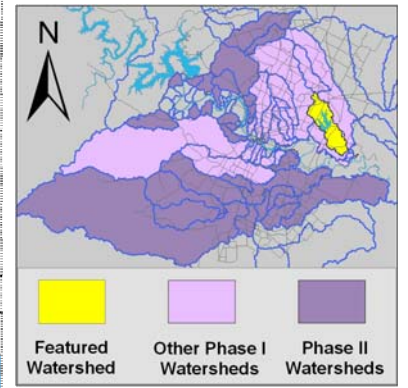


Decker Creek Watershed

Watershed Overview

Catchment	Total area				17 sq. miles			
	Area in recharge				0			
	Creek length				12 miles			
	Receiving water				Colorado River			
Demographics	2000 population				3,156			
	2030 projected population				12,341			
	30 year projected % increase				391 %			
Land Use	Impervious cover (2003 estimate)				17.2 %			
	Impervious cover (2013 estimate)				6.4 %			
Overall EII Scores	1999	2002	2005	2008	2009	2011	2013	2015
	63	65	62	60	68	61	66	69



Flow Regime* for Sample Sites on Decker Creek

Site	2000		2002					2005					2008					2009					2010	2011					2013					2015				
	Jun	Jun	Feb	Feb	May	Aug	Nov	Mar	Jun	Jun	Sep	Dec	Feb	May	Jun	Sep	Dec	Feb	May	May	Oct	Dec	Dec	Mar	Jun	Jun	Sep	Jan	Apr	May	Jun	Jun	Sep	Jan	Apr	Jul	Sep	
	WQ	Bio	WQ	Bio	WQ	WQ	WQ	WQ	WQ	Bio	WQ	WQ	WQ	WQ	Bio	WQ	WQ	WQ	WQ	Bio	WQ	WQ	WQ	WQ	WQ	Bio	WQ	WQ	WQ	Bio	WQ	Bio	WQ	WQ	WQ	WQ	WQ	
1196			B	B	B	B	B	B	n	n	n	n	B	B	n	n	n	B	B	B	B	B	n	n	n	n	n	B	B	B	n		B	B	B	B	n	
1197	B	B	B																																			
1974					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	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 Decker 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
DKR1	1197	Decker Creek @ FM973	2002	70	93	99	68	56				64
DKR3	1196	Decker Creek @ Lindell Lane	2002	54	93	87	66	55	40	51	29	66
DKR1	1974	Decker Creek @ Gilbert Rd	2005	60	83	93	86	68	74	90	57	77
DKR3	1196	Decker Creek @ Lindell Lane	2005	40	83	47	43	62				46
DKR1	1974	Decker Creek @ Gilbert Rd	2008	62	81	94	68	45	79	85	72	72
DKR3	1196	Decker Creek @ Lindell Lane	2008	51	81	70	26	60				48
DKR1	1974	Decker Creek @ Gilbert Rd	2009	62	82	70	65	63	99	98	100	74
DKR3	1196	Decker Creek @ Lindell Lane	2009	65	82	46	61	53	65	65		62
DKR1	1974	Decker Creek @ Gilbert Rd	2011	57	79	86	73	61	70	100	40	71
DKR3	1196	Decker Creek @ Lindell Lane	2011		79		27	53				40
DKR1	1974	Decker Creek @ Gilbert Rd	2013	60	84	63	88	75	78	96	59	75
DKR3	1196	Decker Creek @ Lindell Lane	2013	52	84	39	43	59	62	84	40	57
DKR1	1974	Deck Creek @ Gilbert Rd	2015	61	84	66	76	69	83	88	78	73
DKR3	1196	Decker Creek @ Lindell Lane	2015	55	84	51	60	68	63	93	33	64

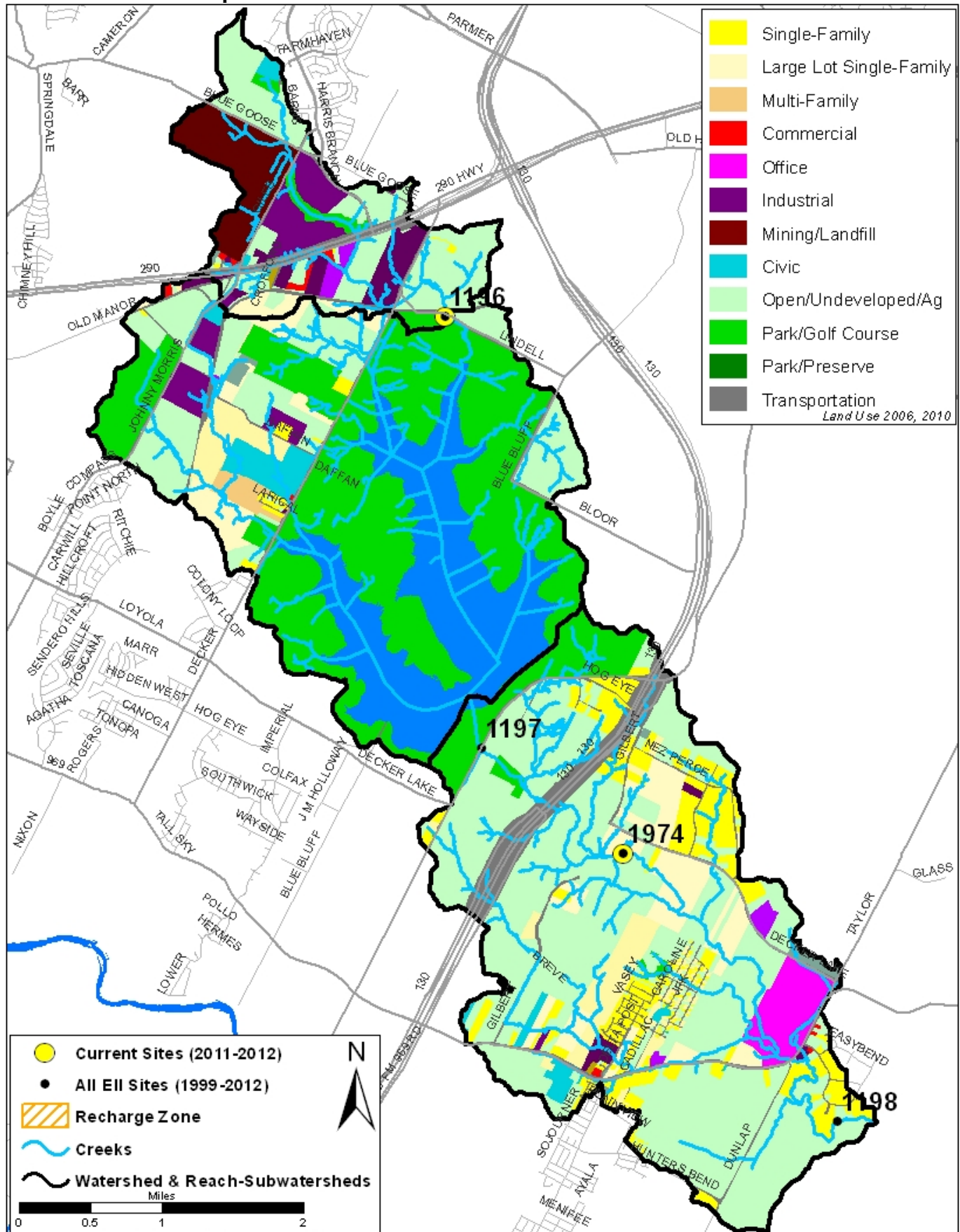
* blank cells indicate parameter was not collected, blank row indicate site was dropped

