Rock Creek Advisor

Conservancy District

Rock Creek Water Monitoring Project

February 2007 Volume 8 Number 1

Rock Creek Conservancy District has been collecting water samples and data, consistently since 1999. Because it has been a long time since we showed you how, and why we collect the data, I thought this would be a good time to have a refresher course on what we are doing, and why, explaining also the data we collect in more detail. One of the best measurements of water quality is the collection of macro invertebrates at the same locations over time.

Collecting macro invertebrates is just one of the many ways to biomonitor; this is the use of organisms to assess or monitor environmental conditions. Benthic macroinvertebrates are animals that are big enough (macro) to be seen with the naked eye. They lack backbones (invertebrate) and live at least part of their lives in or on the bottom (benthos) of a body of water. Macroinvertebrates include aquatic insects (such as mayflies, stoneflies, and beetles), snails, worms, freshwater clams and mussels, and crayfish.

Benthic macroinvertevrates are ideal for use in biomonitoring: Biological stream monitoring is based on the fact that different species react to pollution in different ways. Pollution –sensitive organisms such as mayflies, and caddisflies are more susceptible to the effect of physical or chemical changes in a stream than other organisms, so that these organisms act as indicators of the absence of pollutants. Pollution –tolerant organisms such as midges and worms are less susceptible to changes in physical chemical parameters in a stream. The presence or absence of those indicator organisms is an indirect measure of pollution. When a stream becomes polluted, pollution-sensitive organisms decrease in number or disappear; pollution- tolerant organisms increase in variety and number. Unlike chemical monitoring, which provides information about water quality at the time of measurement, biological monitoring can provide information about past and/or episodic pollution.

Below is a sample page that shows you how to take the macro invertebrates we collect and put it in a chart form, which will give us the pollution tolerance index for each site.

Pollution Tolerance Index

The macroinvertebrate index is divided into Pollution Tolerance Groups (PT Group) 1,2,3 and 4. These PT groups represent the different levels of pollution tolerance. The higher the group number, the higher the pollution tolerance level. Record the number of macroinvertebrates you find here.

PT GROUP 1 *Intolerant*		PT GROUP 2 *Moderately Intolerant*		PT GROUP 3 *Fairly Tolerant*		PT GROUP 4 *Very Tolerant*	
Stonefly Nymph	6	Damselfly Nymph		Midge Larvae	>100	Left-Handed Snail	1
Mayfly Nymph	5	Dragonfly Nymph	15	Black Fly Larvae		Aquatic Worms	25
Caddis Fly Larvae	10	Sowbug		Planaria	16	Blood Midge	
Dobsonfly Larvae		Scud		Leech		Rat-tailed Maggot	
Riffle Beetle		Crane Fly Larvae					
Water Penny	30	Clams/Mussels					
Right-Handed Snail		Crayfish	2				

The next row is the # of Taxa. Insects that have the same body shape all belong to the same taxa (see the back of your PTI macroinvertebrate data sheet for general body shape/taxa). To find the total number of taxa for each PT Group you need to add the number of types of organisms. It is possible to have a particular PT group without any numbers, therefore it will score a zero.

Do not make the mistake of adding the numbers of organisms together.

# of TAXA	4	# of TAXA	2	# of TAXA	2	# of TAXA	2

The next row is the group scores. Multiply each # of taxa by its weighting factor.

# of TAXA	4	# of TAXA	2	# of TAXA	2	# of TAXA	2
Weighting Factors: (x 4)	16	(x 3)	6	(x 2)	4	(x 1)	2

Add the weighting factors up and you get a pollution tolerance index rating of 28
The scale is 23 or more excellent, 17-22 Good, 11-16 Fair, 10 or Less Poor

