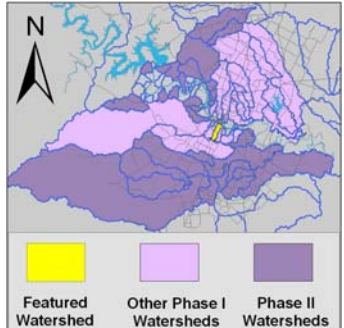


East Bouldin Creek Watershed

Watershed Overview

Catchment	Total area	2 square miles					
	Area in recharge	none					
	Creek length	4 miles					
	Receiving water	Town Lake					
Demographics	2000 population	10,455					
	2030 projected population	12,490					
	30 year projected % increase	19 %					
Land Use	Impervious cover (2003 estimate)	46.4 %					
	Impervious cover (2013 estimate)	54.4 %					
Overall EII Scores	2000	2003	2006	2009	2011	2013	2015
	50	55	53	47	37	58	55



Flow Regime* for Sample Sites on East Bouldin Creek

Site	2001		2003						2006					2009					2010	2011				2013					2015						
	Feb	Feb	Feb	Mar	Mar	May	Sep	Dec	Feb	May	Jul	Aug	Nov	Feb	May	Jun	Oct	Dec	Dec	Dec	Mar	Jun	Jun	Sep	Jan	Apr	M-J	Jun	Jun	Sep	Jan	Apr	May	Jul	Sep
	WQ	Bio	WQ	WQ	Bio	WQ	WQ	WQ	WQ	WQ	Bio	WQ	WQ	WQ	WQ	Bio	WQ	WQ	WQ	WQ	WQ	WQ	Bio	WQ	WQ	Bio	WQ	WQ	Bio	WQ	WQ	WQ	WQ	WQ	WQ
121	B	B	B	B	B	B	n	n	B	B	B	n	n	n	n	n	B	B	n	n	n	n	n	n	B	n	n	n	n	n	B	B		n	N
119	B	B	B	B	B	B	B	B	B	B	B	n	B	n	B	B	B	B	B	B	B	B	B	n	B	B		B	B	B	B	B	B	B	B
120	B	B	B	B	B	B	B	n																											
115	B	B	B	B	B	B	B	n																											
1338									B	B	B	n	n	n	n	n	B	B	B	B	B	n	n	n											
5401																									B	B	B	n			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 East Bouldin Creek 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
EBO1	115	East Bouldin Creek @ Riverside Dr	2000	39	62	53	49	30	29	35	23	44
EBO2	119	East Bouldin Creek @ Elizabeth St	2000	51	62	57	56	88	29	27	30	57
EBO2	120	East Bouldin Creek @ South Austin Center	2000	55	62	59	67	31	26	27	25	50
EBO3	121	East Bouldin Creek Downstream of W. Alpine	2000	61	62	76	49	22	29	33	25	50
EBO1	115	East Bouldin Creek @ Riverside Dr	2003	35	68	40	46	57	35	52	18	47
EBO2	119	East Bouldin Creek @ Elizabeth St	2003	43	68	52	88	69	22	16	28	57
EBO2	120	East Bouldin Creek @ South Austin Center	2003	54	68	49	71	46	26	26	25	52
EBO3	121	East Bouldin Creek Downstream of W. Alpine	2003	56	68	83	83	46	34	26	42	62
EBO1	1338	East Bouldin Creek @ Post Oak	2006	59	42	34	83	57	57	47	66	55
EBO2	119	East Bouldin Creek @ Elizabeth St	2006	55	42	52	77	60	58	57	58	57
EBO3	121	East Bouldin Creek Downstream of W. Alpine	2006	51	42	43	58	47	26	27	25	45
EBO1	1338	East Bouldin Creek @ Post Oak	2009	59	61	33	57	57				45
EBO2	119	East Bouldin Creek @ Elizabeth St	2009	50	61	37	52	52	51	32	70	51
EBO3	121	East Bouldin Creek Downstream of W. Alpine	2009	68	61	38	20	45	47	47		47
EBO1	1338	East Bouldin Creek @ Post Oak	2011	50		27	40	48				33
EBO2	119	East Bouldin Creek @ Elizabeth St	2011	50		46	42	40	56	25	87	47
EBO3	121	East Bouldin Creek Downstream of W. Alpine	2011				42	30				24
EBO1	5401	East Bouldin Creek @ Christopher	2013	62	62	43	66	68	73	55	90	62
EBO2	119	East Bouldin Creek @ Elizabeth St	2013	45	62	20	73	63	65	55	75	56
EBO3	121	East Bouldin Creek Downstream of W. Alpine	2013	71	62	53	68	48	25	11	41	55
EBO1	5401	East Bouldin Creek @ Christopher	2015	50	55	34	78	65	67	61	72	58
EBO2	119	East Bouldin Creek @ Elizabeth St	2015	38	55	25	82	64	61	56	66	54
EBO3	121	East Bouldin Creek DS of W. Alpine Rd	2015	64	55	25	83	45	41	35	45	52

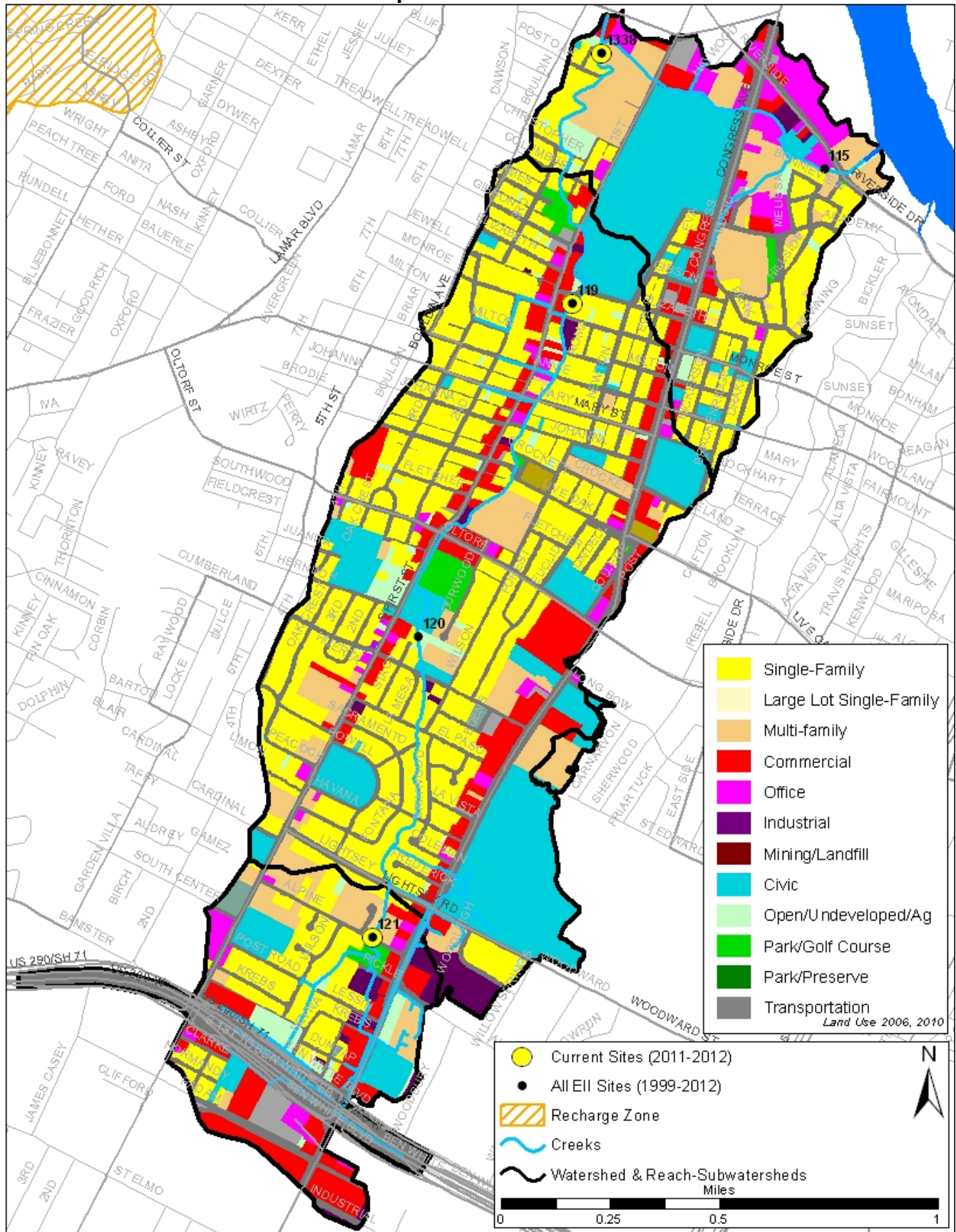
* blank cells indicate parameter was not collected, blank row indicate site was dropped

