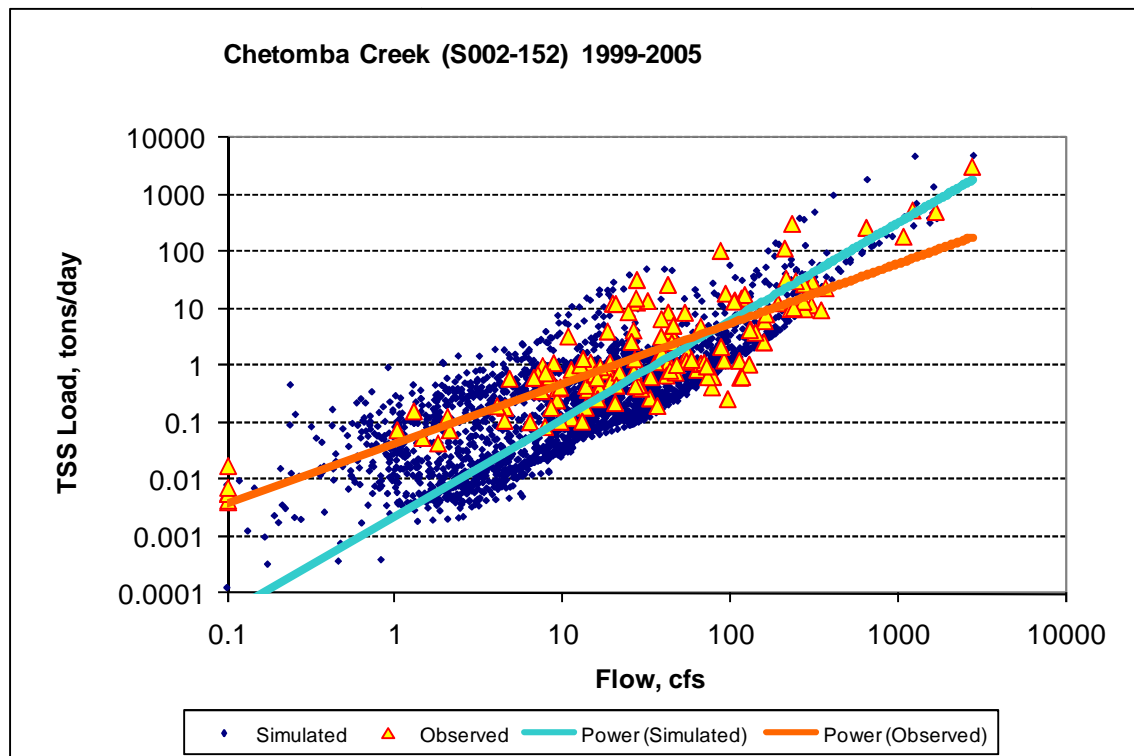


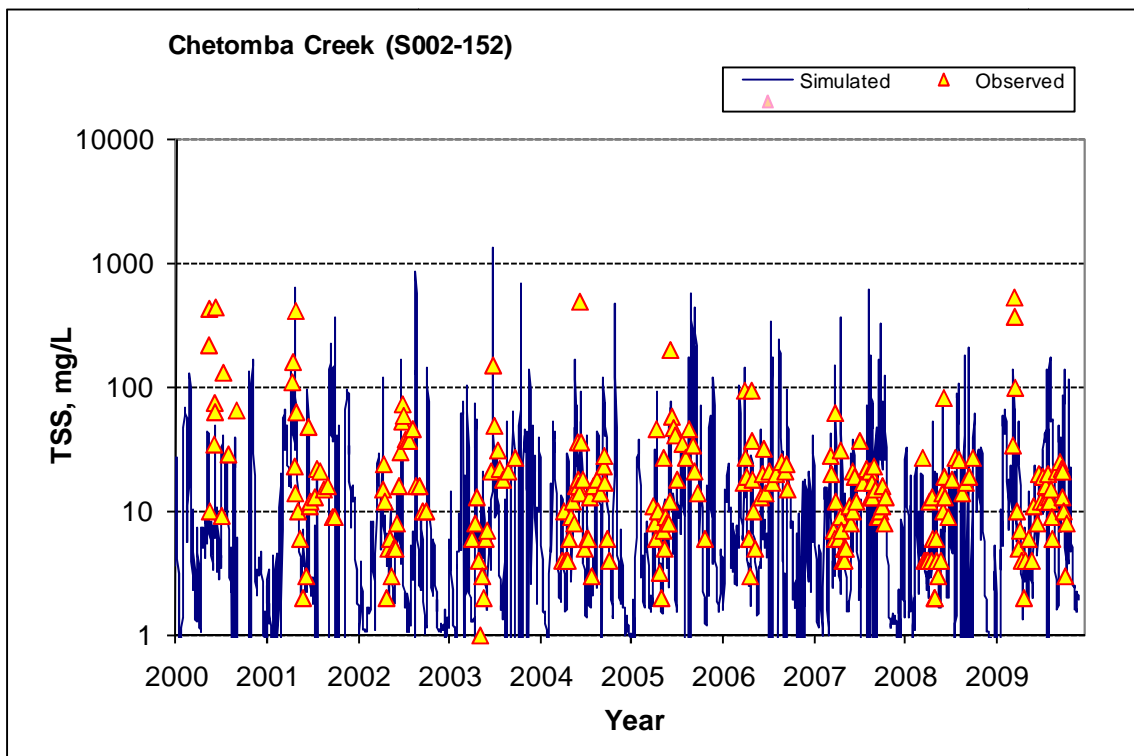
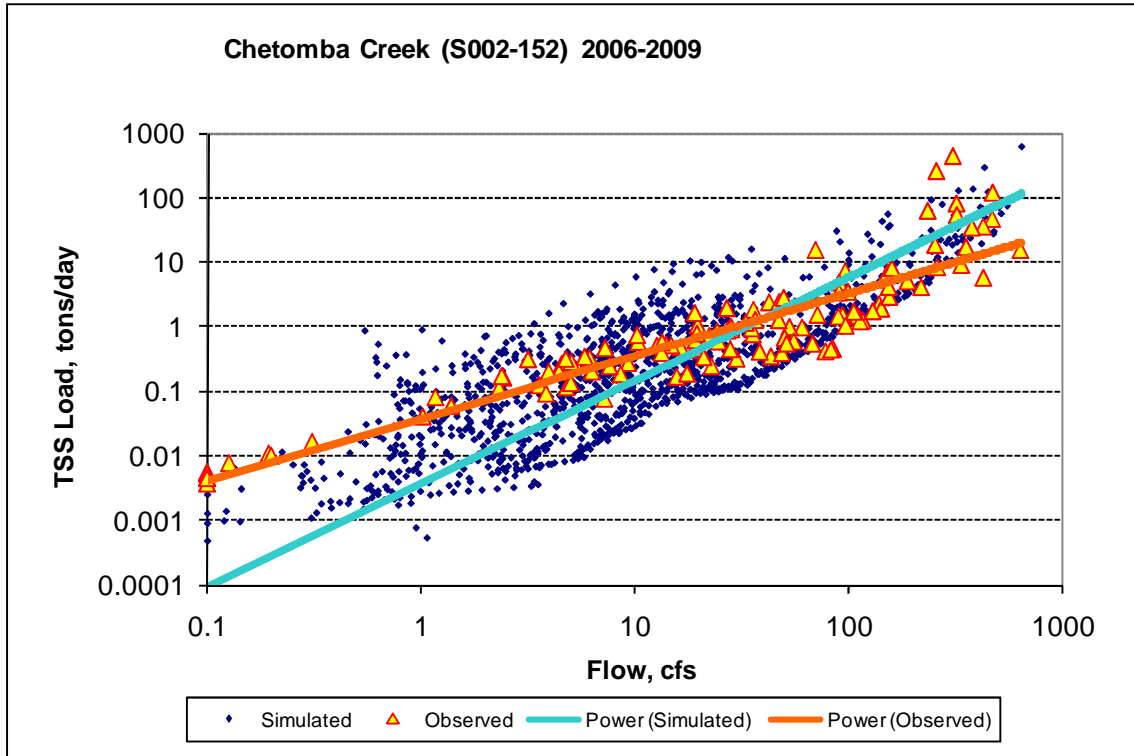
Water Quality Calibration and Validation for the Hawk Creek/Yellow Medicine HSPF Model

1 Chetomba Creek (S002-152)

1.1 TOTAL SUSPENDED SEDIMENT

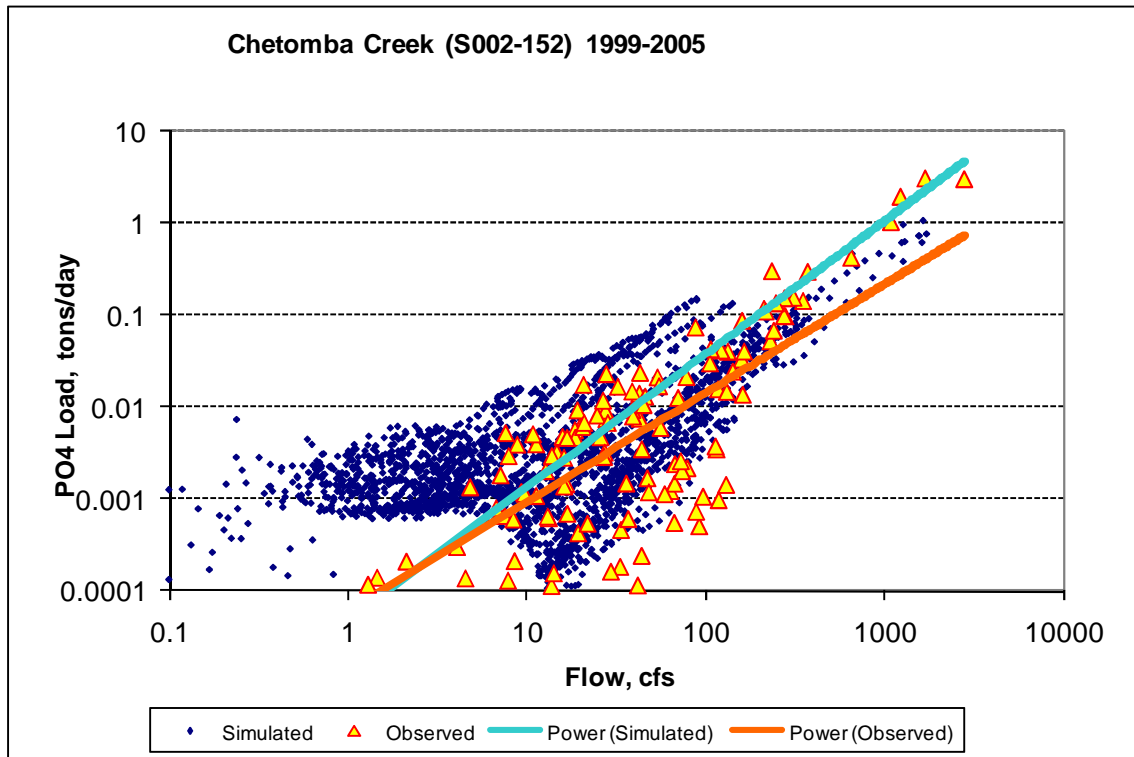
Parameter	1999 - 2005	2006 - 2009
Count	138	120
Conc Ave Error	-10.43%	35.93%
Conc Median Error	-9.49%	4.43%
Load Ave Error	42.73%	24.96%
Load Median Error	-0.34%	0.32%
Paired t conc	0.70	0.23
Paired t load	0.38	0.46

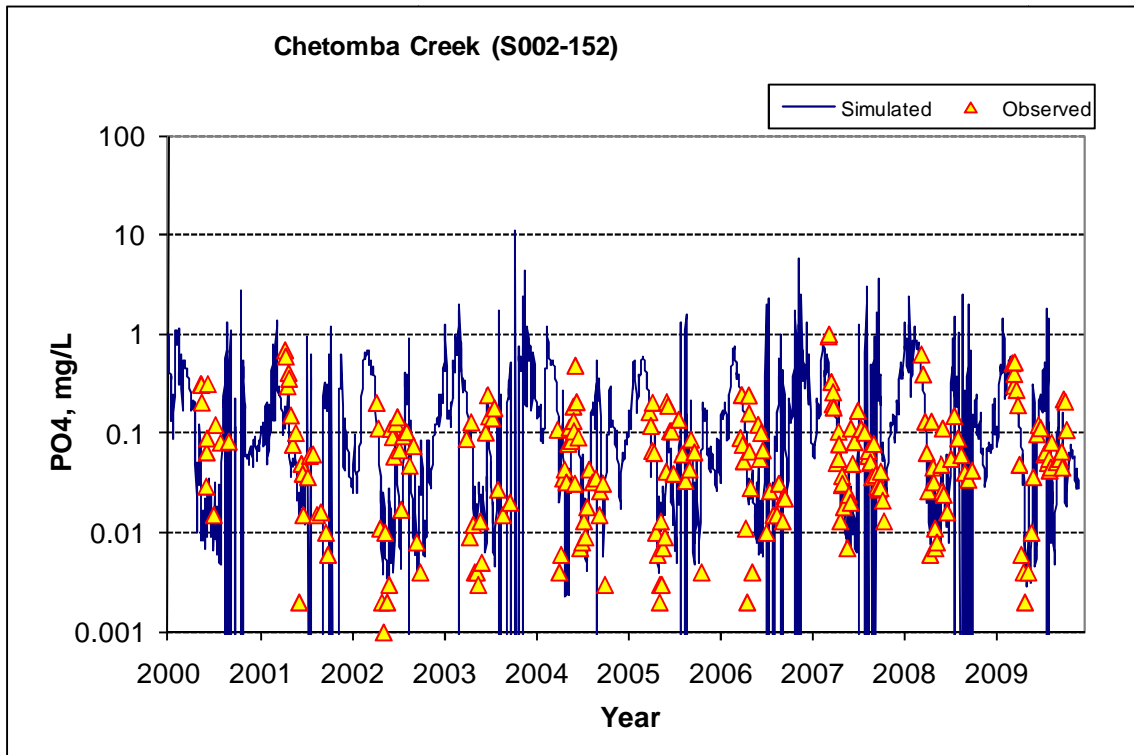
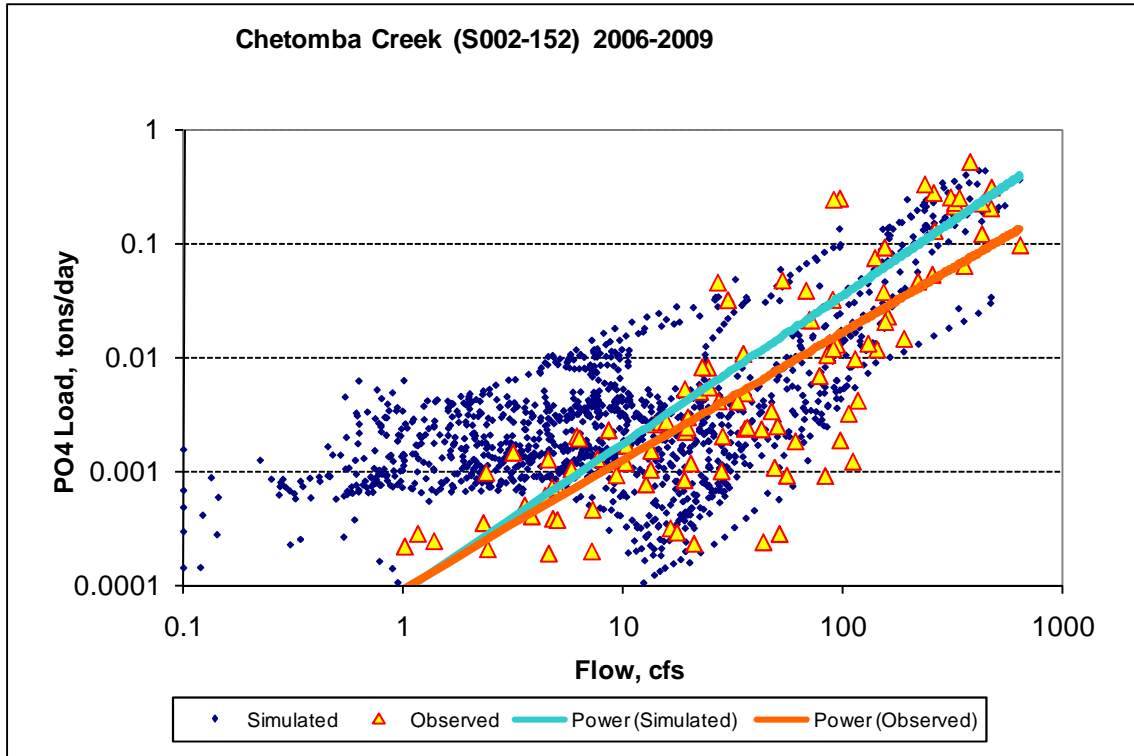




1.2 ORTHOPHOSPHATE (AS P)

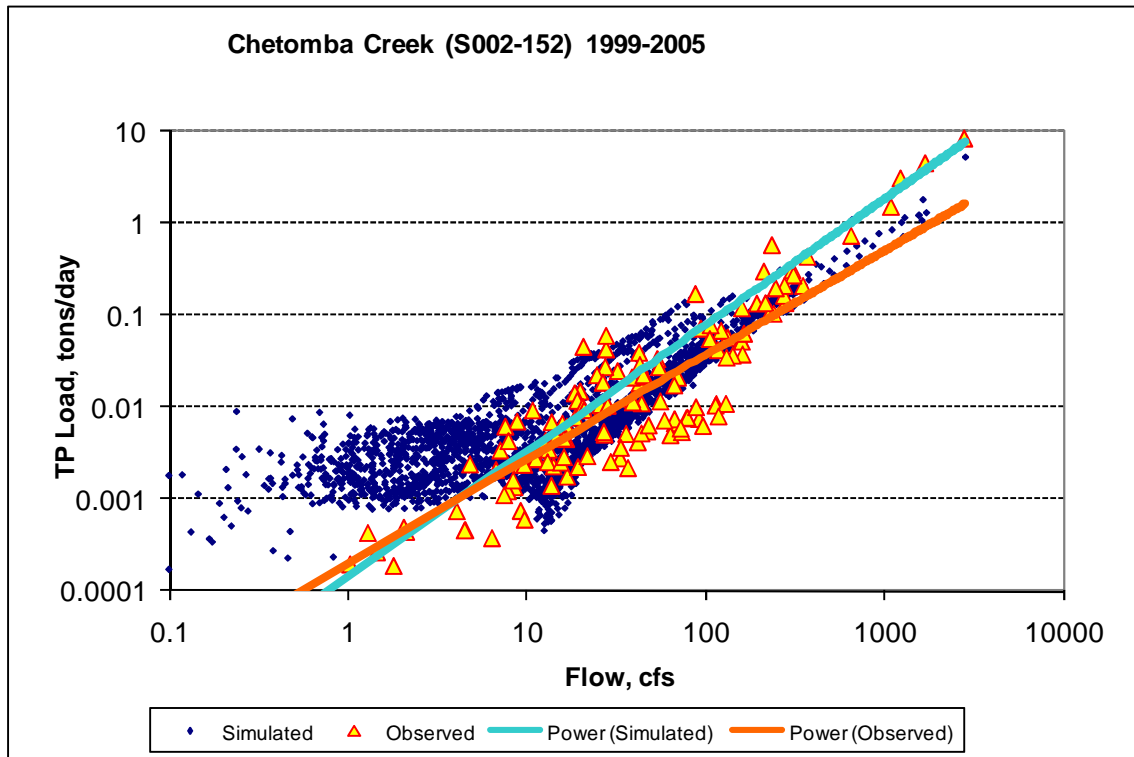
Parameter	1999 - 2005	2006 - 2009
Count	134	114
Conc Ave Error	-11.82%	12.84%
Conc Median Error	-12.98%	4.58%
Load Ave Error	-45.46%	-21.28%
Load Median Error	-0.26%	0.51%
Paired t conc	0.77	0.70
Paired t load	0.22	0.47

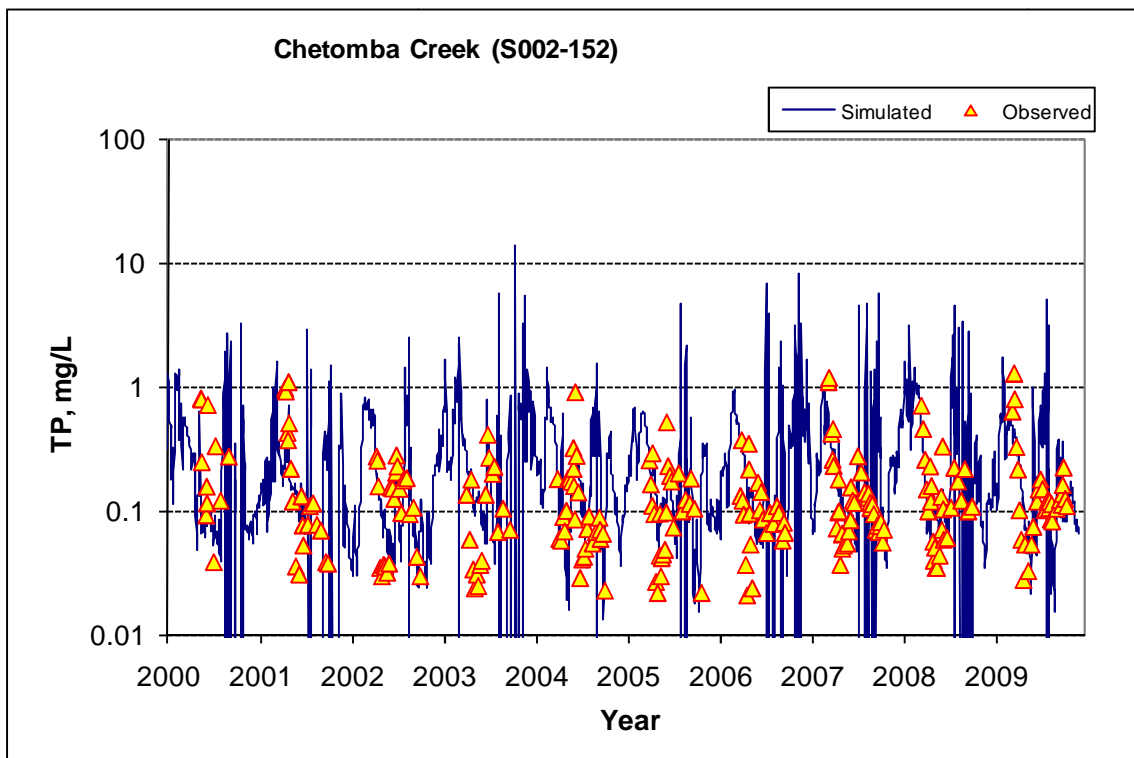
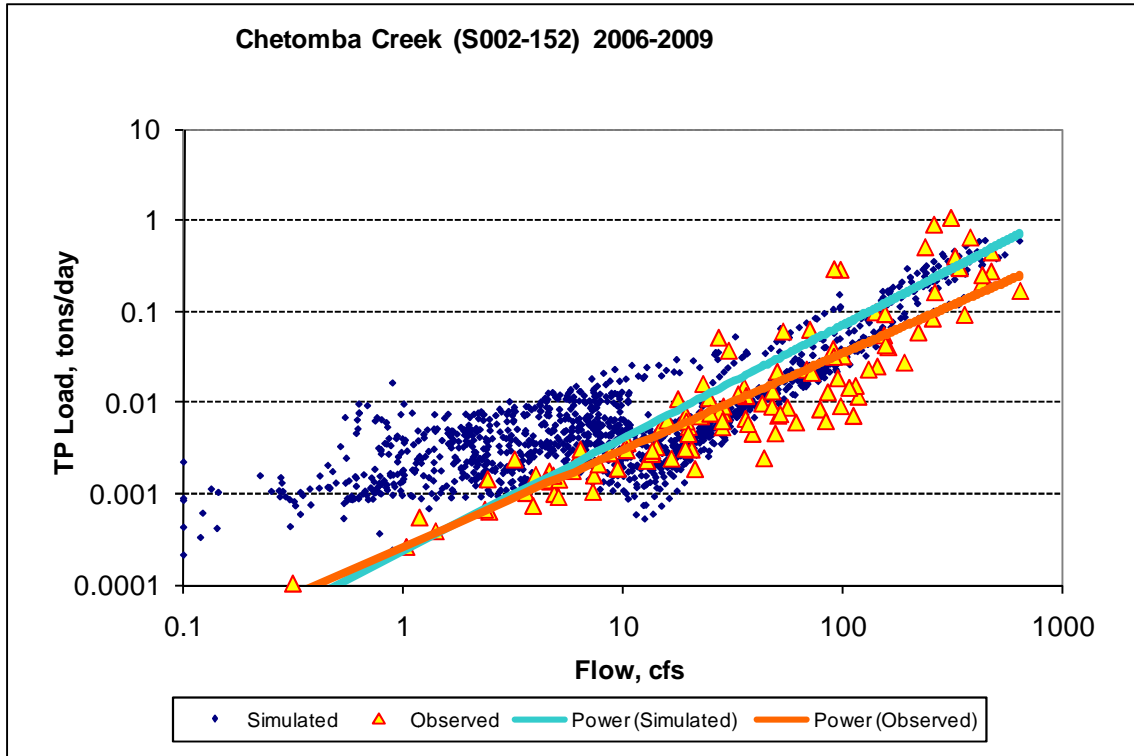




1.3 TOTAL PHOSPHORUS

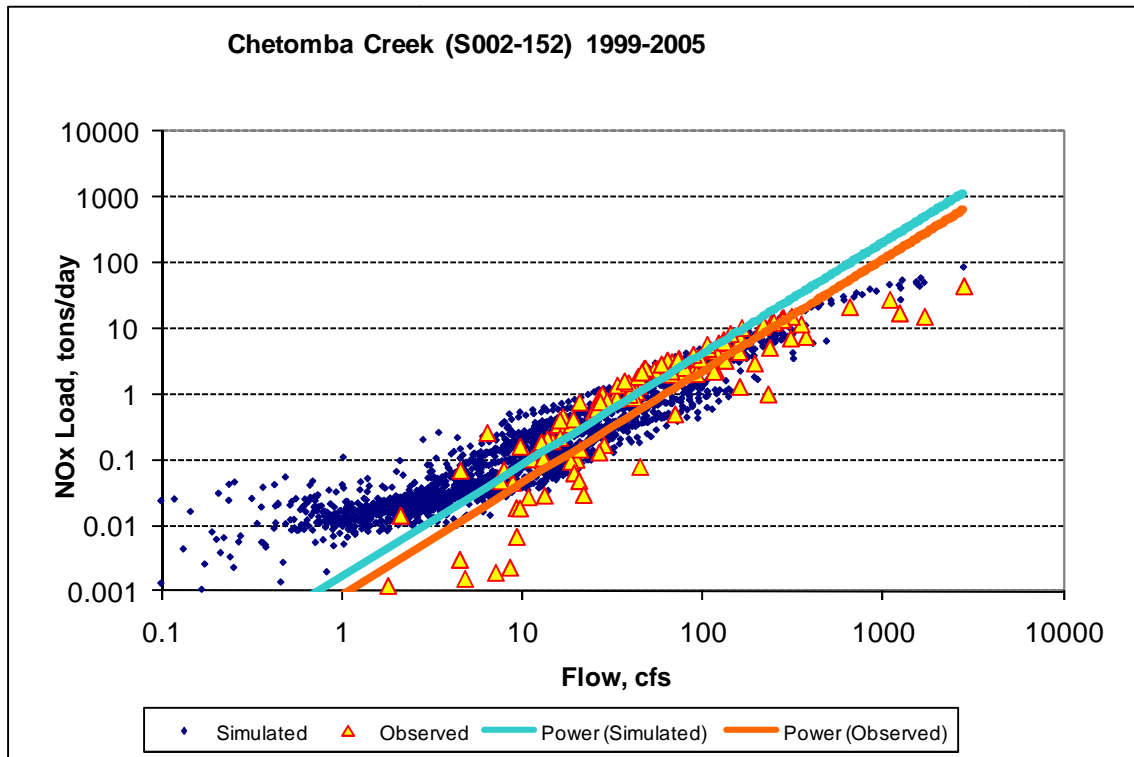
Parameter	1999 - 2005	2006 - 2009
Count	138	121
Conc Ave Error	0.16%	28.65%
Conc Median Error	0.62%	15.42%
Load Ave Error	-40.99%	-18.55%
Load Median Error	0.10%	2.30%
Paired t conc	0.98	0.25
Paired t load	0.27	0.53