**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

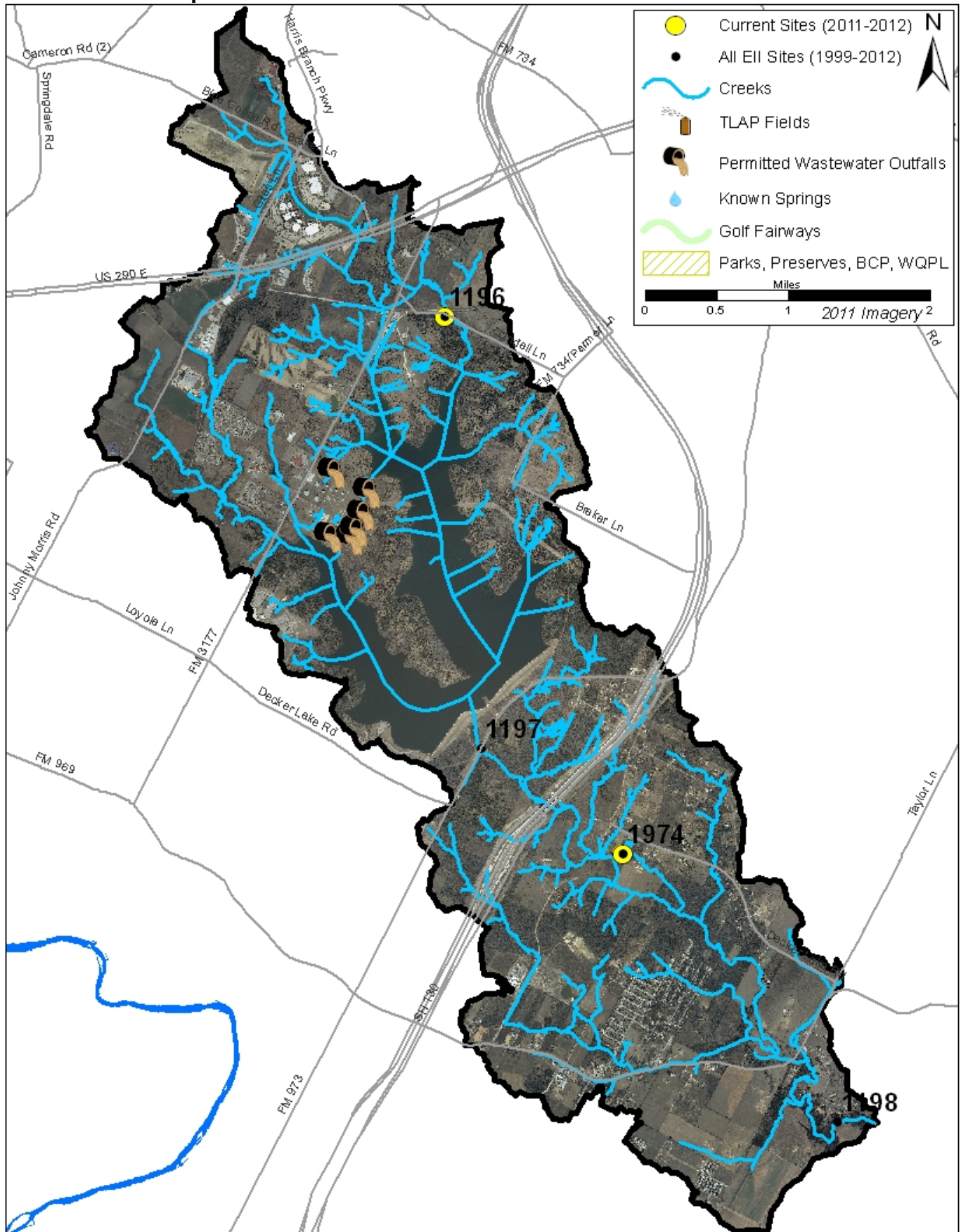
Decker Creek Watershed

Land Use Map



Decker Creek Watershed

Aerial Map



Decker 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. flag	<> Cond. flag	<> pH flag	<> D.O. flag	< E. Coli flag
Decker	1974	DKR1	01/14/2015	6.9	802	8.26	12.0	159.7
Decker	1974	DKR1	04/15/2015	23.6	804	8.14	9.1	95.9
Decker	1974	DKR1	07/13/2015	31.4	734	7.98	6.5	
Decker	1974	DKR1	07/14/2015	32.1	731	9.44	7.8	19.7
Decker	1974	DKR1	09/09/2015	29.4	698	7.98	6.6	27.5
DKR1 Mean				24.7	754	8.36	8.4	75.7
Decker	1196	DKR2	01/14/2015	6.0	644	7.97	12.4	74.8
Decker	1196	DKR2	04/15/2015	20.4	2268	7.47	4.7	59.4
Decker	1196	DKR2	07/13/2015	26.6	281	7.44	5.1	
Decker	1196	DKR2	07/14/2015	28.0	3549	7.91	4.8	178.5
DKR2 Mean				20.3	1686	7.70	6.8	104.2
Decker Mean				22.7	1168	8.06	7.7	87.9

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	

Decker 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	
Decker	1974	DKR1	01/14/2015	<J	0.008		0.18	<J	0.004		16.6		14.6	R
Decker	1974	DKR1	04/15/2015		0.066		0.03	<J	0.004		18.7		28.8	
Decker	1974	DKR1	07/13/2015											
Decker	1974	DKR1	07/14/2015		0.024	<J	0.01	<J	0.004		8.5		16.8	R
Decker	1974	DKR1	09/09/2015	<J	0.008		0.03	<J	0.004		18.8		26.2	R
DKR1 Mean					0.026		0.06		0.004		15.6		21.6	
Decker	1196	DKR2	01/14/2015	<J	0.008		0.08	<J	0.004		7.7		7.6	R
Decker	1196	DKR2	04/15/2015		0.082	<J	0.01	<J	0.004		39.8		47.5	
Decker	1196	DKR2	07/13/2015											
Decker	1196	DKR2	07/14/2015	<J	0.008	<J	0.01	<J	0.004		17.7		24.9	R
DKR2 Mean					0.032		0.03		0.004		21.7		26.6	
Decker Mean					0.029		0.05		0.004		18.2		23.8	