Rock Creek Biological Monitoring 09/04/2006 12/16/06

Group 1 Intolerant	Site 1	Site 2	Site 3	Site4	Site 5	Site 6	Site 7	Site 8	Site 9	Site10	Site 1	Site 2	Site 3	Site4	Site 5	Site 6	Site 7	Site 8	Site 9	Site10
Stonefly Nymph			X																	
Mayfly Nymph			X		X	X	X	X	X				X							
Caddis Fly Lavae								X		X		X	X		X					
Dobson Fly Larvae																				
Riffle Beetle									X				X		X		X			X
Water Penny																				
Right-Handed Snail																				
Total # of Taxa	**0**	**0**	**2**	**0**	**1**	**1**	**1**	**2**	**2**	**1**	**0**	**1**	**3**	**0**	**2**	**0**	**1**	**0**	**0**	**1**
Weighting Factors 4	**0**	**0**	**8**	**0**	**4**	**4**	**4**	**8**	**8**	**4**	**0**	**4**	**12**	**0**	**8**	**0**	**4**	**0**	**0**	**4**
Group 2 Moderately Intolerant								X		X										X
Damselfly Nymph				X		X	X			X					1		X	X	X	
Dragonfly Nymph																	X			X
Sow bug																				
Scud											X									
Crane Fly Larvae				X									X	X			X			
Clams/Mussels		X	X	X								X	X	X	X	X		X	X	
Crayfish	X	X	X	X	X	X	X	X	X					X	X			X		
Total # of Taxa	**1**	**2**	**2**	**4**	**1**	**2**	**2**	**2**	**1**	**2**	**1**	**1**	**2**	**3**	**2**	**1**	**3**	**3**	**2**	**2**
Weighting Factors 3	**3**	**6**	**9**	**12**	**3**	**6**	**6**	**6**	**3**	**6**	**3**	**9**	**6**	**9**	**6**	**3**	**9**	**9**	**6**	**6**
Group 3 Fairly Tolerant																				
Midges								X												
Black Fly Larvae																				
Planaria		X										X								
Leech					X			X				X								
Total # of Taxa	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Weighting Factors 2	**0**	**2**	**0**	**0**	**2**	0	0	2	0	0	**0**	**6**	**0**	**0**	**0**	0	0	0	0	0
Group 4 Very Tolerant																				
Left-Handed Snail	X			X	X		X	X			X	X		X					X	
Aquatic Worms								X												
Blood Midge	X	X					X				X	X		X		X	X			X
Rat-Tailed Maggot																				
Total # of Taxa	**2**	**1**	**0**	**1**	**1**	**0**	**2**	**2**	**0**	**0**	**2**	**2**	**0**	**2**	**0**	**1**	**1**	**0**	**1**	**1**
Weighting Factors 1	**2**	**1**	**0**	**1**	**1**	**0**	**2**	**2**	**0**	**0**	**2**	**2**	**0**	**2**	**0**	**1**	**1**	**0**	**1**	**1**
Pollution Tolerance Index	5=P	9=P	17=G	13=F	10=P	10=P	12=F	18=G	11=F	10=P	5=P	16=F	18=G	5=P	14=F	4=P	14=F	9=P	7=P	10=P

Below is a collection of data gathered from macroinvertevrates from the Rock Creek, from September 2002 – December 2006. Macro invertebrates were collected from the ten sites, and recorded and given a pollution tolerance index rating.

