

**Accurate Data for DEWOOS Long Time Pictures:  
Sampling and Analyses**

**Jonathan Sharp, CMES – U Delaware**

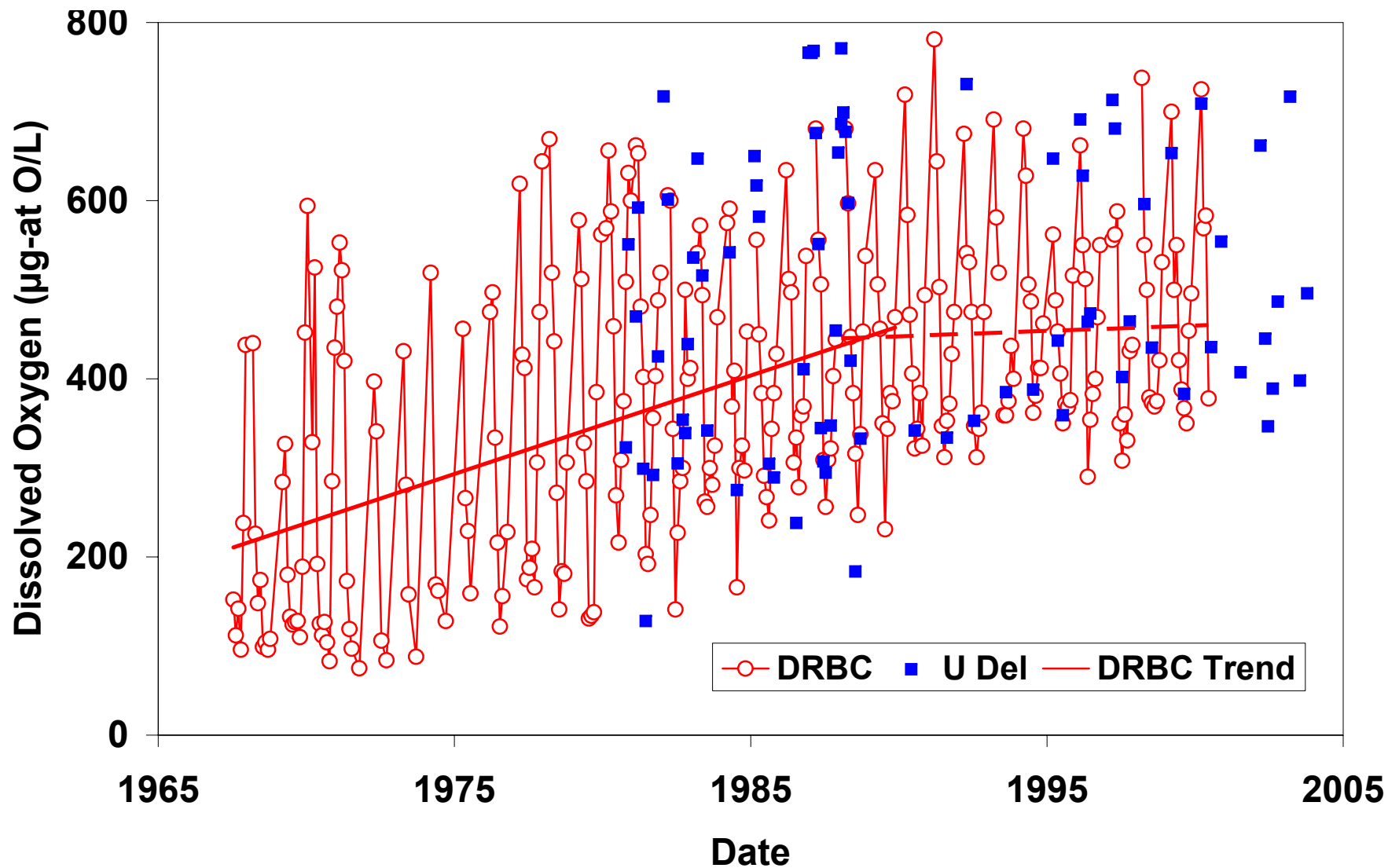
**20 February MAC Meeting**

**DRBC (DNREC) Boat Run monitoring dataset is one of longest most consistent estuarine water quality datasets in the world**