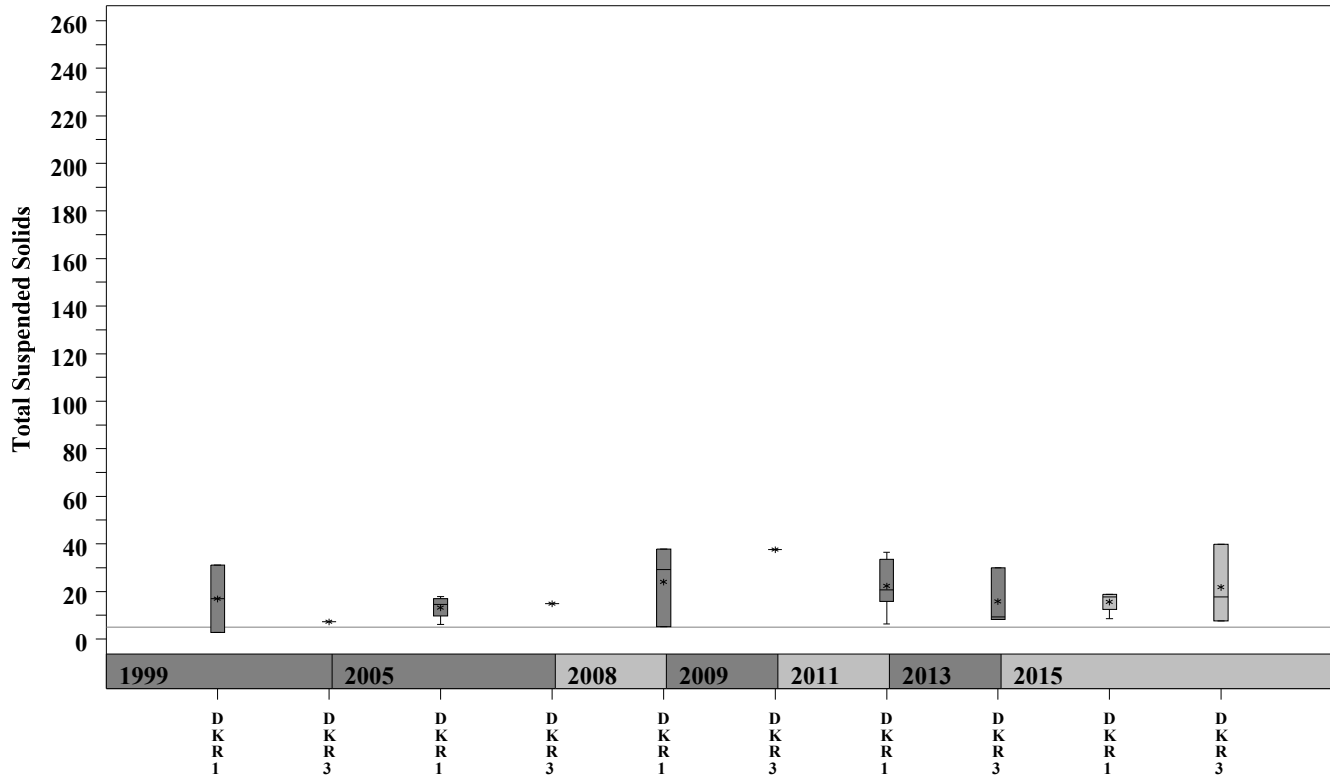
Gray highlighting indicates that the value exceeds one standard deviation from the mean of all E.I.I. sites combined.

