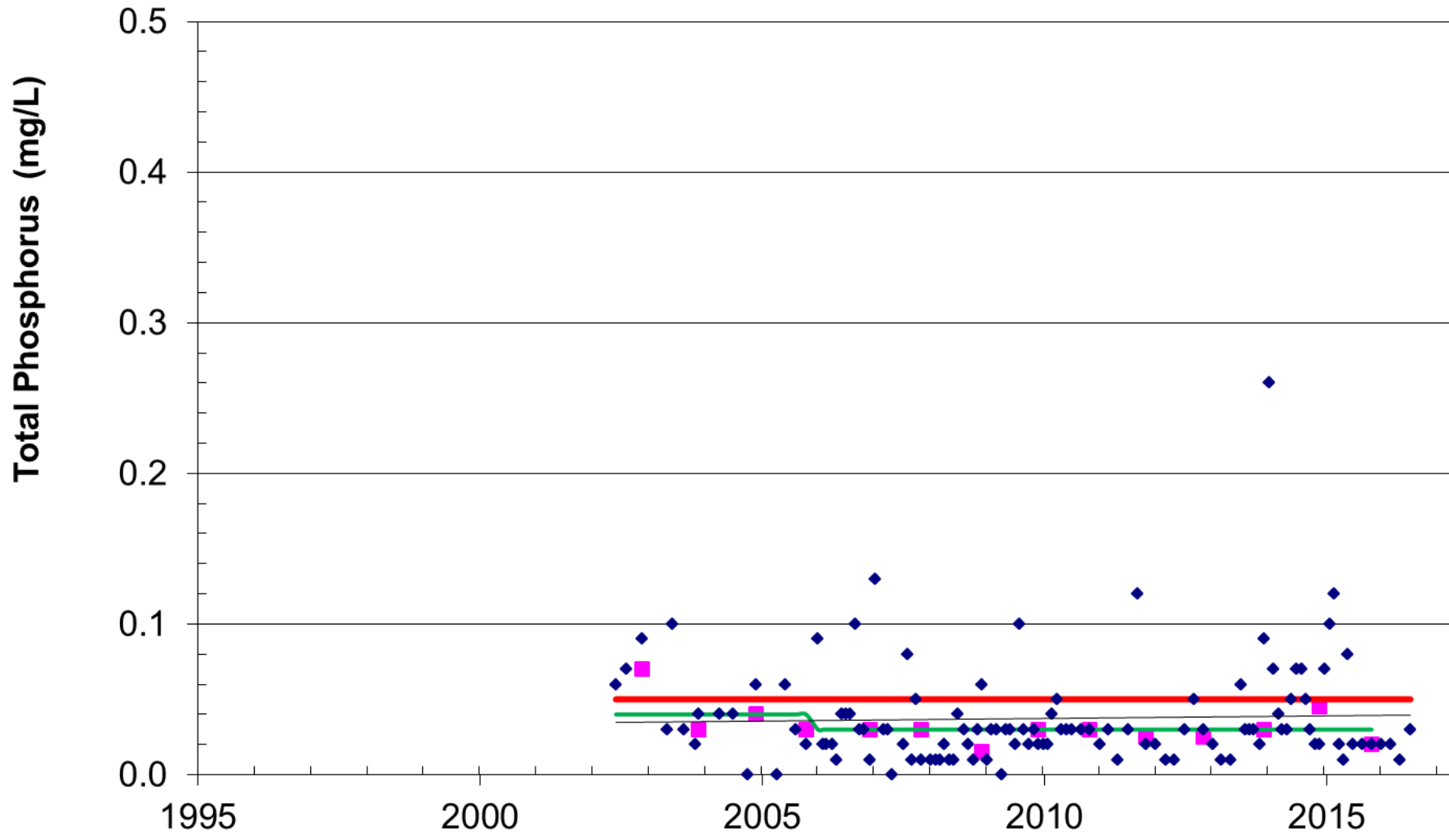
Christina River at Nottingham Rd., Rt. 273