**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

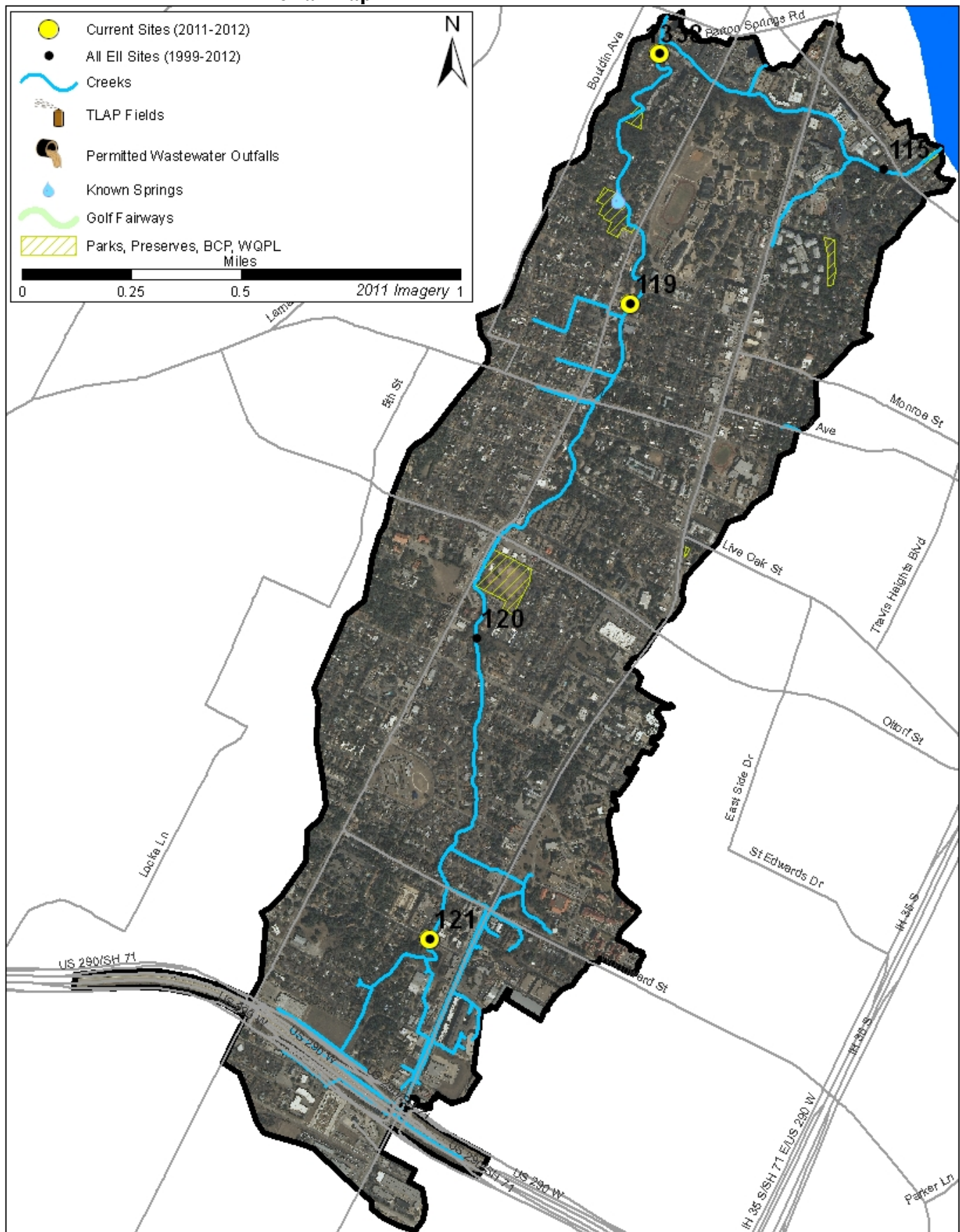
East Bouldin Creek Watershed

Land Use Map



East Bouldin Creek Watershed

Aerial Map



East Bouldin Creek Watershed

Water Quality Data – Temperature, Conductivity, pH, Dissolved Oxygen & *E. coli* for 2015 Sample Sites (Downstream to Upstream)

Qualifiers to the left of the value	>	Greater than	Qualifiers to the right of the value	(blank)	Useable
	<	Less than		S	Exceeds standard range
	<J	Less than detected limit		R	Rejected, failed QC
	J	Estimated			

Watershed	Site	EII Reach	Date	Temp.	Cond.	pH	D.O.	E. Coli
				flag	flag	flag	flag	flag
East Bouldin	5401	EBO1	01/14/2015	9.1	768	7.96	10.2	> 2419.6
East Bouldin	5401	EBO1	04/15/2015	19.2	845	7.99	6.3	261.3
East Bouldin	5401	EBO1	05/05/2015	22.1	891	8.00	7.7	
East Bouldin	5401	EBO1	07/14/2015	26.2	733	8.07	7.0 R	1299.7
East Bouldin	5401	EBO1	09/09/2015	27.0	690	7.41	1.4	96.0
EBO1 Mean				20.7	785	7.89	6.5	1019.2
East Bouldin	119	EBO2	01/14/2015	9.6	767	7.68	10.1	> 2419.6
East Bouldin	119	EBO2	04/15/2015	18.2	809	7.72	6.2	> 2419.6
East Bouldin	119	EBO2	05/05/2015	21.2	855	7.77	5.7	
East Bouldin	119	EBO2	07/14/2015	25.4	642	8.00	6.0 R	2419.6
East Bouldin	119	EBO2	09/09/2015	26.4	784	7.65	3.8	980.4
EBO2 Mean				20.2	771	7.76	6.4	2059.8
East Bouldin	121	EBO3	01/14/2015	6.5	342	8.03	12.5	1046.2
East Bouldin	121	EBO3	04/15/2015	18.2	531	7.98	7.4	488.4
East Bouldin	121	EBO3	07/09/2015	25.6	423	7.45		
EBO3 Mean				16.8	432	7.82	10.0	767.3
East Bouldin Mean				19.6	698	7.82	7.0	1385.0

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

Summary Statistics for all 2015-2016 E.I.I. Sites Combined					
Parameter	2015-2016 Average	2015-2016 Minimum	2015-2016 Maximum	1 Standard Deviation Above	1 Standard Deviation Below
Temperature (C°)	20.7	5.8	34.2	27.5	
Conductivity (uS/cm)	722	160	3549	955	
pH (Standard units)	7.86	5.85	10.25	8.24	7.47
D.O. (mg/l)	7.9	0.1	18.7	10.4	5.5
<i>E. Coli</i> (col/100ml)	316.1	1.0	2420.0	883.7	

