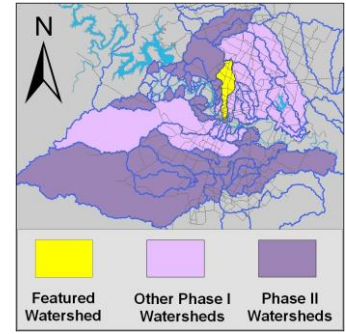


Shoal Creek Watershed

Summary Sheet

Catchment	Total area		13 square miles			
	Area in recharge		3 square miles			
	Creek length		11 miles			
Demographics	Receiving water		Town Lake			
	2000 population		59,011			
	2030 projected population		78,759			
	30 year projected % increase		33 %			
Land Use	Impervious cover (2003 estimate)		47.3 %			
	Impervious cover (2013 estimate)		53.3 %			
Overall EII Scores	2000	2003	2006	2009	2011	2013
	60	54	55	63	57	59



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

Site	Site Name	2001		2003					2006					2009					2010		2011					2013				
		Feb	Feb	Feb	Mar	Mar	May	Sep	Dec	Feb	May	Jul	Aug	Nov	Feb	May	May	Oct	Dec	Dec	Mar	Jun	Jun	Sep	Jan	Apr	May	Jun	Jun	Sep
		WQ	Bio	WQ	WQ	Bio	WQ	WQ	WQ	WQ	WQ	Bio	WQ	WQ	WQ	WQ	WQ	WQ	WQ	WQ	WQ	WQ	Bio	WQ	WQ	WQ	WQ	Bio	WQ	WQ
118	Crosscreek	B	B	B	B	B	B	B	n	B	B	B	n	B	B	B	B	B	B	n	B	n	n	n	B	B	B	B	B	B
117	Shl Edge Ct	B	B	B	B	B	B	B	B	B	B	B	n	B	B	B	B	B	B	B	B	n	n	n	B	B	B	B	B	B
116	24th	B	B	B	B	B	B	B	B	B	B	B	n	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
122	us 1st	B	B	B	B	B	B	B	B	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 light blue = Samples were not taken blank = not visited

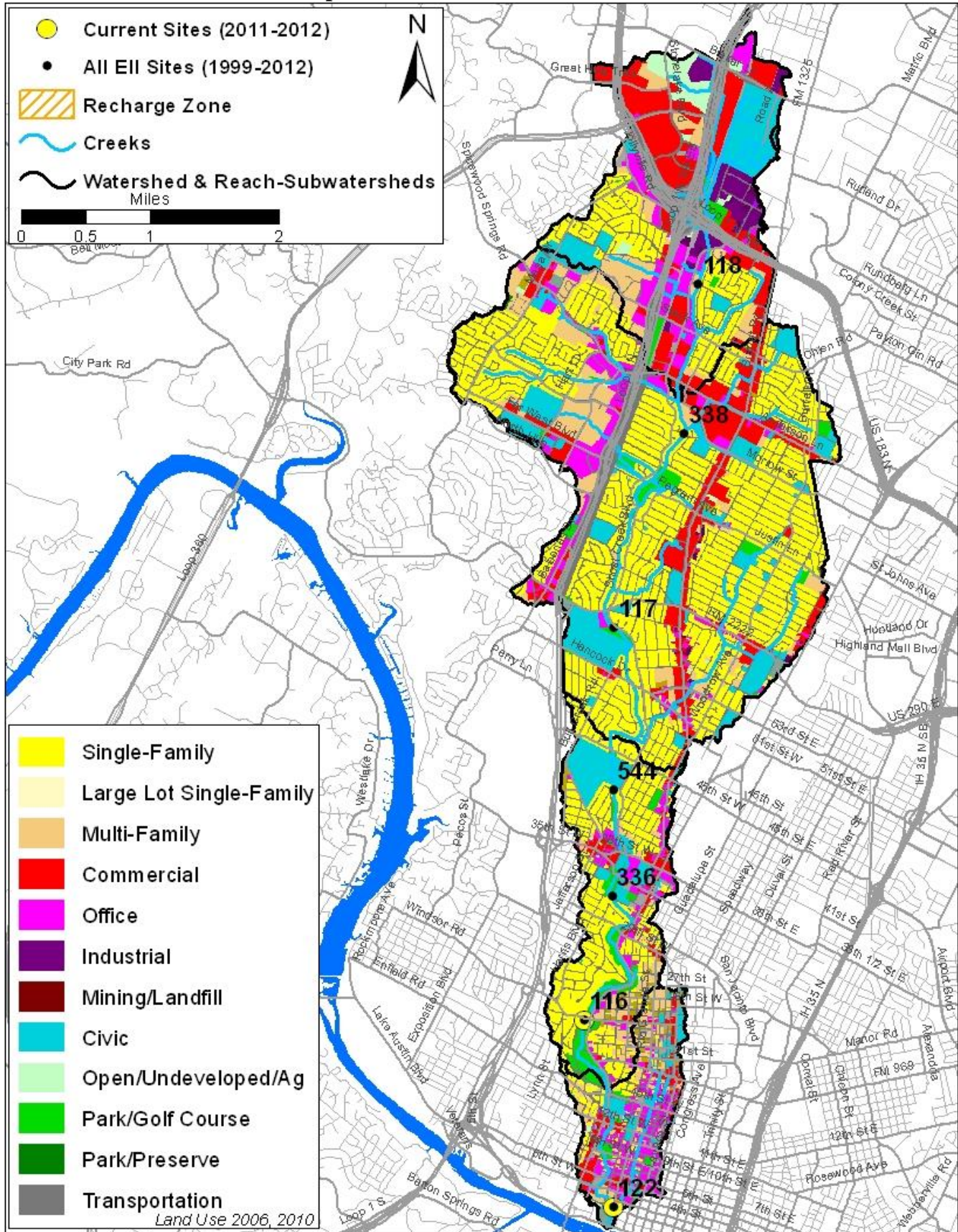
Index Scores* for Shoal Creek Sites by Year

Reach	Site	Site Name	Year	Water Quality	Sediment*	Contact Rec.	Non-Contact Rec.	Physical Integrity	Aquatic Life	Benthic subindex	Diatom subindex	Total EII Score
SHL1	122	Shoal Creek Upstream of 1st St.	1996	27	51	14	37	58	35	30	39	37
SHL2	116	Shoal Creek @ 24th Street	1996	41	51	45	68	51	52	52	51	51
SHL3	117	Shoal Creek @ Shoal Edge Court (EII)	1996	56	51	93	79	60	54	69	38	66
SHL4	118	Shoal Creek DS of Crosscreek Drive	1996	63	51	24	59	50	51	32	70	50
SHL1	122	Shoal Creek Upstream of 1st St.	2000	44	89	63	64	33	37	31	42	55
SHL2	116	Shoal Creek @ 24th Street	2000	53	89	74	63	26	38	40	36	57
SHL3	117	Shoal Creek @ Shoal Edge Court (EII)	2000	62	89	65	77	45	39	40	37	63
SHL4	118	Shoal Creek DS of Crosscreek Drive	2000	64	89	75	63	42	62	60	64	66
SHL1	122	Shoal Creek Upstream of 1st St.	2003	32	68	60	34	35	45	34	56	46
SHL2	116	Shoal Creek @ 24th Street	2003	51	68	41	66	32	36	29	43	49
SHL3	117	Shoal Creek @ Shoal Edge Court (EII)	2003	62	68	62	65	65	36	32	40	60
SHL4	118	Shoal Creek DS of Crosscreek Drive	2003	68	68	67	68	54	37	41	32	60
SHL1	122	Shoal Creek Upstream of 1st St.	2006	34	59	30	59	46	38	30	45	44
SHL2	116	Shoal Creek @ 24th Street	2006	48	59	24	79	47	64	62	66	54
SHL3	117	Shoal Creek @ Shoal Edge Court (EII)	2006	67	59	49	72	57	59	58	60	61
SHL4	118	Shoal Creek DS of Crosscreek Drive	2006	70	59	59	53	58	56	53	59	59
SHL1	122	Shoal Creek Upstream of 1st St.	2009	48	60	25	79	57	79	83	75	58
SHL2	116	Shoal Creek @ 24th Street	2009	64	60	28	84	59	94	91	97	65
SHL3	117	Shoal Creek @ Shoal Edge Court (EII)	2009	69	60	37	78	72	79	90	68	66
SHL4	118	Shoal Creek DS of Crosscreek Drive	2009	76	60	36	83	49	74	65	82	63
SHL1	122	Shoal Creek Upstream of 1st St.	2011	36	70	25	55	54	53	46	60	49
SHL2	116	Shoal Creek @ 24th Street	2011	62	70	48	80	50	62	61	63	62
SHL3	117	Shoal Creek @ Shoal Edge Court (EII)	2011	79	70	62	76	63	64	60	67	69
SHL4	118	Shoal Creek DS of Crosscreek Drive	2011	85	70	25	42	60				47
SHL1	122	Shoal Creek Upstream of 1st St.	2013	36	62	25	56	41	82	80	84	50
SHL2	116	Shoal Creek @ 24th Street	2013	60	62	31	83	47	81	80	82	61
SHL3	117	Shoal Creek @ Shoal Edge Court (EII)	2013	74	62	48	63	58	83	84	81	65
SHL4	118	Shoal Creek DS of Crosscreek Drive	2013	71	62	28	83	56	62	66	57	60

