

**Illinois
Department of
Natural Resources**

**Office of
Resource Conservation
Division of Fisheries**

**Region 2 Watershed Program
5931 Fox River Drive
Plano, Illinois 60545**

\$ BLACKBERRY CREEK

\$ 1997 BIOLOGICAL SURVEY

A report by

Robert C. Rung and Stephen M. Pescitelli

630-553-0164 FAX: 630-553-1108

BLACKBERRY CREEK BIOLOGICAL SURVEY REPORT

January 16, 1998

SUMMARY

During 1997, biological surveys were conducted on Blackberry Creek. The survey was a result of a cooperative effort by the Illinois Department of Natural Resources (IDNR), USEPA, NRCS, and numerous volunteers.

A total of 4,409 fish (representing 42 species), 671 macroinvertebrates (representing 22 taxa), and 66 mussels (representing 11 species) were collected. A Biological Stream Characterization (BSC) rating (Bertrand, et. al. 1996) was calculated for each sampling station. A BSC rating of C was computed for stations in the upper and middle reaches (Kane County). A BSC rating of B was determined for stations in the lower reach (Kendall County).

A 13 mile walking inspection in the stream channel indicated the upper and middle reaches are experiencing habitat degradation from significant mud/silt deposition and scoured banks. The mud/silt was aerobic (signifying recent deposition), and often occurred as large "clumps" of streambank.

Fish migration into the stream from the Fox River is precluded by a ten foot high dam 700 feet upstream of the confluence. The sampling station between the dam and the Fox River (BBC-7) produced 20.0% (n=879) of all fish collected at all stations combined. Additionally, 23.8% (n=10) of all species sampled were only collected at BBC-7.

Sportfish were poorly represented in the stations upstream of the River Road dam. Largemouth bass (n=36) were the most abundant sport species, reflecting recruitment from ponds in the watershed and their ability to tolerate a mud substrate. Smallmouth bass (n=3) were represented by only the 1994 year class. The absence of 1995 through 1997 smallmouth bass year classes indicates unsuccessful reproduction. One northern pike was observed, but not collected.

INTRODUCTION

During 1997 fish population sampling was conducted at seven (7) stations on Blackberry Creek (Figure 1). Six (6) of these stations were also sampled for macroinvertebrates (insects and crustaceans). An additional three (3) stations were sampled for mussel populations.

Data provided by these surveys provide insights into Blackberry Creek's biological community, aquatic habitat, and water quality. This baseline data should prove useful for watershed planning efforts currently underway by the Blackberry Creek Watershed Management Association. It will also be utilized to evaluate the efficacy of restoration and enhancement efforts on the stream.

WATERSHED CHARACTERISTICS

Blackberry Creek originates in Campton Township of Kane County (T. 40N. - R. 7E. - NW.1/4 Sec. 33), approximately 1/3 mile north of the junction of Route 38 and Pouley Road and 1.5 miles east of Elburn. The creek flows 32 miles to its confluence with the Fox River in Kendall County. It has a total drainage area of 73 square miles (NRCS, 1989). Blackberry Creek can be divided into three sections based on gradient and valley 'development'.

Upper Section (Route 38 to Route 56): The upper section has a moderate gradient and flows through a valley of glacial origin. The primary land use is agriculture (Appendix 1, 2).

The upper section has been extensively channelized. Upstream of the Seavey Road and Interstate 88 bridges channel straightening has resulted in severe down-cutting. Channel down-cutting is ongoing, further degrading this section and contributing sediment to lower stream sections.

Two in-stream excavated ponds occur on the Hughes Creek Golf Course property (1.5 miles east of Route 47 on the south side of Hughes Road). However, no control structure or dam, impeding fish movement, exists at this location.

Middle Section (from approximately Route 56 to Bristol Ridge Road): The middle section, is low gradient, with a poorly defined stream valley. Approximately 30% to 40% of the middle section has very slow current and/or is ponded, often behind beaver dams. Six beaver dams were observed in the middle section. However, ponded areas often were created by bedload deposition from scour holes and did not relate to a beaver dam. Land use is a mix of residential, urban grassland, and agriculture (Appendix 3, 4).

Lower Section (Bristol Ridge Road to the confluence with the Fox River): The lower section has a moderate to high gradient and a well defined stream valley (Appendix 5, 6, 7).

Approximately 700 feet upstream of the confluence with the Fox River, a ten foot high dam obstructs Blackberry Creek. The dam is located on the west side of Yorkville, adjacent to the River Road bridge. The dam precludes spawning migrations of smallmouth bass, shorthead redhorse suckers, and other desirable species.

The dam, the first mill dam built in Kendall County, was built by John Schneider in 1834 (Baumann, 1976). The dam and mill were renovated in approximately 1855 by Manzo Lane. Both owners operated grist mills at the site (Kendall Co. BiCen Comm, 1976). It currently serves no function.