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

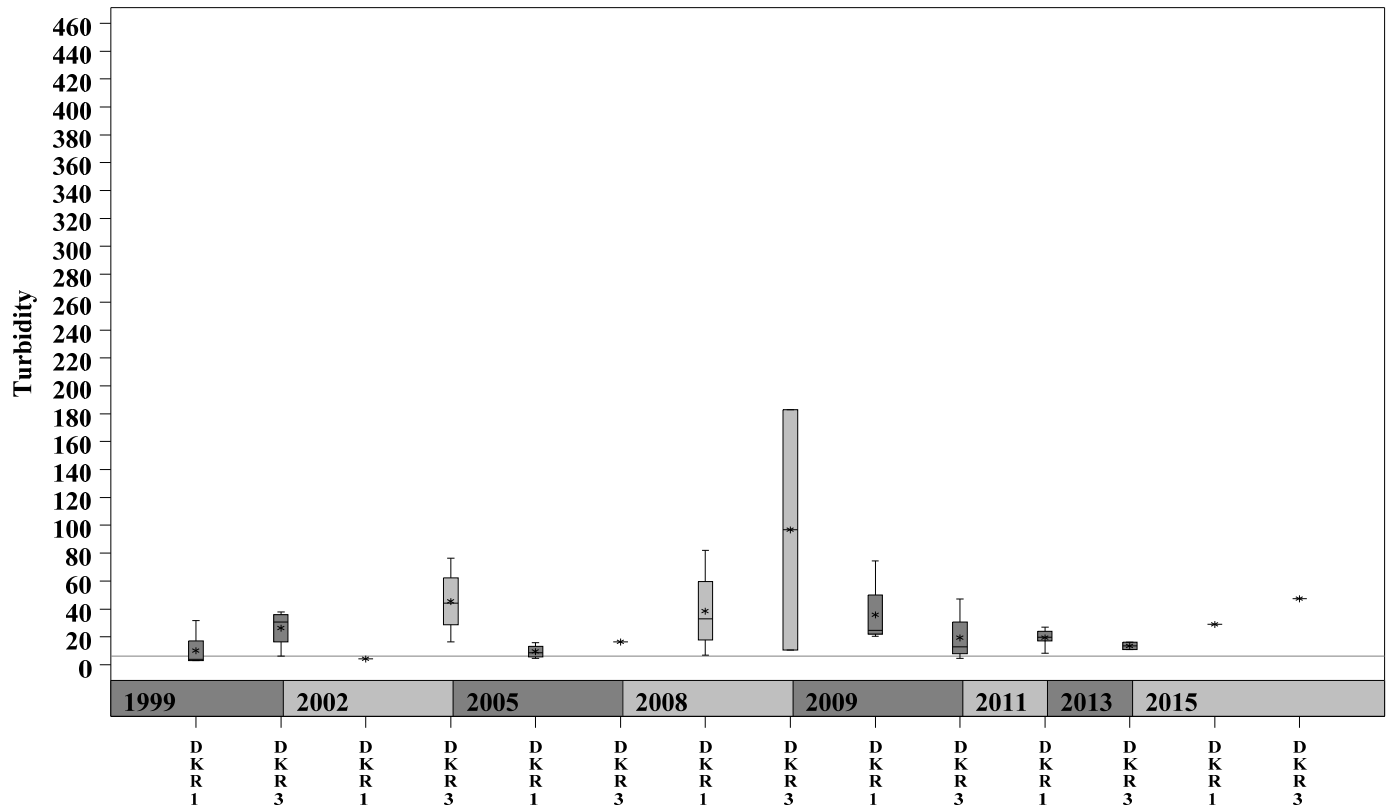
Decker Creek Watershed

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

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



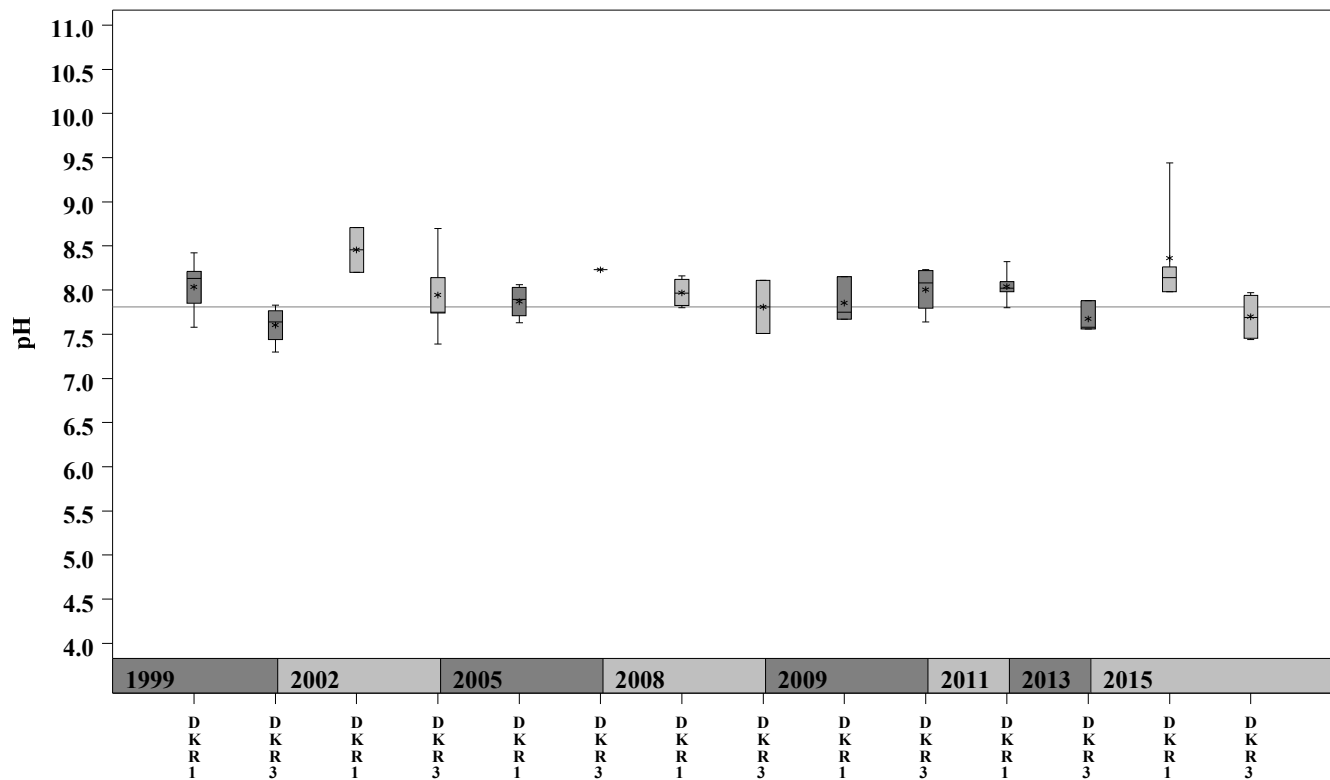
Parameter = TURBIDITY Unit = NTU Watershed = Decker



