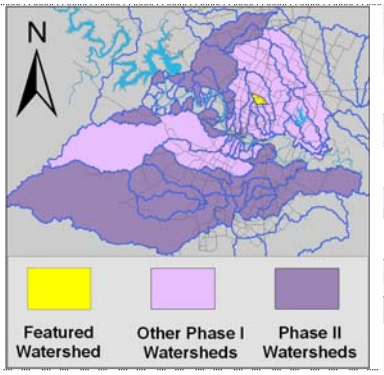
Buttermilk Creek Watershed

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
	64	54	55	48



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

Site upstream to downstream	Site Name	2003					2006					2009				
		Feb WQ	Mar Bio	May WQ	Sep WQ	Dec WQ	Feb WQ	May WQ	Jul Bio	Aug WQ	Nov WQ	Feb WQ	Jun WQ	Jun-Jul Bio	Oct WQ	Dec WQ
3861	BMK at VCC						B	B	B	B	B	n	B	B	B	B
782	BMK at Providence	B	B	B	B	n	n	B	B	n	n	n	n	n	n	B
783	BMK at Cameron	B	B	B	B	B										
851	BMK at L. Walnut	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 2009 Data for Buttermilk Creek

2009 summary	Parameter	Mean	Max	Min	Discussion
Physicochemical	**D.O.** mg/l	8.7	11.9	4.1	Wide range of highs and lows. Downstream site higher than headwater
	pH st.units	7.9	8.4	7.2	Downstream site typically higher in pH than headwater site
	Cond uS/cm	592	817	458	Within normal range. Downstream site generally lower than headwater
Nutrients	**NH_3** mg/l	0.01	0.017	0.005	Within normal range. Downstream site generally lower than headwater
	NO_3 mg/l	1.31	3.38	0.07	Elevated concentrations. Downstream site generally lower than headwater
	Ortho P mg/l	0.04	0.18	0.02	Within normal range, no apparent trends
Sediment Load	**TSS** mg/l	0.8	1.3	0.5	Generally low, with some high values in the past decade
	Turbidity ntu	2.2	4.8	0.5	Generally low, with some high values in the past decade
Biology	**E.Coli** /100ml	872	1120	344	Elevated. Generally high or above average concentrations
	Benthic Macs	Downstream site (851) much more diverse and pollution-intolerant than the upstream site (3861)			
	Diatoms	Generally good for most metrics, however both sites had low Cymbella richness			

Index scores* for Buttermilk Creek Sites by Year

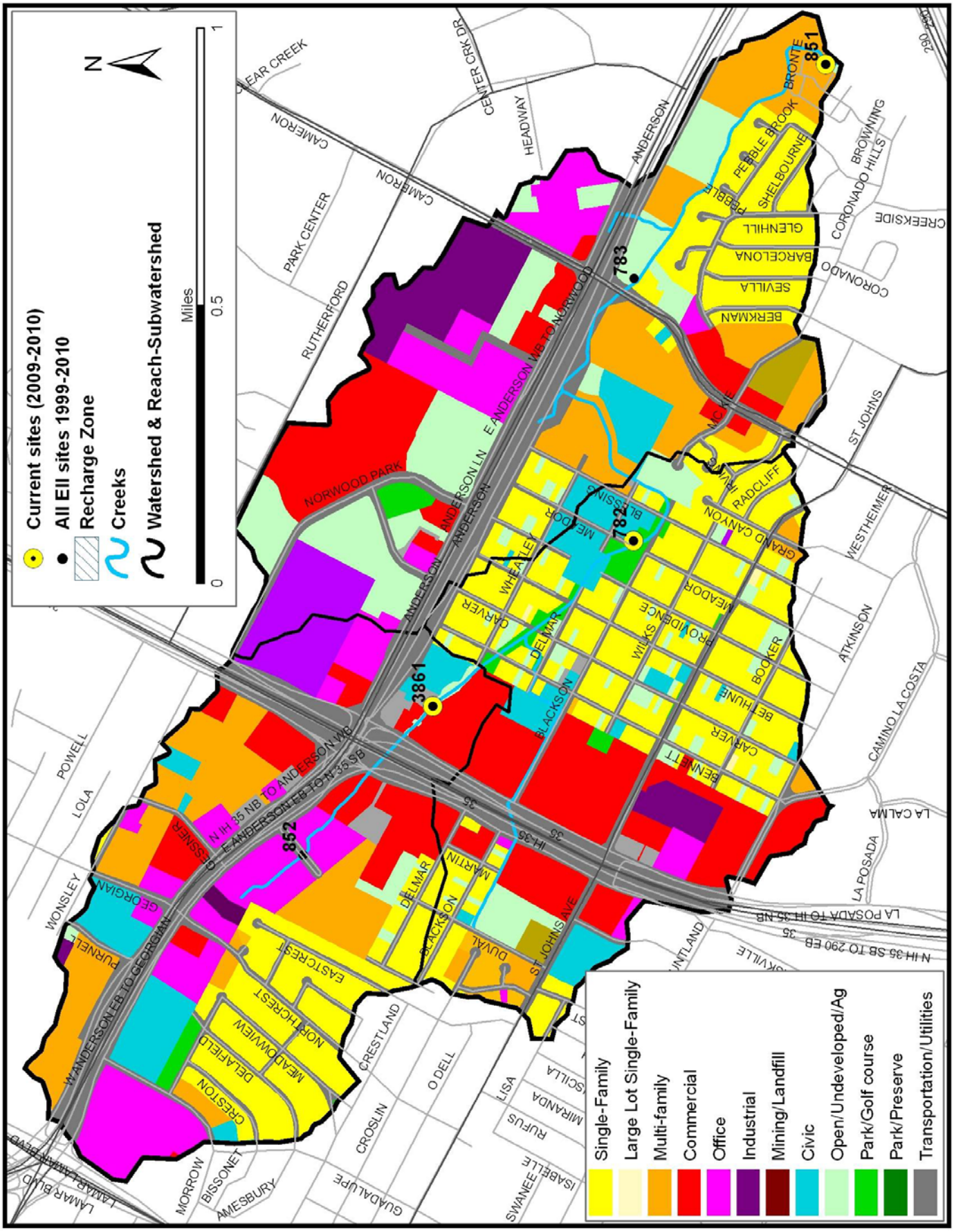
Reach	Site	Site Name	Year	Water Quality	Sediment**	Contact Recreation	Non-Contact Recreation	Physical Integrity	Aquatic Life	Benthic subindex	Diatom subindex	Total EII Score
BMK1	783	Buttermilk @ Cameron Road	2000	60	91	79	69	36	51	53	48	64
BMK1	851	Buttermilk @ Little Walnut Creek	2000	67	91	78	78	41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