Site Index Rating 12/17/06	**Site1=5 Poor**	**Site2= 16 Fair**	**Site3= 18 Good**	**Site4= 5 Poor**	**Site5=14 Fair**	**Site6= 4 Poor**	**Site7= 14 Fair**	**Site8= 9 Poor**	**Site9=7 Poor**	**Site10= 10 Poor**
Site Index Rating 10/28/06	**Site1=4 Poor**	**Site2= 7 Poor**	**Site3= 12 Fair**	**Site4= 17 Good**	**Site5=12 Fair**	**Site6= 4 Poor**	**Site7= 19 Good**	**Site8= 14 Fair**	**Site9=22 Good**	**Site10= 8 Poor**
Site Index Rating 09/04/06	**Site1=5 Poor**	**Site2= 7 Poor**	**Site3= 12 Fair**	**Site4= 17 Good**	**Site5=12 Fair**	**Site6= 4 Poor**	**Site7= 19 Good**	**Site8= 14 Fair**	**Site9=22 Good**	**Site10= 8 Poor**
Site Index Rating 09/04/06	**Site1=5 Poor**	**Site2= 9 Poor**	**Site3= 17 Good**	**Site4= 13 Fair**	**Site5=10 Poor**	**Site6=10 Poor**	**Site7= 12 Fair**	**Site8= 18 Good**	**Site9=11 Fair**	**Site10= 10 Poor**
Site Index Rating 06/17/06	**Site1=11 Fair**	**Site2= 12 Fair**	**Site3=13 Fair**	**Site4= 8 Poor**	**Site5=10 Poor**	**Site6=5 Poor**	**Site7= 4 Poor**	**Site8= 8 Poor**	**Site9=13 Fair**	**Site10= 7 Poor**
Site Index Rating 04/08/06	**Site1=3 Poor**	**Site2= 10 Poor**	**Site3= 5 Poor**	**Site4= 8 Poor**	**Site5= 16 Fair**	**Site6=5 Poor**	**Site7= 15 Fair**	**Site8= 16 Fair**	**Site9=10 Poor**	**Site10= 18 Good**
Site Index Rating 11/26/05	**Site1=1 Poor**	**Site2= 10 Poor**	**Site3=11 Fair**	**Site4= 9 Poor**	**Site5=7 Poor**	**Site6=4 Poor**	**Site7=9 Poor**	**Site8= 13 fair**	**Site9=13 Fair**	**Site10= 4 Poor**
Site Index Rating 9/06/05	**Site1=4 Poor**	**Site2= 7 Poor**	**Site3=16 Fair**	**Site4= 9 Poor**	**Site5=16 Fair**	**Site6=10Poor**	**Site7=8 Poor**	**Site8= 16 fair**	**Site9=16 Fair**	**Site10=12 Fair**
Site Index Rating 7/14/05	**Site1=8 Poor**	**Site2=15 Fair**	**Site3=26 Excellent**	**Site4= 22 Good**	**Site5=10 Poor**	**Site6=6Poor**	**Site7=17 Good**	**Site8= 15 fair**	**Site9=14 Fair**	**Site10=11 Fair**
Site Index Rating 5/16/05	**Site1= 15 Fair**	**Site2=14 Fair**	**Site3=10 Poor**	**Site4=14 Fair**	**Site5=11 Fair**	**Site6=16 Fair**	**Site7=11 Fair**	**Site8=19 Good**	**Site9=14 Fair**	**Site10=11 Fair**
Site Index Rating 12/4/05	**Site1=1 Poor**	**Site2=13 Poor**	**Site3=15 Fair**	**Site4=18 Good**	**Site5=11 Fair**	**Site6=13 Fair**	**Site7=22 Good**	**Site8=10 Poor**	**Site9=17 Good**	**Site10=9 poor**
