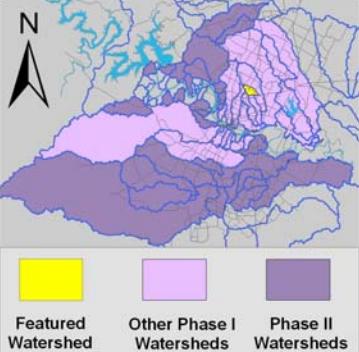


Buttermilk Branch Watershed

Summary Sheet

Catchment	Total area		2 square miles			
	Area in recharge		none			
	Creek length		2 miles			
	Receiving water		Little Walnut			
Demographics	2000 population		10,533			
	2030 projected population		11,661			
	30 year projected % increase		11 %			
Land Use	Impervious cover (2003 estimate)		49.57 %			
Overall EII Scores	2000	2003	2006	2009	2011	
	64	54	55	48	42	

Flow Regime* for Sample Sites on Buttermilk Branch Upstream to Downstream

Site #	Site Name	2003						2006						2009						2010			
		Feb	Mar	Mar	May	Sep	Dec	Feb	May	Jul	Aug	Nov	Feb	May	Jun	Oct	Dec	Dec	Mar	Jun	Jun	Sep	
		WQ	WQ	Bio	WQ	WQ	WQ	WQ	WQ	Bio	WQ	WQ	WQ	WQ	WQ	WQ	WQ	WQ	WQ	WQ	WQ	WQ	WQ
3861	VCC							B	B	B	B	B	n	B	B	B	B	B	B	n	n	n	
782	Providence	B	B	B	B	B	n	n	B	B	n	n	n	n	n	n	B	n	n	n	n	n	
783	Cameron Rd	B	B	B	B	B																	
851	LWA	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	

* B = baseflow n = no flow S = storm flow blue = Samples were taken grey = Samples were not taken blank = not visited

Summary of 2011 Data for Buttermilk Branch

summary	Parameter	Mean	Max	Min	Discussion
Physicochemical	D.O. mg/l	8.7	12.1	4.1	Wide range, some high values downstream, some low values upstream.
	pH st.units	7.89	8.48	7.4	Some high values downstream, some low values upstream.
	Cond uS/cm	632	751	449	Within normal range. upstream generally higher.
Nutrients	NH ₃ mg/l	0.015	0.033	0.008	Within normal range.
	NO ₃ mg/l	0.817	2.410	0.008	Within normal range, above average values upstream.
	Ortho P mg/l	0.060	0.110	0.020	Within normal range.
Sediment Load	TSS mg/l	0.8	1.4	0.5	Within normal range, generally below average.
	Turbidity ntu	2.23	3.63	1.10	Within normal range.
Biology	E.Coli /100ml	473	1046	219	Mostly within normal range, some high values at site 851.
	Benthic Macroinvertebrates and Diatoms: evaluations are provided in the introduction of this report				

Index scores* for Buttermilk Branch Sites by Year

Reach	Site	Site Name			Year	Water Quality	Sediment*	Contact Recreation	Non-Contact Rec.	Physical Integrity	Aquatic Life	Benthic subindex	Diatom subindex	Total EII Score
BMK1	783	Buttermilk Creek @ Cameron Road	2000	60	91	79	69	36	51	53	48	64		
BMK1	851	Buttermilk Creek @ Little Walnut Cr	2000	67	91	78	78	41	68	84	51	71		
BMK2	782	Buttermilk Creek @ Providence Ave	2000	56	91	76	72	31	20	35	4	58		
BMK3	852	Buttermilk Creek @ Chevy Chase Rd	2000		91		83	31	29	35	23	59		
BMK1	783	Buttermilk Creek @ Cameron Road	2003	47	70	65	54	51	55	31	78	57		
BMK1	851	Buttermilk Creek @ Little Walnut Cr	2003	61	70	33	58	42	48		48	52		
BMK2	782	Buttermilk Creek @ Providence Ave	2003	53	70	58	60	40	29	24	33	52		
BMK1	851	Buttermilk Creek @ Little Walnut Creek	2006	60	70	31	77	53	75	69	80	61		
BMK2	782	Buttermilk Creek @ Providence Ave	2006	51	70	34	78	46	56	52	59	56		
BMK3	3861	Buttermilk Creek @ Victory Christian Ctr.	2006	37	70	25	71	53	36	22	49	49		
BMK1	851	Buttermilk Creek @ Little Walnut Creek	2009	71	61	27	57	39	92	99	84	58		
BMK2	782	Buttermilk Creek @ Providence Ave	2009	56	61	25	47	37				38		
BMK3	3861	Buttermilk Creek @ Victory Christian Ctr.	2009	50	61	25	63	42	53	28	77	49		
BMK1	851	Buttermilk Creek @ Little Walnut Cr	2011	67	68	35	43	31	69	70	67	52		
BMK2	782	Buttermilk Creek @ Providence Ave	2011		68		43	33				36		
BMK3	3861	Buttermilk Creek @ Victory Christian Ctr.	2011	51	68	28	32	31				35		