* 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

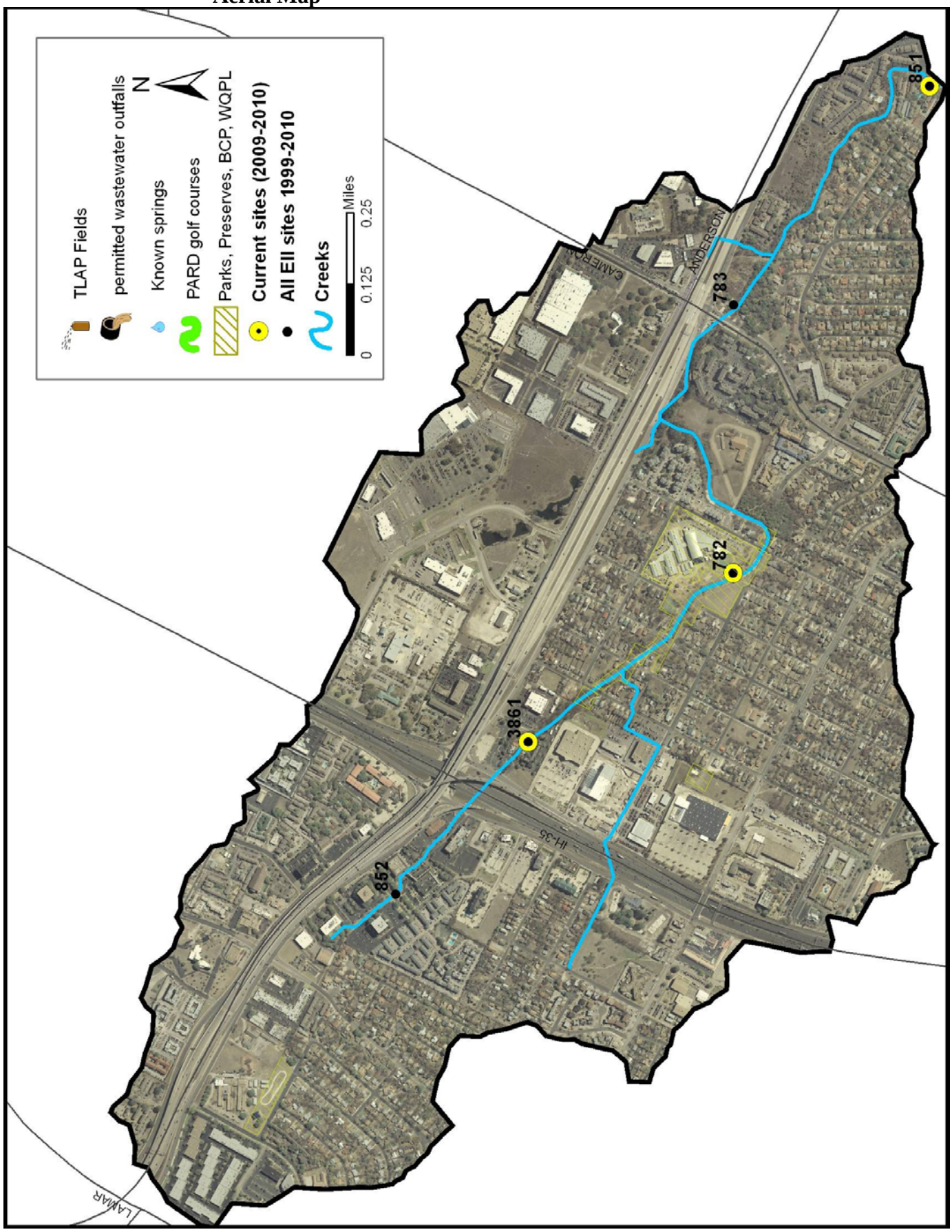
Buttermilk Creek Watershed

Land Use Map



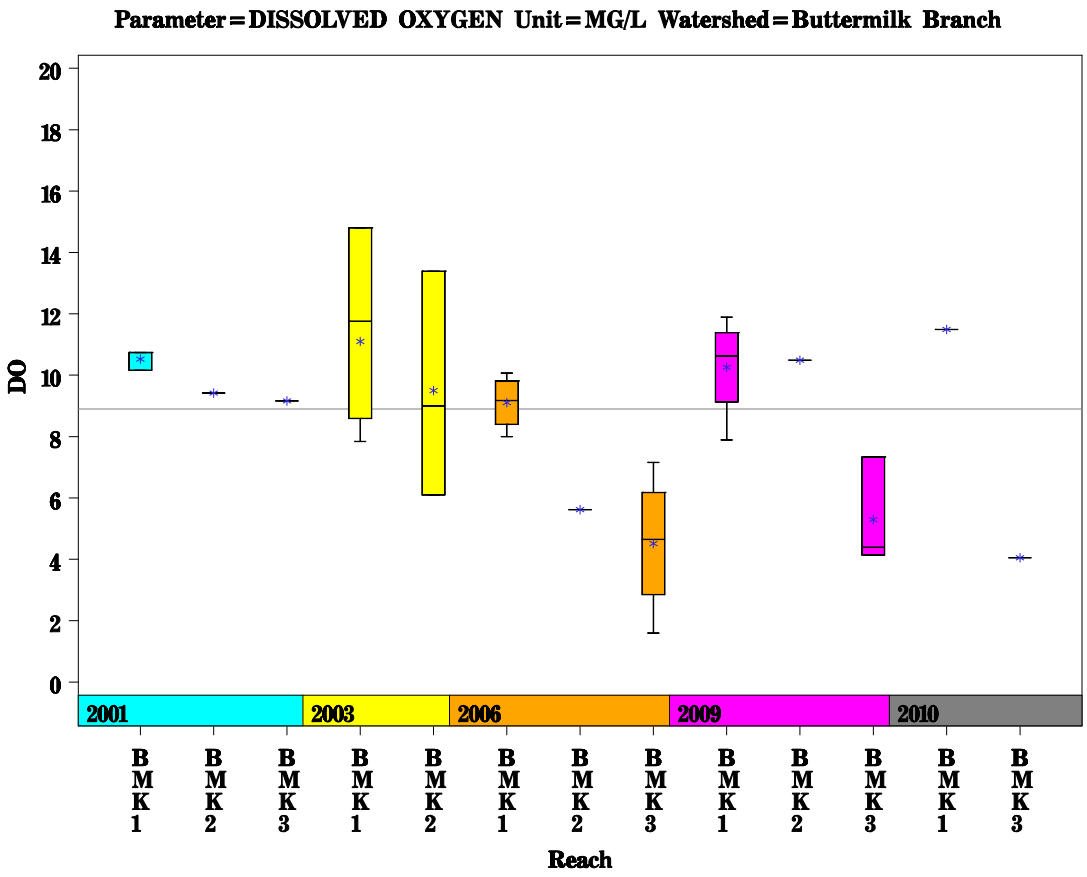
Buttermilk Creek Watershed

