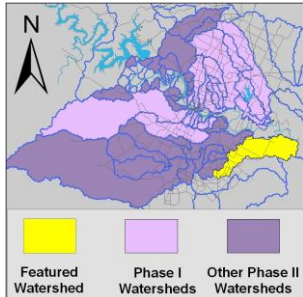


Dry Creek (East) Watershed

Summary Sheet

Catchment	Total area	41.8 sq. miles					
	Area in recharge	0					
	Creek length	24.8 miles					
Demographics	Receiving water	Colorado River					
	2000 population	unknown					
	2030 projected population	unknown					
Land Use	30 year projected % increase	unknown					
	Impervious cover (2003 estimate)	4.0 %					
	Impervious cover (2013 estimate)	4.4 %					
Overall EII Scores	1999	2002	2005	2008	2010	2012	2014
	56	55	60	55	60	61	59



Flow Regime* for Sample Sites on Dry Creek (East)

Site	Site Name	2002					2005					2008					2010				2011				2012					2014				
		Feb WQ	Feb Bio	May WQ	Aug WQ	Nov WQ	Mar WQ	Jun WQ	Jun Bio	Sep WQ	Dec WQ	Feb WQ	May WQ	Jun Bio	Sep WQ	Dec WQ	Mar WQ	May WQ	May Bio	Oct WQ	Dec WQ	Mar WQ	Apr Bio	Jul WQ	Sep WQ	Jan WQ	Apr WQ	May Bio	Jul WQ	Sep WQ				
1208	FM 812	n		n	n	B																												
1209	Elroy	n		n	n	B																												
1211	Pearce	B	B	B	B	B	n	B	B	B	n	n	B	n	B	B	S	B	B	B	B	B	n	B	B	B	B	B	B					
1210	Wolf	B	B	n	B	B	B	B	B	n	B	n	n	n	B	n	S	n	B	B	B	B	n	B	B	B	B	n	B					
1212	River	B		n	B	B	B	n	n	n																								

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

Index scores* for Dry Creek (East) Sites by Year

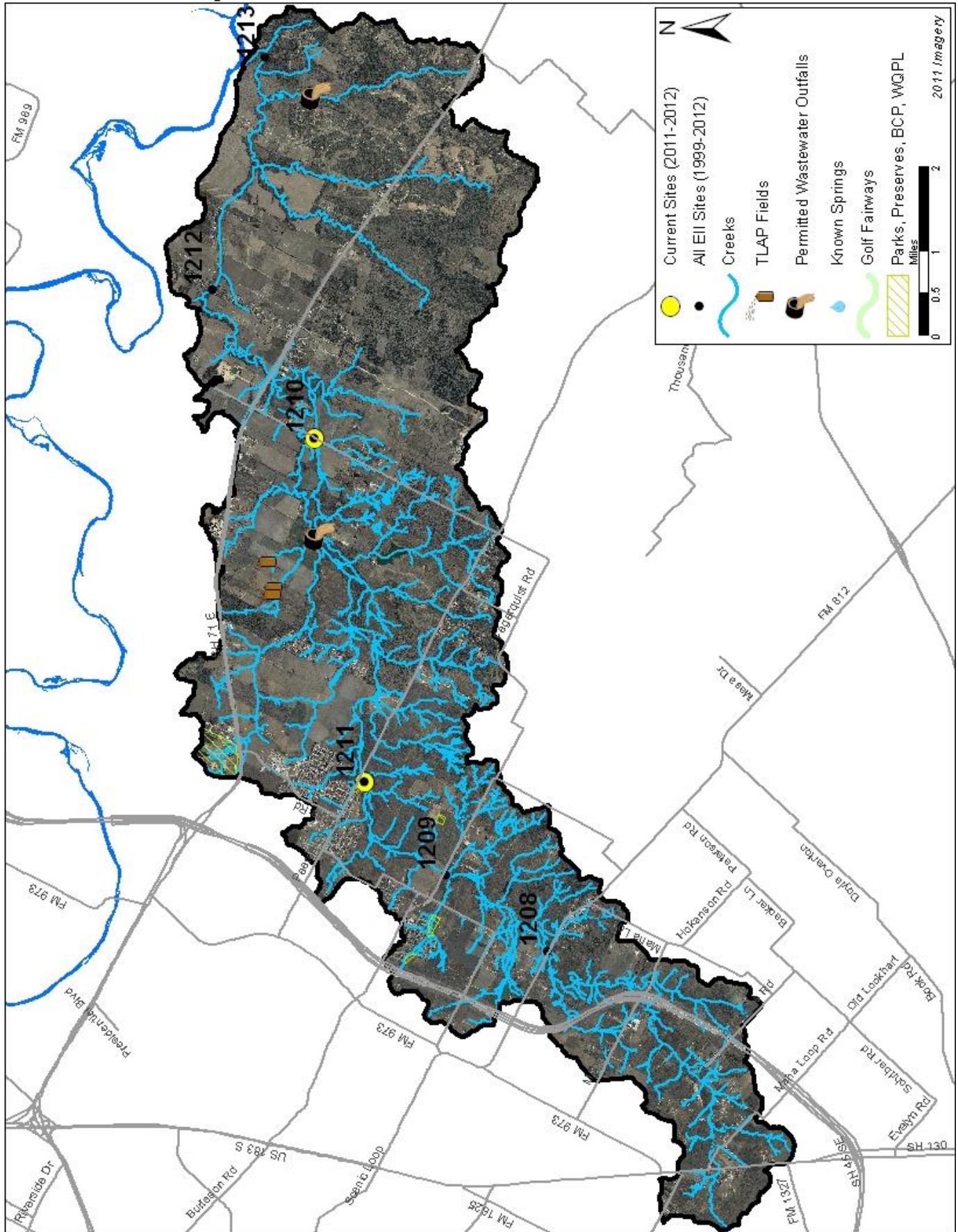
Reach	Site	Site Name	Year	Water Quality	Sediment**	Contact Rec.	Non-Contact Rec.	Physical Integrity	Aquatic Life	Benthic subindex	Diatom subindex	Total EII Score
DRE1	1210	Dry Creek @ Wolf Lane	1999	46	84	90	36	42				50
DRE1	1212	Dry Creek @ River Road	1999	42	84	87	39	68				53
DRE1	1213	Dry Creek @ Colorado Dr	1999	49	84	97	65	72				61
DRE2	1208	Dry Creek @ FM 812	1999	76	84	100	88	64				69
DRE2	1209	Dry Creek @ Elroy Road	1999	65	84	97	48	31				54
DRE2	1211	Dry Creek @ Pearce Road	1999	49	84	83	42	33				49
DRE1	1210	Dry Creek @ Wolf Lane	2002	47	86	76	63	32	27	34	20	55
DRE1	1212	Dry Creek @ River Road	2002	48	86	85	37	48				51
DRE2	1208	Dry Creek @ FM 812	2002	61	86	94	50	26				53
DRE2	1209	Dry Creek @ Elroy Road	2002	58	86	95	72	31				57
DRE2	1211	Dry Creek @ Pearce Road	2002	59	86	96	65	48				59
DRE1	1210	Dry Creek @ Wolf Lane	2005	42	83	64	57	39	56	64	48	57
DRE1	1212	Dry Creek @ River Road	2005	54	83	67	32	48	71		71	59
DRE2	1211	Dry Creek @ Pearce Road	2005	54	83	76	50	44	77	77		64
DRE1	1210	Dry Creek @ Wolf Lane	2008	60	80	87	22	49				50
DRE2	1211	Dry Creek @ Pearce Road	2008	48	80	61	62	49	59	59		60
DRE1	1210	Dry Creek @ Wolf Lane	2010	59	83	45	56	38	57	53	60	56
DRE2	1211	Dry Creek @ Pearce Road	2010	49	83	55	70	58	60	53	66	63
DRE1	1210	Dry Creek @ Wolf Lane	2012	48	82	28	51	59	80	77	83	58
DRE2	1211	Dry Creek @ Pearce Road	2012	58	82	56	62	69	49	55	42	63
DRE1	1210	Dry Creek @ Wolf Lane	2014	60	79	63	19	35	74	74		55
DRE2	1211	Dry Creek @ Pearce Road	2014	59	79	69	60	50	59	59		63