East Bouldin Creek Watershed

Water Quality Data – Ammonia, Nitrate / Nitrite, Ortho-Phosphorus, Total Suspended Solids & Turbidity for 2015 Sample Sites (Downstream to Upstream)

Qualifiers to the left of the value	>	Greater than	Qualifiers to the right of the value	(blank)	Useable
	<	Less than		S	Exceeds standard range
	<J	Less than detected limit		R	Rejected, failed QC
	J	Estimated			

Watershed	Site	EII Reach	Date	NH3-N		NO3/NO2		Ortho-P		T.S.S		Turb.	
				<>	flag	<>	flag	<>	flag	<>	flag	<>	flag
East Bouldin	5401	EBO1	01/14/2015	<J	0.008	1.72		<J	0.004	32.8		5.4	R
East Bouldin	5401	EBO1	04/15/2015		0.090	1.58			0.043	1.2		2.0	
East Bouldin	5401	EBO1	05/05/2015										
East Bouldin	5401	EBO1	07/14/2015	<J	0.008	3.05			0.030	<J	1.1	1.5	R
East Bouldin	5401	EBO1	09/09/2015	<J	0.008	0.05			0.033	<J	1.1	1.5	R
EBO1 Mean					0.028	1.60			0.027	9.0		2.5	
East Bouldin	119	EBO2	01/14/2015	<J	0.008	2.24			0.028 R	4.7		7.5	R
East Bouldin	119	EBO2	04/15/2015		0.097	1.58			0.035	1.4		2.4	
East Bouldin	119	EBO2	05/05/2015										
East Bouldin	119	EBO2	07/14/2015		0.063	2.50			0.066	2.4		8.8	R
East Bouldin	119	EBO2	09/09/2015		0.031	3.30			0.031	<J	1.1	3.4	R
EBO2 Mean					0.050	2.40			0.040	2.4		5.5	
East Bouldin	121	EBO3	01/14/2015	<J	0.008	0.08		<J	0.004	2.2		2.1	R
East Bouldin	121	EBO3	04/15/2015		0.060	0.05		<J	0.004	3.4		1.7	
East Bouldin	121	EBO3	07/09/2015										
EBO3 Mean					0.033	0.06			0.004	2.8		1.9	
East Bouldin Mean					0.038	1.62			0.028	5.1		3.6	

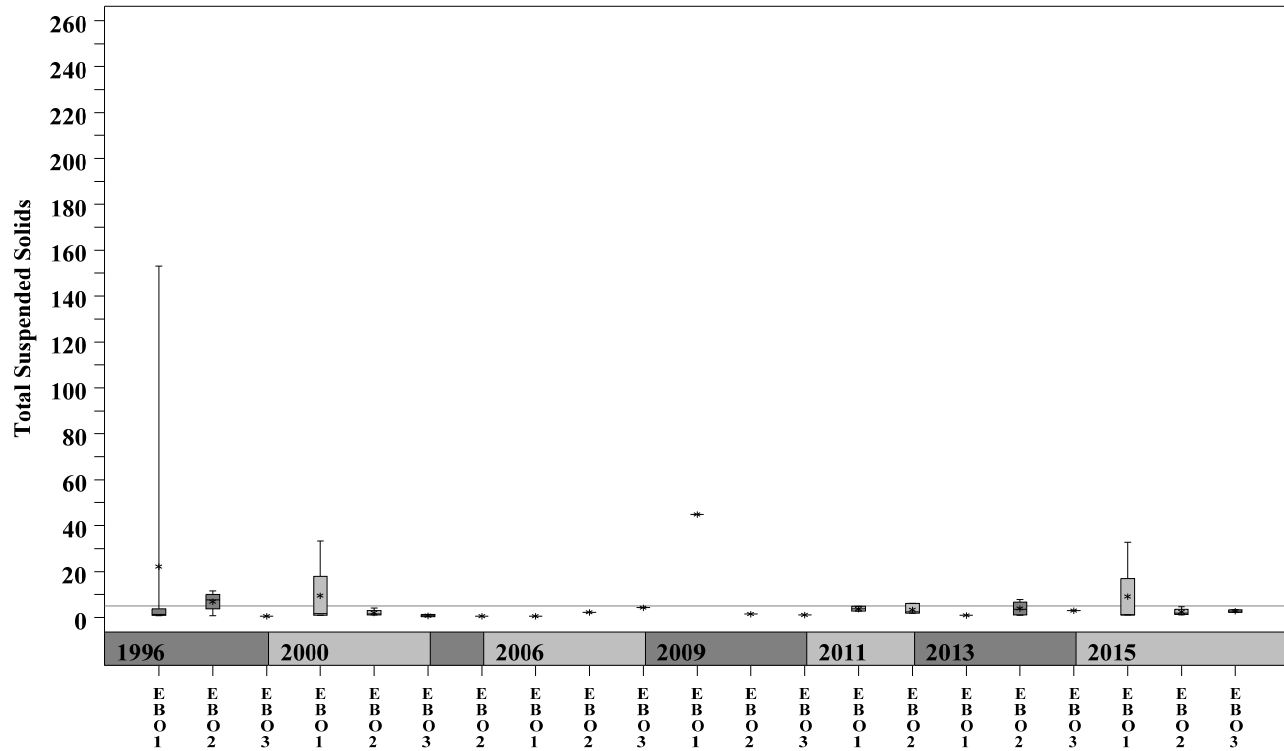
Gray highlighting indicates that the value exceeds one standard deviation from the mean of all E.I.I. sites combined.

Summary Statistics for all 2015-2016 E.I.I. Sites Combined				
Parameter	2015-2016 Average	2015-2016 Minimum	2015-2016 Maximum	1 Standard Deviation Above
NH3-N (mg/l)	0.018	0.008	0.881	0.085
NO3-N (mg/l)	1.14	0.01	12.0	3.16
Ortho-P (mg/l)	0.016	0.004	0.661	0.08
T.S.S. (mg/l)	3.7	1.0	58.2	9.7
Turbidity (NTU)	4.4	0.2	98.6	11.7