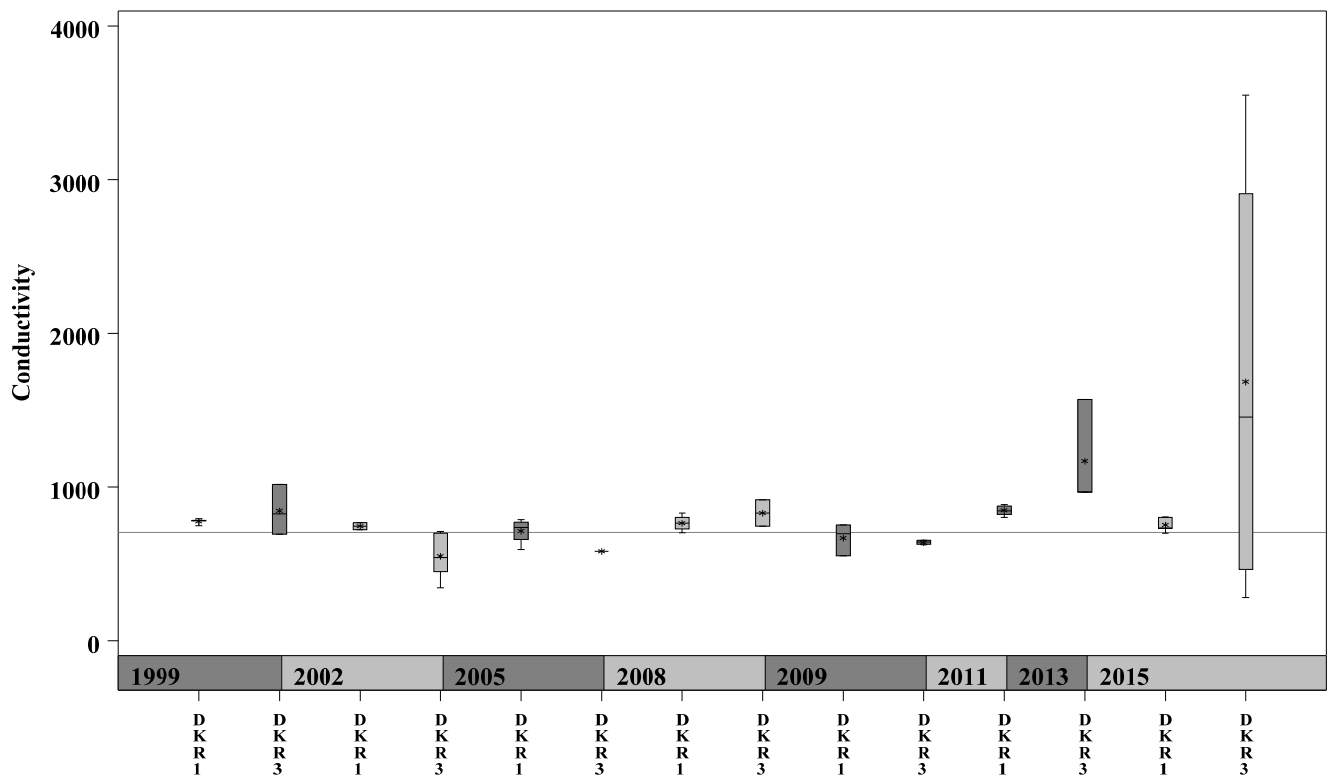
Decker Creek Watershed

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

Parameter = pH Unit = Standard Units Watershed = Decker



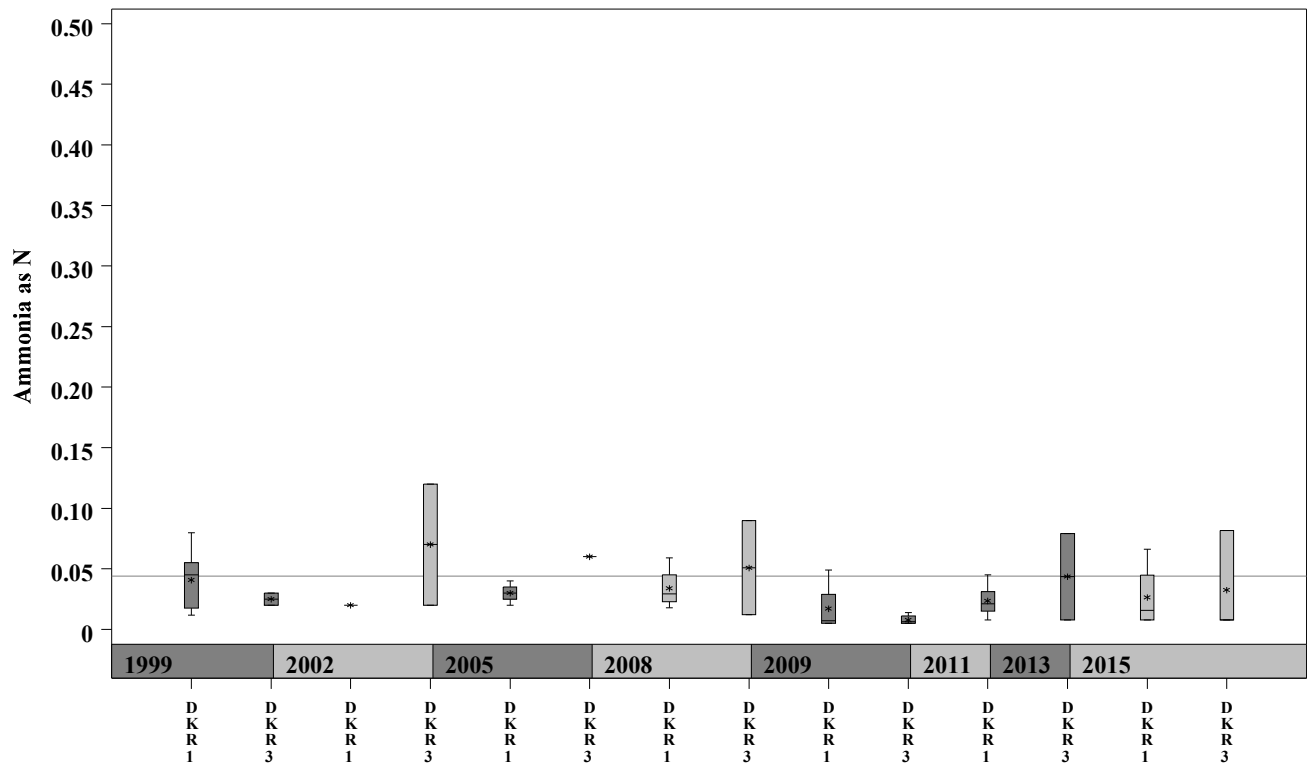
Parameter = CONDUCTIVITY Unit = uS/cm Watershed = Decker