* 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

Dry Creek (East) Watershed

Aerial Map



Dry Creek (East) Watershed

Water Quality Data – Temperature, Conductivity, pH, Dissolved Oxygen & *E. coli* for 2014 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.		E.coli	
				<> Value	flag	<> Value	flag	<> Value	flag	<> Value	flag		
Dry Creek @ Wolf Ln	1210	DRE1	01/15/2014	10.2		692		8.38				60.5	
Dry Creek @ Wolf Ln	1210	DRE1	04/17/2014	17.5		1590		8.27		9.1		115.3	
Dry Creek @ Wolf Ln	1210	DRE1	07/02/2014	29.1		871		7.84		6.5		27.2	
Site 1210 Mean				18.9		1051		8.16		7.8		67.7	
Dry Creek @ Pearce Rd	1211	DRE2	01/15/2014	10.2		442		8.44				272.3	
Dry Creek @ Pearce Rd	1211	DRE2	04/17/2014	16.5		937		7.93		4.1		18.5	
Dry Creek @ Pearce Rd	1211	DRE2	05/07/2014	21.6		1783		7.45		2.8			
Dry Creek @ Pearce Rd	1211	DRE2	07/02/2014	28.3		684		7.50		3.0		52.0	
Dry Creek @ Pearce Rd	1211	DRE2	09/10/2014									30.5	
Site 1211 Mean				19.2		961		7.83		3.3		93.3	
Watershed Mean				19.1		1000		7.97		5.1		82.3	

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	

Dry Creek (East) Watershed

Water Quality Data – Ammonia, Nitrate / Nitrite, Ortho-Phosphorus, Total Suspended Solids & Turbidity for 2014 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
Dry Creek @ Wolf Ln	1210	DRE1	01/15/2014	<J	0.008	<J	0.01	<J	0.004		7.1		9.0	R
Dry Creek @ Wolf Ln	1210	DRE1	04/17/2014		0.063	<J	0.01	<J	0.004		37.4		35.5	R
Dry Creek @ Wolf Ln	1210	DRE1	07/02/2014		0.008	<J	0.01	<J	0.004		70.0		64.2	
Site 1210 Mean					0.026		0.01		0.004		38.2		36.2	
Dry Creek @ Pearce Rd	1211	DRE2	01/15/2014		0.020		0.06		0.015		9.5		12.8	R
Dry Creek @ Pearce Rd	1211	DRE2	04/17/2014		0.037	<J	0.01	<J	0.004		16.7		17.6	R
Dry Creek @ Pearce Rd	1211	DRE2	05/07/2014											
Dry Creek @ Pearce Rd	1211	DRE2	07/02/2014		0.060		3.33	<J	0.004		17.1		16.2	
Dry Creek @ Pearce Rd	1211	DRE2	09/10/2014		0.042	<J	0.01		0.029		14.9		16.6	R
Site 1211 Mean					0.040		0.85		0.013		14.6		15.8	
Watershed Mean					0.034		0.49		0.009		24.7		24.6	