Recent investigations (Kendall DOT, 1997) indicate that a 10 foot deep plunge pool has developed

at the base of the dam (Figure 2). The plunge pool has eroded around, and possibly below, the bridge piling on the east side. The close proximity of the dam to the bridge (they are connected) complicates repairing or replacing the bridge. Also, the dam is disintegrating. Kendall DOT reported finding limestone blocks dislodged from the dam in the downstream channel following the 1996 flood (Andy Meier, Kendall DOT).

METHODS

Fish and macroinvertebrate sampling was conducted at a total of seven locations during the Fall of 1997 (Figure 1, Appendix 1-7). All stations except BBC-3 were sampled September 16-18 for fish and macroinvertebrates. Station BBC-3 was sampled on October 10 and included only a fish collection.

The very shallow, head-water station BBC-1 was sampled with a 12 Volt, 12 Amp, backpack electrofishing unit. Deeper and wider wadable stations (BBC-2, BBC-4, BBC-5, BBC-6) were sampled with an electric seine powered by a 1600 watt, 110 Volt, generator. Stations with an average depth ≥ 0.6 meter (BBC-3, BBC-7) were sampled with a boat-mounted, 4000 watt, 230 volt, electrofishing system. At BBC-7, a minnow seine sample was also collected.

Larger fish specimens were identified to species, weighed, measured and returned to the creek. Smaller specimens were preserved and processed in the laboratory to insure accurate identification.

Macroinvertebrate samples (aquatic insects and other invertebrates) were collected during the fish population survey. RiverWatch personnel conducted sampling with dip nets and substrate samplers.

Mussel samples were collected at a total of three stations during 1997 (Appendix 8 - 10). Sampling was conducted at two stations on June 13 (crew of three), and one station on July 3, 1997 (crew of five) by hand-picking (total collecting time of 4 man-hours per station).

A wading inspection of Blackberry Creek was conducted in the Fall of 1997. Over a period of three days, a five member crew waded in the stream from U.S. Route 30 to Ke-De-Ka Road.

RESULTS AND DISCUSSION

Fish Community

The fish population survey resulted in the collection of 4,409 fishes representing 42 species (Table 1). Bluntnose minnow (*Pimephales notatus*) was the most numerous species representing 25.8% (n=1,139) of all fish collected. Bluntnose minnow, white sucker, carp, and green sunfish are tolerant of degraded habitat (Karr, et al. 1986). These four species dominated collections in the upper stations, representing 44.3% (n=885) of the fish collected at BBC-1, BBC-2, and BBC-3 (Table 1 and Table 2b). Stations in the lower watershed (BBC-4, BBC-5, BBC-6, BBC-7) were comprised of higher numbers of intolerant species and lower percentages of tolerant species (Table 1).

The Index of Biotic Integrity (IBI) (Karr, et al. 1986) was determined for each station. The IBI value is the sum of 12 metrics based on fish population composition, quality and abundance. IBI values range from 12 to 60, and indicate the quantity and caliber of habitat and water quality.

Upstream stations BBC-1, BBC-2, BBC-3, and BBC-4 yielded IBI values of 34, 36, 40, and 40, respectively (Table 2b). The Illinois Biological Stream Characterization (BSC) (Bertrand et. al. 1996)

rating for an IBI in the 31-40 range is a class 'C' designation (Moderate Aquatic Resource [Table 2d]).

IBI values in downstream stations exceeded those of upstream stations. Stations BBC-5, BBC-6, and BBC-7 yielded IBI values of 44, 42, and 46, respectively (Table 2b). The BSC rating for an IBI in the 41-50 range is a class 'B' designation (Highly Valued Aquatic Resource [Table 2d]).

Habitat

Upper Section (Route 38 to approximately Route 56): This section has significant channel straightening and minimal habitat. Much of the reach that parallels Pouley Road has a gravel/cobble streambed. However, the gravel streambed is blanketed by a layer of silt and mud. All pools, and most runs, in the upper section have a deep layer of mud from eroding streambanks and agricultural fields. Many areas below Main Street (Fisherman's Inn) exhibit severe bank erosion, channel down-cutting, and deep layers of mud deposition (Appendix 1, 2).

Desirable habitat is rare in the upper section. Existing habitat is degraded by mud/silt deposition. No submergent vegetation was observed. Great Bulrush (*Scirpus validus*) and Spike Rush (*Eleocharis spp*) were represented by occasional individuals. Both species are hardy, but provide only low habitat value.

Middle Section (Route 56 to Bristol Ridge Road): The middle section is low gradient with less evident bank erosion. Mud/silt deposition is severe through most of this section, degrading otherwise good habitat. The wading inspection indicated that 40% to 50% of this section has significant mud deposition. At several locations 'clumps' of bank material were observed crumbling into the stream (Appendix 3, 4).

