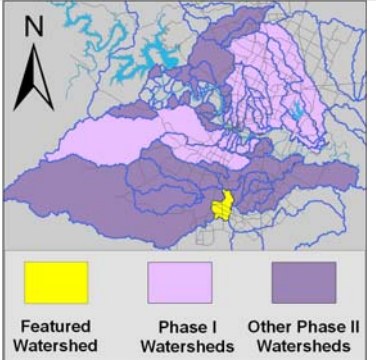


Rinard Creek Watershed

Summary Sheet

Catchment	Total area	8 sq. miles				
	Area in recharge	0				
	Creek length	7 miles				
	Receiving water	Onion Creek				
Demographics	2000 population	284				
	2030 projected population	6,940				
	30 year projected % increase	2,344 %				
Land Use	Impervious cover (2003 estimate)	2.8 %				
Overall EII Scores	1999	2002	2005	2008	2010	2012
	63	70	66	65	70	72



Flow Regime* for Sample Sites on Rinard

Site #	Site Name	2005					2008					2010				2011	2012	
		Mar	Jun	Jun	Sep	Dec	Feb	May	Jun	Sep	Dec	Mar	May	May	Oct	Dec	Mar	May
		WQ	WQ	Bio	WQ	WQ	WQ	WQ	Bio	WQ	WQ	WQ	WQ	Bio	WQ	WQ	WQ	Bio
1220	FM 1327	B	B	n	n	n	n	n	n	n	n	B	n	B	n	n	B	n
1219	Fm 1327 Bradshaw	B	B	B	B	n	B	n	n	n	n	B	n	B	n			
233	Bradshaw	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B

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

Summary of 2012 Data for Rinard Creek

Summary	Parameter	Mean	Max	Min	Discussion
Physicochemical	D.O. mg/l	8.2	12.3	5.4	Mostly within normal range, some high values at site 233.
	pH st.units	8.07	8.69	7.69	High values at upstream sites, decreasing to normal range downstream.
	Cond uS/cm	593	845	316	Wide range, but within normal range.
Nutrients	NH ₃ mg/l	0.012	0.021	0.008	Within normal range.
	NO ₃ mg/l	0.121	0.537	0.008	Within normal range.
	Ortho P mg/l	0.006	0.014	0.004	Generally low concentrations, within normal range.
Sediment Load	TSS mg/l	3.4	12.00	1.1	Mostly within normal range, some high values at site 5398.