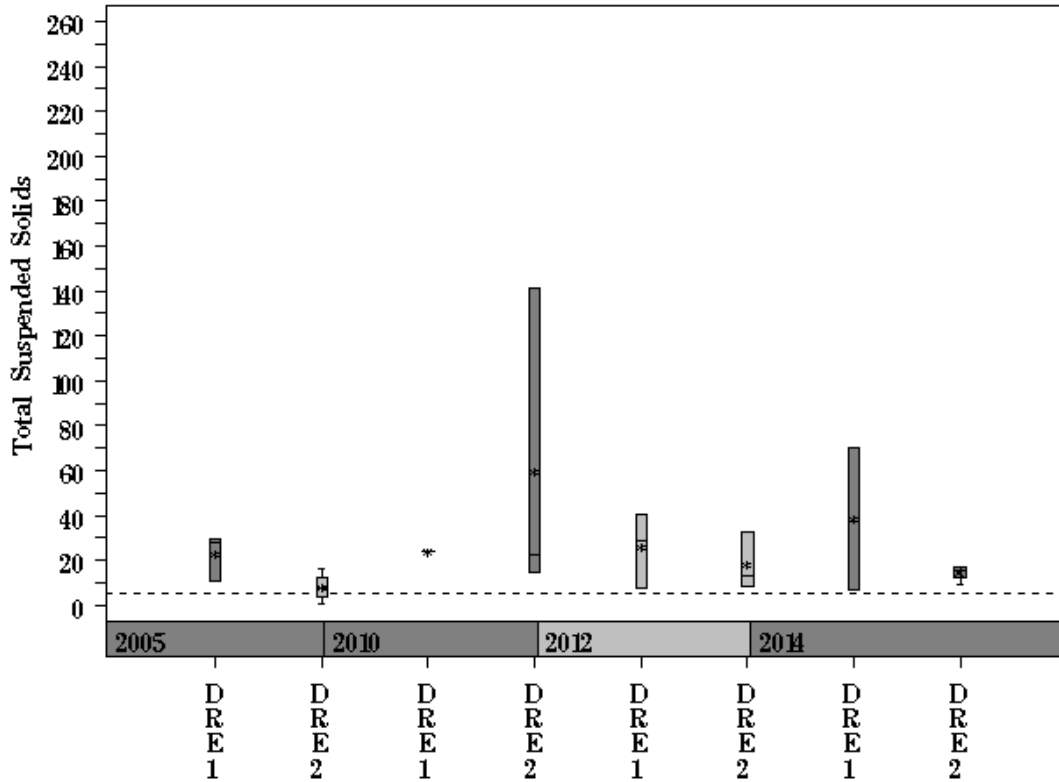
Orange highlighting indicates that the value exceeds one standard deviation from the mean of all E.I.I. sites combined.