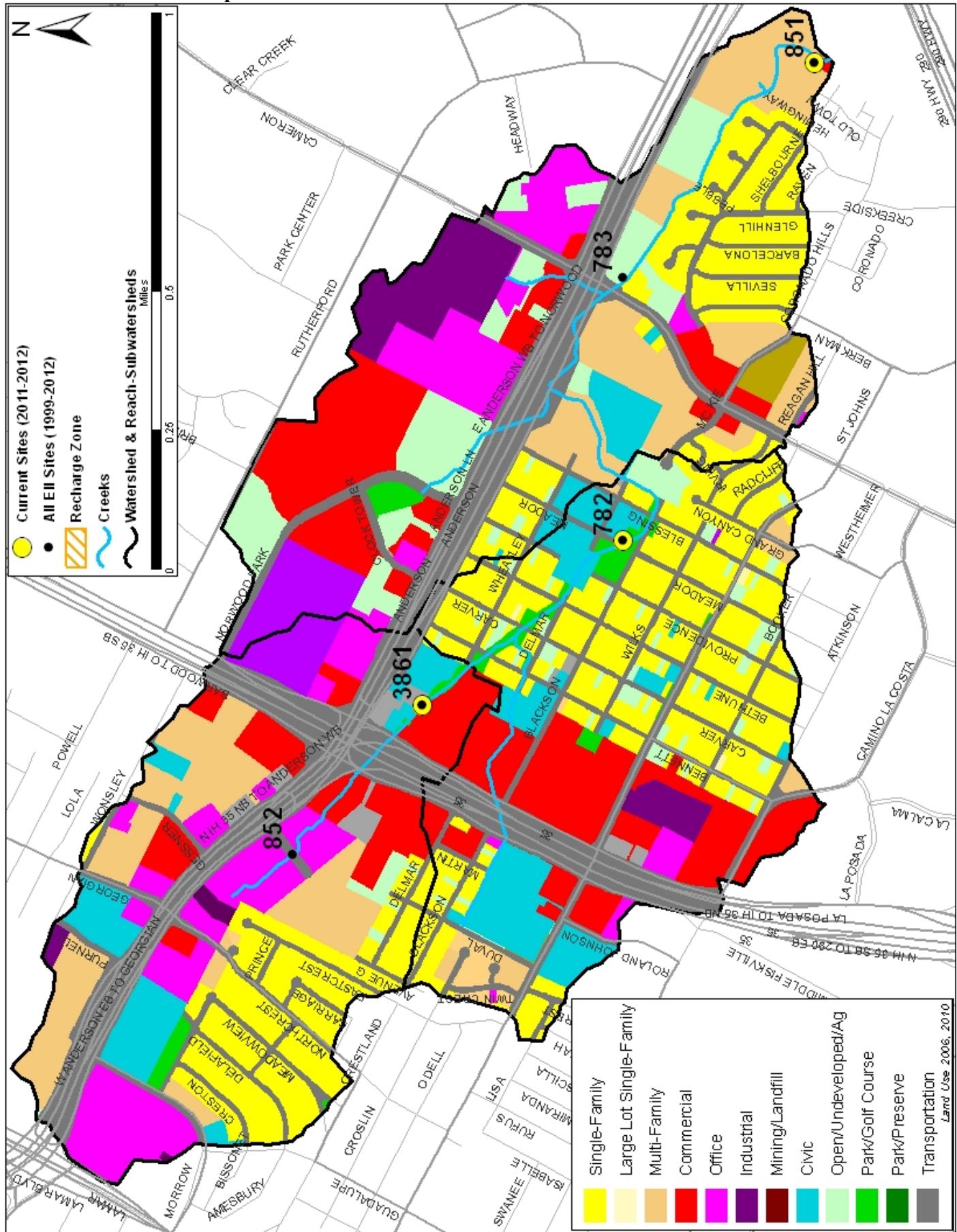
* blank cells indicate parameter was not collected, blank row indicate site was dropped

**sediment samples only collected at the downstream site

■ 100-87.5 Excellent ■ 87.5-75 V. Good ■ 75-62.5 Good ■ 62.5-50 Fair ■ 50-37.5 Marginal ■ 37.5-25 Poor ■ 25-12.5 Bad ■ 12.5-0 V. Bad