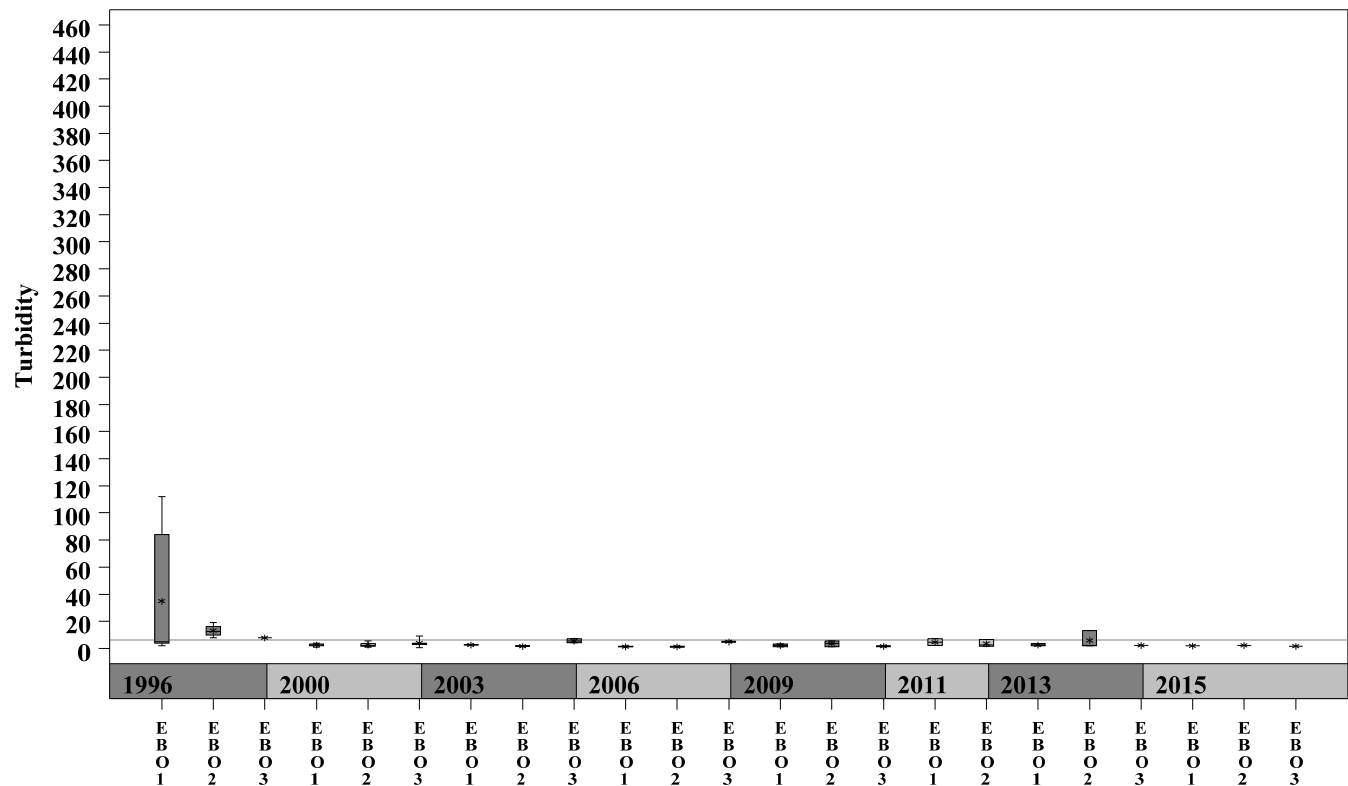
East Bouldin Creek Watershed

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

Parameter=TOTAL SUSPENDED SOLIDS Unit=mg/L Watershed=East Bouldin



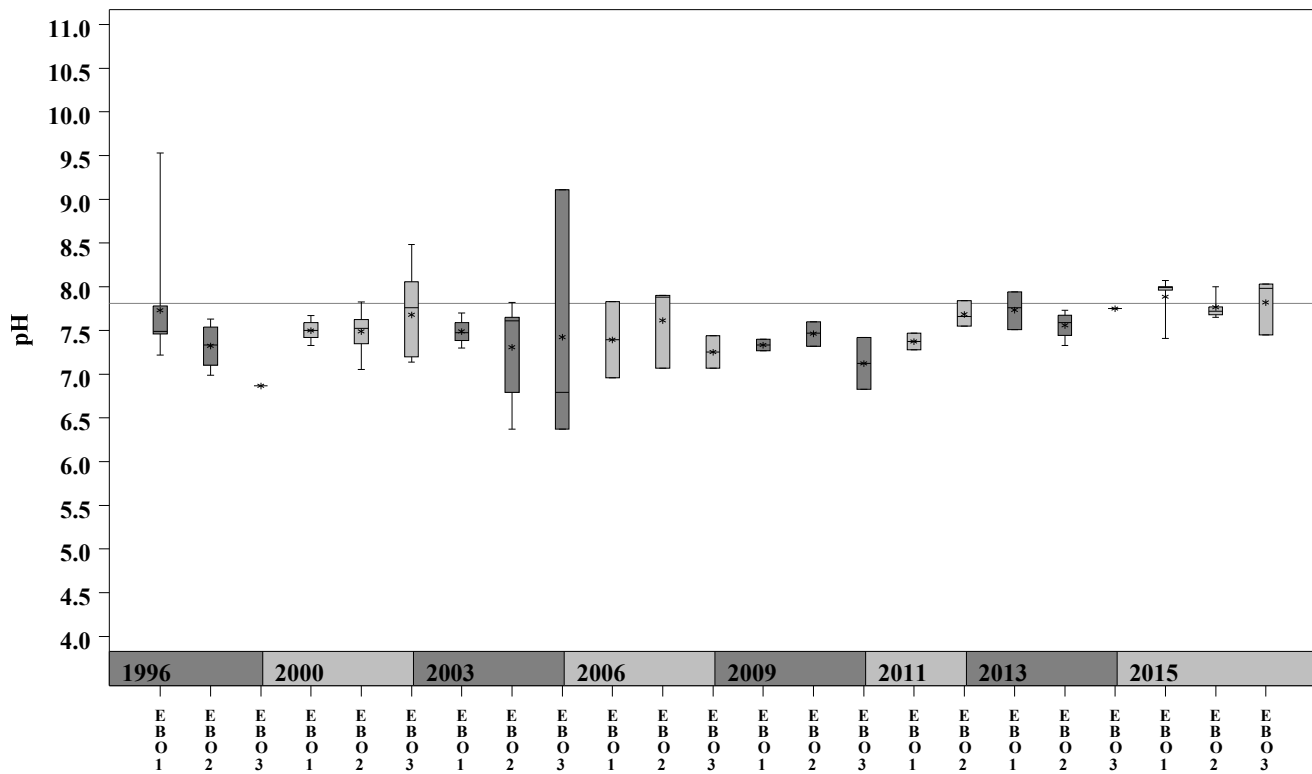
Parameter=TURBIDITY Unit=NTU Watershed=East Bouldin