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

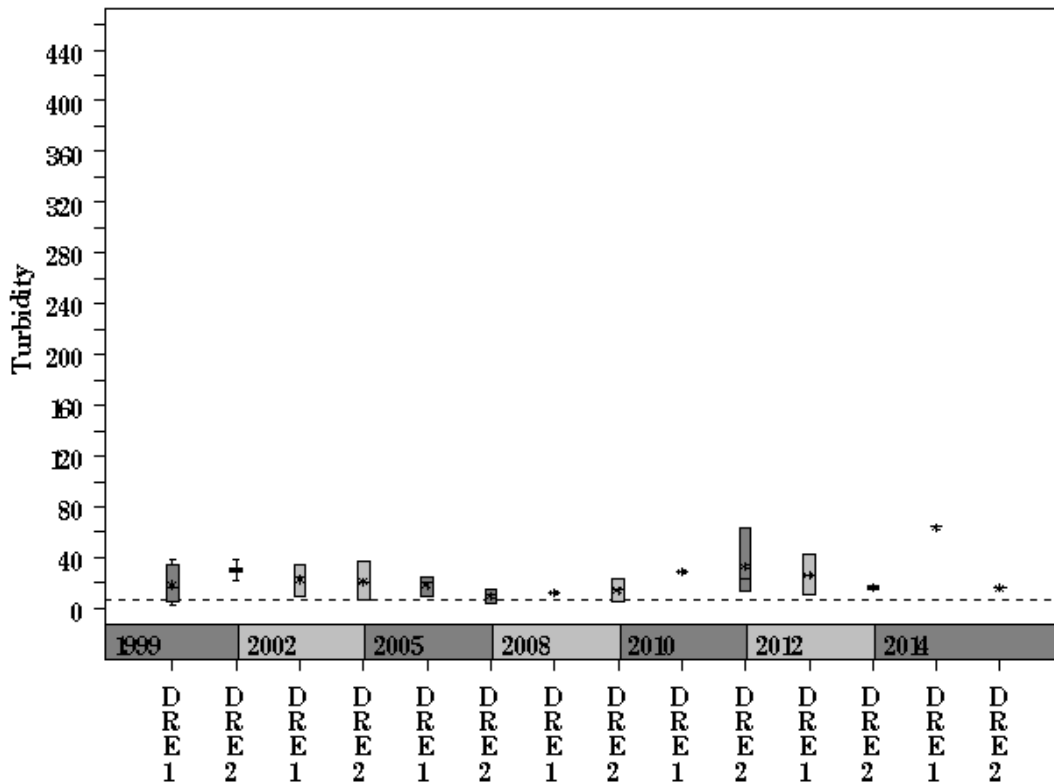
Dry Creek (East) Watershed

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

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



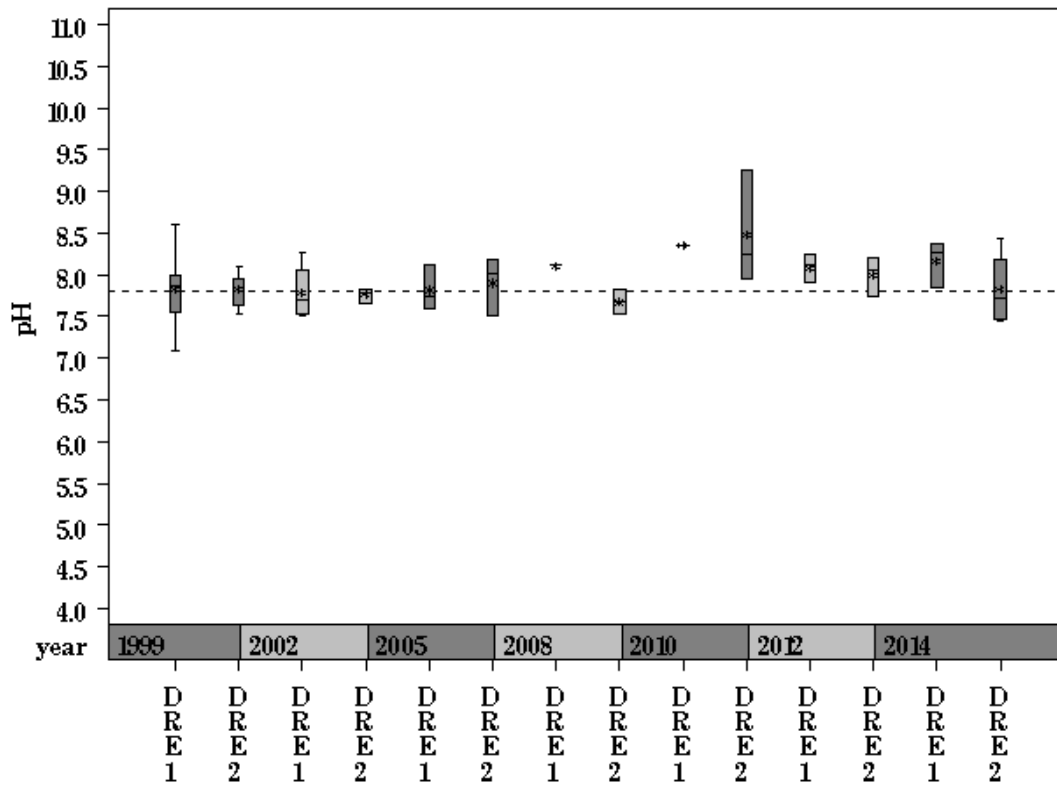
Parameter= TURBIDITY Unit= NTU Watershed= Dry East