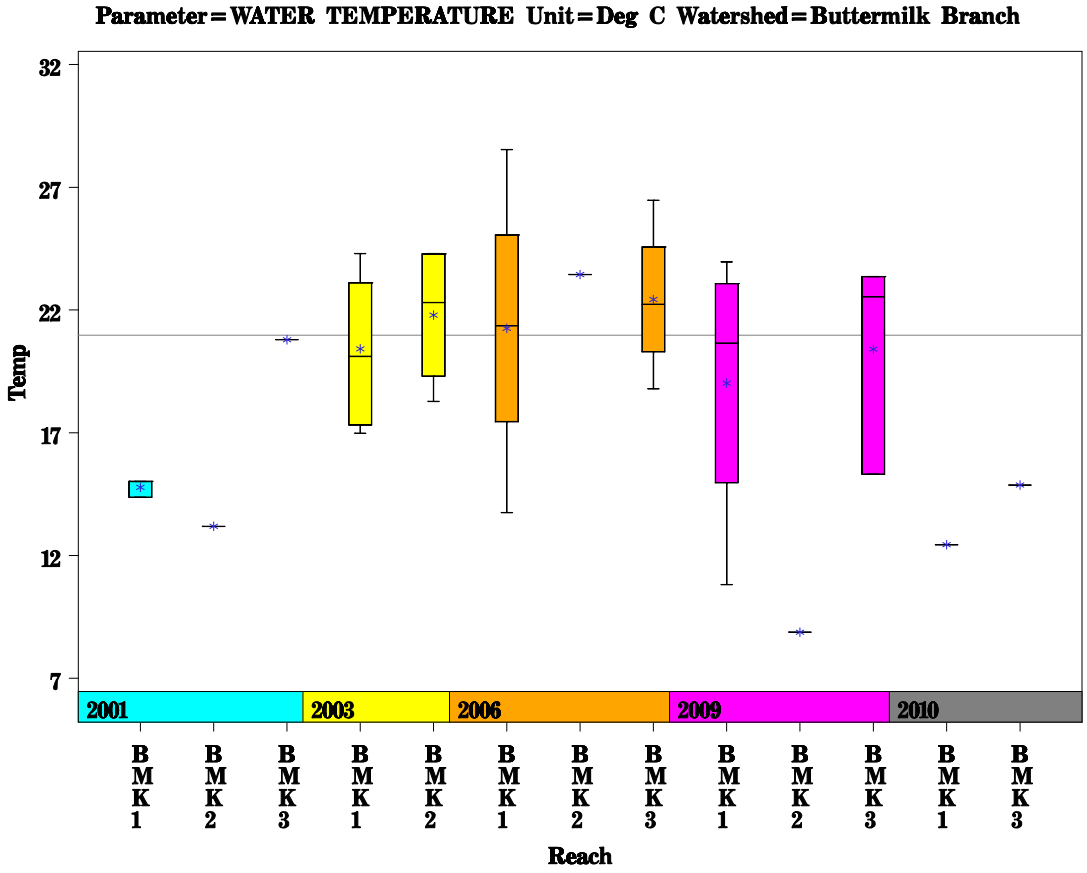
Aerial Map



Buttermilk Creek Watershed

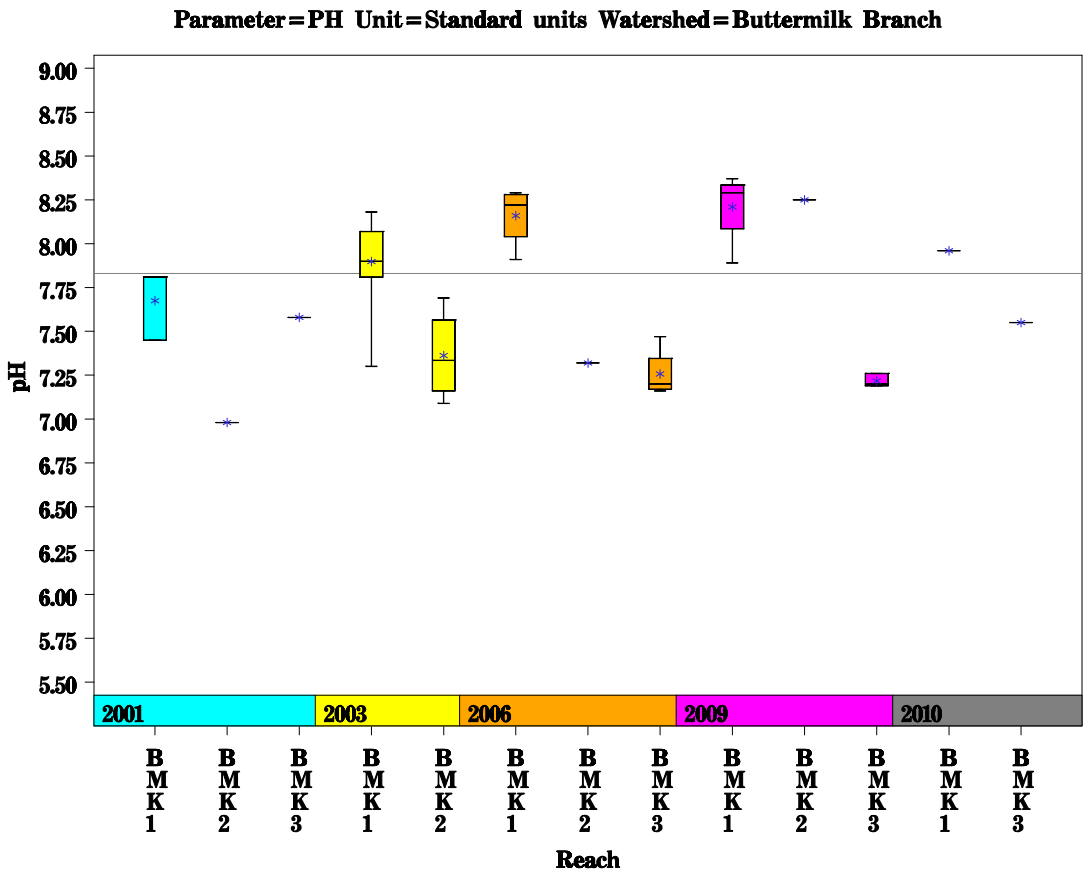
Data Summary Graphs – Dissolved Oxygen and Temperature (Downstream to Upstream by Year)