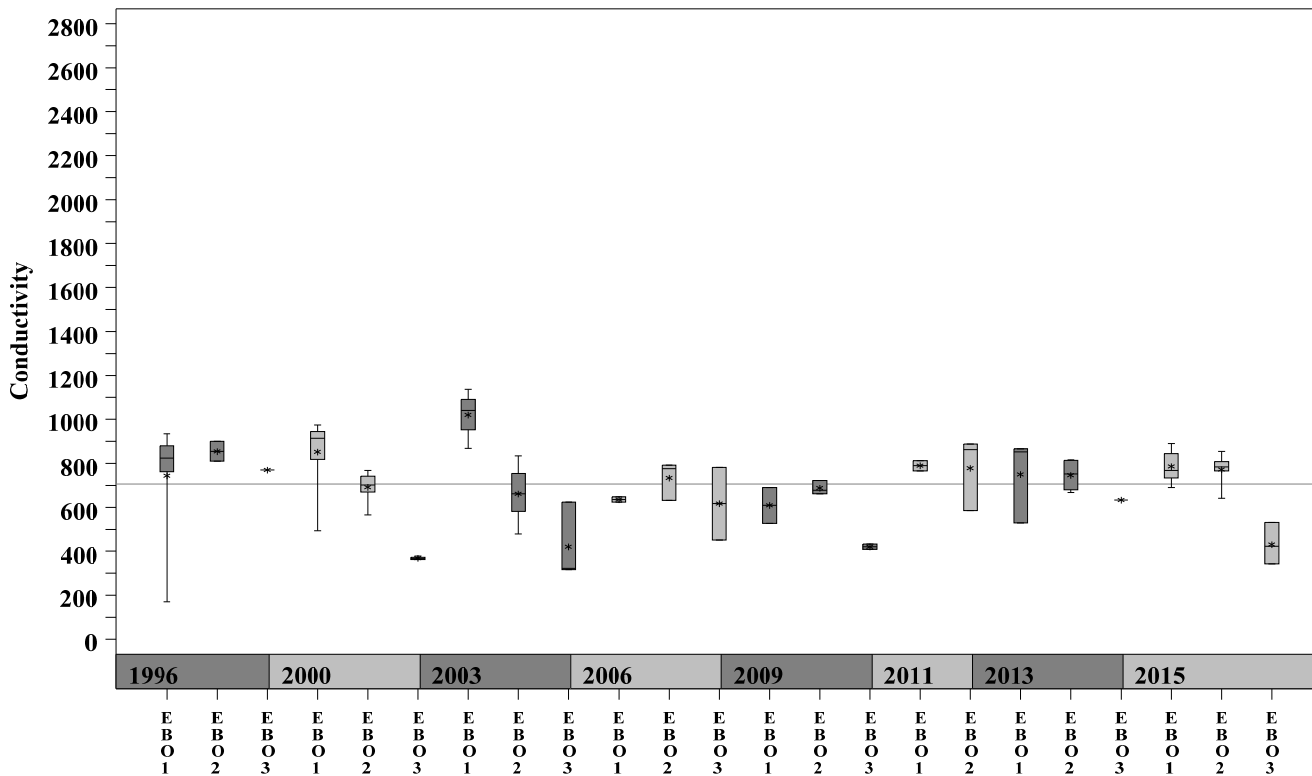
East Bouldin Creek Watershed

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

Parameter=pH Unit=Standard Units Watershed=East Bouldin



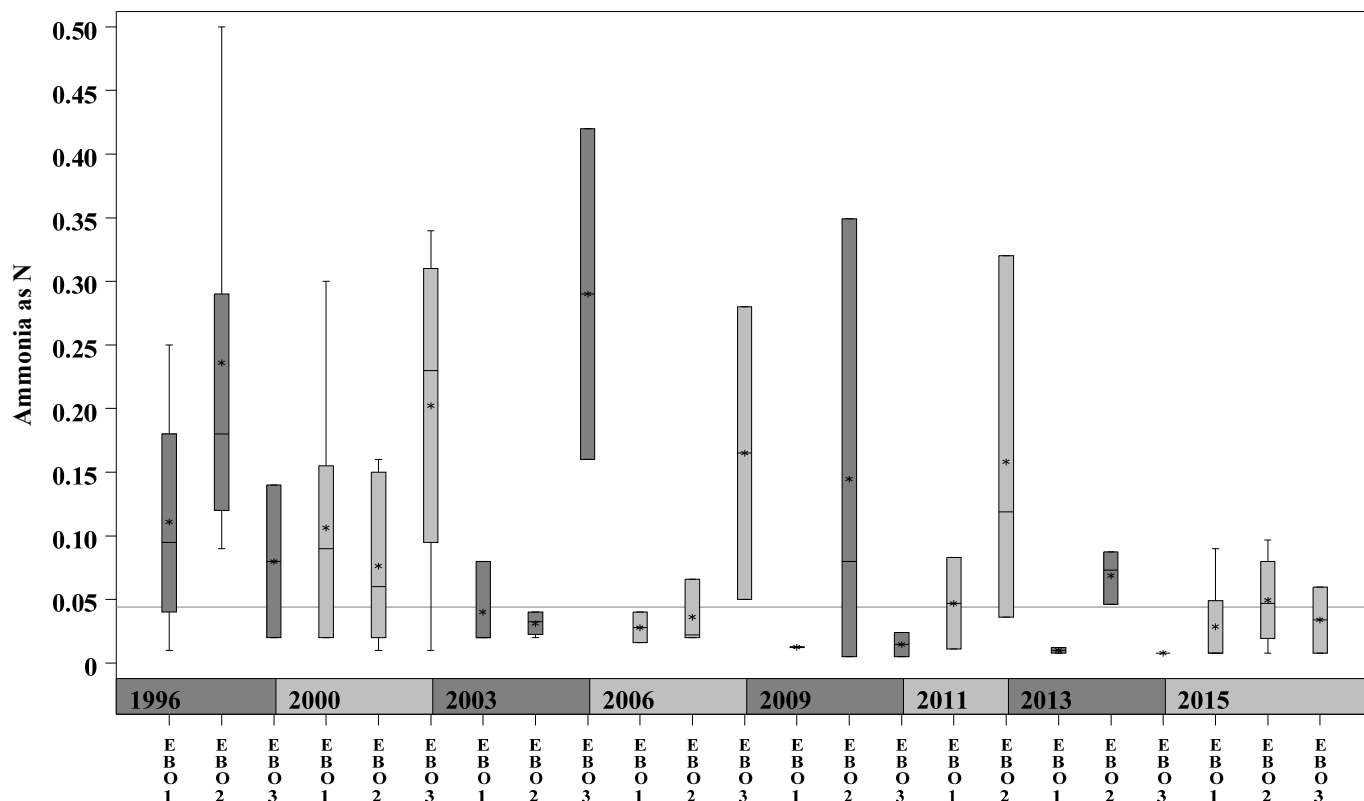
Parameter=CONDUCTIVITY Unit=uS/cm Watershed=East Bouldin