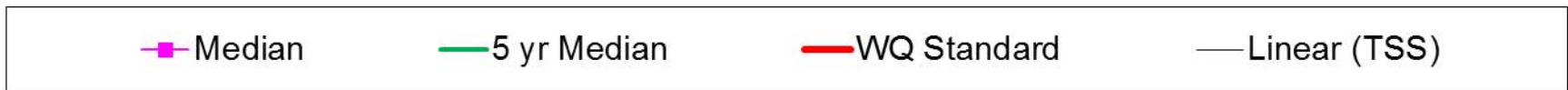
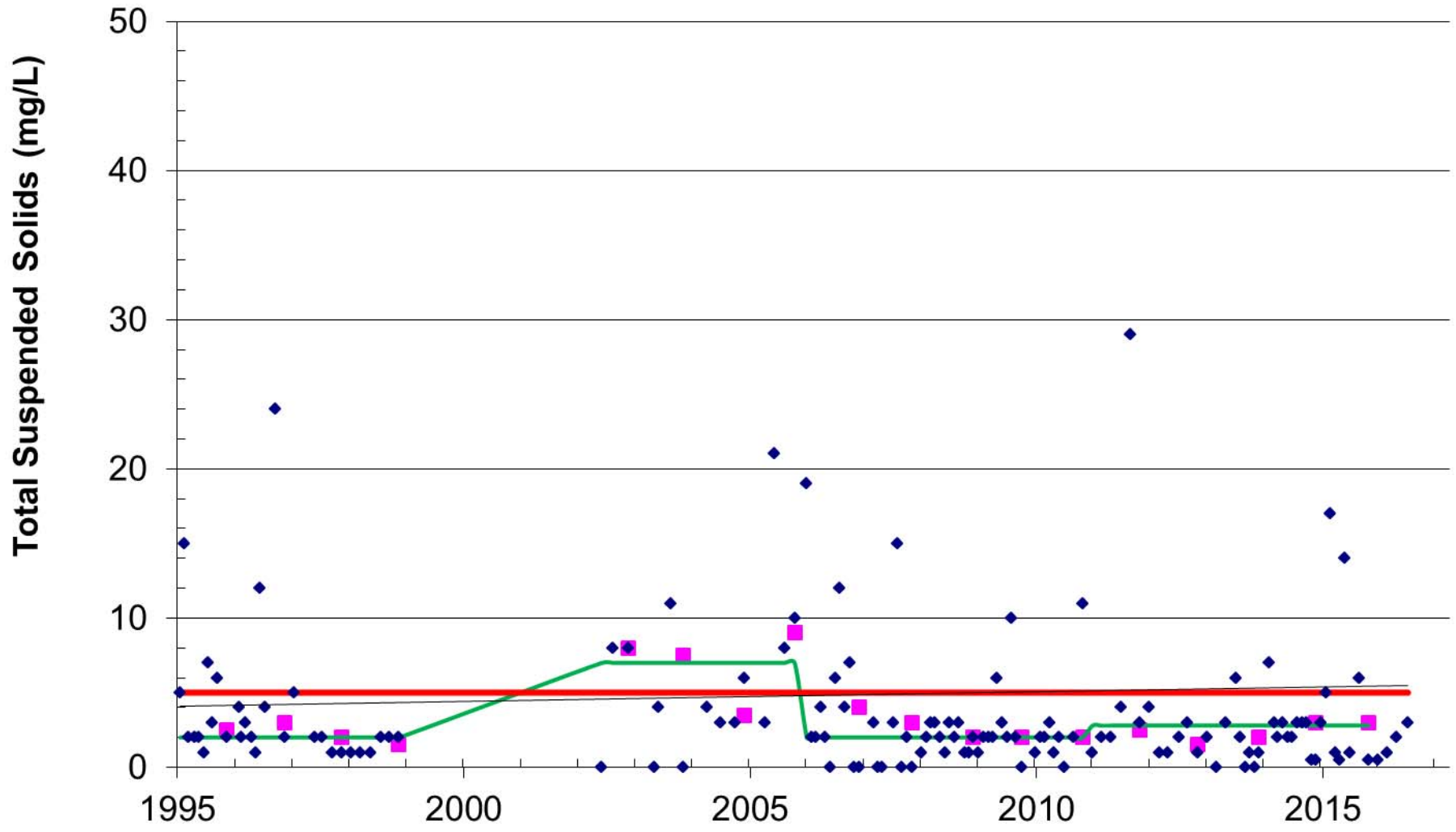
Christina River at Nottingham Rd., Rt. 273



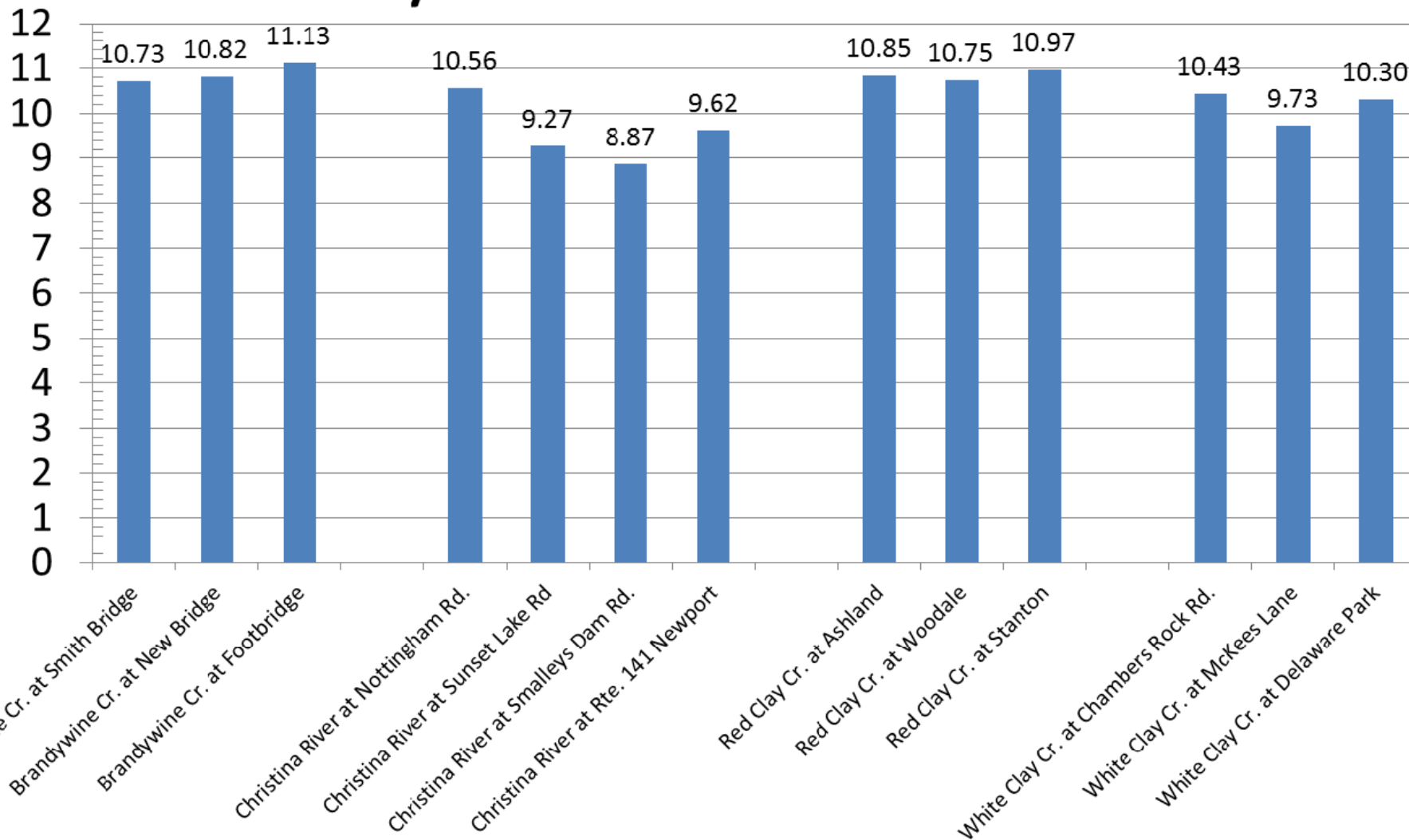
Christina River at Nottingham Rd., Rt. 273