	Turbidity ntu	3.67	6.86	.99	Some above average values, but within normal range.
Biology	E.Coli /100ml	82	185	11	Generally low concentrations, within normal range.
	Benthic Macroinvertebrates and Diatoms: evaluations are provided in the introduction of this report				

Index Scores* for Rinard Watershed Sites by Year

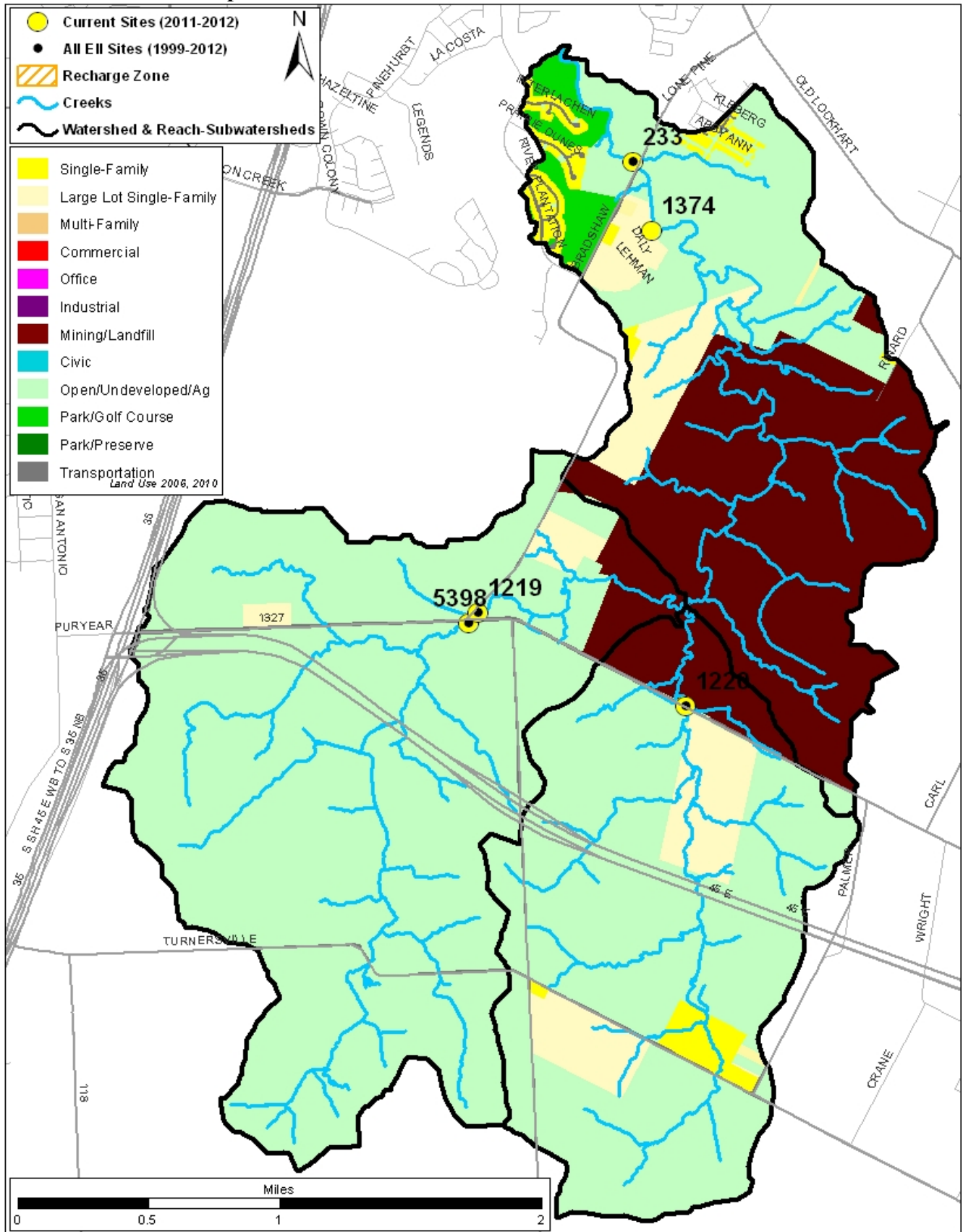
Reach	Site	Site Name	Year	Water Quality	Sediment**	Contact Rec.	Non Contact Recreation	Physical Integrity	Aquatic Life	Benthic subindex	Diatom subindex	Total Site Score
RIN1	233	Rinard Cr @ Bradshaw Road	1999	60	80	93	73	54	56	73	39	69
RIN2	1219	Rinard Cr @ FM1327 and Bradshaw	1999	72	80	98	70	66				64
RIN3	1220	Rinard Cr @ FM1327	1999	64	80	97	63	39				57
RIN1	233	Rinard Cr @ Bradshaw Road	2002	59	81	93	73	63	61	45	76	72
RIN2	1219	Rinard Cr @ FM1327 and Bradshaw	2002	66	81	95	80	29	65	49	80	69
RIN3	1220	Rinard Cr @ FM1327	2002	69	81	99	70	27	59	40	77	68
RIN1	233	Rinard Cr @ Bradshaw Road	2005	69	76	64	73	69	81	68	93	72
RIN2	1219	Rinard Cr @ FM1327 and Bradshaw	2005	69	76	81	79	65	74	80	68	74
RIN3	1220	Rinard Cr @ FM1327	2005	61	76	58	63	48				51
RIN1	233	Rinard Cr @ Bradshaw Road	2008	64	82	72	71	72	52	47	56	69
RIN2	1219	Rinard Cr @ FM1327 and Bradshaw	2008	73	82	98	70	49				62
RIN3	1220	Rinard Cr @ FM1327	2008		82		54	52	41	41		57
RIN1	233	Rinard Cr @ Bradshaw Road	2010	71	82	89	83	71	87	79	94	81
RIN2	1219	Rinard Cr @ FM1327 and Bradshaw	2010	75	82	95						63
RIN3	1220	Rinard Cr @ FM1327	2010	72	82	85	68	26	56	41	70	65