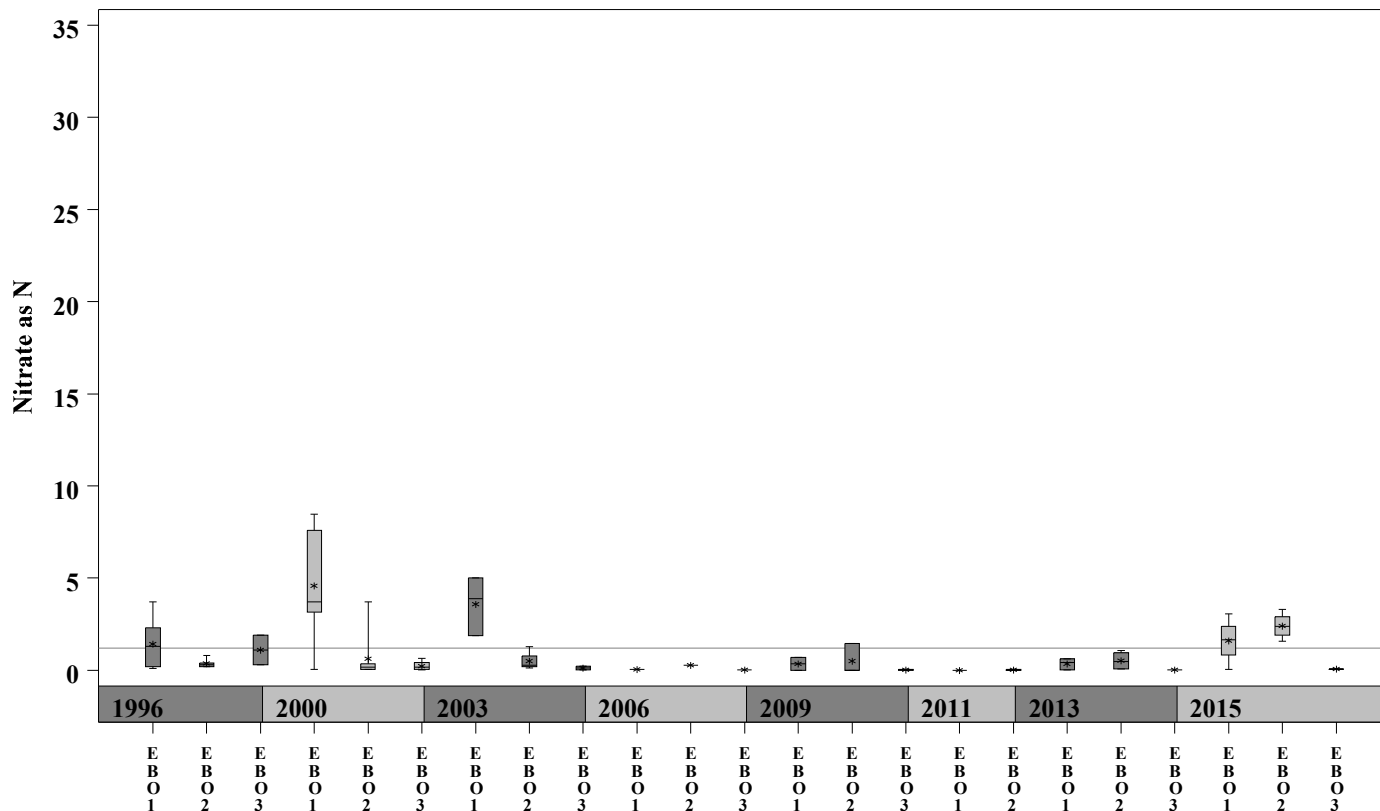
East Bouldin Creek Watershed

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

Parameter=AMMONIA AS N Unit=mg/L Watershed=East Bouldin



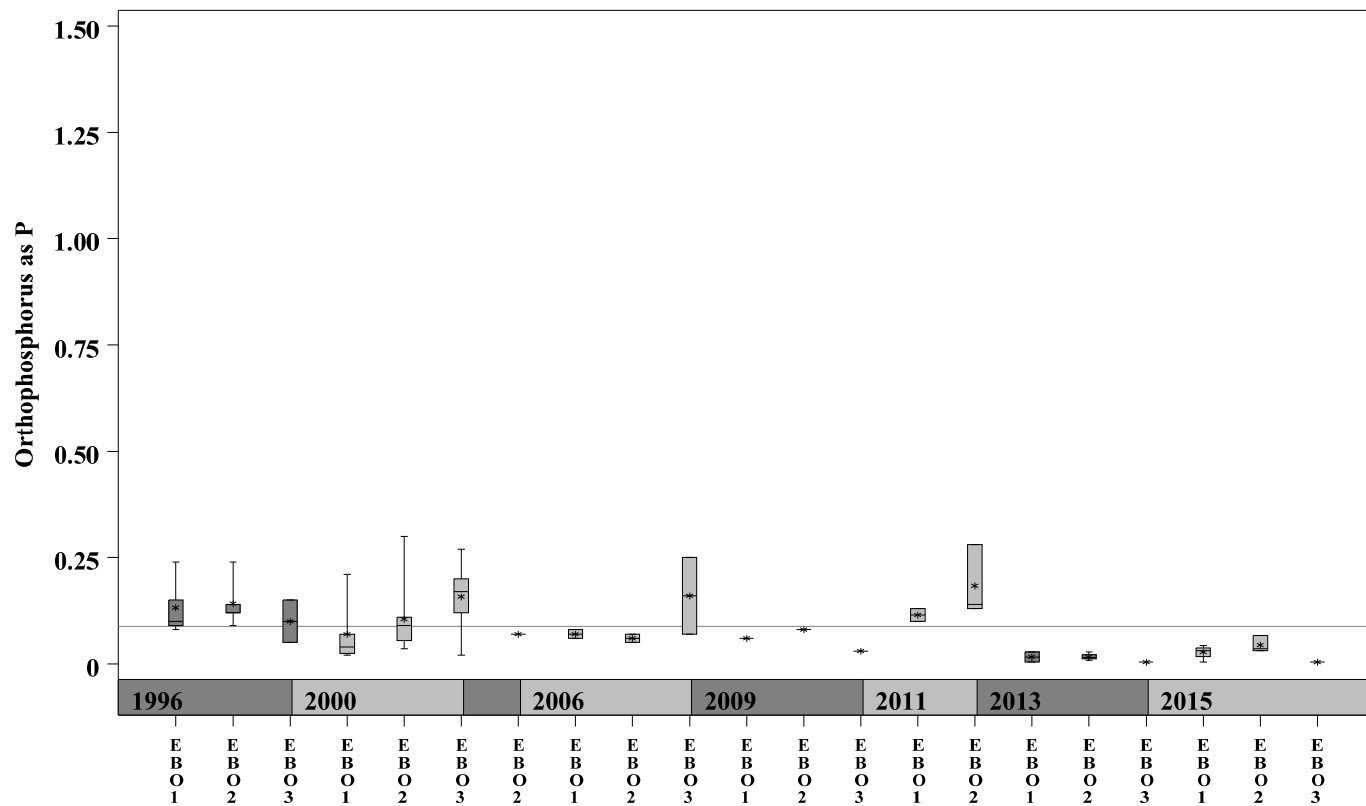
Parameter=NITRATE AS N Unit=mg/L Watershed=East Bouldin