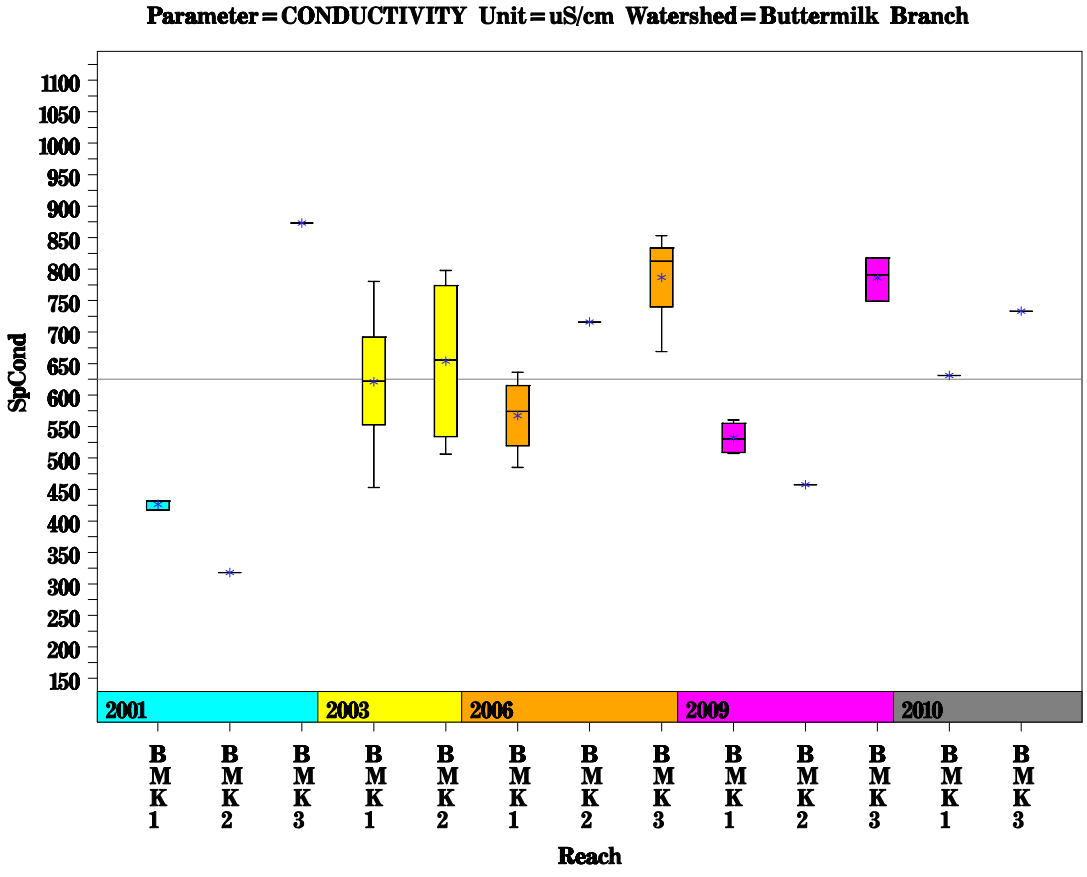




Buttermilk Creek Watershed

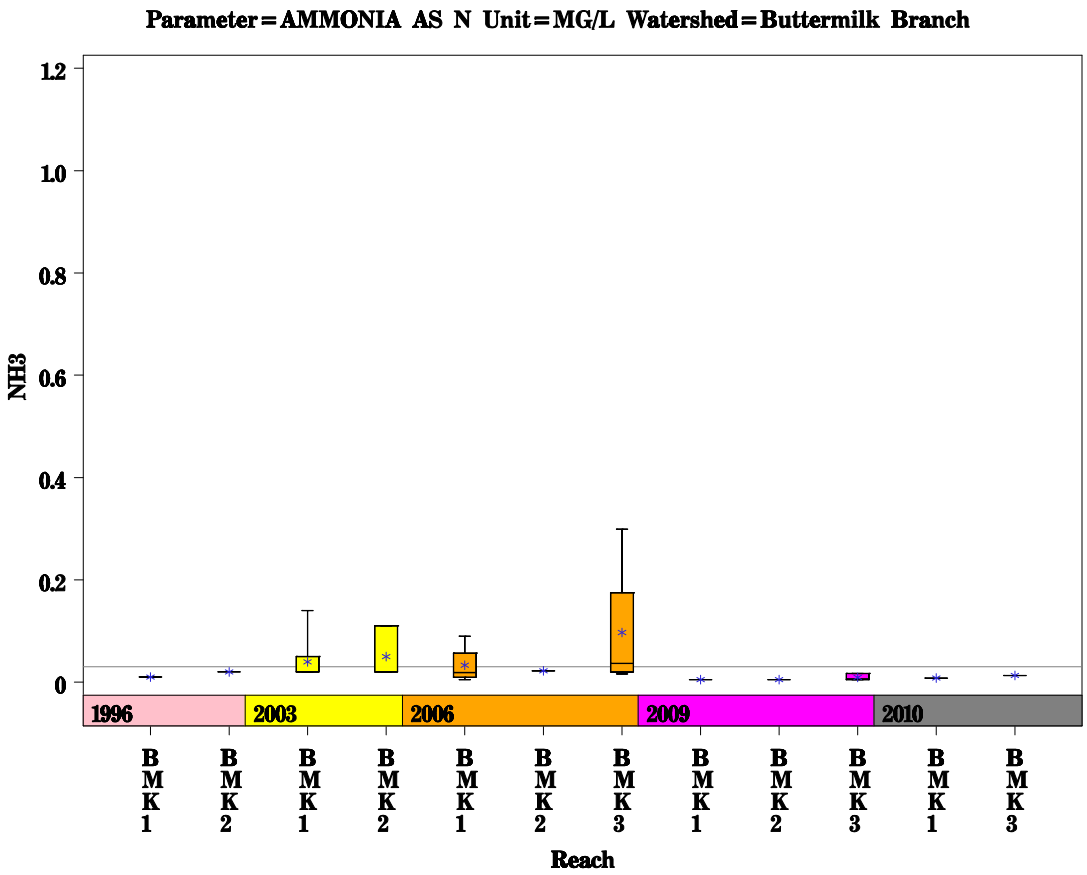
Data Summary Graphs – pH and Conductivity (Downstream to Upstream by Year)

