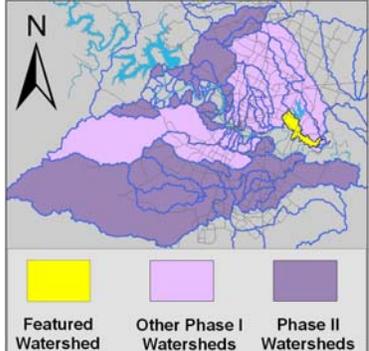


Elm Creek Watershed

Summary Sheet

Catchment	Total area	9 sq. miles				
	Area in recharge	0				
	Creek length	10 miles				
Demographics	Receiving water	Gilleland Creek				
	2000 population	3,136				
	2030 projected population	5,643				
Land Use	30 year projected % increase	180 %				
	Impervious cover (2003 estimate)	7.23 %				
Overall EII Scores	1999	2002	2005	2008	2009	
	49	65	46	45	62	



Flow Regime* for Sample Sites on Elm Creek

Site # upstream to downstream	Site Name	2002					2005					2008					2009					
		Feb WQ	Feb Bio	May WQ	Aug WQ	Nov WQ	Mar WQ	Jun W	Jun Bio	Sep WQ	Dec WQ	Feb W	May WQ	Jun Bio	Sep WQ	Dec W	Feb WQ	Jun WQ	Jun- Bio	Oct WQ	Dec WQ	
1202	West Elm Cr. at Blue Bluff	B	B	n	n	B	B	B	n	n	n											
1204	Elm Creek at FM 973	B	B	n	n	B	B	n	n	n	n	B	n	n	n	n	n	n	n	n	n	B
3614	Elm at Austin Colony						B	n	n	n	n	n	B	n	n	n	n	n	n	n	n	
887	Elm Creek at Milo	n		n																		

* 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 Elm Creek

2009 data summary	Parameter	Mean	Max	Min	Discussion
Physicochemical	D.O. mg/l	9.5	Only one sample collected in 2009	Only one sample collected in 2009	Generally within normal range
	pH st.units	8.2			Generally within normal range
	Cond uS/cm	741			Generally within normal range with some high values in past years
Nutrients	NH ₃ mg/l	0.005			Generally within normal range
	NO ₃ mg/l	0.004			Generally within normal range
	Ortho P mg/l	0.04			Generally within normal range
Sediment Load	TSS mg/l	4.0	Generally within normal range with some high values in past years		
	Turbidity ntu	2.4	Generally within normal range with some high values in past years		
	Biology	E.Coli /100ml	10.2	Generally within normal range with some high values in past years	
Benthic Macs		Lack of baseflow lowers scores. Kicknet produced high diversity, but mostly pollution-tolerant taxa			
Diatoms		No diatoms collected; no suitable substrate or flow.			

Index scores* for Elm Creek Sites by Year

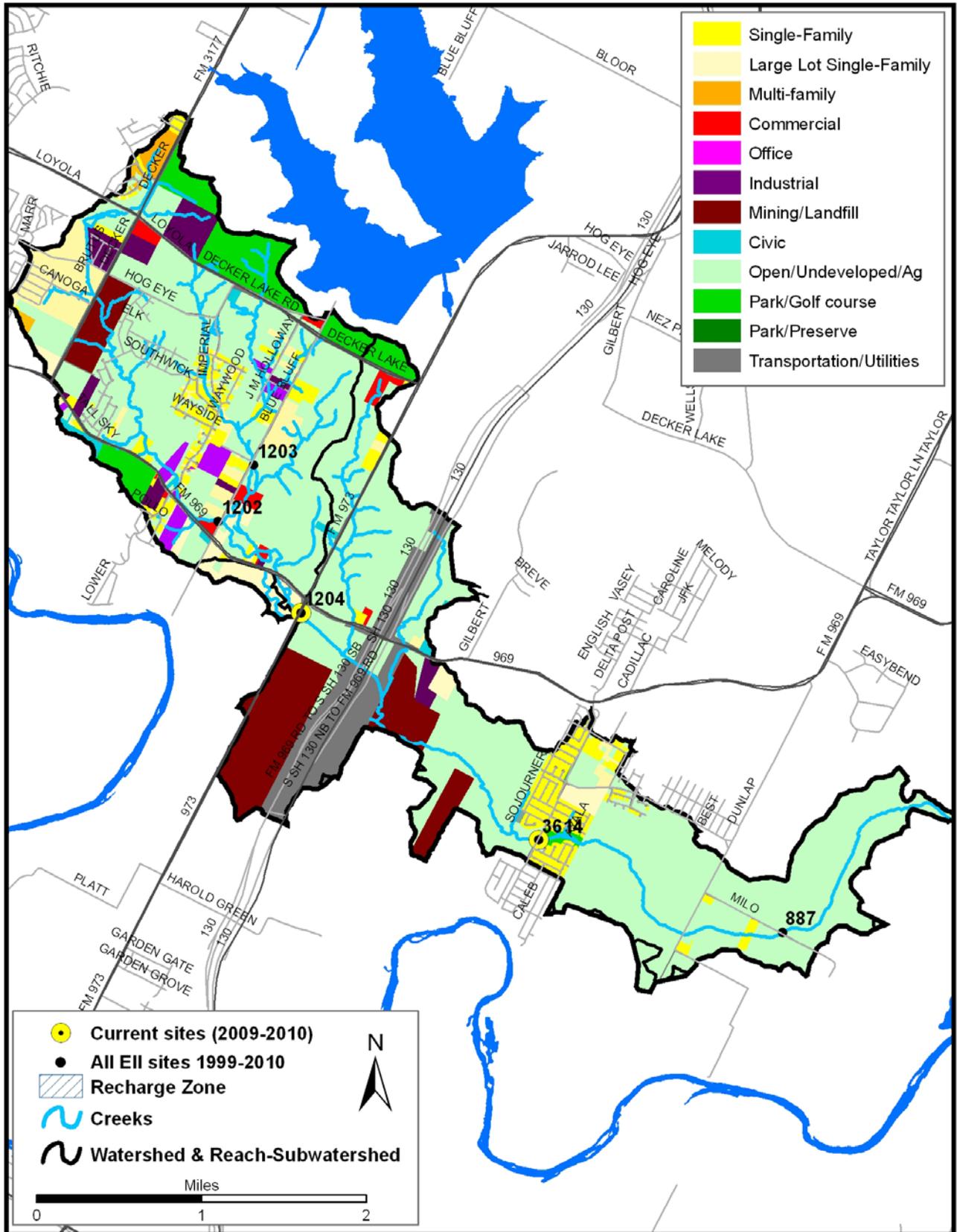
Reach	Site	Site Name	Year	Water Quality	Sediment**	Contact Recreation	Non-Contact Recreation	Physical Integrity	Aquatic Life	Benthic subindex	Diatom subindex	Total EII Score
ELM1	887	Elm Creek @ Milo Road	2002		91		60	44				49
ELM2	1202	West Elm @ Blue Bluff Road	2002	62	91	99	57	58	41	41	40	68
ELM2	1204	Elm Creek @ FM 973	2002	57	91	92	77	51	44	50	37	69
ELM1	3614	Elm Creek @ Austins Colony	2005	46	71		56	50				45
ELM2	1202	West Elm @ Blue Bluff Road	2005	39	71	32	49	56	50		50	50
ELM2	1204	Elm Creek @ FM 973	2005	51	71	47	52	54				46
ELM1	3614	Elm Creek @ Austins Colony	2008	39	67	42	43	37				38
ELM2	1204	Elm Creek @ FM 973	2008	50	67	97	48	47				52
ELM1	3614	Elm Creek @ Austins Colony	2009		66		56	60	68	68		63
ELM2	1204	Elm Creek @ FM 973	2009	69	66	94	47	55				55