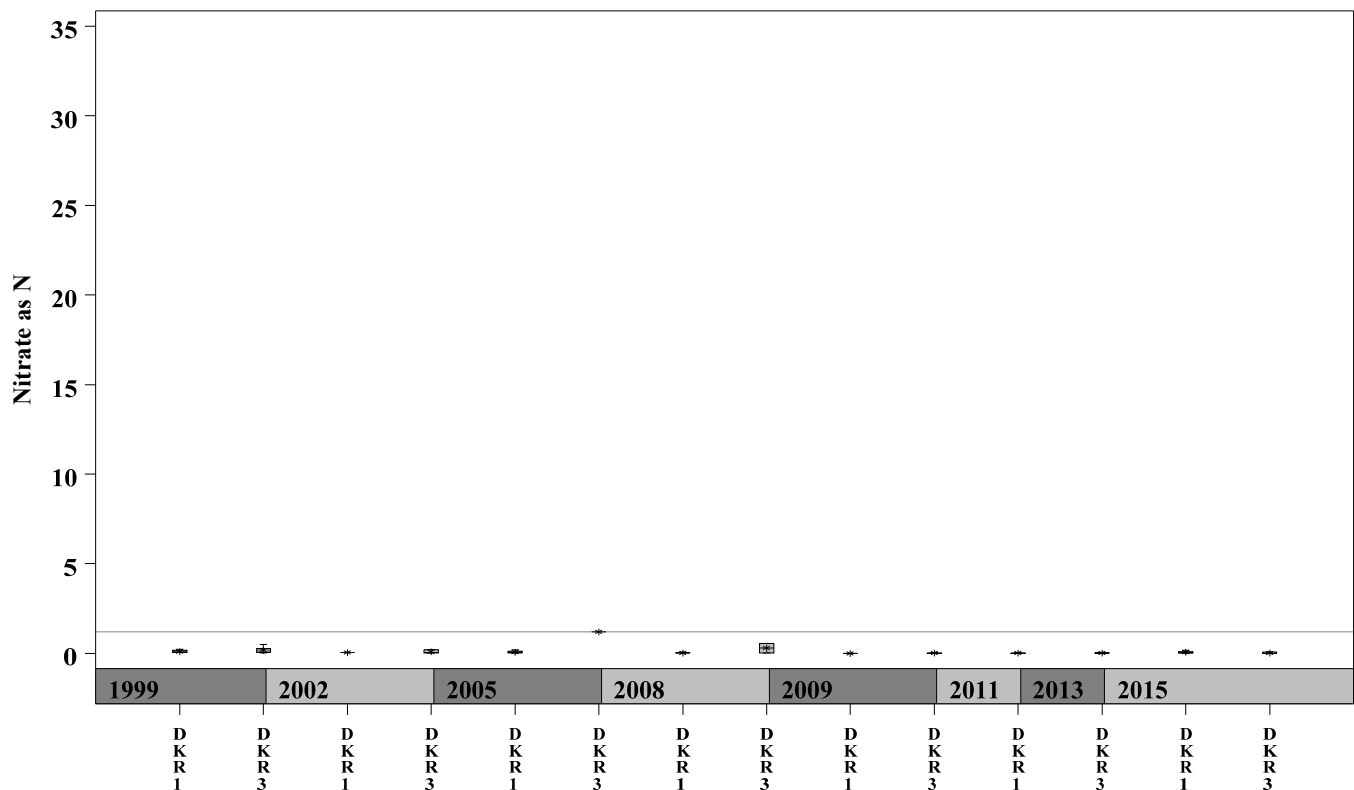
Decker Creek Watershed

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

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



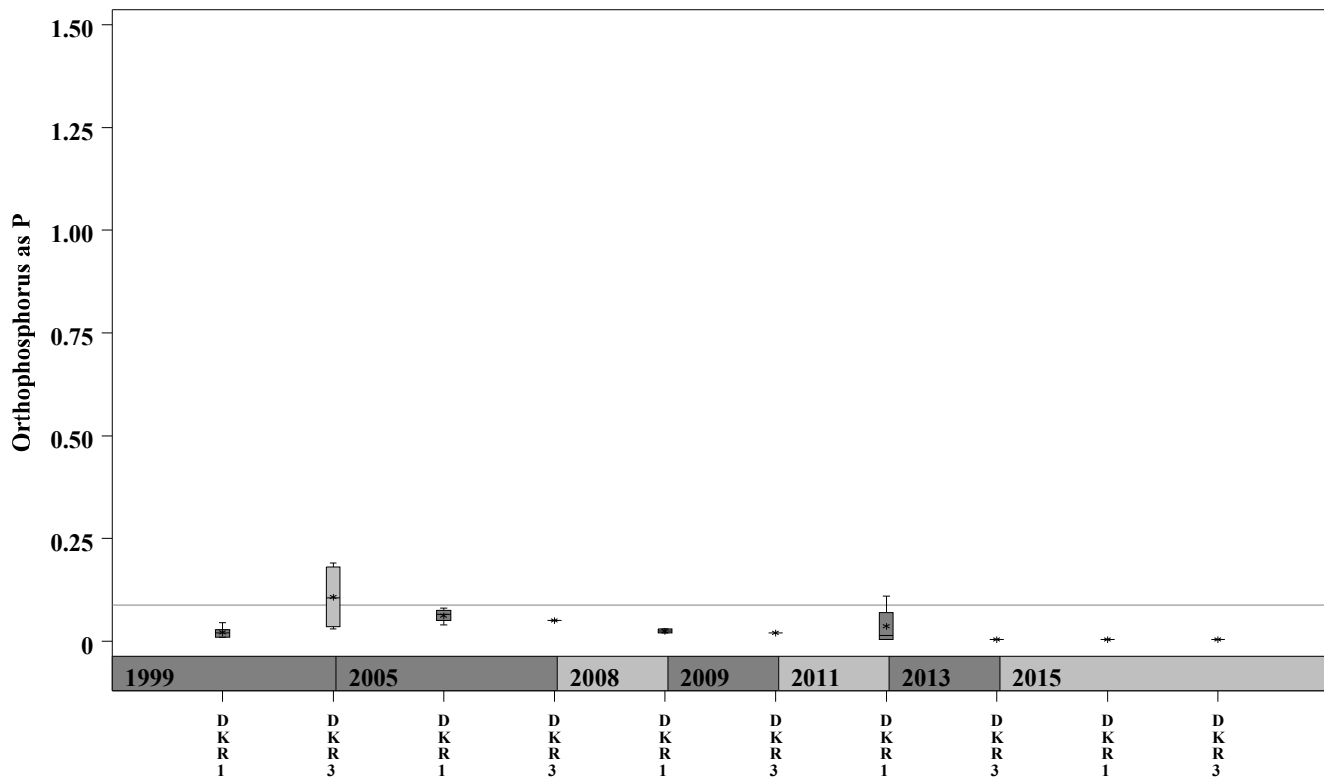
Parameter = NITRATE AS N Unit = mg/L Watershed = Decker