Buttermilk Branch Watershed

Land Use Map



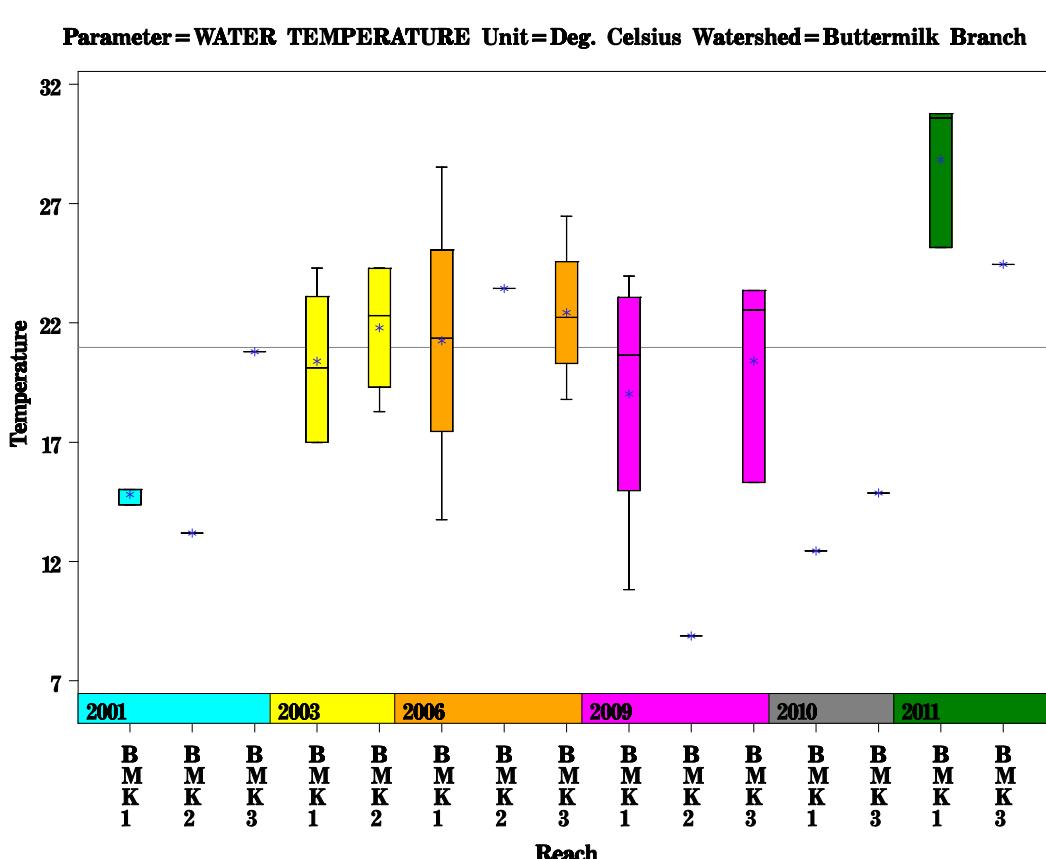
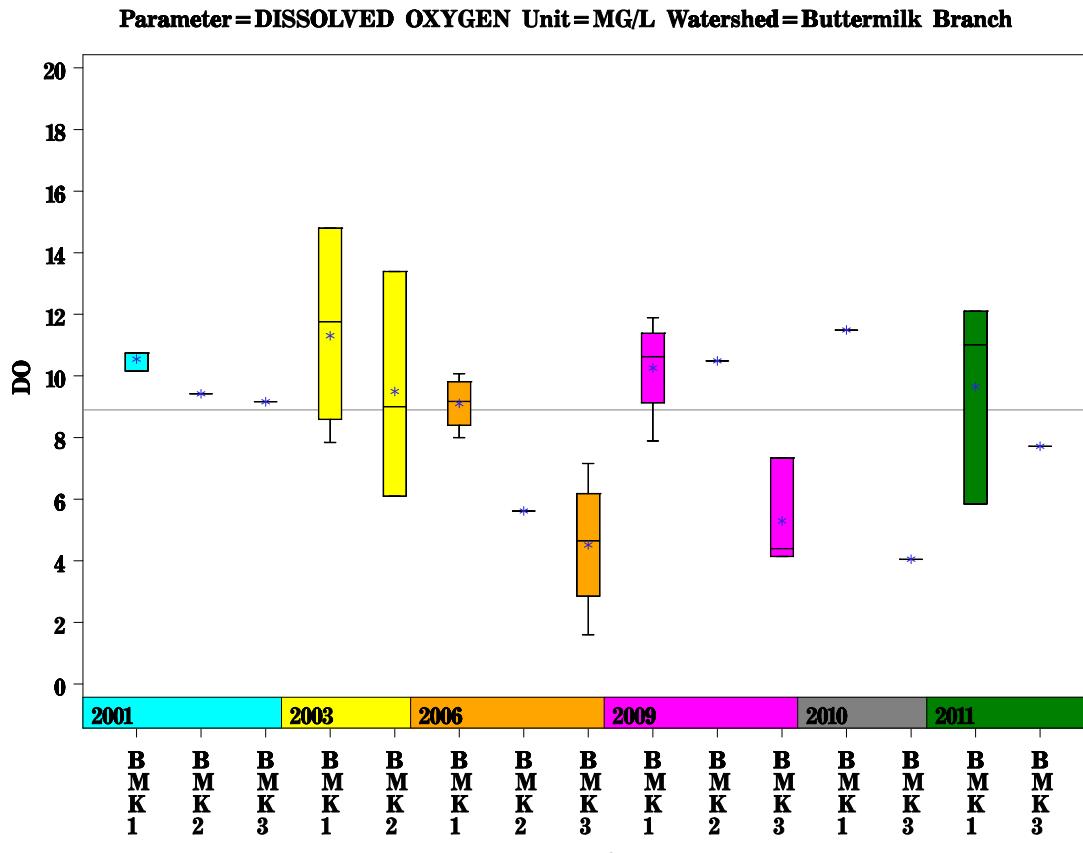
Buttermilk Branch Watershed