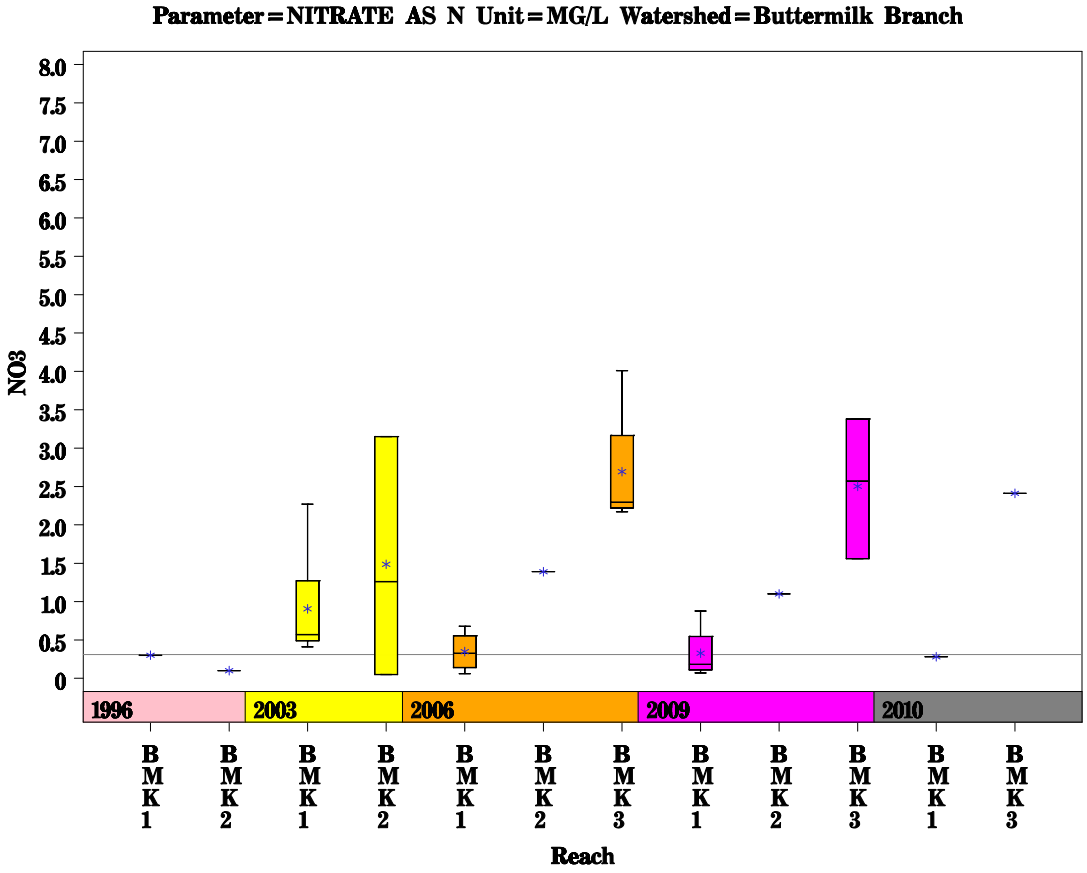




Buttermilk Creek Watershed

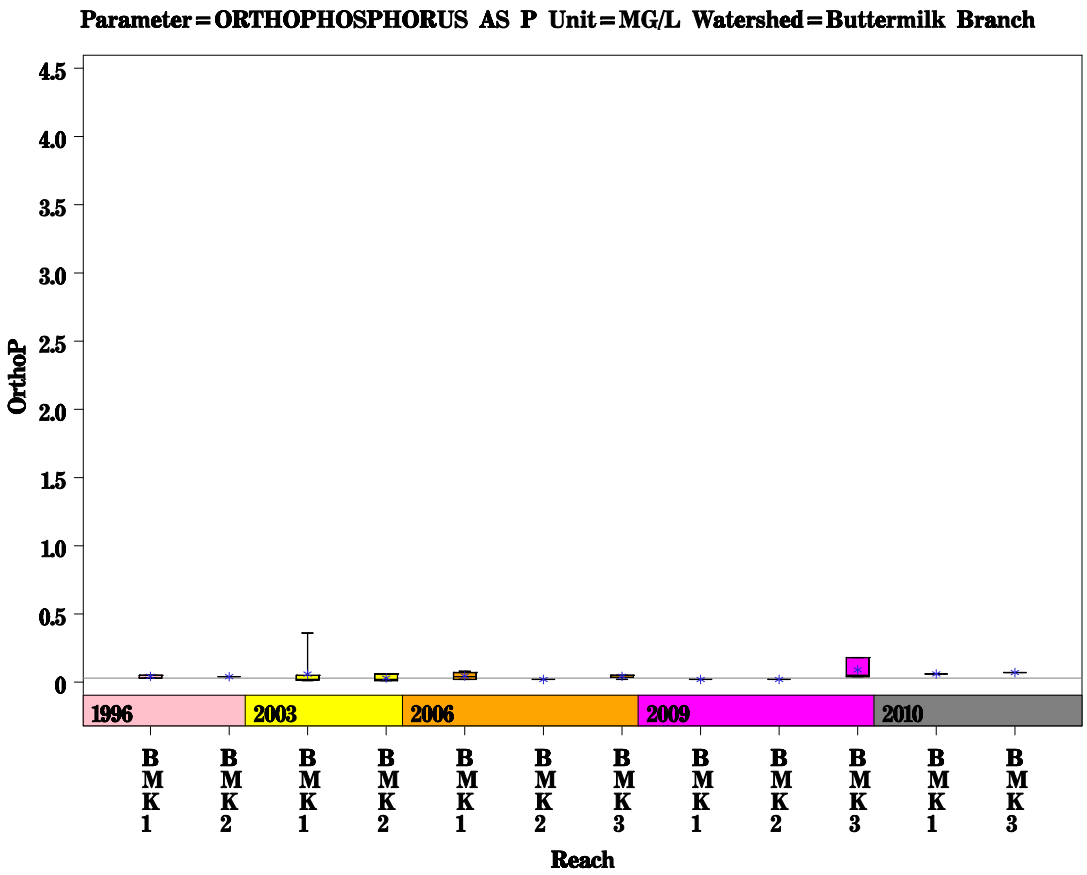
Data Summary Graphs – Ammonia and Nitrate/Nitrite (Downstream to Upstream by Year)