Habitat is comprised of beaver dams (n=6), brush jams, submerged logs, under-cut banks, and some submergent and emergent vegetation. One high quality submergent plant species (Water Star Grass, *Heteranthera dubia*) was located at station BBC-4 (Jericho Lake Park). It was present only as a single, "stranded" colony.

Two emergent plant species occur in the middle section, Yellow Pond Lily (*Nuphar advena*) and Arrowhead (*Sagittaria latifolia* or *S. brevirostra*). Yellow Pond Lily provided moderate habitat in isolated, sporadic locations. Arrowhead was observed as spatially separated, individual plants.

Lower section (Bristol Ridge Road to the confluence with the Fox River): The lower section has a moderate to high gradient with less mud/silt deposition (Appendix 5, 6, 7).

Habitat is comprised of pools, brush jams, under-cut banks, boulders, clean gravel/cobble runs, submerged logs, and the aquatic emergent plant species Water Willow. Water Willow (*Justicia americana*), provides high quality aquatic habitat. It is present only in the lower 1/2 mile of the watershed.

Sportfish

Largemouth bass were the most numerous sport species, representing 1.4% (n=61) of all fish collected. Smallmouth bass represented only 0.09% (n=4) of all fish collected. Largemouth bass abundance was 15.5 times greater than smallmouth bass abundance.

Largemouth bass are more tolerant of a mud substrate than are smallmouth bass. Largemouth bass abundance reflects the following problems in the watershed: mud/silt deposition; a dam that precludes smallmouth from migrating into the creek from the Fox River; and largemouth bass escapement from ponds in the watershed.

Three adult smallmouth bass were collected at station BBC-3 (Blackberry Creek Community Church). One fingerling smallmouth bass was collected at station BBC-7 (between the River Road dam and the Fox River).

The three smallmouth bass collected at BBC-3 measured 8.5", 11.0", 12.7". These bass were aged by 'reading' the growth rings on their scales. Scale ages indicated that all three smallmouth bass represented the 1994 year class.

The fingerling bass collected at BBC-7 was the only representative of the 1997 year class. The absence of 1995 through 1997 year classes in areas above the River Road dam indicates smallmouth bass reproduction is not successfully occurring in Blackberry Creek. Failure to reproduce successfully reflects degraded habitat and a low adult smallmouth bass population (an affect of the River Road dam). Predation by largemouth bass, green sunfish, and bluegill sunfish on fry and fingerling smallmouth bass may also impact smallmouth bass year class survival.

Invertebrate sampling results

Macroinvertebrate sampling resulted in the collection of 671 invertebrates representing 22 taxa. A Macroinvertebrate Biotic Index (MBI) was determined for each station. The MBI, similar to the IBI, relates to the composition, quality and abundance of invertebrate populations. The MBI is particularly well suited for indicating water quality.

Water quality rated good at all stations sampled (Table 2c). MBI values suggest that water quality is not a limiting factor in Blackberry Creek. Therefore, it is likely that low IBI values in upper and middle sections reflect degraded habitat and not poor water quality.

Mussel sampling efforts resulted in the collection of 66 live mussels representing 11 species (Appendix 8-10). Relict shells indicate that an additional two mussel species may also be present. Five individuals of the State Endangered species *Alismidonta viridis* (Slippershell) were collected at Smith Road, north of Sugar Grove.

Mussels are intolerant of poor water quality (Page et. al. 1992). Moderately high mussel diversity also suggests that Blackberry Creek is not water quality limited.

Mussel fauna were absent from the lower stations BBC-6 and BBC-7. During 1997 a paucity, or complete absence, of mussels was also observed in the lower reaches of Big Rock Creek, Somonauk Creek, and Indian Creek. The absence of mussels is likely due to the July 1996 and February 1997 floods (pers comm Bob Schanzle).

ACKNOWLEDGEMENTS

The Blackberry Creek biological survey was a joint effort of four sections of the Illinois Department of Natural Resources (IDNR). The Division of Fisheries' Watershed Management Section was represented by Steve Pescitelli and Bob Rung (Watershed Biologists).

The IDNR's Ecowatch Network's RiverWatch section was represented by Melissa Vernon, Emily Steadman, Gary Pfister, Martha Mitchell, Annie Breitenstein and Adam Schultz.

Bob Schanzle (IDNR Natural Resource Review and Coordination), Glen Kruse and Joe Kath (IDNR Endangered and Threatened Species Program) conducted the mussel sampling. Walter Rung (Illinois Natural History Survey intern) assisted with the July 3 sample.

Valuable assistance was provided by Ken Towles and Jenna Zakosek from the Kane County office of the Natural Resource Conservation Service (U.S. Department of Agriculture).

Ed Hammer of the U.S. Environmental Protection Agency provided coordination and fish collection and processing assistance.