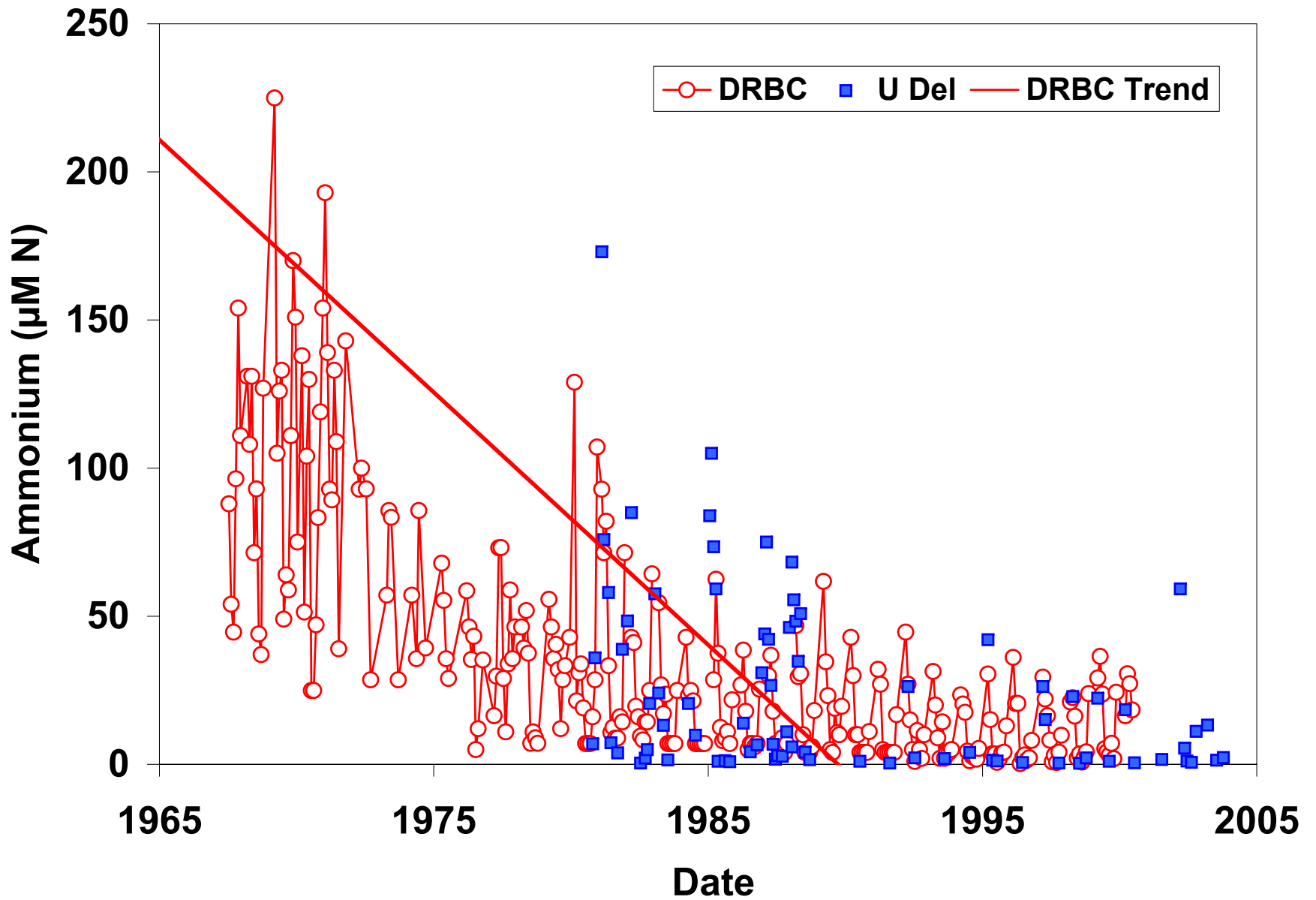
**Boat Run dataset spans period of one of the most successful water quality improvements in world**

**DEWOOS – Delaware Estuary Watershed to Ocean Observing System – being proposed as pilot demonstration project for IOOS (Integrated Ocean Observing System)**

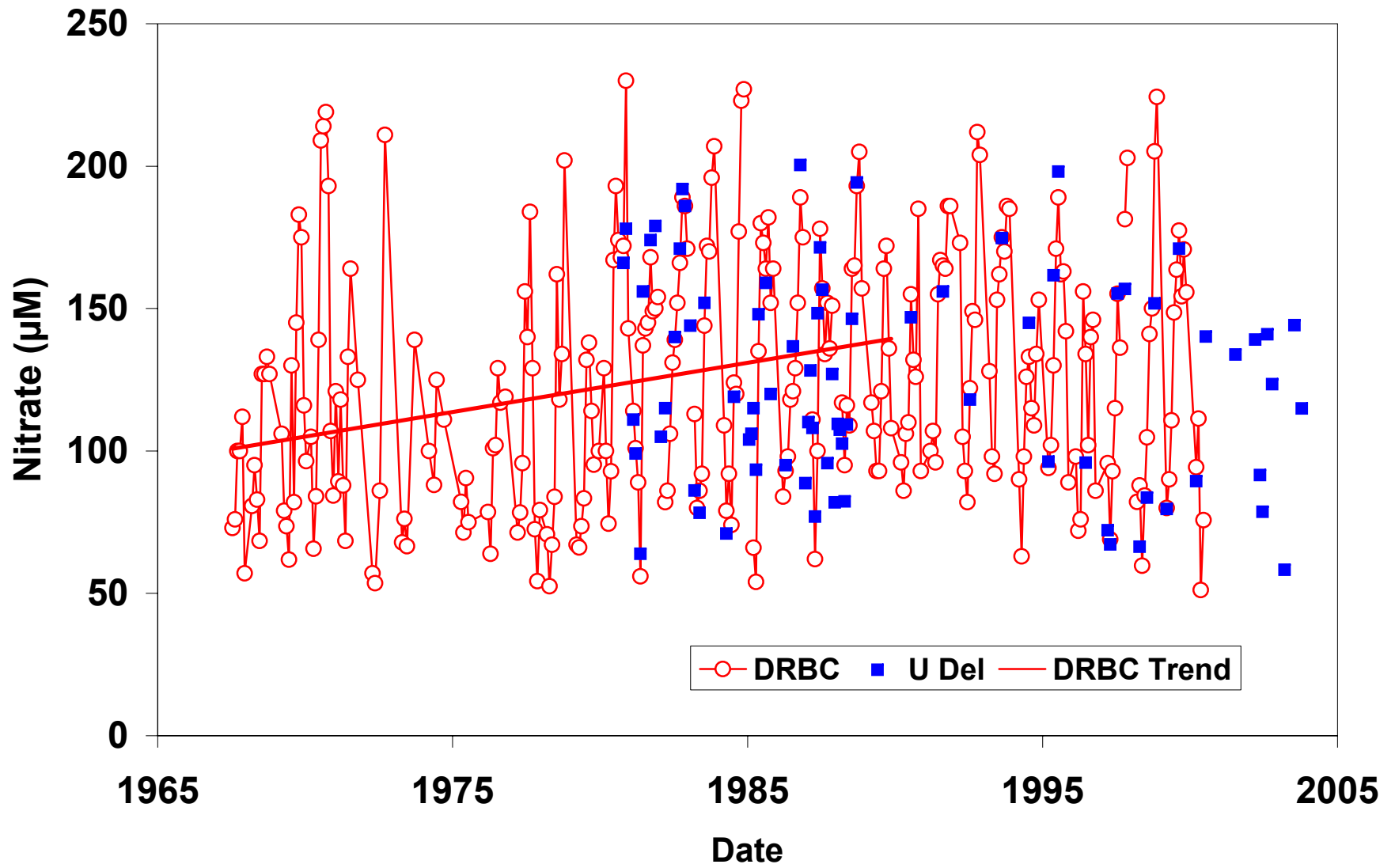
**For DEWOOS – long term discrete sampling data will be integrated with real-time continuous measurements and research information**