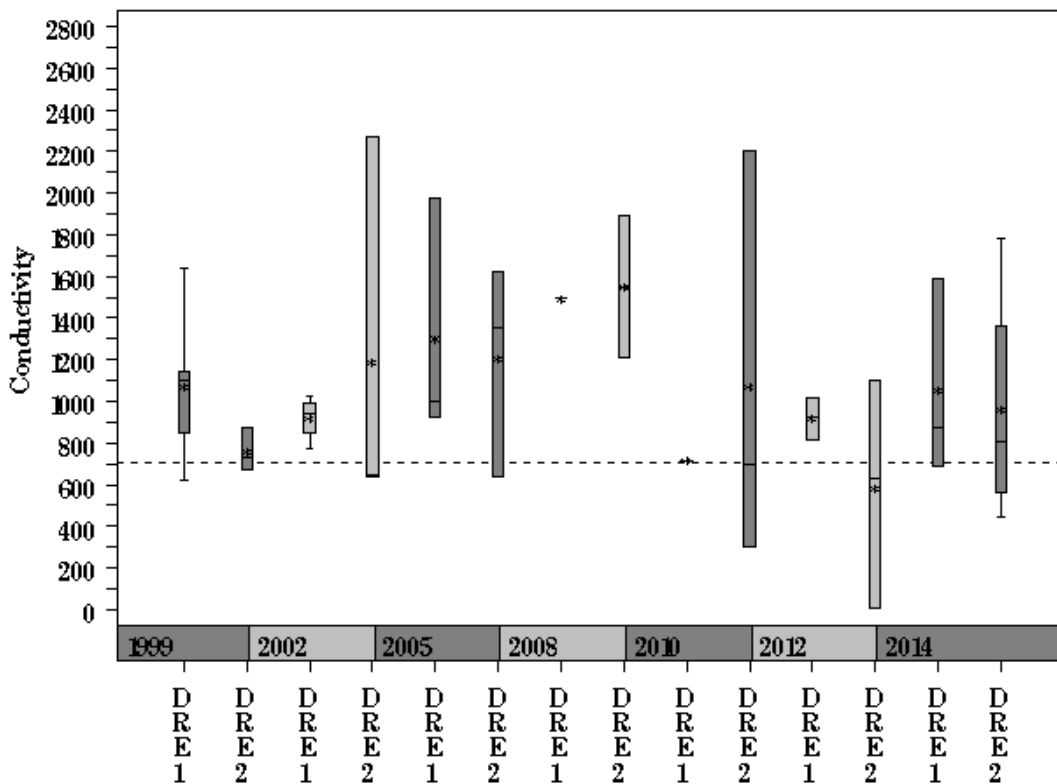
Dry Creek (East) Watershed

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

Parameter= PH Unit= Standard units Watershed= Dry East



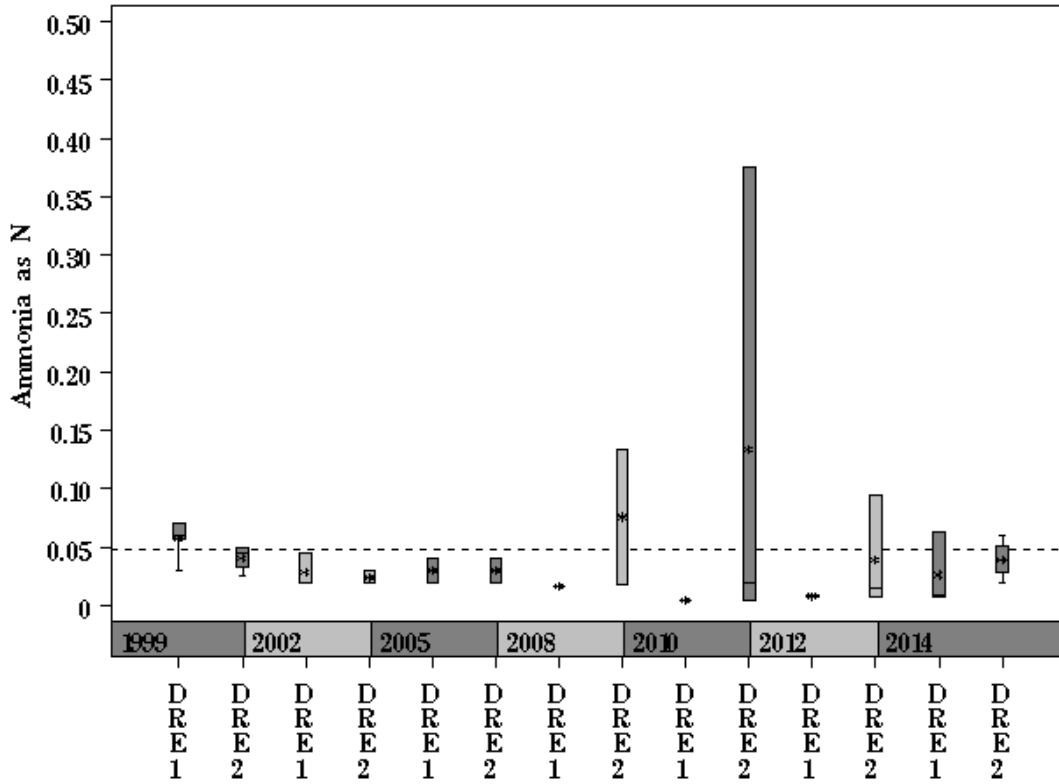
Parameter= CONDUCTIVITY Unit= uS/cm Watershed= Dry East