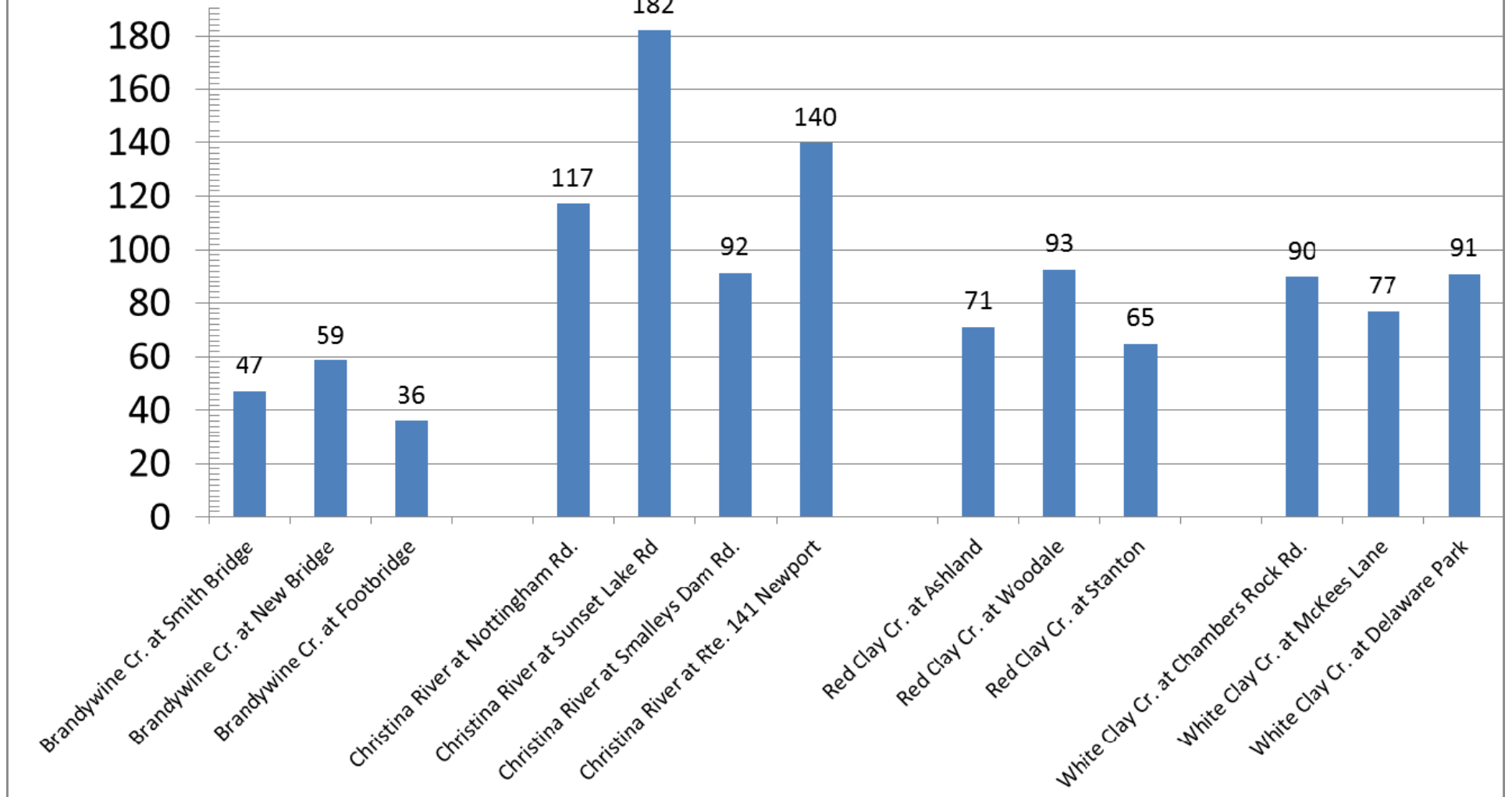
Christina River at Nottingham Rd, Rte 273



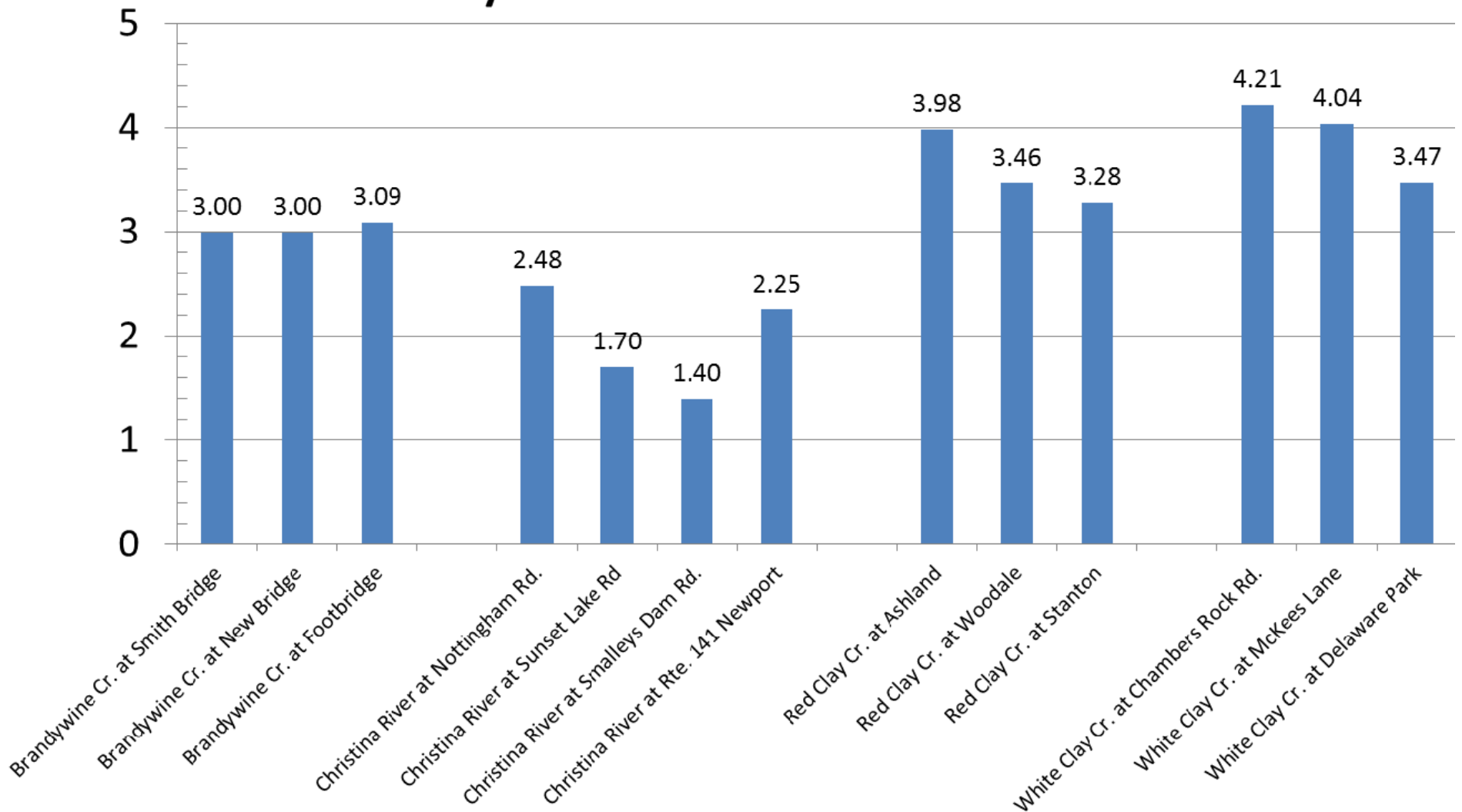
Dissolved Oxygen (Median 2011-2015) Brandywine-Christina Watershed