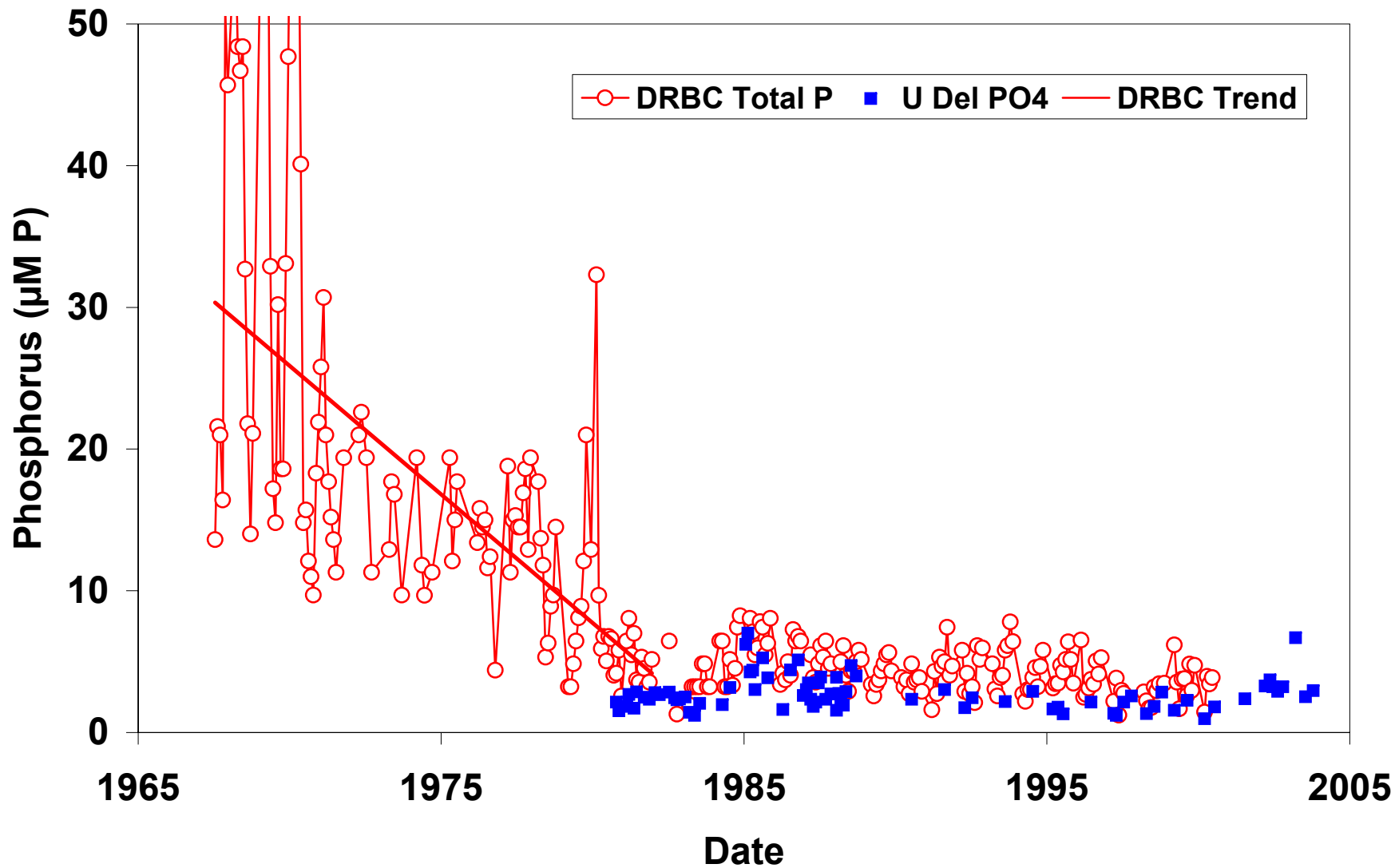
**Dissolved oxygen at Marcus Hook Station (UD Station 14) – DRBC monthly average and trendline for 5-year running average values 1969-1989; UD individual samples. 62.5  $\mu\text{g-at O/L}$  = 1 mg /L.**



**Marcus Hook (Station 14)  $\text{NH}_4$  trend.  $71.43 \mu\text{g-at N/L} = 1 \text{ mg/L}$ .**



**Marcus Hook NO<sub>3</sub> (Station 14) trend. 71.43 µg-at N/L = 1 mg/L.**



**Marcus Hook Total P – Station 14 PO<sub>4</sub> trend. 32.3 µg P/L = 1 mg/L.  
Trend for 5-year running average 1969-1981.**