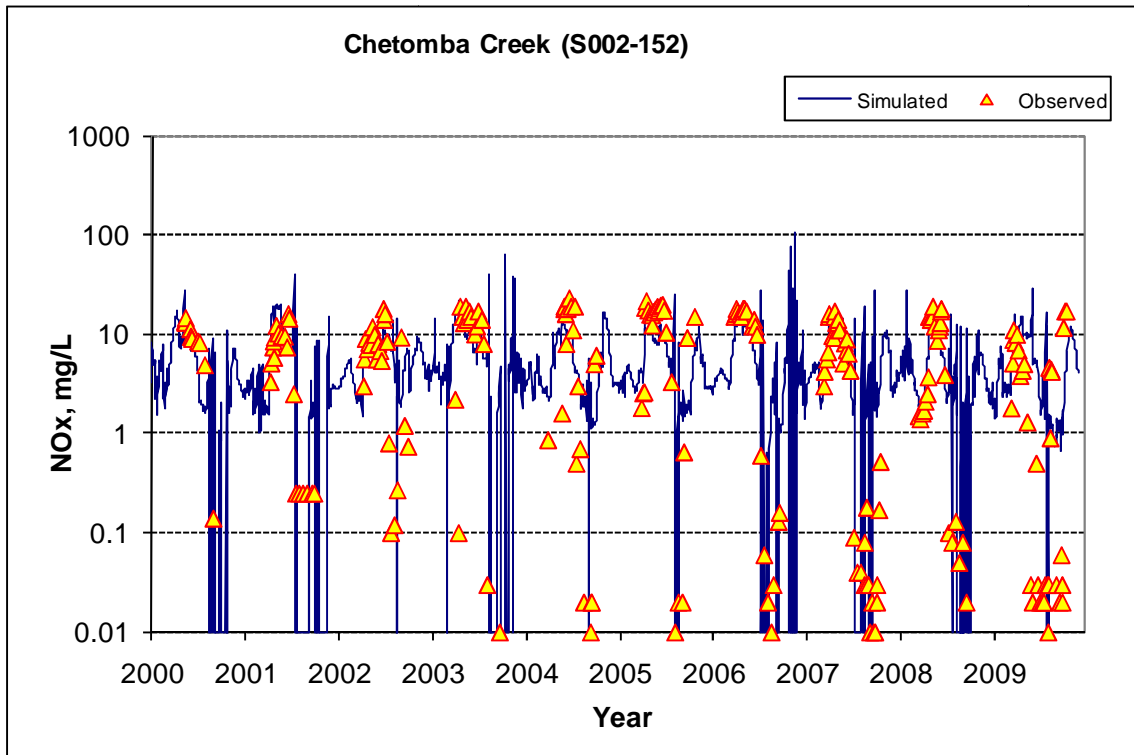
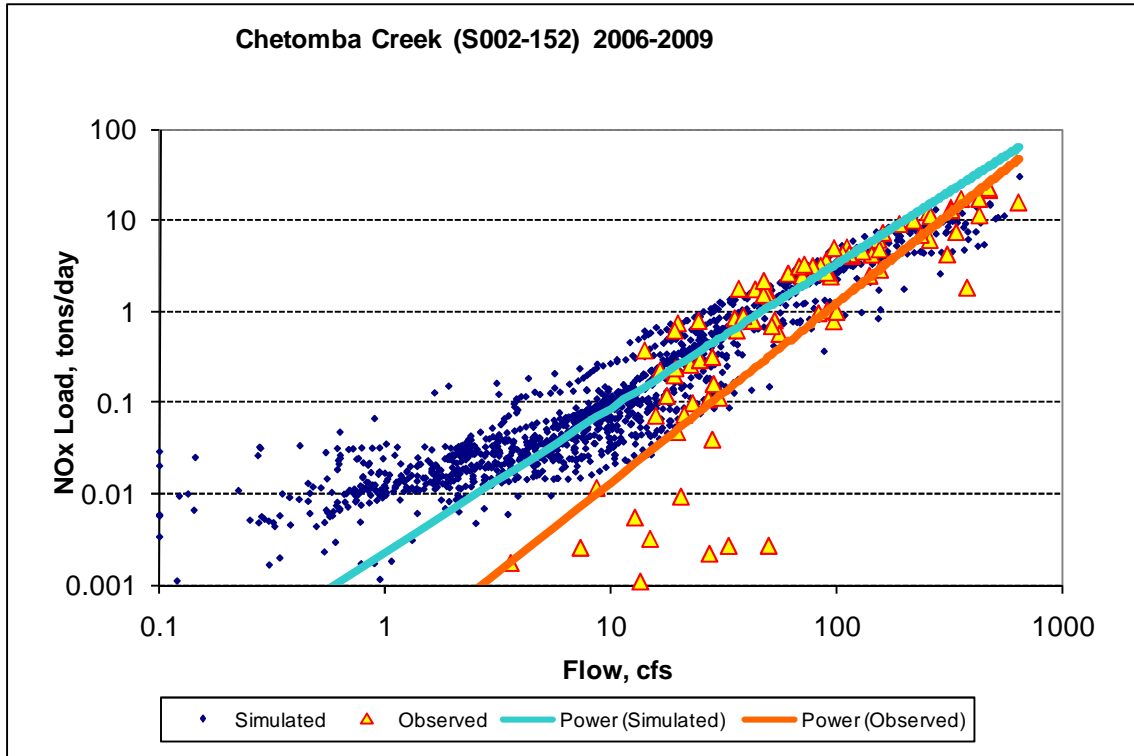




1.4 NITRATE PLUS NITRITE NITROGEN (AS N)

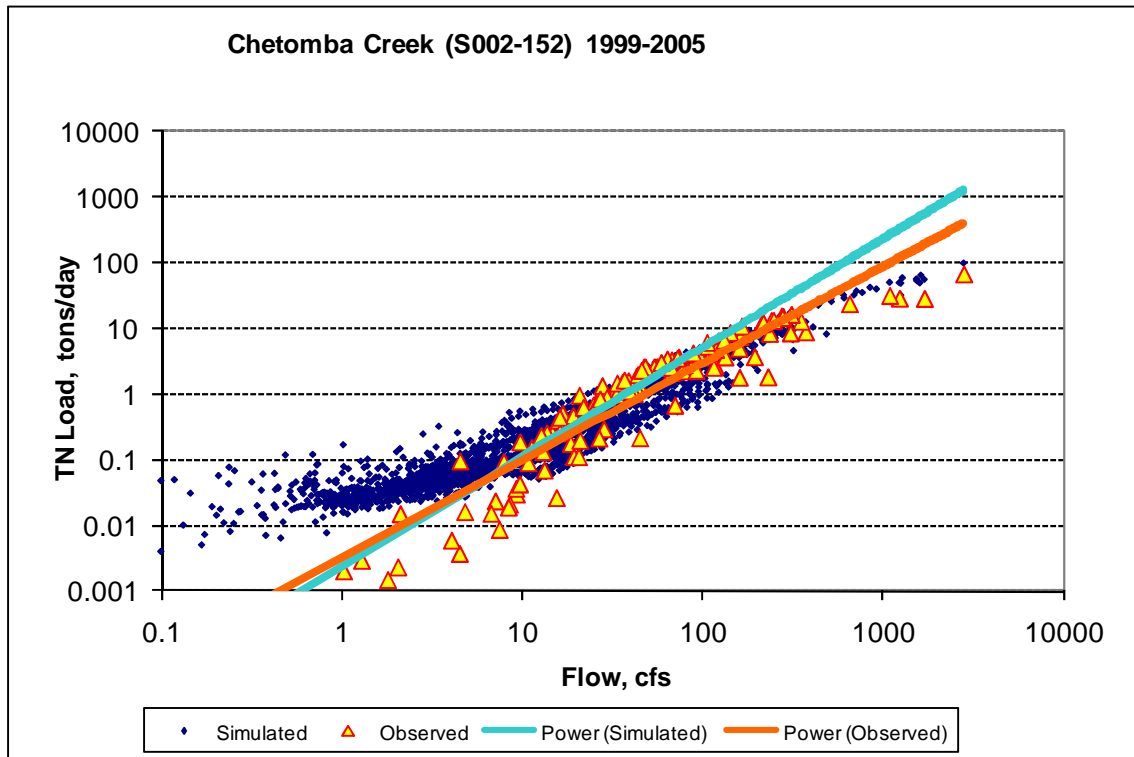
Parameter	1999 - 2005	2006 - 2009
Count	129	119
Conc Ave Error	-14.05%	-2.02%
Conc Median Error	-4.32%	5.90%
Load Ave Error	19.29%	-7.98%
Load Median Error	-1.13%	0.56%
Paired t conc	0.84	0.98
Paired t load	0.51	0.77

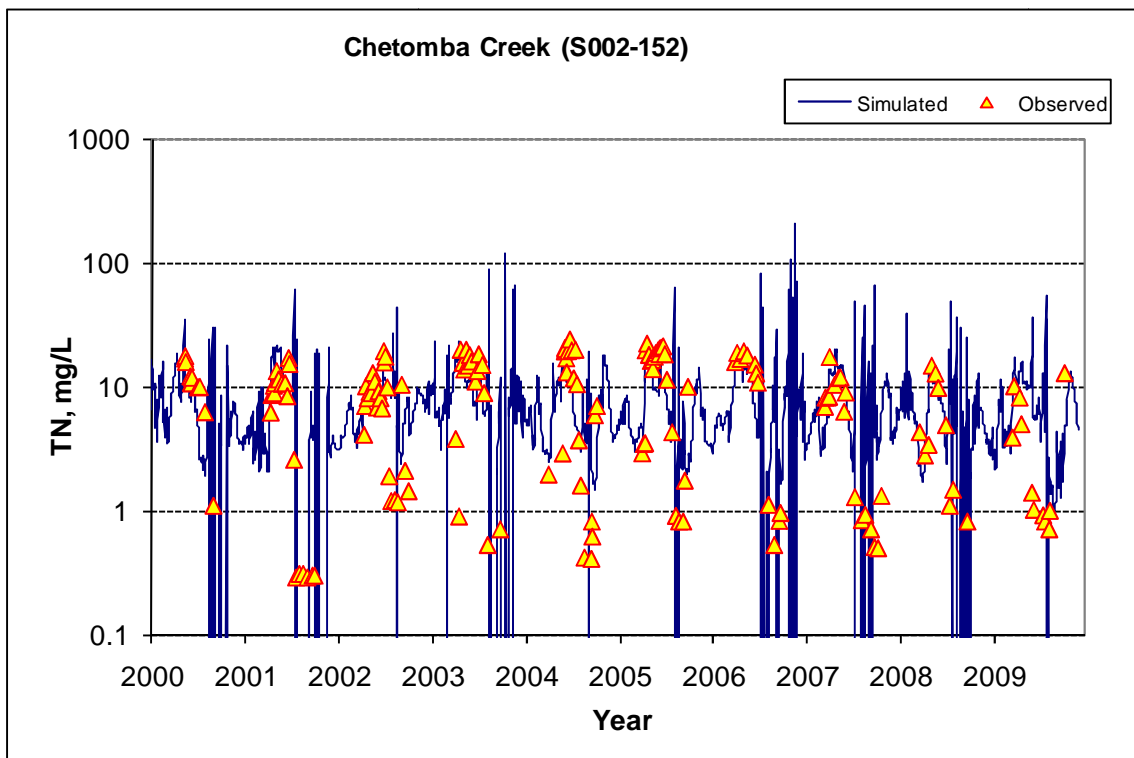
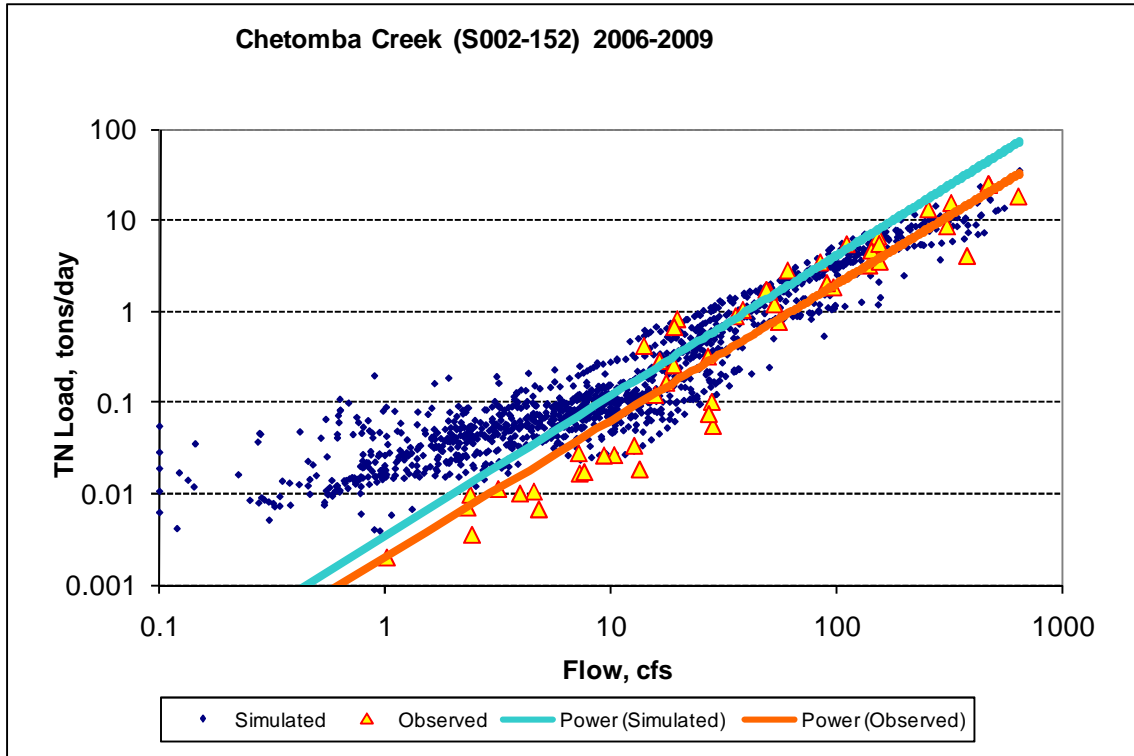




1.5 TOTAL NITROGEN

Parameter	1999 - 2005	2006 - 2009
Count	125	51
Conc Ave Error	-11.51%	13.50%
Conc Median Error	-16.39%	17.66%
Load Ave Error	11.99%	-5.27%
Load Median Error	-3.05%	1.08%
Paired t conc	0.94	0.72
Paired t load	0.63	0.71

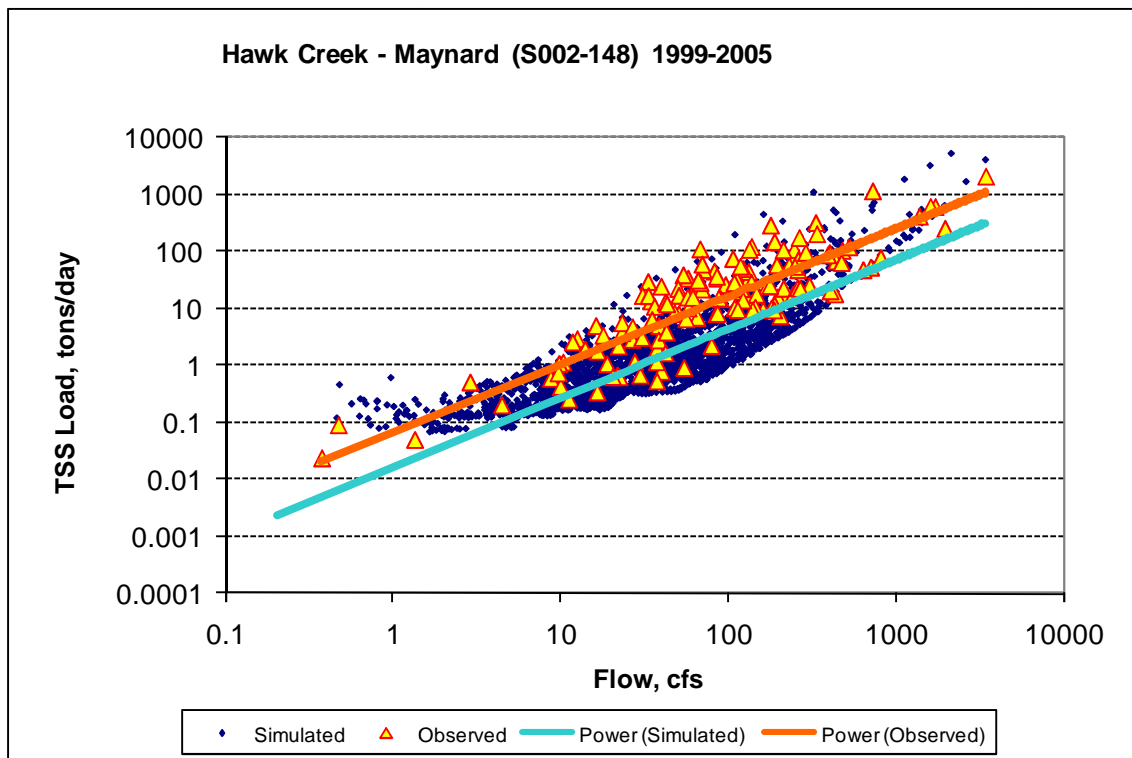


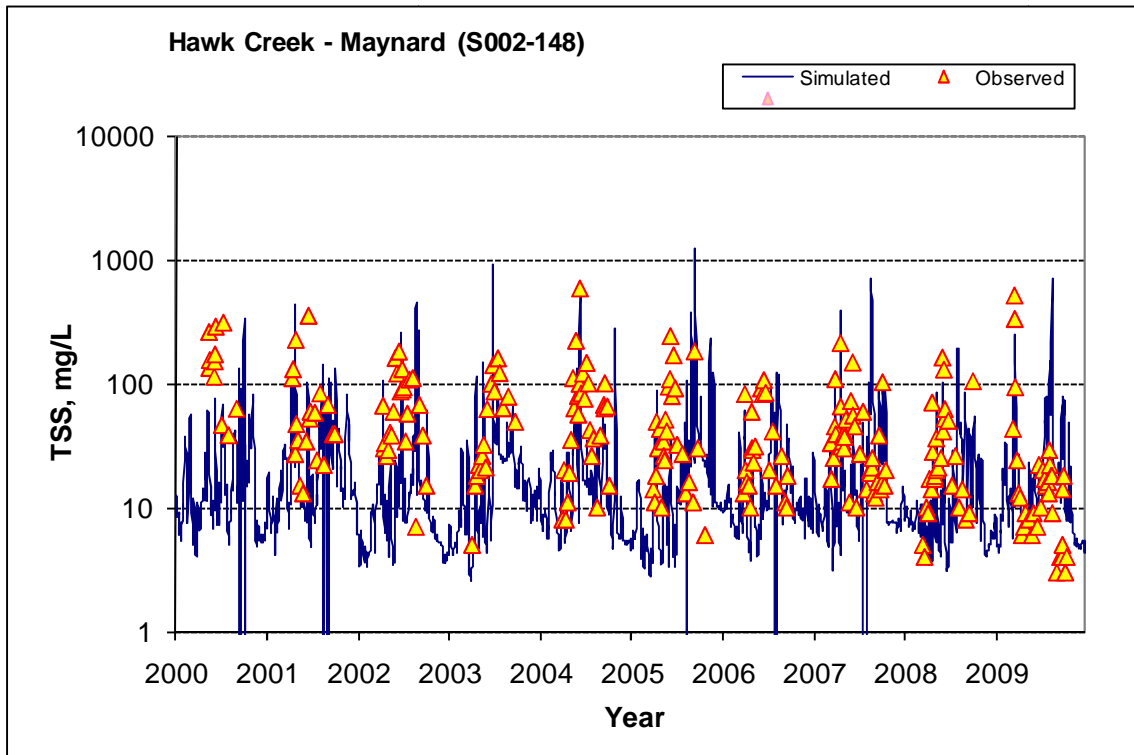
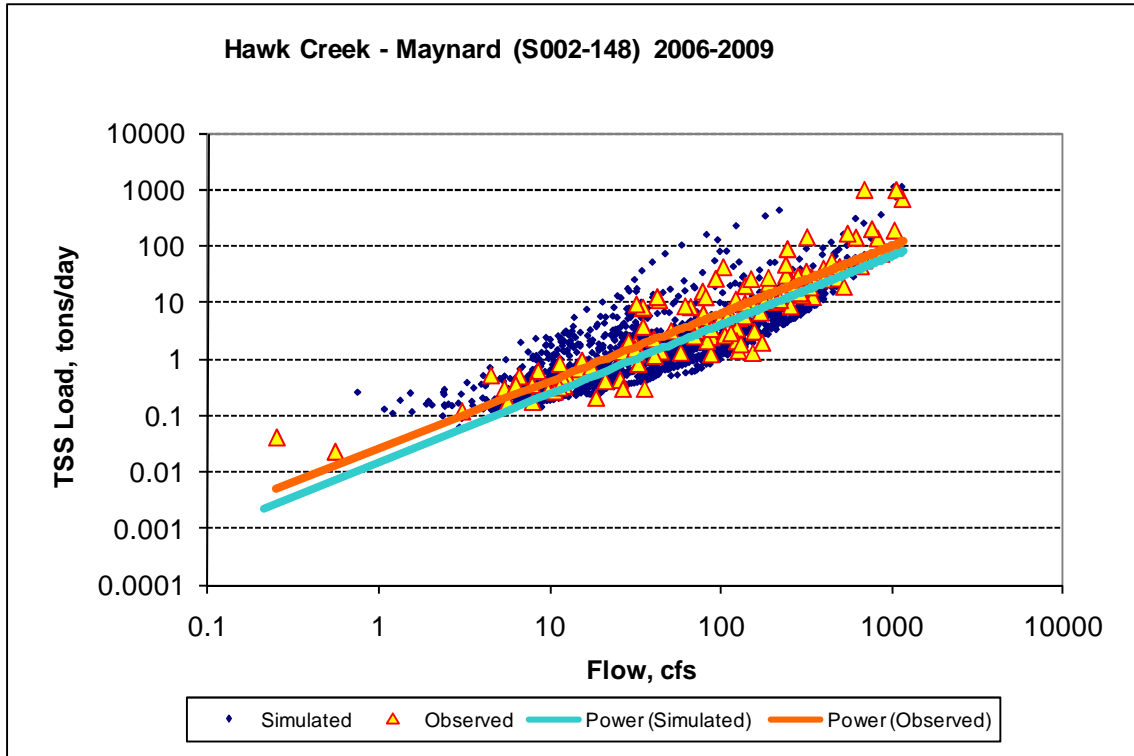


2 Hawk Creek at Maynard (S002-148)

2.1 TOTAL SUSPENDED SEDIMENT

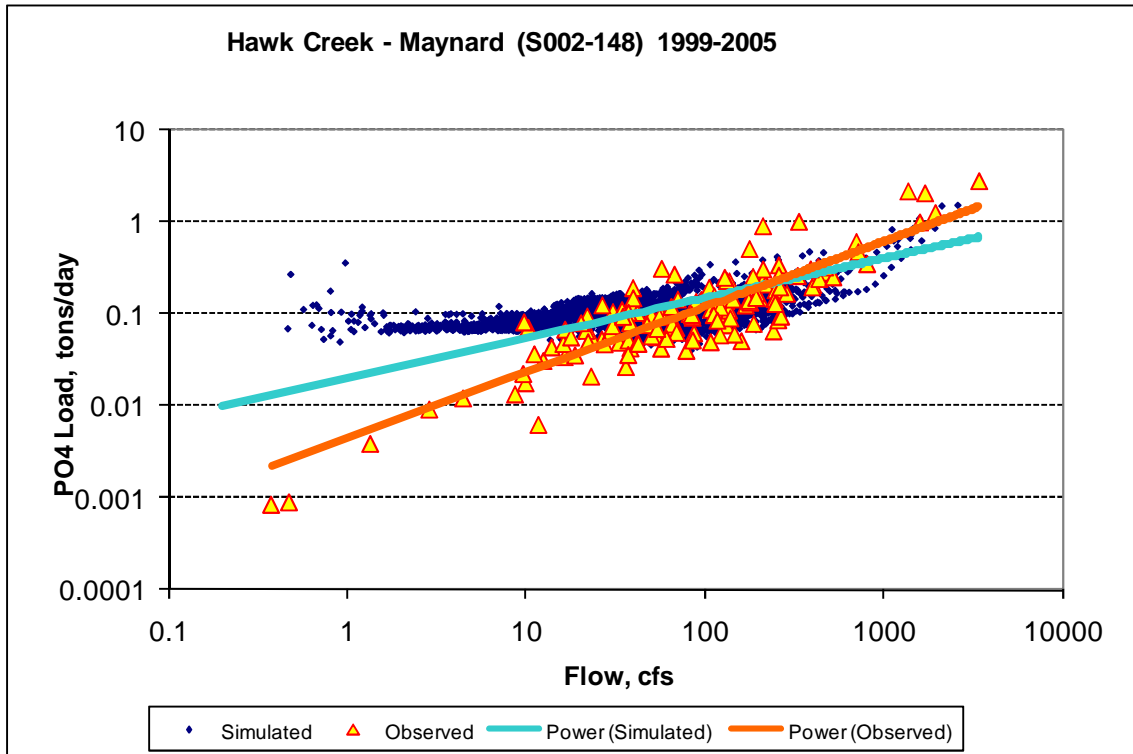
Parameter	1999 - 2005	2006 - 2009
Count	141	119
Conc Ave Error	-55.27%	32.12%
Conc Median Error	-35.04%	-5.42%
Load Ave Error	18.55%	14.21%
Load Median Error	-10.56%	-0.14%
Paired t conc	0.00	0.26
Paired t load	0.51	0.57

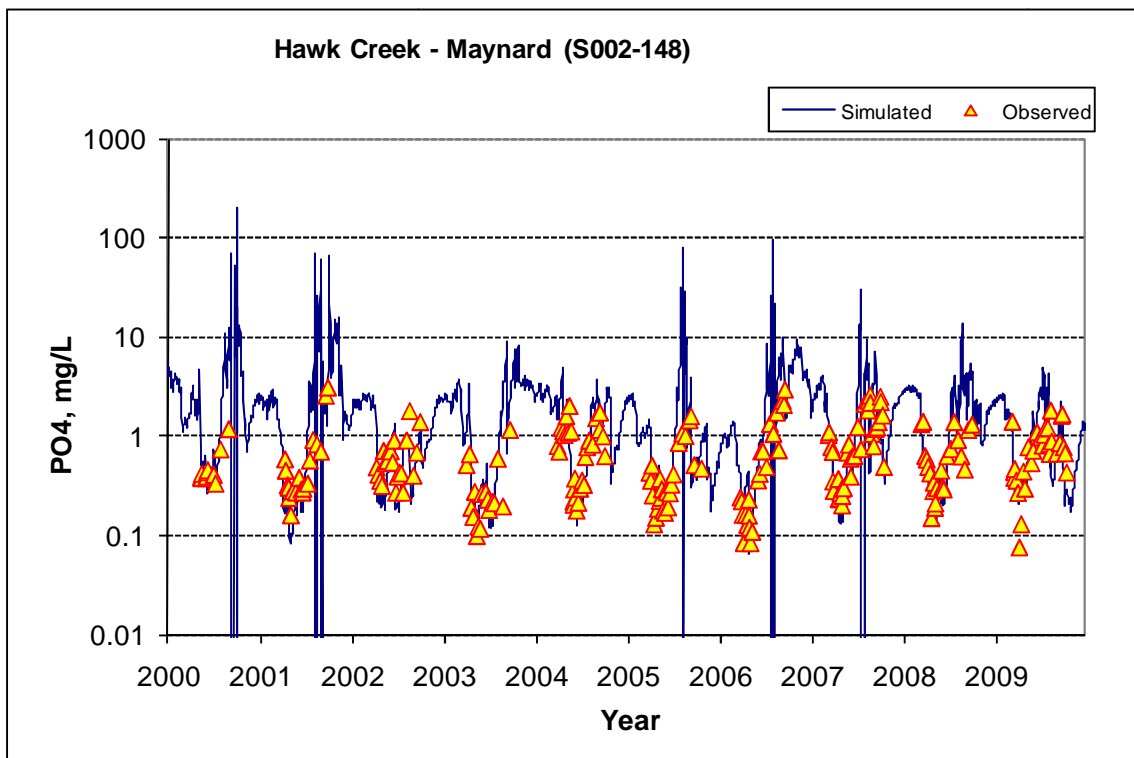
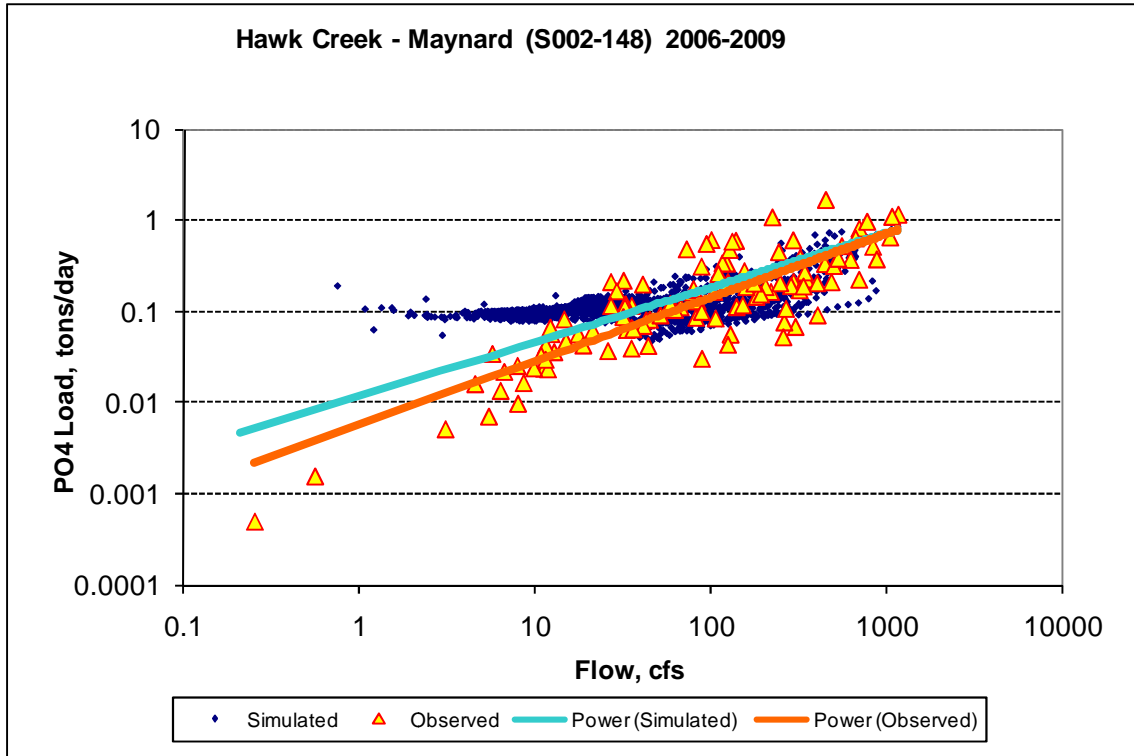