* blank cells indicate parameter was not collected, blank columns 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

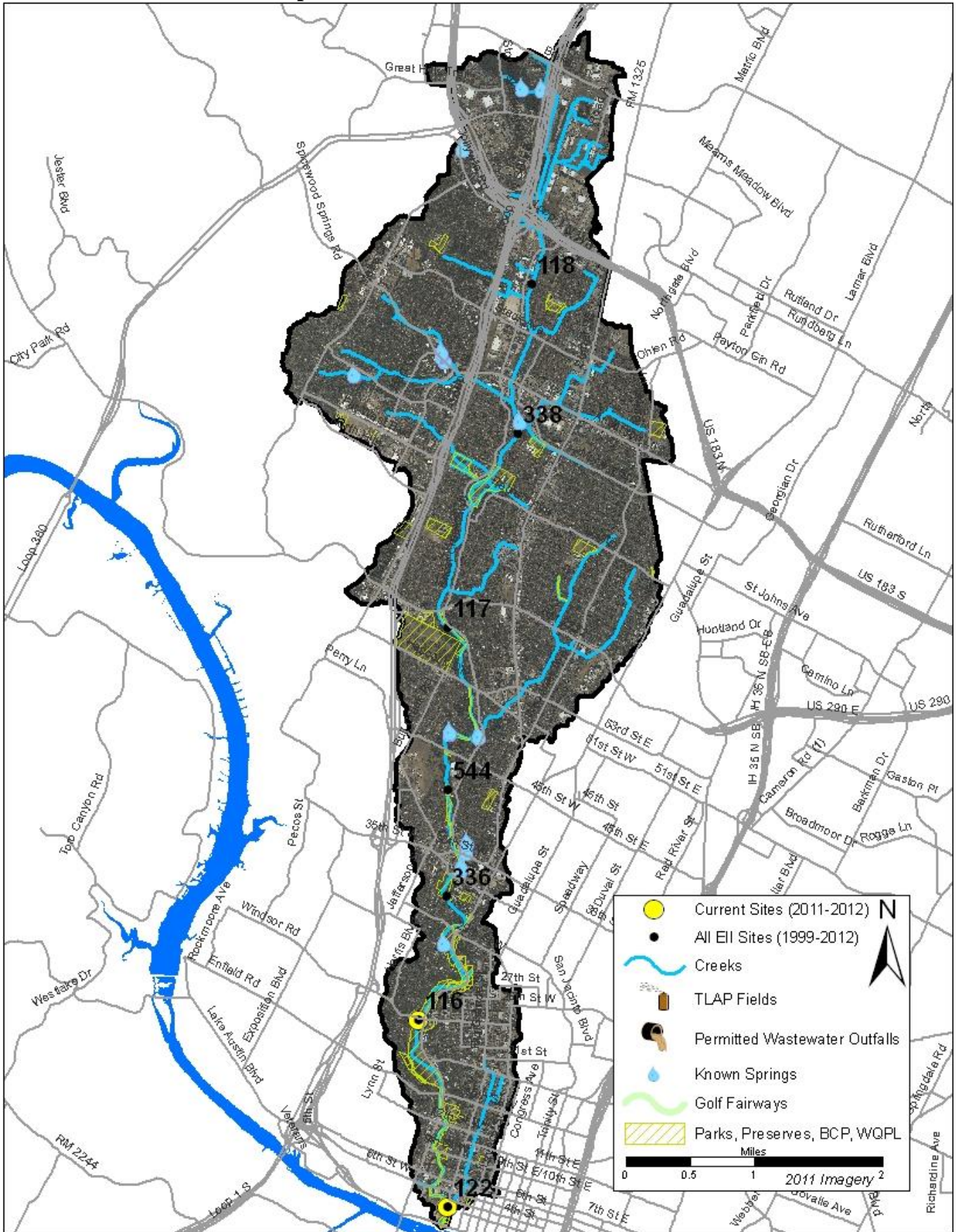
Shoal Creek Watershed

Land Use Map



Shoal Creek Watershed

Aerial Map



Shoal Creek Watershed

Water Quality Data – Temperature, Conductivity, pH, Dissolved Oxygen & *E. coli* for 2013 Sample Sites (Downstream to Upstream)

Qualifiers to the left of value:	>	greater than	Qualifiers to the right of value:	(blank)	Useable
	<	less than		S	Exceeds standard range
	< J	less than detection limit		R	Rejected, failed QC
	J	Estimated			

Site Name	Site #	Reach	Date	Temp.		Cond.		pH		D.O.		<i>E. coli</i>	
				<> Value	flag	<> Value	flag	<> Value	flag	<> Value	flag	<> Value	flag
Shoal us 1st St	122	SHL1	01/22/2013	13.2		815		7.90		9.4	R	>	2419.6
Shoal us 1st St	122	SHL1	04/24/2013	15.9		866		7.96		8.6			1413.6
Shoal us 1st St	122	SHL1	06/26/2013	26.5		727		8.01		8.4		>	2419.6
Shoal us 1st St	122	SHL1	09/26/2013	24.6		934		7.69		8.3			1203.3
Site 122 Mean				20.1		835		7.89		8.7			1864.0
Shoal @ 24th St	116	SHL2	01/22/2013	13.3		855		8.27		13.9	R		1732.9
Shoal @ 24th St	116	SHL2	04/24/2013	17.1		856		8.24		13.5			727.0
Shoal @ 24th St	116	SHL2	06/26/2013	29.8		549		8.63		14.2		>	2419.6
Shoal @ 24th St	116	SHL2	09/26/2013	28.1		601		8.06		13.6			82.1
Site 116 Mean				22.1		715		8.30		13.8			1240.4
Shoal @ Shoal Edge Ct	117	SHL3	01/22/2013	9.9		440		7.94		9.6			53.0
Shoal @ Shoal Edge Ct	117	SHL3	04/24/2013	13.0		370		7.72		7.7			224.7
Shoal @ Shoal Edge Ct	117	SHL3	06/26/2013	29.0		340		8.00		6.6			218.7
Shoal @ Shoal Edge Ct	117	SHL3	09/26/2013	25.9		356		7.78		7.7			160.7
Site 117 Mean				19.4		377		7.86		7.9			164.3
Shoal ds Crosscreek Dr	118	SHL4	01/22/2013	11.2		552		7.73		7.4			1046.2
Shoal ds Crosscreek Dr	118	SHL4	04/24/2013	13.5		490		7.70		8.7			365.4
Shoal ds Crosscreek Dr	118	SHL4	06/26/2013	26.7		294		8.30		7.6			387.3
Shoal ds Crosscreek Dr	118	SHL4	09/26/2013	25.9		380		7.86		10.5			1553.1
Site 118 Mean				19.3		429		7.90		8.5			838.0
Watershed Mean				20.2		589		7.99		9.7			1026.7

Orange highlighting indicates that the value exceeds one standard deviation from the mean of all E.I.I. sites combined.

Summary Statistics for all 2013 – 2014 E.I.I. Sites Combined.					
Parameter	2013-2014 Average	2013-2014 Minimum	2013-2014 Maximum	1 Standard Deviation Above	1 Standard Deviation Below
Temperature (C°)	19.6	8.6	34.0	25.8	
Conductivity (uS/cm)	711	107	1783	942	
pH (Standard units)	7.86	6.96	8.97	8.19	7.52
D.O. (mg/l)	8.1	1.2	30.5	11.4	4.8
<i>E. coli</i> . (col/100ml)	435	1	4840	1127	

Shoal Creek Watershed

Water Quality Data – Ammonia, Nitrate / Nitrite, Ortho-Phosphorus, Total Suspended Solids & Turbidity for 2013 Sample Sites (Downstream to Upstream)

Qualifiers to the left of value:	>	greater than	Qualifiers to the right of value:	(blank)	Useable
	<	less than		S	Exceeds standard range
	< J	less than detection limit		R	Rejected, failed QC
	J	Estimated			

