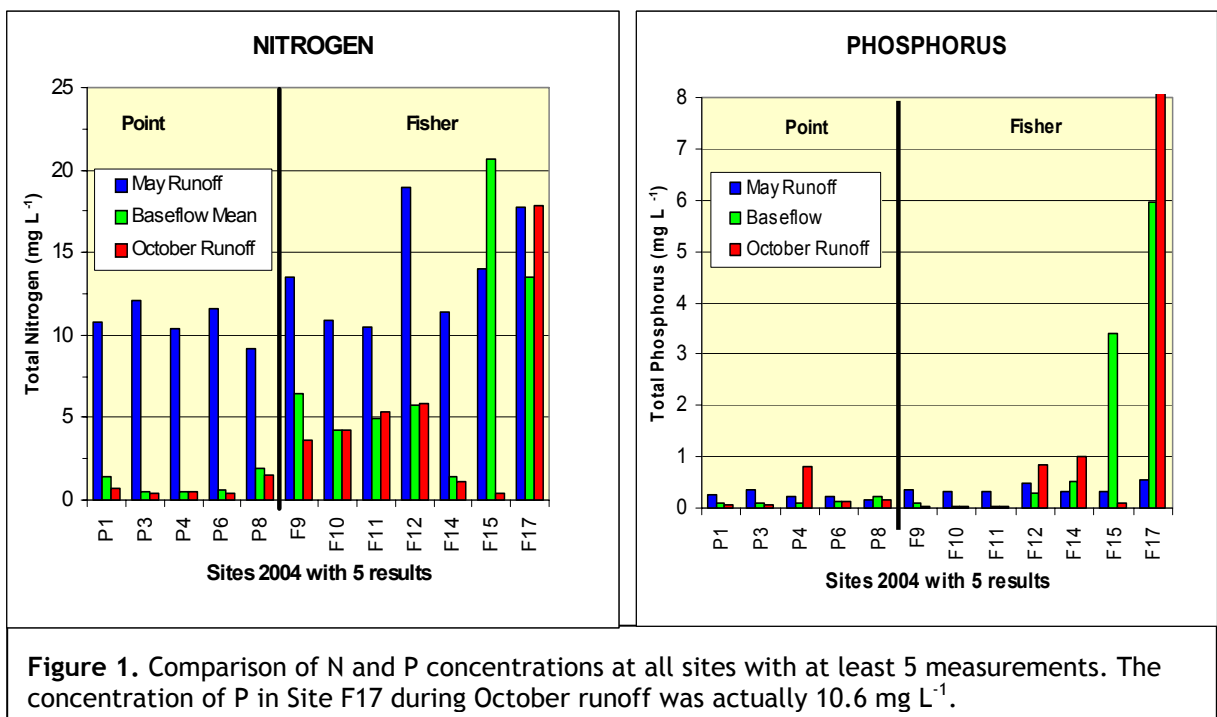


Findings of Citizen Monitoring of Point and Fisher Creeks, Manitowoc County

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The following is a summary of my conclusions to date about the Point and Fisher creeks monitoring in 2004.

- Most of the sites had no measurable flows for most if not all of the sampling dates with the exception of the May 10 sample. This makes comparison of concentrations between sites very difficult. Sites with minimal flow will not have representative P and N concentrations because standing water will likely have elevated concentrations and therefore these levels may not be reflective of landuse in the watershed.
- The only sites with flow at all sampling periods (although flow data was not always obtained) were 2 sites on Point Cr. (P1, P3) and 1 site on Fisher Cr. (F10). It was not clear from the accompanying document how flows were measured. Flows can be difficult to measure and therefore the values are suspect at this time. An example of possible problems with this data is sites P3 and P1 on 12 July when reported flows were higher at the upstream site (P3) when higher (or similar) flows would be expected at the downstream site (P1).
- During the 10 May sampling (spring runoff event monitoring), P concentrations were generally similar at sites in both creeks although N values were slightly higher in Fisher Cr



- Concentrations of N and especially P were much higher at 2 upstream sites in Fisher Cr (F15, F17) during the rest of the sampling season (Figure 1) but these sites had very low flow so the higher levels do not necessarily indicate a significant nutrient source.
- Most of my analysis was performed on the 3 sites (P1, P3, F10) with flow at all of the sampling times. These sites are the sites lowest in the watersheds.
 - Point Creek generally had more flow than Fisher Creek