2.2 ORTHOPHOSPHATE (AS P)

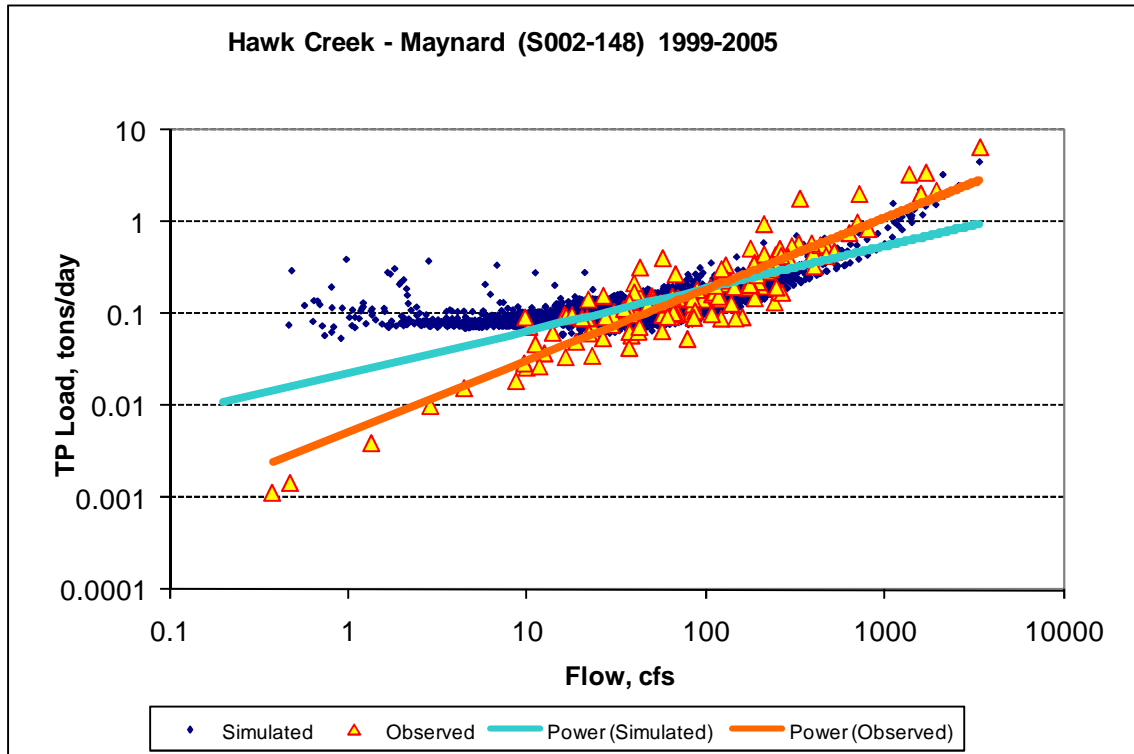
Parameter	1999 - 2005	2006 - 2009
Count	137	113
Conc Ave Error	65.68%	48.84%
Conc Median Error	-3.95%	-7.00%
Load Ave Error	-21.70%	-26.09%
Load Median Error	-1.76%	-6.15%
Paired t conc	0.03	0.03
Paired t load	0.45	0.25

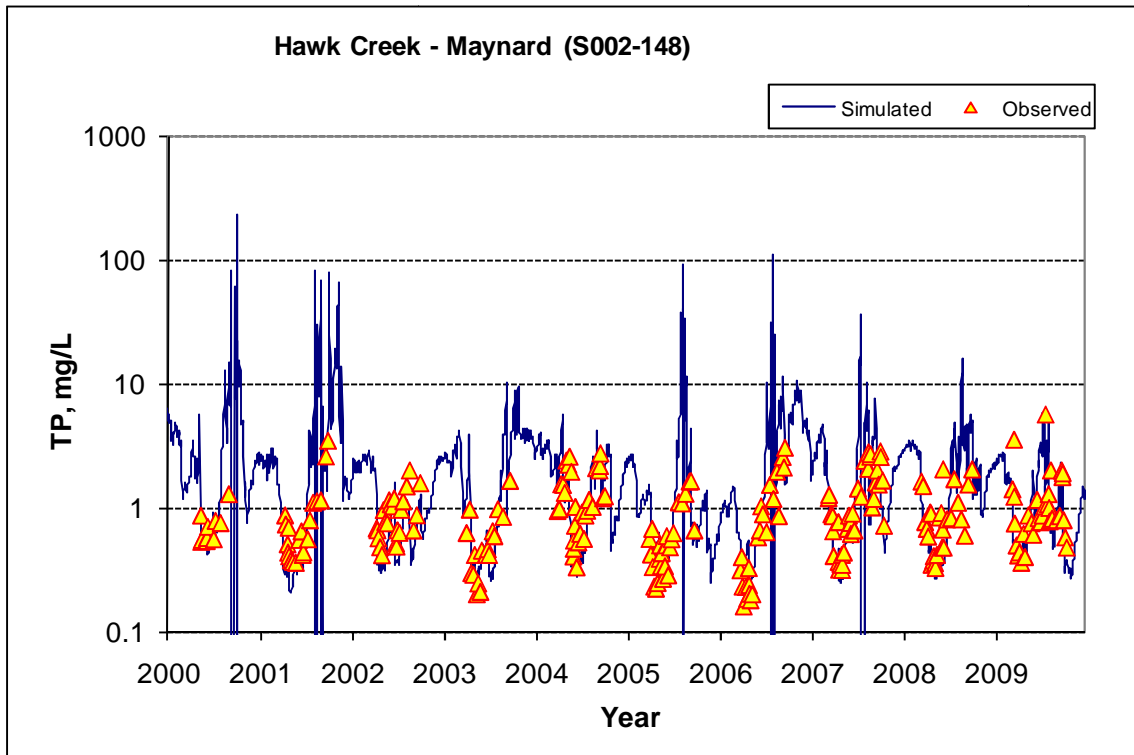
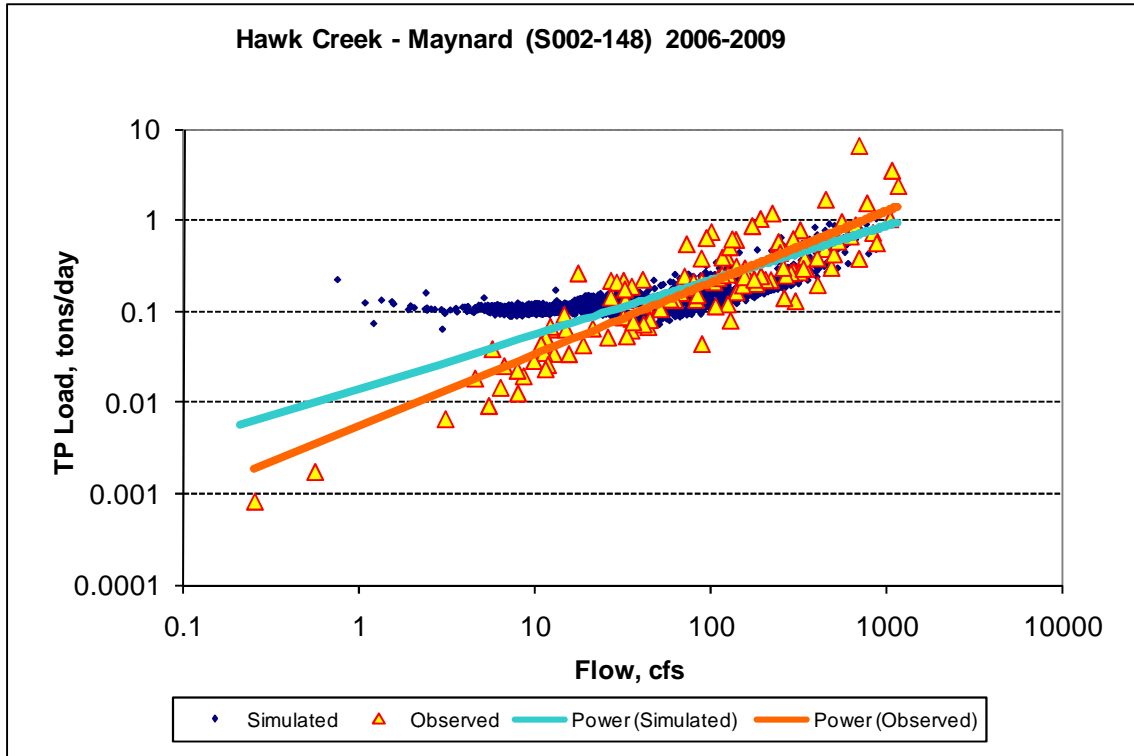




2.3 TOTAL PHOSPHORUS

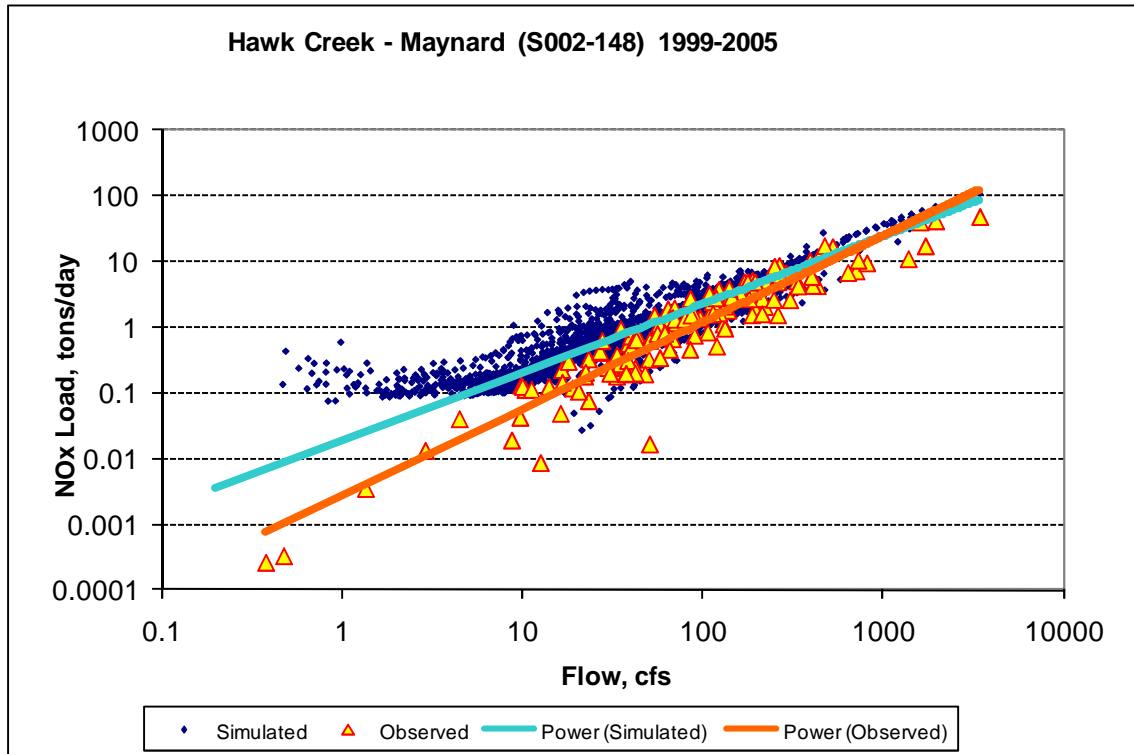
Parameter	1999 - 2005	2006 - 2009
Count	140	120
Conc Ave Error	38.47%	28.72%
Conc Median Error	-9.78%	-9.00%
Load Ave Error	-28.93%	-38.85%
Load Median Error	-5.25%	-12.06%
Paired t conc	0.18	0.24
Paired t load	0.28	0.07

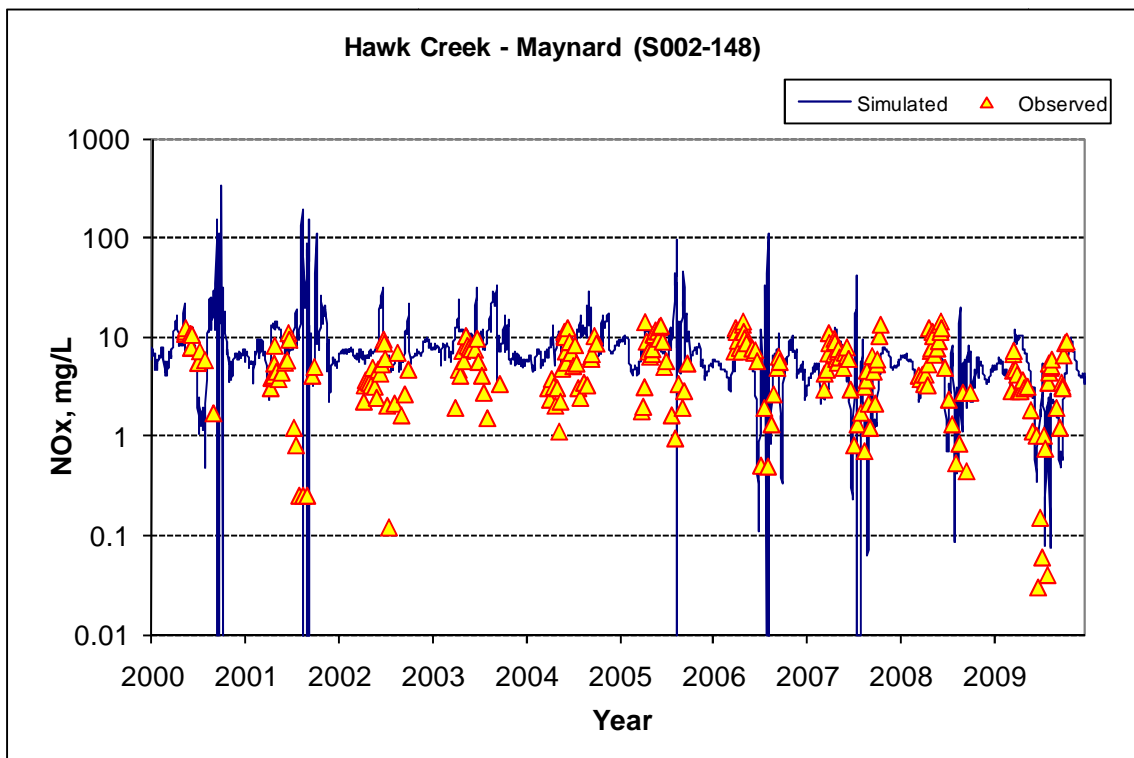
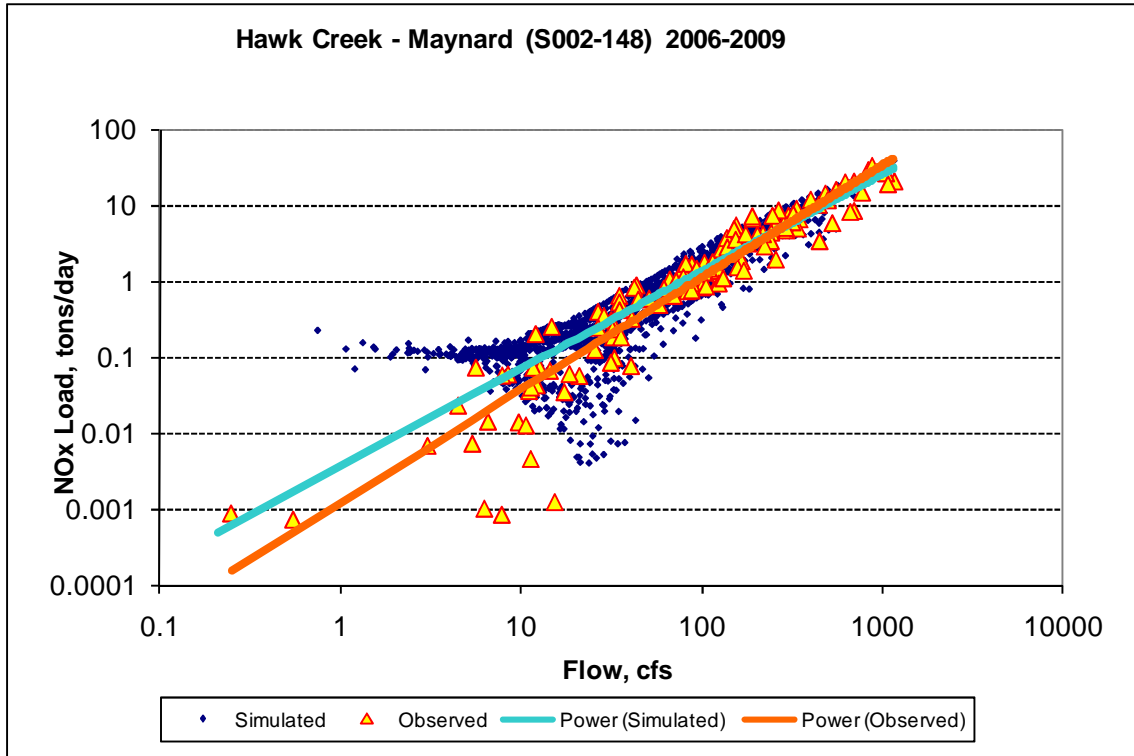




2.4 NITRATE PLUS NITRITE NITROGEN (AS N)

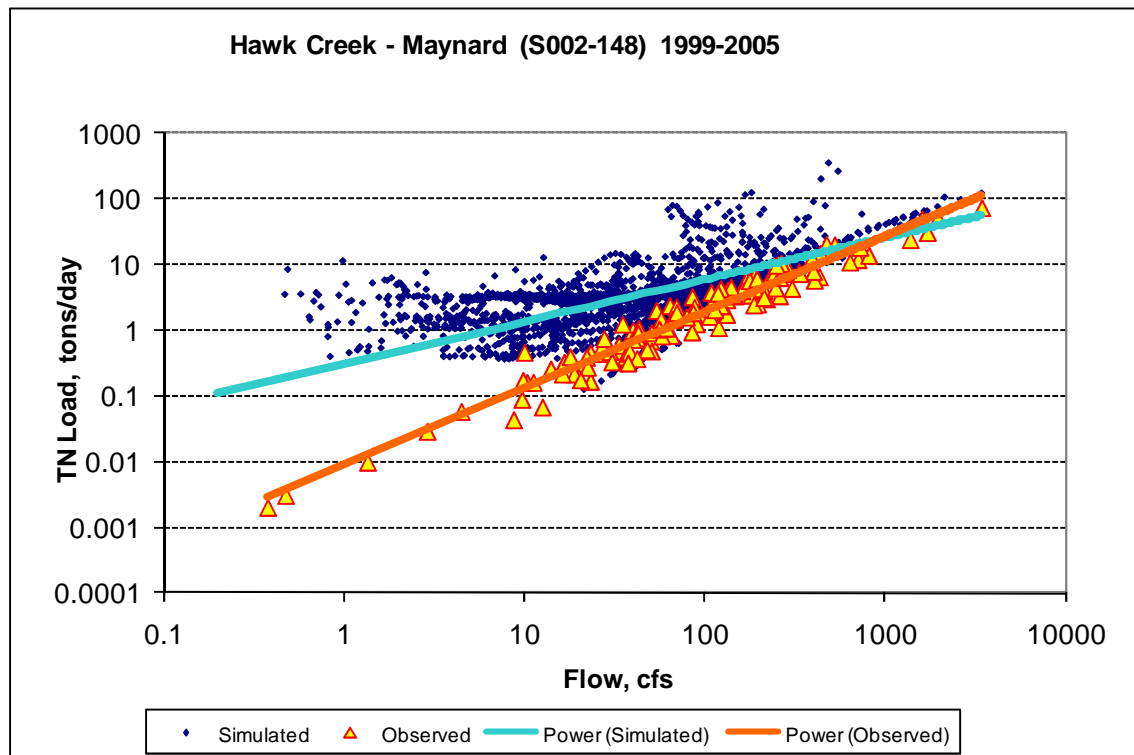
Parameter	1999 - 2005	2006 - 2009
Count	139	120
Conc Ave Error	100.95%	-3.11%
Conc Median Error	72.67%	-9.25%
Load Ave Error	64.02%	3.79%
Load Median Error	15.14%	-0.72%
Paired t conc	0.00	1.00
Paired t load	0.04	0.85

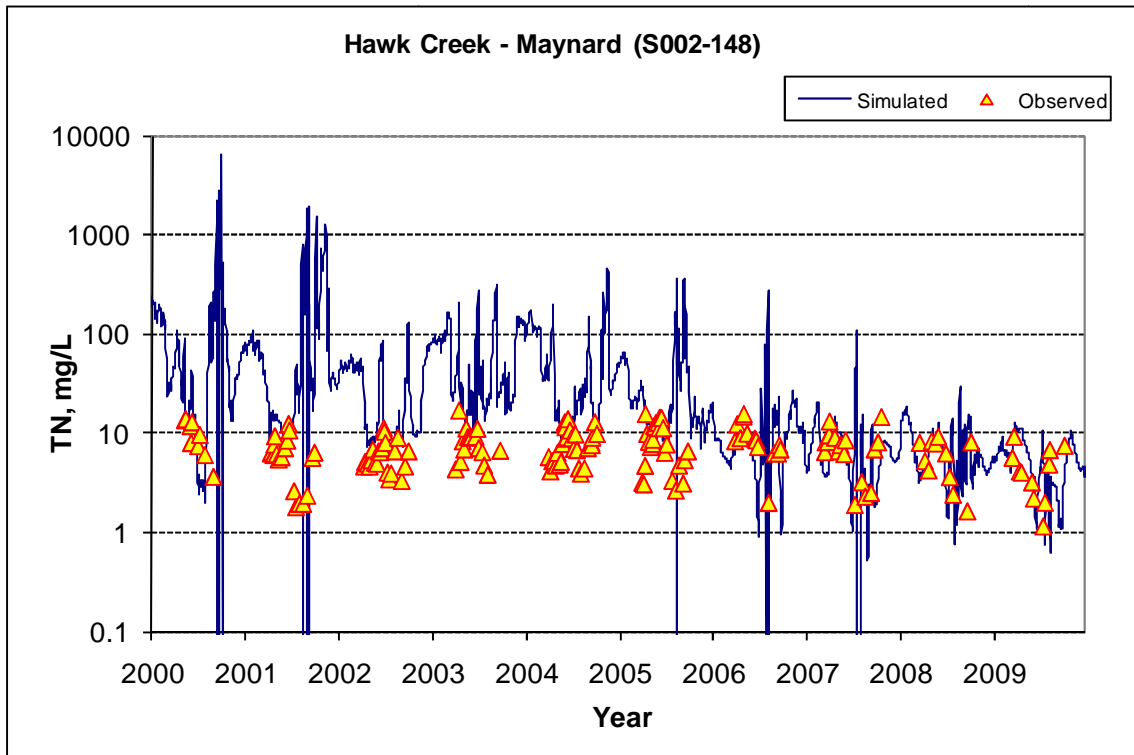
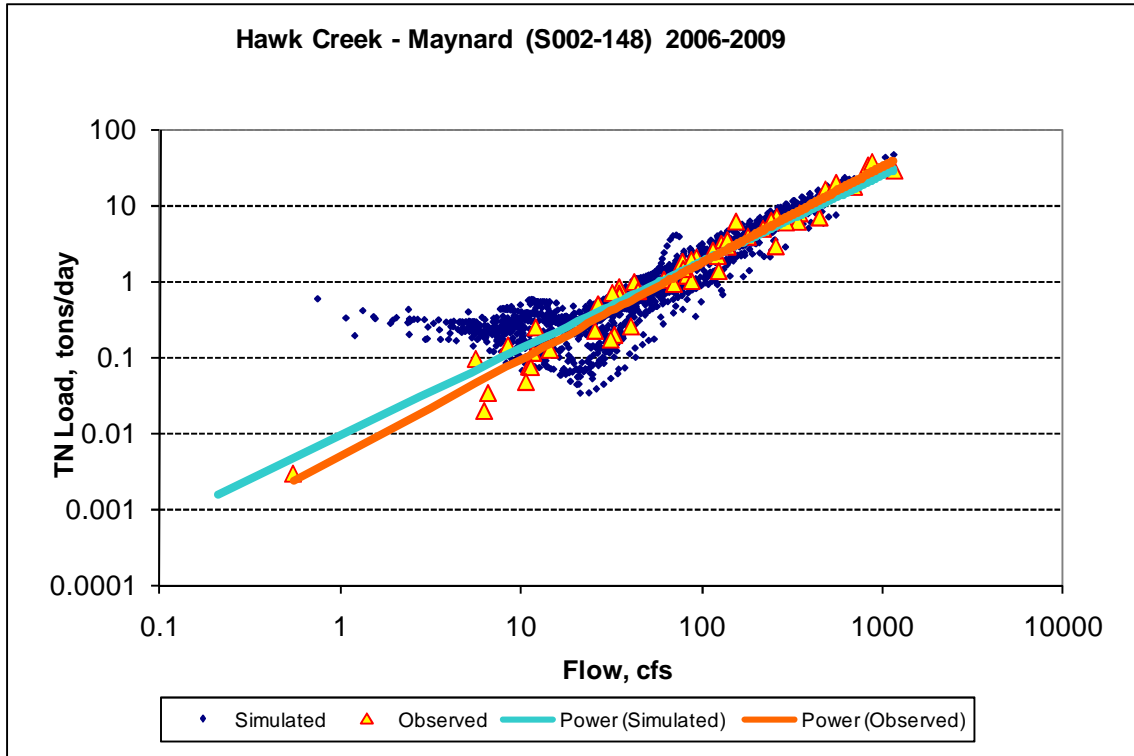




2.5 TOTAL NITROGEN

Parameter	1999 - 2005	2006 - 2009
Count	137	53
Conc Ave Error	298.44%	-1.41%
Conc Median Error	104.03%	-8.81%
Load Ave Error	122.36%	-5.39%
Load Median Error	37.43%	-3.76%
Paired t conc	0.00	0.99
Paired t load	0.00	0.72