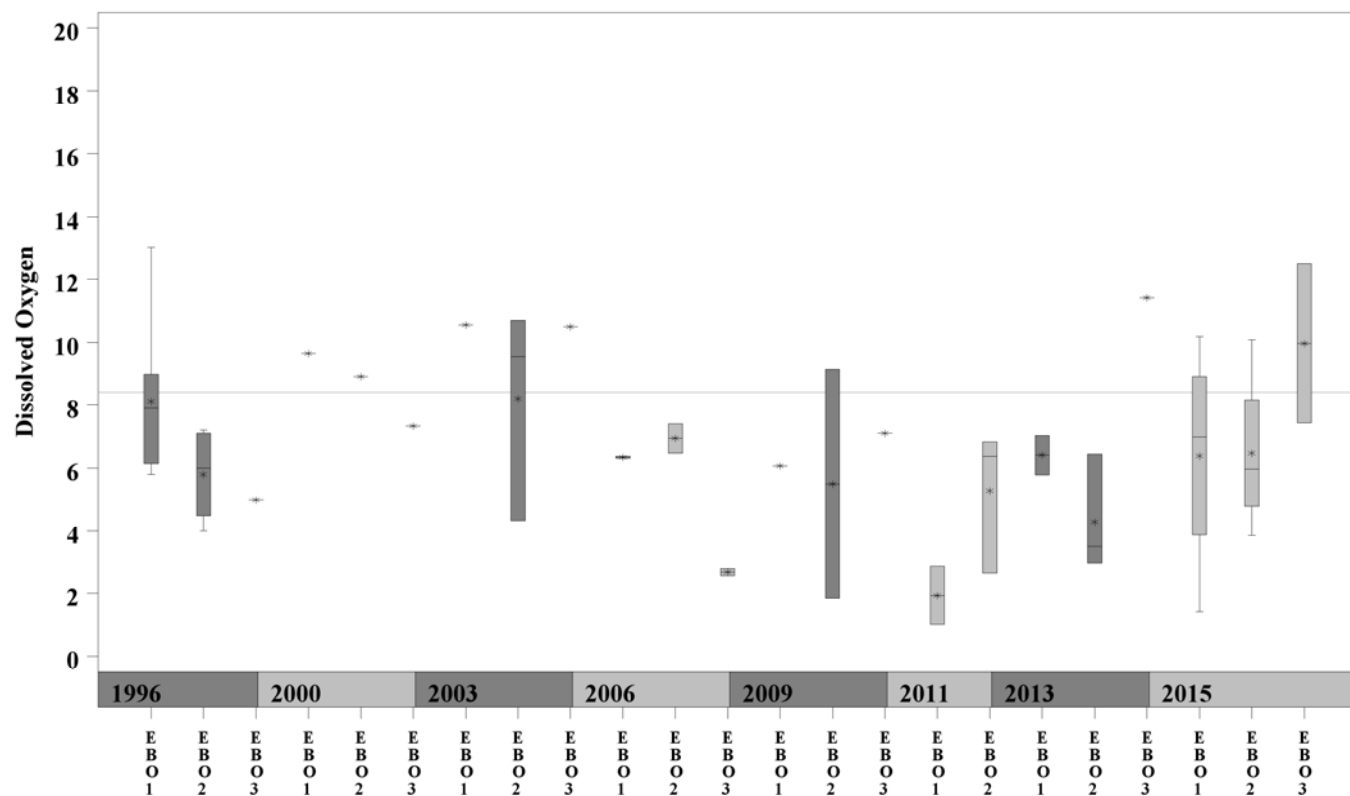
East Bouldin Creek Watershed

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

Parameter = ORTHOPHOSPHORUS AS P Unit = mg/L Watershed = East Bouldin



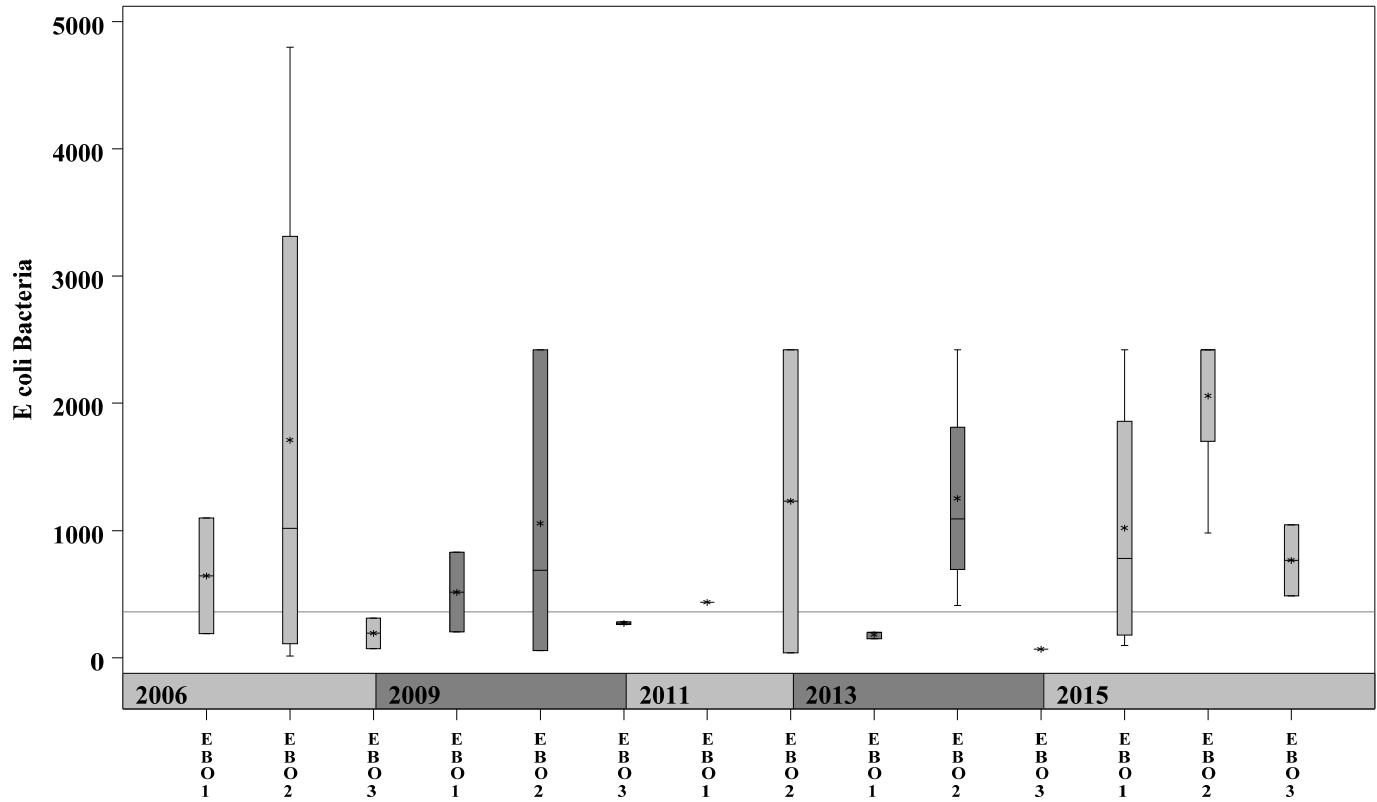
Parameter = DISSOLVED OXYGEN Unit = mg/L Watershed = East Bouldin