* 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

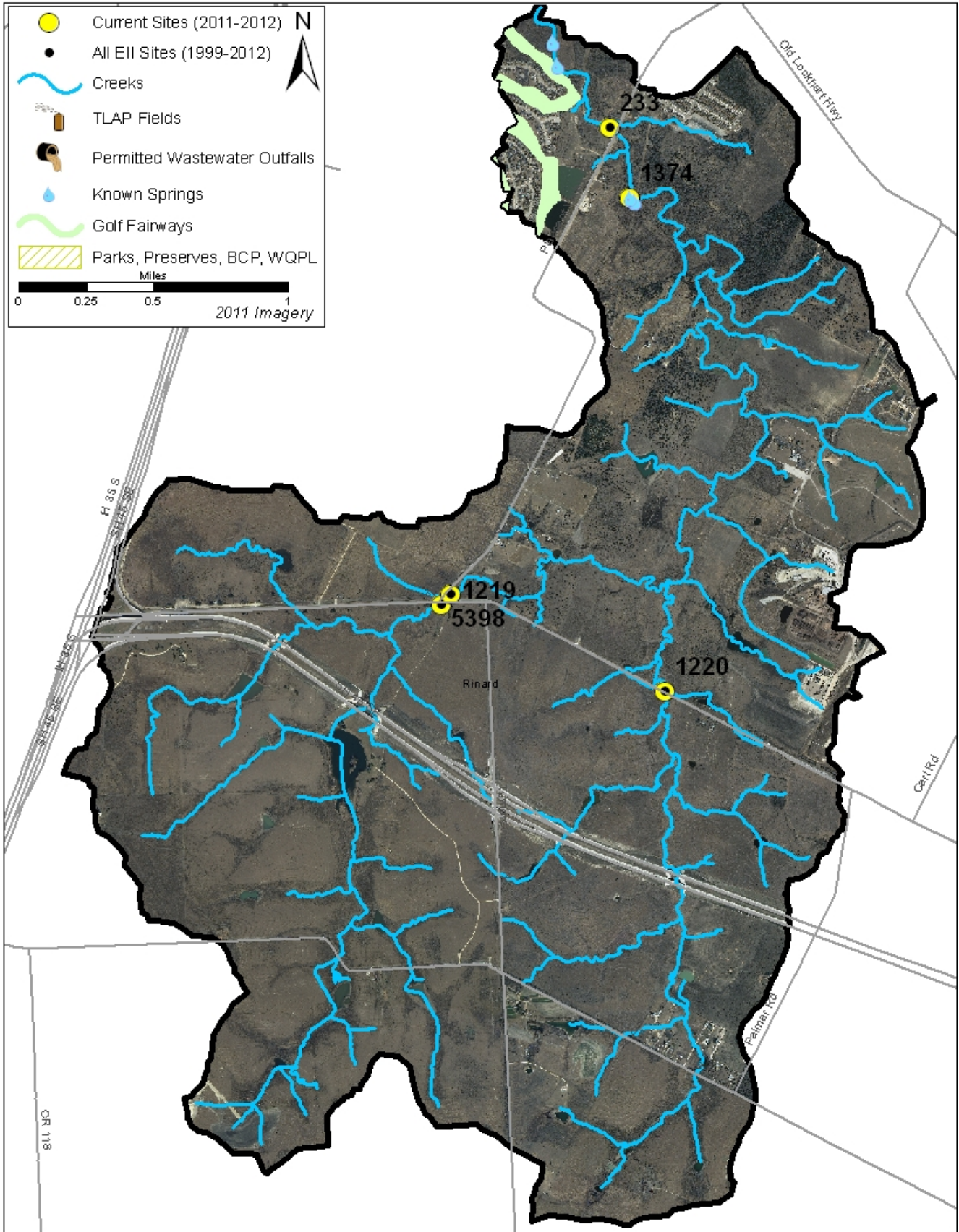
Rinard Creek Watershed

Land Use Map



Rinard Creek Watershed

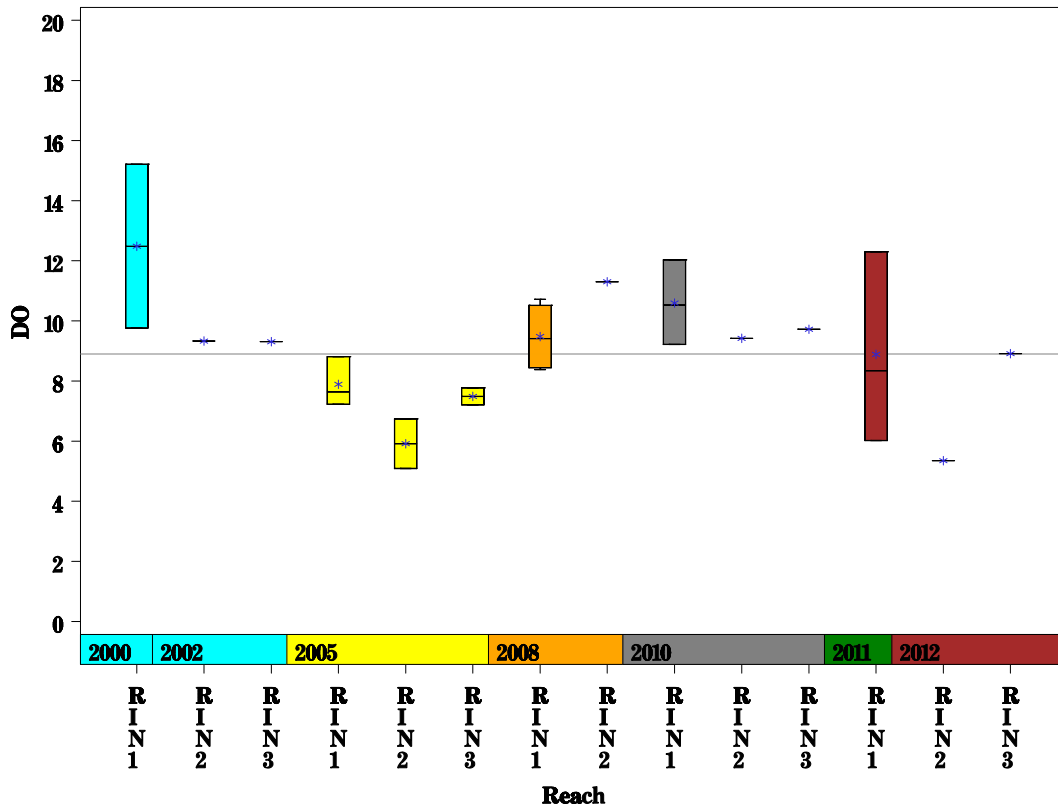
Aerial Map



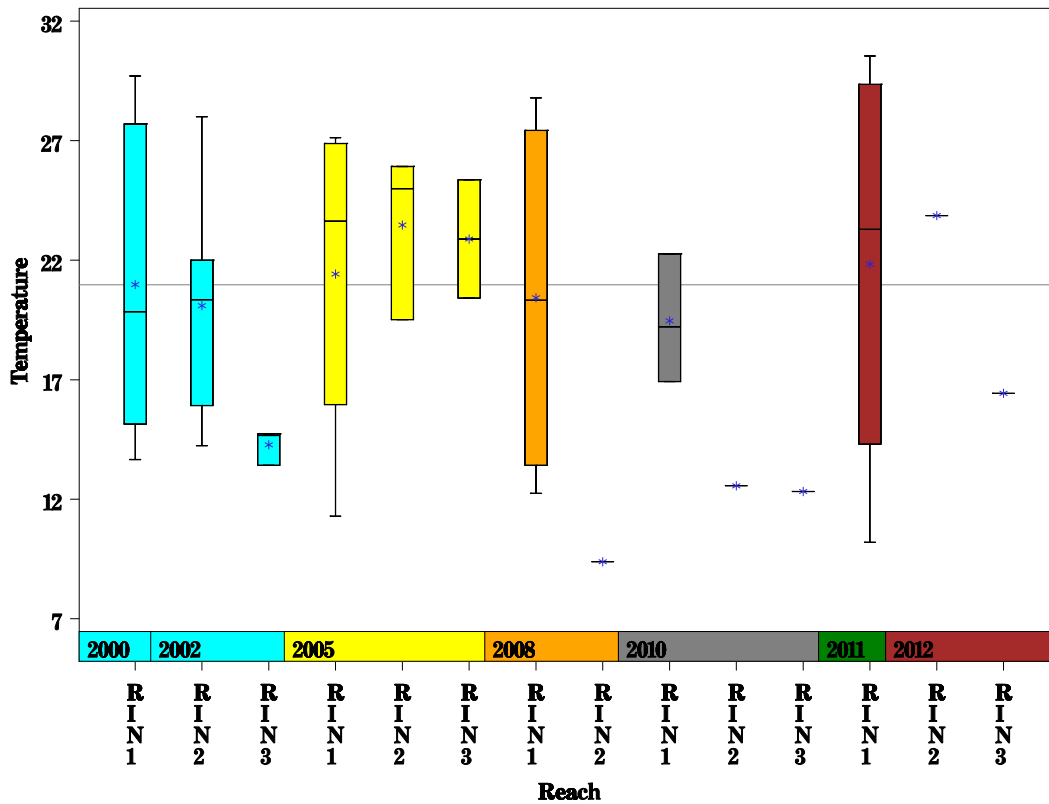