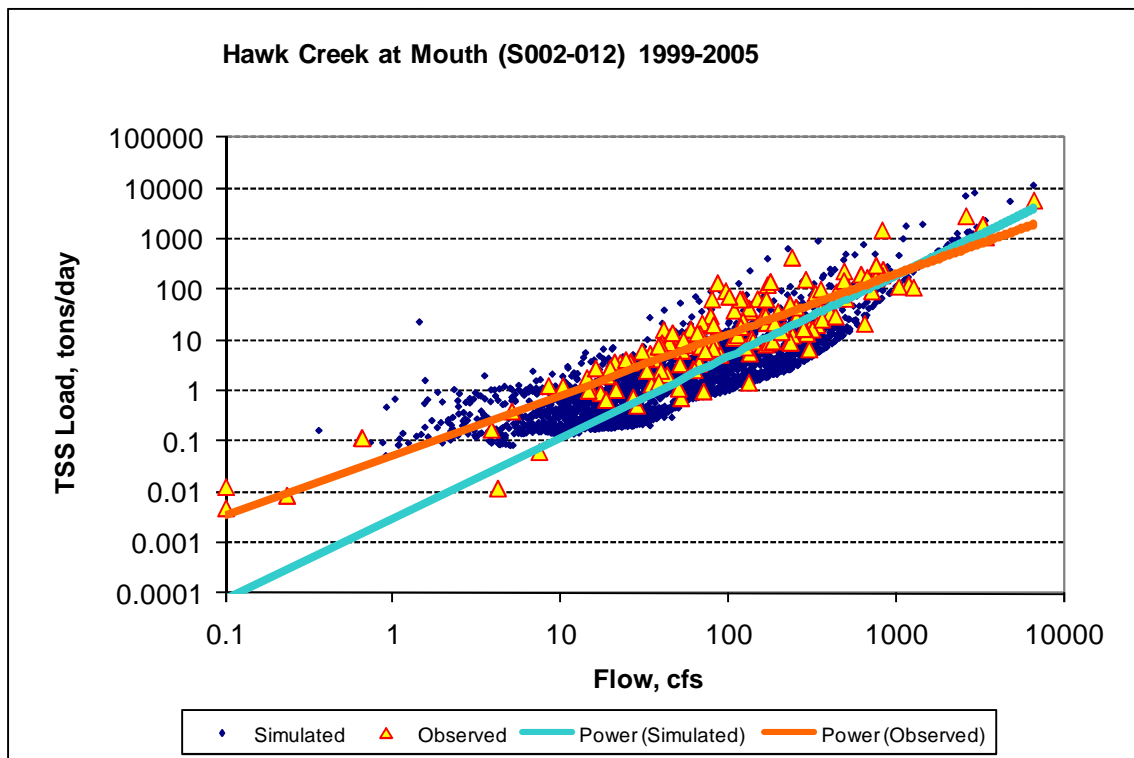


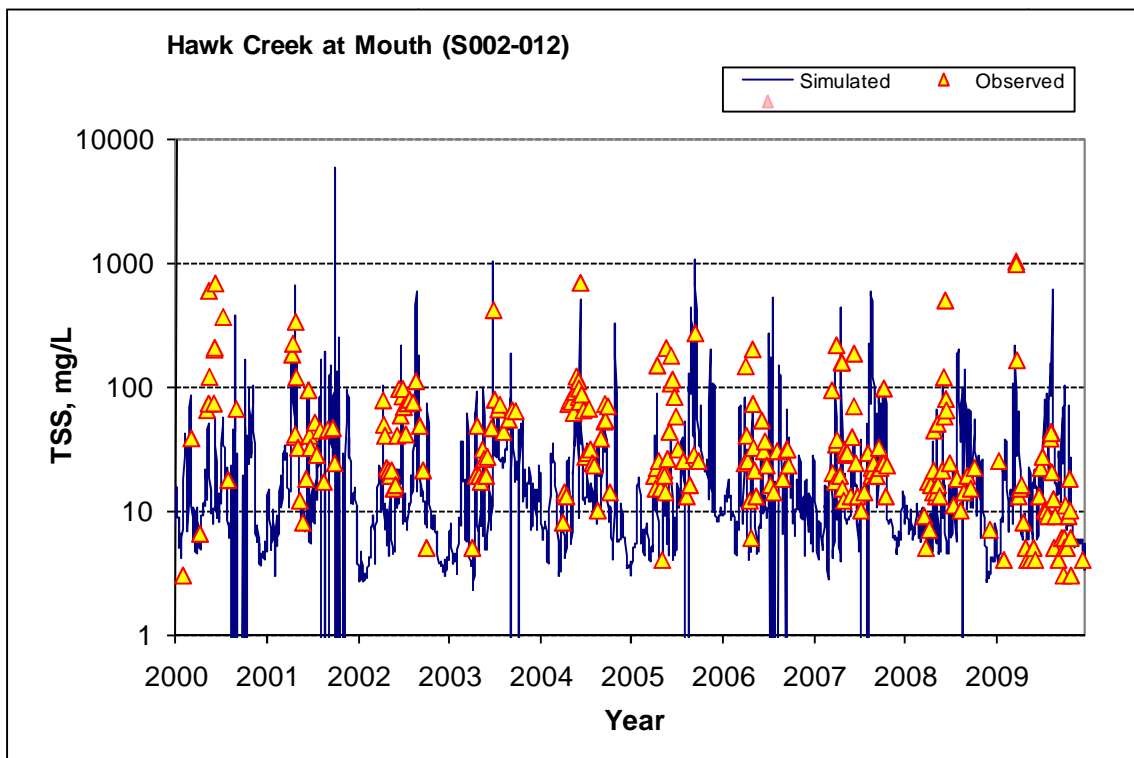
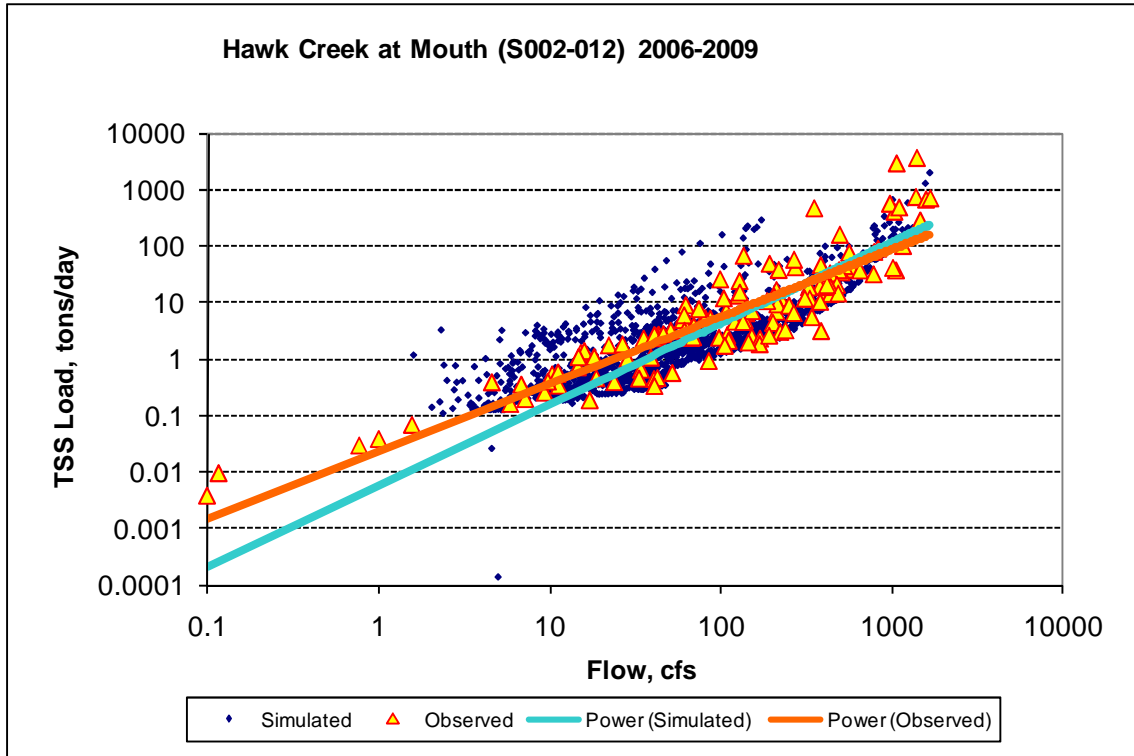


3 Hawk Creek at Mouth (S002-12)

3.1 TOTAL SUSPENDED SEDIMENT

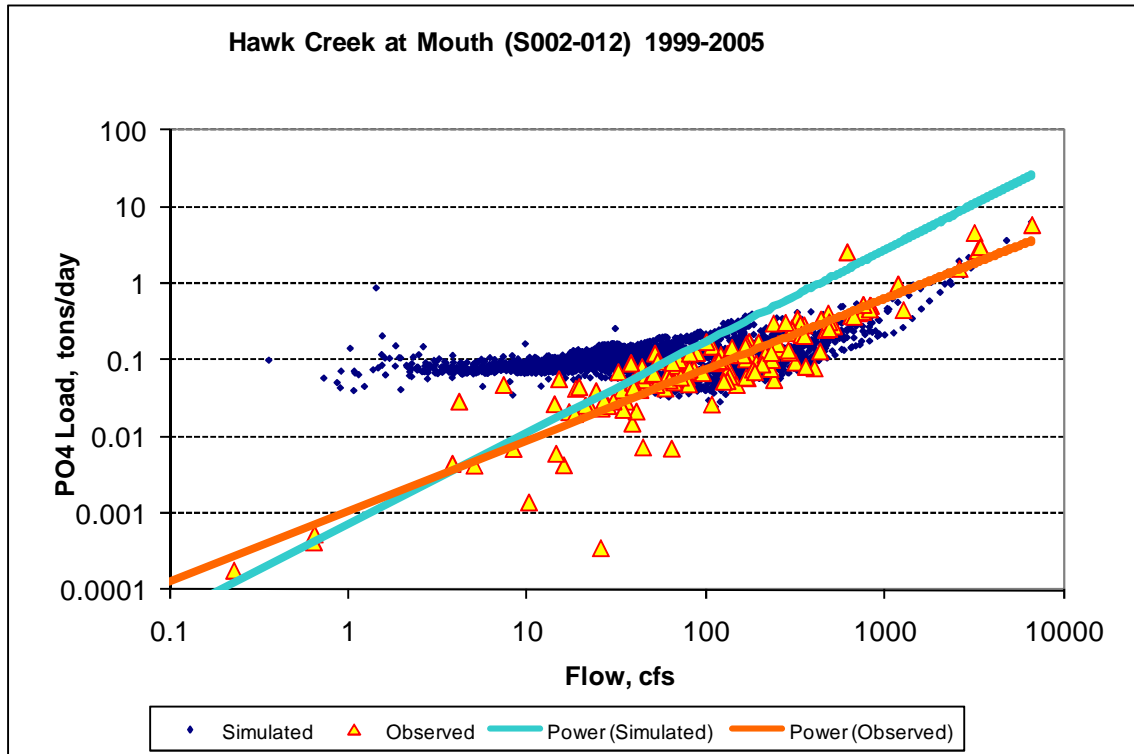
Parameter	1999 - 2005	2006 - 2009
Count	149	127
Conc Ave Error	-43.02%	-0.73%
Conc Median Error	-20.68%	-1.96%
Load Ave Error	33.89%	-36.97%
Load Median Error	-3.16%	-0.03%
Paired t conc	0.02	0.84
Paired t load	0.40	0.29

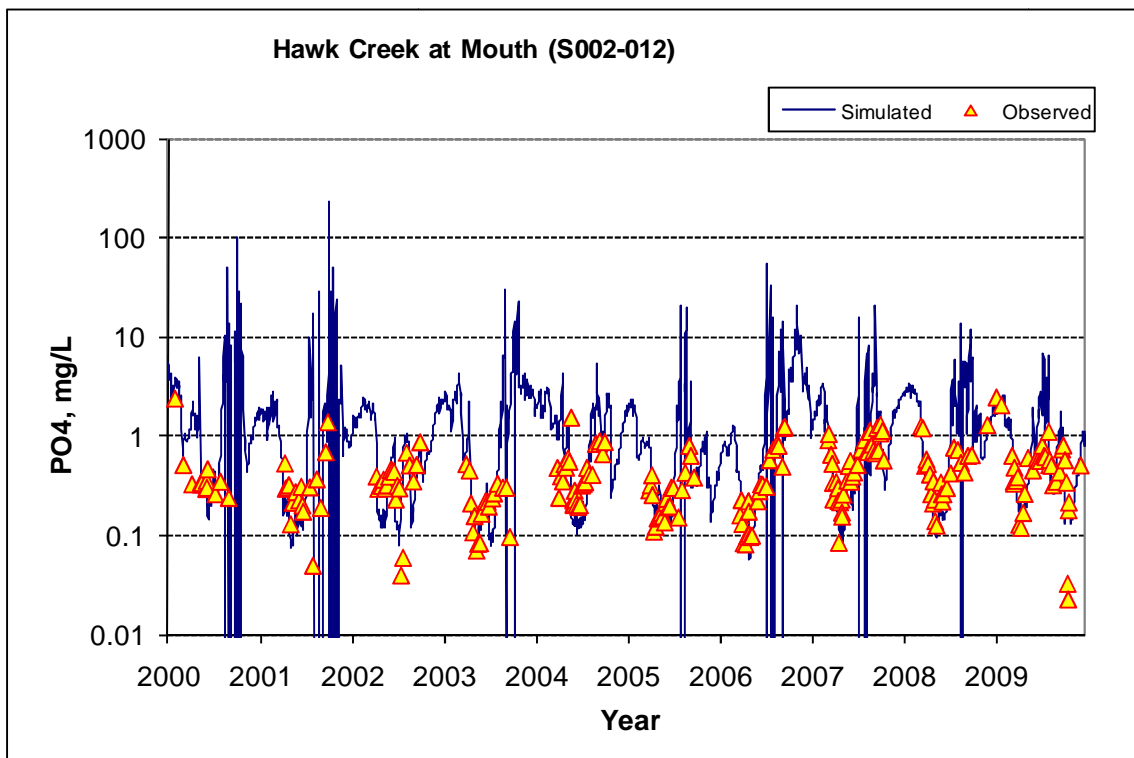
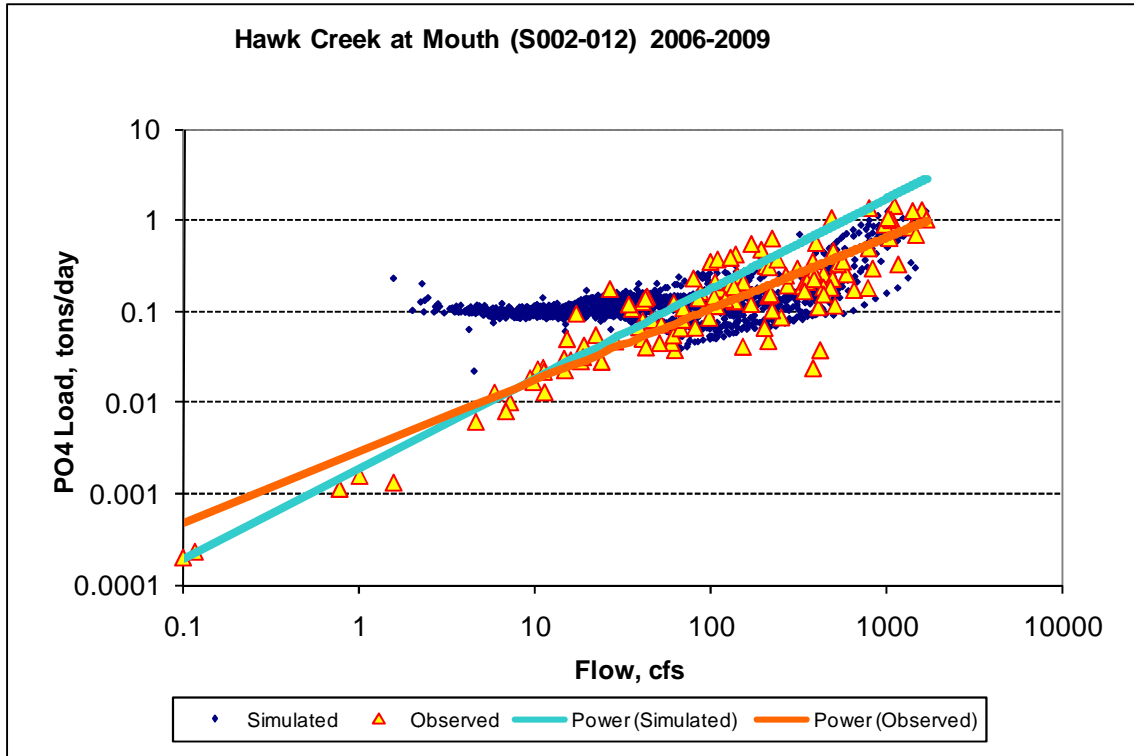




3.2 ORTHOPHOSPHATE (AS P)

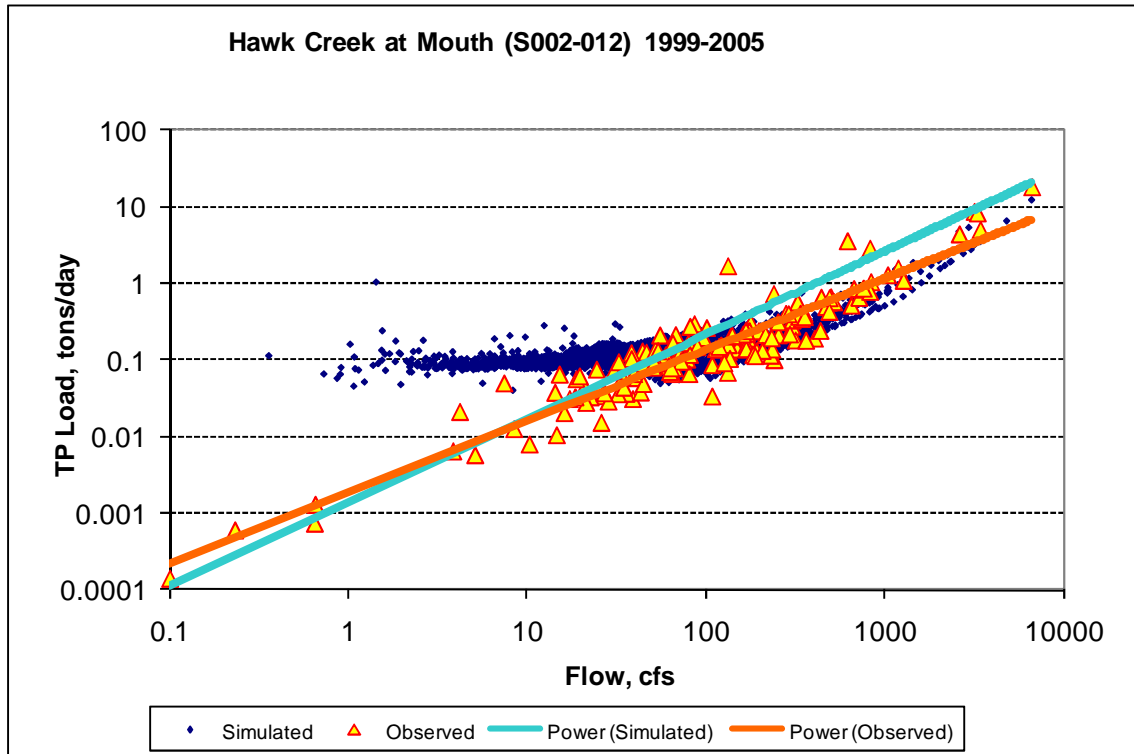
Parameter	1999 - 2005	2006 - 2009
Count	144	121
Conc Ave Error	93.04%	148.28%
Conc Median Error	4.14%	-12.85%
Load Ave Error	-18.12%	-19.22%
Load Median Error	4.00%	-9.74%
Paired t conc	0.00	0.02
Paired t load	0.53	0.53

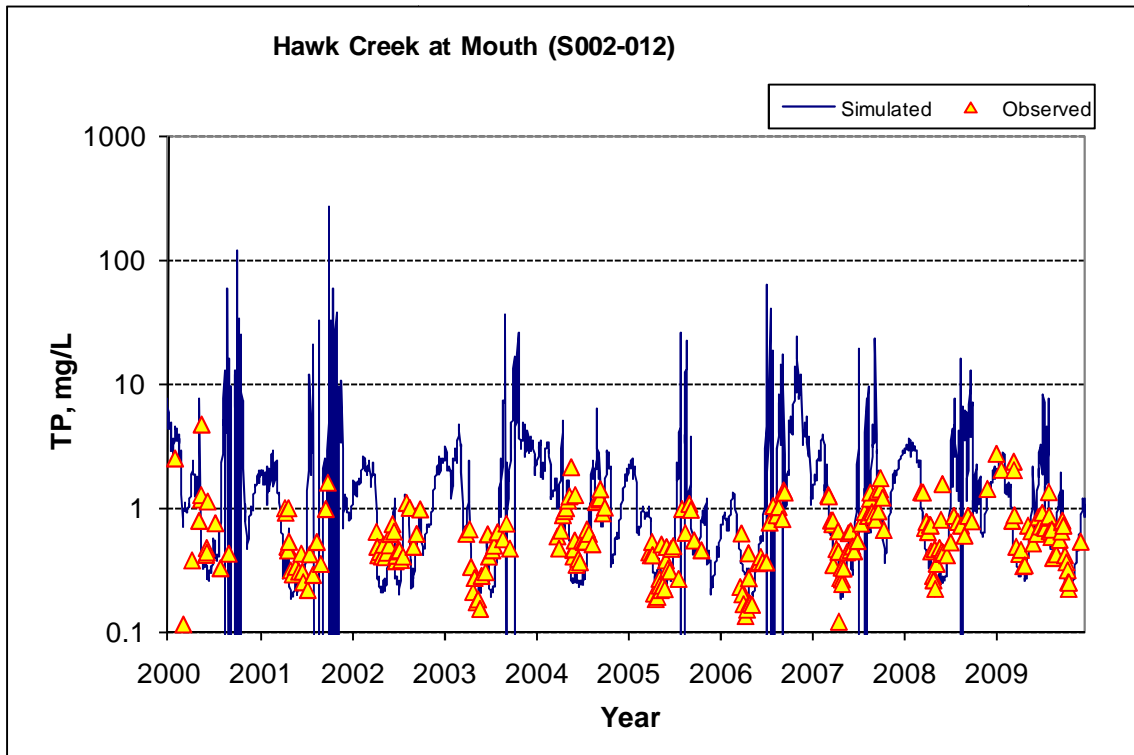
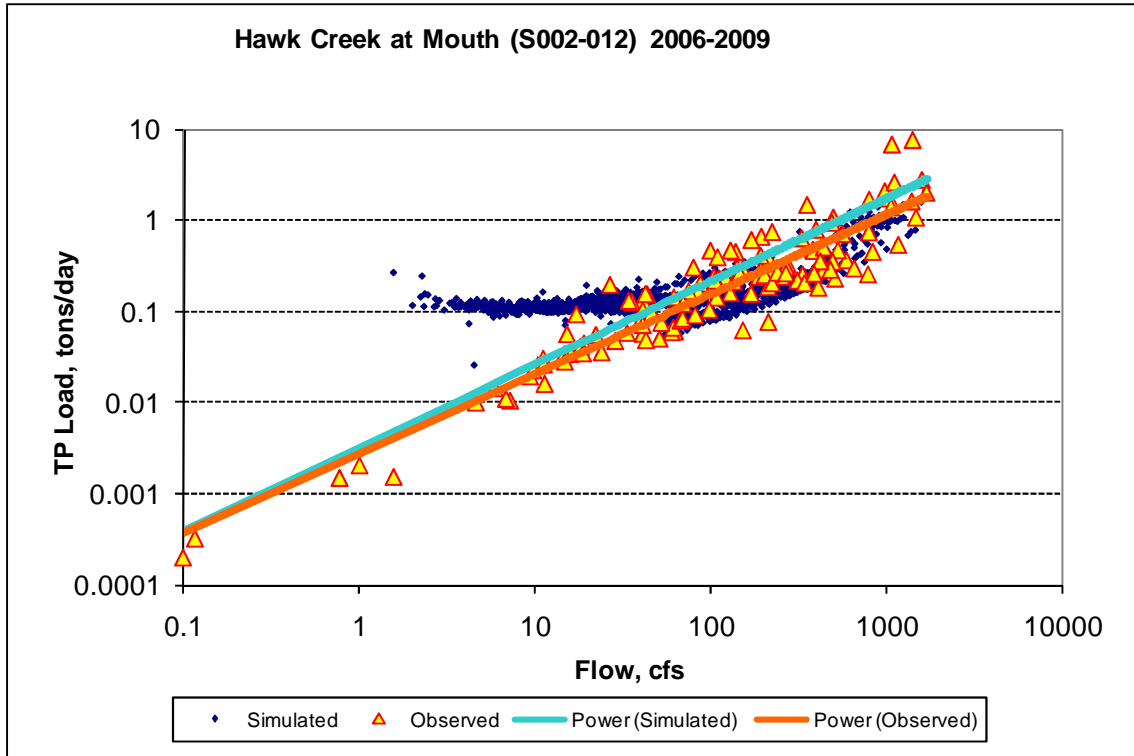




3.3 TOTAL PHOSPHORUS

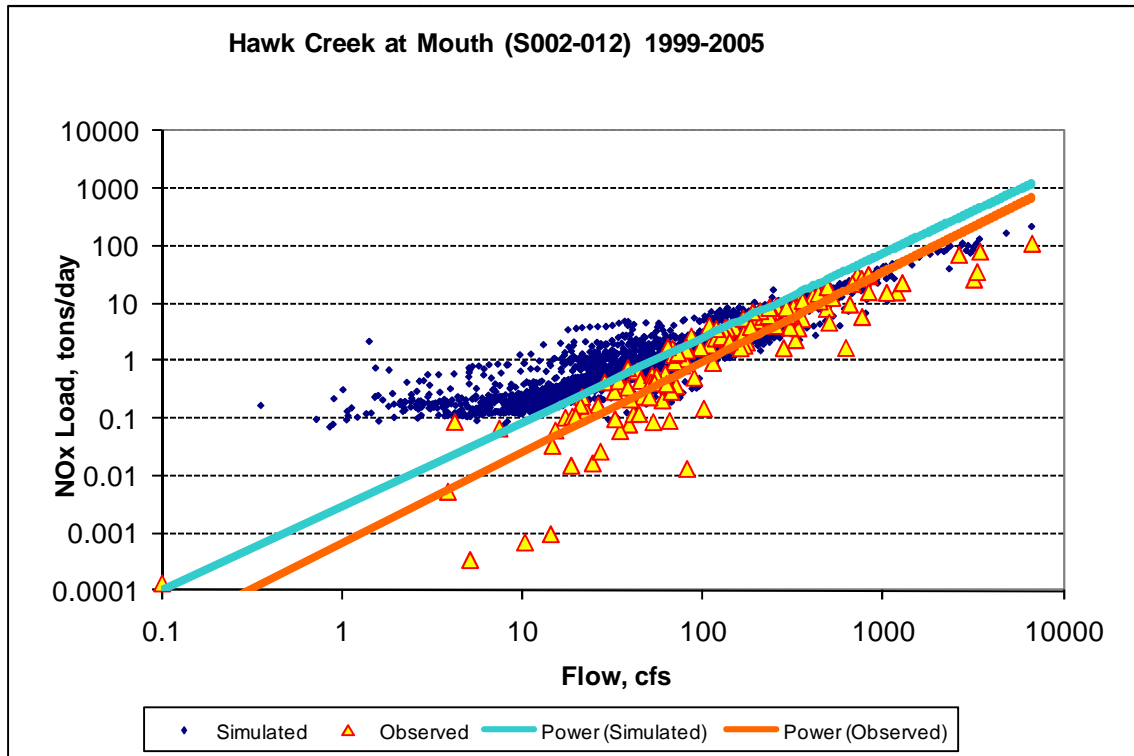
Parameter	1999 - 2005	2006 - 2009
Count	150	128
Conc Ave Error	-38.38%	-113.82%
Conc Median Error	9.30%	13.47%
Load Ave Error	36.04%	39.19%
Load Median Error	2.43%	7.38%
Paired t conc	0.10	0.04
Paired t load	0.24	0.09