Site Index Rating 9/6/2004	**Site1=4 Poor**	**Site2=10 Poor**	**Site3=21 Good**	**Site4=15 Fair**	**Site5=11 Fair**	**Site6=0 Poor**	**Site7=1 Poor**	**Site8=14 Fair**	**Site9=21 Good**	**Site10=10 poor**
Site Index Rating 06/21/04	**Site1=4 Poor**	**Site2=15 Fair**	**Site3=8 Poor**	**Site4=14 Fair**	**Site5=8 Poor**	**Site6=0 Poor**	**Site7=1 Poor**	**Site8=6 Poor**	**Site9=5 Poor**	**Site10=15 Fair**
Site Index Rating 04/09/04	**Site1=15 Fair**	**Site2=19 Good**	**Site3=25 Excellent**	**Site4=10 Poor**	**Site5=7 Poor**	**Site6=4 Poor**	**Site7=6 Poor**	**Site8=7 Poor**	**Site9=16 Fair**	**Site10=15 Fair**
Site Index Rating 12/7/03	**Site 1=5Poor**	**Site2=4 Poor**	**Site3=8 Poor**	**Site4=7 Poor**	**Site5=5 Poor**	**Site6=3 Poor**	**Site7=5 poor**	**Site8=12 Fair**	**Site9=19 Good**	**Site10=18 Good**
Site index rating 9/6/03	**site 1=1 Poor**	**site 2 = 3 Poor**	**site 3 = 1 Poor**	**site 4 = 4 Poor**	**site 5 = 0 Poor**	**site 6 = 0 Poor**	**site 7 = 0 Poor**	**site 8 = 11 Fair**	**site 9 = 18 Good**	**site 10 = 11 Fair**
Site Index Rating 6/10/03	**Site 1=4Poor**	**Site2=12Fair**	**Site3=19Good**	**Site4=9 Poor**	**Site5=3 Poor**	**Site6=5 Poor**	**Site7=4 poor**	**Site8=18 Good**	**Site9=15 Fair**	**Site10=7 Poor**
Site Index Rating 4/18/03	**Site 1=1Poor**	**Site2=11Fair**	**Site3=17Good**	**Site4=4 Poor**	**Site5=9 Poor**	**Site6=0 Poor**	**Site7=9 poor**	**Site8=22 Good**	**Site9=20 Good**	**Site10=10 Poor**
Site Index Rating 12/16/02	**Site1=2 Poor**	**Site2=13 Fair**	**Site3=13 Fair**	**Site4=7 Poor**	**Site5=6 Poor**	**Site6=10 Poor**	**Site7=12 Fair**	**Site8=8 Poor**	**Site9=14 Fair**	**Site10=7 Poor**
SITE INDEX RATING 5/4/02	**Site1=10 Poor**	**Site2=14 Fair**	**Site3=16 Fair**	**Site4=13 Fair**	**Site5=8 Poor**	**Site6=5 Poor**	**Site7=8 Poor**	**Site8=15 Fair**	**Site9=19 Good**	**Site10=11 Fair**
Site Index Rating 6/13/02	**Site1= 8 Poor**	**Site2=16 Fair**	**Site3=17 Good**	**Site 4=20 Good**	**Site 5=11 Fair**	**Site 6=5 Poor**	**Site7=4 Poor**	**Site8=12 Fair**	**Site9=22 Good**	**Site 10=16 Fair**
Site Index Rating 9/02/02	**Site 1= 4 Poor**	**Site 2= 4 Poor**	**Site 3= 9 Poor**	**Site 4 =0 Poor**	**Site 5 = 10 Poor**	**Site 6 = 3 Poor**	**Site 7 = 7 Poor**	**Site 8 =11 Fair**	**Site 9 = 14 Fair**	**Site 10=11 Poor**