Site Name	Site #	Reach	Date	NH3-N		NO3/NO2		Ortho-P		T.S.S.		Turb.			
				<>	Value	flag	<>	Value	flag	<>	Value	flag	<>	Value	flag
Shoal us 1st St	122	SHL1	01/22/2013		0.098			1.77			<J	1.00		1.2	
Shoal us 1st St	122	SHL1	04/24/2013		0.022	R		1.61			<J	1.10		0.8	R
Shoal us 1st St	122	SHL1	06/26/2013		0.036			1.90				7.45		3.6	
Shoal us 1st St	122	SHL1	09/26/2013	<J	0.008			3.36		R		1.44		3.8	
Site 122 Mean					0.041			2.16				2.75		2.3	
Shoal @ 24th St	116	SHL2	01/22/2013	<J	0.008			0.31		<J	0.004	<J	1.00	1.7	
Shoal @ 24th St	116	SHL2	04/24/2013	J	0.010	R		0.20		<J	0.004	<J	2.00	1.2	R
Shoal @ 24th St	116	SHL2	06/26/2013	<J	0.008		<J	0.01		<J	0.004		18.20	2.6	
Shoal @ 24th St	116	SHL2	09/26/2013	<J	0.008			0.09		<J	0.004	<J	2.08	3.3	
Site 116 Mean					0.009			0.15				5.82		2.2	
Shoal @ Shoal Edge Ct	117	SHL3	01/22/2013	J	0.017			0.24		J	0.004		2.50	0.6	
Shoal @ Shoal Edge Ct	117	SHL3	04/24/2013	J	0.010	R		0.06			0.020	<J	1.00	0.6	R
Shoal @ Shoal Edge Ct	117	SHL3	06/26/2013	<J	0.008		<J	0.01		<J	0.004		1.94	1.7	
Shoal @ Shoal Edge Ct	117	SHL3	09/26/2013	<J	0.008			0.09			0.028	<J	1.02	0.8	
Site 117 Mean					0.011			0.10				1.62		0.9	
Shoal ds Crosscreek Dr	118	SHL4	01/22/2013	<J	0.008			0.05		<J	0.004		1.10	2.3	
Shoal ds Crosscreek Dr	118	SHL4	04/24/2013	<J	0.008	R		0.09			0.017	<J	2.10	0.5	R
Shoal ds Crosscreek Dr	118	SHL4	06/26/2013		0.021		<J	0.01		<J	0.004		3.09	3.5	
Shoal ds Crosscreek Dr	118	SHL4	09/26/2013	<J	0.008		<J	0.01			0.025	<J	1.02	0.8	
Site 118 Mean					0.011			0.04				1.83		1.8	
Watershed Mean					0.018			0.61				3.00		1.8	

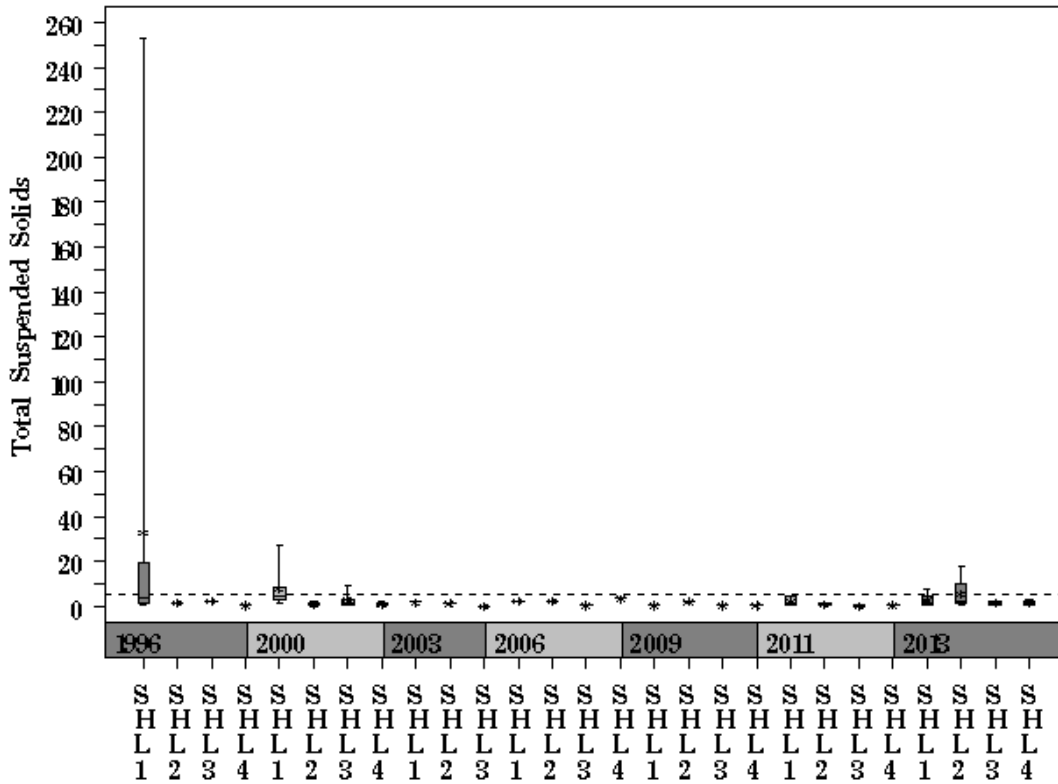
Orange highlighting indicates that the value exceeds one standard deviation from the mean of all E.I.I. sites combined.

Summary Statistics for all 2013 – 2014 E.I.I. Sites Combined.				
Parameter	2013-2014 Mean	2013-2014 Minimum	2013-2014 Maximum	1 Standard Deviation Above
NH3-M (mg/l)	0.031	0.008	2.250	0.150
NO3-N (mg/l)	1.16	0.01	16.30	4.02
Ortho-P (mg/l)	0.041	0.004	1.360	0.164
TSS (mg/l)	5.6	1.0	70.0	15.3
Turbidity (NTU)	4.5	0.0	97.1	13.2