* 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

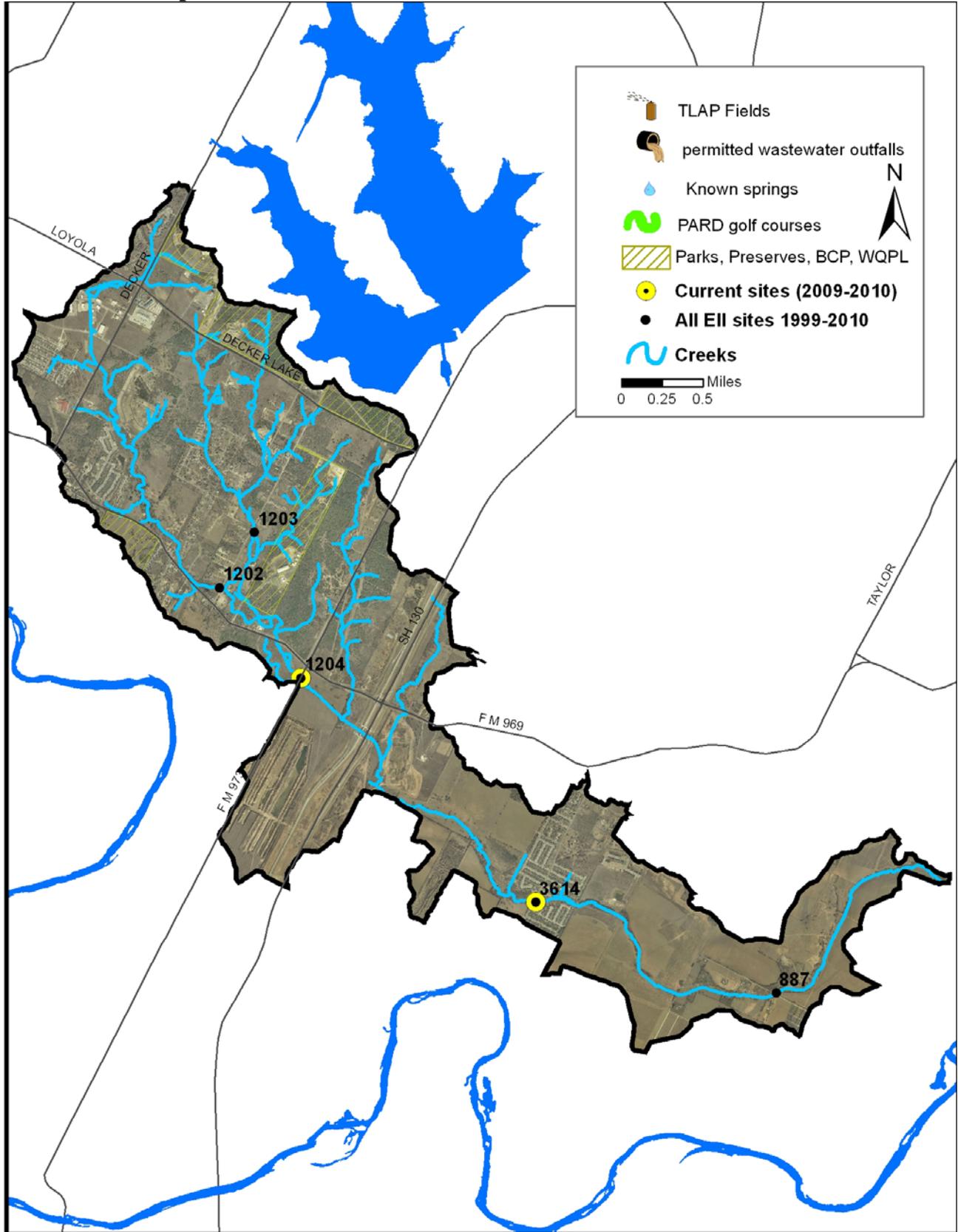
Elm Creek Watershed

Land Use Map



Elm Creek Watershed

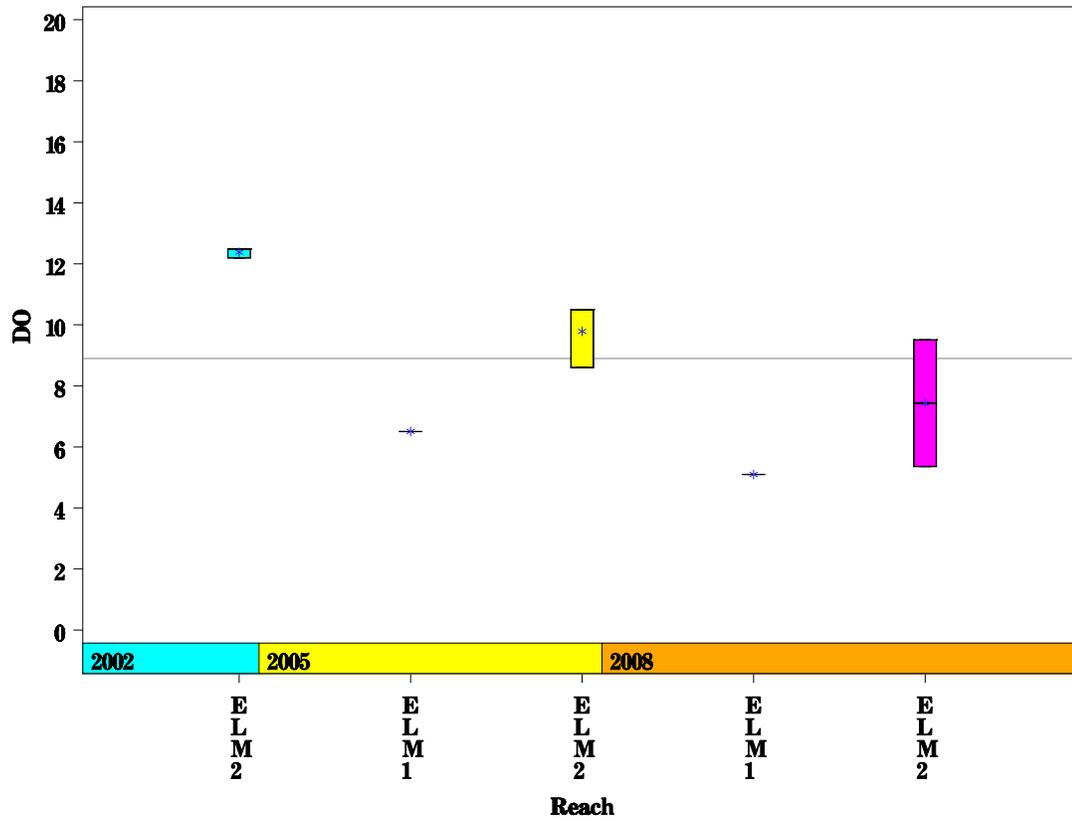
Aerial Map



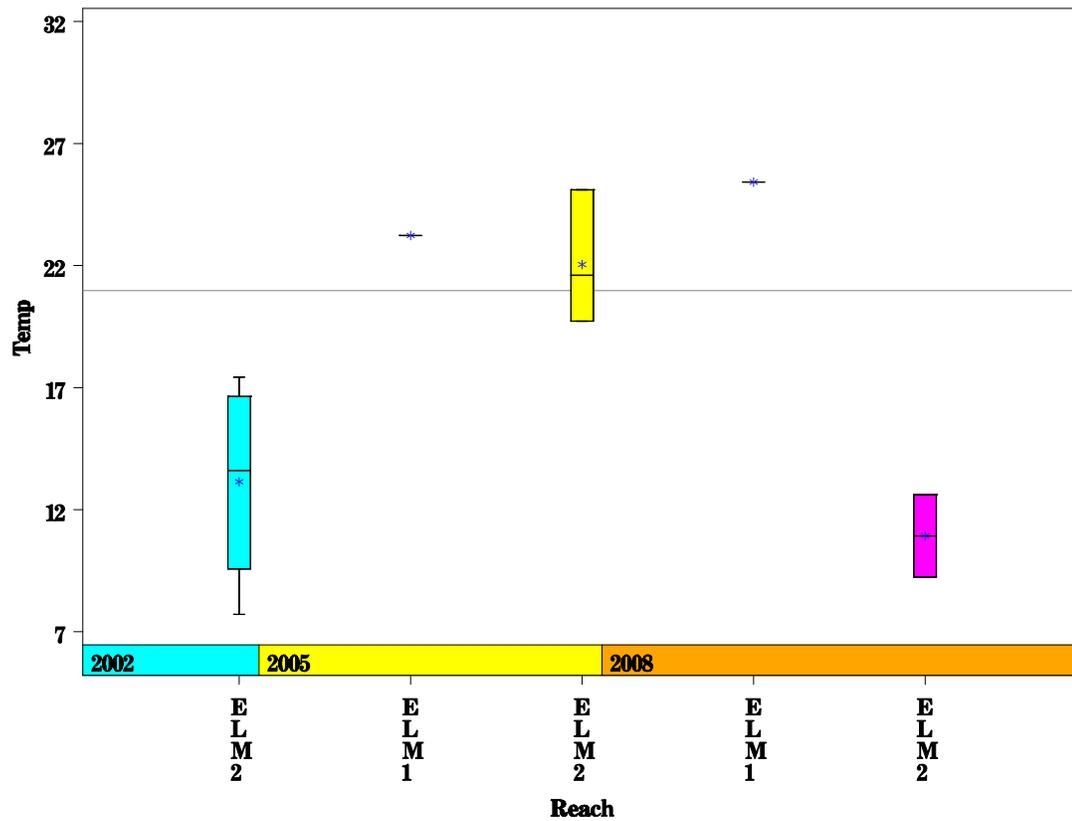