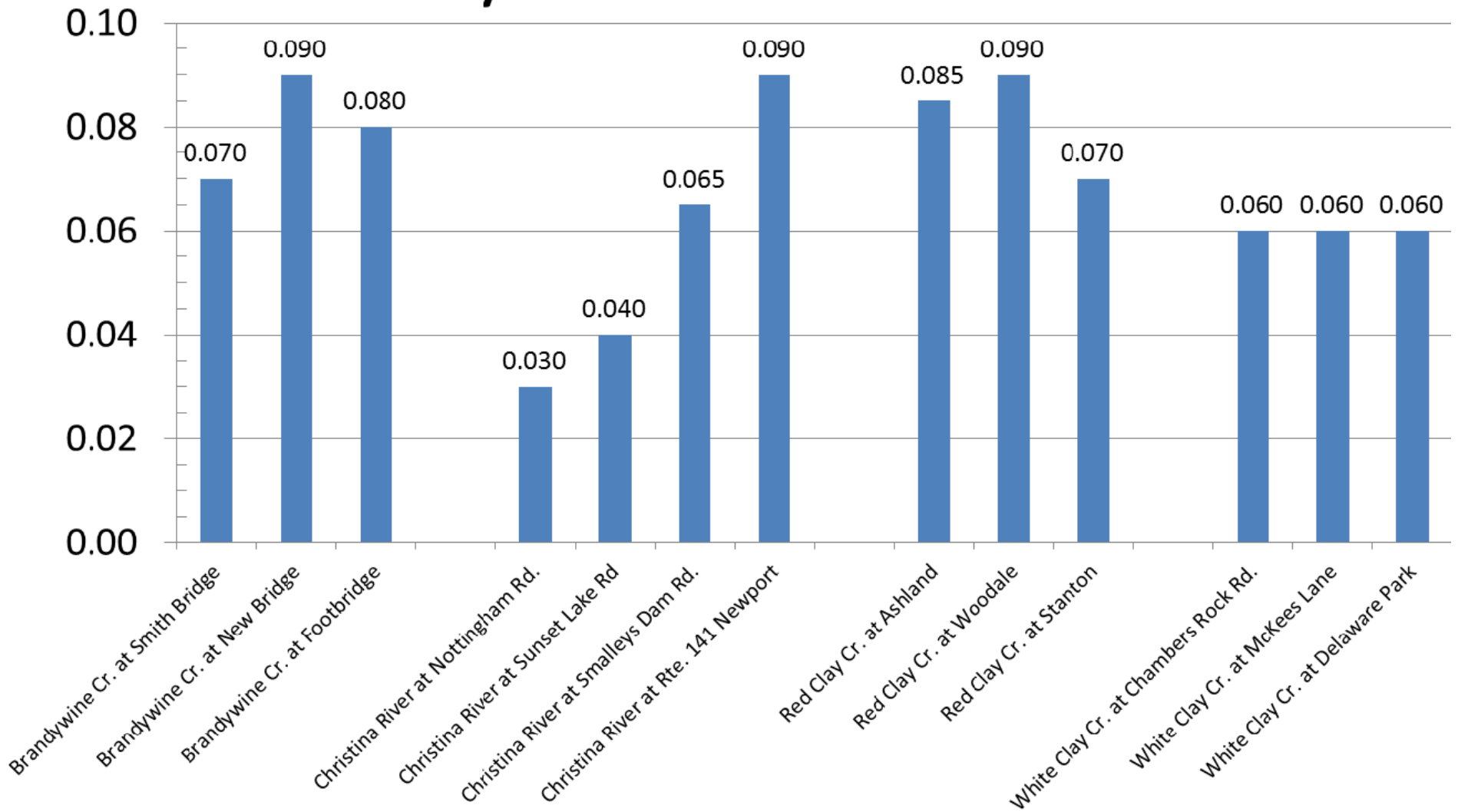
Enterococcus Bacteria (Median 2011-2015) Brandywine-Christina Watershed