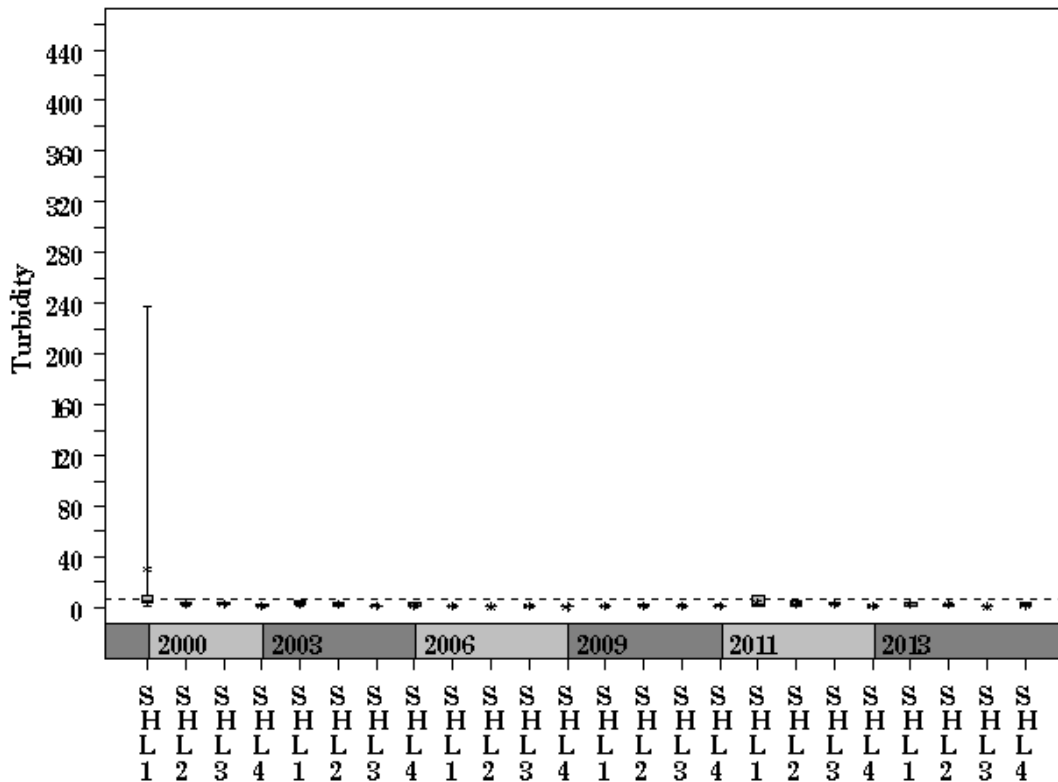
Shoal Creek Watershed

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

Parameter= TOTAL SUSPENDED SOLIDS Unit= mg/L Watershed= Shoal



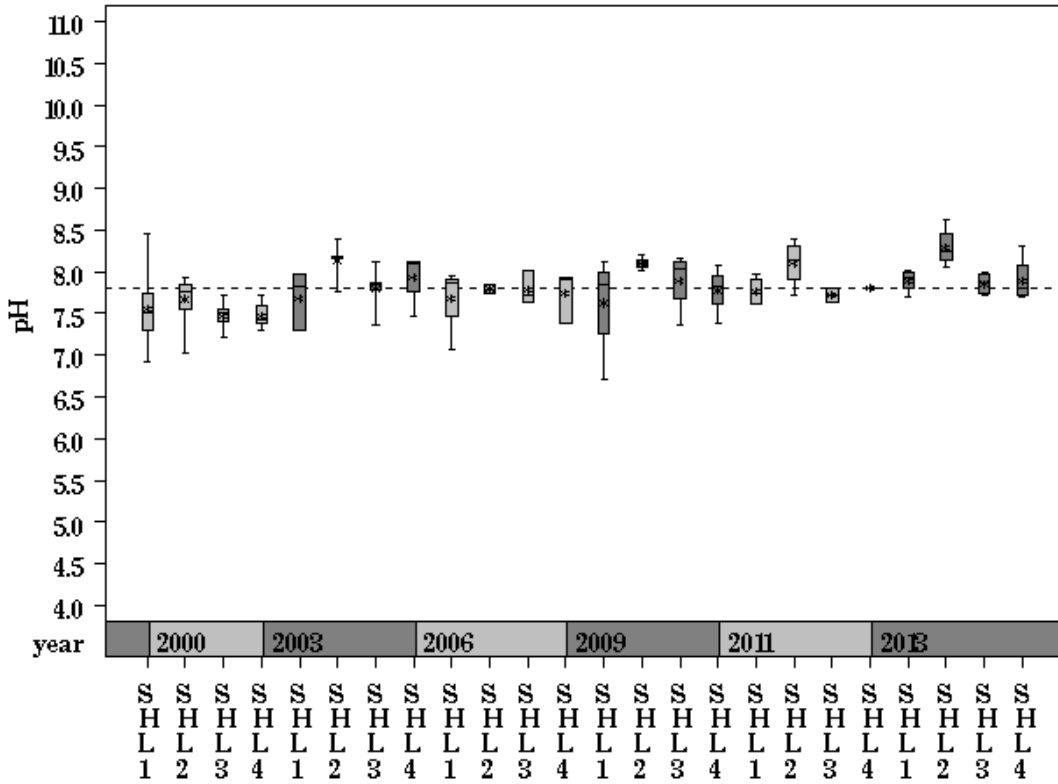
Parameter= TURBIDITY Unit= NTU Watershed= Shoal



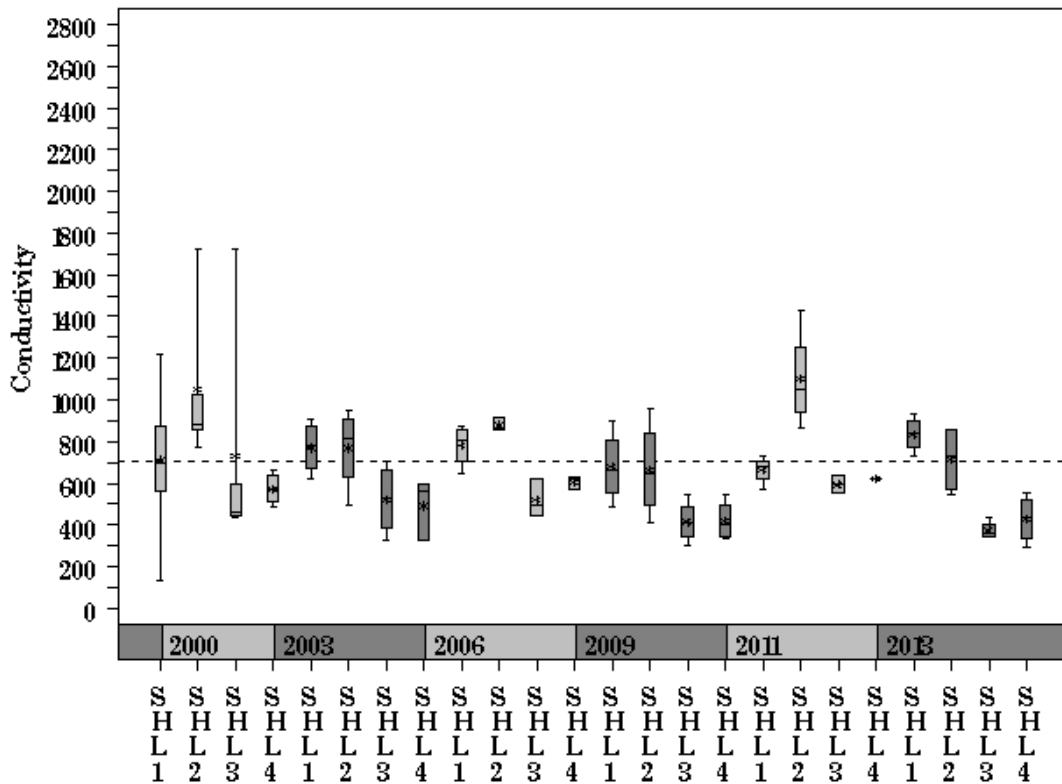
Shoal Creek Watershed

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

Parameter= PH Unit= Standard units Watershed= Shoal



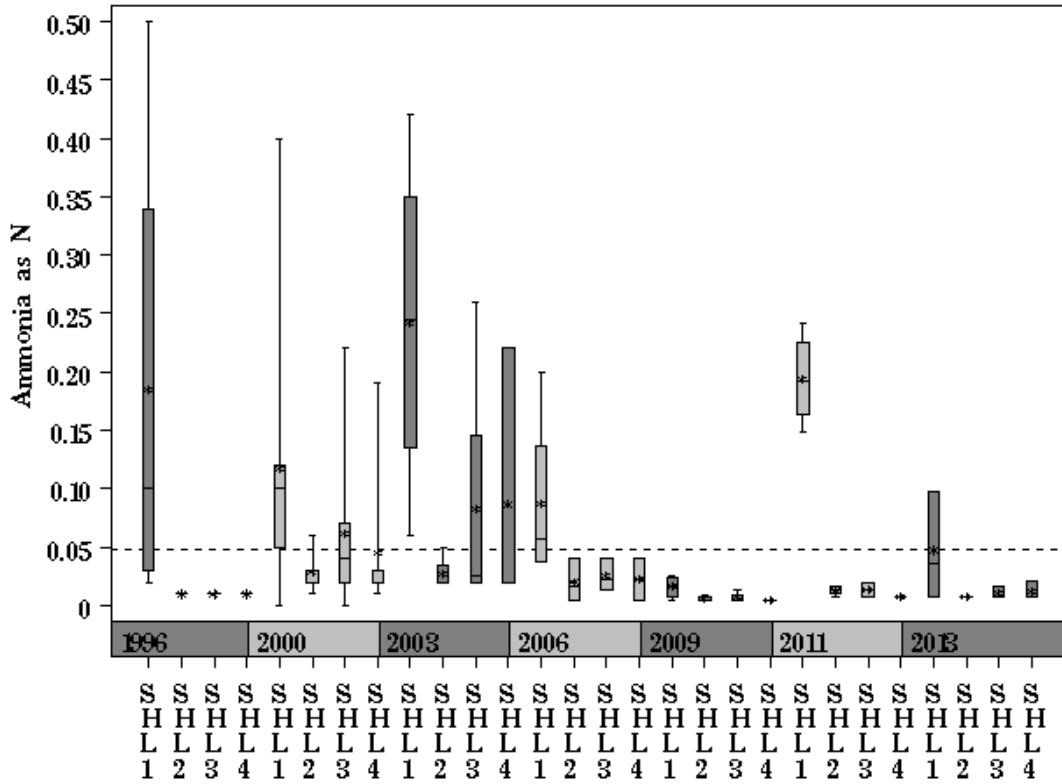
Parameter= CONDUCTIVITY Unit= uS/cm Watershed= Shoal



