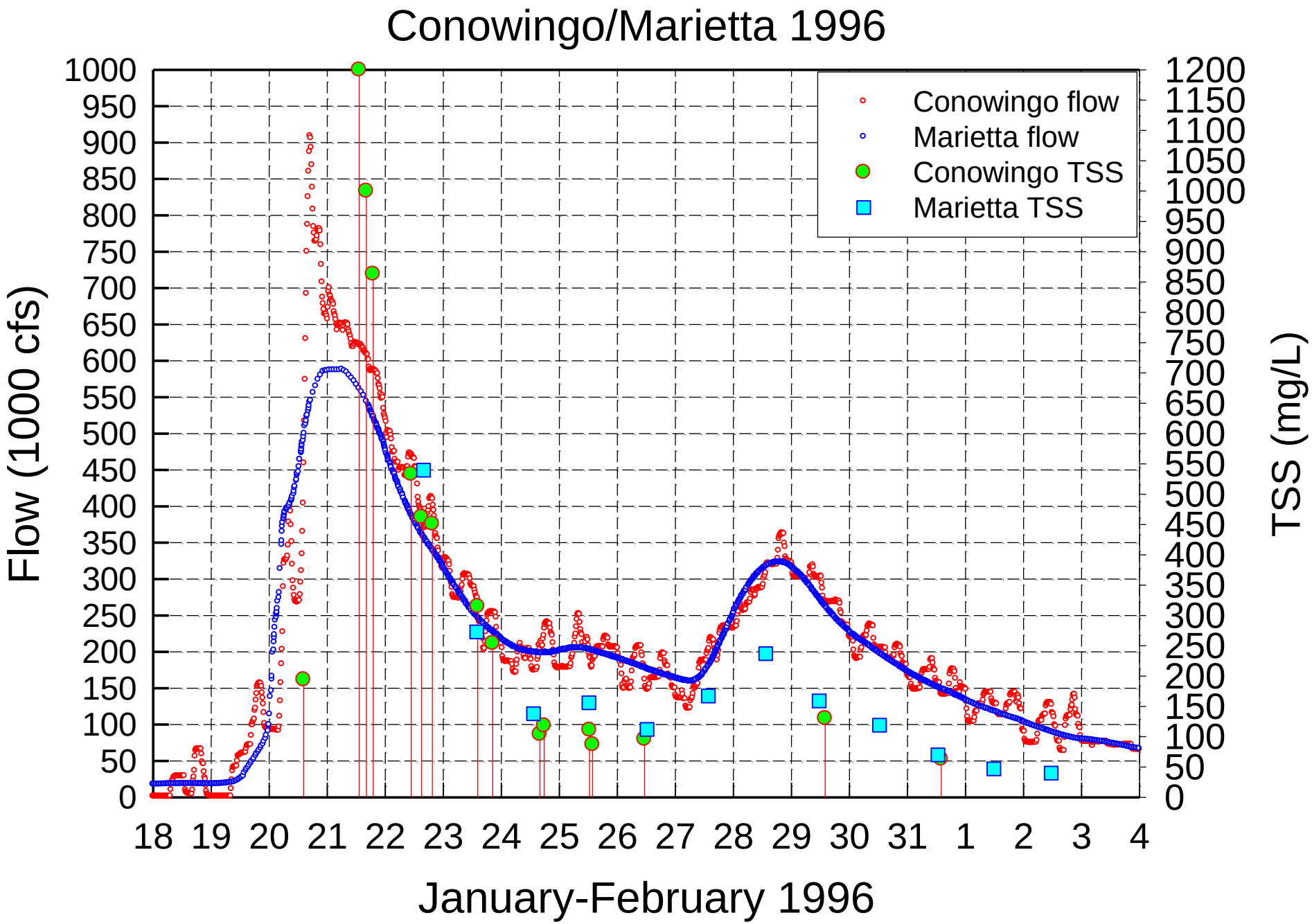
Conowingo/Marietta 1996
Conowingo flow
Marietta flow
Conowingo TSS
Marietta TSS
Flow (1000 cfs)
TSS (mg/L)
January-February 1996
0
50
100
150
200
250
300
350
400
450
500
550
600
650
700
750
800
850
900
950
1000
1050
1100
1150
1200
18
19
20
21
22
23
24
25
26
27
28
29
30
31
1
2
3
4

Ken Staver, personal communication (email) 1/12/16:

It is a very weird hydrograph, and if I understand the rapid increase in flow to over 900,000 cfs at about 5:00 pm on January 20, it is because the dam operator got the call from upstream that the ice jam had broken, and they opened flood gates as fast as possible to make room for the coming surge. It was a riveting story as they were worried about major damage to the dam and power house. I am sure Mike Langland and others know the details of this better than I. There was a sample collected just as the gate opening began at about 400,000 cfs, but in terms of capturing information during peak scour conditions, the first samples weren't collected until 1:00 the next day at about 622,000 cfs. I think I have my timing right on flows and samples, but please check if you have any doubts. The scour experts can weigh in, but my understanding is that the flows near 900,000 cfs would have moved much of the material that would have been subject to scour at 600,000 cfs later in the event when samples were collected. Mechanistically, to me 600,00 cfs after 900,000 cfs seems quite a bit different than 600,000 near the peak of a tropical storm after 7 years of relatively low flows, as was the case for Ivan. It also seems notable that concentrations were dropping quickly in the three post peak samples on January 21. Some version of this interpretation seems to me to be consistent with the bathymetry data suggesting that more scour had occurred than that based on the samples collected on January 21. So when I said the scour event was "missed" with water quality sampling, this is what I mean. But I am only speculating about what happened during preceding 18 hours of 600-900,000 cfs flow before samples were collected.