Rinard Creek Watershed

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

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



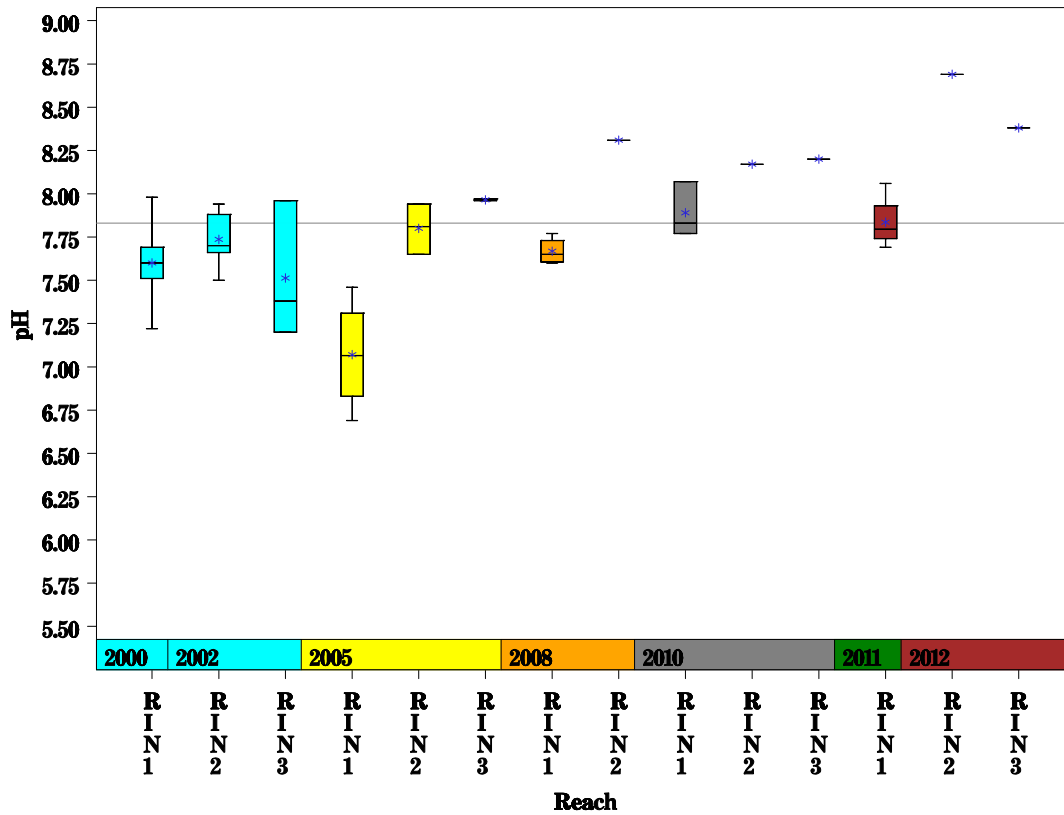
Parameter=WATER TEMPERATURE Unit=Deg. Celsius Watershed=Rinard Creek