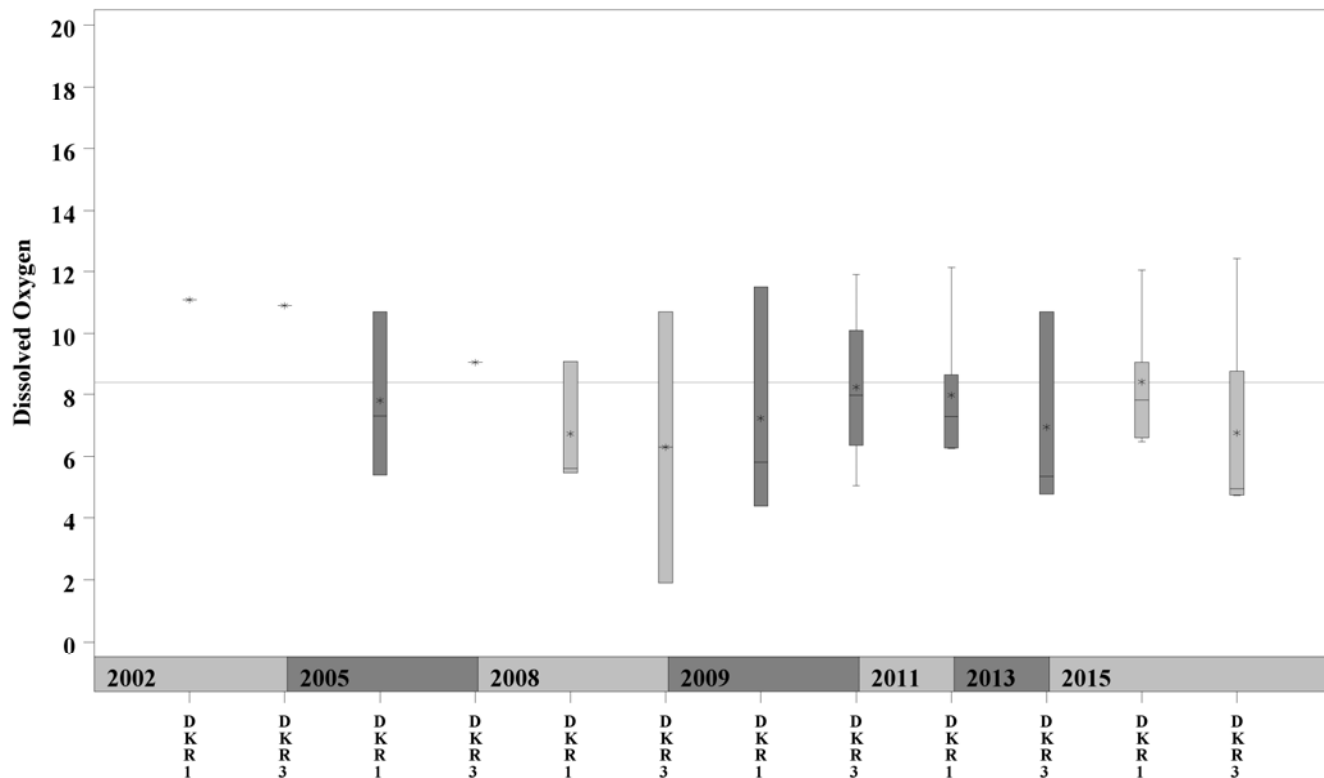
Decker Creek Watershed

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

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



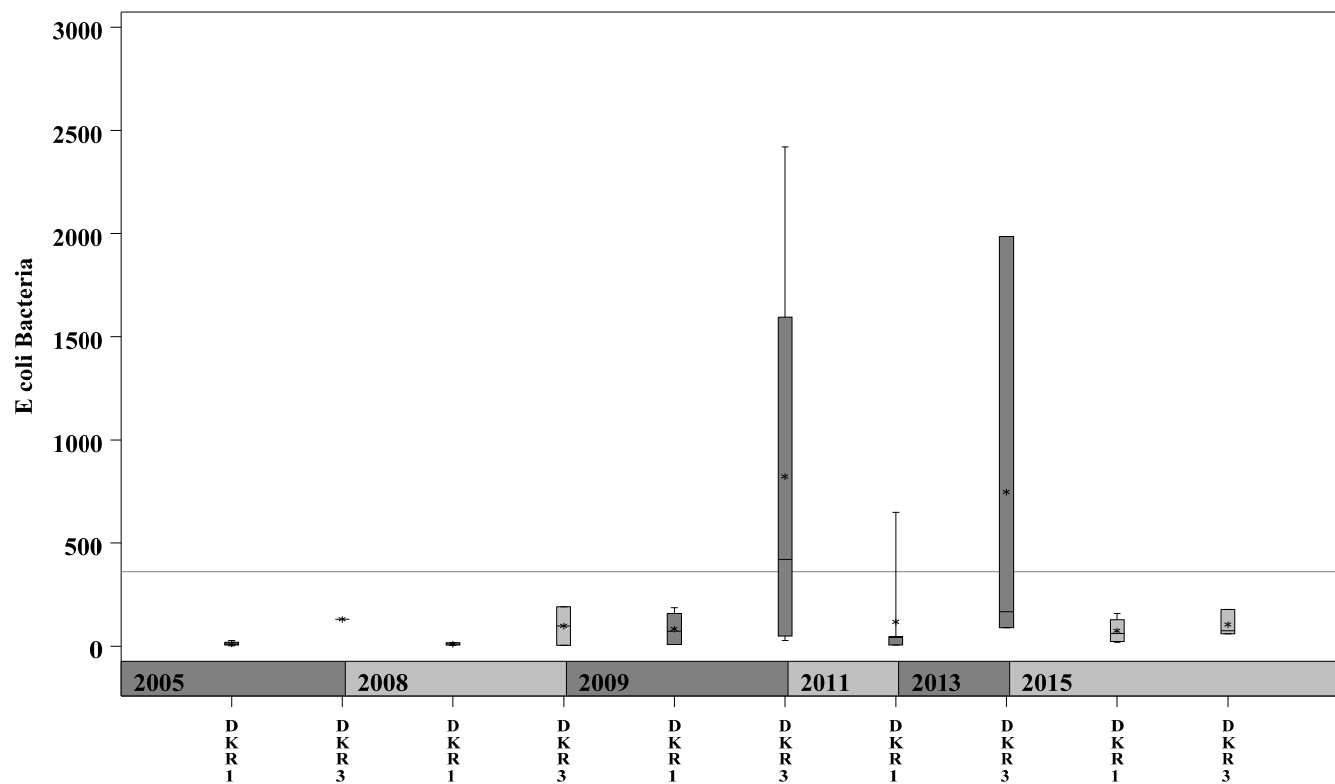
Parameter = DISSOLVED OXYGEN Unit = mg/L Watershed = Decker