Aerial Map



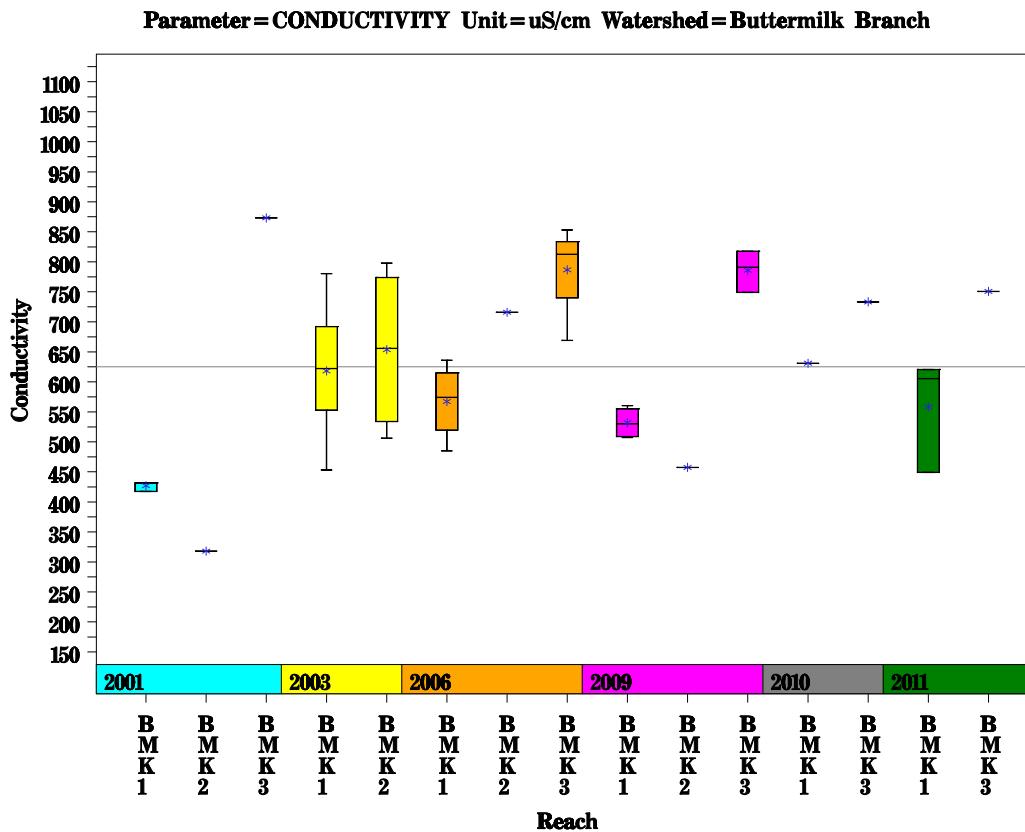
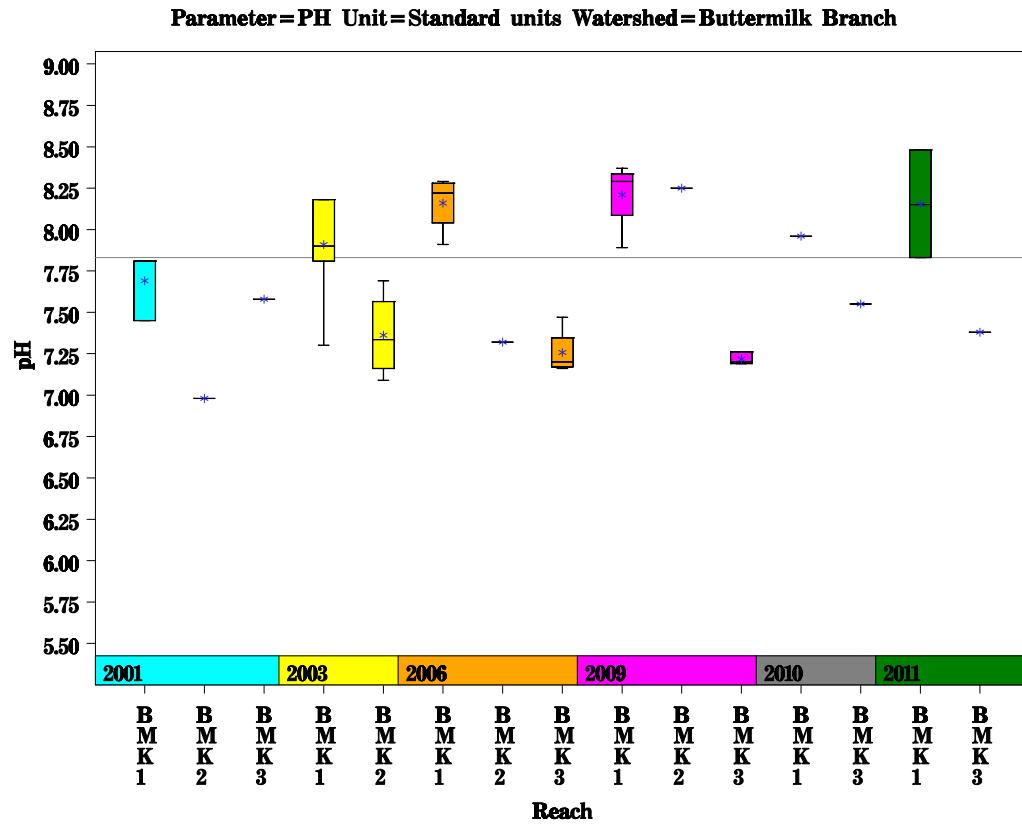
Buttermilk Branch Watershed

Data Summary Graphs – Dissolved Oxygen and Temperature (Downstream to Upstream by Year)