Elm Creek Watershed

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

Parameter=DISSOLVED OXYGEN Unit=MG/L Watershed=Elm Creek



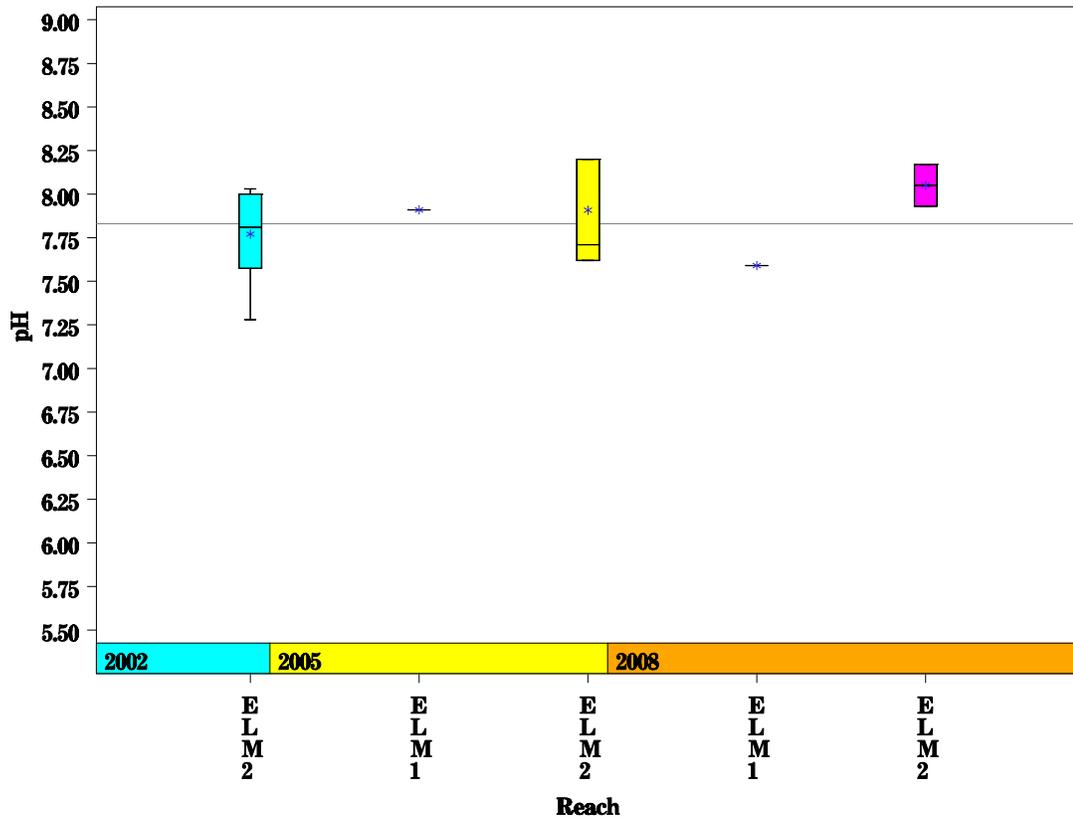
Parameter=WATER TEMPERATURE Unit=Deg C Watershed=Elm Creek