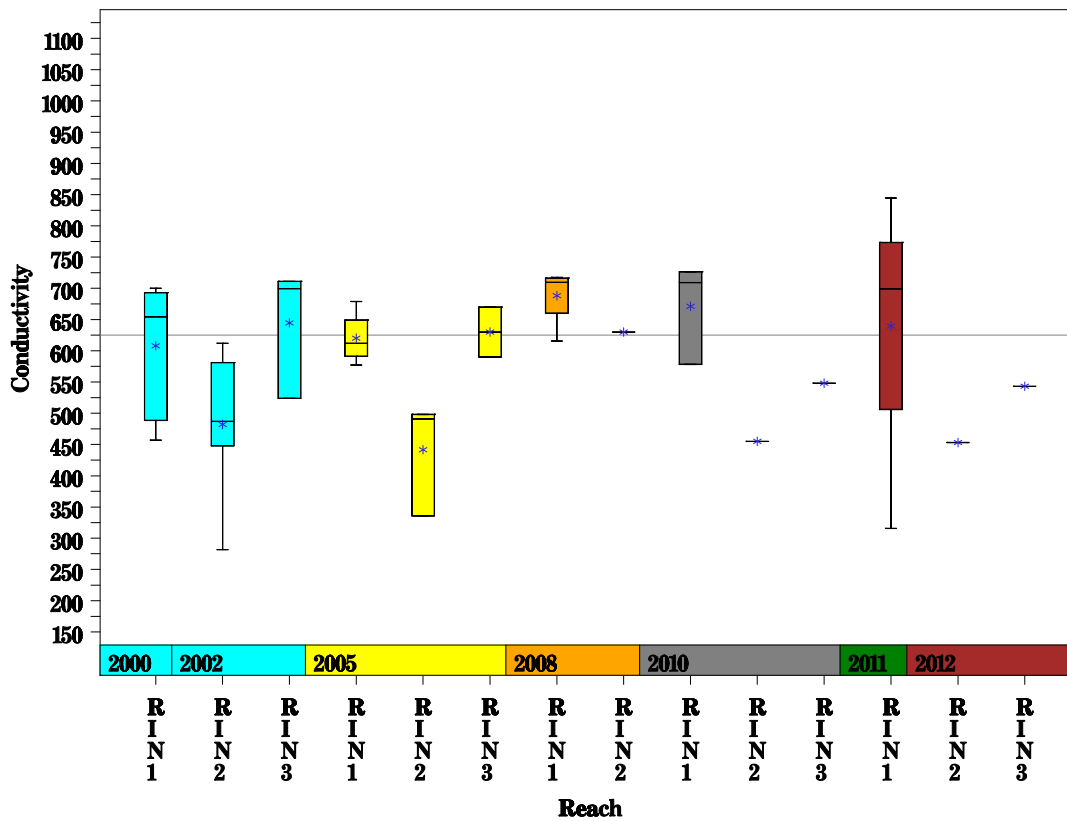
Rinard Creek Watershed

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

Parameter=PH Unit=Standard units Watershed=Rinard Creek



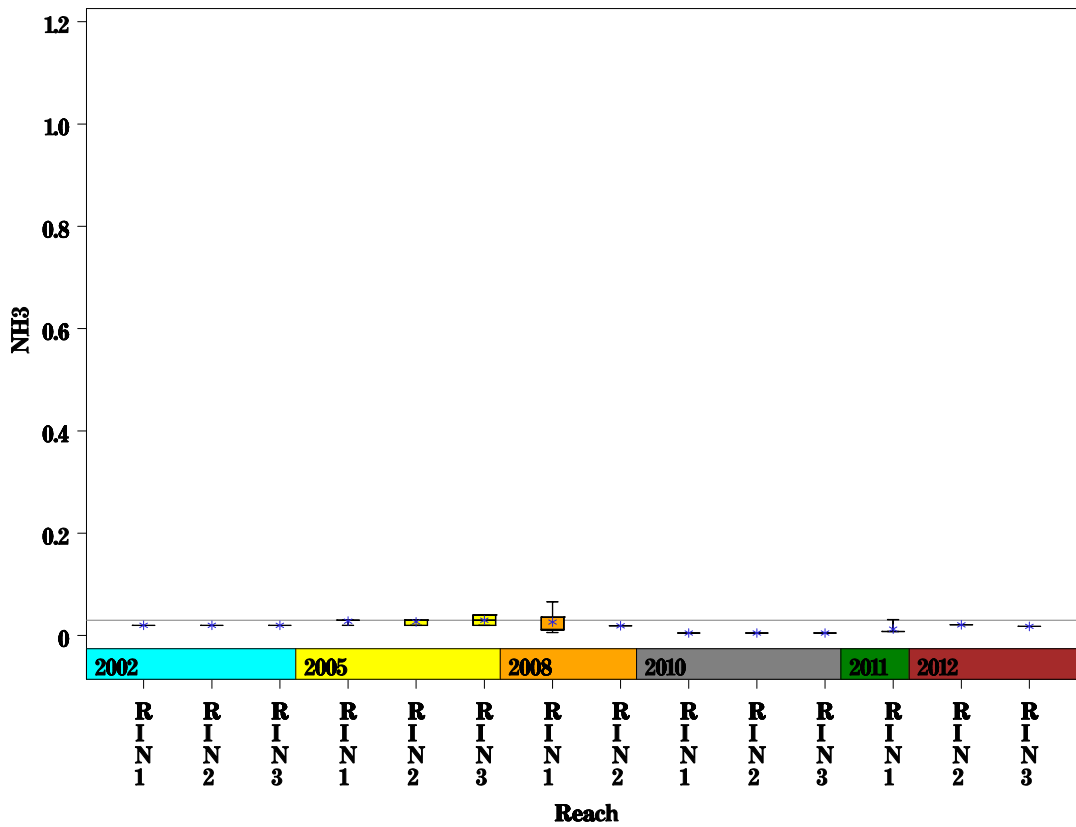
Parameter=CONDUCTIVITY Unit=uS/cm Watershed=Rinard Creek