**Difference between compliance QA/QC and “environmental” quality assurance.**

**Good correlation between UD and DRBC data for dissolved oxygen and nutrients.**

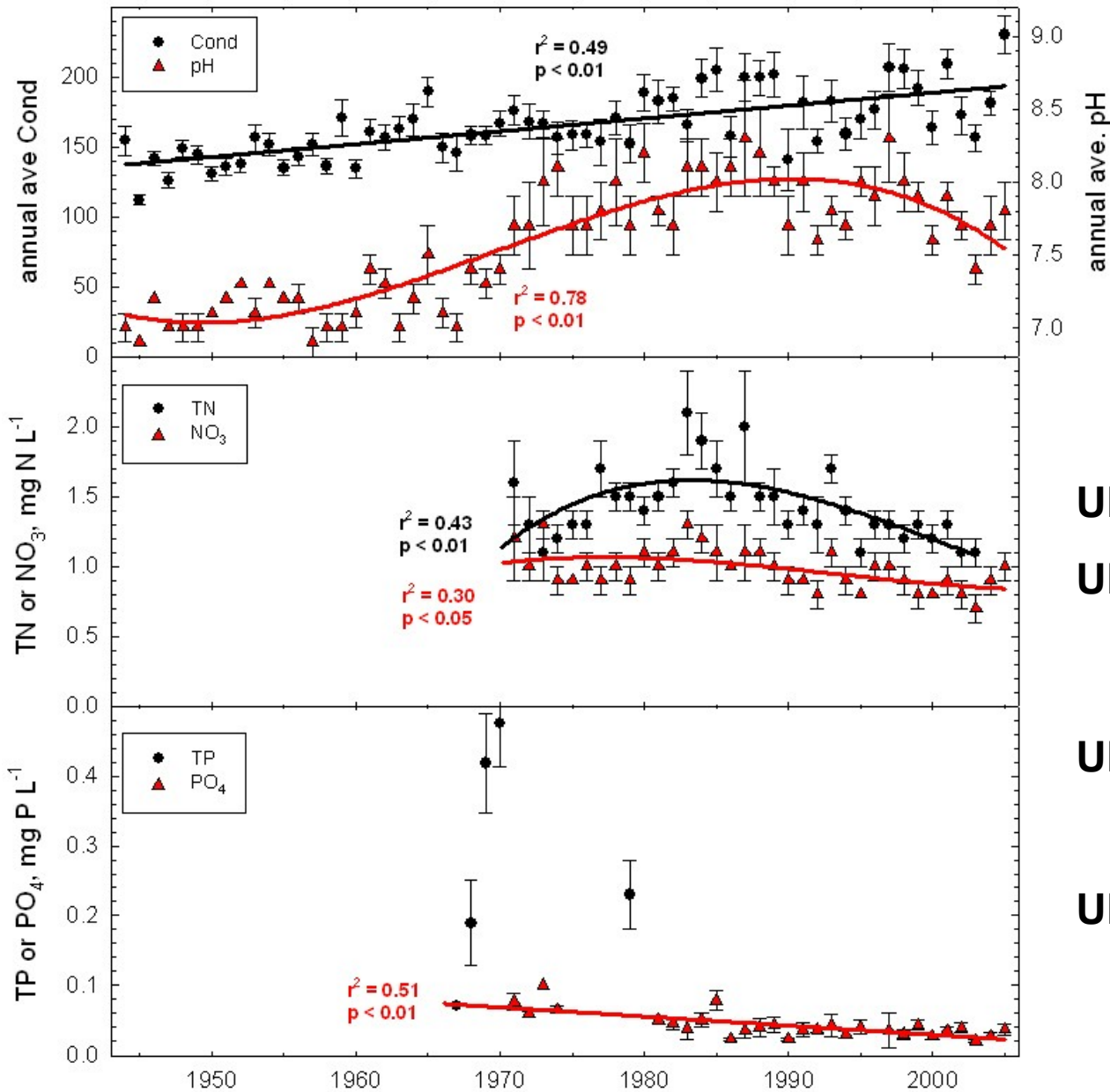
**Correlation for chlorophyll – not examined much; suspected problem with DRBC special study samples that are outsourced for analysis.**

**Correlation for primary production – should compare.**

**Correlation for dissolved organic carbon – suspected problem with DRBC special study samples that are outsourced for analysis.**