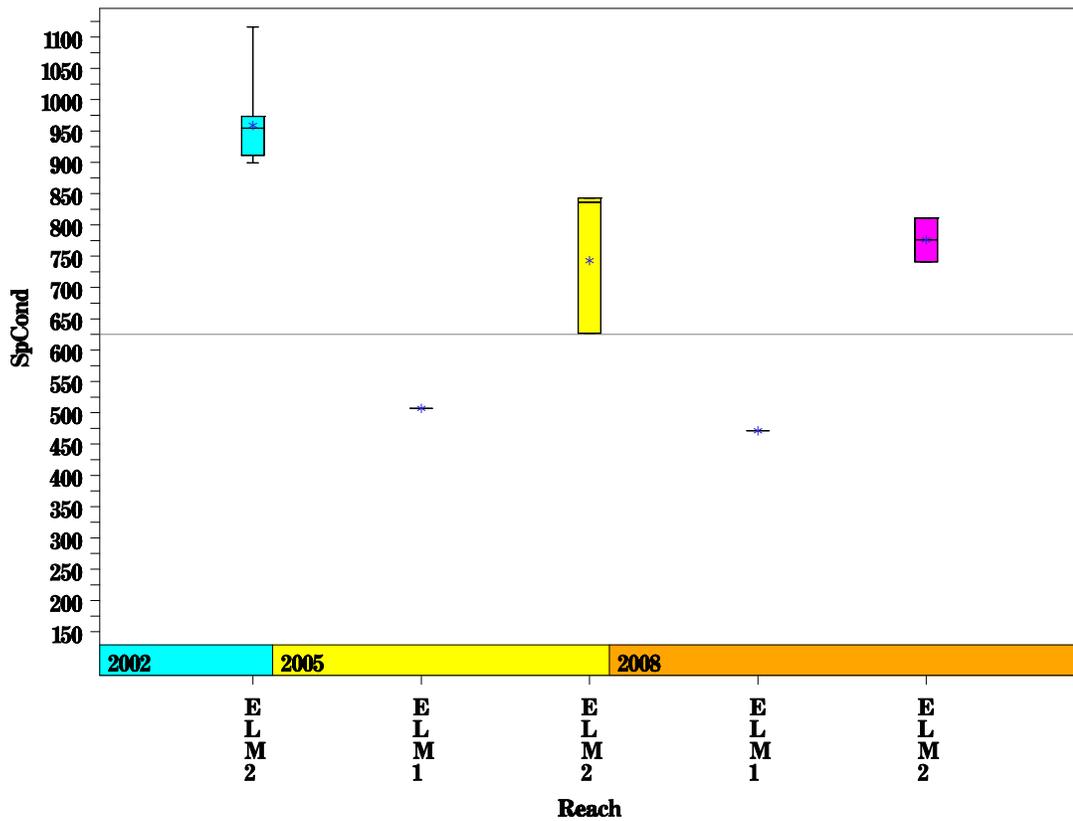
Elm Creek Watershed

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

Parameter=PH Unit=Standard units Watershed=Elm Creek



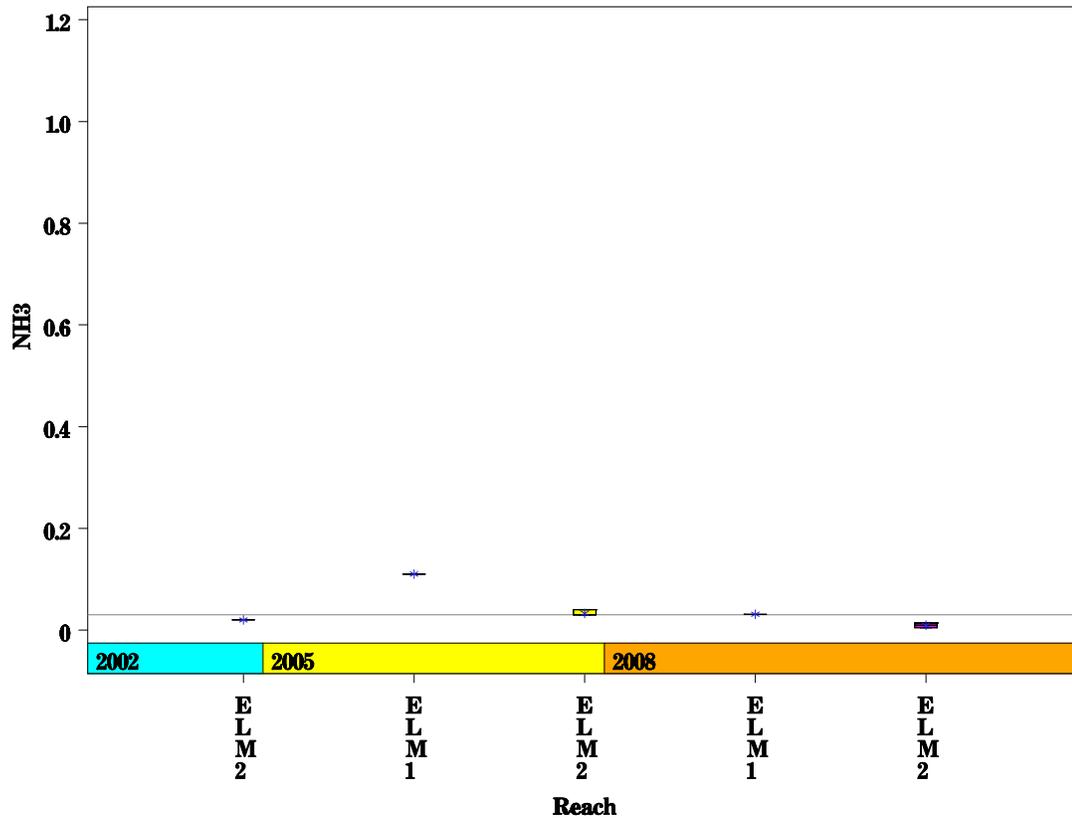
Parameter=CONDUCTIVITY Unit=uS/cm Watershed=Elm Creek