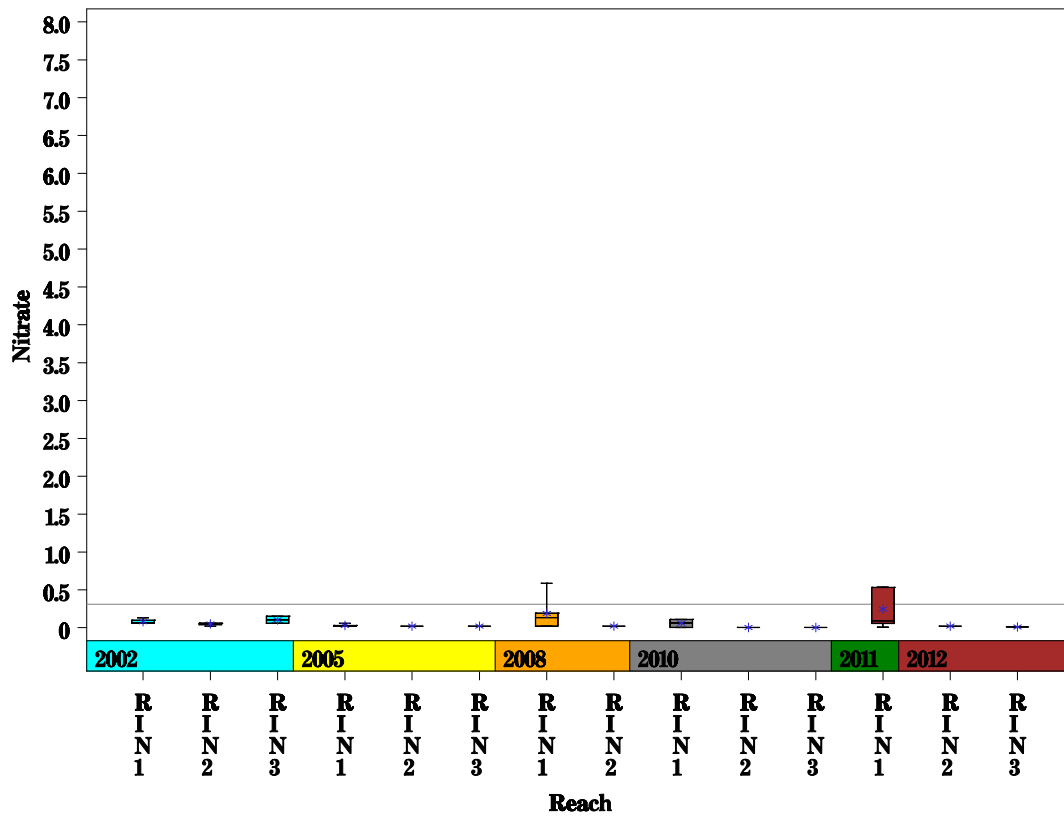
Rinard Creek Watershed

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

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



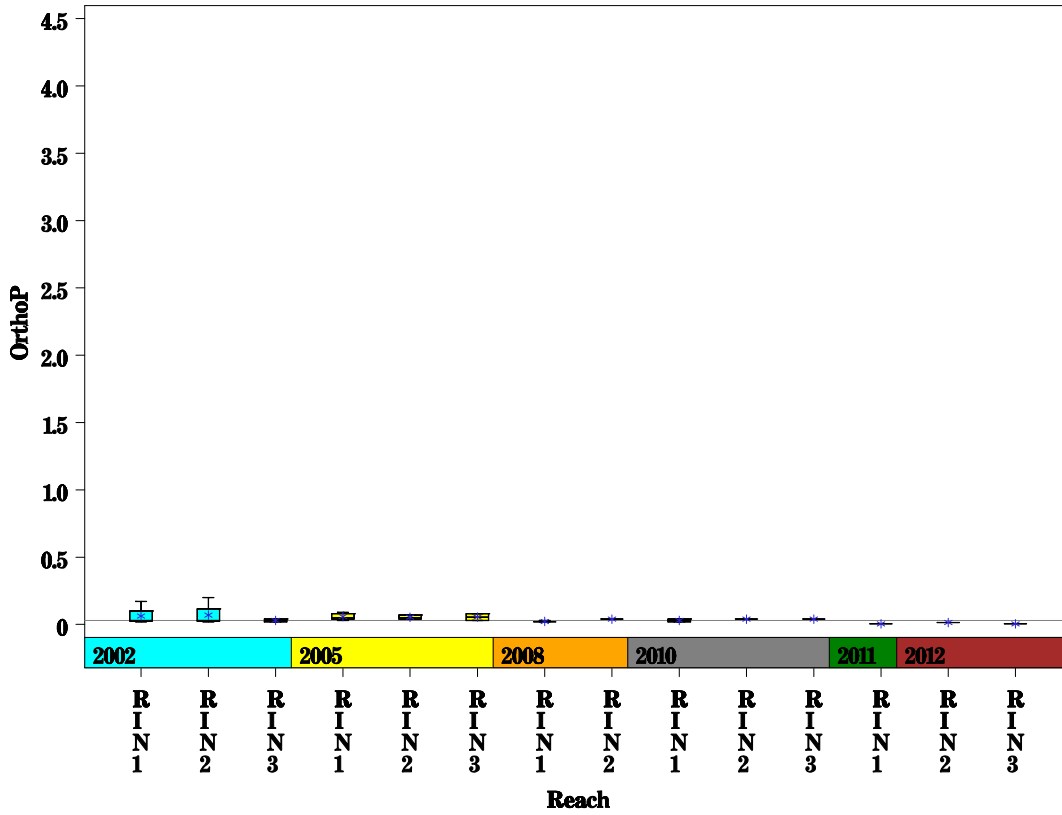
Parameter=NITRATE AS N Unit=MG/L Watershed=Rinard Creek