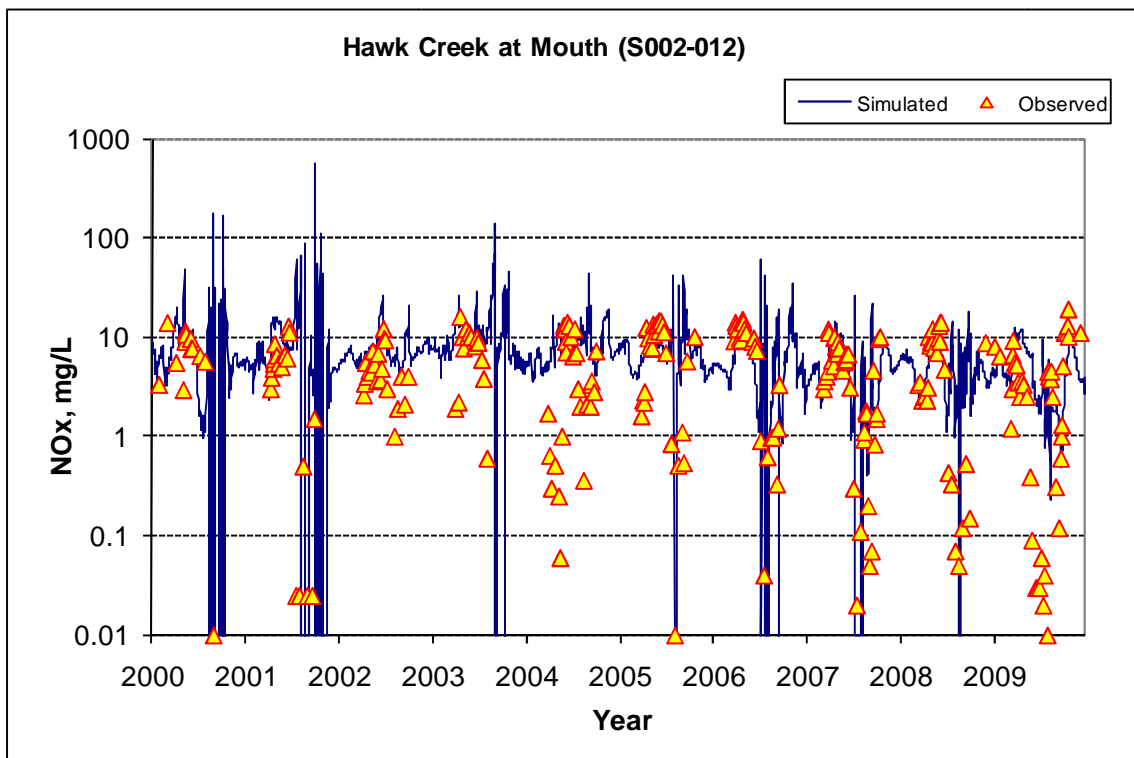
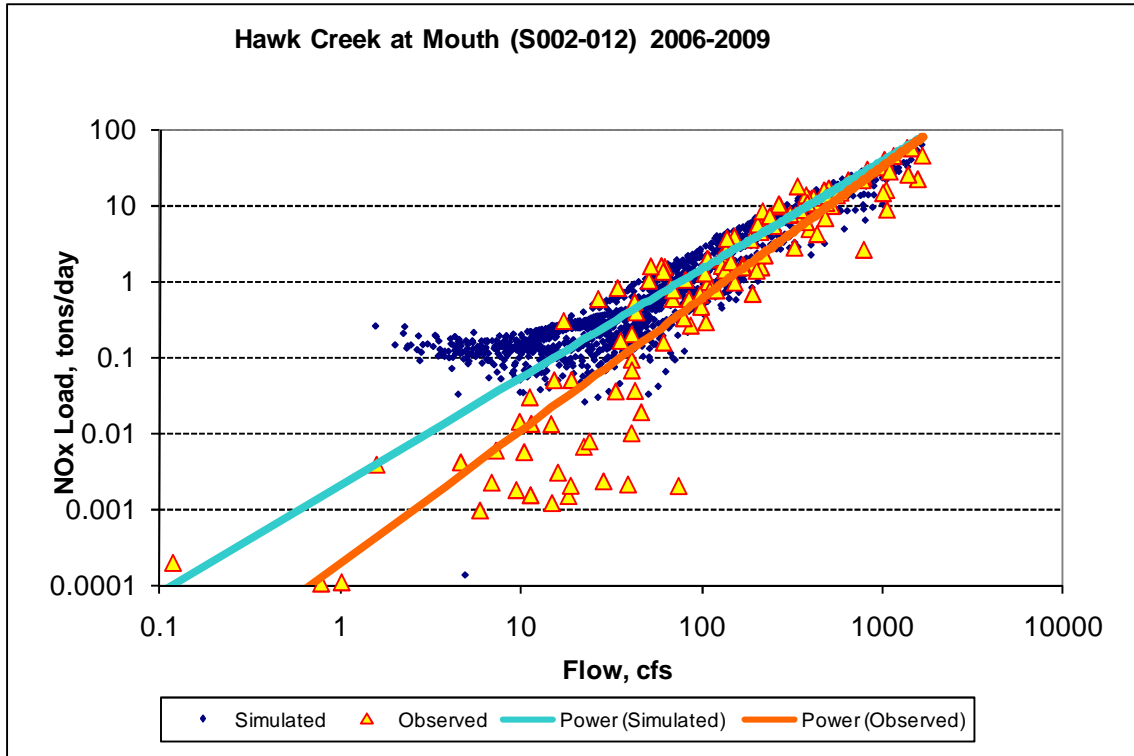




3.4 NITRATE PLUS NITRITE NITROGEN (AS N)

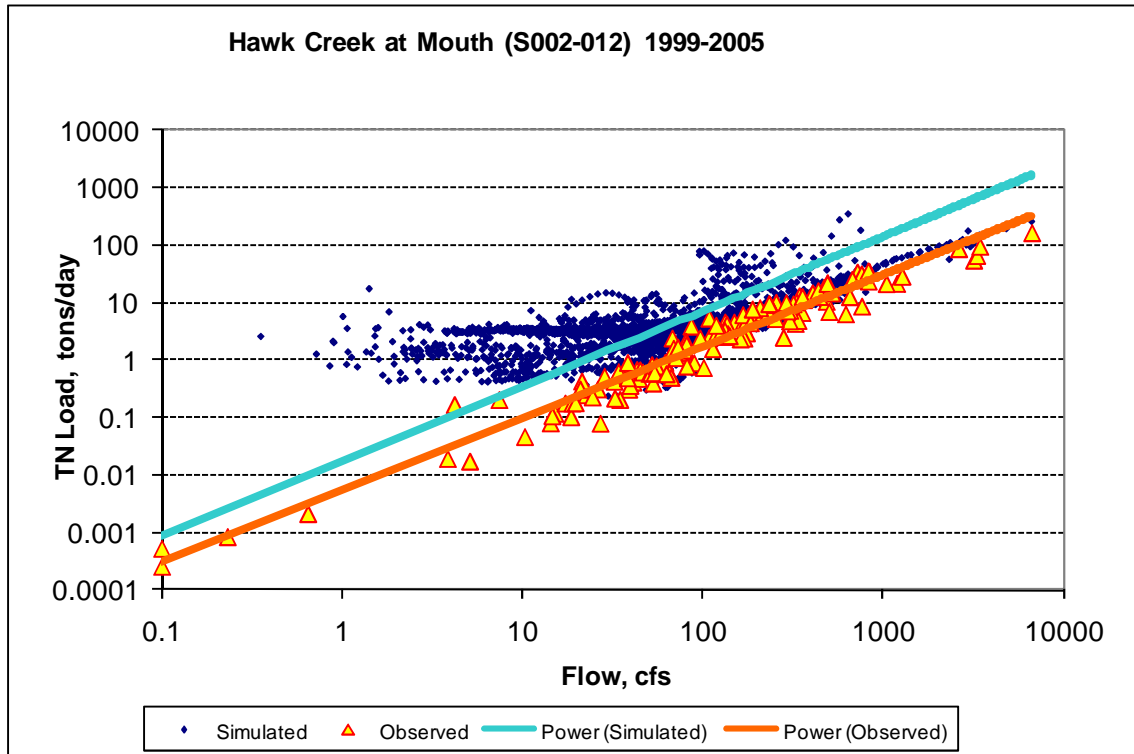
Count	142	128
Conc Ave Error	89.75%	12.74%
Conc Median Error	56.38%	3.14%
Load Ave Error	52.51%	4.07%
Load Median Error	10.92%	0.45%
Paired t conc	0.00	0.79
Paired t load	0.10	0.85

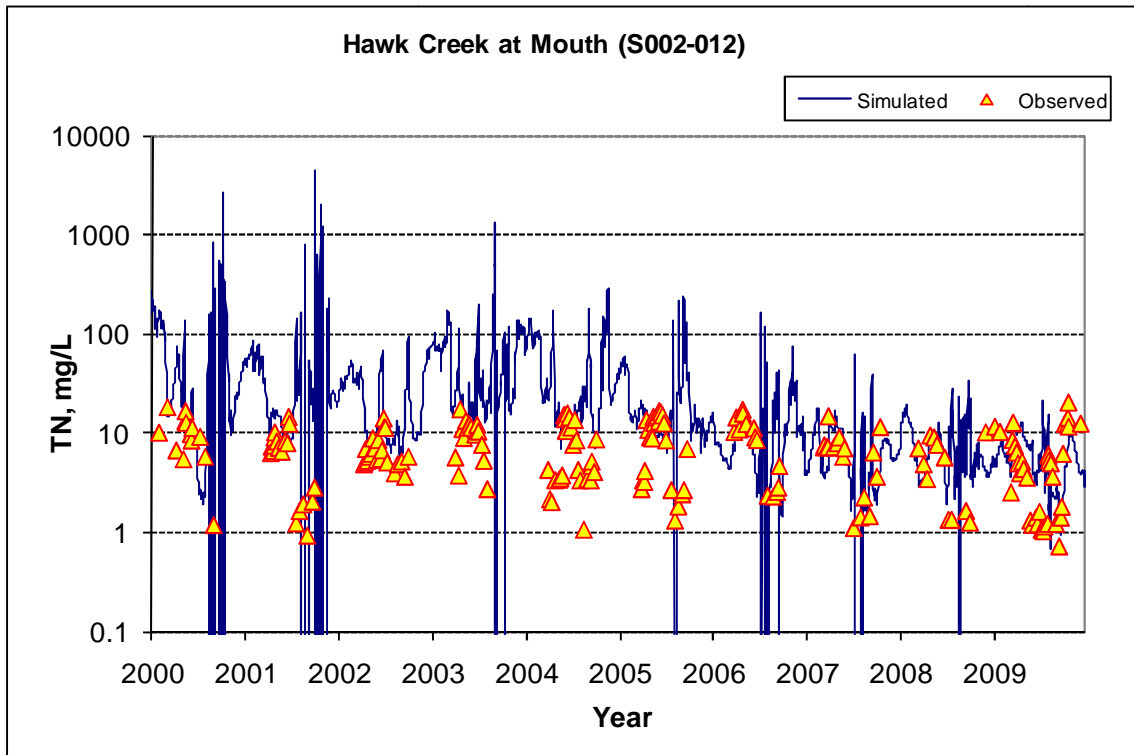
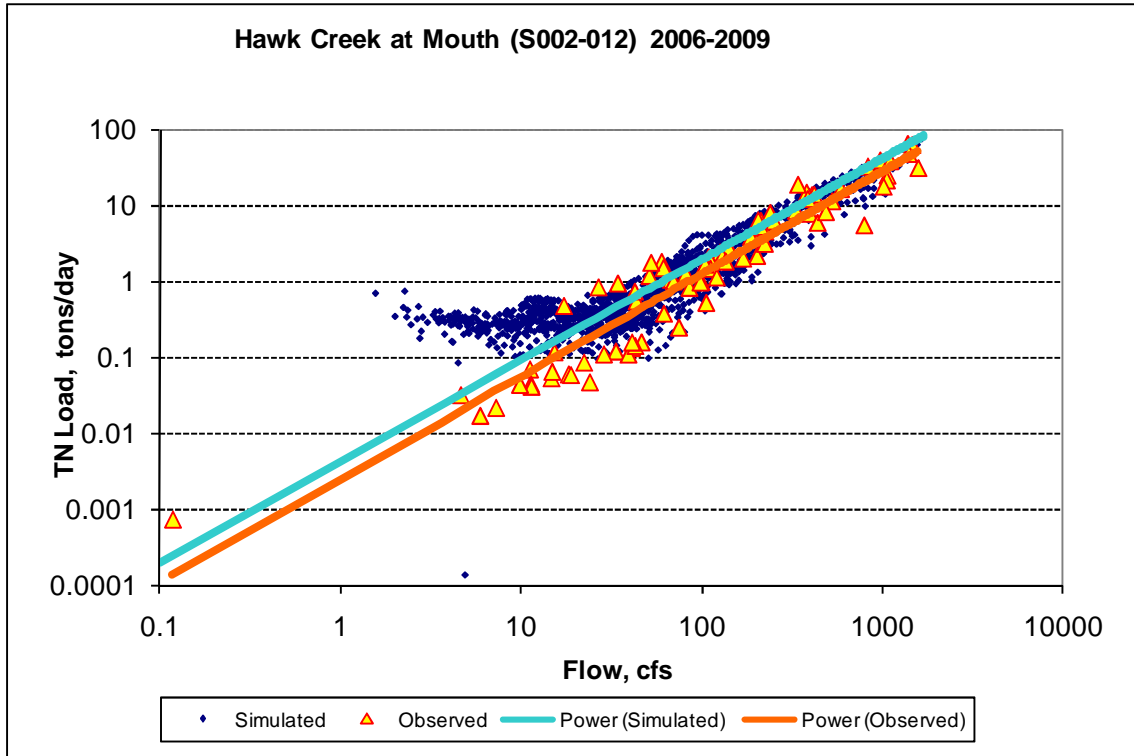




3.5 TOTAL NITROGEN

Parameter	1999 - 2005	2006 - 2009
Count	139	81
Conc Ave Error	265.30%	8.28%
Conc Median Error	73.46%	-5.75%
Load Ave Error	79.03%	-3.10%
Load Median Error	17.56%	-0.01%
Paired t conc	0.00	0.93
Paired t load	0.01	0.81

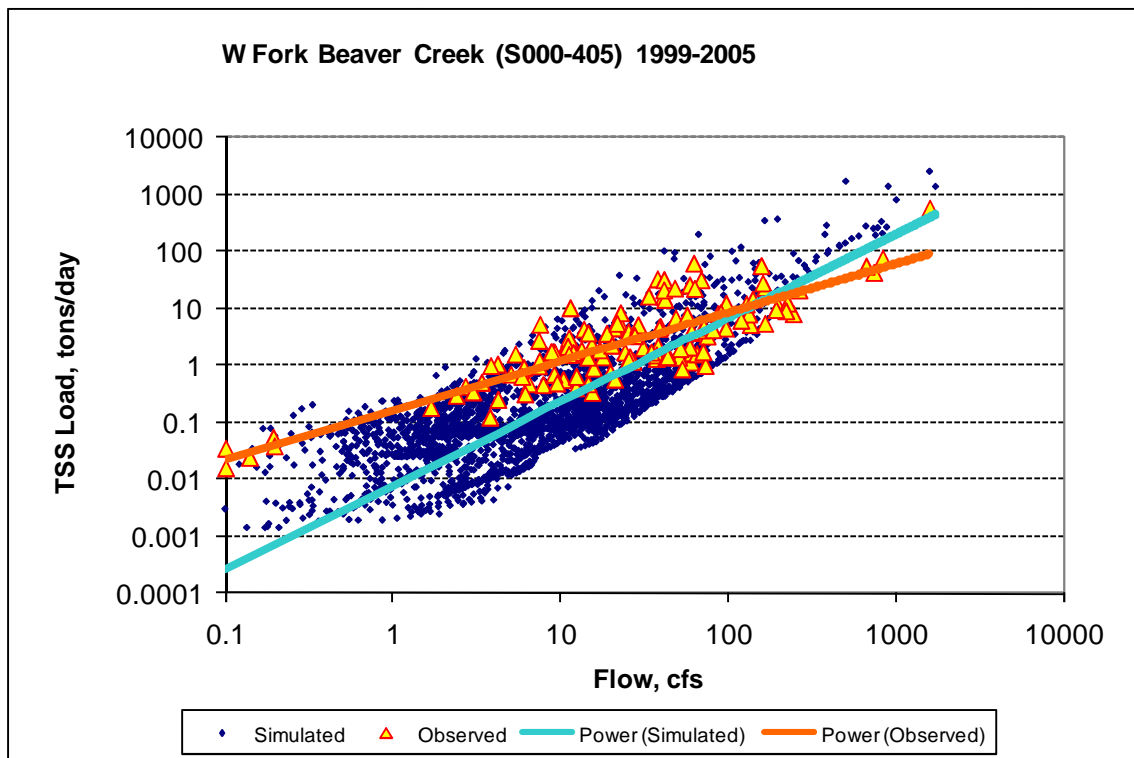


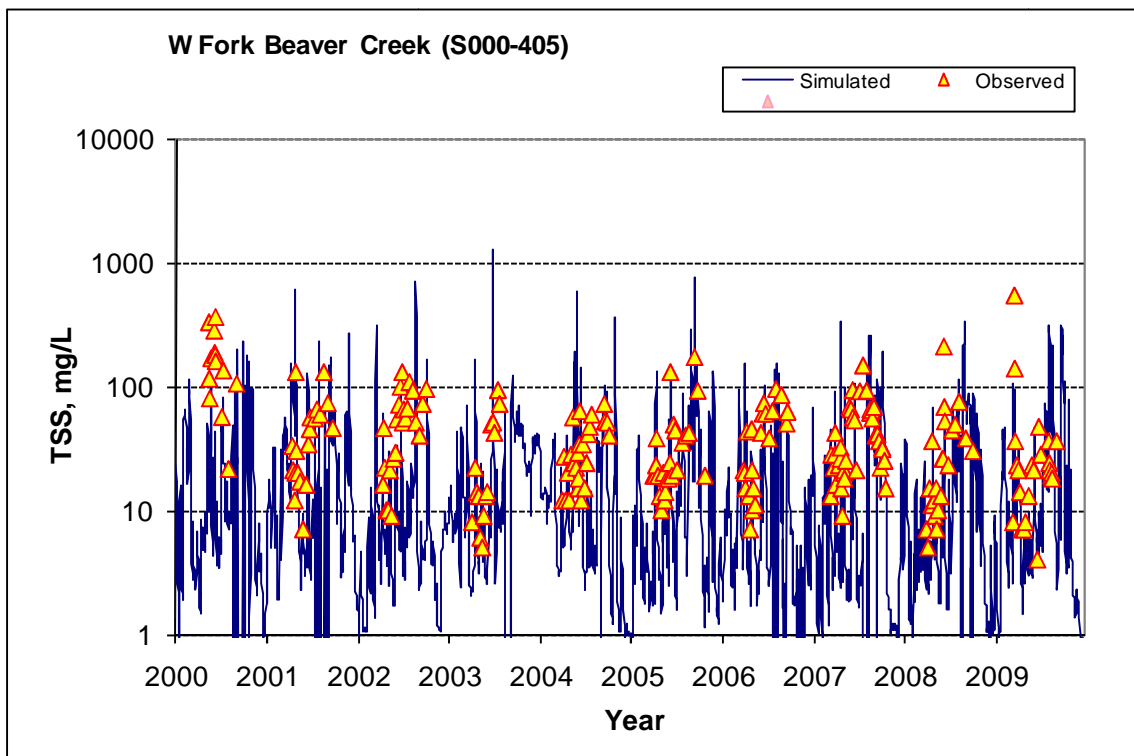
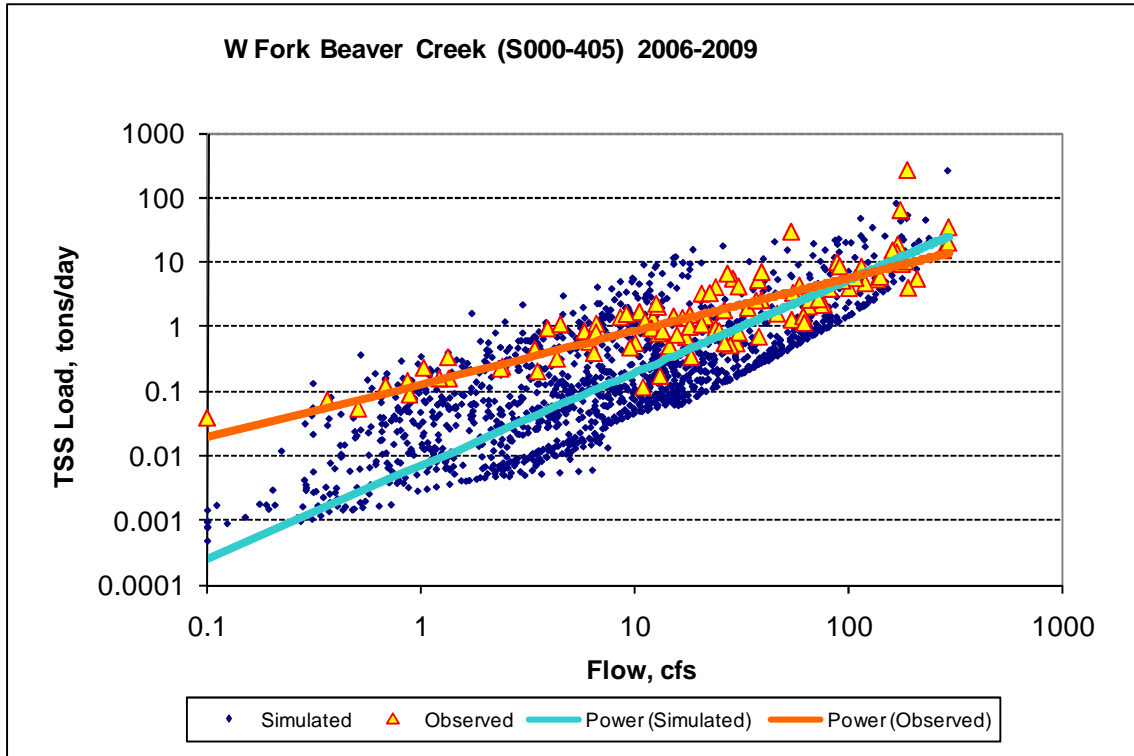


4 West Fork Beaver Creek (S000-405)

4.1 TOTAL SUSPENDED SEDIMENT

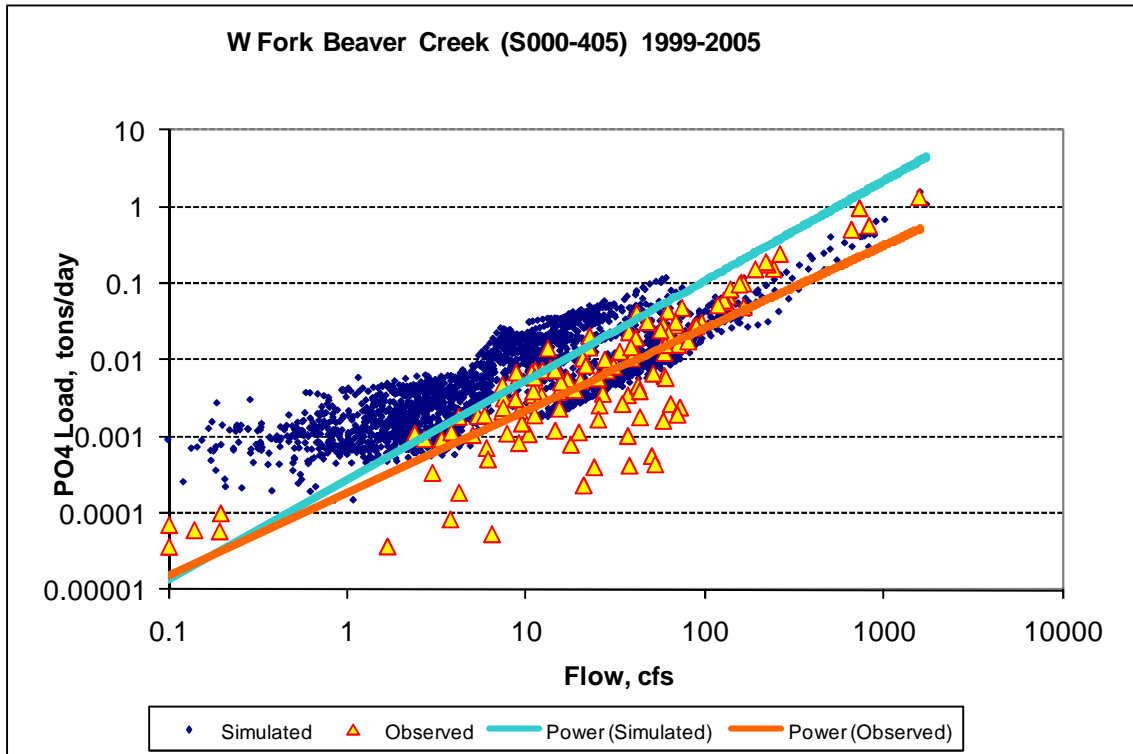
Parameter	1999 - 2005	2006 - 2009
Count	130	104
Conc Ave Error	-10.71%	-1.93%
Conc Median Error	-23.48%	-13.18%
Load Ave Error	205.97%	9.58%
Load Median Error	-5.38%	-3.13%
Paired t conc	0.72	0.90
Paired t load	0.08	0.60

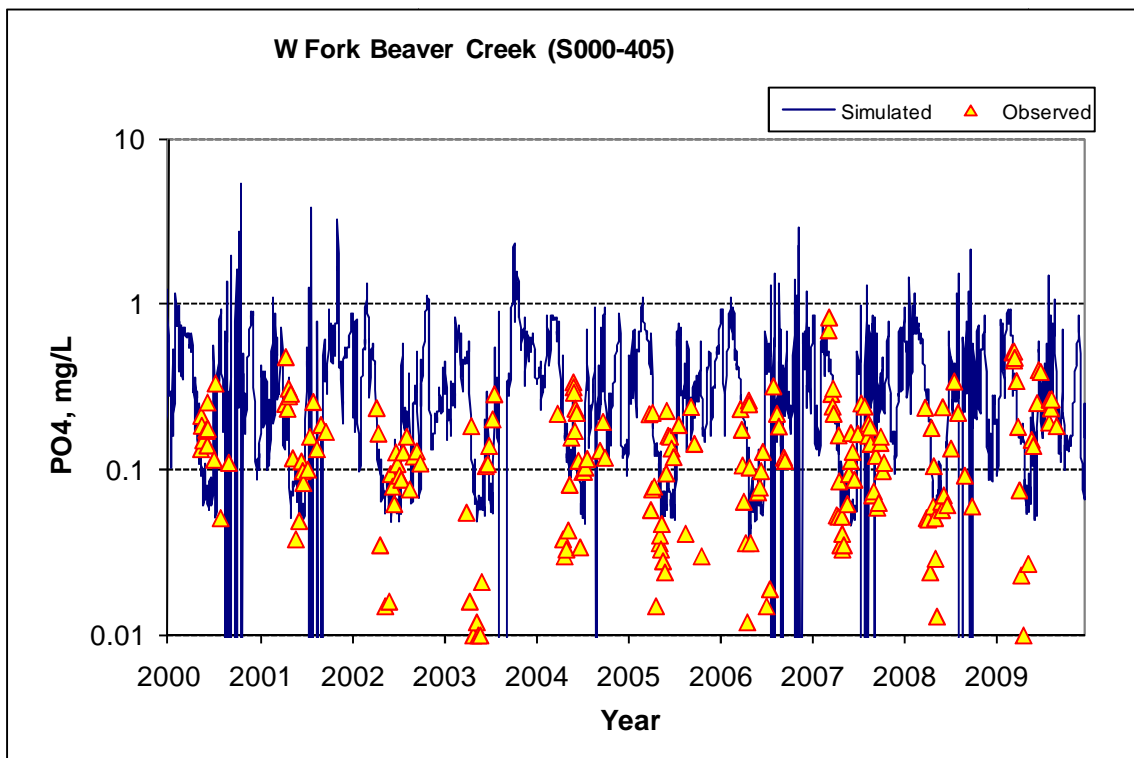
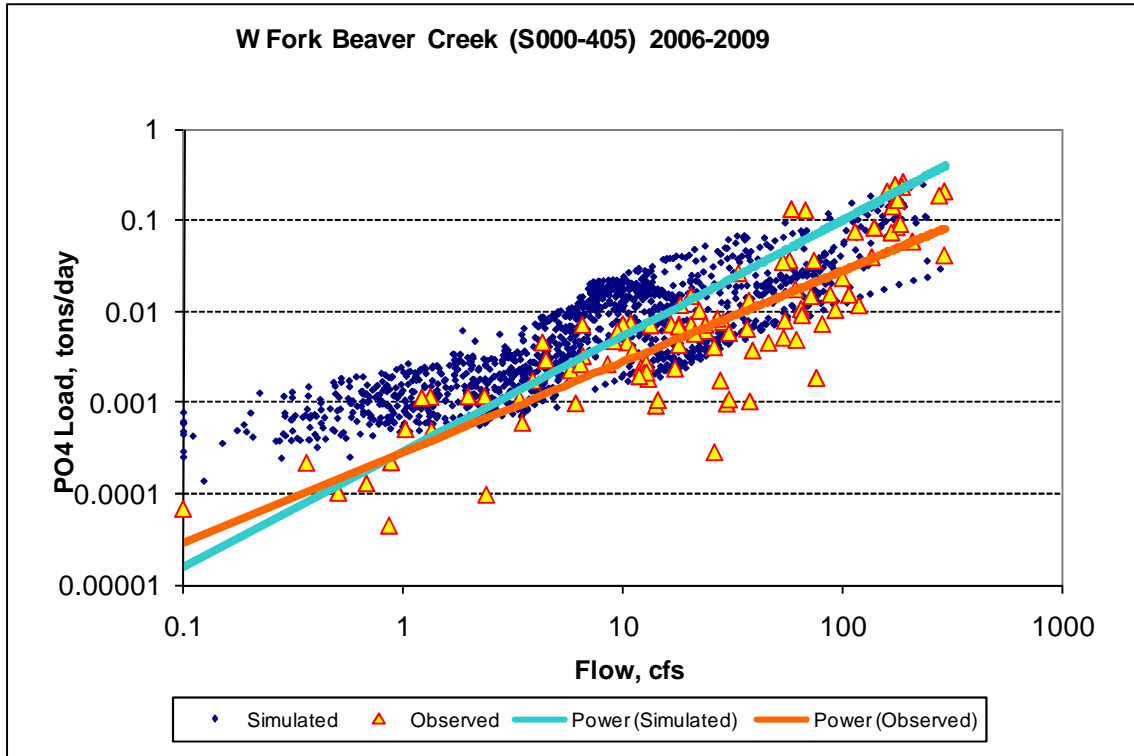