The wading inspection was performed by: Tim Harbaugh and Maureen Anderson (both of the Kane County Department of Environmental Management), Randy Stowe (the consulting firm of Natural Areas and Biotechnical Erosion Control), Mark Hoskins (IDNR's Office of Water Resources), and Bob Rung (IDNR watershed biologist).

REFERENCES

Baumann, Paul (1976) *The Fox River: A Bicentennial History*

Bertrand, et. al. (1996) *Biological Stream Characterization (BSC): Biological Assessment of Illinois Stream Quality through 1993.*

Burr, Brooks M. (1997) *ANNOTATED CHECKLIST OF ILLINOIS FISHES.* Department of Zoology, Southern Illinois University

Karr, et. al. (1986) *Assessing Biological Integrity in Running Waters. A Method and Its Rationale.*, Illinois Natural History Survey, Special Publication 5

Kendall County Bicentennial Commission (1976) *A Bicentennial History of Kendall County, Illinois.* Kendall County Historical Society, Yorkville Illinois

NRCS, (1989) *Floodplain Management Study, Blackberry Creek and Tributaries*

Page, et. al. (1992) *BIOLOGICALLY SIGNIFICANT ILLINOIS STREAMS*, Center for Biodiversity Technical Report 1992, Illinois Natural History Survey

Table 1. Blackberry Creek Fish Species List

S))Q

COMMON NAME	SCIENTIFIC NAME	TOTAL BY	QUANTITY COLLECTED AT EACH SAMPLING STATION							BBC-7
		SPECIES	BBC-1	BBC-2	BBC-3	BBC-4	BBC-5	BBC-6		
1. Bluntnose Minnow	<i>Pimephales notatus</i>	1,139	342	4	74	265	179	82	193	
2. Sand Shiner	<i>Notropis ludibundus</i>	577	0	0	19	218	183	48	109	
3. Spotfin Shiner	<i>Cyprinella spiloptera</i>	446	0	0	3	31	63	24	325	
4. Central Stoneroller	<i>Campostoma pullum</i>	400	382	13	0	3	0	0	2	
5. White Sucker	<i>Catostomus commersoni</i>	398	183	40	95	17	21	33	9	
6. Johnny Darter	<i>Etheostoma nigrum</i>	354	293	31	2	17	5	4	2	
7. Green Sunfish	<i>Lepomis cyanellus</i>	203	3	31	38	24	17	3	87	
8. Bluegill Sunfish	<i>Lepomis macrochirus</i>	123	1	36	29	43	8	0	6	
9. Creek Chub	<i>Semotilus atromaculatus</i>	100	82	4	0	0	0	12	2	
10. Hornyhead Chub	<i>Nocomis biguttatus</i>	86	0	1	2	11	7	64	1	
11. Carp	<i>Cyprinus carpio</i>	82	0	51	24	2	0	0	5	
12. Blacknose Dace	<i>Rhinichthys atratulus</i>	76	65	10	1	0	0	0	0	
13. Bigmouth Shiner	<i>Notropis dorsalis</i>	72	66	5	0	0	0	0	1	
14. Largemouth Bass	<i>Micropterus salmoides</i>	61	0	21	5	2	6	2	25	
15. Suckermouth Minnow	<i>Phenacobius mirabilis</i>	51	0	0	1	17	22	11	0	
16. Golden Redhorse Sucker	<i>Moxostoma erythrum</i>	46	0	0	12	10	19	2	3	
17. Striped Shiner	<i>Luxilus chrysocephalus</i>	33	0	0	0	0	0	0	33	
18. Redfin Shiner	<i>Lythrurus umbratilis</i>	22	0	0	0	6	0	1	15	
19. Orangespotted Sunfish	<i>Lepomis humilis</i>	16	0	0	0	0	0	0	16	
20. Gizzard Shad	<i>Dorosoma cepedianum</i>	15	0	0	10	1	0	0	4	
21. Northern Hogsucker	<i>Hypentelium nigricans</i>	15	0	0	4	5	2	4	0	
22. Blackstripe Topminnow	<i>Fundulus notatus</i>	14	0	0	0	9	2	3	0	
23. Stonecat Madtom	<i>Noturus flavus</i>	13	0	0	0	5	1	7	0	
24. Banded Darter	<i>Etheostoma zonale</i>	10	0	0	0	0	0	0	10	
25. Quillback Carpsucker	<i>Carpoides cyprinus</i>	8	0	0	0	0	0	0	8	
26. Common Shiner	<i>Luxilus cornutus</i>	7	0	0	6	1	0	0	0	
27. Rosyface Shiner	<i>Notropis rubellus</i>	6	0	0	0	0	0	0	6	
28. River Carpsucker	<i>Carpoides carpio</i>	5	0	0	0	0	0	0	5	
29. Fantail Darter	<i>Etheostoma flabellare</i>	5	0	0	0	0	0	5	0	
32. Smallmouth Bass	<i>Micropterus dolomieu</i>	4	0	0	3	0	0	0	1	
30. Fathead Minnow	<i>Pimephales promelas</i>	3	0	1	0	0	0	0	2	
31. Yellow Bullhead	<i>Ameiurus natalis</i>	3	0	0	1	0	2	0	0	
33. Golden Shiner	<i>Notemigonus crysoleucas</i>	3	0	0	0	0	2	0	1	
34. Emerald Shiner	<i>Notropis atherinoides</i>	3	0	0	0	0	0	0	3	
35. Channel Catfish	<i>Ictalurus punctatus</i>	2	0	0	0	0	2	0	0	
36. Walleye	<i>Stizostedion vitreum</i>	2	0	0	0	0	0	0	2	
37. Muskellunge	<i>Esox masquinongy</i>	2	0	0	0	0	0	0	2	
38. Central Mudminnow	<i>Umbra limi</i>	1	0	1	0	0	0	0	0	
39. Grass Pickerel	<i>Esox americanus</i>	1	0	0	1	0	0	0	0	
40. Rock Bass	<i>Ambloplites rupestris</i>	1	0	0	1	0	0	0	0	
41. Black Crappie	<i>Pomoxis nigromaculatus</i>	1	0	0	0	1	0	0	0	
42. Northern Pike	<i>Esox lucius</i>	1	0	0	0	0	0	0	1	
TOTAL NUMBER OF INDIVIDUALS		4,409	1,417	249	331	688	541	305	879	
TOTAL NUMBER OF SPECIES		42	9	14	20	20	17	16	29	