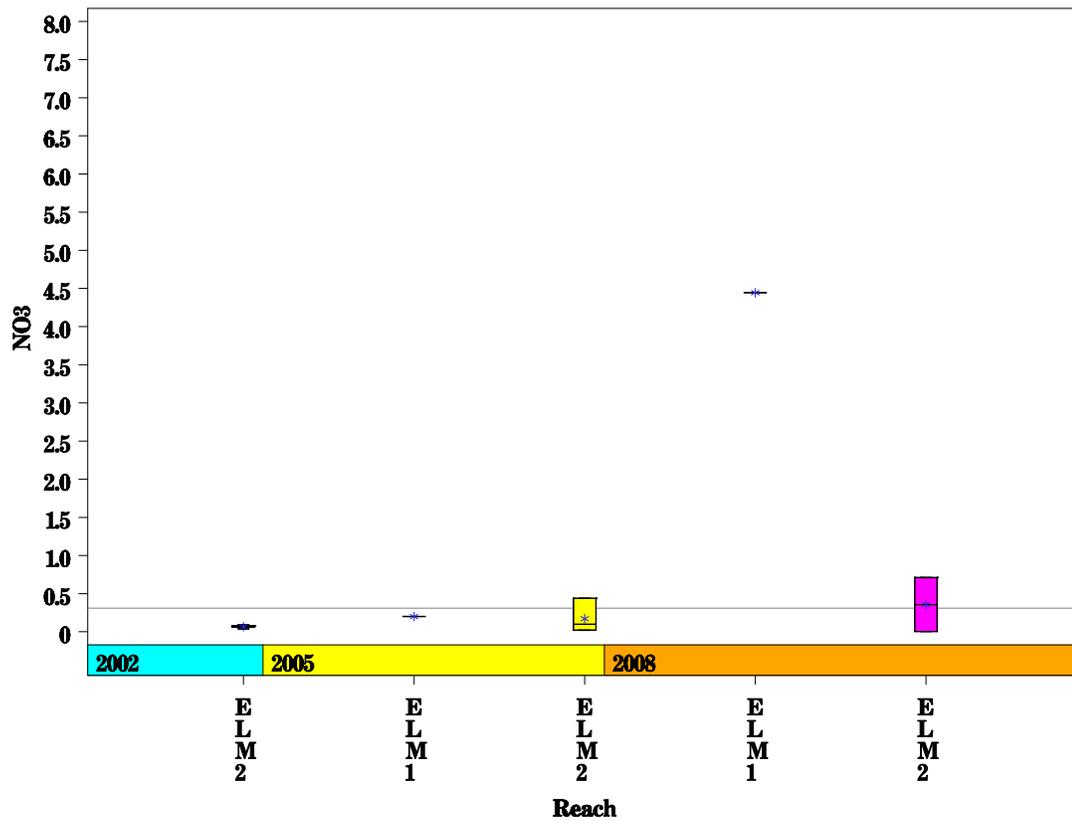
Elm Creek Watershed

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

Parameter=AMMONIA AS N Unit=MG/L Watershed=Elm Creek



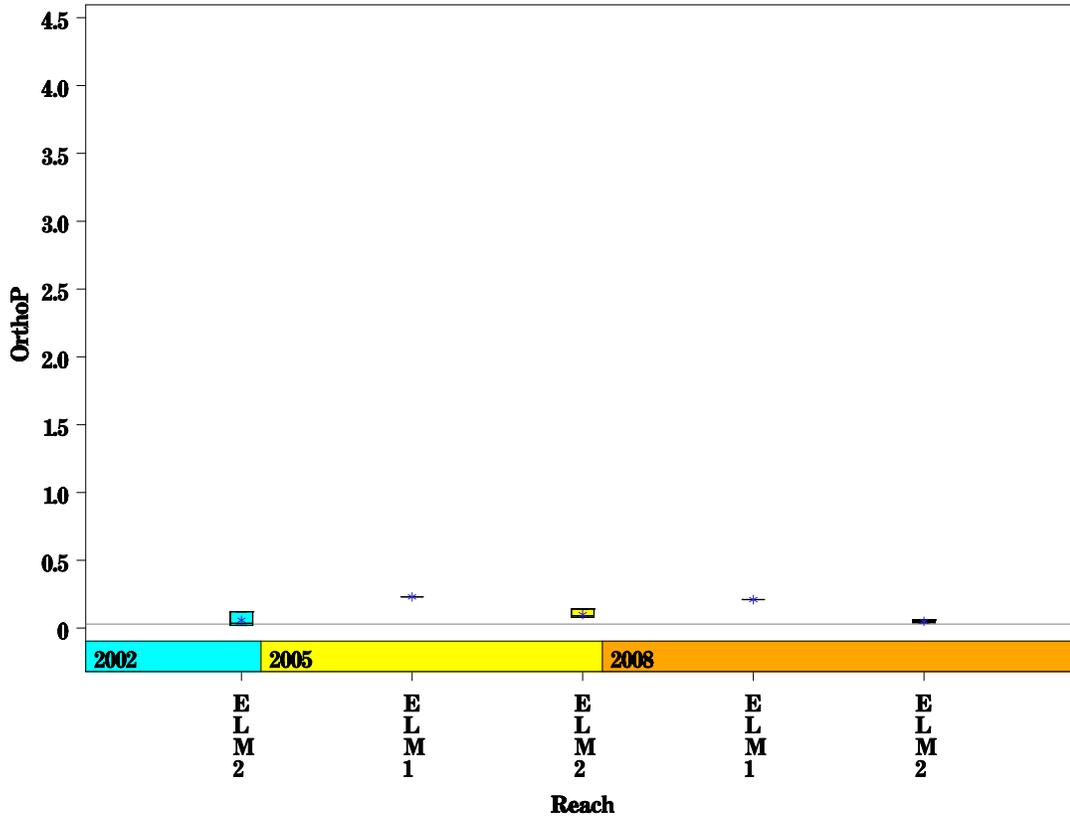
Parameter=NITRATE AS N Unit=MG/L Watershed=Elm Creek