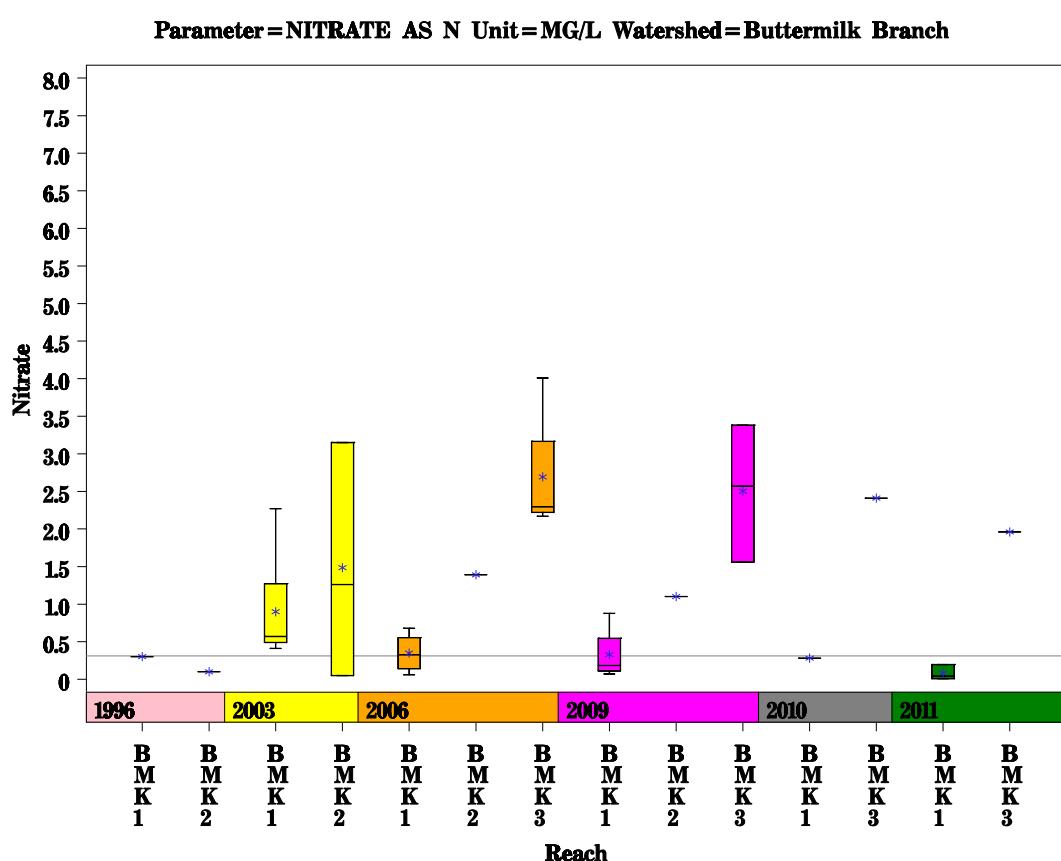
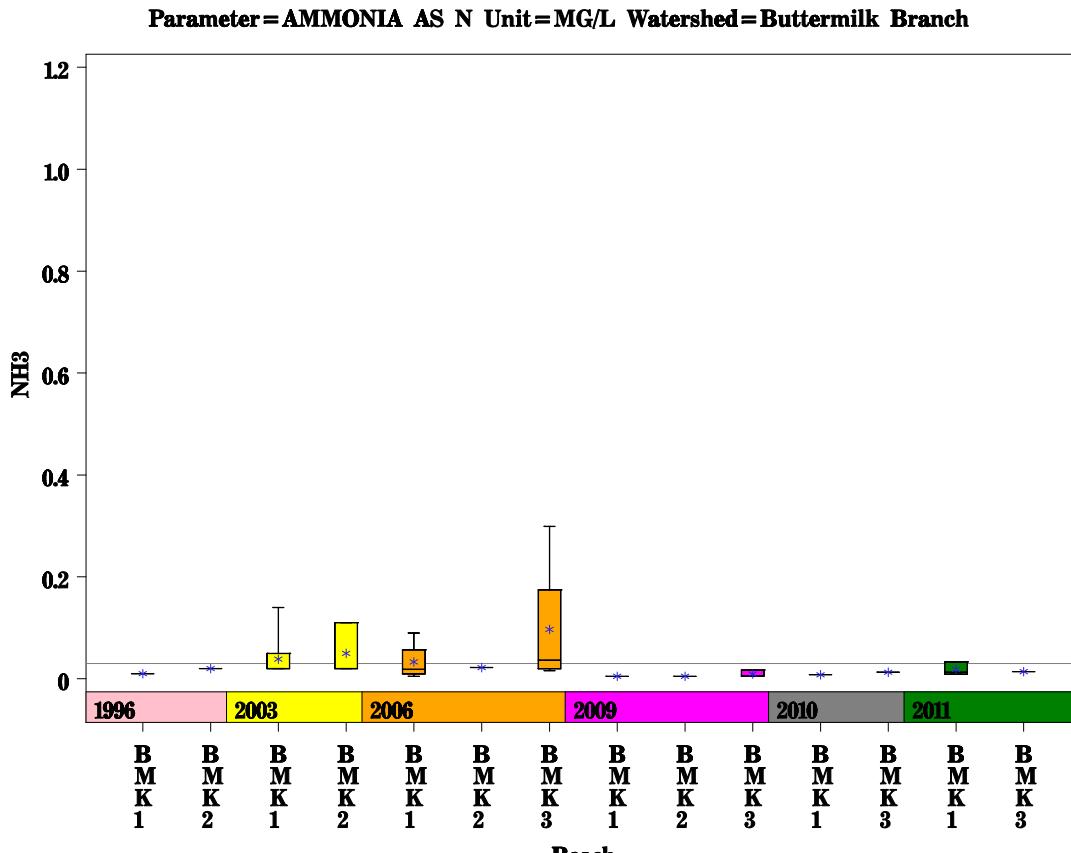
Buttermilk Branch Watershed

Data Summary Graphs – pH and Conductivity (Downstream to Upstream by Year)