**Correlation for total suspended sediments – should check.**

### Delaware River at Trenton



**USGS Trenton – data analyzed by Tom Fisher (U MD)**

**UD Station 1 comparison**

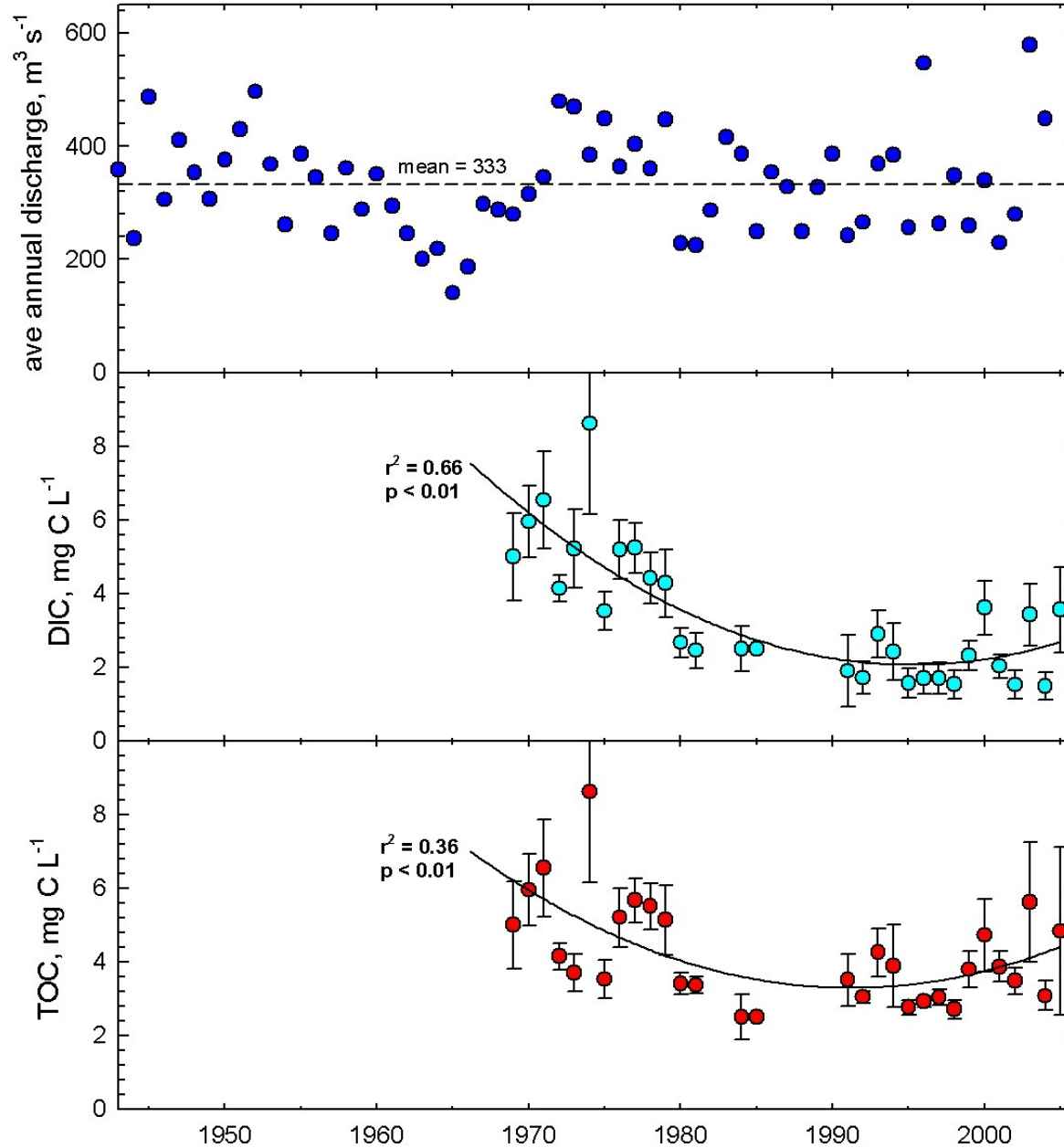
**UD dataset shows pH for mid-1980s in range of 6.6-8.1**