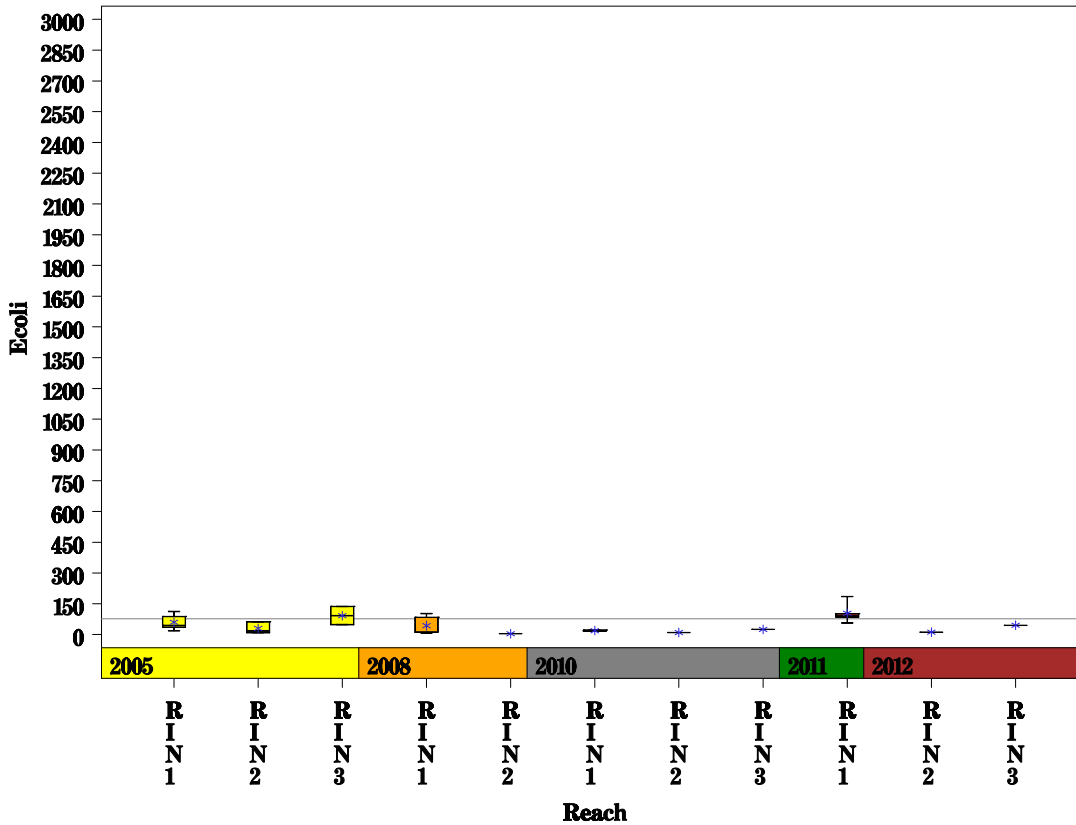
Rinard Creek Watershed

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

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



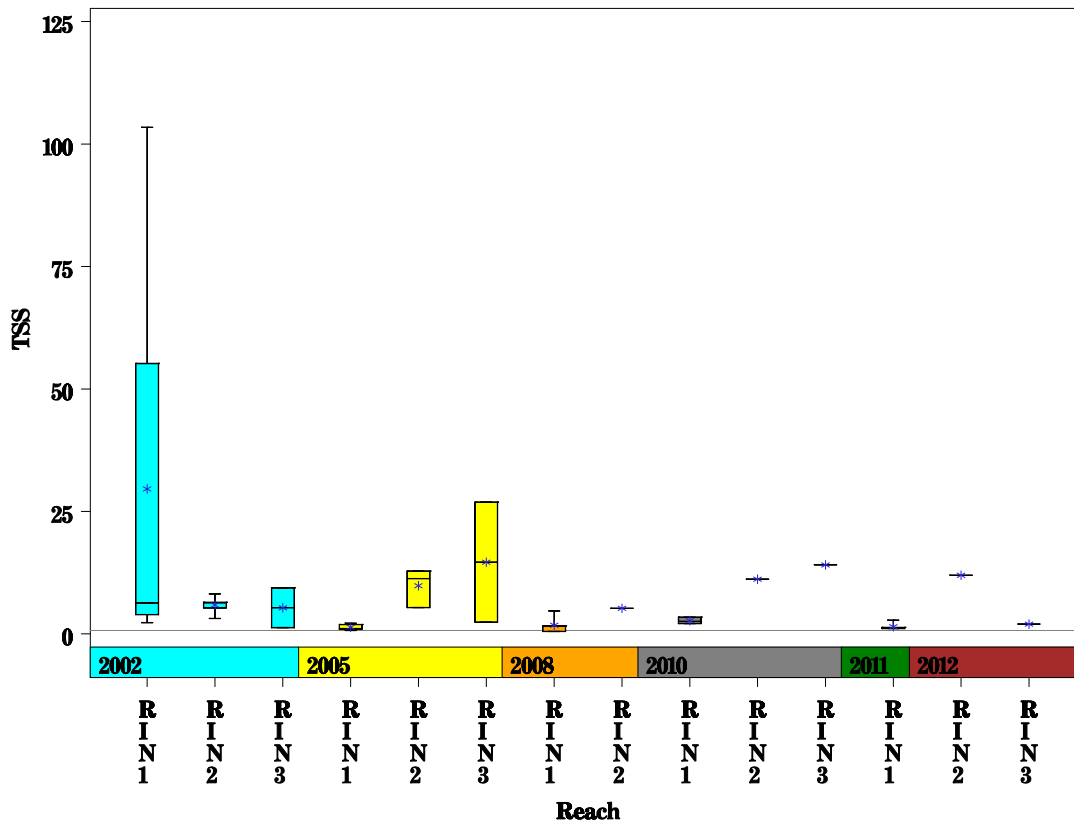
Parameter=E COLI BACTERIA Unit=MPN/100ML Watershed=Rinard Creek