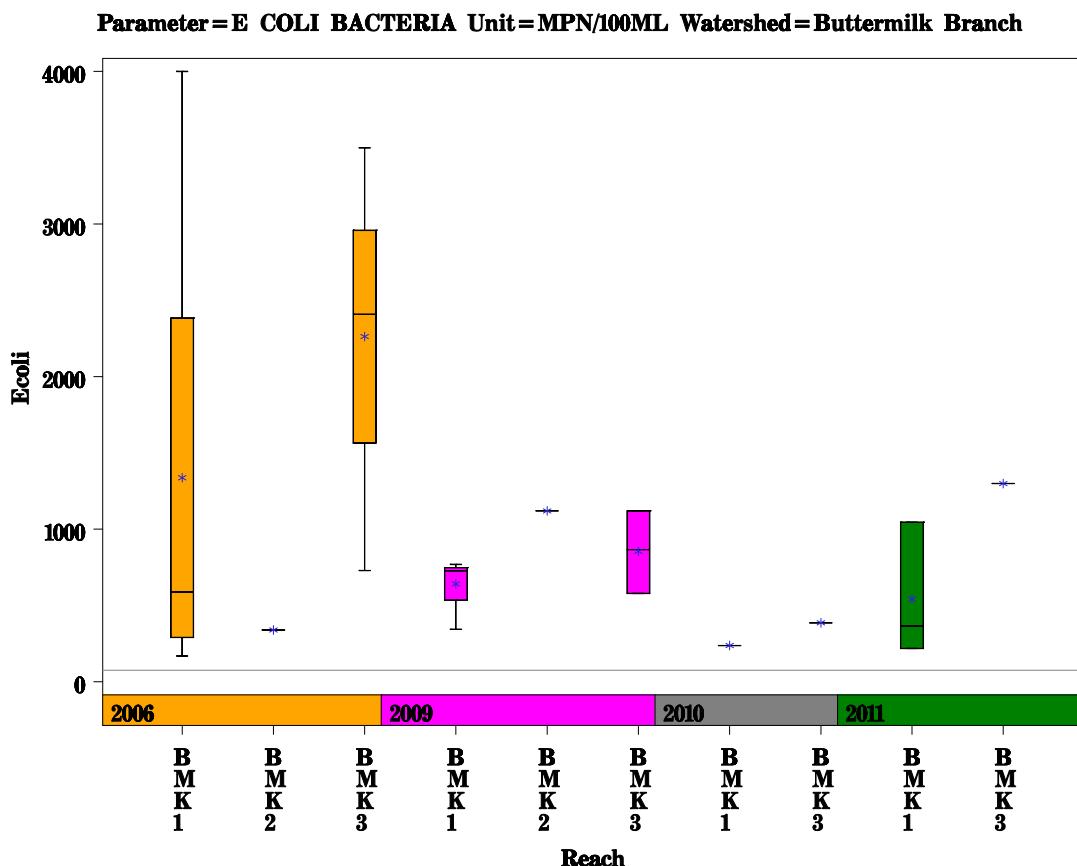
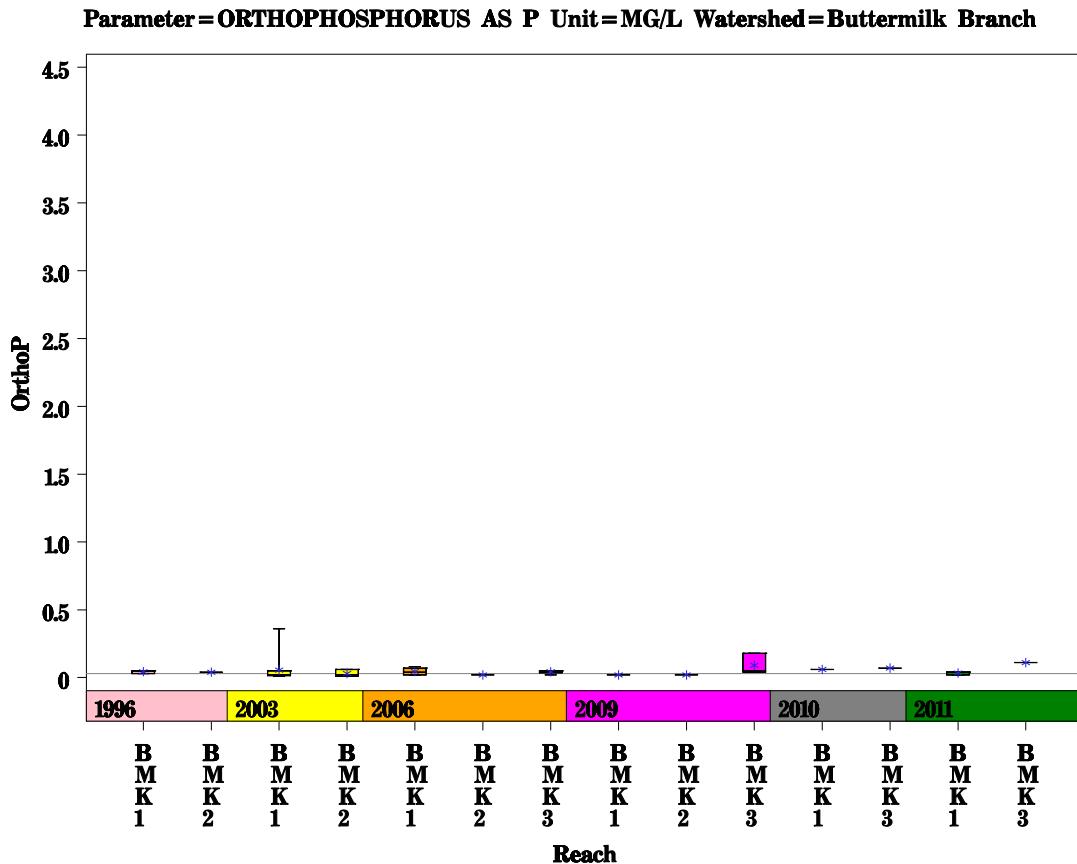
Buttermilk Branch Watershed

Data Summary Graphs – Ammonia and Nitrate/Nitrite (Downstream to Upstream by Year)