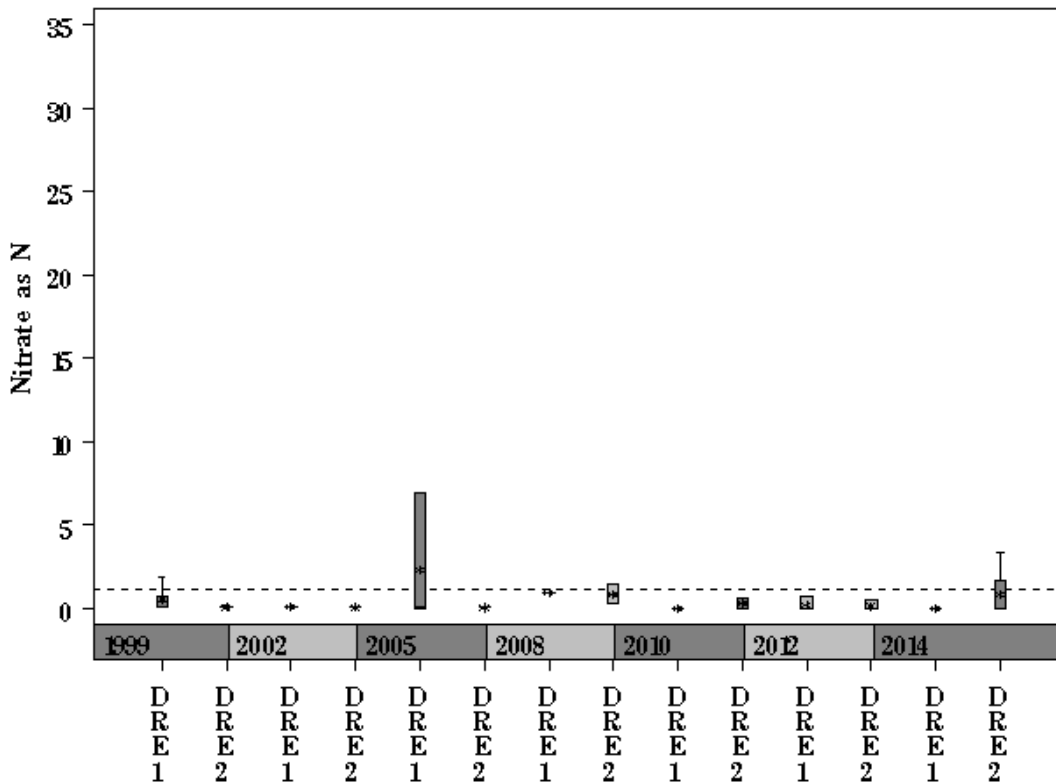
Dry Creek (East) Watershed

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

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

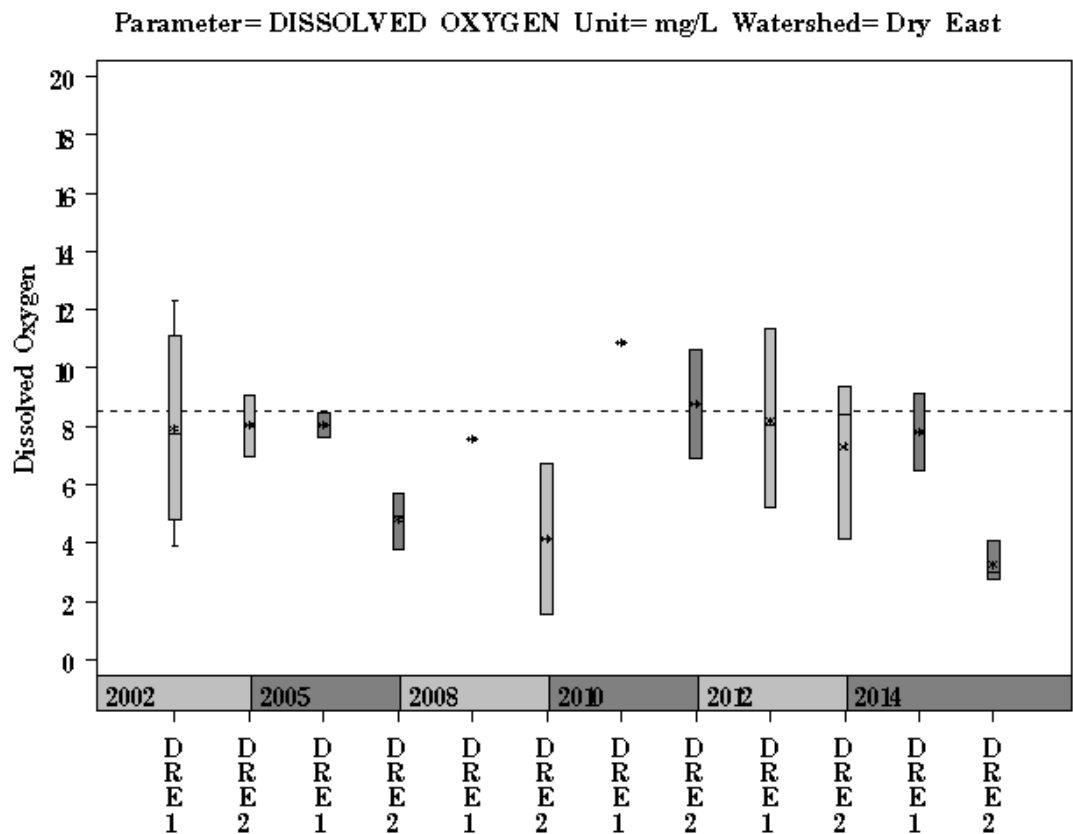
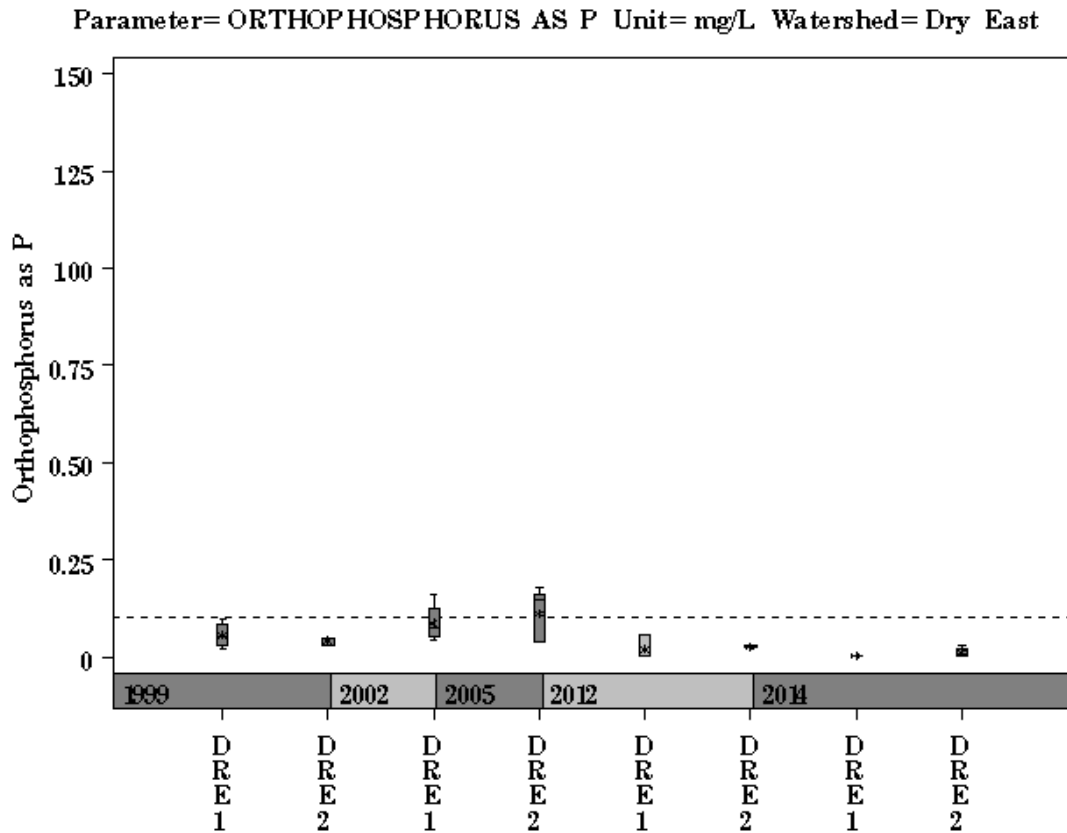