East Bouldin Creek Watershed

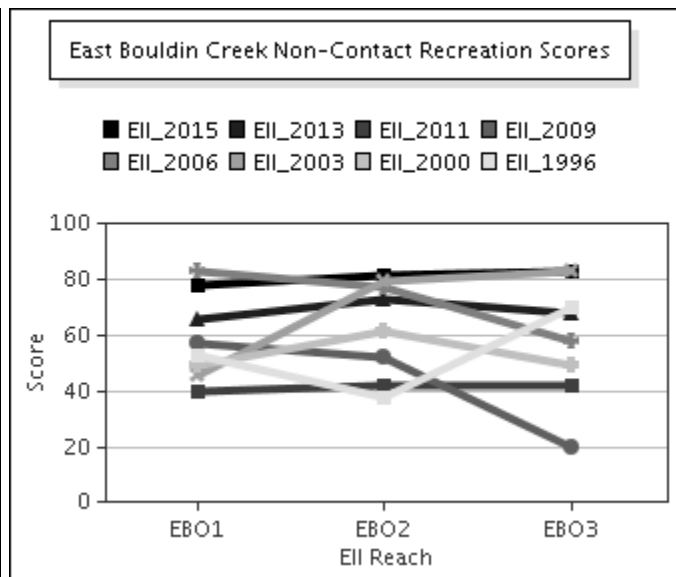
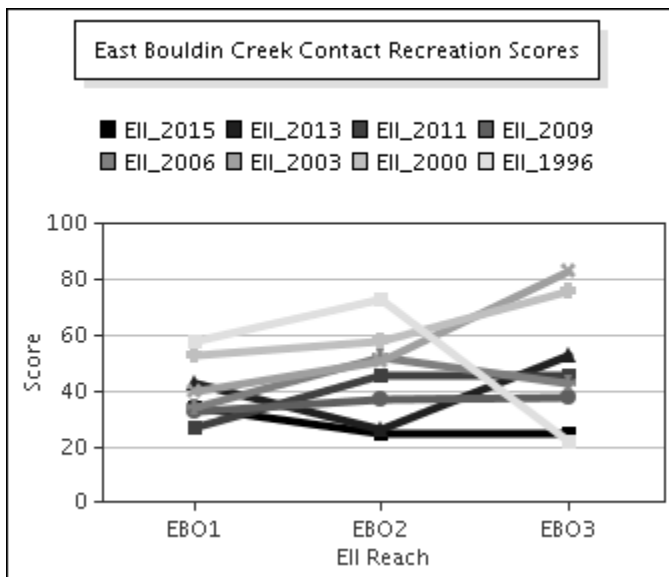
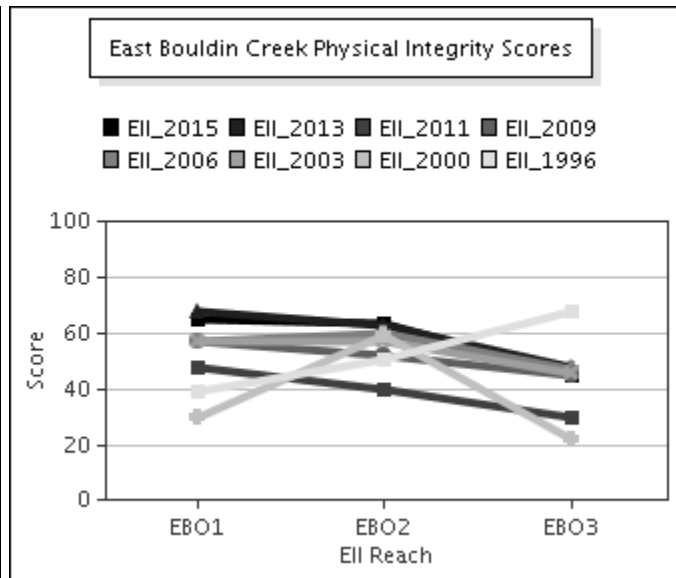
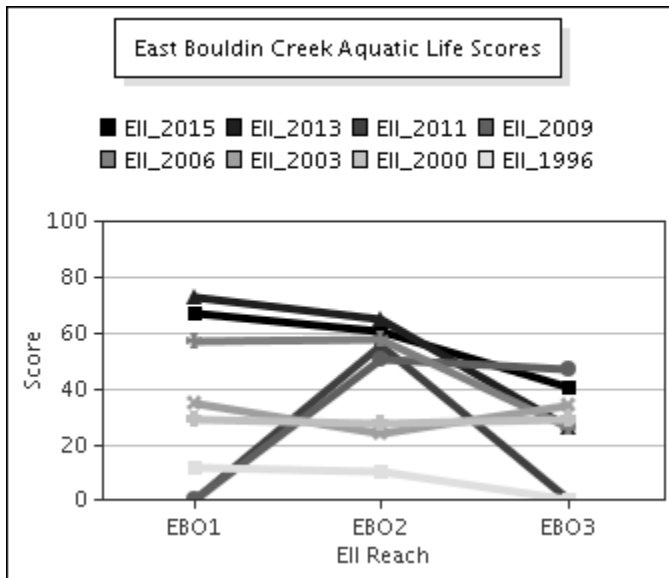
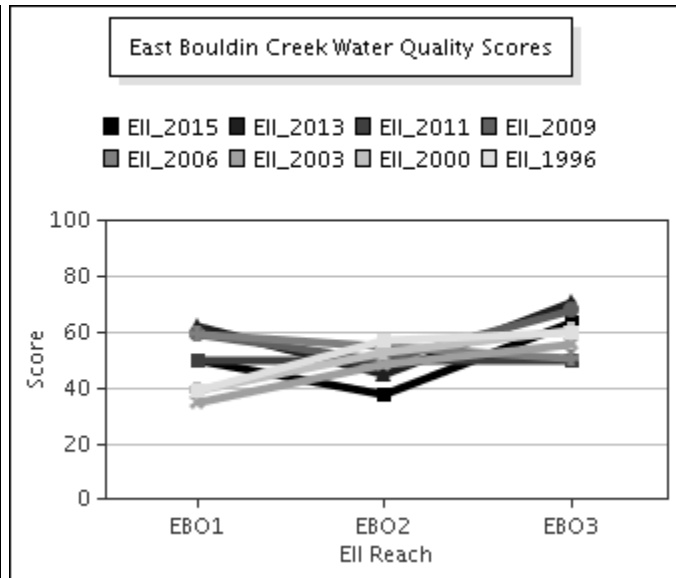
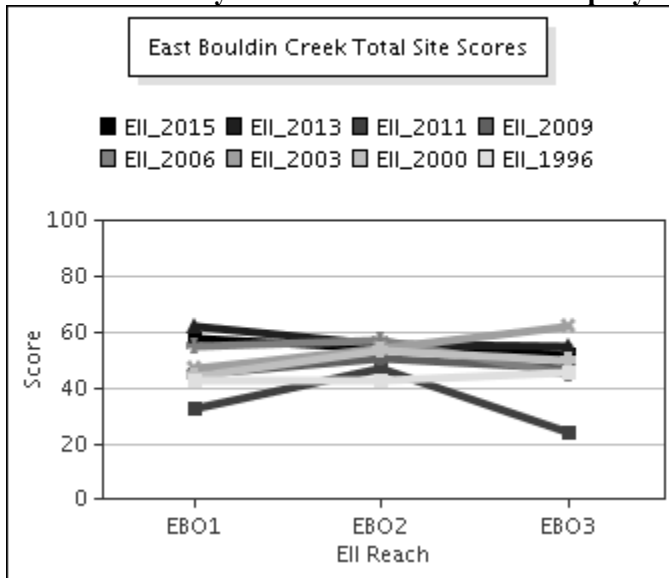
Data Summary Graphs – E.coli (Downstream to Upstream by Year)

Parameter = E COLI BACTERIA Unit = MPN/100mL Watershed = East Bouldin



East Bouldin Creek Watershed

Score Summary – Reach scores for each sample year



East Bouldin Creek Watershed

Benthic Macroinvertebrates – Taxa List, Pollution Tolerance Index & Functional Feeding Group for 2015 Sample Sites (Downstream to Upstream)

Benthic Macroinvertebrates - East Bouldin Creek			EBO @ Alpine (121) 07/09/2015 (WRE)	EBO @ Elizabeth (119) 05/05/2015 (WRE)	EBO @ Christopher (5401) 05/05/2015 (WRE)
Benthic Macroinvertebrate ID	PTI	FFG			
Fallceon	4	CG,SC	2	45	83
Simulium	4	FC			1
Argia	6	P	79	3	3
Cheumatopsyche	6	FC	7	114	121
Chironomidae	6	FC,P	8	36	7
Hydracarina	6			8	8
Tanypodinae	6	P	1	3	1
Gyraulius	7	SC	1		
Stenelmis	7	CG,SC	1		
Hirudinea	8	P	1		
Hyaella	8	CG,SH		1	1
Oligochaeta	8	CG	2	6	4
Tipula	8	CG,SH		1	
Physella	9	SC	14	14	16
Dugesia		CG,P	29	12	30

East Bouldin Creek Watershed

Site Photographs



115_t00-us-02_13_2001



115_t00-us-03_11_2003



119_t00-us-07_05_2006



119-t00-ds-06-01-2009



120_t00-ds-02_13_2001



120_t00-ur-03_10_2003

East Bouldin Creek Watershed

Site Photographs



120_t00-us-02_13_2001



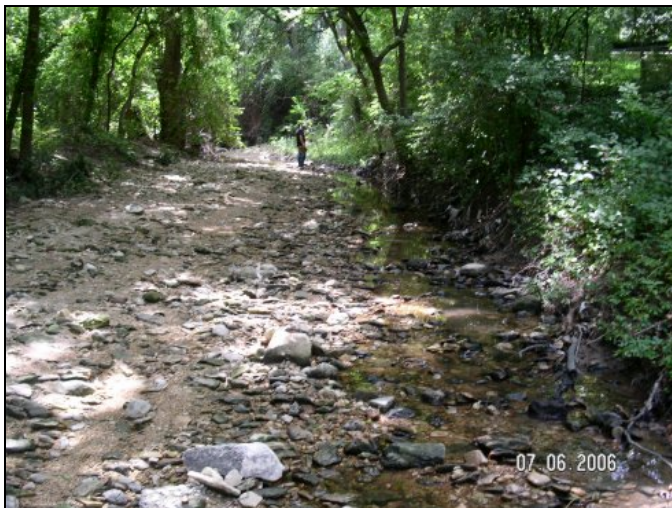
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121_t00-us-07_05_2006



121_t00-ds-06_03_2009



1338_t00-us1-07_06_2006



1338_t00-ds-06_03_2009