Exclusion of Flood-Affected Waters from 2012 Draft Impaired Waters List

Six waterbodies assessed in the 2012 assessment cycle do not have sufficient representative data to make an impairment decision. Each of these waterbodies has the minimum of six total phosphorus samples, one from each month of May – September, but these samples were collected during an extreme weather year. In June of 2008 southern Wisconsin received heavy rainfall and for each of the six waterbodies one total phosphorus sample was collected during this storm event (Figures 1-3). The 2008 annual mean stream discharge for these waterbodies was also very high, indicating that the other samples collected are not representative of normal conditions.

For each waterbody stream discharge data from the nearest USGS gauging station was utilized to determine if 2008 qualified as an extreme weather year. An extreme weather year in this case is defined as a year where stream flow data are above the 90th percentile of the annual averages within the period of record. A total of 19 or 20 years was used to calculate long-term stream flow averages and 90th percentiles for each waterbody. The mean of the flood year (2008) flow data was compared to the long-term upper 90th percentile (U90); if the 2008 mean value was higher than the long-term U90 then it was considered an extreme year. Flow data indicate that mean discharge (cubic ft/s) in 2008 exceeded the long-term mean and U90 discharge at all six sites (Table 1).

An impairment decision with data from an extreme weather year alone does not accurately assess normal conditions in a waterbody so further monitoring will be done on these six rivers to aid in impairment decisions for future assessment cycles.

Table 1: Comparison of the 2008 flood-year mean discharge (cubic ft/s) to long-term flow data to demonstrate extreme weather year for six rivers in Wisconsin.

Official Water Name	WBIC	Seg	Nearest USGS Gauging Station	Years in long-term dataset (starting in 1992)	Long-term mean discharge (cubic ft/s)	Long-term Upper 90th Percentile	2008 mean discharge (cubic ft/s)
De Neveu Creek	138700	1	5423500	19	41.7	47.9	87.5
Little Platte River	943800	4	5414000	20	120.2	130.7	291.9
Bad Axe River	1639300	1	5408000	20	200.0	211.4	321.6
Grant River	956000	1	5413500	19	212.9	228.6	488.5
Yellowstone River	902500	1	5433000	19	189.8	201.9	323.1
Baraboo River	1271100	7	5405000	20	508.6	548.0	919.5