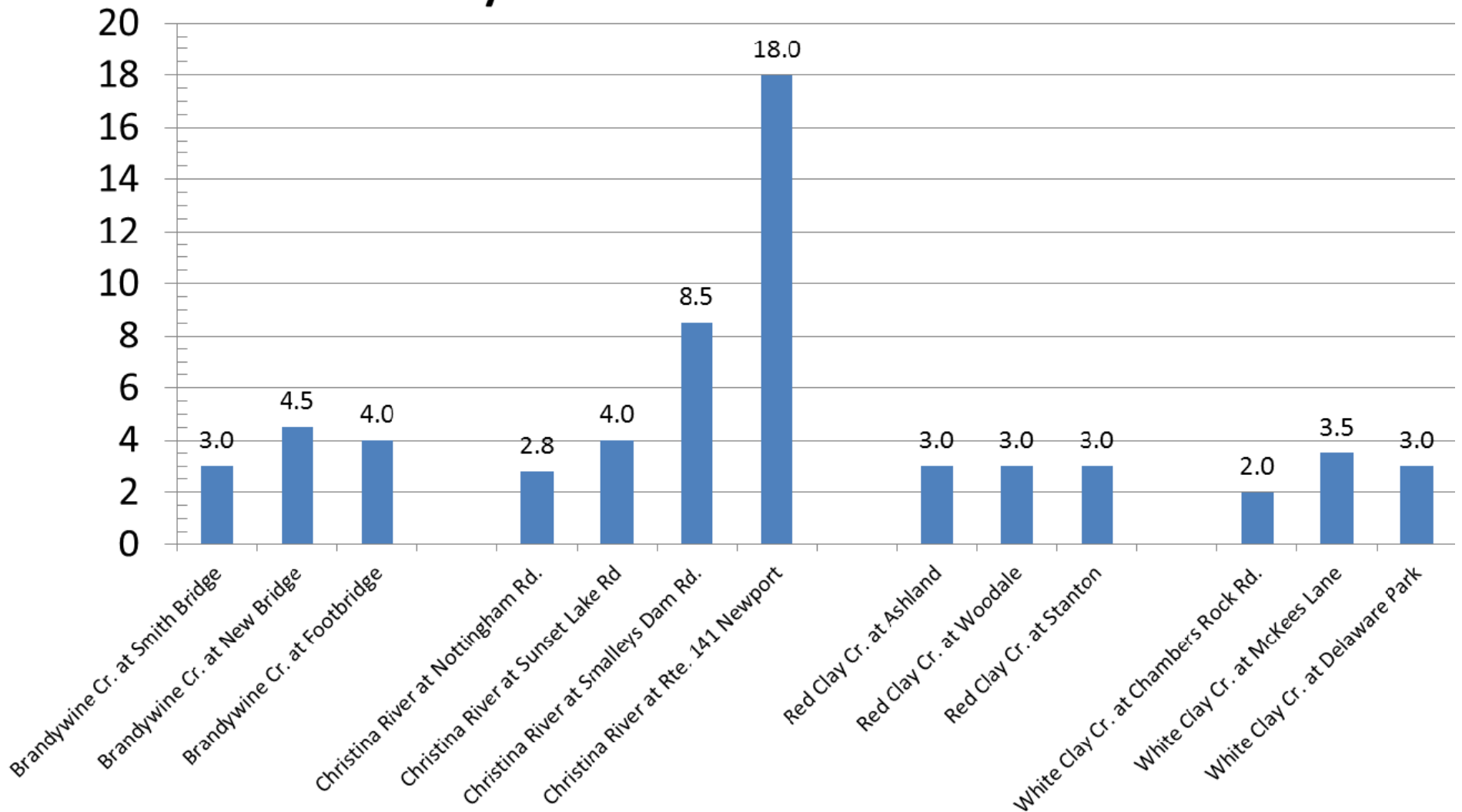
Total Nitrogen (Median 2011-2015) Brandywine-Christina Watershed