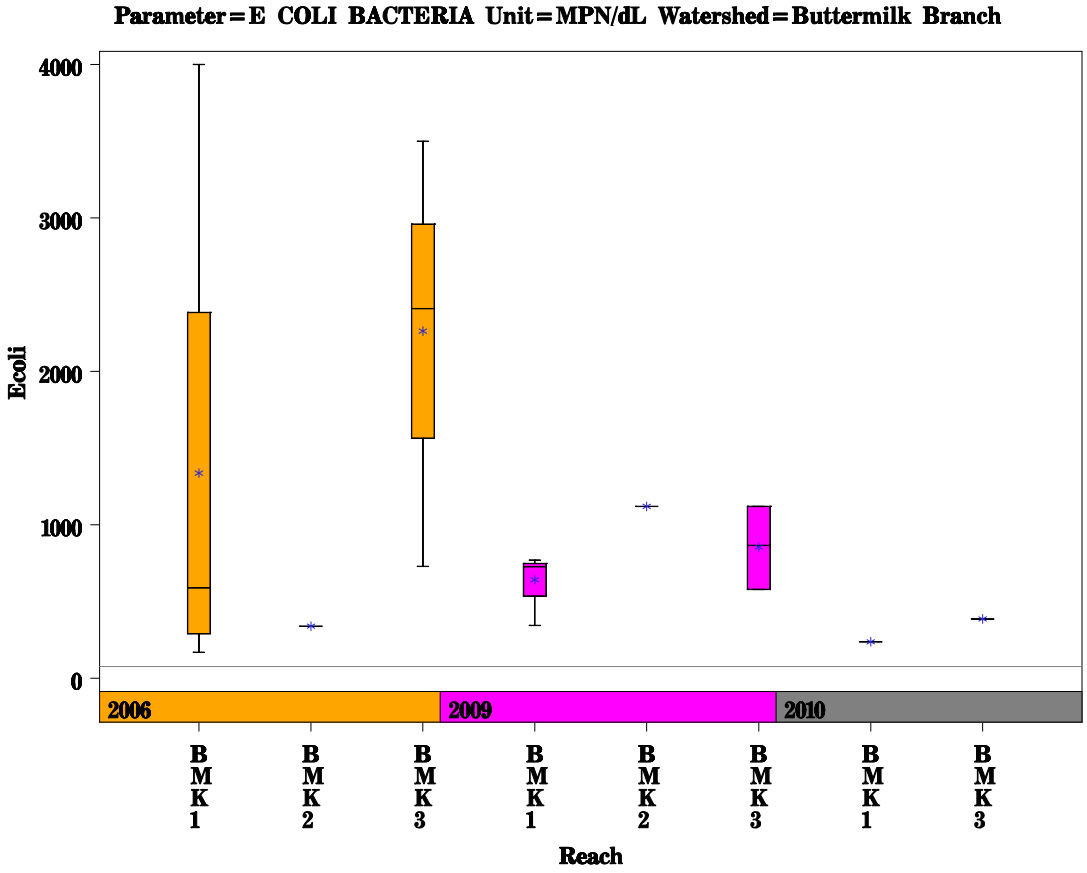




Buttermill Creek Watershed

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

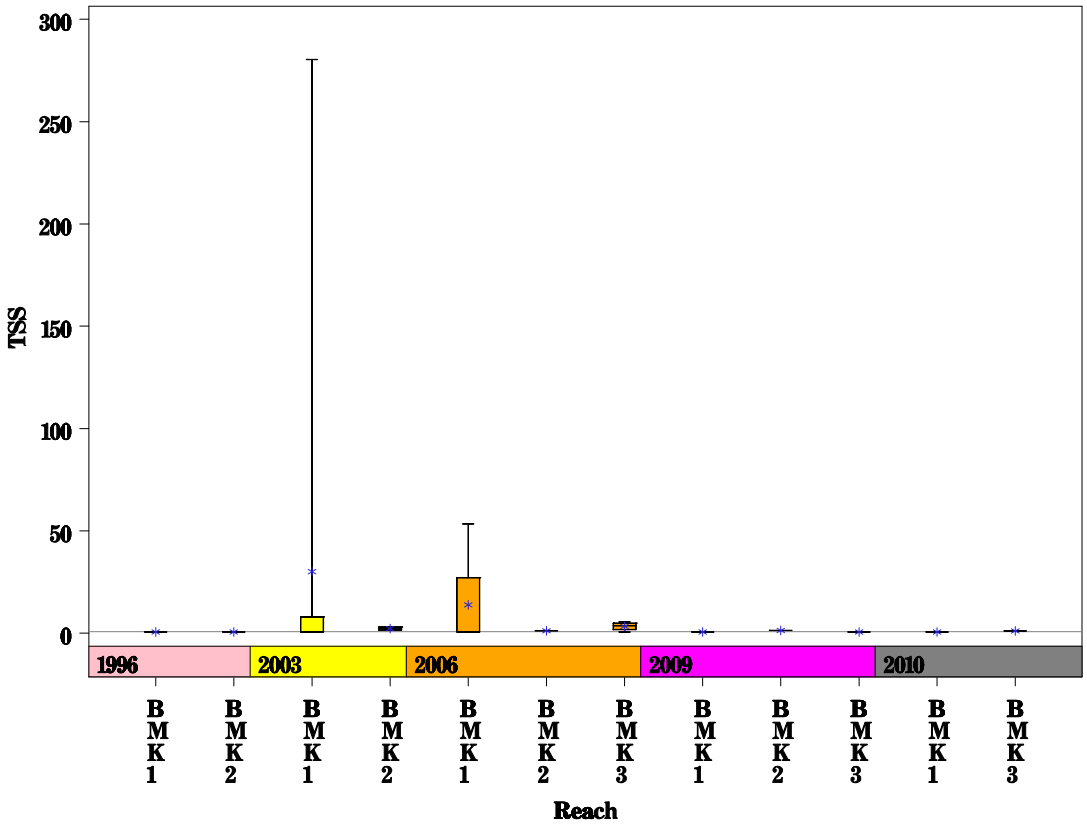




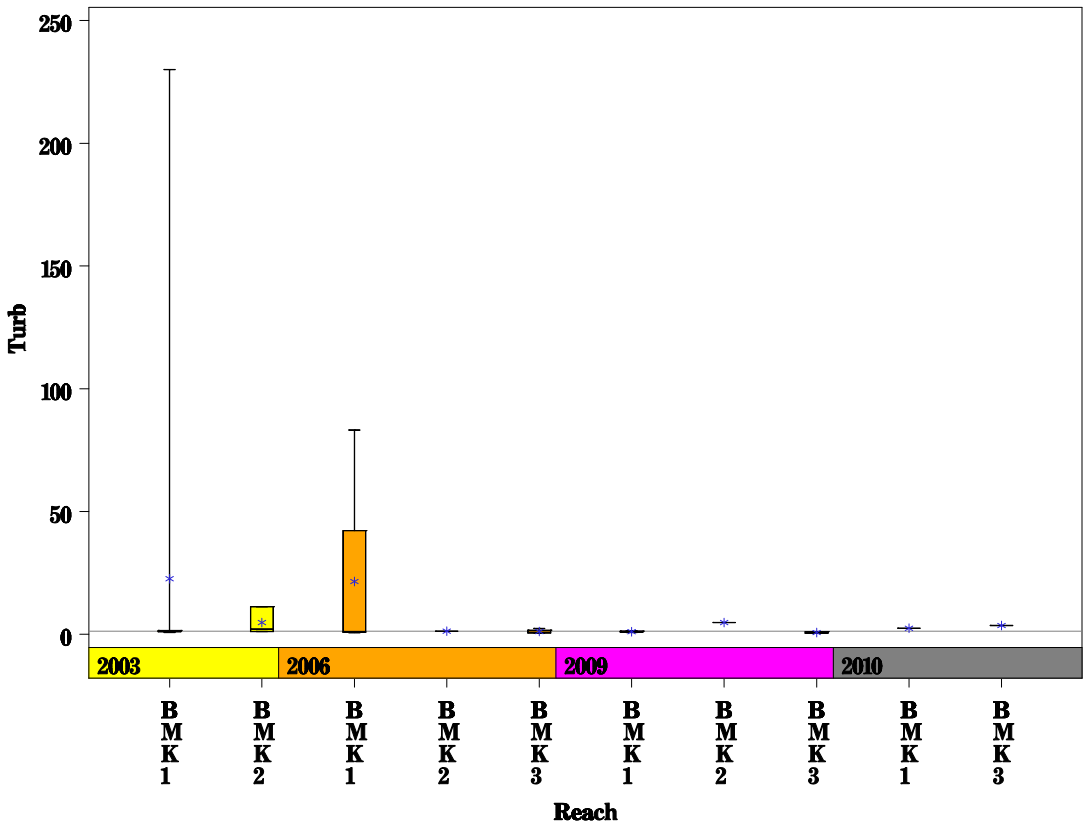
Buttermilk Creek Watershed