4.2 ORTHOPHOSPHATE (AS P)

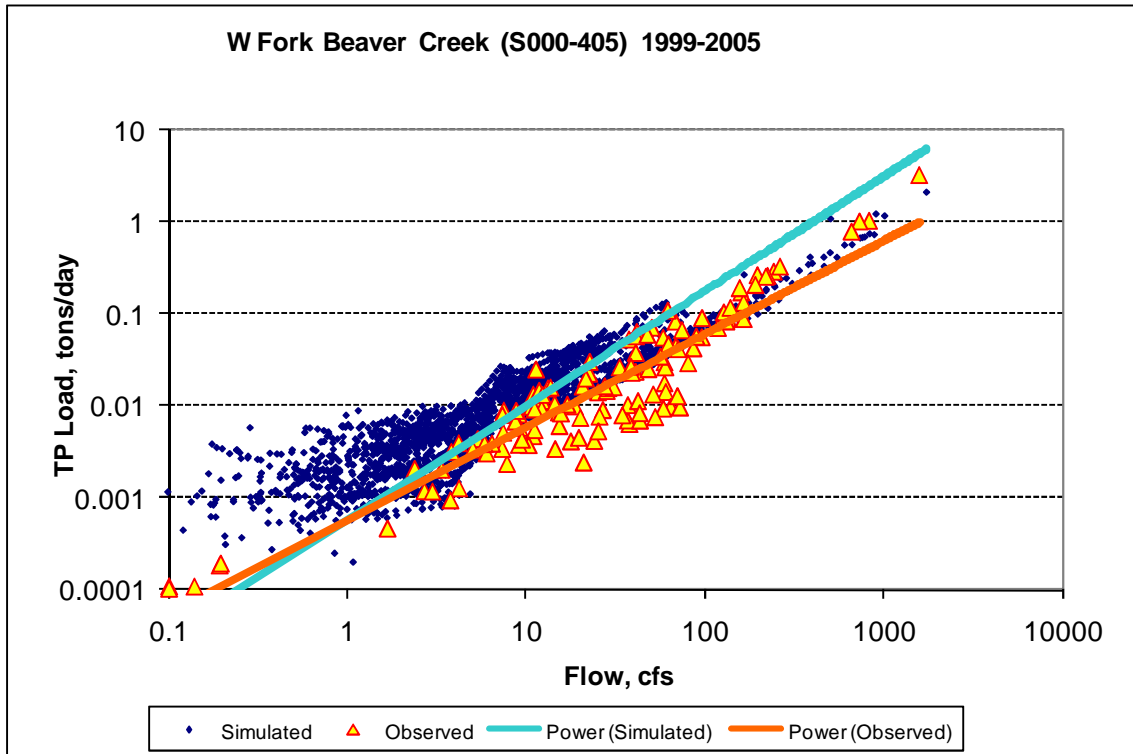
Parameter	1999 - 2005	2006 - 2009
Count	126	100
Conc Ave Error	33.64%	40.09%
Conc Median Error	6.55%	19.08%
Load Ave Error	-20.19%	-16.36%
Load Median Error	0.58%	5.39%
Paired t conc	0.06	0.03
Paired t load	0.50	0.59

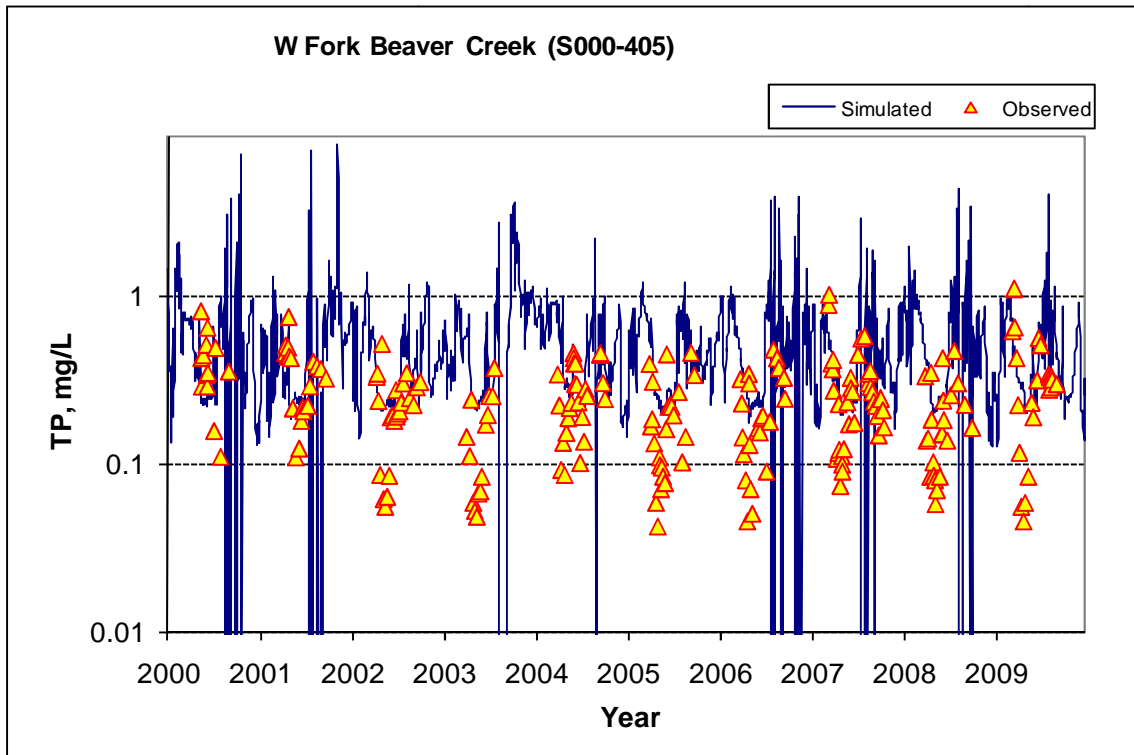
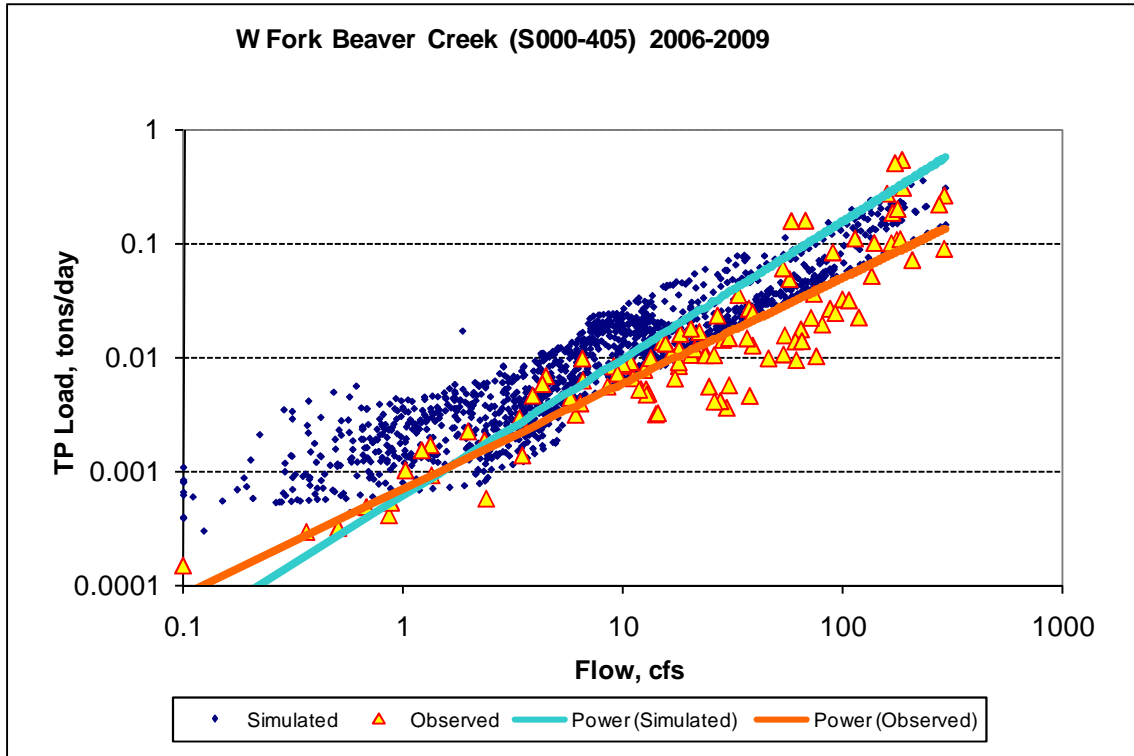




4.3 TOTAL PHOSPHORUS

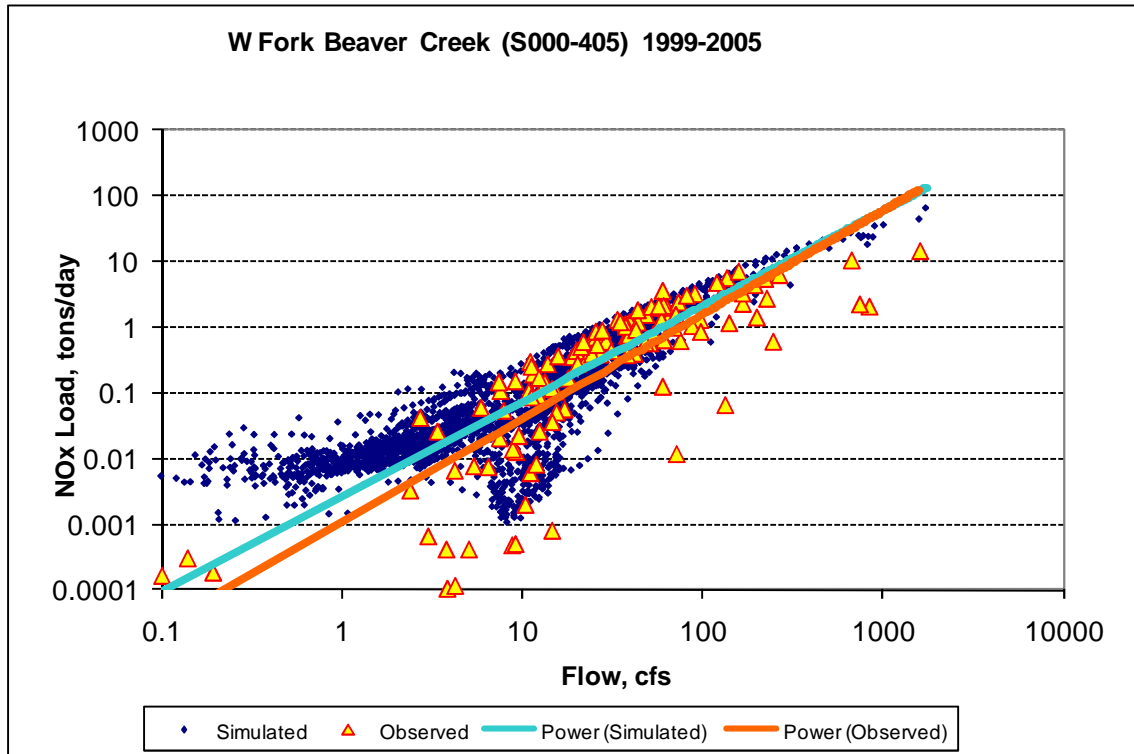
Parameter	1999 - 2005	2006 - 2009
Count	129	105
Conc Ave Error	25.65%	57.72%
Conc Median Error	21.51%	40.73%
Load Ave Error	-10.02%	-0.19%
Load Median Error	3.94%	9.95%
Paired t conc	0.15	0.00
Paired t load	0.62	0.88

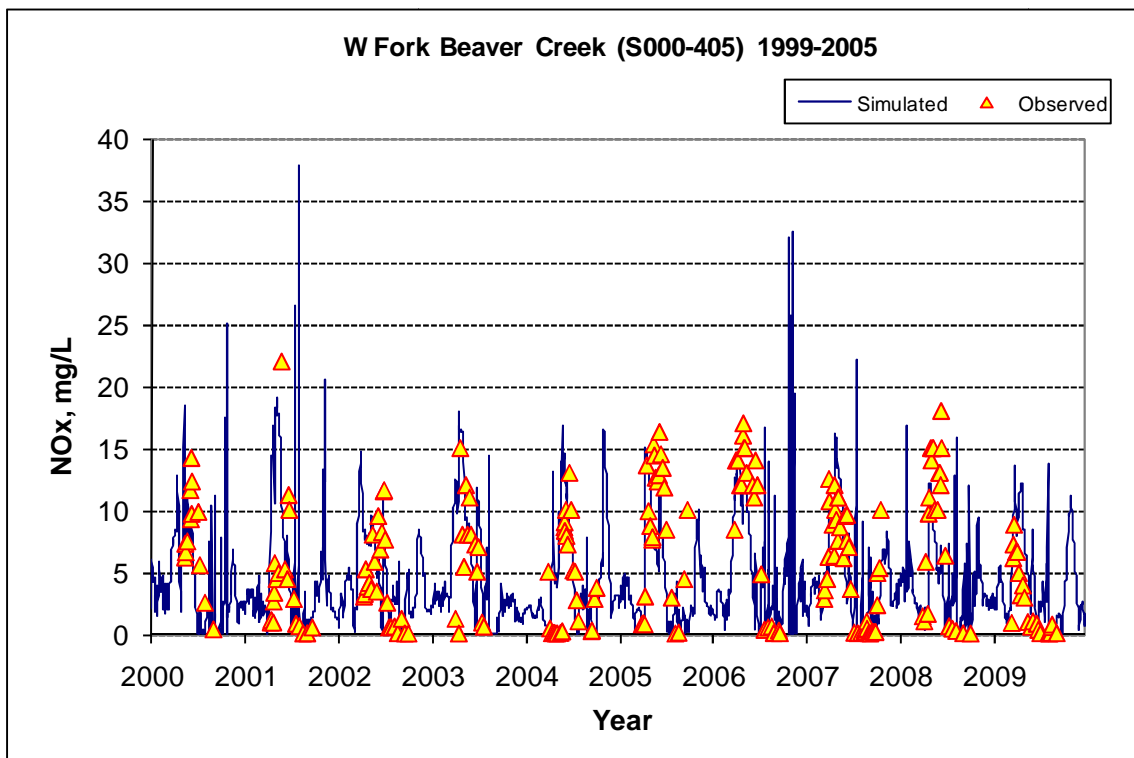
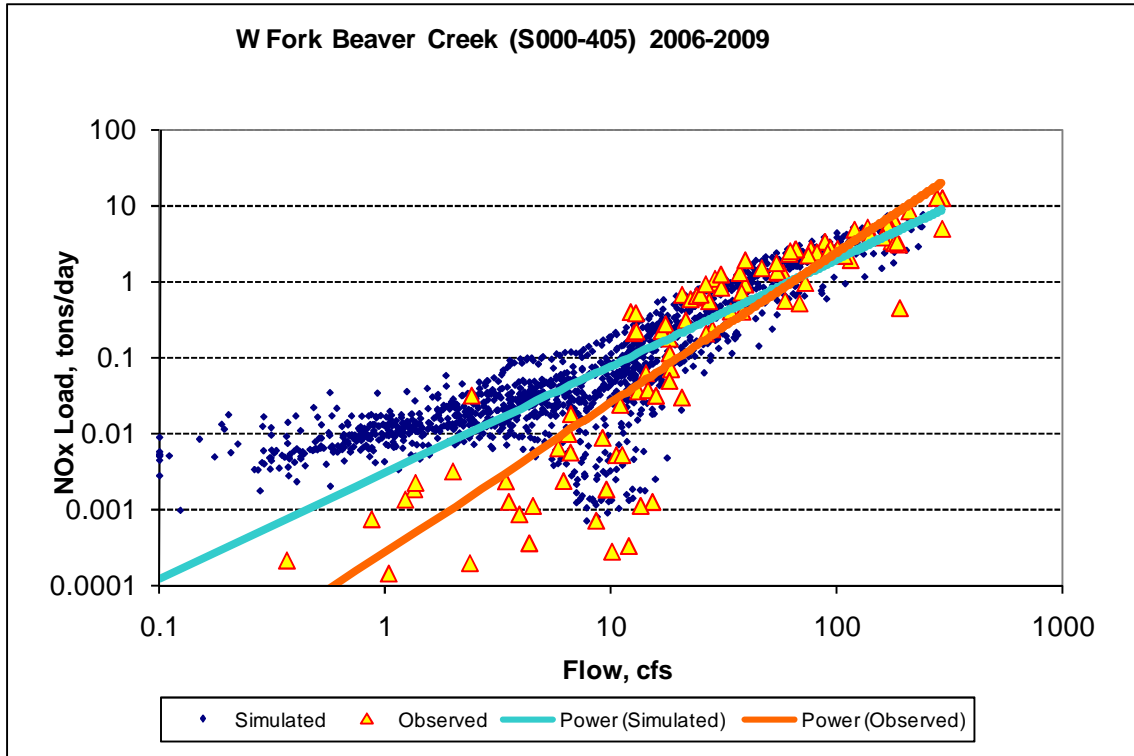




4.4 NITRATE PLUS NITRITE NITROGEN (AS N)

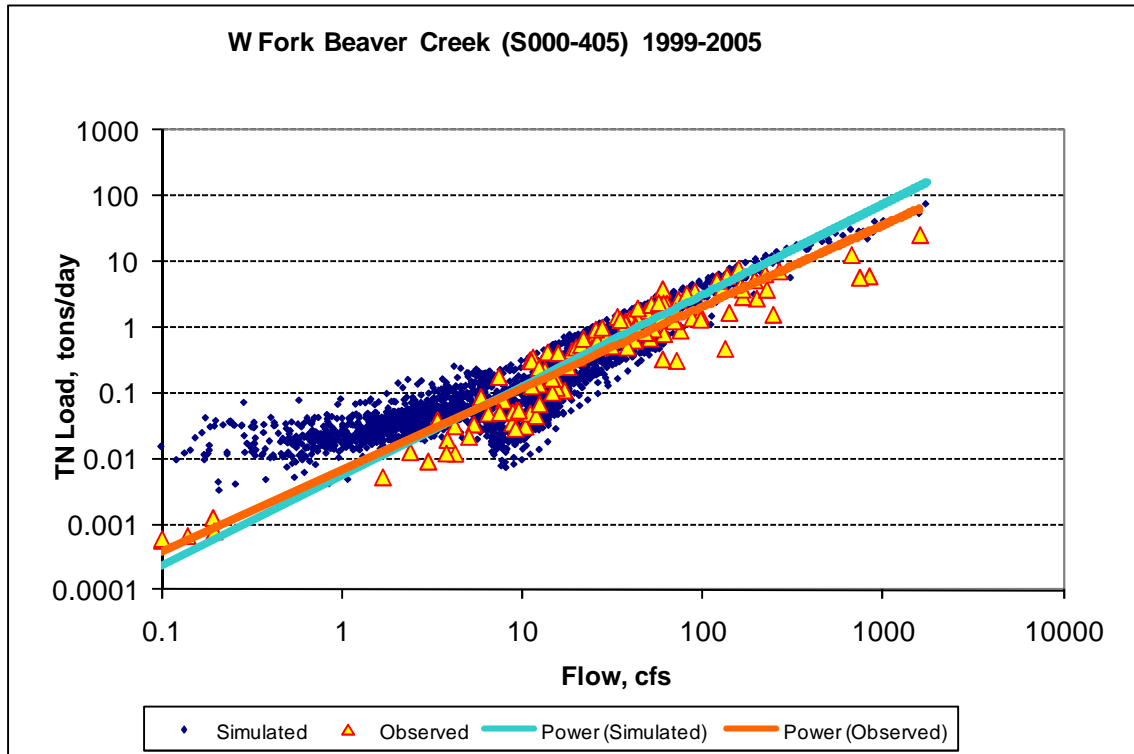
Parameter	1999 - 2005	2006 - 2009
Count	128	105
Conc Ave Error	8.60%	-0.49%
Conc Median Error	0.48%	5.20%
Load Ave Error	96.21%	1.43%
Load Median Error	0.12%	0.41%
Paired t conc	0.94	0.99
Paired t load	0.01	0.88

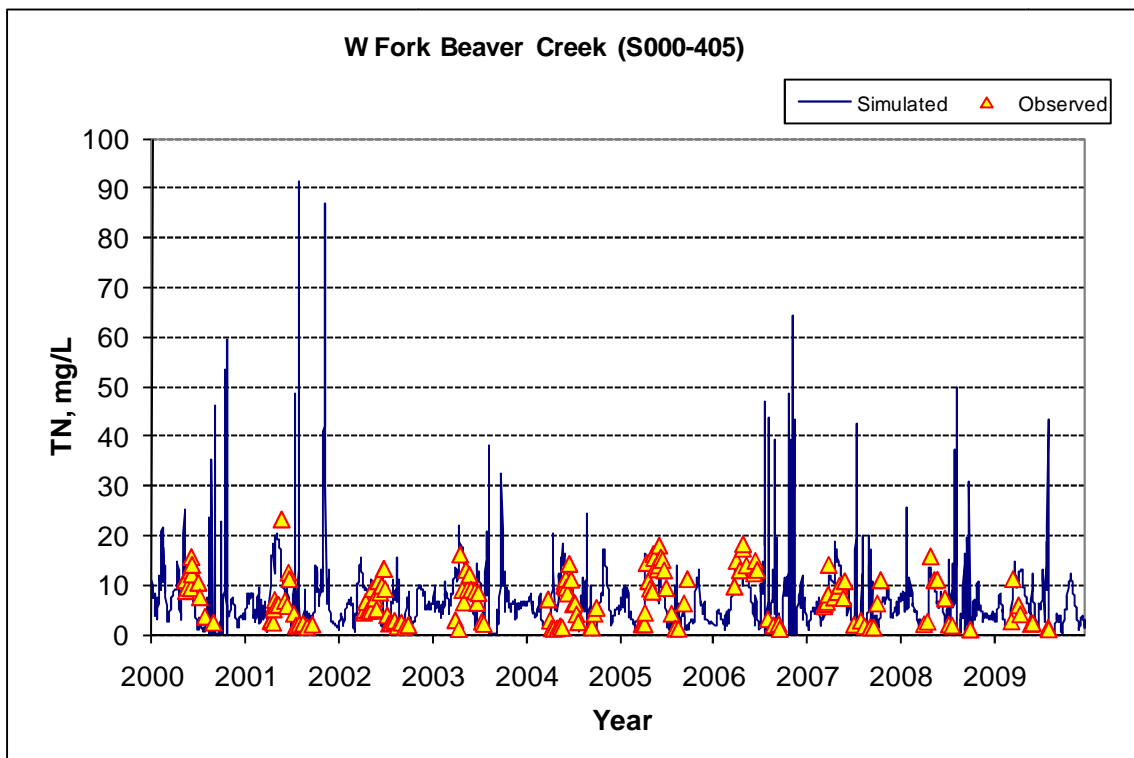
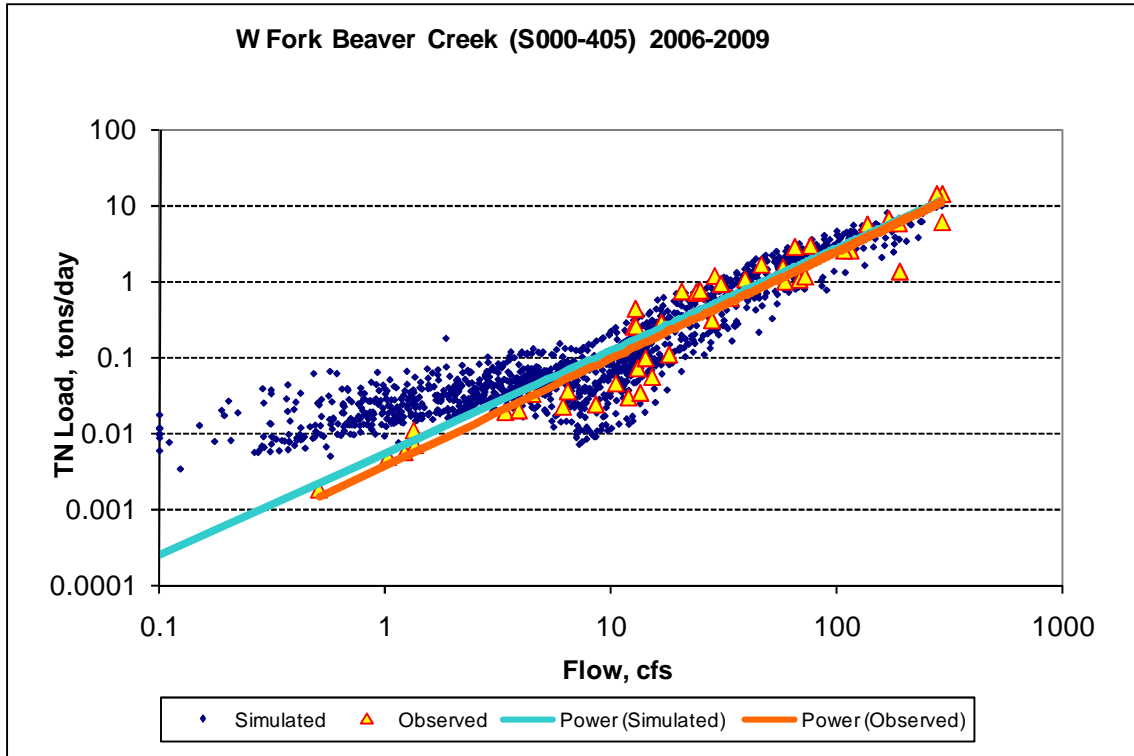




4.5 TOTAL NITROGEN

Parameter	1999 - 2005	2006 - 2009
Count	121	47
Conc Ave Error	11.71%	12.47%
Conc Median Error	-4.58%	6.06%
Load Ave Error	75.71%	3.01%
Load Median Error	-0.04%	0.43%
Paired t conc	0.91	0.76
Paired t load	0.04	0.73