**Table 2. Biological Stream Characterization (BSC)
Blackberry Creek Station Comparison**

S)))))))))))))

2a. Station Description

Station #	Survey Date	Location	Method
BBC-1	9-16-97	Keslinger Road, Kane County	BP
BBC-2	9-16-97	Seavey Road, Kane County	ES
BBC-3	10-10-97	Galena Rd, Kane County	BE
BBC-4	9-17-97	Jericho Road, Kane County	ES
BBC-5	9-17-97	Kennedy Road, Kendall County	ES
BBC-6	9-18-97	Yorkville, Kendall County	ES
BBC-7	9-18-97	River Road, Kendall County	BE/SH

2b. Index of Biotic Integrity (IBI)

Station #	Number Species	Number of Fish	Percent Intolerant	Percent Green Sunfish	IBI
BBC-1	9	1,417	4.6% (n= 65)	0.2% (n= 3)	34
BBC-2	14	249	4.0% (n= 10)	12.4% (n=31)	36
BBC-3	20	331	3.6% (n= 12)	11.5% (n=38)	40
BBC-4	20	688	6.0% (n= 41)	3.5% (n=24)	40
BBC-5	17	541	12.2% (n= 66)	3.1% (n=17)	44
BBC-6	16	305	13.1% (n= 40)	1.0% (n= 3)	42
BBC-7	29	879	38.9% (n= 342)	9.9% (n=87)	46

2c. Macroinvertebrate Biotic Index (MBI)

Station #	Number Taxa	Number of Organisms	May Flies	Stone Flies	Caddis Flies	Blood Worms	Aquatic Worms	MBI
BBC-1	12	110	0	0	9	2	6	5.20
BBC-2	8	121	23	0	80	0	0	5.09
BBC-3	-	-	-	-	-	-	-	-
BBC-4	10	115	32	0	50	0	2	5.11
BBC-5	14	85	26	0	2	0	8	5.33
BBC-6	15	107	27	0	49	0	0	4.79
BBC-7	13	133	15	0	76	0	1	5.43

2d. Biological Stream Characterization Ratings

Station #	IBI	MBI	Water Quality Rating	BSC Rating
BBC-1	34	5.20	GOOD	C
BBC-2	36	5.09	GOOD	C
BBC-3	40	NA	NA	C
BBC-4	40	5.11	GOOD	C
BBC-5	44	5.33	GOOD	B
BBC-6	42	4.79	GOOD	B
BBC-7	46	5.43	GOOD	B

2e. Biological Criteria for the Classification of Illinois Streams

RESOURCE DESCRIPTION -->	UNIQUE AQUATIC RESOURCE	HIGHLY VALUED AQUATIC RESOURCE	MODERATE AQUATIC RESOURCE	LIMITED AQUATIC RESOURCE	RESTRICTED AQUATIC RESOURCE	
BIOTIC CLASS-->	A	B	C	D	E	
* IBI --->	51 - 60	41 - 50	31 - 40	21 - 30	<20	*
* WATER QUALITY RATING -->	GOOD	GOOD	FAIR	POOR	VERY POOR	*
* MBI --->		≤6.0	6.1 - 7.5	7.6 - 8.9	>9.0	*