Total Phosphorus (Median 2011-2015) Brandywine-Christina Watershed

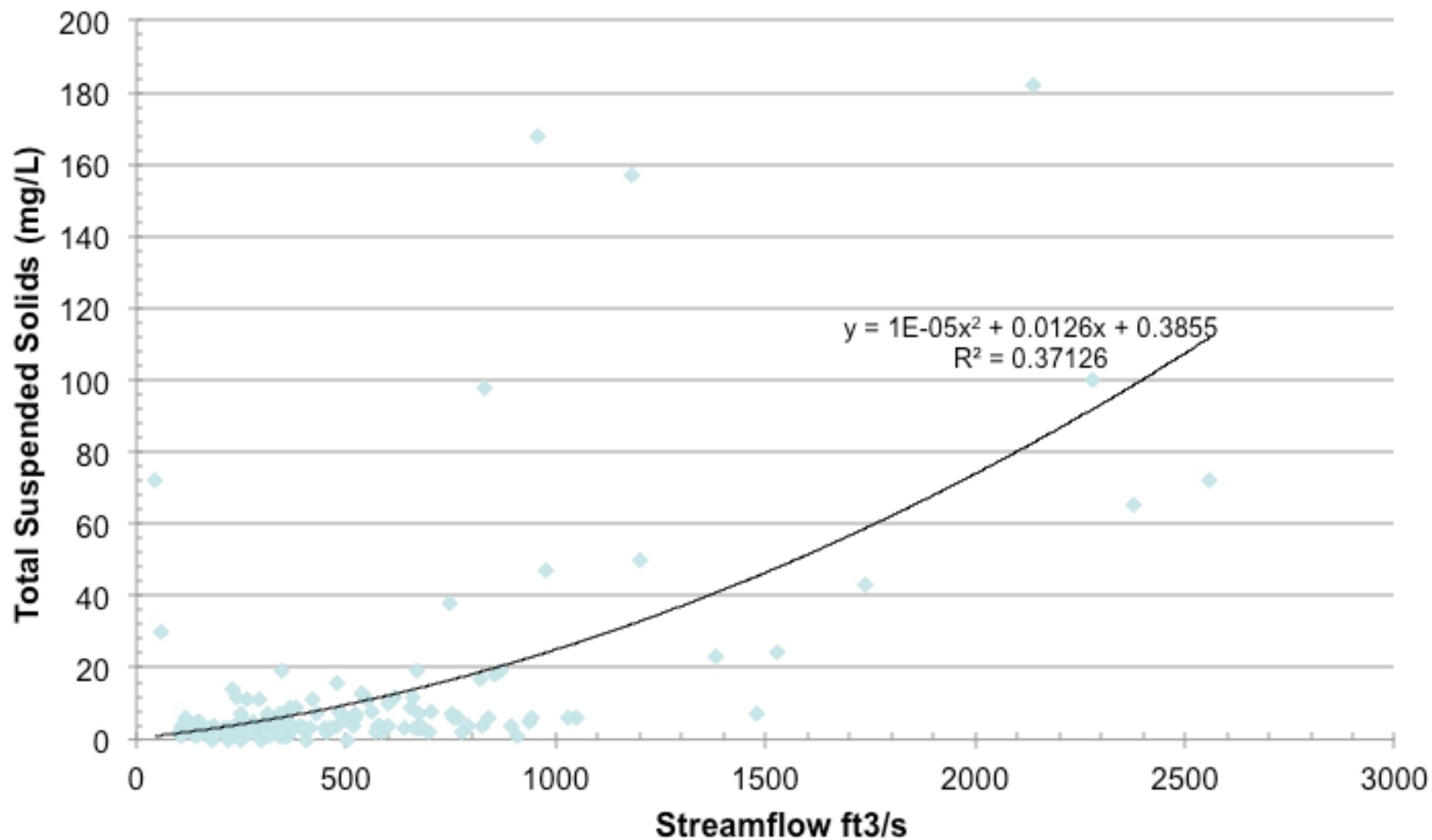


Total Suspended Sediment (Median 2011-2015) Brandywine-Christina Watershed



Turbidity

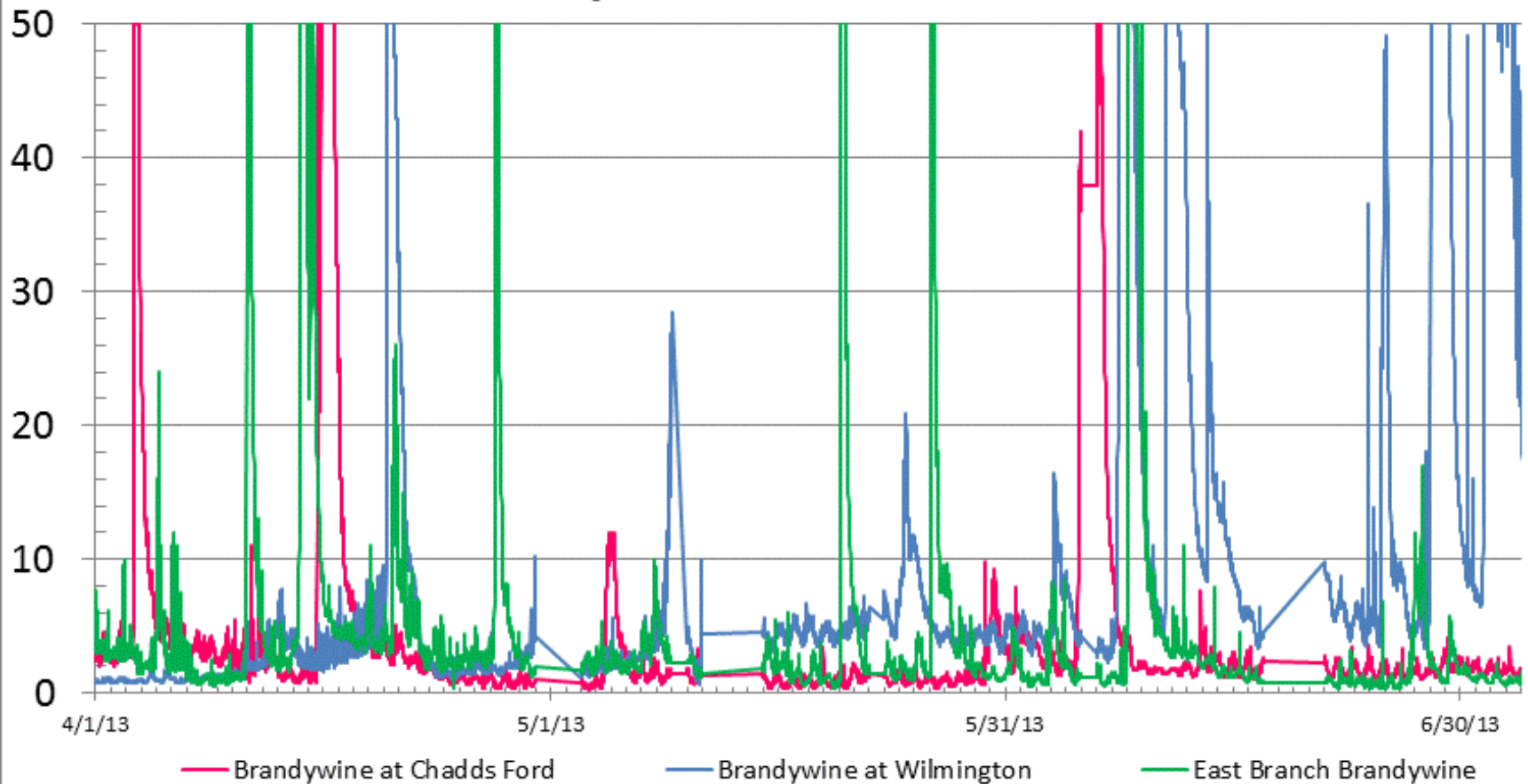
Brandywine Creek @ Foot Bridge (1995-2014)



◆ Total Suspended Solids — Poly. (Total Suspended Solids)