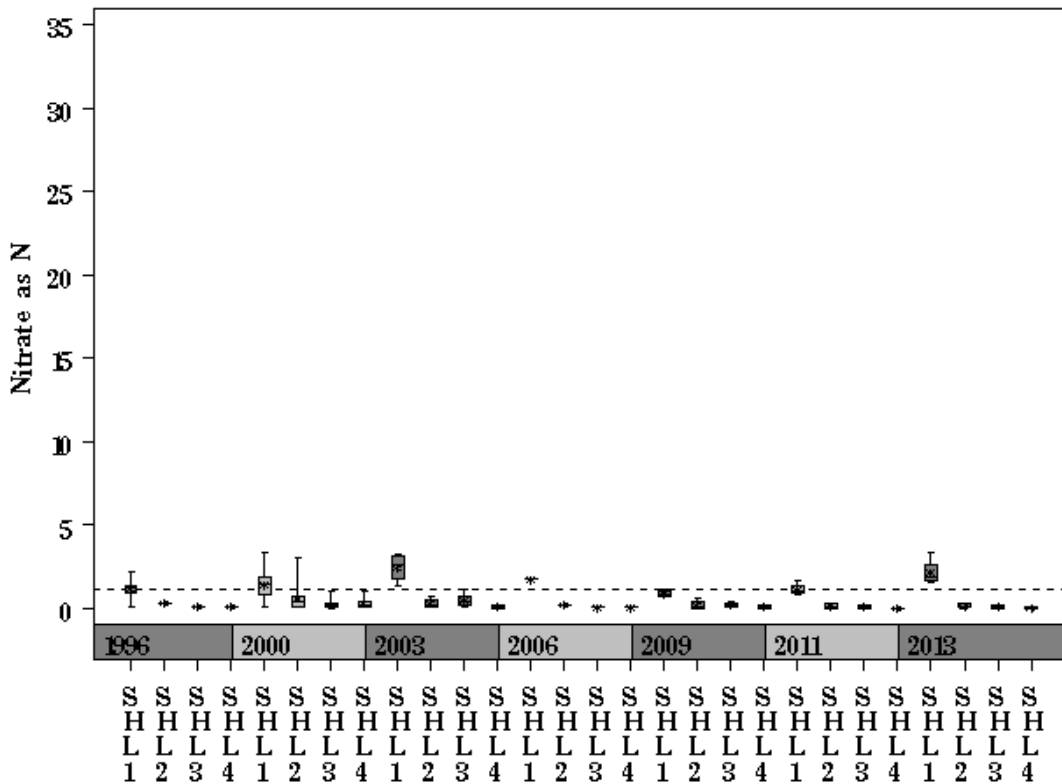
Shoal Creek Watershed

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

Parameter= AMMONIA AS N Unit= mg/L Watershed= Shoal



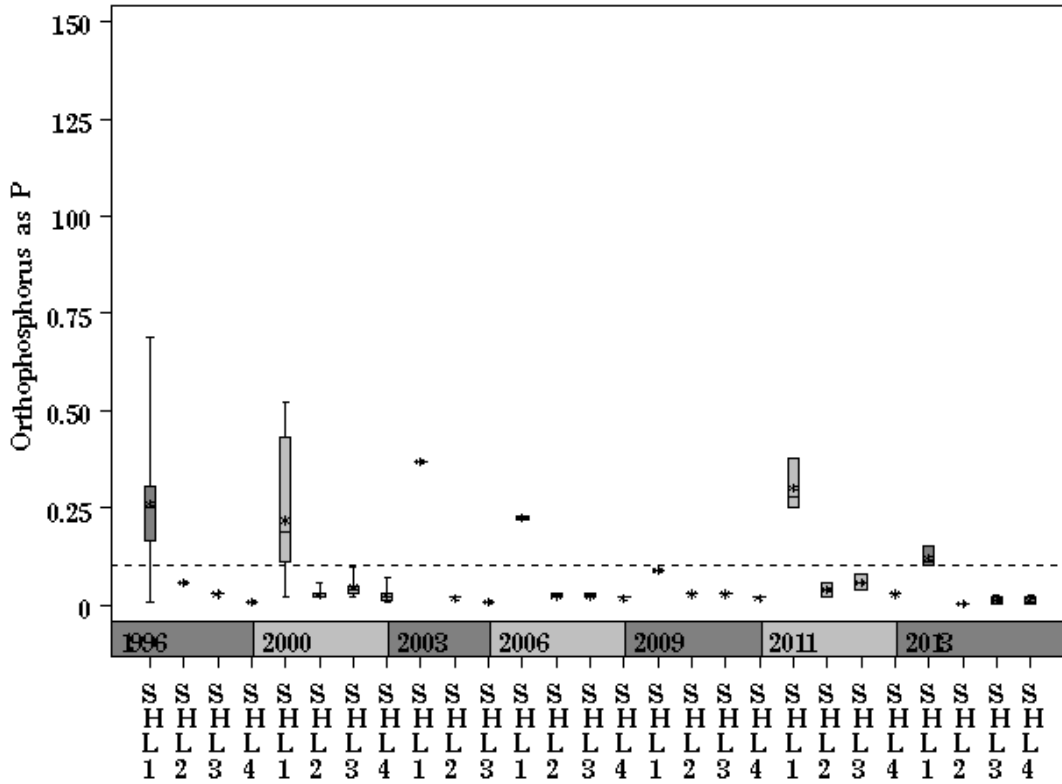
Parameter= NITRATE AS N Unit= mg/L Watershed= Shoal