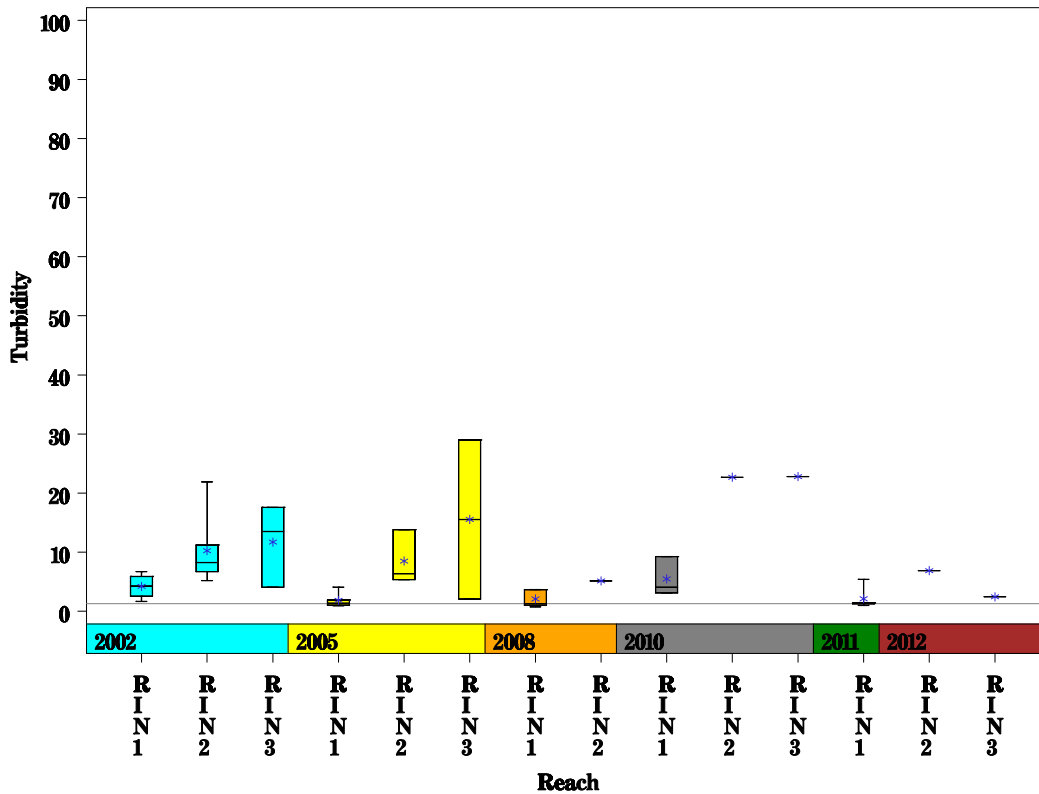
Rinard Creek Watershed

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

Parameter = TOTAL SUSPENDED SOLIDS Unit = MG/L Watershed = Rinard Creek

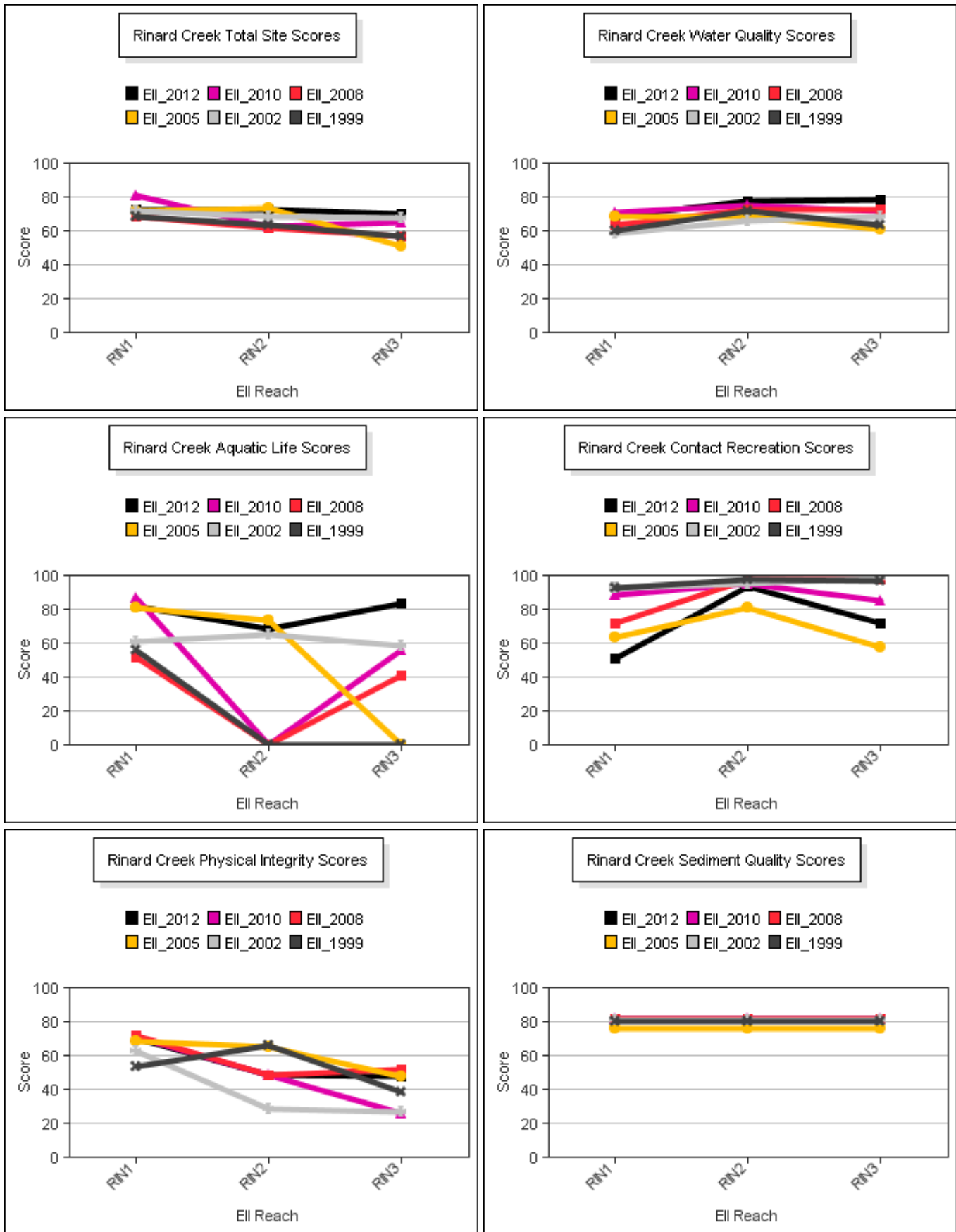


Parameter = TURBIDITY Unit = NTU Watershed = Rinard Creek



Rinard Creek Watershed

Score Summary – Reach scores for each sample year



Rinard Creek Watershed

Site Photographs



233_t00-ds-06_20_2000



233_t00-us-03_28_2002



233_t00-ds-06_15_2005



233_t0-na-06_16_2008



233_00-ds-05_19_2010



233_00-us-05_19_2010

Rinard Creek Watershed

Site Photographs



1219_00-us-05_19_2010



1219_00-ds-05_19_2010



1219_t00-ur-06_15_2005



1220_t00-ur-06_15_2005



1220_00-us-05_19_2010



1220_00-ds-05_19_2010

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