Table 3. Biological Stream Characterization (BSC) Plot

S))Q

Rating	IBI (Index of Biotic Integrity)	BSC RATINGS BY STATIONS SAMPLED
S))Q	60	
	59	
	58	
UNIQUE	57	
RESOURCE	56 A	
	55	
	54	
	53	
	52	
	51	
S))Q	50	
	49	
HIGHLY VALUED	48	
	47	
RESOURCE	46 B -----	-----BBC-7
	45	
	44	-----BBC-5
	43	
	42	-----BBC-6
	41	
S))Q	40	-----BBC-3 -----BBC-4
	39	
MODERATE	38	
	37	
RESOURCE	36 C -----	-----BBC-2
	35	
	34	-----BBC-1
	33	
	32	
	31	
S))Q	30	
	29	
LIMITED	28	
	27	
RESOURCE	26 D	
	25	
	24	
	23	
	22	
	21	
S))Q	20	
	19	
RESTRICTED	18	
RESOURCE	17 E	
	16	
	15	
	14	
))Q		

APPENDIX 1: Station BBC-1 Summary - Blackberry Creek

S))0

Survey Date: 9-16-97 IEPA Station Code: NA Stream Order this Station: 2

County: Kane Nearest Town: Elburn T: 39N R: 7E 1/4 Sec: NE 9
 Sample Location: downstream of Keslinger Road bridge

Gear Type: BackPack Shocker Sampling Effort(MIN): 20 Station Length(ft): 350

Water Temp: 70 °F Air Temp: 74 °F Conductivity: 845 mohm/ml Turbidity: 29 NTU
 ALKALINITY: 17 gr/gal 291 mg/l

Average Width of Water(ft): 5 Bankfull Width of Channel (ft): 15 Average Depth(ft): 0.5
 Maximum Depth (ft): 3.0 Stream Stage: Low Stage Trend: dropping

IN-STREAM HABITAT AND COVER: Two deep pools with undercut banks, brush debris 5%, boulders 5%, and filamentous algae 20% coverage of station.

CHANNEL CHARACTERISTICS: Periodic channelization evident, but meanders are reestablishing. Station area comprised of 65% runs (n=4), 30% riffles (n=4), 5% deep pools(n=2). Substrate was 69% silt-mud, 30% cobble, and 1% boulders. Emergent vegetation observed: Spike rush (*Eleocharis spp*), and Great Bulrush (*Scirpus validus*). Submergent vegetation comprised entirely of filamentous algae which filled the two lower runs (100% coverage). The odor of decaying material was strong in the lower 2/3 of the station (reminiscent of a hog-farm, although none was observed).

RIPARIAN CHARACTERISTICS: Ag fields both sides with approximately a 20 foot riparian buffer zone. Buffer vegetation comprised primarily of low quality plants (Reed Canary grass, etc). Bank erosion (scour) is occurring and is a principal source of silt/mud deposition in pool and run areas.

MACROINVERTEBRATE COLLECTION DATA.....

Number Individuals Collected: 110 Number of Taxa Represented: 12
 NOTE: 16 larvae and one adult riffle beetle and one helgrammite collected.
 Macroinvertebrate Biotic Index (MBI): 5.20 Water Quality Rating: GOOD

FISH COLLECTION DATA.....

Number of Fish Collected: 1,417 Number of Species Represented: 9
 Fish/Minute (CPUE): 70.9 Index of Biotic Integrity (IBI): 34
 Biological Stream Characterization (BSC) rating: C

Fish species collected BBC-1, listed by order of numerical abundance they represented in the sample.

COMMON NAME	SCIENTIFIC NAME	NUMBER	% OF TOTAL
1. Central Stoneroller	<i>Campostoma anomalum</i>	382	27.0%
2. Bluntnose Minnow	<i>Pimephales notatus</i>	342	24.1%
3. Johnny Darter	<i>Etheostoma nigrum</i>	293	20.7%
4. White Sucker	<i>Catostomus commersoni</i>	183	12.9%
5. Creek Chub	<i>Semitilus atromaculatus</i>	82	5.8%
6. Bigmouth Shiner	<i>Notropis dorsalis</i>	66	4.7%
7. Blacknose Dace	<i>Rhinichthys atratulus</i>	65	4.6%
8. Green Sunfish	<i>Lepomis cyanellus</i>	3	0.2%
9. Bluegill Sunfish	<i>Lepomis macrochirus</i>	1	-

APPENDIX 2: Station BBC-2 Summary - Blackberry Creek

S))Q

Survey Date: 9-16-97 IEPA Station Code: NA Stream Order, this Station: 3

County: Kane Nearest Town: Sugar Grove T: 39N R: 7E 1/4 Sec: SE 30
 Sample Location: Upstream of Seavey Road bridge, north of I-88, West of Rt 47

Gear Type: Electric Seine Sampling Effort(MIN): 21 Station Length(ft): 352

Water Temp: 67 °F Air Temp: 84 °F Conductivity: 758 mohm/ml Turbidity: 12 NTU
 Alkalinity: 19 gr/gal 325 mg/l

Average Width of Water(ft): 12 Bankfull Width of Channel (ft): 20 Average Depth(ft): 1.0
 Maximum Depth(ft): 3.0 Water Level Stage: LOW Stage Trend: dropping

IN-STREAM HABITAT AND COVER: Submerged roots, boulders and the submergent aquatic plant, Leafy Pondweed (*Potamogeton foliosus*) provided habitat in approximatley 15% of the area sampled.