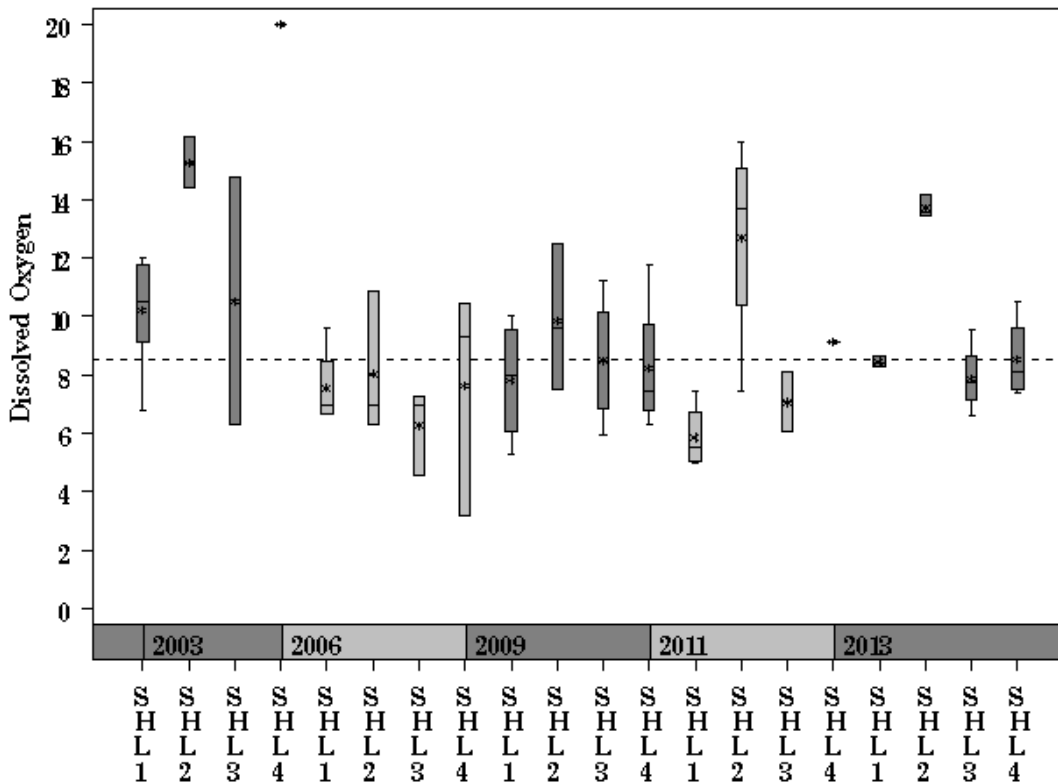
Shoal Creek Watershed

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

Parameter= ORTHOPHOSPHORUS AS P Unit= mg/L Watershed= Shoal

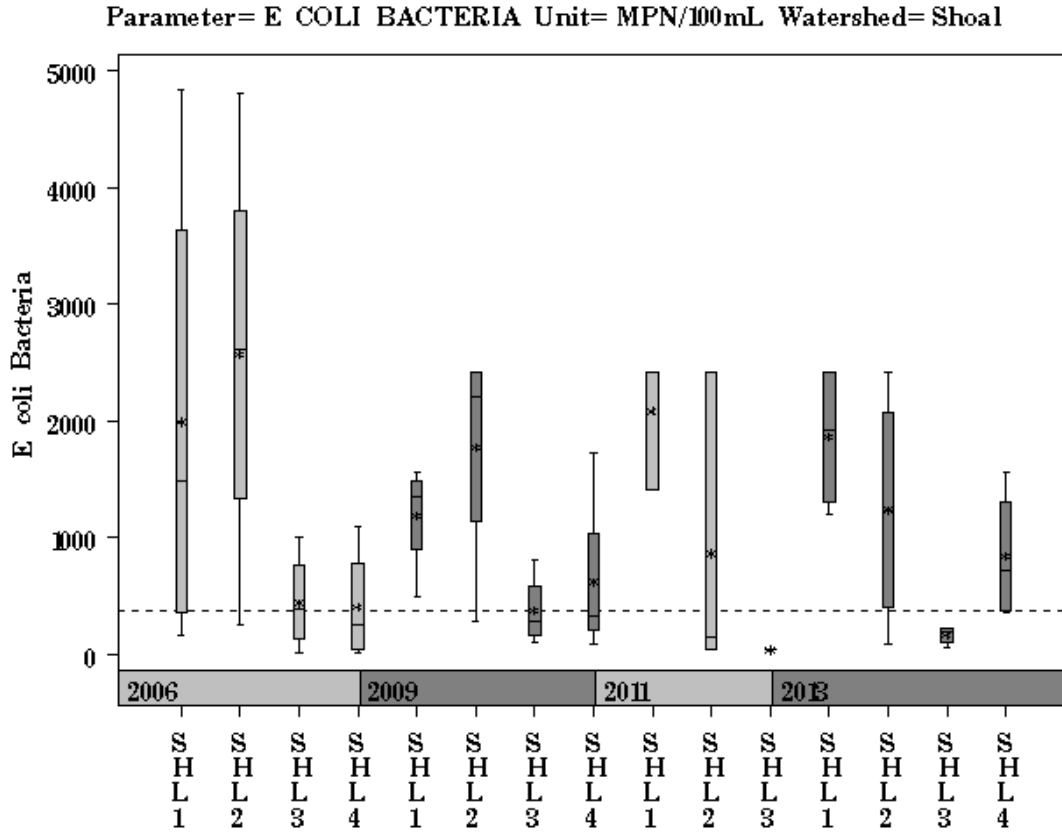


Parameter= DISSOLVED OXYGEN Unit= mg/L Watershed= Shoal



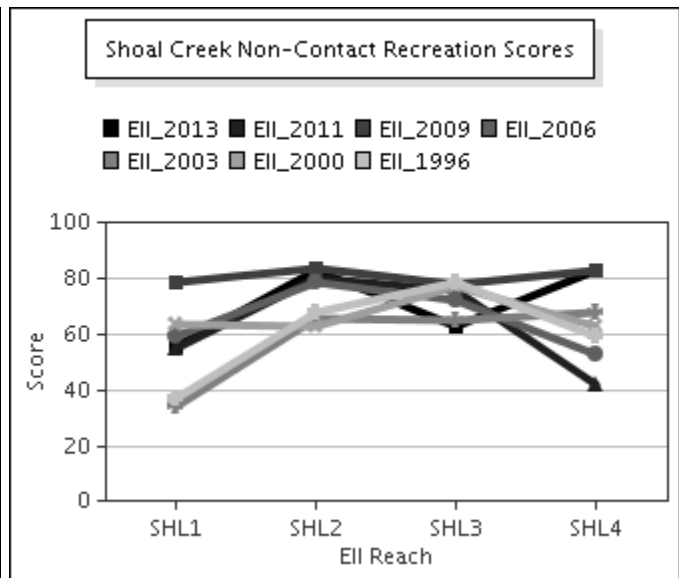
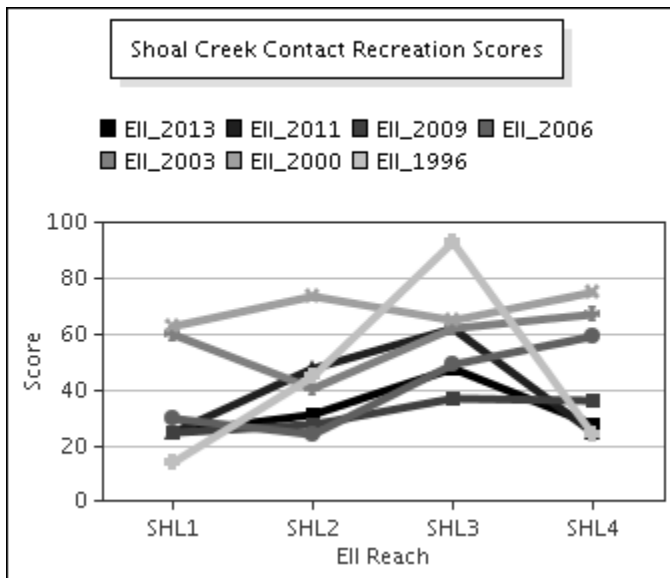
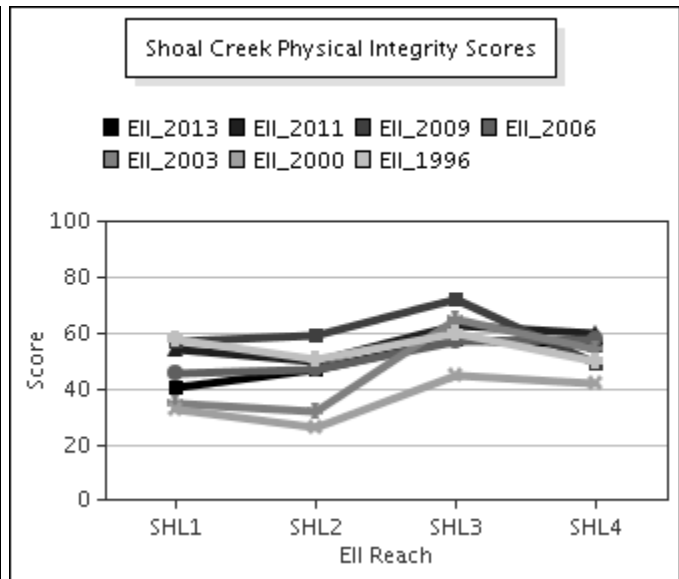
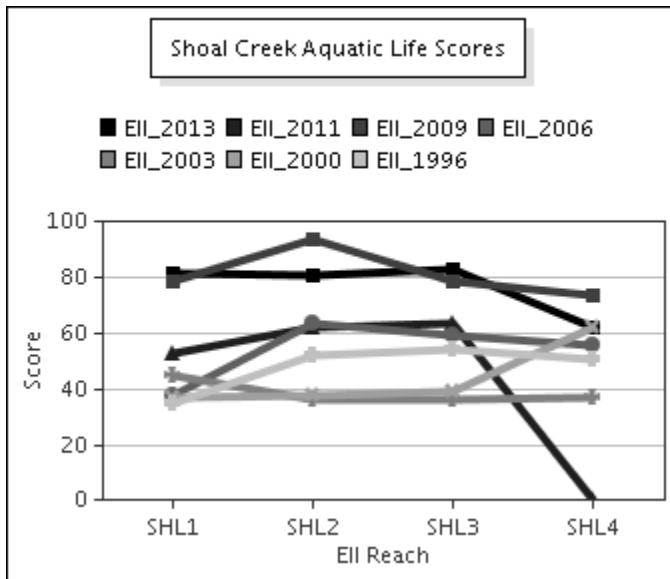
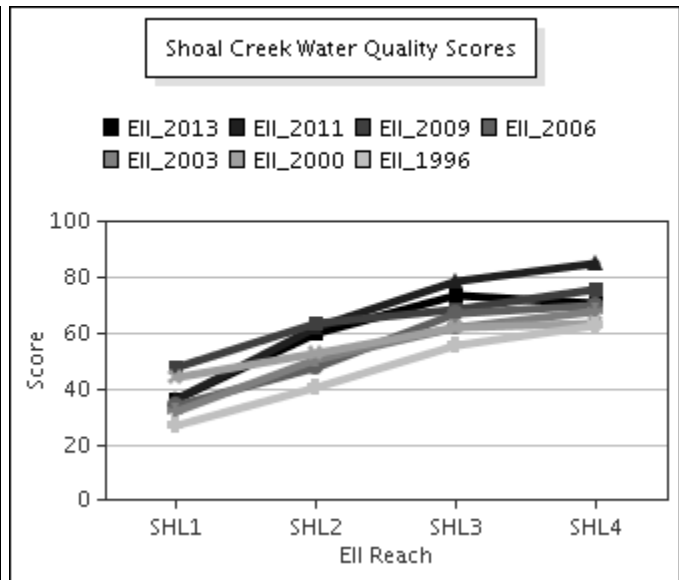
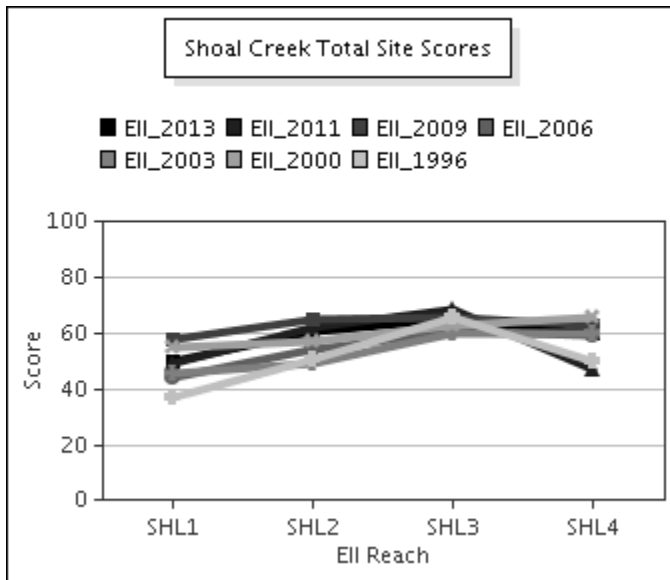
Shoal Creek Watershed