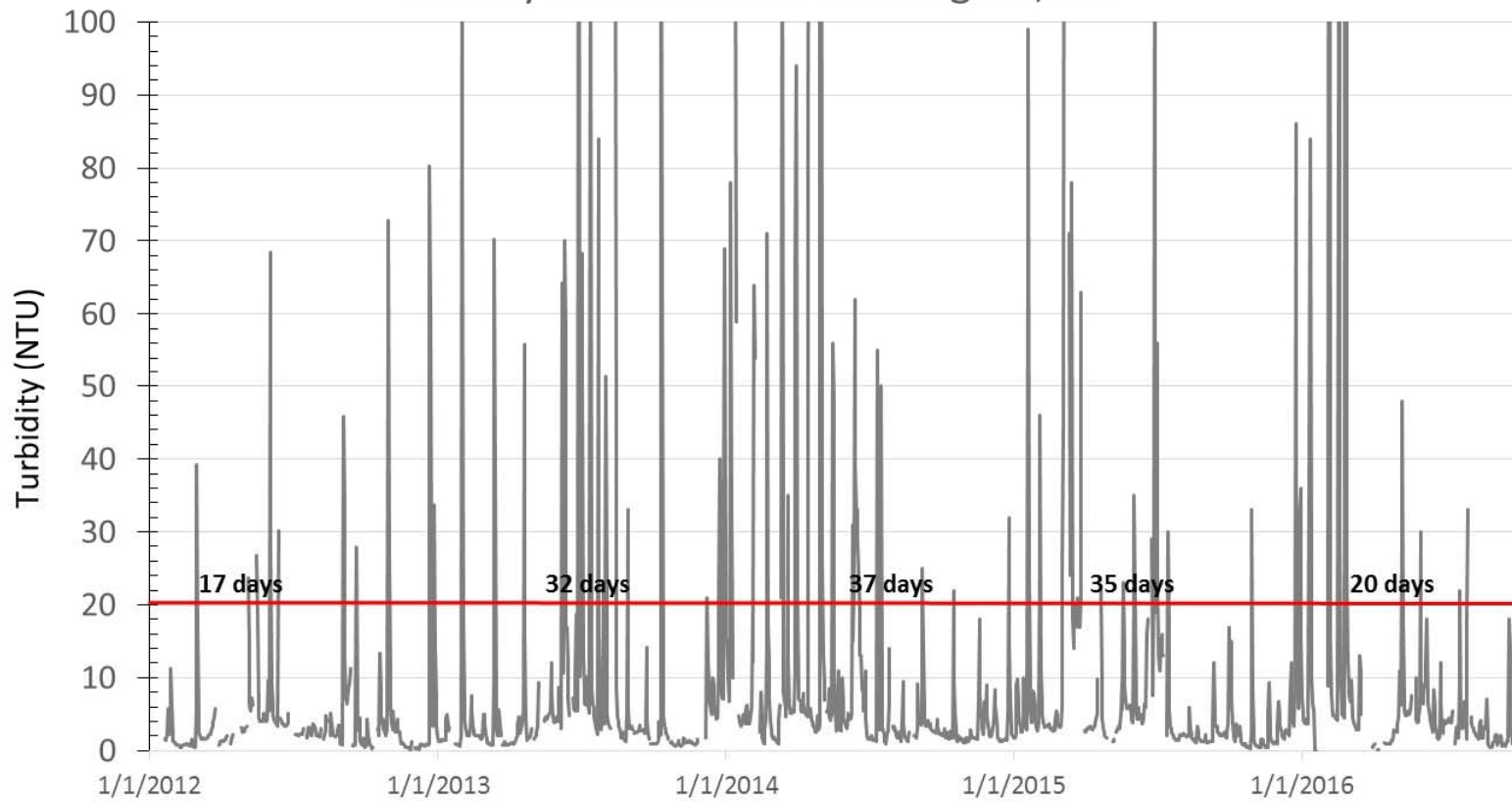
Turbidity (2013)