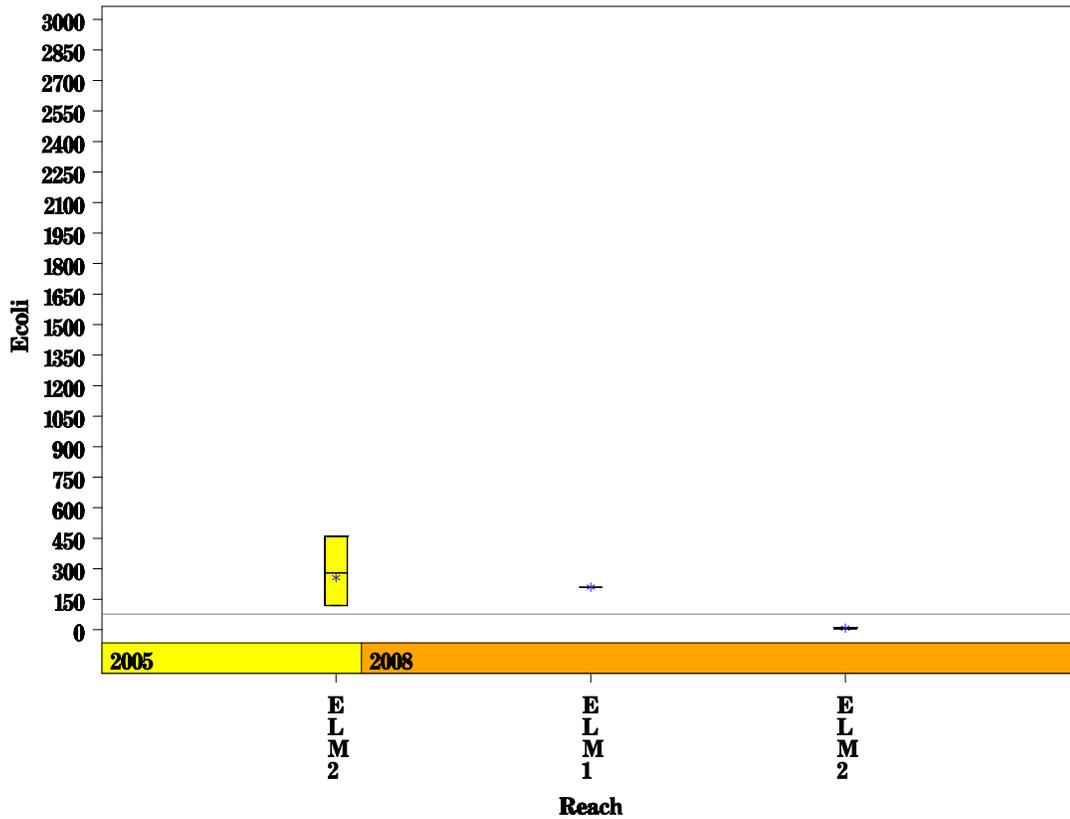
Elm Creek Watershed

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

Parameter= ORTHOPHOSPHORUS AS P Unit=MG/L Watershed=Elm Creek



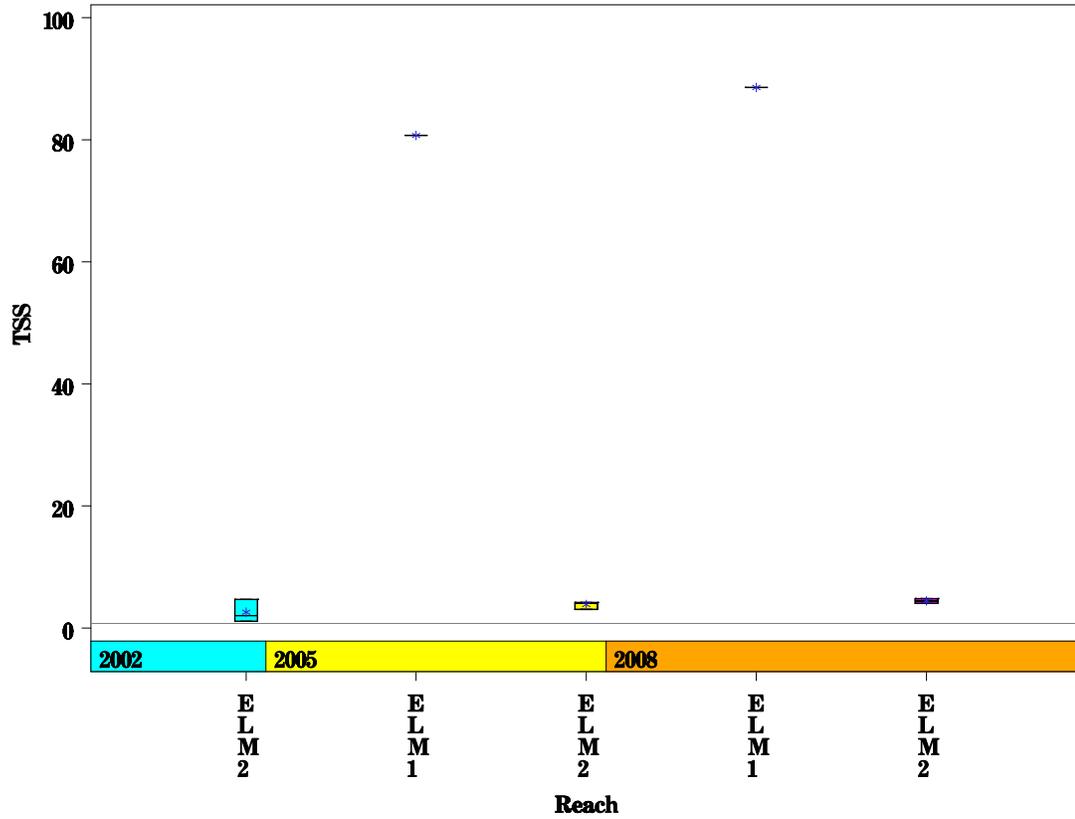
Parameter=E COLI BACTERIA Unit=MPN/dL Watershed=Elm Creek