Rock Creek Water Monitoring for T-Coliform 4/21/1999 – 9/06/2006

T-Coliform	4/21/1999	6/3/1999	8/11/1999	9/30/1999	12/15/1999	2/14/2000	4/13/2000	6/8/2000	9/18/2000	12/13/2000	4/13/2001	6/19/2001	10/2/2001
site1	7120	7700	5440	3300	**81300**	1720	1600	**33600**	**31600**	**15160**	**50000**	**254000**	1400
site2	5040	6100	3520	**15400**	**69600**	2360	**12800**	**67200**	**11000**	9920	**27500**	**34000**	**13400**
site3	2800	3100	4160	7200	**32800**	3680	2800	**48000**	3600	**15840**	**18000**	**40000**	5000
site4	3040	4200	6880	9300	**28800**	3680	1600	**29600**	4650	**15200**	**55000**	**46000**	8600
site5	3660	**10300**	3280	2100	**24800**	720	2000	1400	7700	**18040**	**46000**	**39000**	**14800**
T-Coliform	4/21/1999	6/3/1999	8/11/1999	9/30/1999	12/15/1999	2/14/2000	4/13/2000	6/8/2000	9/18/2000	12/13/2000	4/13/2001	6/19/2001	10/2/2001
site6	3860	8100	4400	**11000**	**22800**	1560	1600	**18400**	4550	**18800**	**61000**	**49100**	**11000**
site7	4480	8900	6640	2900	**21200**	1200	2200	**10400**	4850	**17960**	**28000**	**40000**	**11200**
site8	4320	7000	4240	500	**18800**	1080	200	**13600**	**16650**	**13840**	**35000**	**35000**	4600
site9	4240	**10700**	5520	1800	**16500**	800	1000	**13800**	5600	**13680**	**52000**	**29000**	4200
site10	3840	**10500**	7200	2800	**11600**	1040	400	**16800**	4650	**14560**	**75000**	**40000**	**12600**
MCL	**10000 / 100 ml**												
T-Coliform	12/20/2001	4/14/2002	6/13/2002	9/2/2002	12/3/2002	4/23/2003	6/13/2003	9/2/2003	12/1/2003	4/8/2004	6/18/2004	9/16/2004	12/8/2004
site1	5280	**76500**	**13600**	**12700**	800	4140	**30000**	**47400**	**29800**	3200	**22000**	5000	**41000**
site2	4340	**35000**	2720	**14800**	900	3740	**35000**	**54800**	**23200**	1700	**30500**	9500	**24200**
site3	6600	**15000**	3520	**14800**	900	1540	**44800**	**69600**	**11600**	1900	**27000**	5500	**33000**
site4	5050	**11000**	2330	8000	2240	1320	**51400**	**58200**	**13000**	1700	**37500**	4500	**31000**
site5	4910	**14000**	2210	8000	2100	1760	**10200**	**35800**	**11400**	800	**43500**	3500	**43600**
T-Coliform	12/20/2001	4/14/2002	6/13/2002	9/2/2002	12/3/2002	4/23/2003	6/13/2003	9/2/2003	12/1/2003	4/8/2004	6/18/2004	9/16/2004	12/8/2004
site6	7180	**18500**	1920	5400	1400	2040	**67000**	**57600**	9000	2100	**43000**	4000	**40800**
site7	5280	**12000**	1880	8700	1920	1160	**49200**	**41800**	6200	1000	**53000**	3000	**44000**
site8	4380	**26000**	1340	5500	1360	1740	**58600**	**48600**	**10600**	1400	**42000**	5500	**43200**
site9	5840	**21000**	1720	5100	1260	1320	**49400**	**60000**	**10800**	1100	**57500**	2000	**41200**
site10	4830	**23500**	1610	4200	1760	2880	**53400**	**39800**	**12600**	700	**46500**	4500	**34000**
T-Coliform	site1	site2	site3	site4	site5	site6	site7	site8	site9	site10			
4/22/2005	**32000**	**25800**	**14600**	**16200**	**16200**	9600	**16000**	**10800**	**20800**	**21600**			
6/28/2005	**193000**	**170000**	**24500**	**17500**	**31000**	**30000**	**10500**	**18000**	**18500**	**20000**			
9/19/2005	**23000**	**29000**	**17000**	**17000**	**12000**	**16500**	6000	9000	8000	**10000**			
12/13/2005	3900	6500	4900	1500	1300	1600	2000	1400	1600	700			
4/18/2006	9800	**12200**	**11600**	7900	8500	7500	8300	6500	7100	6100			
6/29/2006	8200	8900	7200	**10100**	6100	4700	4800	4300	3000	3000			
9/6/2006	**15800**	5900	8200	5900	4600	3600	2700	1200	1200	2000			
MCL	**10000 / 100 ml**												