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



Shoal Creek Watershed

Score Summary – Reach scores for each sample year



Shoal Creek Watershed

Benthic Macroinvertebrates – Taxa List, Pollution Tolerance Index & Functional Feeding Group for 2013 Sample Sites (Downstream to Upstream)

Benthic Macroinvertebrate ID	PTI	FFG	Shoal us 1st St (Site 122)	Shoal @ 24th St (Site 116)	Shoal @ Shoal Edge Ct (Site 117)	Shoal ds Crosscreek Dr (Site 118)
<i>Chimarra</i> sp.	2	FC	9		4	36
<i>Hydroptila</i> sp.	2	SC,PI		1	1	1
<i>Camelobaetidius</i> sp.	4	CG		8	4	
Copepoda	4	SC		8	6	
<i>Fallceon quilleri</i>	4	SC,CG	27	169	4	8
Ostracoda	4	FC,CG		3	6	
<i>Agabus</i> sp.	5	P				1
<i>Aquarius</i> sp.	5	P				1
<i>Mesovelgia</i> sp.	5	P			1	
<i>Petrophila</i> sp.	5	SC	7			
<i>Sphaerium</i> sp.	5	FC			1	
<i>Argia</i> sp.	6	P	7	28	1	
<i>Cheumatopsyche</i> sp.	6	FC	65	3		
Chironomidae	6	P,FC	47	81	20	29
<i>Corbicula fluminea</i>	6	FC	1			
<i>Enallagma</i> sp.	6	P		4		1
Hydracarina	6			1		
<i>Neoporus</i> sp.	6	P				2
<i>Rhagovelia</i> sp.	6	P			4	
Tanypodinae	6	P	13			
<i>Caenis</i> sp.	7	SC,CG	1	129	48	13
<i>Ferrissia</i> sp.	7	SC			1	
<i>Gyraulus</i> sp.	7	SC				2
<i>Helisoma trivolvis</i>	7	SC			2	
<i>Stenelmis</i> sp.	7	SC,CG		1		
<i>Caloparyphus</i> sp. / <i>Euparyphus</i> sp.	8	SC,CG				1
Cladocera	8	FC			1	
Culicidae	8	FC			1	
Hirudinea	8	P	3	3	1	1
<i>Hyalella</i> sp.	8	SH,CG		265	13	31
Oligochaeta	8	CG	14	3		12
<i>Physella</i> sp.	9	SC		11	25	2
Collembola	10	CG			1	
<i>Trepobates</i> sp.	10	P			1	
Cambaridae		CG		1	1	
<i>Dugesia</i> sp.		P,CG	3	2	2	88

Shoal Creek Watershed

Benthic Macroinvertebrates – Metric Summary for 2013 Sample Sites (Downstream to Upstream)

Scoring Metric	Shoal us 1st St (Site 122)	Shoal @ 24th St (Site 116)	Shoal @ Shoal Edge Ct (Site 117)	Shoal ds Crosscreek Dr (Site 118)
Number of Taxa *	10	18	21	16
Hilsenhoff Biotic Index *	5.7	6.5	6.7	5.6
Number of Ephemeroptera Taxa *	2	3	3	2
Percent of Total as Chironomidae *	31	11	14	13
Number of EPT Taxa *	4	5	5	4
Percent of Total as EPT *	52	43	41	25
Percent of Total as Predator *	37	16	20	54
Number of Intolerant Taxa *	2	5	6	3
Percent Dominance (Top 3 Taxa) *	71	78	63	68
EPT / EPT + Chironomidae	1	1	1	1
Number of Diptera Taxa	1	1	2	2
Number of Non-Insect Taxa	3	9	10	6
Number of Organisms	196	721	147	229
Percent Dominance (Top 1 Taxa)	33	37	33	38
Percent of Total as Collector / Gatherer	23	81	53	67
Percent of Total as Dominant Guild (FFG)	68	81	59	67
Percent of Total as Elmidae	0	0	0	0
Percent of Total as Filterers	68	12	22	28
Percent of Total as Grazers (PI & SC)	18	44	59	12
Percent of Total as Tolerant Organisms	0	2	18	1
Percent of Trichoptera as Hydropsychidae	88	75	0	0
Ratio of Intolerant : Tolerant Organisms	0.28	0.35	0.22	0.50
TCEQ Qualitative Aquatic Life Use Score	18	23	22	20
TCEQ Quantitative Aquatic Life Use Score	27	29	29	23

* **EII scoring parameter: Nine metric parameters are used in the calculation of the EII Benthic Subindex score. Other metrics are shown to supplement evaluation.**

1. # of Taxa: Higher diversity (number of taxa) correlates with greater biological integrity. The average number of taxa per site for 2013/2014 samples was 15; the lowest value was 5 and the highest value was 30.
2. Hilsenhoff Biotic Index (HBI): HBI values range from 0 to 10. Low HBI values reflect a higher abundance of taxa that are sensitive to organic (nutrient) pollution, thus a lower level of this type of pollution. The average HBI per site for 2013/2014 samples was 5.4; the lowest value was 3.7 and the highest value was 8.1.
3. # of Ephemeroptera taxa: A higher number of Ephemeroptera (mayfly) taxa correlates with greater biological integrity. The average number of taxa per site for 2013/2014 samples was 2; the lowest value was 0 and the highest value was 7.
4. % of total as Chironomidae: The percentage of the sample represented by the Dipteran family Chironomidae will increase with a decrease in biological integrity. The average percent Chironomidae per site for 2013/2014 samples was 16%; the lowest value was 0% and the highest value was 77%.
5. # of EPT Taxa: A higher number of Ephemeroptera (mayfly), Plecoptera (stonefly) and Trichoptera (caddisfly) taxa correlates with greater biological integrity. The average number of EPT taxa per site for 2013/2014 samples was 4; the lowest value was 0 and the highest value was 12.
6. % of total as EPT: The percentage of the sample represented by the insect orders Ephemeroptera (mayfly), Plecoptera (stonefly) and Trichoptera (caddisfly) will decrease with a decrease in biological integrity. The average percent EPT taxa per site for 2013/2014 samples was 46%; the lowest value was 0% and the highest value was 89%.
7. % of total as Predator: The percentage of the sample represented by predators is variable with regard to biological integrity. The average percent predator per site for 2013/2014 samples was 31%; the lowest value was 3% and the highest value was 82%.
8. # of Intolerant Taxa: A higher number of pollution intolerant taxa correlates with greater biological integrity. The average number of intolerant taxa per site for 2013/2014 samples was 5; the lowest value was 0 and the highest value was 15.
9. % Dominance (top 3 taxa): The percentage of the sample represented by the three most abundant taxa will increase with a decrease in biological integrity. The average percent of sample dominated by the top three taxa per site for 2013/2014 samples was 72%; the lowest value was 39% and the highest value was 96%.

Shoal Creek Watershed

Diatoms – Taxa List & Pollution Tolerance Index for 2013 Sample Sites (Downstream to Upstream)