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

Parameter = TOTAL SUSPENDED SOLIDS Unit = MG/L Watershed = Buttermilk Branch

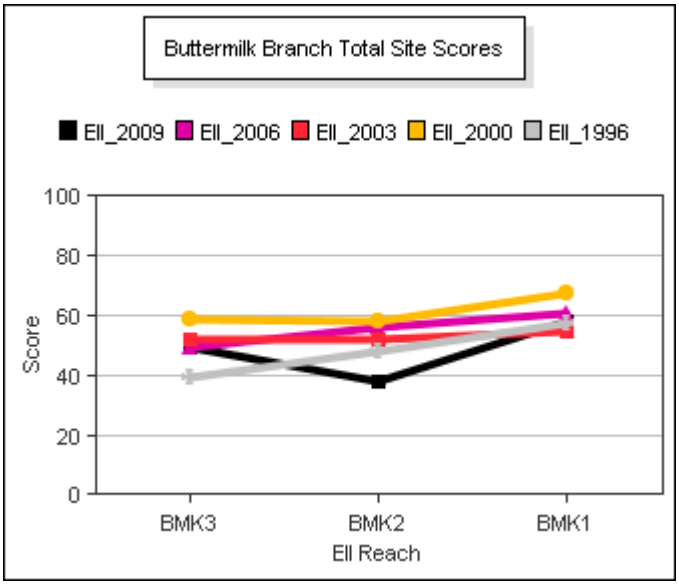


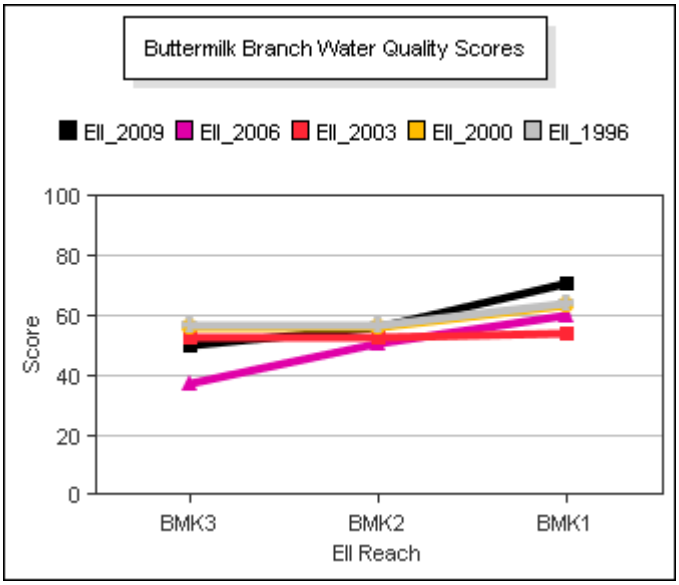
Parameter = TURBIDITY Unit = NTU Watershed = Buttermilk Branch