Parameter= NITRATE AS N Unit= mg/L Watershed= Dry East



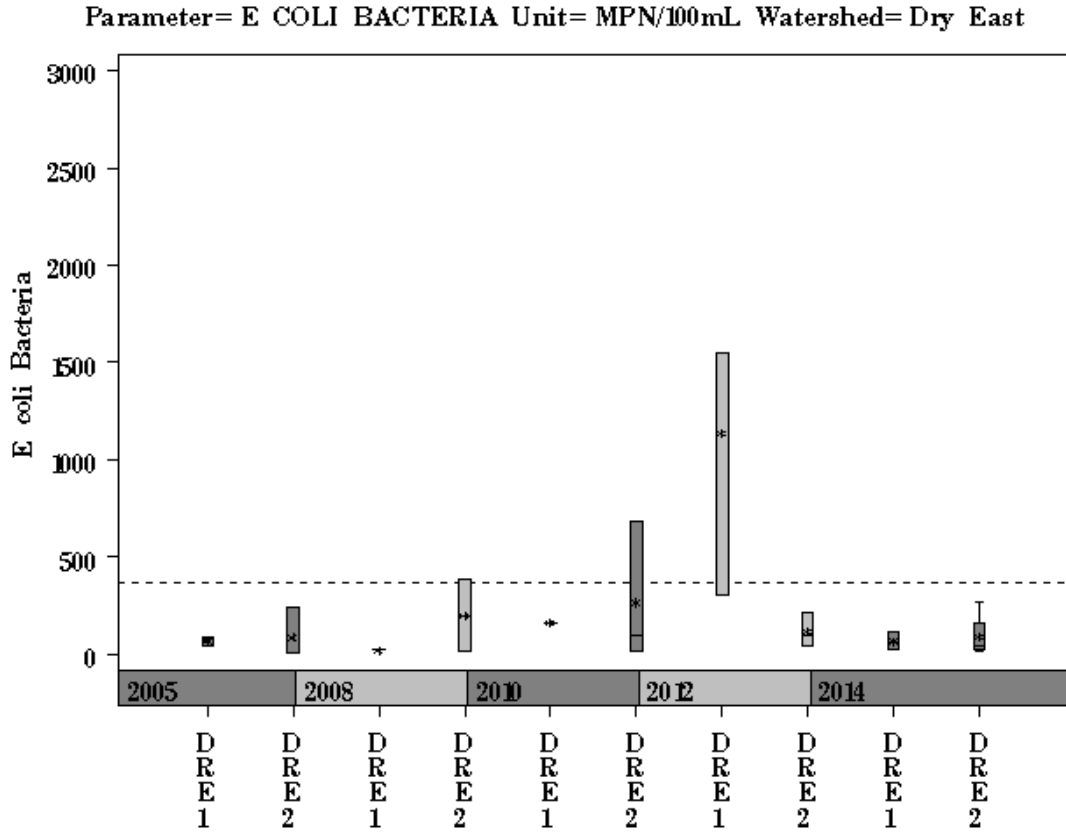
Dry Creek (East) Watershed

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



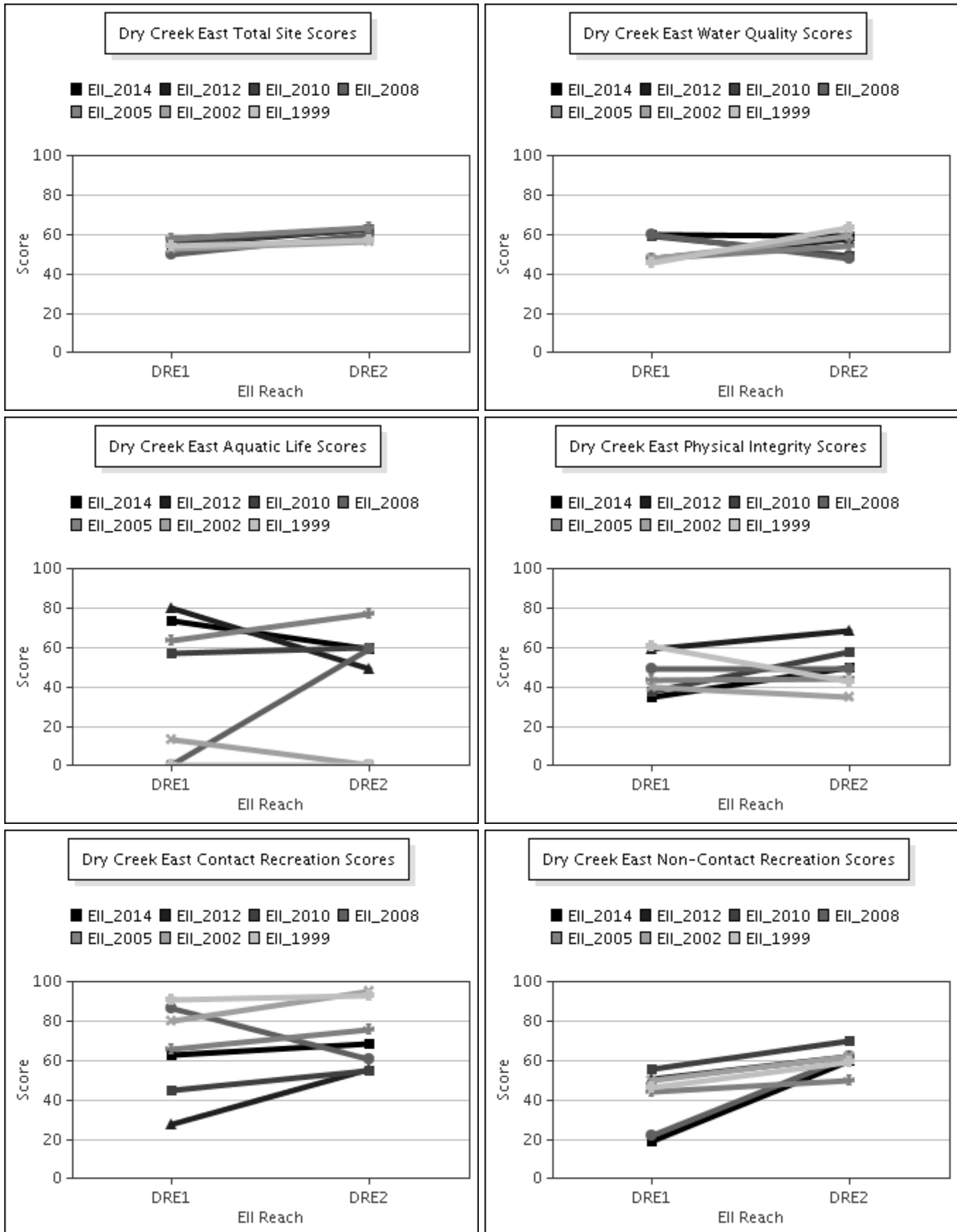
Dry Creek (East) Watershed

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



Dry Creek (East) Watershed

Score Summary – Reach scores for each sample year



Dry Creek (East) Watershed

Benthic Macroinvertebrates – Taxa List, Pollution Tolerance Index & Functional Feeding Group for 2014 Sample Sites (Downstream to Upstream)

Benthic Macroinvertebrate ID	PTI	FFG	Dry Creek @ Wolf Ln (Site 1210)	Dry Creek @ Pearce Rd (Site 1211)
<i>Callibaetis</i> sp.	4	CG	1	3
Copepoda	4	SC	1	1
<i>Hexagenia bilineata</i>	4	CG	4	
Ostracoda	4	FC,CG	1	2
<i>Trichocorixa</i> sp.	5	P,CG	6	
<i>Uvarus</i> sp.	5	P	1	
<i>Argia</i> sp.	6	P	1	2
Chironomidae	6	P,FC	2	19
Hydracarina	6		22	40
<i>Microvelia</i> sp.	6	P	6	1
<i>Neoporus</i> sp.	6	P	4	
<i>Probezzia</i> sp.	6	P	1	1
Tanypodinae	6	P	3	1
<i>Bezzia</i> sp. / <i>Palpomyia</i> sp.	7	P,CG	2	8
<i>Caenis</i> sp.	7	SC,CG	3	14
Cladocera	8	FC	2	18
<i>Hyalella</i> sp.	8	SH,CG	10	85
Oligochaeta	8	CG	1	3
<i>Physella</i> sp.	9	SC		1
Cambaridae		CG		3
Unionidae		FC	1	

Dry Creek (East) Watershed

Benthic Macroinvertebrates – Metric Summary for 2014 Sample Sites (Downstream to Upstream)

Scoring Metric	Dry Creek @ Wolf Ln (Site 1210)	Dry Creek @ Pearce Rd (Site 1211)