Rock Creek Water Monitoring for E-Coli 4/21/1999 – 9/06/2006

E. Coli	4/21/1999	6/3/1999	8/11/1999	9/30/1999	12/15/1999	2/14/2000	4/13/2000	6/8/2000	9/18/2000	12/13/2000	4/13/2001	6/19/2001	10/2/2001
site1	**360**	**1000**	120	**300**	**5600**	60	200	**1200**	**600**	**340**	**11500**	**2000**	200
site2	**300**	**600**	0	**900**	**1600**	90	<200	**1200**	**1200**	**840**	200	**5000**	0
site3	**280**	200	40	**300**	**1500**	70	<200	**1000**	<50	**670**	0	**3000**	0
site4	120	**200**	40	**400**	**1100**	70	<200	**400**	50	**690**	**2000**	**5000**	**400**
site5	**340**	**600**	60	<100	**400**	170	200	**200**	50	**760**	**4000**	**1000**	**600**
E. Coli	4/21/1999	6/3/1999	8/11/1999	9/30/1999	12/15/1999	2/14/2000	4/13/2000	6/8/2000	9/18/2000	12/13/2000	4/13/2001	6/19/2001	10/2/2001
site6	100	**700**	140	**1900**	**400**	90	<200	**600**	100	**970**	**2000**	**3000**	**400**
site7	120	**300**	60	**300**	**300**	130	200	**600**	**450**	**970**	**3000**	0	200
site8	160	**700**	40	<100	**400**	150	<200	100	150	**720**	**2500**	0	200
site9	20	**1100**	40	200	**1100**	80	200	200	<50	**720**	**3000**	0	**400**
site10	20	**1600**	20	**300**	**600**	50	<200.	100	100	**910**	**4500**	**2000**	0
MCL	235 col	/100ml											
E. Coli	12/20/2001	4/14/2002	6/13/2002	9/2/2002	12/3/2002	4/23/2003	6/13/2003	9/2/2003	12/1/2003	4/8/2004	6/18/2004	9/16/2004	12/8/2004
site1	160	**7500**	**1000**	**2000**	**240**	0	**800**	**2600**	200	100	**<50**	**<500**	**700**
site2	100	**1000**	**660**	200	100	**1120**	**2400**	**6800**	0.00	0.00	**500**	**<500**	200
site3	**320**	**500**	**750**	**400**	40	0	**2600**	**10400**	**1200**	0	**500**	**<500**	**800**
site4	**330**	**500**	**580**	**300**	0	60	**600**	**9400**	**800**	200	**<50**	**<500**	**500**
site5	**310**	0	**550**	200	0	40	**600**	**5400**	**600**	200	**1000**	**<500**	**500**
E. Coli	12/20/2001	4/14/2002	6/13/2002	9/2/2002	12/3/2002	4/23/2003	6/13/2003	9/2/2003	12/1/2003	4/8/2004	6/18/2004	9/16/2004	12/8/2004
site6	260	0	**490**	**400**	40	40	**1000**	**8000**	**400**	**500**	**500**	**<500**	**900**
site7	**360**	0	**570**	**400**	160	40	**400**	**6600**	**1400**	**300**	**1500**	**<500**	**900**
site8	**300**	0	**370**	100	40	40	**2600**	**7800**	**800**	**300**	**1000**	**<500**	**700**
site9	**240**	**500**	**470**	100	220	60	**2400**	**7200**	**600**	**400**	**1000**	**<500**	**1100**
site10	230	**2000**	**240**	**400**	0	20	**1400**	**6200**	200	100	**500**	**<500**	**900**
T-Coliform	site1	site2	site3	site4	site5	site6	site7	site8	site9	site10			
4/22/2005	**1400**	**1000**	**1600**	**1600**	**1200**	**1000**	**1200**	**2400**	**1800**	**600**			
6/28/2005	**9000**	**24000**	**1000**	**1500**	**6000**	**3500**	**1000**	**1500**	**2000**	**500**			
9/19/2005	<500	<500	**500**	**2500**	**500**	**500**	**500**	<500	<500	<500			
12/13/2005	100	100	**1800**	**1500**	**1300**	**300**	200	**300**	200	100			
4/18/2006	**700**	**2500**	**1500**	**600**	**700**	**600**	**1200**	**900**	**1200**	**1200**			
6/29/2006	**800**	**1800**	**1300**	**700**	**900**	**800**	**1000**	**500**	**300**	**500**			
9/6/2006	100	**800**	**1800**	**2400**	**900**	**1100**	**300**	100	200	**300**			
MCL	235 col	/100ml											