Diatom Species Name	PTI	Shoal us 1st St (Site 122)	Shoal @ 24th St (Site 116)	Shoal @ Shoal Edge Ct (Site 117)	Shoal ds Crosscreek Dr (Site 118)
<i>Amphora inariensis</i>	4	34			2
<i>Fragilaria acus</i>	4	4			
<i>Achnantheidium minutissimum</i>	3	14	24	16	157
<i>Amphipleura pellucida</i>	3			4	
<i>Amphora libyca</i>	3	3			
<i>Amphora pediculus</i>	3	159	8	90	8
<i>Brachysira vitrea</i>	3			1	
<i>Caloneis bacillum</i>	3			2	
<i>Cocconeis pediculus</i>	3			22	
<i>Cymbella affinis</i>	3		37	3	
<i>Cymbella hustedtii</i>	3		4		
<i>Cymbella neocistula</i>	3		2		
<i>Denticula kuetzingii</i>	3	2	345	6	2
<i>Encyonema silesiacum</i>	3		24		
<i>Encyonopsis microcephala</i>	3			2	
<i>Epithemia turgida</i>	3				18
<i>Eunotia bilunaris</i>	3				2
<i>Fragilaria capucina</i>	3			2	1
<i>Gomphonema acuminatum</i>	3	2	3	4	
<i>Gomphonema affine</i>	3		4		6
<i>Gomphonema clavatum</i>	3			1	12
<i>Gomphonema gracile</i>	3			1	
<i>Gomphonema grovei</i> var. <i>lingulatum</i>	3	2			
<i>Gomphonema pumilum</i>	3				29
<i>Gomphonema truncatum</i>	3		8		2
<i>Gyrosigma nodiferum</i>	3				
<i>Halamphora montana</i>	3	2			2
<i>Navicula kotschyi</i>	3	3	4		
<i>Navicula radiosa</i>	3			3	
<i>Nitzschia dissipata</i>	3	2			
<i>Nitzschia fonticola</i>	3	3			
<i>Nitzschia linearis</i>	3			1	
<i>Nitzschia sinuata</i> var. <i>tabellaria</i>	3	2			
<i>Pinnularia microstauron</i>	3		1		
<i>Reimeria sinuata</i>	3	4		6	
<i>Rhoicosphenia abbreviata</i>	3	2	1	78	2
<i>Rhopalodia gibba</i>	3				2
<i>Achnantheiopsis lanceolata</i>	2			12	
<i>Cyclotella meneghiniana</i>	2	8	3		
<i>Encyonema minutum</i>	2	3	4		
<i>Gomphonema angustatum</i>	2			12	
<i>Luticola mutica</i>	2			1	
<i>Navicula ingenua</i>	2	5			
<i>Navicula menisculus</i>	2			18	
<i>Navicula recens</i>	2	19			2
<i>Navicula schroeterii</i>	2	6			
<i>Navicula tenelloides</i>	2				2
<i>Navicula trivialis</i>	2	1			
<i>Navicula veneta</i>	2	2			
<i>Nitzschia amphibian</i>	2	4	17	52	206
<i>Nitzschia clausii</i>	2	4			
<i>Nitzschia inconspicua</i>	2	9		8	2
<i>Sellaphora pupula</i>	2	1			1
<i>Suriella angusta</i>	2	1			
<i>Synedra ulna</i>	2	6		1	
<i>Tryblionella apiculata</i>	2	4	2		
<i>Gomphonema parvulum</i>	1	10	2	14	22
<i>Nitzschia palea</i>	1	3		2	
<i>Nitzschia solita</i>	1	3			

----- This table is continued on the following page -----

Shoal Creek Watershed

Diatoms – Taxa List & Pollution Tolerance Index for 2013 Sample Sites (Downstream to Upstream)

----- This table is continued from the previous page -----

Diatom Species Name	PTI	Shoal us 1st St (Site 122)	Shoal @ 24th St (Site 116)	Shoal @ Shoal Edge Ct (Site 117)	Shoal ds Crosscreek Dr (Site 118)
<i>Achnanthydium gracillimum</i>			5	4	1
<i>Cocconeis plancentula</i> var. <i>lineata</i>		62	1	18	9
<i>Cymbella excise</i>		5			
<i>Eolimna minima</i>		85		116	10
<i>Fallacia helensis</i>		1			
<i>Fallacia lenzii</i>		1			
<i>Navicula antonii</i>		2	1		
<i>Navicula rostellata</i>		17			

Diatoms – Metric Summary for 2013 Sample Sites (Downstream to Upstream)

Scoring Metric	Shoal us 1st St (Site 122)	Shoal @ 24th St (Site 116)	Shoal @ Shoal Edge Ct (Site 117)	Shoal ds Crosscreek Dr (Site 118)
<i>Cymbella</i> Richness	3	5	3	0
Number of organisms	500	500	500	500
Number of taxa	39	21	29	23
Percent motile taxa	18	5	17	43
Percent similarity to reference condition	25	16	30	34
Pollution tolerance index	2.80	2.94	2.62	2.47

* **EII scoring parameter: Four metric parameters are used in the calculation of the EII Diatom Subindex score: *Cymbella* richness, percent motile taxa, percent similarity to reference condition and pollution tolerance index. Number of taxa is non-scoring, but is shown to supplement evaluation. The number of organisms is typically a sample of 500, but occasionally differs due to sample conditions.**

1. *Cymbella* Richness: The Cymbelloid taxa include species in the genus *Cymbella*, in addition to some species belonging to the genera *Cymbellopsis*, *Cymbopleura*, *Encyonema*, *Encyonemopsis*, *Navicymbula* and *Reimeria*. Their presence highlights the presence of sensitive species, especially with regard to impervious cover, and this value increases with an increase in overall water quality. The average number of Cymbelloid taxa per site for 2013/2014 samples was 3; the lowest value was 0 and the highest value was 7.
2. % Motile Taxa: This is a siltation index showing the relative abundance of genera that are able to move towards the surface if covered by silt. A higher percentage is indicative of a degraded condition caused by increased silt pollution. The average percent motile taxa per site for 2013/2014 samples was 16%; the lowest value was 0% and the highest value was 77%.
3. % similarity to reference condition: This percentage compares a site to reference sites that are selected based on having low percent impervious cover. A higher percentage reflects greater biological integrity. The average percent similarity per site for 2013/2014 samples was 31%; the lowest value was 6% and the highest value was 57%.
4. Pollution Tolerance Index (PTI): This is a total value for a sample, which is a function of the abundance of each taxon (usually species) in a sample and the individual PTI's for each of those taxa. Individual PTI's for each taxon range from 1 (most pollution tolerant) to 4 (most pollution sensitive), thus higher total PTI's for a site reflect greater biological integrity. The average PTI per site for 2013/2014 samples was 2.76; the lowest value was 1.70 and the highest value was 3.45.

Shoal Creek Watershed

Site Photographs



118_t00-us-07_07_2006



118_t00-ds-07_07_2006



117_t00-ds-02_12_2001



117_t00-us-07_07_2006



117-t00-us-05-28-2009



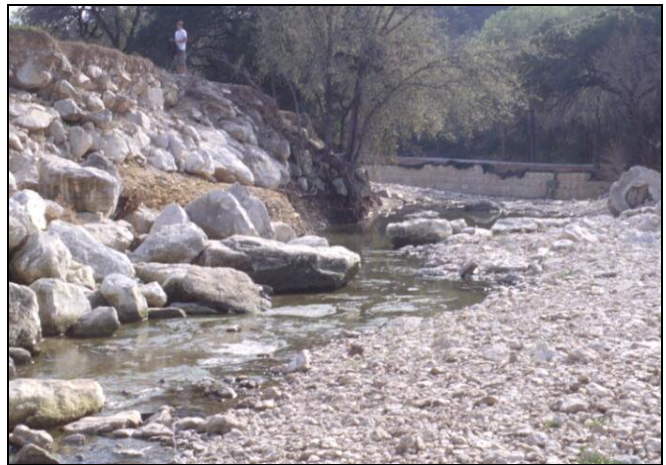
117-t00-ds-05-28-2009

Shoal Creek Watershed

Site Photographs



116_t00-ds-02_12_2001



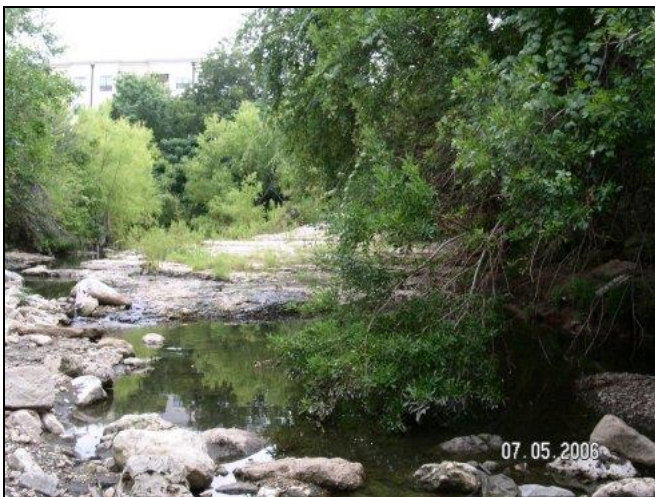
116_t00-ds-03_11_2003



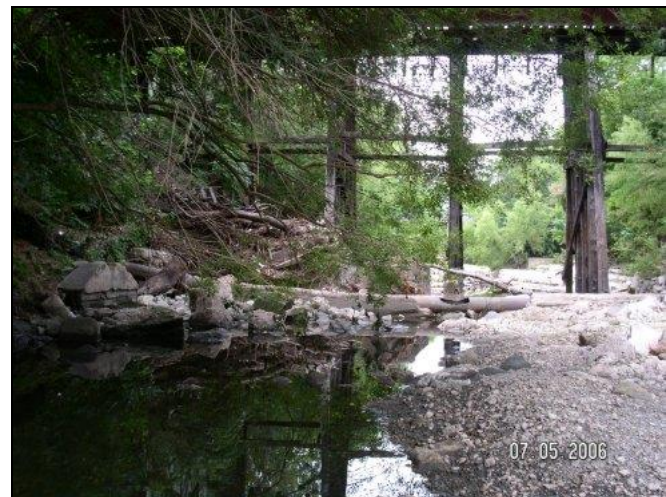
116_t00-us1-07_07_2006



116-t00-us-05-28-2009



122_t00-us-07_05_2006



122_t00-ds-07_05_2006

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