Decker Creek Watershed

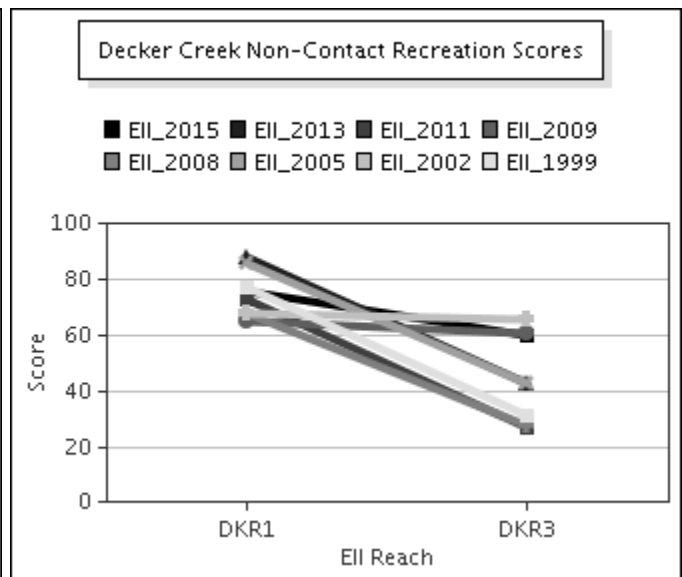
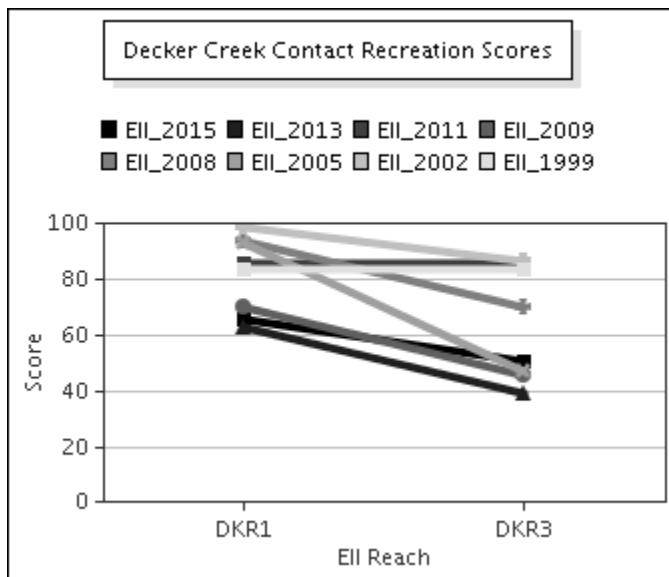
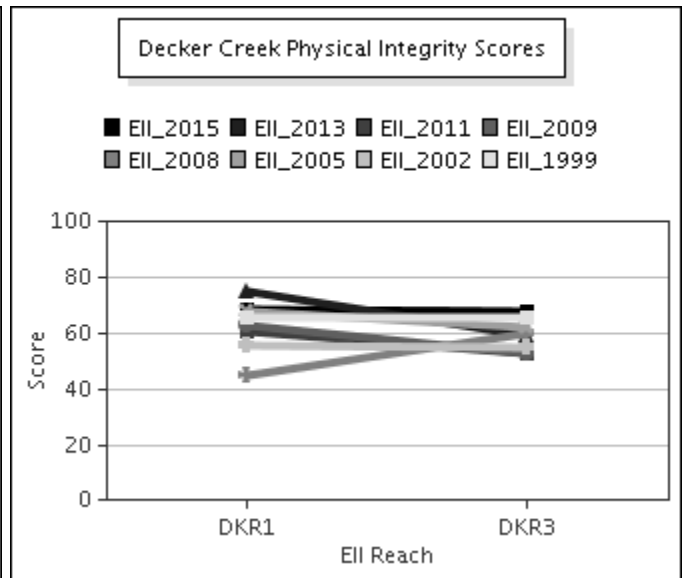
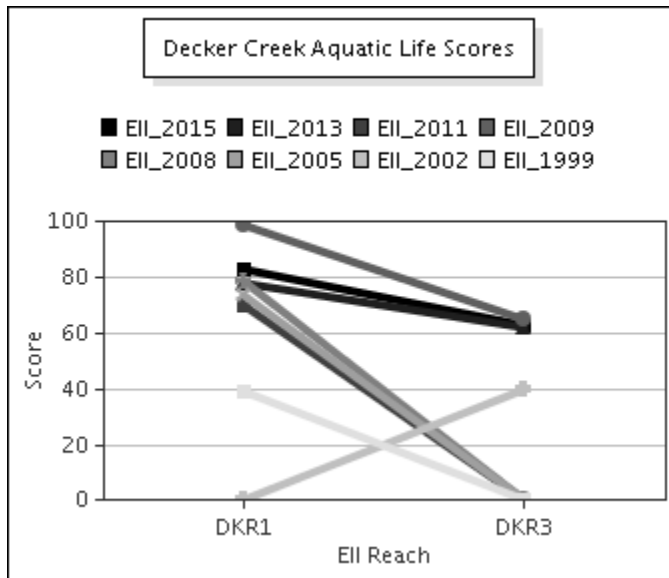
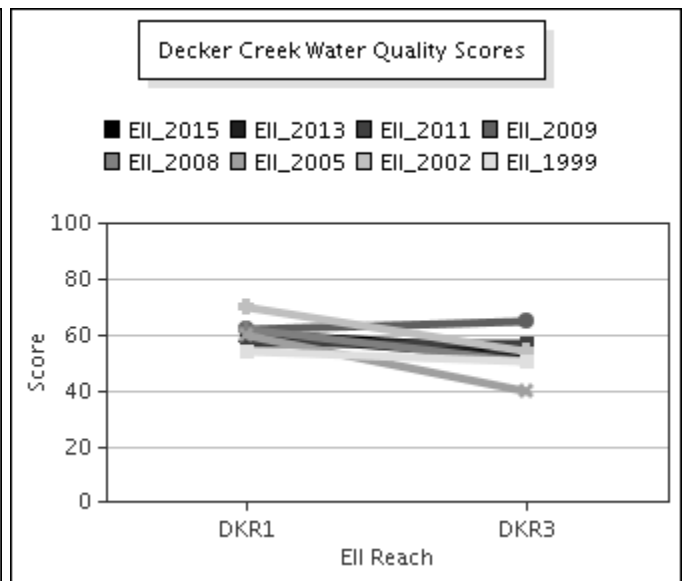
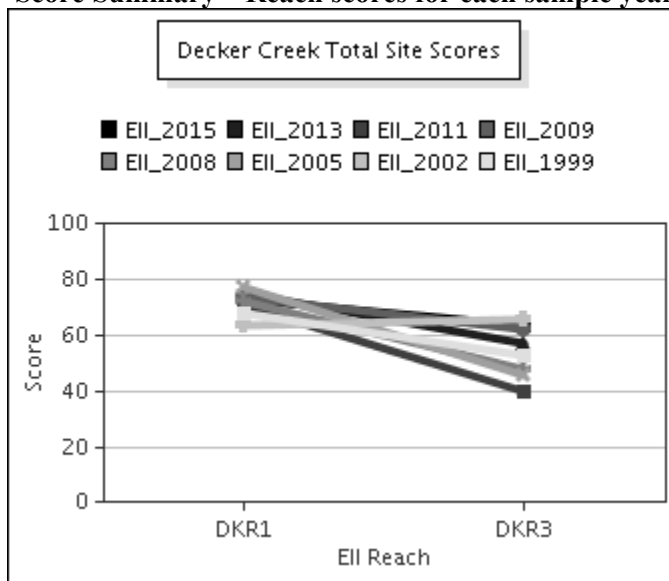
Data Summary Graphs – *E.coli* (Downstream to Upstream by Year)

Parameter = E COLI BACTERIA Unit = MPN/100mL Watershed = Decker



Decker Creek Watershed

Score Summary – Reach scores for each sample year



Decker Creek Watershed

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

Benthic Macroinvertebrates - Decker Creek			DKR @ Lindell (1196) 07/07/2015 (WRE)	DKR @ Gilbert (1974) 07/13/2015 (WRE)
Benthic Macroinvertebrate ID	PTI	FFG		
Chimarra	2	FC	2	21
Farrodes Texanus	2	CG,SC	4	
Hexacylloepus Ferrugineus	2	CG,SC	2	3
Hagenius Brevistylus	3	P		1
Isonychia	3	FC		3
Camelobaetidius	4	CG		2
Fallceon	4	CG,SC	21	
Neochoroterpes	4	CG	8	
Simulium	4	FC		41
Smicridea	4	FC		12
Stenacron	4	CG,SC	2	
Argia	6	P	32	8
Cheumatopsyche	6	FC	56	89
Chironomidae	6	FC,P	8	2
Hetaerina	6	P	1	3
Hydracarina	6		1	
Rhagovelia	6	P	2	3
Tanypodinae	6	P	2	
Caenis	7	CG,SC	20	
Scirtidae	7	CG,SC,SH	2	
Stenelmis	7	CG,SC		2
Caloparyphus/Euparyphus	8	CG,SC	1	
Hyalella	8	CG,SH	7	
Oligochaeta	8	CG	9	
Physella	9	SC	3	
Dugesia		CG,P		1

Decker Creek Watershed

Site Photographs



1196_t00-ds-03_27_2002



1196_t00-us-03_27_2002



1196_t00-ur-06_17_2008



1196_t00-ds-06_17_2008



1196_t00-ds-05_28_2009



1196_t00-us-05_28_2009

Decker Creek Watershed

Site Photographs



1974_t00-ds-06_17_2005



1974_t00-us-06_17_2005



1974_t00-ur-06_18_2008



1974_t00-ds-06_18_2008



1974_t00-ds-05_28_2009



1974_t00-ur-05_28_2009