NONPROFIT ORG.
US POSTAGE
PAID
BLUFFTON, IN
46714
PERMIT NO. 477

Rock Creek Water Monitoring for Nitrogen 4/21/1999 – 9/06/2006

Nitrogen	4/21/1999	6/3/1999	8/11/1999	9/30/1999	12/15/1999	2/14/2000	4/13/2000	6/8/2000	9/18/2000	12/13/2000	4/13/2001	6/19/2001	10/2/2001
site1	10.7	22.3	0	0.31	20.9	19.2	11.3	2.17	0	0	0.4	2.1	0
site2	10	21.3	0.26	0.2	11.2	19	11	1.95	0	0	0.6	1.8	0
site3	7.4	18.1	1.5	0.28	7.6	11.6	7.4	1.96	0	0	0.5	1.9	0
site4	7.4	18.5	0	0.25	4.4	11.7	7.3	1.97	0	0	0.5	2	0
site5	7.1	17.4	0.23	0.23	4.4	12	6.8	2.41	0	0	0.5	2.3	0
Nitrogen	4/21/1999	6/3/1999	8/11/1999	9/30/1999	12/15/1999	2/14/2000	4/13/2000	6/8/2000	9/18/2000	12/13/2000	4/13/2001	6/19/2001	10/2/2001
site6	7.3	17.9	0.24	0.27	1.9	12.5	6.3	3.18	0	15.8	10.21	8.16	10
site7	7.5	17.3	0	0.32	3.8	18.5	6.3	3.12	0	12.3	9.85	8.11	2.04
site8	6.9	18.2	0	0.28	0.97	13.6	5.9	3.12	0	11.5	9.87	7.84	1.79
site9	6.8	17.7	0	0.38	0.86	11.3	6	3.14	0	12.2	10.08	8.03	1.83
site10	6.9	18.5	0	0	0.6	12.6	6.1	3.2	0	12.3	9.72	8.47	1.93
MCL	25 mg/L												
Nitrogen	12/20/2001	4/14/2002	6/13/2002	9/2/2002	12/3/2002	4/23/2003	6/13/2003	9/2/2003	12/1/2003	4/8/2004	6/18/2004	9/16/2004	12/8/2004
site1	0	4.3	3.61	0.45	13.23	6.08	21.75	2.65	6.85	5.08	6	1.66	10.61
site2	0	5.96	4.78	0	9.26	5.83	22.42	4.67	7.25	5.58	9.54	1.47	11.65
site3	0	4.97	3.41	0	5.76	4.4	21.7	2.41	6.09	3.65	6.12	0.93	8.82
site4	0	5	4	0	5.59	4.2	20.7	2.24	5.89	3.5	5.88	0.79	8.36
site5	0	5.53	6.11	0	5.94	4.42	20.72	2.2	5.95	3.6	5.37	0.84	8.36
Nitrogen	12/20/2001	4/14/2002	6/13/2002	9/2/2002	12/3/2002	4/23/2003	6/13/2003	9/2/2003	12/1/2003	4/8/2004	6/18/2004	9/16/2004	12/8/2004
site6	4.04	5.44	5.85	0	5.43	3.92	20.96	2.11	5.85	3.27	5.42	0.72	8.25
site7	4.09	5.54	5.9	0	4.47	3.34	21.4	1.99	5.51	3.61	5.63	0.55	7.97
site8	4.06	5.39	5.99	0	4.36	3.47	21.37	1.92	5.61	3.14	5.46	0.49	7.96
site9	4.09	5.44	6.14	0	4.12	3.55	21.89	1.93	5.65	3.15	5.54	0.37	8.03
site10	4.09	5.6	7	0	5.2	3.87	21.98	1.85	5.85	3.1	5.69	0.63	7.85
Nitrogen	site1	site2	site3	site4	site5	site6	site7	site8	site9	site10			
4/22/2005	8.96	9.98	7.44	7.54	7.18	7.29	7.37	7.15	7.58	8.15			
6/28/2005	**31.04**	4.89	BDL	BDL	0.21	BDL	BDL	0.41	BDL	BDL			
9/19/2005	1.28	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL			
12/13/2005	3.74	3.69	2.91	2.83	2.77	2.38	2.23	2.27	2.24	2.21			
4/18/2006	12.34	14.5	10.2	10.06	9.64	9.25	9.04	8.96	8.89	8.86			
6/29/2006	6.07	4.94	1.98	2.39	2.93	2.31	2.2	3.34	3.72	4.12			
9/6/2006	0.26	0.1	0.07	0.09	0.09	0.1	0.1	0.21	0.34	1.82			
MCL	25 mg/L	BDL= Below detection level of metod utilized= .20											

MCL= Maximum Contaminant Level is the highest permissible level of a contaminant in water which is delivered to any public water system.

Bold numbers are over the MCL. The MCL's I have collected are only a guide to compare with other waterways in the area.

Total Coliform, and E-Coli limits are based on secondary contact water (boating, fishing) 10,000 col/100ml is permissible for Total Coliform, but less than 5,000col/100ml is desirable. E-Coli's MCL is less than 235 col/100ml for total body contact.

Total Phosphorus MCL is .04 mg/L for aquatic wildlife. Nitrate + Nitrite's MCL 25 mg/L. is based on wastewater limits set for Indiana.

The table below and on page 4 show the results for the Rock Creek Channel biological monitoring for the year 2005. Page two and three are tables from water testing results for contaminants, from April of 1999 to December 2005. If you have questions or want past Rock Creek Advisors, please contact the Rock Creek Conservancy District Clerk, Stacia Henderson or Mark Grimm at 260-824-0624 ext. 3.