- Nitrogen concentrations were higher in Fisher Creek than in Point Creek with the means being 5.6 and 3.1 mg L⁻¹ in Fisher and Point creeks respectively.
- Phosphorus concentrations were lower in Fisher Creek than in Point Creek with the means being 0.09 and 0.13 mg L⁻¹ in Fisher and Point creeks respectively.
- In order to gain a better understanding of what the concentrations found in these streams in 2004 mean on a regional basis, a comparison was made of data collected in 2001 and 02 from other streams in Manitowoc County. Samples were collected from these streams on a monthly basis from May through October by the USGS. Samples were collected from Point Cr. near the P1 site. This comparison shows that P and N mean values for Point Cr in 2001 were similar to other streams in the county (Figure 2). Mean P values in Point Cr. in 2001 were higher than found in 2004 (0.25 vs 0.13 mg L⁻¹) and mean N values were similar (3.4 vs 3.1 mg L⁻¹). In 2004, Sites P1 (mean TN 3.1 mg/L; mean TP 0.13 mg/L), P3 (mean TN 2.8 mg/L; mean TP 0.16 mg/L) and F10 (mean TN 5.6 mg/L; mean TP 0.09 mg/L) with n=5,

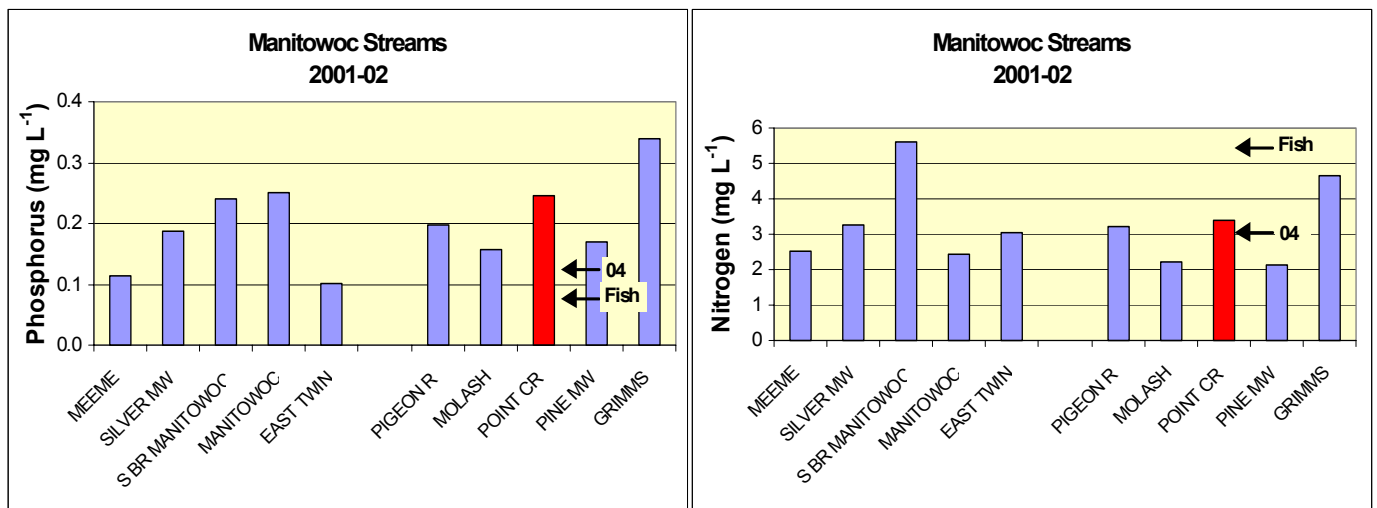


Figure 2. Comparison of N and P in other Manitowoc Co. streams. Data was collected in 2001-02.

consisted of two events (spring and autumn, and three summer baseflows).

- In order to put the loading measured in Point and Fisher creeks into perspective concerning their importance to regional loading of phosphorus into the western part of Lake Michigan, a comparison was made to loading in 2004 from the Sheboygen River. Figure 3 shows that loading from the creeks were about an order of magnitude less on each of the 5 days when data was available compared with the river loading.

In summary, the phosphorus concentrations for these 2 creeks are similar to other streams in the area. Yes the streams have nutrient "problems" i.e. higher than what we would like to see if the entire watershed had buffers and runoff controls, but consistent with the other small streams in the area. Nitrogen levels in 2004 were elevated in Fisher Cr. compared with other nearby streams including Point Cr. The lack of flowing water at many of the sites after May make it difficult for me to interpret the concentration data. Having said that, P levels were exceedingly high at 2 of the headwater sites (F15, F17) on Fisher Creek yet this was not reflected at the downstream site (F10) that always had measurable flow. In fact P levels were generally higher in Point Cr. compared with Fisher Cr.