**UD NO<sub>3</sub> in same range ≈ 70 μg-at N/L**

**UD PO<sub>4</sub> in same range of 1.5 – 3 μg-at P/L**

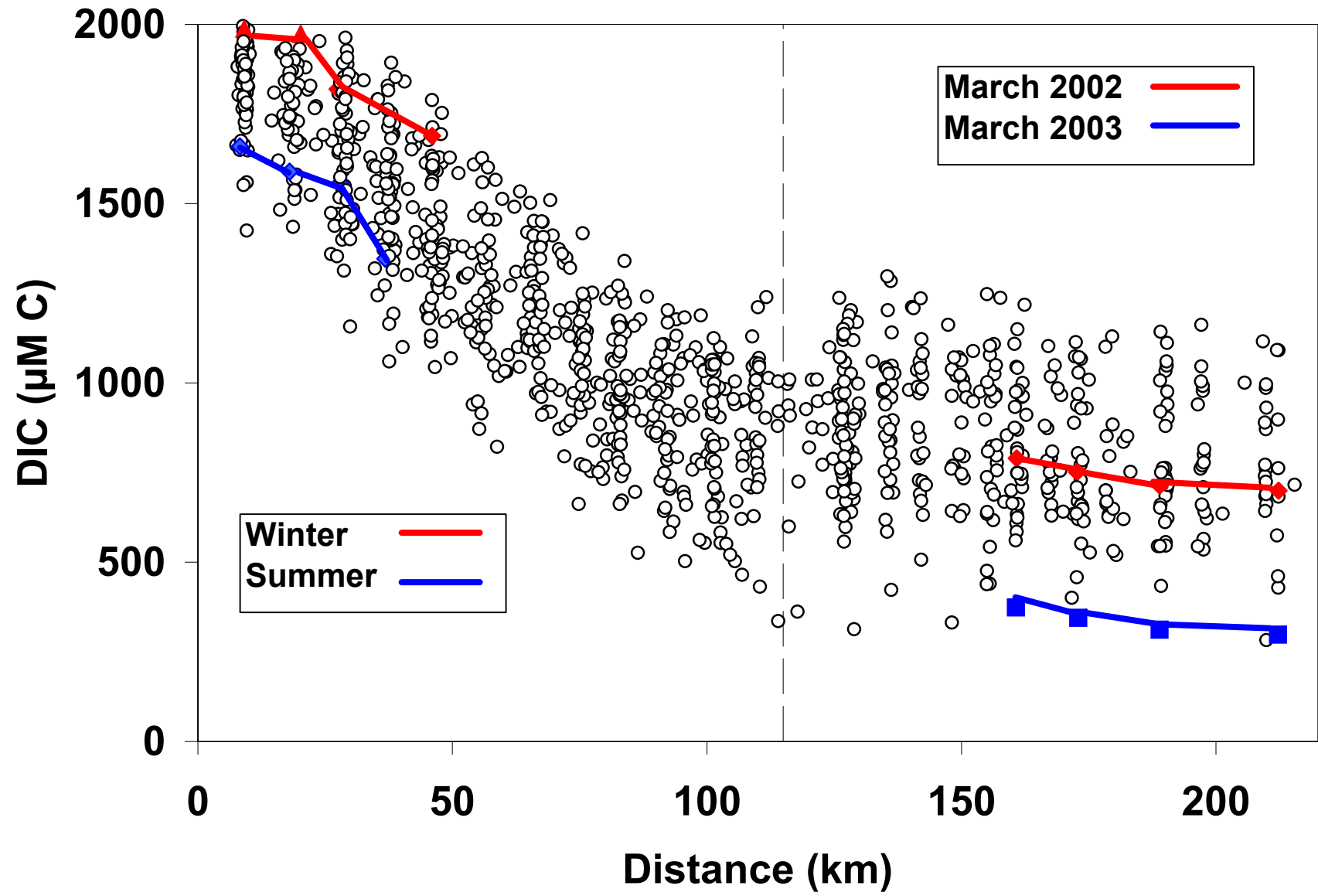


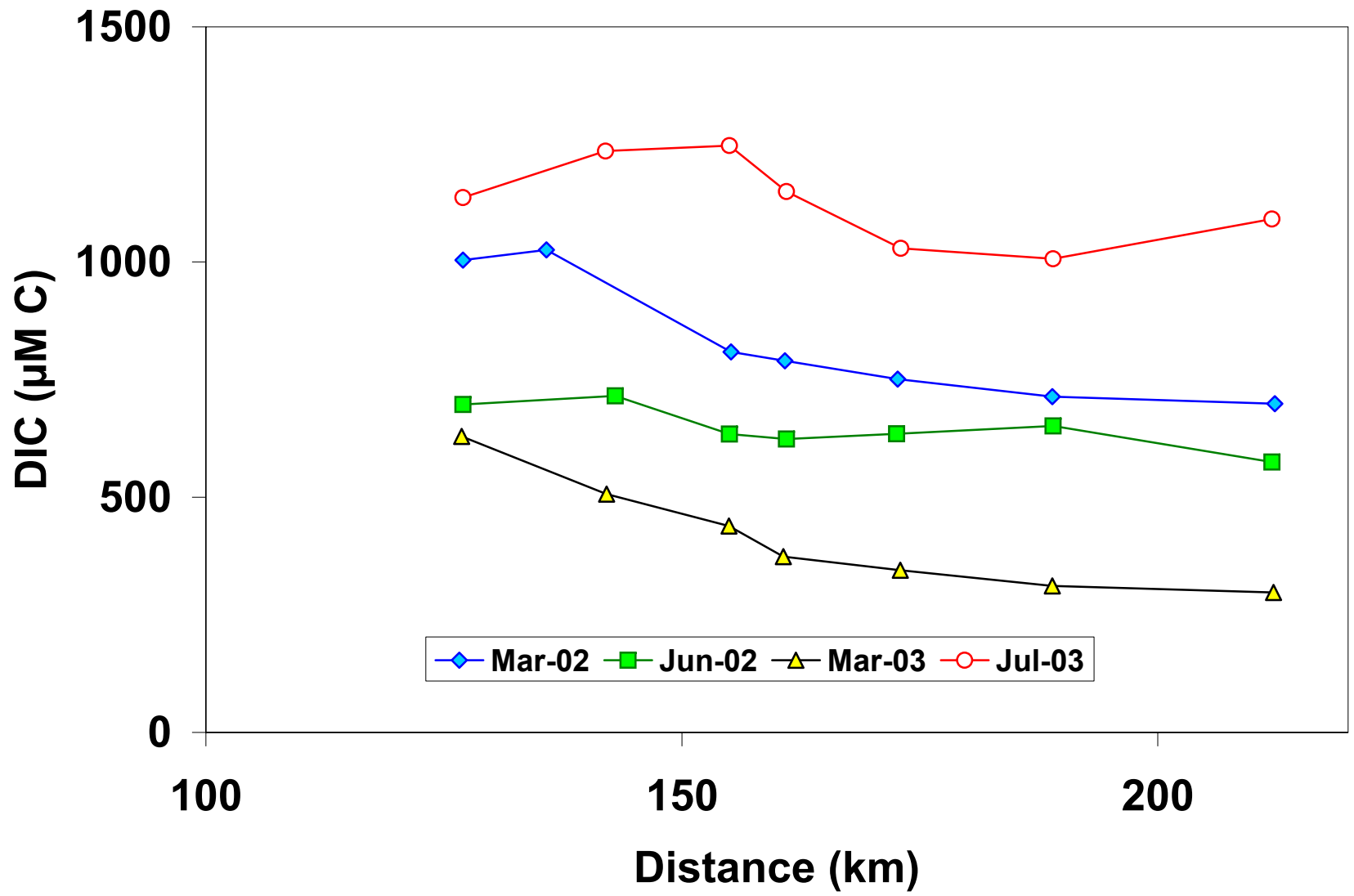