Brandywine Christina Watershed



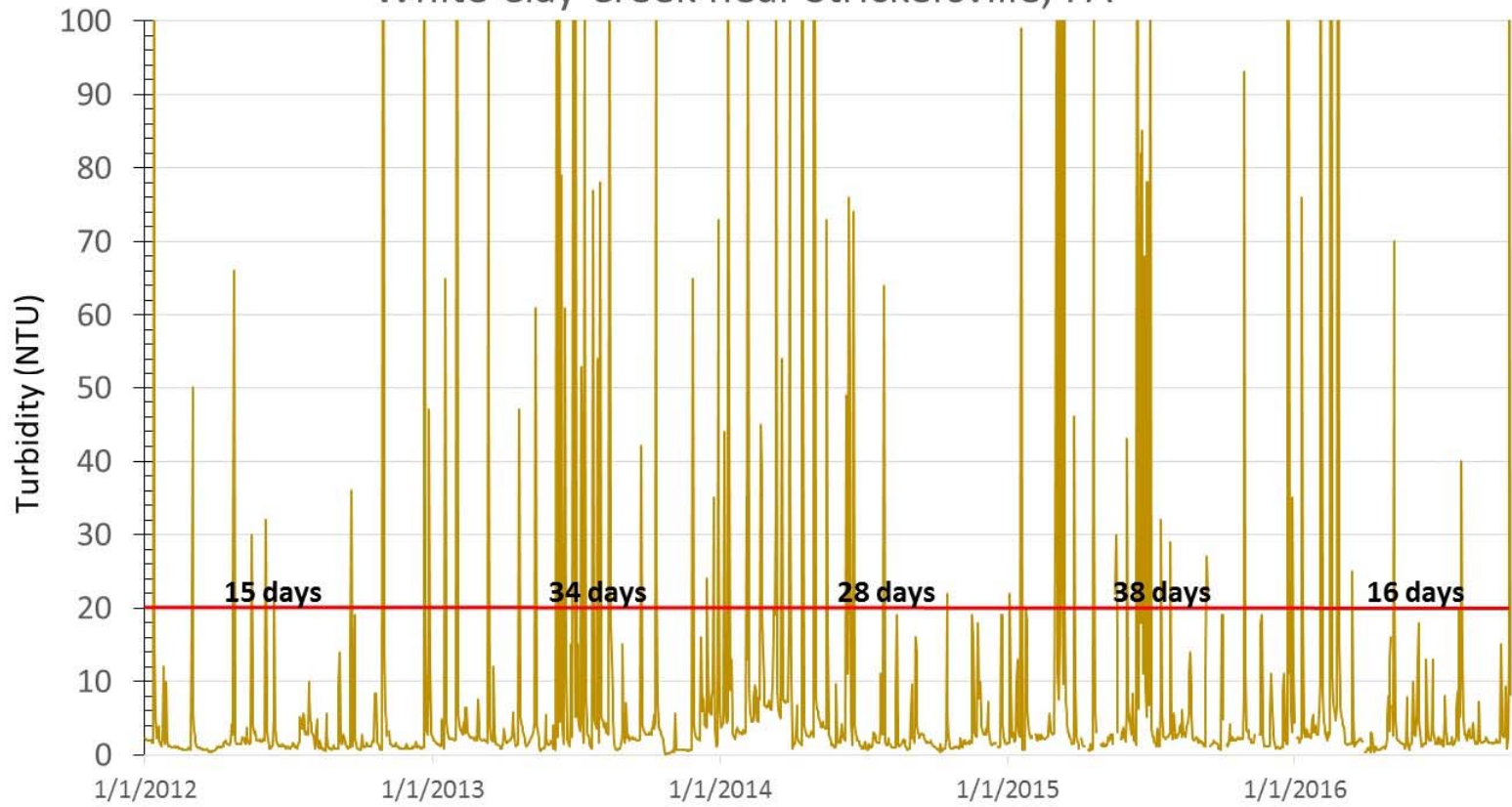
Turbidity

Brandywine Creek at Wilmington, DE



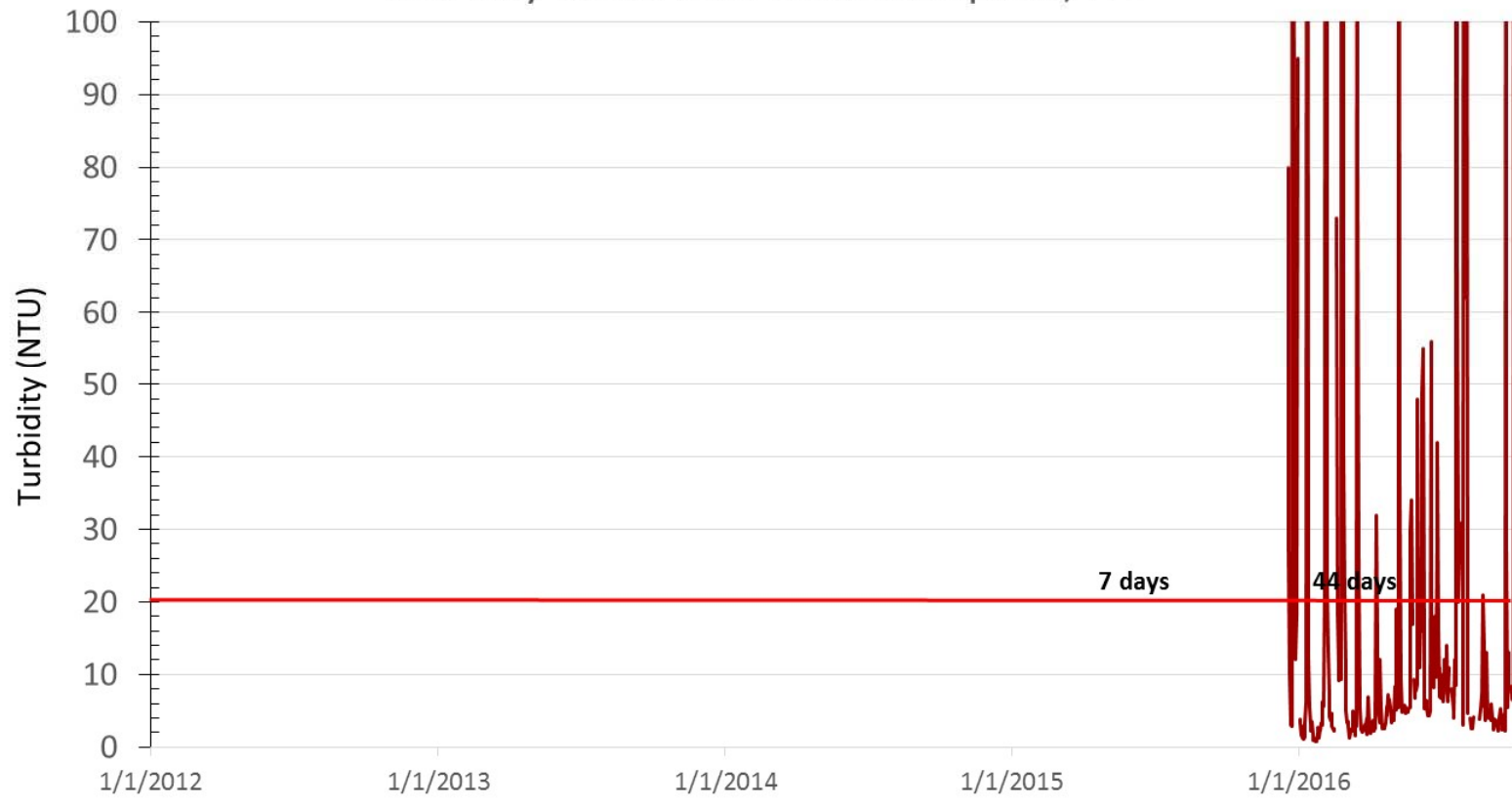
Turbidity

White Clay Creek near Strickersville, PA



Turbidity

Red Clay Creek near Kennett Square, PA



Stream	Water Purveyor	Number of Days above Turbidity of 20 NTU					Mean
		2012	2013	2014	2015	2016	
Brandywine Cr. at Wilmington, DE	City of Wilmington	17	32	37	35	20	28
White Clay Cr. near Stricknersville, PA	City of Newark	15	34	28	38	16	26
Red Clay Cr. near Kennett Square, PA	SUEZ DE					44	44
EB Brandywine Cr. below Downingtown, PA	AQUA PA and Downingtown	55	52	45	48	30	46
WB Brandywine Cr. at Modena, PA	PA American Water Co.	57	76	73	69	46	64

Water Temperature

Brandywine Creek at Chadds Ford Water Temperature, 1995-2016