Number of Taxa *	17	15
Hilsenhoff Biotic Index *	6.1	7.1
Number of Ephemeroptera Taxa *	3	2
Percent of Total as Chironomidae *	7	10
Number of EPT Taxa *	3	2
Percent of Total as EPT *	11	8
Percent of Total as Predator *	37	16
Number of Intolerant Taxa *	4	3
Percent Dominance (Top 3 Taxa) *	54	71
EPT / EPT + Chironomidae	1	0
Number of Diptera Taxa	3	3
Number of Non-Insect Taxa	6	8
Number of Organisms	71	202
Percent Dominance (Top 1 Taxa)	31	42
Percent of Total as Collector / Gatherer	39	58
Percent of Total as Dominant Guild (FFG)	39	58
Percent of Total as Elmidae	0	0
Percent of Total as Filterers	11	20
Percent of Total as Grazers (PI & SC)	6	8
Percent of Total as Tolerant Organisms	0	0
Percent of Trichoptera as Hydropsychidae	0	0
Ratio of Intolerant : Tolerant Organisms	0.24	0.03
TCEQ Qualitative Aquatic Life Use Score	24	20
TCEQ Quantitative Aquatic Life Use Score	23	21

* **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%.

Dry Creek (East) Watershed

Site Photographs



1208_t00-us-02_27_2002



1208_t00-ds-02_27_2002



1209_t00-us-02_27_2002



1209_t00-ds-02_27_2002



1211_00-ur-05_18_2010



1211_00-us-05_18_2010

Dry Creek (East) Watershed

Site Photographs



1210_t00-ur-06_16_2005



1210_t00-ur-02_27_2002



1210_00-us-05_18_2010



1210_00-ds-05_18_2010



1212_t00-us-02_27_2002



1212_t00-ds-06_16_2005

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