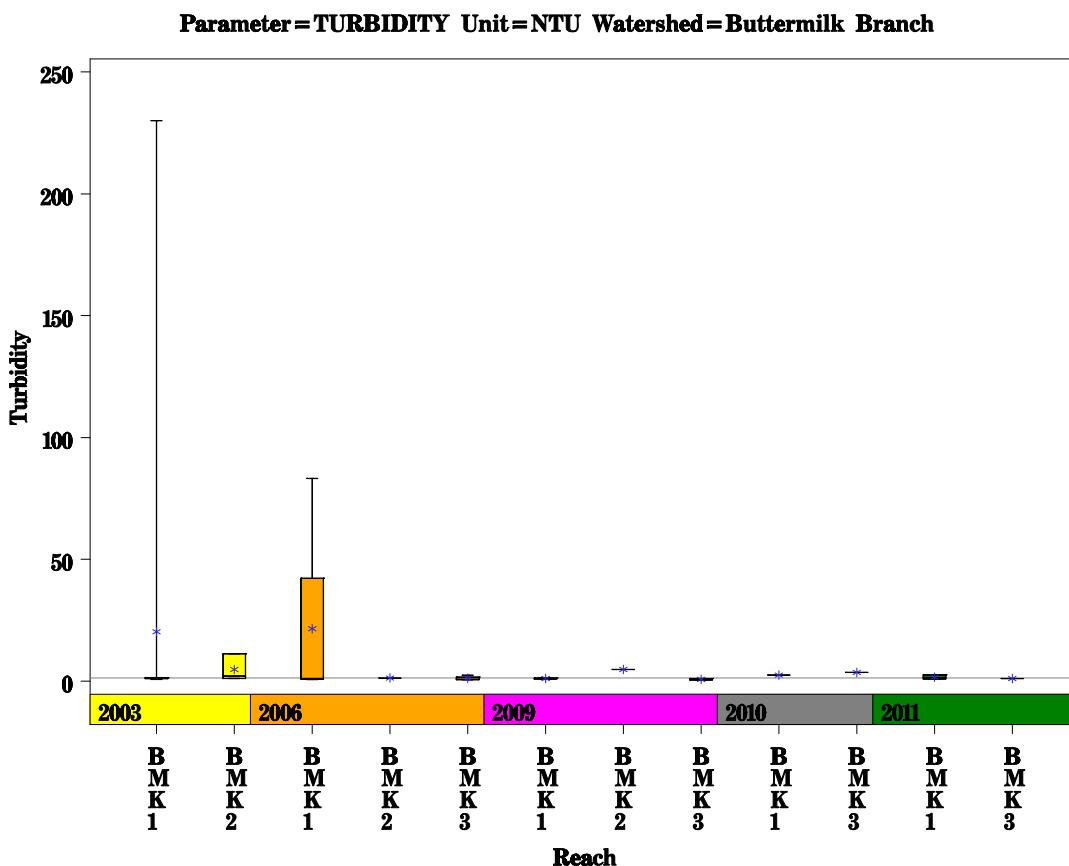
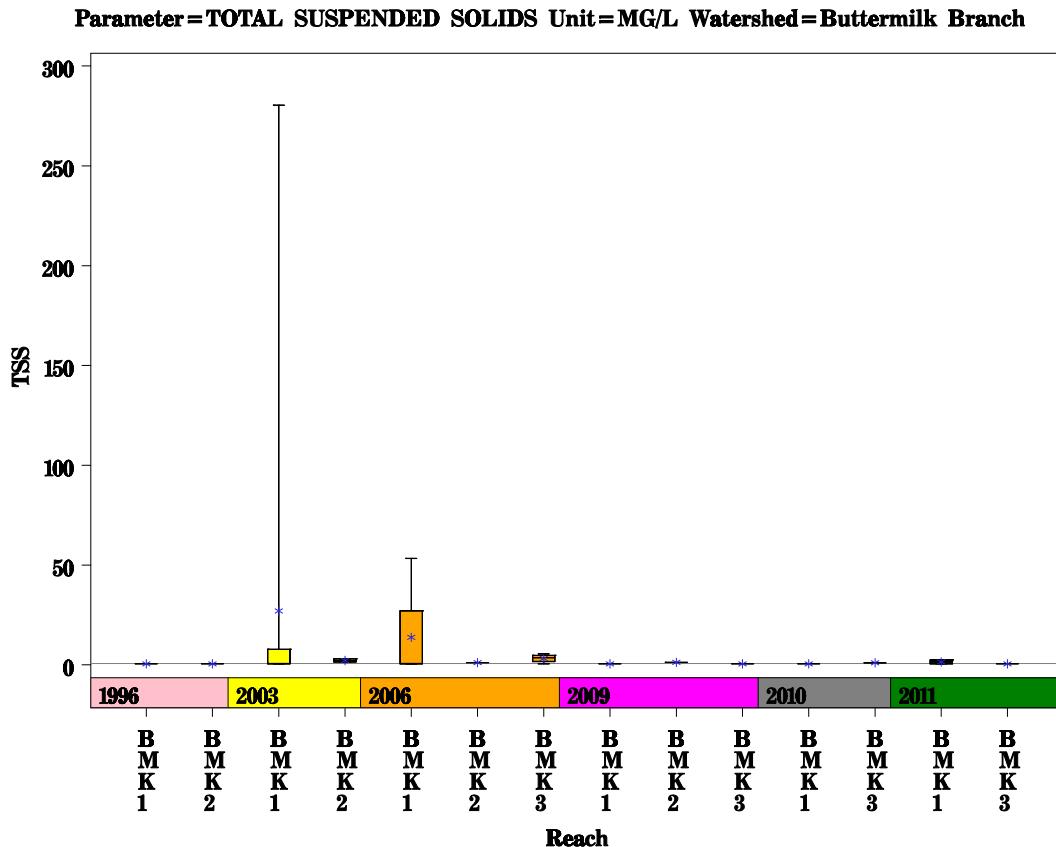
Buttermilk Branch Watershed

Data Summary Graphs – Orthophosphate and *E.coli* (Downstream to Upstream by Year)