### Delaware River at Trenton

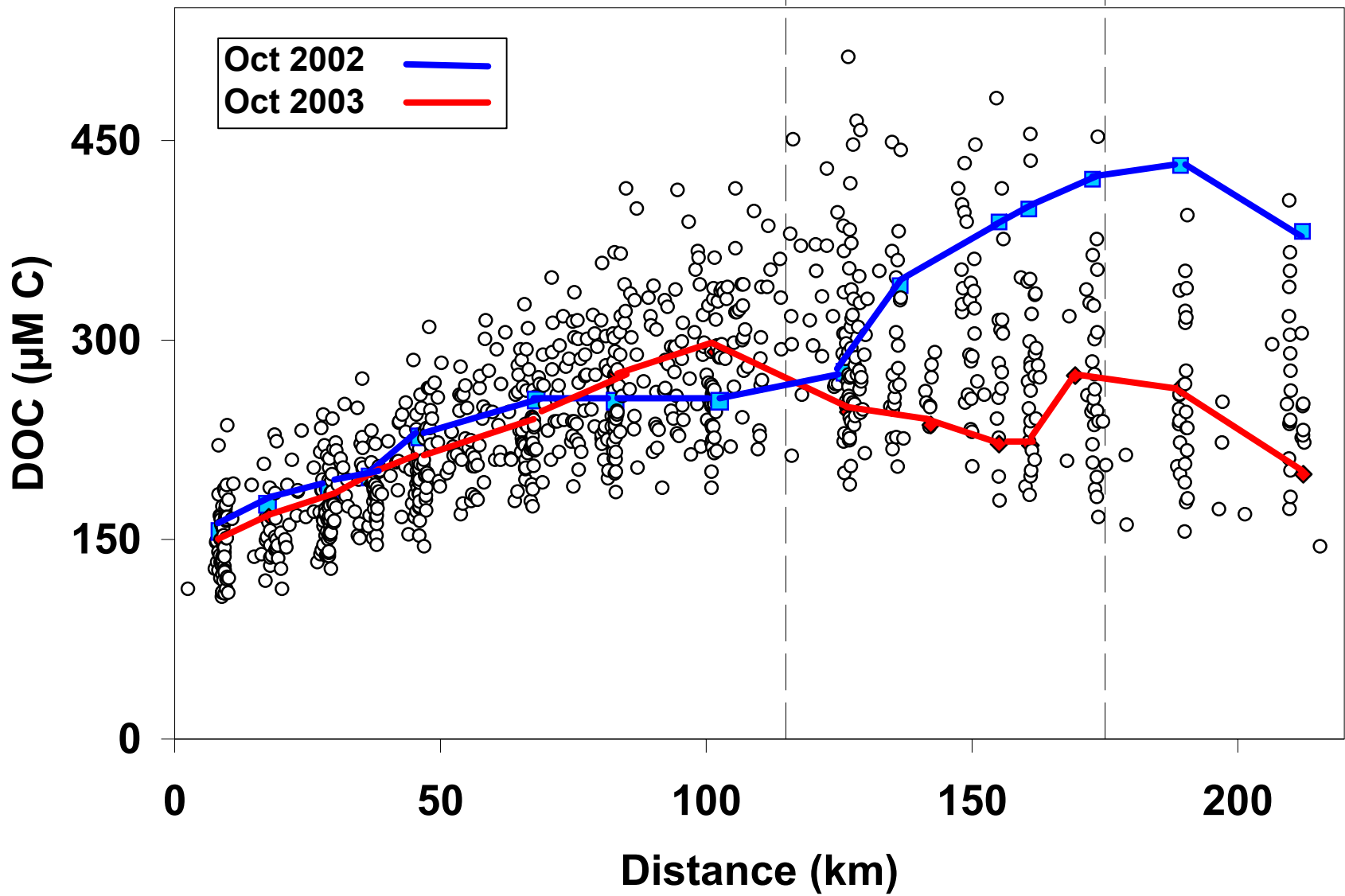


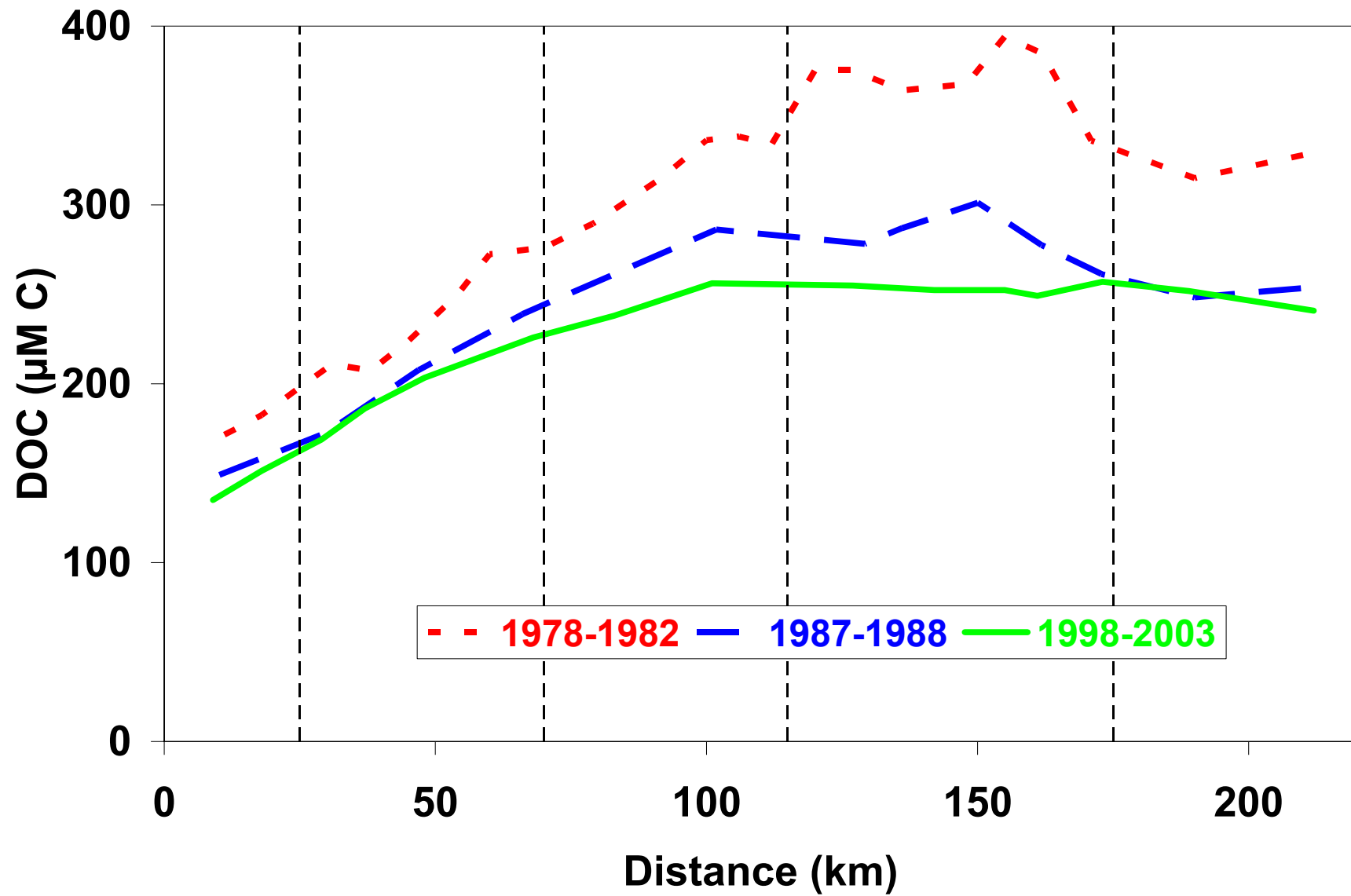
**DIC data similar to UD data, USGS data not as high; trend?**