CHANNEL CHARACTERISTICS: The stream channel has been straightened both upstream and downstream of station (under I-88). Channel is deeply incised from the Seavey Road bridge upstream. A nicke-point (a.k.a. head-cut or sharp incision of channel) is located approximately 20 feet upstream of Seavey Road bridge. Station was 40% riffles (n=3) and 60% runs (n=2). The upper two riffles are the result of bedload deposition. The lower riffle, nearest the Seavey Road bridge, represents an elevation gradient from the existing channel to a pool that has formed behind the nicke-point. The pool runs downstream a minimum of 300 feet and under I-88.

RIPARIAN CHARACTERISTICS: A 30 to 40 foot riparian buffer is present on the west side of the channel, bordered by row crops. A portion of the west bank has collapsed into the stream channel. The east side has an approximately 300 foot wide buffer of pasture with numerous mature, post-settlement, hardwoods. Nearly veritcal banks, primarily on the east bank, exhibit significant scour. 'Clumps' of bank are crumbling into the creek. On the north/east corner of Seavey Road bridge, a run-off ditch has deeply incised into the embankment.

MACROINVERTEBRATE COLLECTION DATA

Number Individuals collected: 121 Number Taxa Represented: 8
 Macroinvertebrate Biotic Index (MBI) value: 5.09 Water Quality Rating: GOOD

FISH COLLECTION DATA

Number Fish Collected: 249 Number Species Represented: 14
 Fish/Minute (CPUE): 11.7 Index of Biotic Integrity (IBI): 36
 Biological Stream Characterization (BSC) rating: C

Fish species collected BBC-2 listed by order of numerical abundance they represented in the sample.

COMMON NAME	SCIENTIFIC NAME	NUMBER	% OF TOTAL
1. Carp	<i>Cyprinus carpio</i>	51	20.5%
2. White Sucker	<i>Catostomus commersoni</i>	40	16.0%
3. Bluegill Sunfish	<i>Lepomis macrochirus</i>	36	14.5%
4. Green Sunfish	<i>Lepomis cyanellus</i>	31	12.4%
5. Johnny Darter	<i>Etheostoma nigrum</i>	31	12.4%
6. Largemouth Bass	<i>Micropterus salmoides</i>	21	8.4%

FISH DATA CONTINUED ON FOLLOWING PAGE

Blackberry Creek, BBC-2 continued....

	COMMON NAME	SCIENTIFIC NAME	NUMBER	% OF TOTAL
7.	Central Stoneroller	<i>Campostoma pullum</i>	13	5.2%
8.	Blacknose Dace	<i>Rhinichthys atratulus</i>	10	4.0%
9.	Bigmouth Shiner	<i>Notropis dorsalis</i>	5	2.0%
10.	Creek Chub	<i>Semotilus atromaculatus</i>	4	1.6%
11.	Bluntnose Minnow	<i>Pimephales notatus</i>	4	1.6%
12.	Central Mudminnow	<i>Umbra limi</i>	1	-
13.	Hornyhead Chub	<i>Nocomis biguttatus</i>	1	-
14.	Fathead Minnow	<i>Pimephales promelas</i>	1	-

APPENDIX 3: Station BBC-3 Summary - Blackberry Creek

S))0

Survey Date: 10-10-97 IEPA Station Code: NA Stream Order, This Station: 4
County: Kane Nearest Town: Aurora T: 38N R: 7E 1/4 Sec: SW 13
Sample Location: behind Blackberry Creek Community Church, downstream

Gear Type: Boat electrofishing Sampling Effort(MIN): 38 Station Length(ft): 2500

Water Temp: 61 °F Air Temp: 67 °F Conductivity: 930 mohm/ml Turbidity: 28 NTU
Alkalinity: 20 gr/gal 342 mg/l

Average Width of Water(ft): 40 Bankfull Width of Channel (ft): 100 Average Depth(ft): 1.5
Maximum Depth(ft): 4.0 Water Level Stage: high Stage Trend: rising

IN-STREAM HABITAT AND COVER: Habitat was comprised of deep pools and undercut banks. Instream cover represented 25% of the station, and consisted of submerged roots, brush, submerged logs, yellow pond lily, and dead-fall trees. Yellow pond lily (*Nuphar advena*) was the only aquatic plant present, and covered 1% of this station.