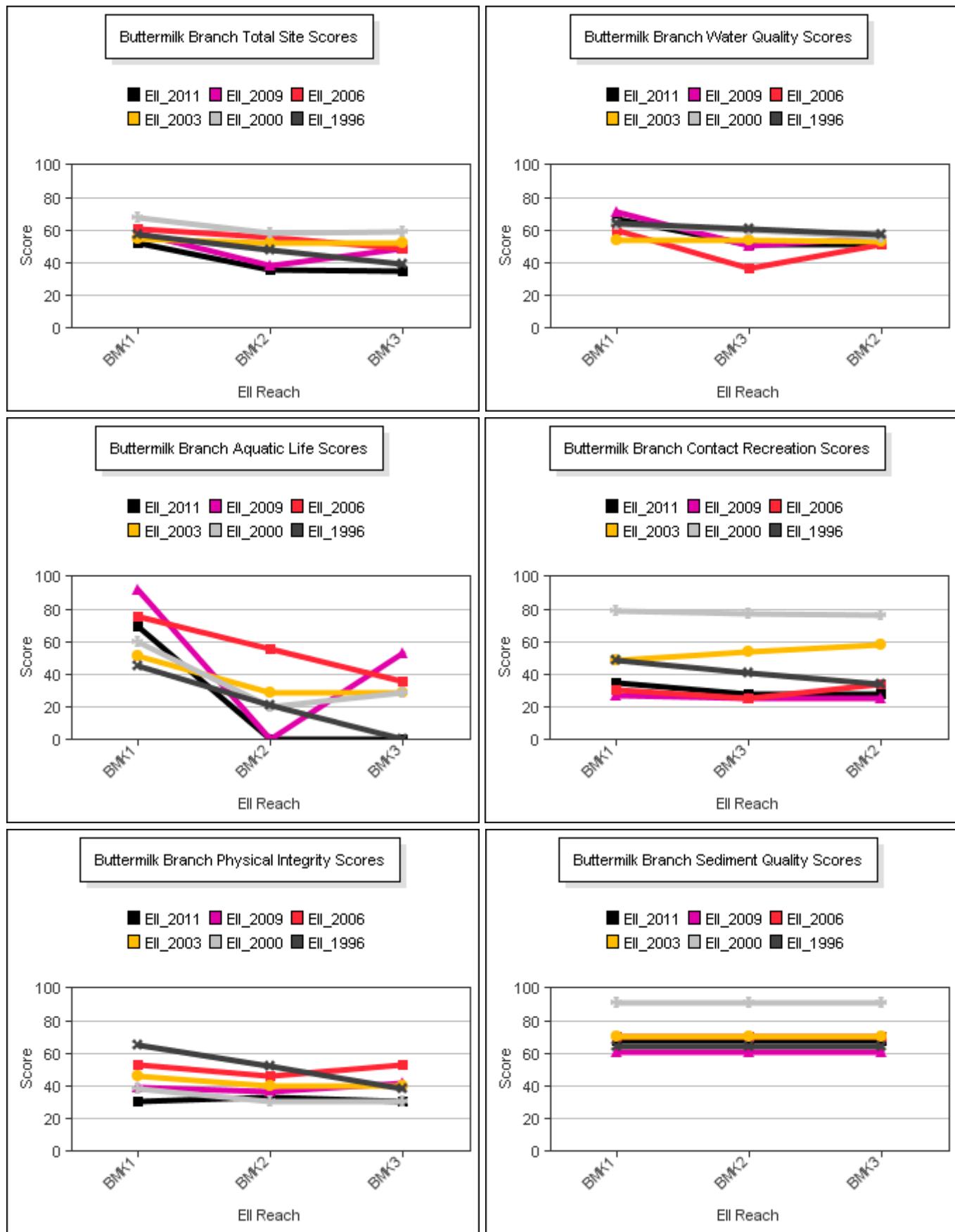
Buttermilk Branch Watershed

Data Summary Graphs – Total Suspended Solids and Turbidity (Downstream to Upstream by Year)



Buttermilk Branch Watershed

Score Summary – Reach scores for each sample year



Buttermilk Branch Watershed

Site Photographs



782_t00-ds-02_16_2001



782_t00-us-07_05_2006



782_t00-ds-07_05_2006



782-t00-dr-06-03-2009



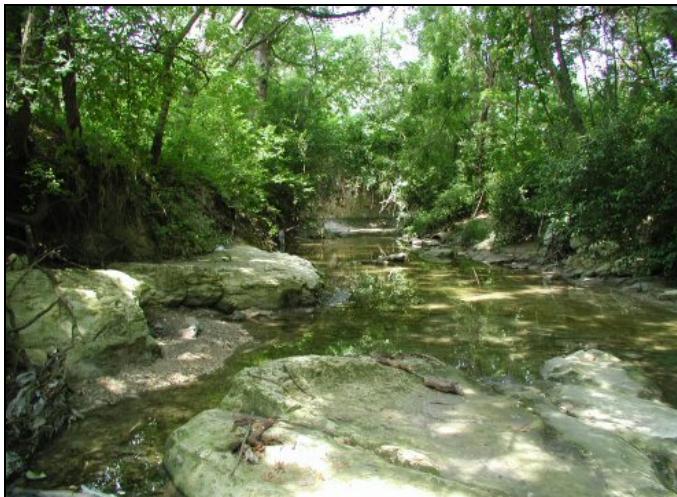
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783_t00-us-02_19_2003

Buttermilk Creek Watershed

Site Photographs



851_t00-us-05_14_2003



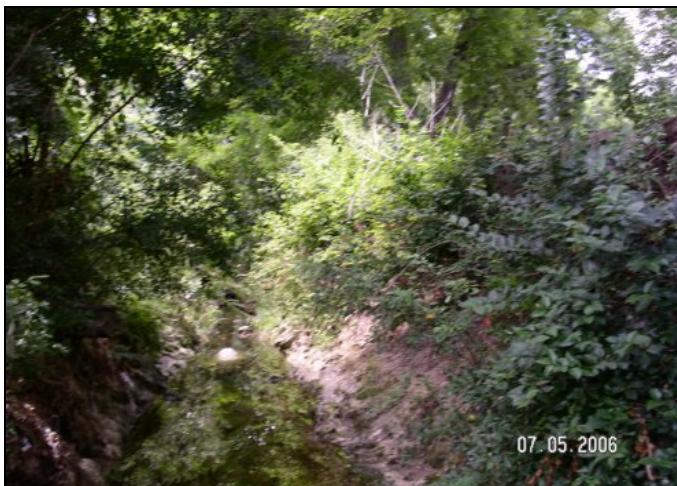
851-t00-ds-06-02-2009



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852_t00-ds-02_15_2001



07.05.2006

3861_t00-ds-07_05_2006



3861-t00-us-06-03-2009

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