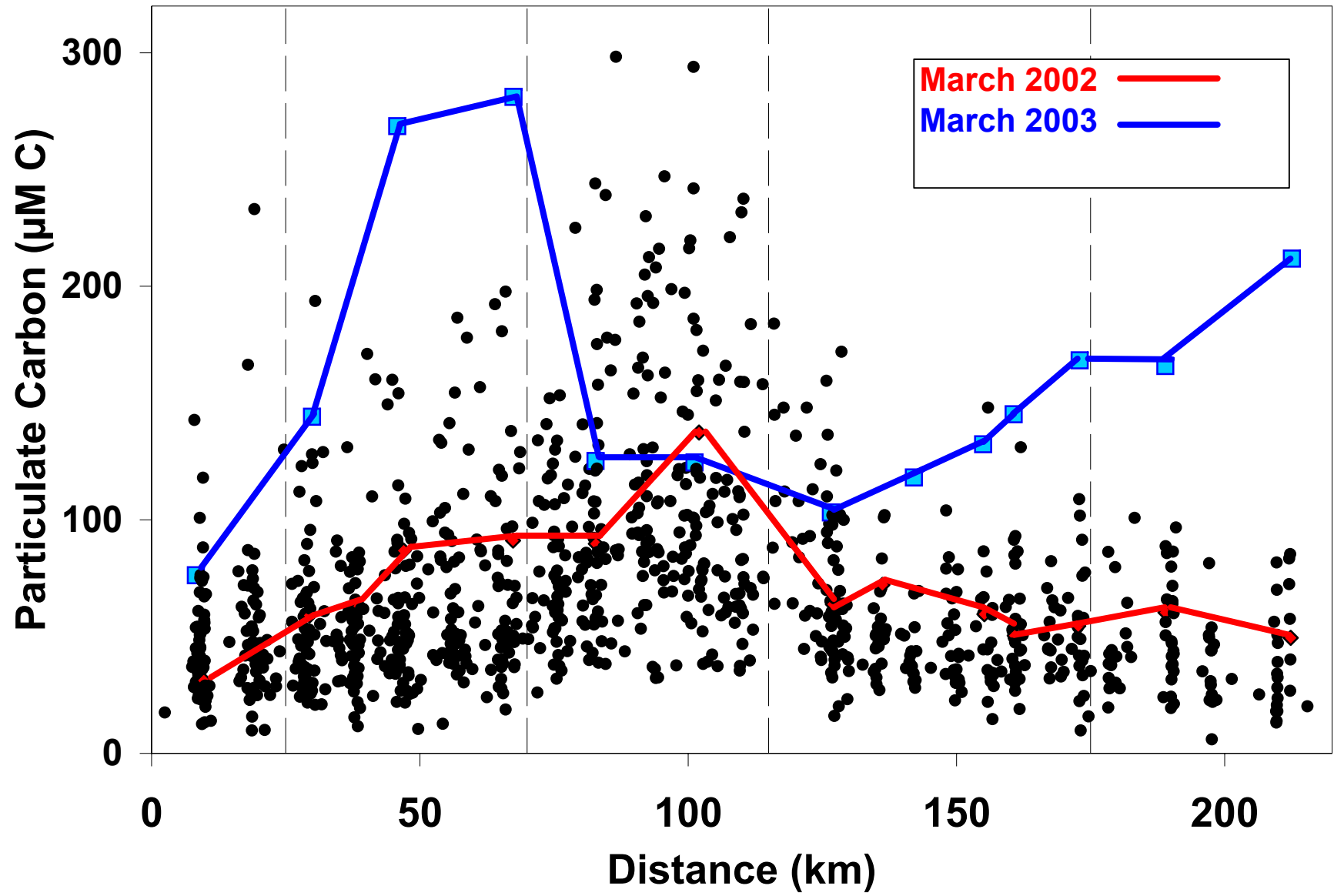
**DOC data appear too high compared to UD; trend?**











**We need more comparisons of DNREC, UD, NJ DEP, USGS discrete sample data.**

**Need comparisons and checks on USGS continuous data – gauging stations and stations in river.**

**Need more correlations of parameters to be able to assess ecosystem responses:**

- nutrients to chlorophyll**
- chlorophyll to primary production**