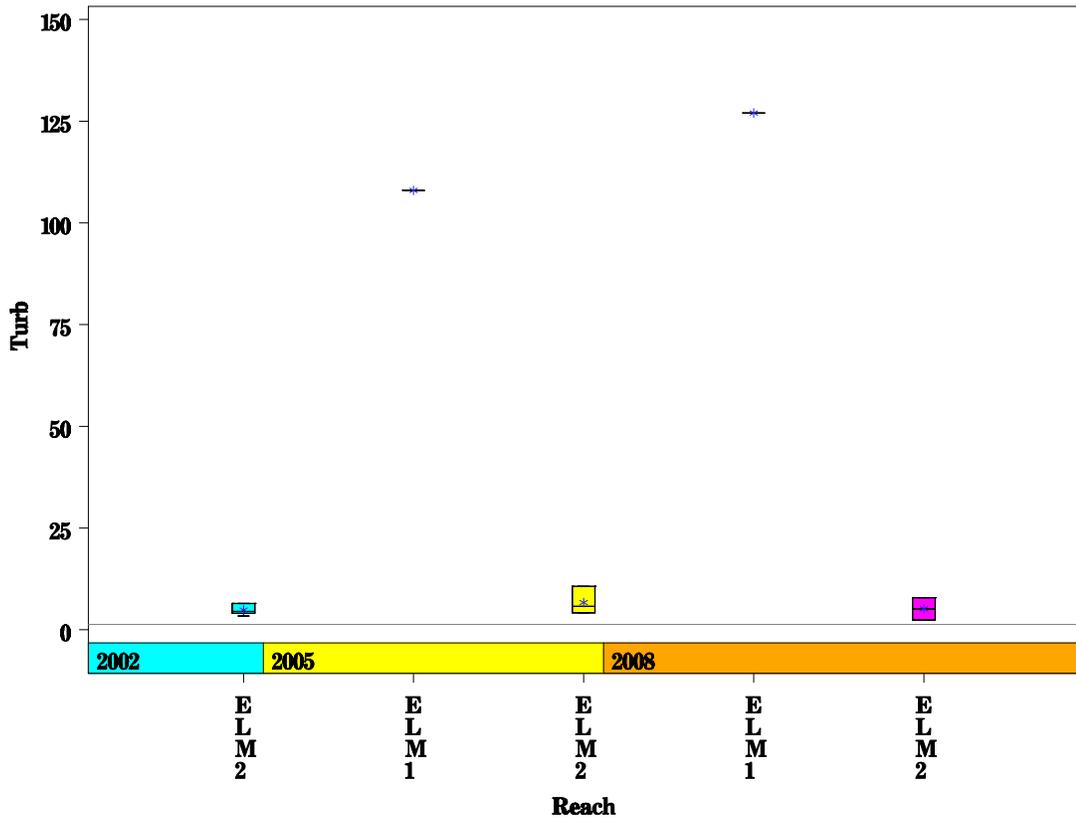
Elm Creek Watershed

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

Parameter = TOTAL SUSPENDEED SOLIDS Unit = MG/L Watershed = Elm Creek

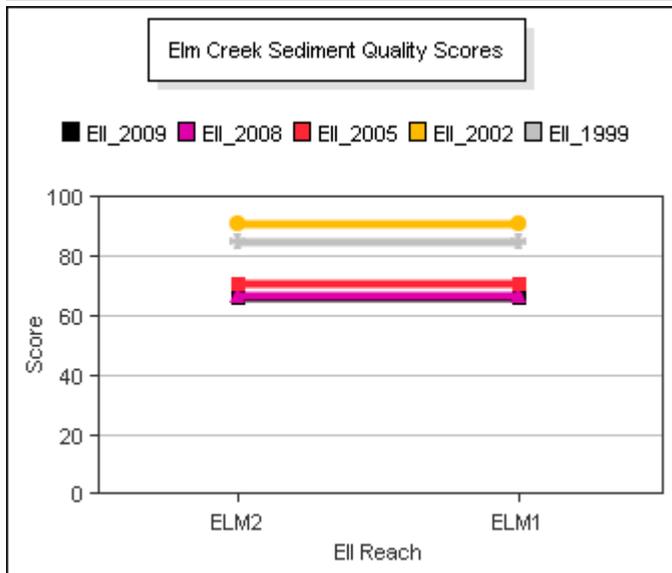
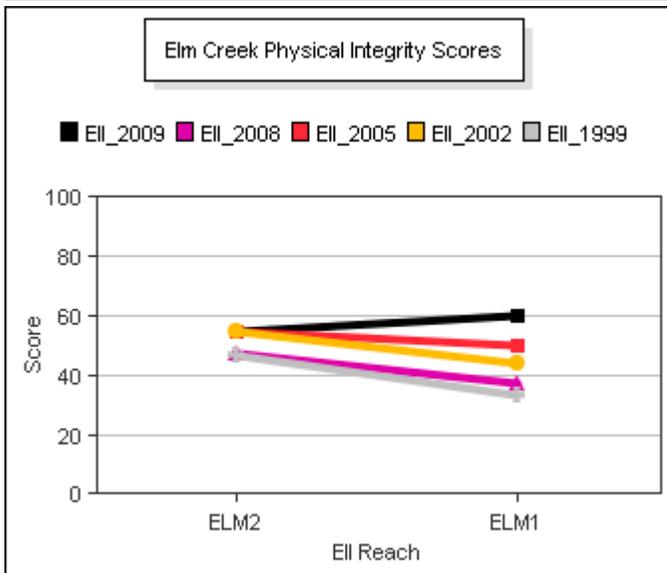
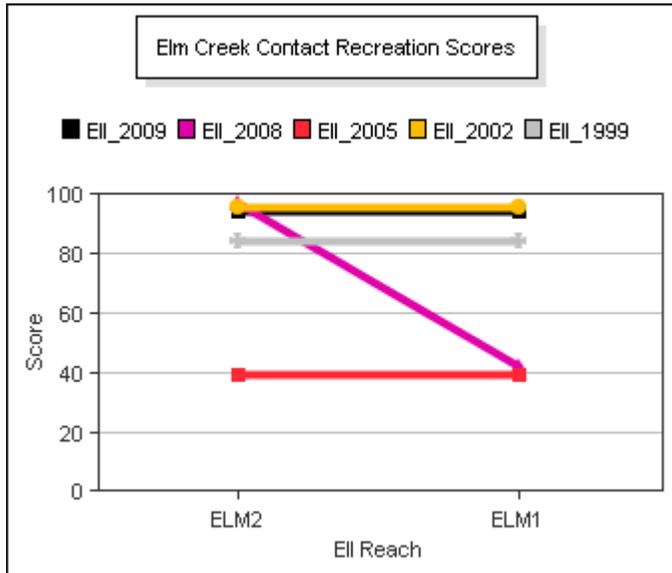
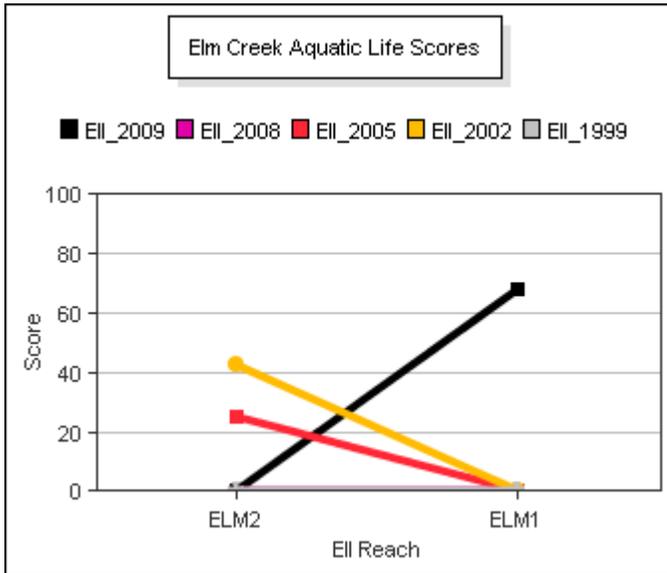
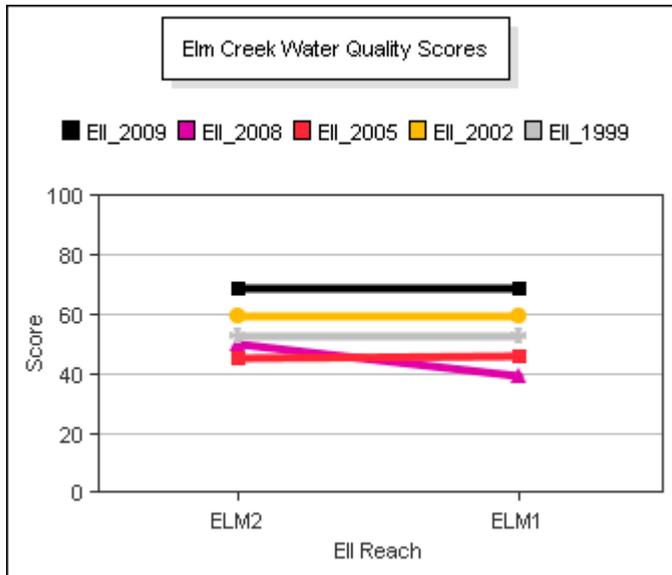
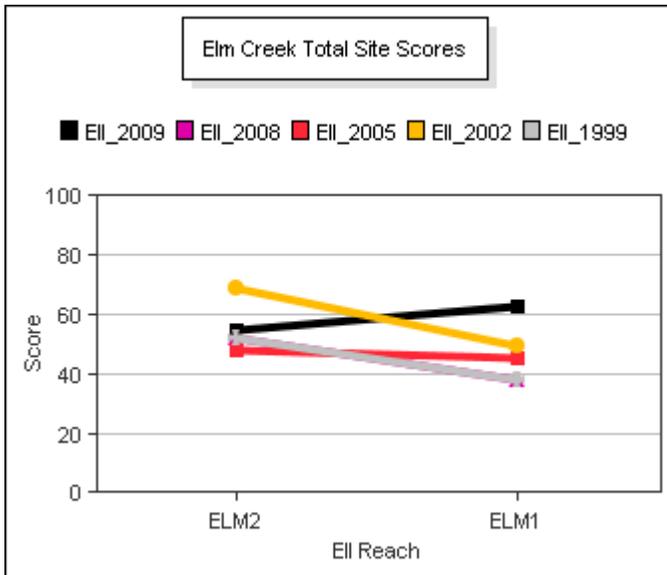


Parameter = TURBIDITY Unit = NTU Watershed = Elm Creek



Elm Creek Watershed

Score Summary – Reach scores for each sample year



Elm Creek Watershed

Site Photographs



1202_t00-us-03_27_2002



1202_t00-ds-06_17_2005



3614_t00-us-06_17_2005



3614_t00-ur-06_17_2005



3614_t00-ur-06_18_2008



3614_t00-us-06_03_2009

Elm Creek Watershed

Site Photographs



1204_t00-ds-03_27_2002



1204_t00-ur-03_27_2002



1204_t00-us-06_17_2005



1204_t00-ds-06_17_2005



1204_t0-us06_18_2008

SR-12-01



1204_t00-ds-06_03_2009

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