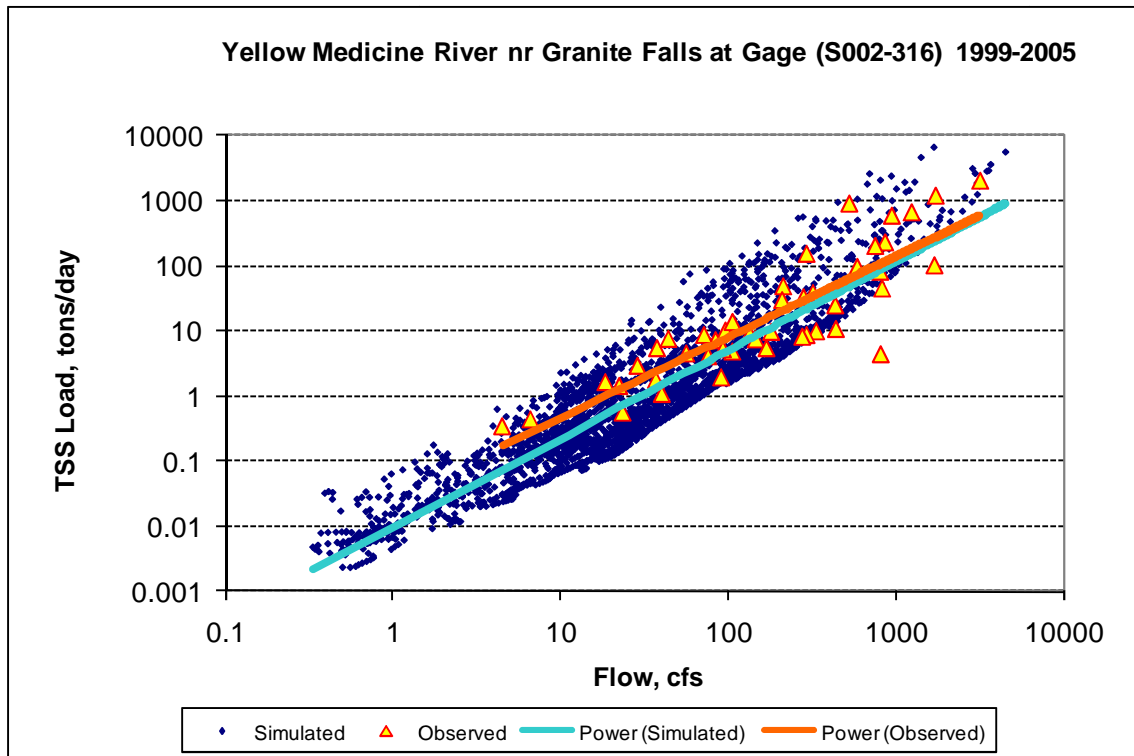


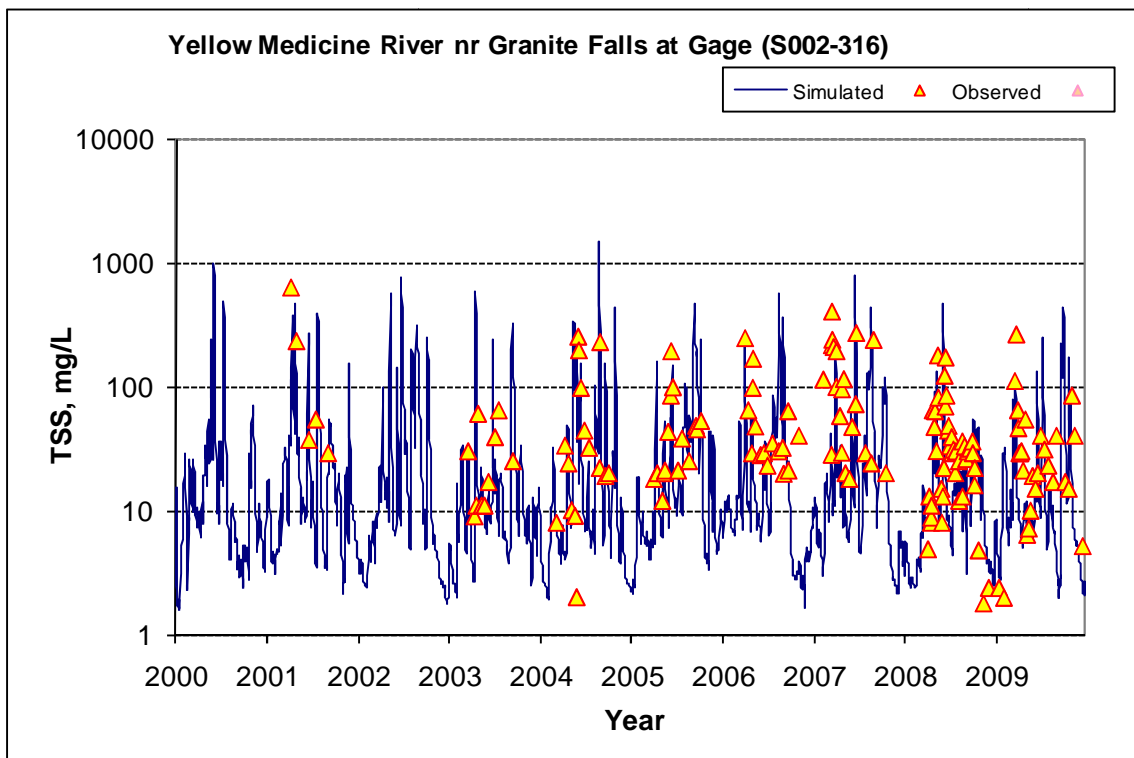
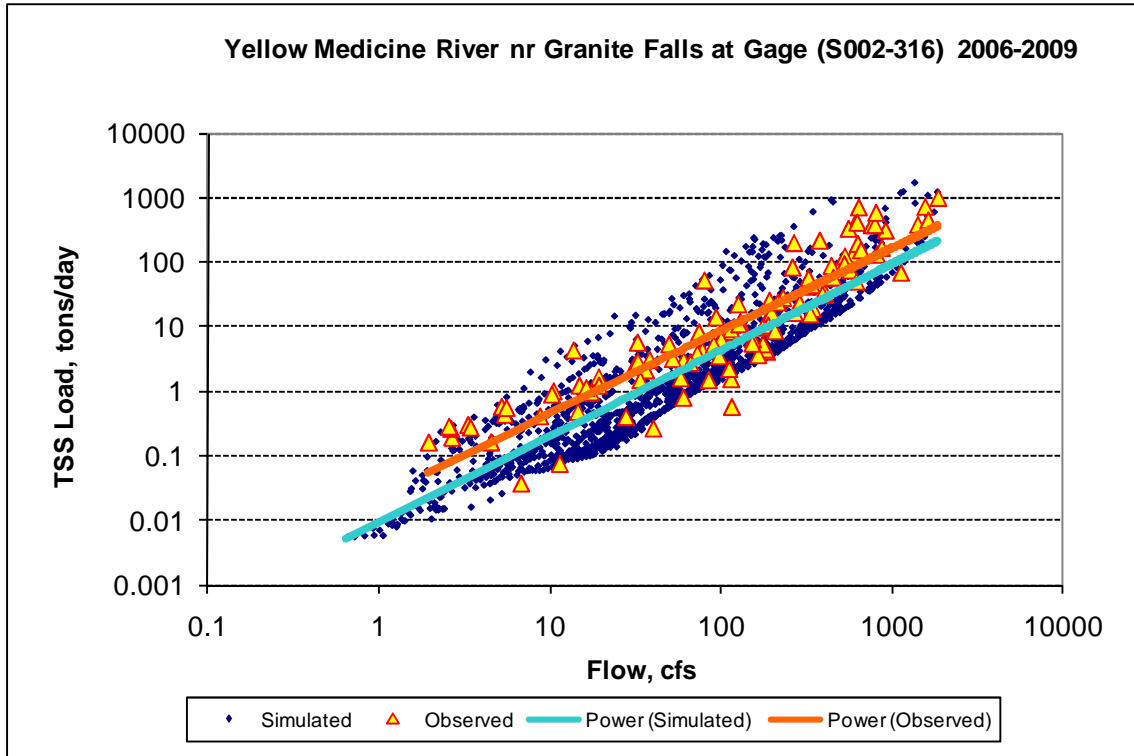


5 Yellow Medicine River at Gage (S002-316)

5.1 TOTAL SUSPENDED SEDIMENT

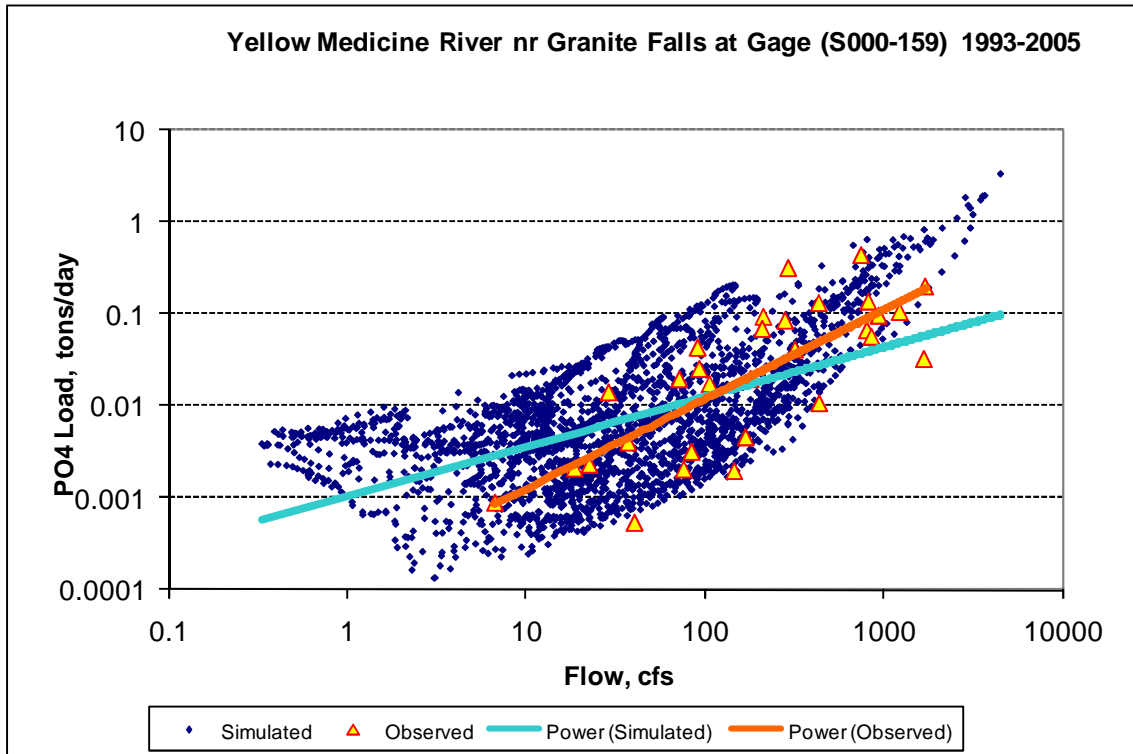
Parameter	1999 - 2005	2006 - 2009
Count	45	107
Conc Ave Error	107.53%	-1.73%
Conc Median Error	-8.53%	-17.38%
Load Ave Error	140.15%	-1.53%
Load Median Error	-0.28%	-0.65%
Paired t conc	0.03	0.88
Paired t load	0.08	0.79

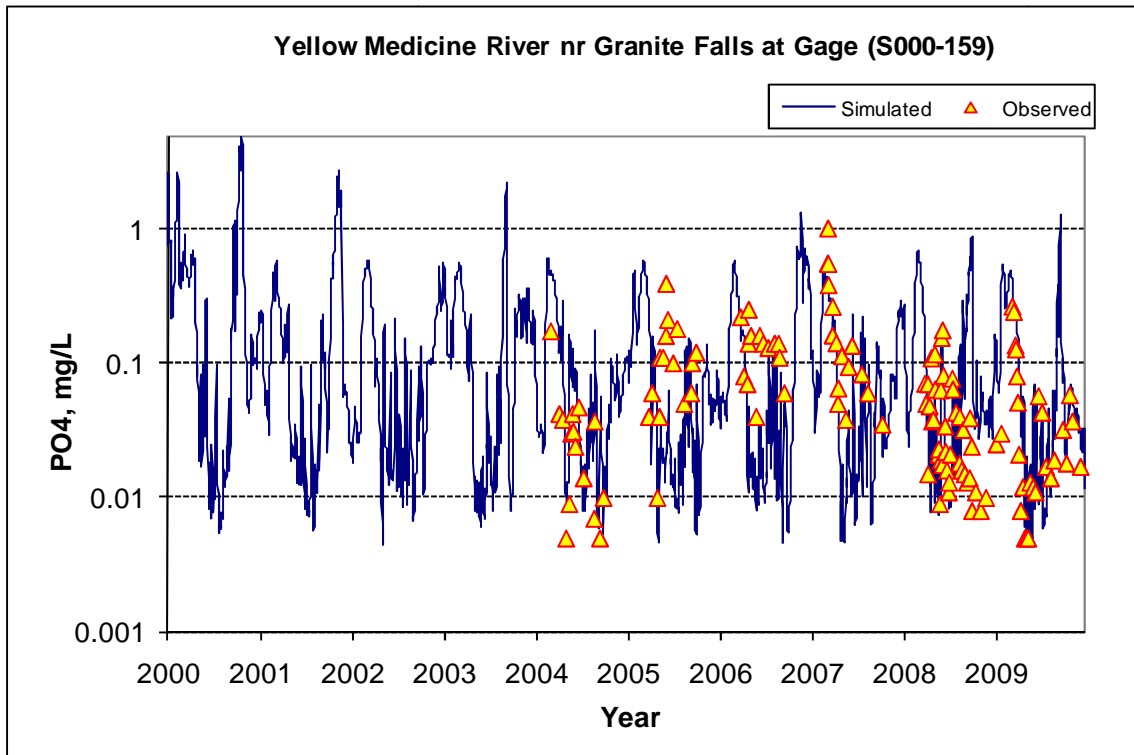
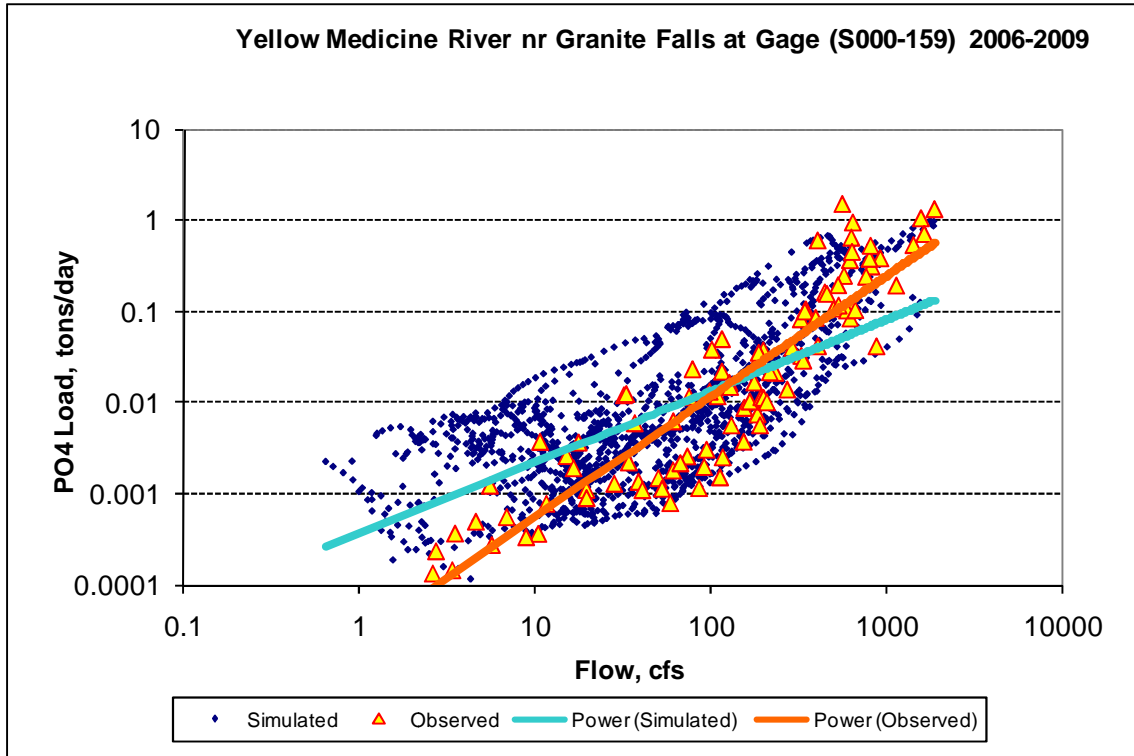




5.2 ORTHOPHOSPHATE (AS P)

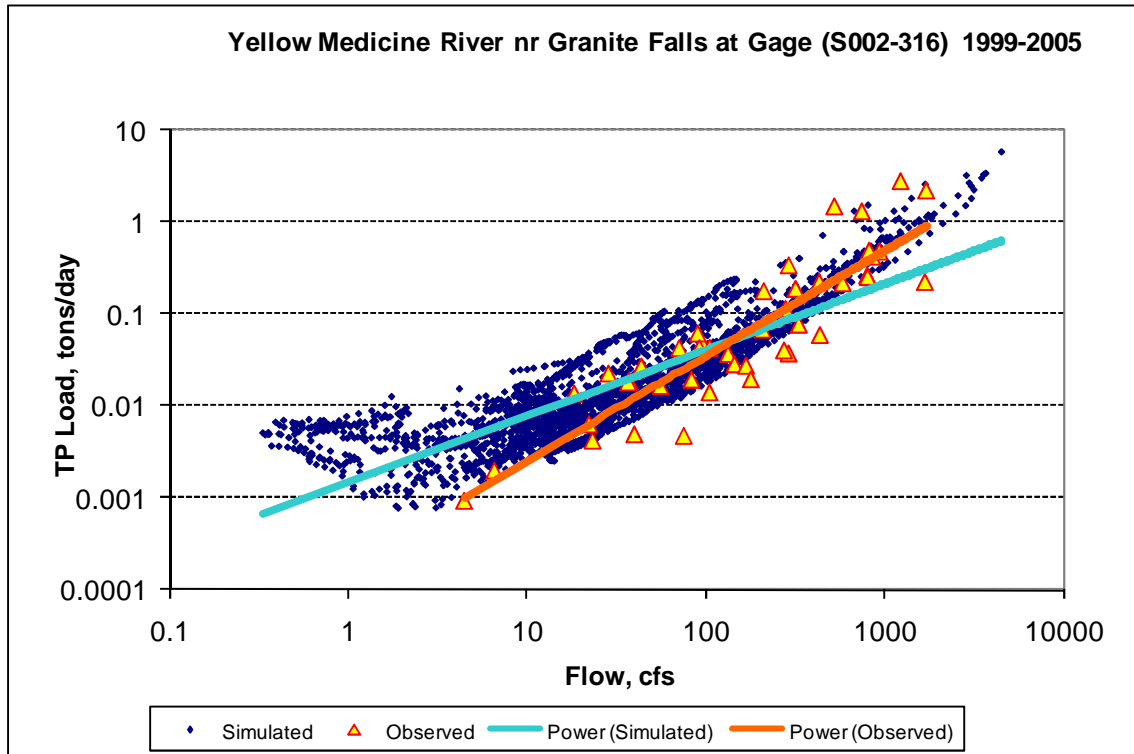
Parameter	1999 - 2005	2006 - 2009
Count	30	98
Conc Ave Error	12.69%	3.93%
Conc Median Error	0.32%	-2.76%
Load Ave Error	76.87%	-29.90%
Load Median Error	0.29%	-0.21%
Paired t conc	0.63	0.87
Paired t load	0.10	0.29

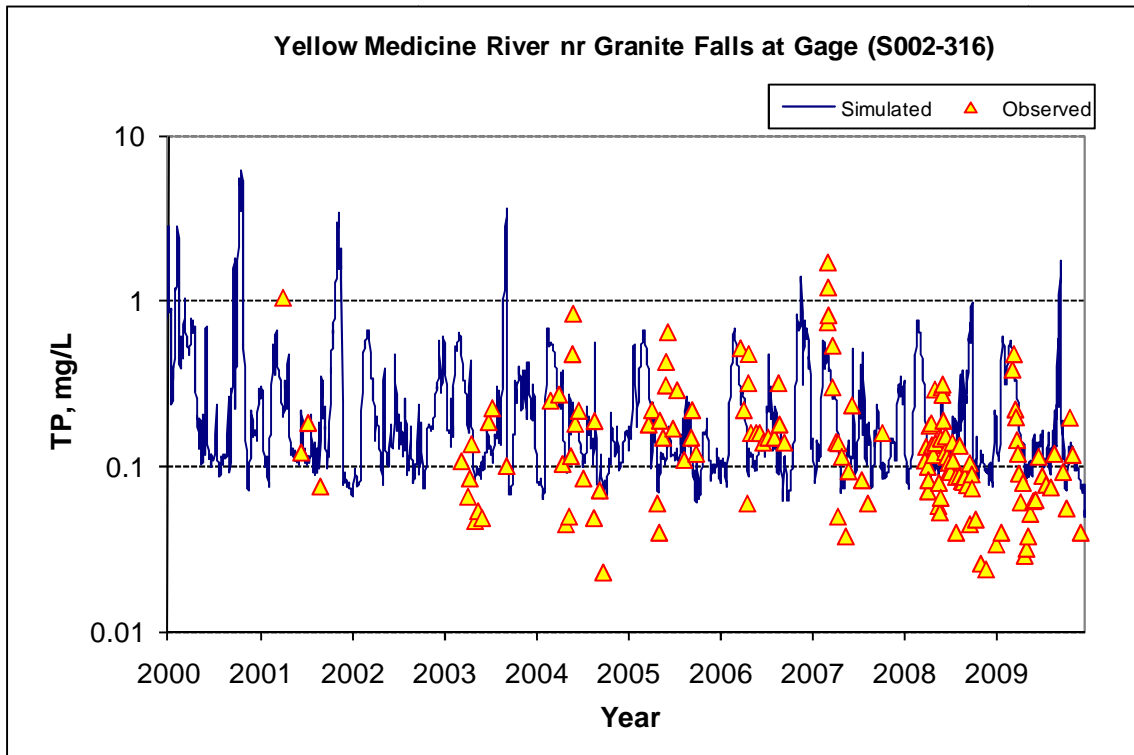
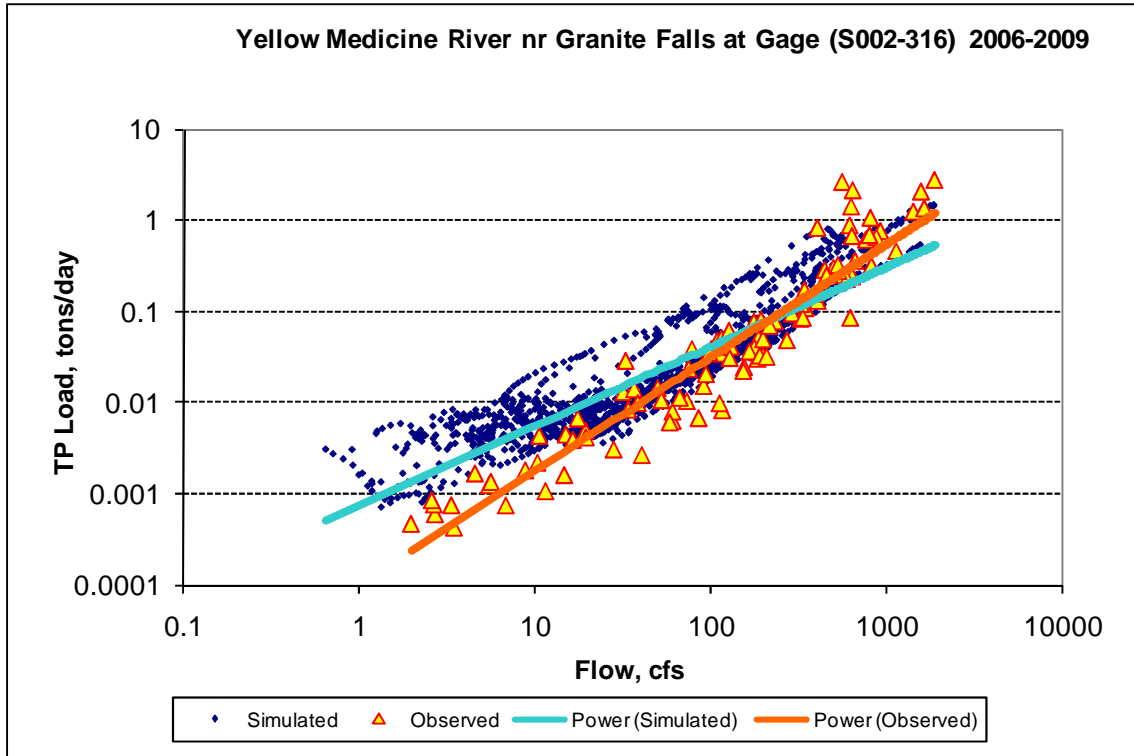




5.3 TOTAL PHOSPHORUS

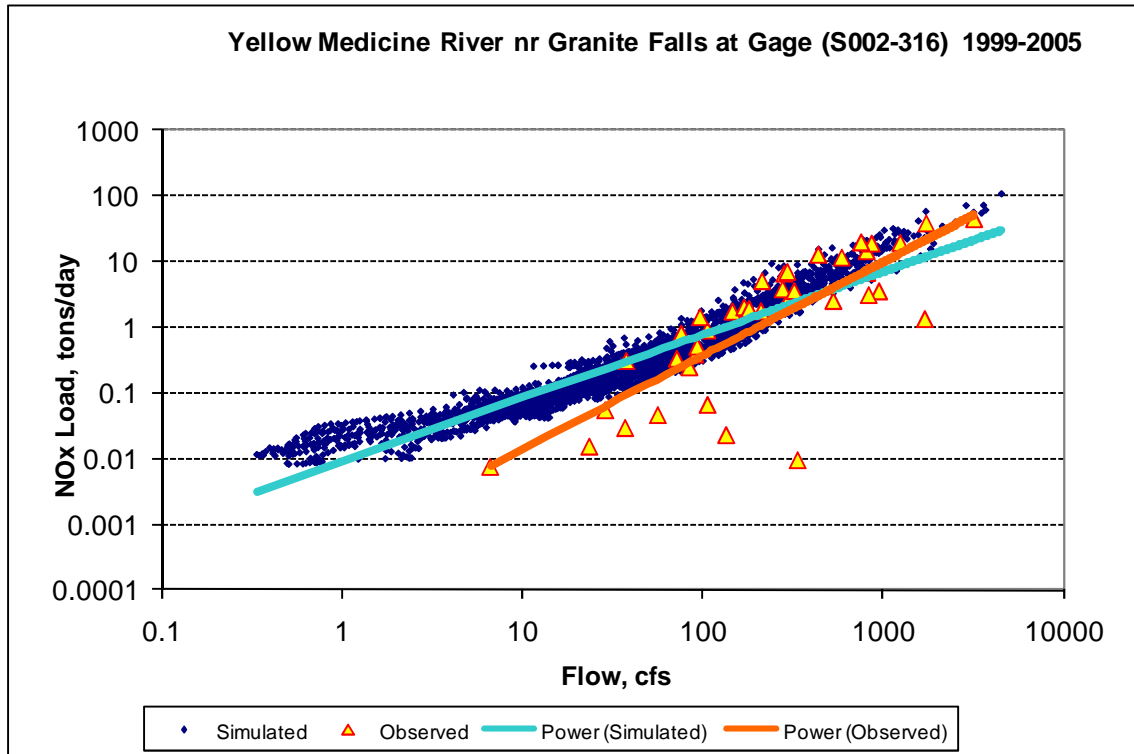
Parameter	1999 - 2005	2006 - 2009
Count	44	100
Conc Ave Error	6.52%	-4.36%
Conc Median Error	-12.67%	-16.18%
Load Ave Error	16.84%	32.90%
Load Median Error	-1.89%	-1.06%
Paired t conc	0.85	0.93
Paired t load	0.54	0.22

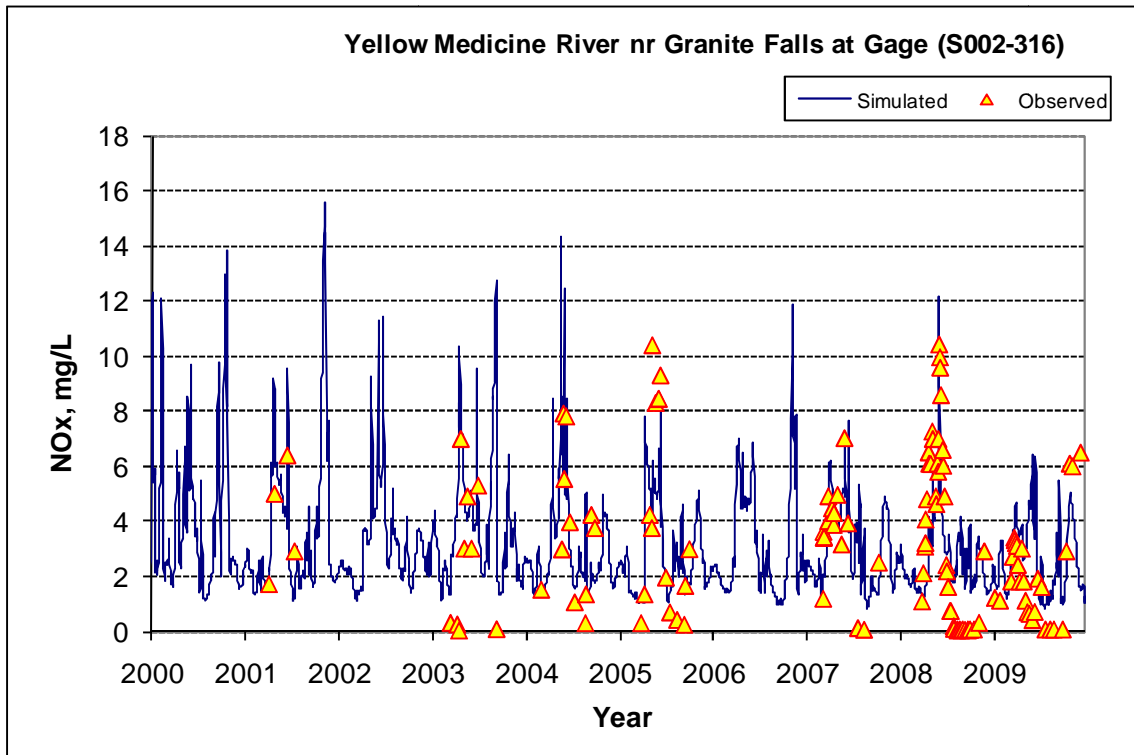
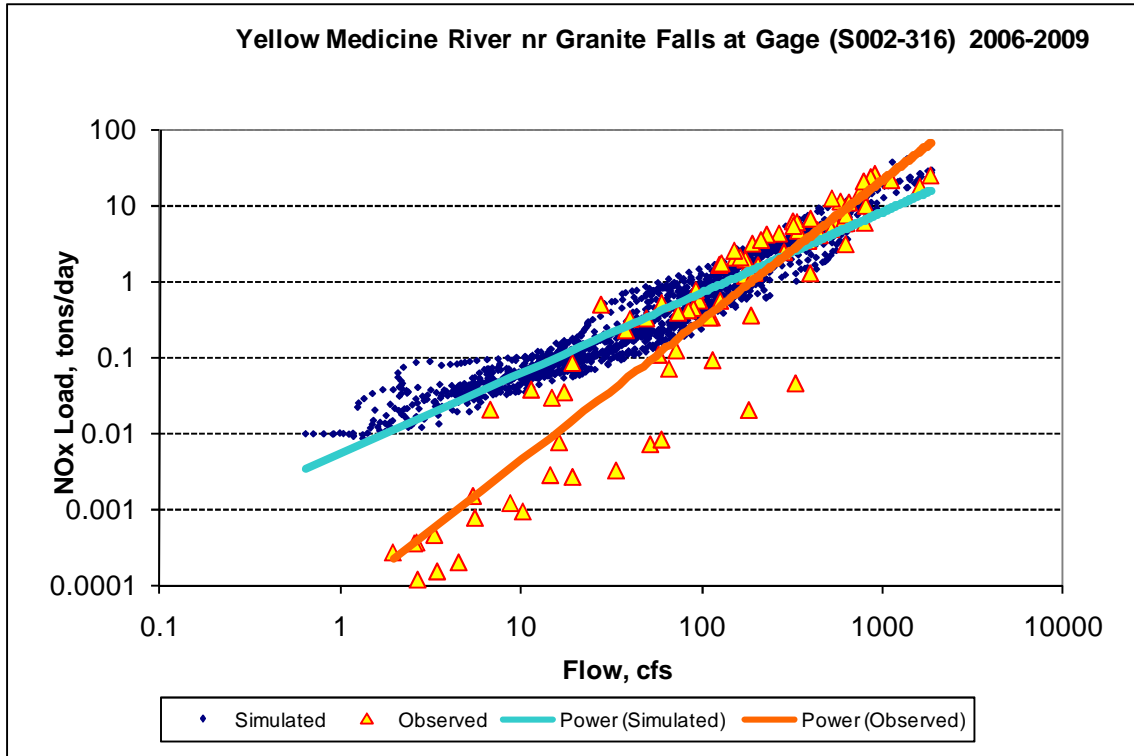