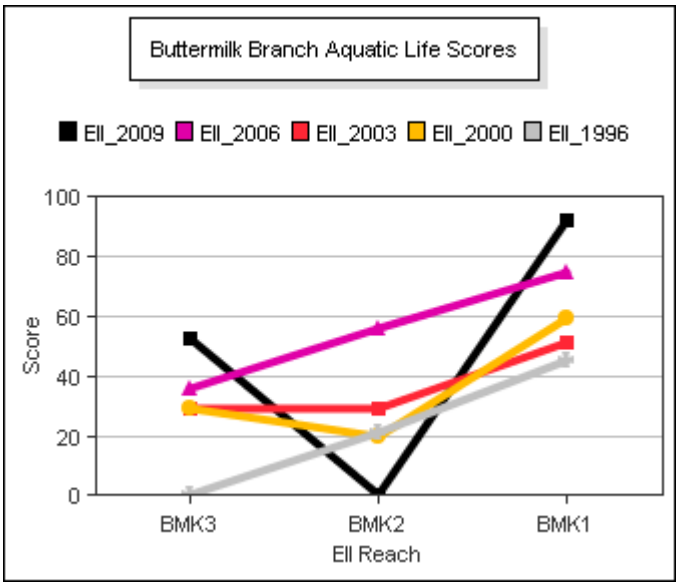


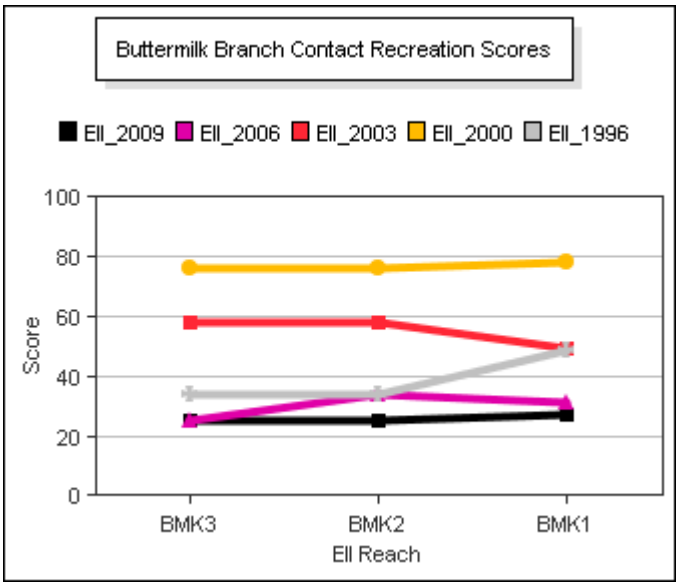
Buttermilk Creek Watershed

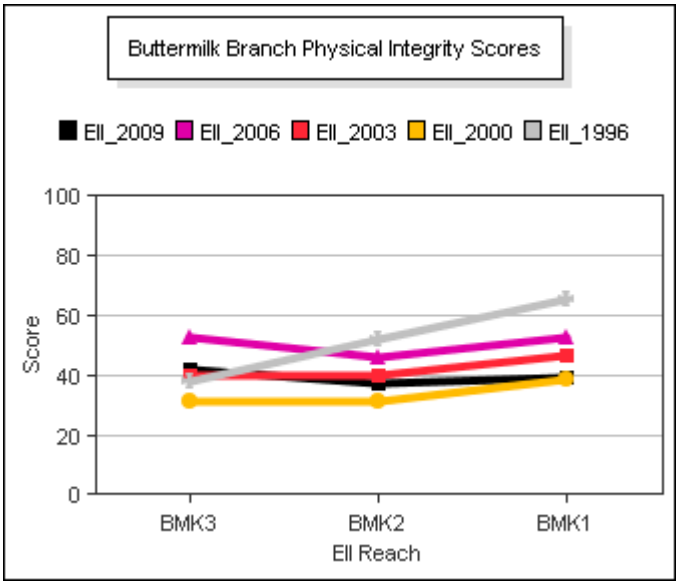
Score Summary – Reach scores for each sample year

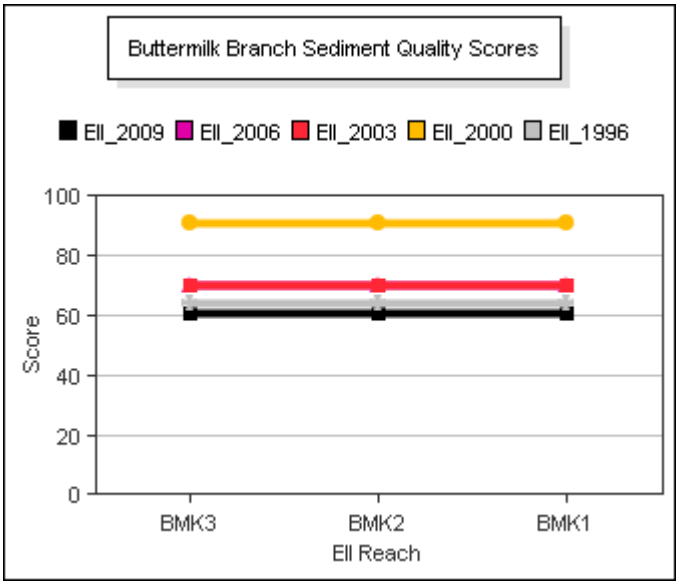












Buttermilk Creek Watershed

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

783_t00-ds-02_19_2003

783_t00-us-02_19_2003

Buttermilk Creek Watershed

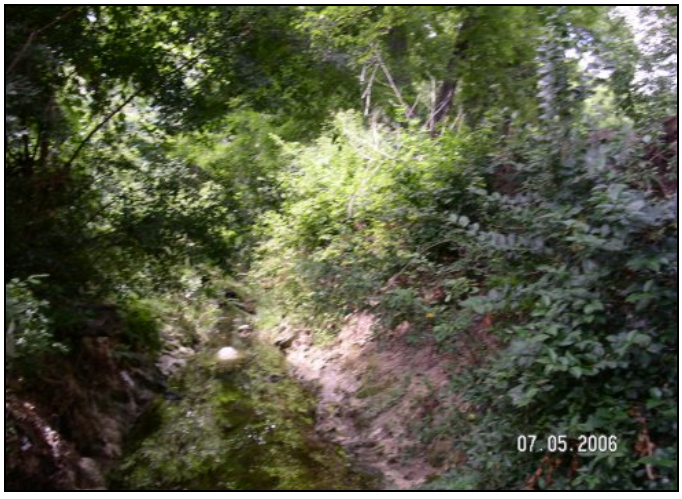
Site Photographs

851_t00-us-05_14_2003

851-t00-ds-06-02-2009

852_t00-us-02_15_2001

852_t00-ds-02_15_2001



3861_t00-ds-07_05_2006

3861-t00-us-06-03-2009

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