5.4 NITRATE PLUS NITRITE NITROGEN (AS N)

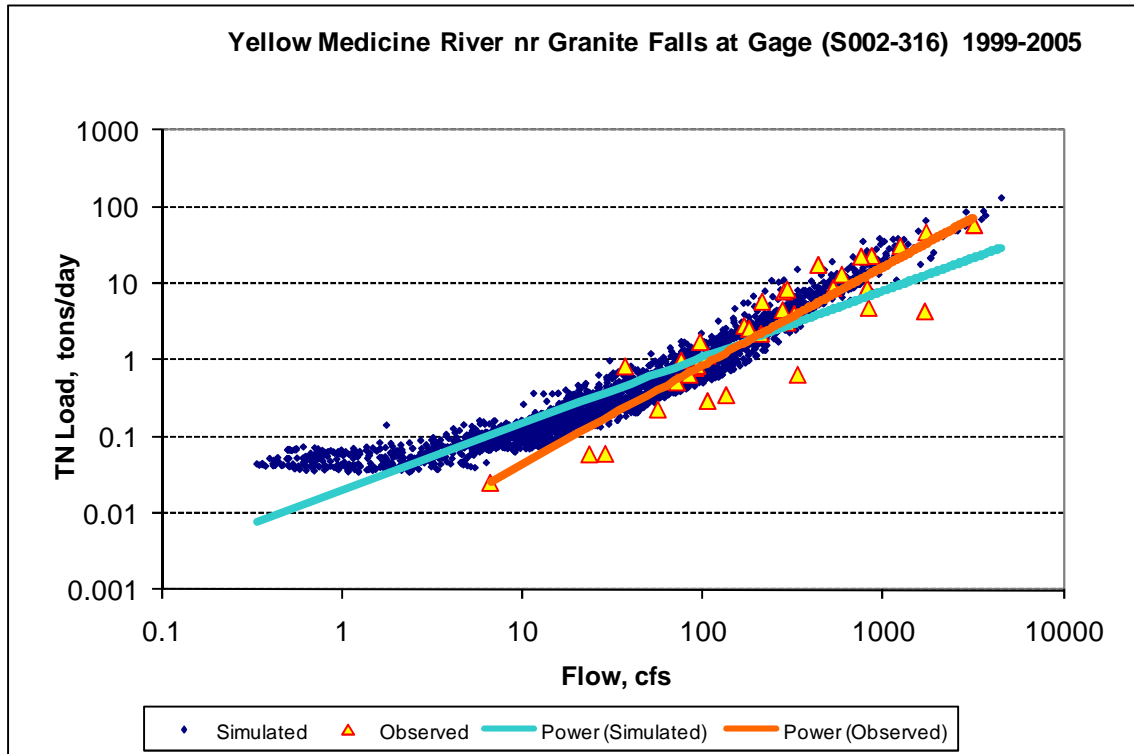
Parameter	1999 - 2005	2006 - 2009
Count	39	86
Conc Ave Error	22.89%	11.70%
Conc Median Error	16.41%	26.56%
Load Ave Error	40.40%	-5.68%
Load Median Error	1.54%	0.76%
Paired t conc	0.41	0.84
Paired t load	0.26	0.79

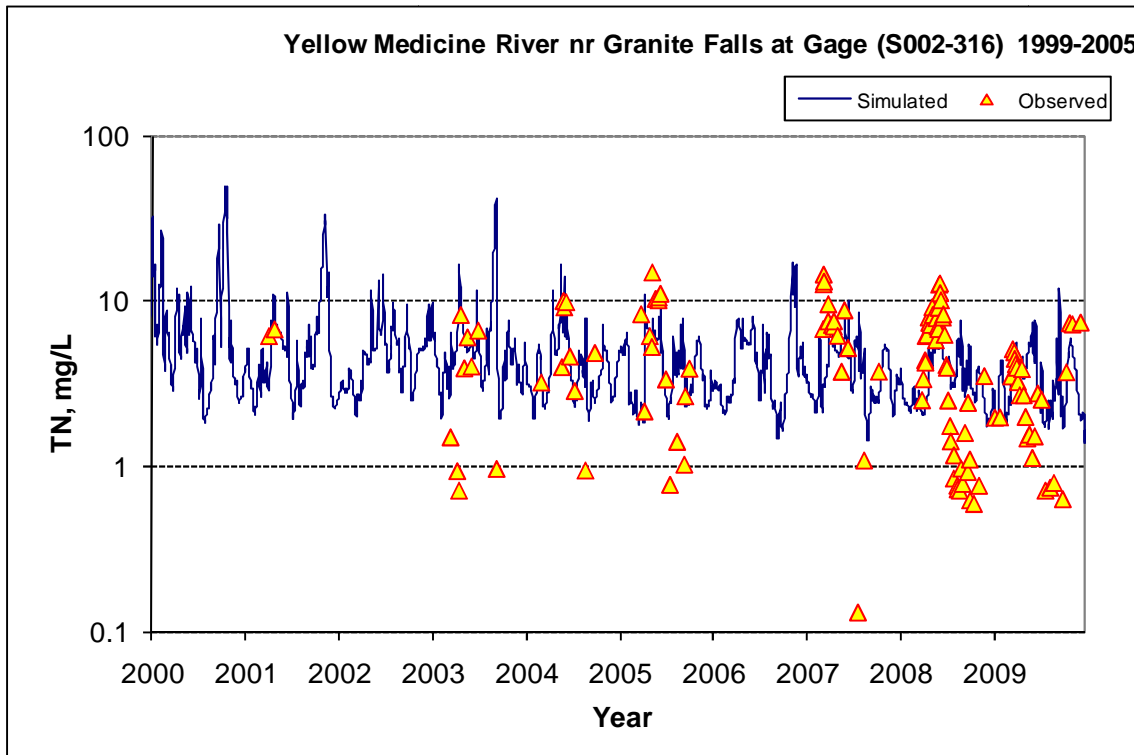
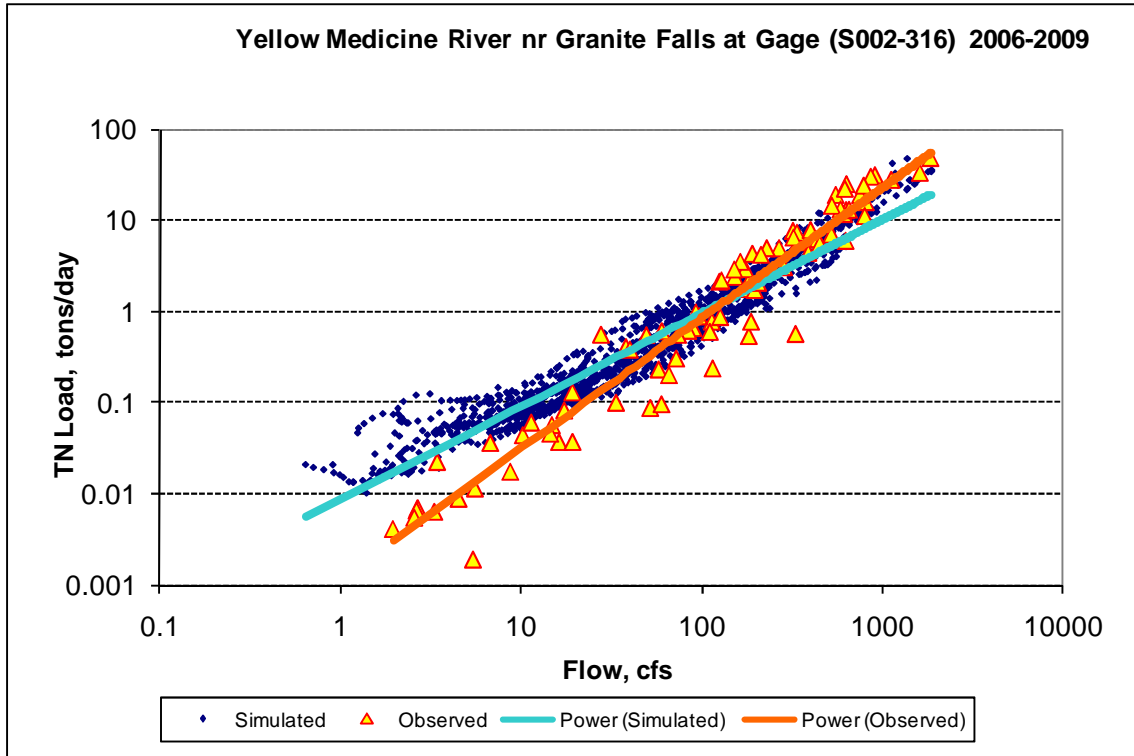




5.5 TOTAL NITROGEN

Parameter	1999 - 2005	2006 - 2009
Count	35	86
Conc Ave Error	14.97%	-5.91%
Conc Median Error	-4.25%	-2.49%
Load Ave Error	27.51%	-25.06%
Load Median Error	-0.83%	-0.35%
Paired t conc	0.67	0.98
Paired t load	0.41	0.37

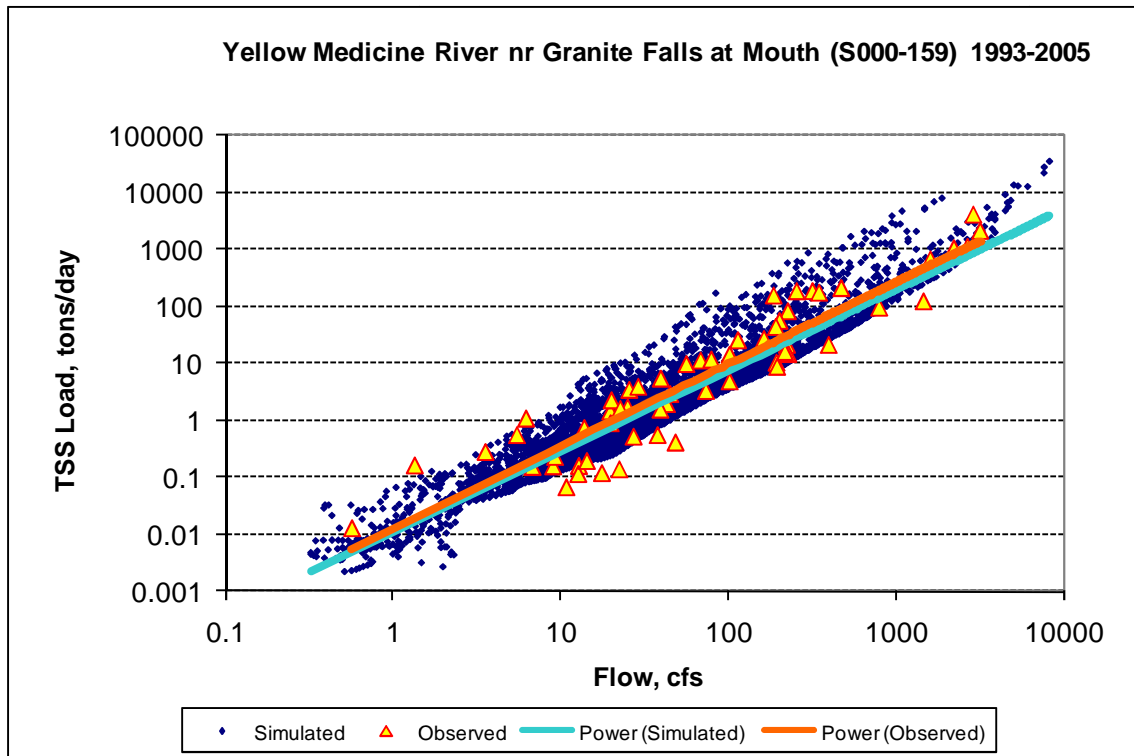


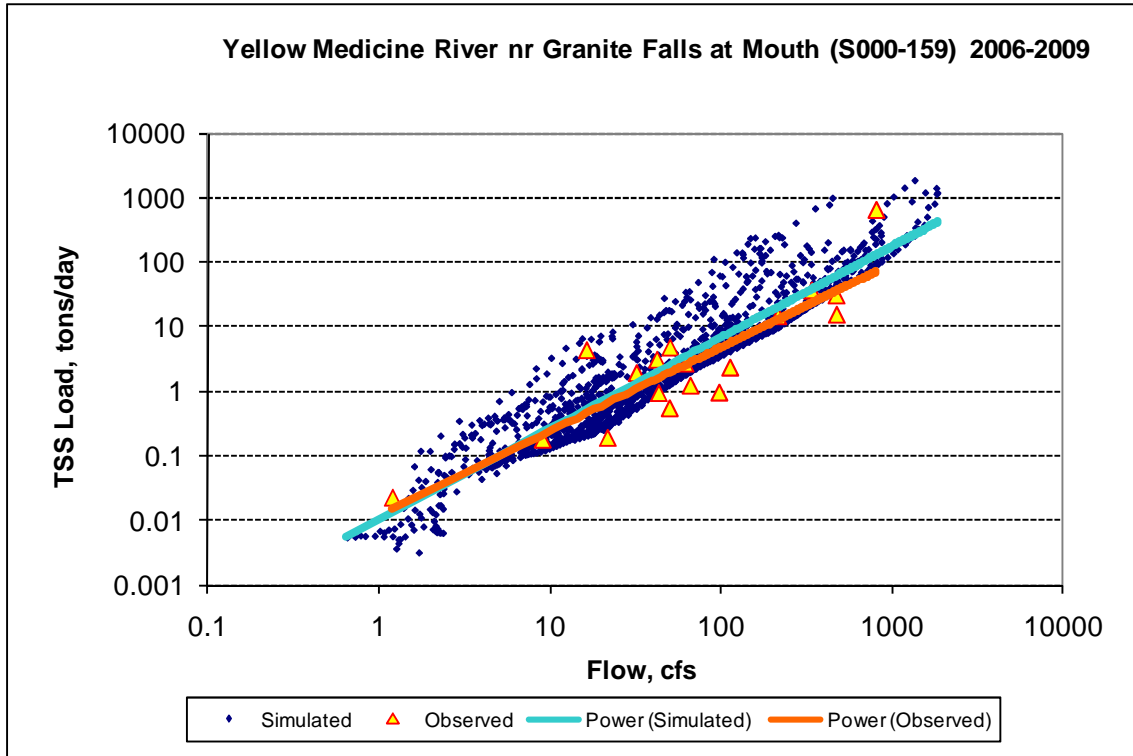


6 Yellow Medicine River at Mouth (S000-159)

6.1 TOTAL SUSPENDED SEDIMENT

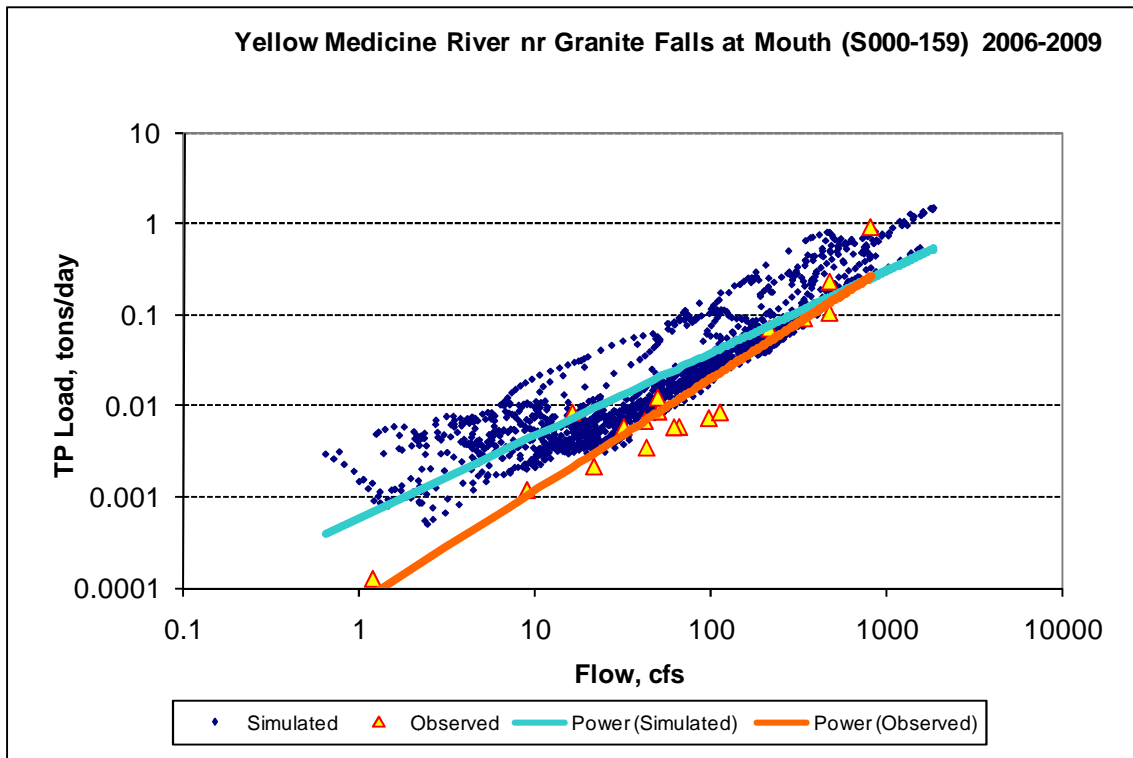
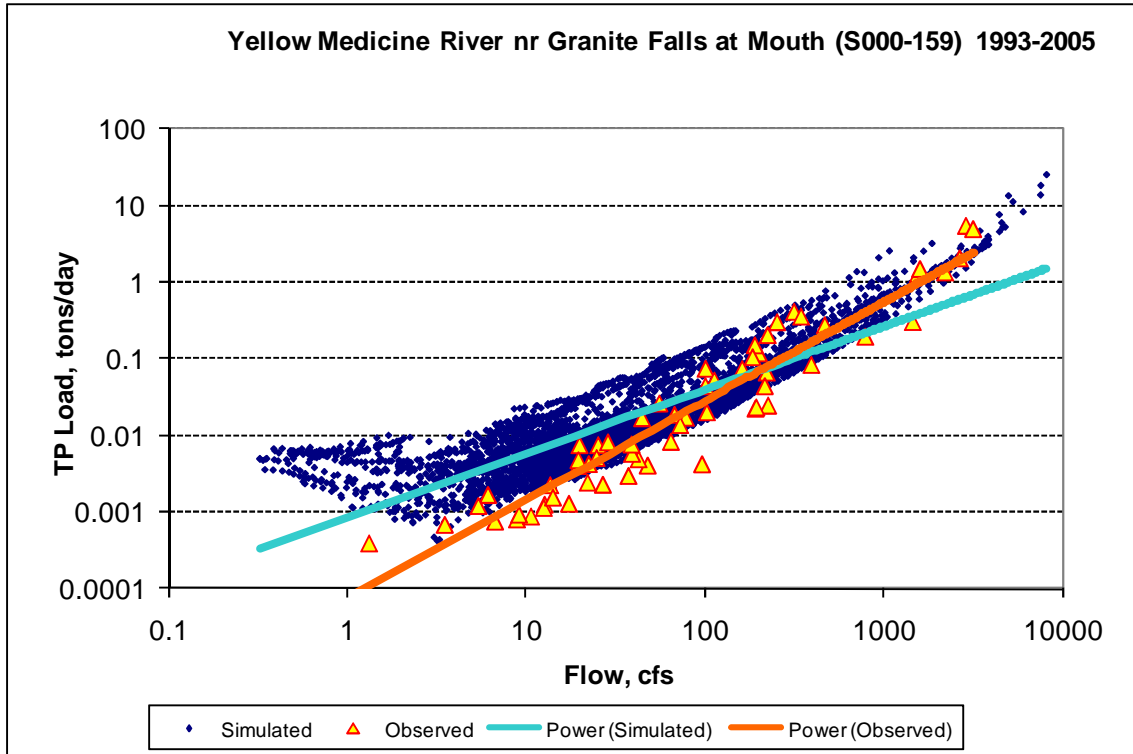
Parameter	1993 - 2005	2006 - 2009
Count	60	18
Conc Ave Error	-14.08%	20.66%
Conc Median Error	10.93%	-9.71%
Load Ave Error	-27.50%	53.18%
Load Median Error	0.21%	-1.33%
Paired t conc	0.58	0.49
Paired t load	0.44	0.30

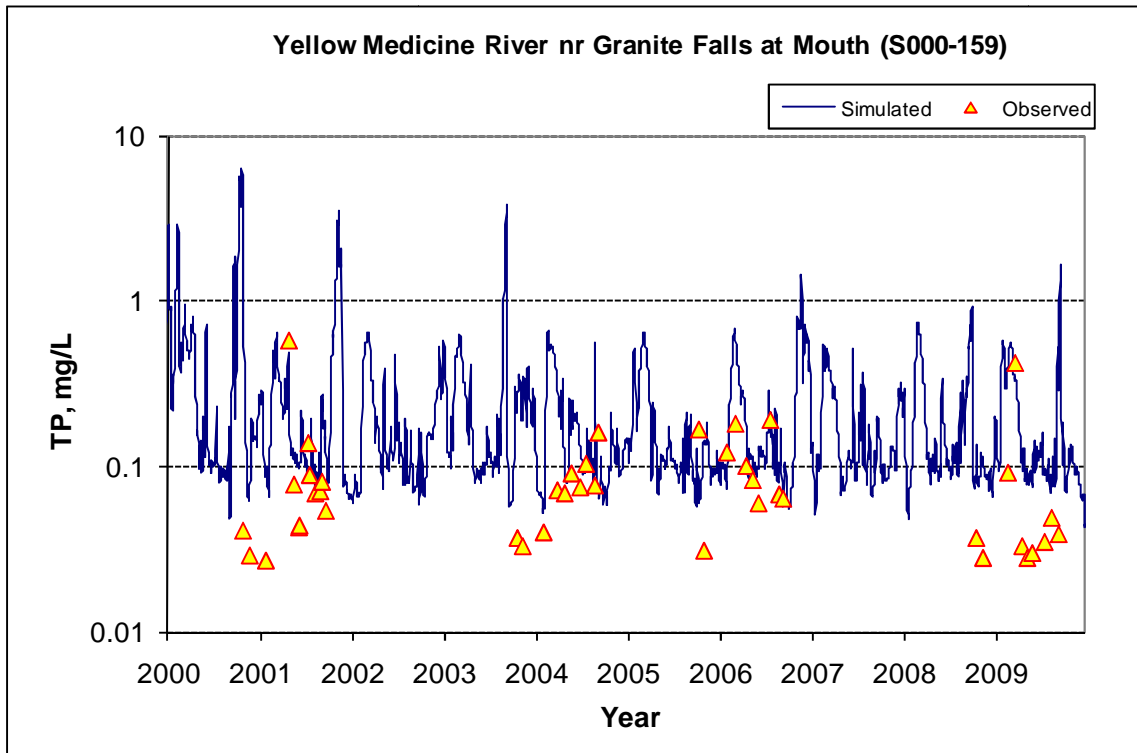
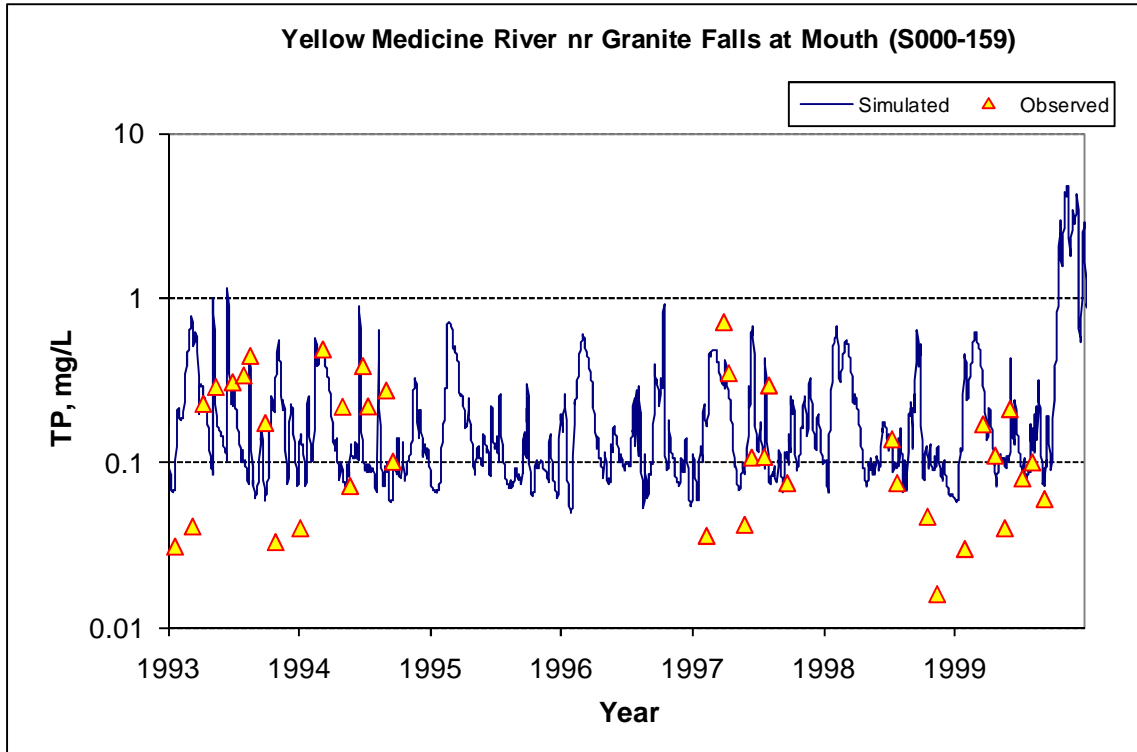




6.2 TOTAL PHOSPHORUS

Parameter	1993 - 2005	2006 - 2009
Count	62	18
Conc Ave Error	-69.10%	-92.89%
Conc Median Error	-25.66%	-51.99%
Load Ave Error	21.50%	-36.38%
Load Median Error	-0.80%	-6.07%
Paired t conc	0.07	0.02
Paired t load	0.48	0.40





6.3 NITRATE PLUS NITRITE NITROGEN (AS N)

Parameter	1993 - 2005	2006 - 2009
Count	50	17
Conc Ave Error	45.26%	13.31%
Conc Median Error	30.64%	28.83%
Load Ave Error	62.46%	-27.58%
Load Median Error	1.54%	2.66%
Paired t conc	0.04	0.61
Paired t load	0.16	0.41