CHANNEL CHARACTERISTICS: The station was 90% pool (n=3), 10% run, and no riffles. Substrate is comprised of 70% silt-mud, 20% gravel, 5% sand, 4% cobble, and 1% boulders. Streambed scour and bedload deposition is moderate.

RIPARIAN CHARACTERISTICS: Bank erosion is moderate to low, but is threatened by numerous downed (or nearly down) trees lying cross-channel. The south riparian zone is primarily grassland, exhibiting no obvious erosion. The north side is wooded, exhibiting only minor erosion (except where tree roots have pulled up).

MACROINVERTEBRATE COLLECTION DATA -no samples taken this station-

FISH COLLECTION DATA

Number of Fish Collected: 331 Number of Species Represented: 20
Fish/Minute (CPUE): 8.7 Index of Biotic Integrity (IBI): 40
Biological Stream Characterization (BSC) rating: C

Fish species collected BBC-3 listed by order of numerical abundance they represented in the sample.

COMMON NAME	SCIENTIFIC NAME	NUMBER	% OF TOTAL
1. White Sucker	<i>Catostomus commersoni</i>	95	28.7%
2. Bluntnose Minnow	<i>Pimephales notatus</i>	74	22.4%
3. Green Sunfish	<i>Lepomis cyanellus</i>	38	11.5%
4. Bluegill Sunfish	<i>Lepomis macrochirus</i>	29	8.8%
5. Carp	<i>Cyprinus carpio</i>	24	7.3%
6. Sand Shiner	<i>Notropis ludibundus</i>	19	5.7%
7. Golden Redhorse Sucker	<i>Moxostoma erthrum</i>	12	3.6%
8. Gizzard Shad	<i>Dorosoma cepedianum</i>	10	3.0%
9. Common Shiner	<i>Luxilus cornutus</i>	6	1.8%
10. Largemouth Bass	<i>Micropterus salmoides</i>	5	1.5%
11. Northern Hogsucker	<i>Hypentelium nigricans</i>	4	1.2%
12. Smallmouth Bass	<i>Micropterus dolomieu</i>	3	0.9%
13. Spotfin Shiner	<i>Cyprinella spiloptera</i>	3	0.9%
14. Hornyhead Chub	<i>Nocomis biguttatus</i>	2	0.6%

FISH DATA CONTINUED ON FOLLOWING PAGE

STREAM NAME: Blackberry Creek STATION #: BBC-3 CONTINUED...

	COMMON NAME	SCIENTIFIC NAME	NUMBER	% OF TOTAL
15.	Johnny Darter	<i>Etheostoma nigrum</i>	2	0.6%
16.	Grass Pickerel	<i>Esox americanus</i>	1	-
17.	Suckermouth Minnow	<i>Phenacobius mirabilis</i>	1	-
18.	Blacknose Dace	<i>Rhinichthys atratulus</i>	1	-
19.	Yellow Bullhead	<i>Ameiurus natalis</i>	1	-
20.	Rock Bass	<i>Ambloplites rupestris</i>	1	-

NOTE: observed, but not collected:

Northern Pike (*Esox lucius*) approx 20 inches in length

APPENDIX 4: Station BBC-4 Summary - Blackberry Creek

S))

Survey Date: 9-17-97 IEPA Station Code: NA Stream Order, This Station: 4

County: Kane Nearest Town: Aurora T: 38N R: 7E 1/4 Sec: SE 25
 Sample Location: dwnstrm of Jericho Rd, in Jericho Lake Park, Fox Valley PD

Gear Type: Electric Seine Sampling Effort(MIN): 35 Station Length(ft): 425

Water Temp: 70 °F Air Temp: 72 °F Conductivity: 862 _{moHm/ml} Turbidity: 63 _{NTU}
 Alkalinity: 19 _{gr/gal} 325 _{mg/l} OVER-NIGHT RAIN

Average Width of Water(ft): 27 Bankfull Width of Channel (ft): 55 Average Depth(ft): 1.5
 Maximum Depth(ft): 3.5 Water Level Stage: high Stage Trend: rising

IN-STREAM HABITAT AND COVER: A beaver dam at the upper end of the station, extensive under-cut banks, brush and deadfall tree debris, and aquatic vegetation provided habitat in this station. Aquatic plant species noted were Yellow Pond Lily (*Nuphar advena*), Waterstargrass (*Heteranthera dubia*), Arrowhead (*Sagittaria latifolia*) and Leafy Pondweed (*Potamogeton foliosus*).

CHANNEL CHARACTERISTICS: No channel straightening was evident at this station, except within 100 feet of the Jericho Road bridge. Channel substrate consisted of 40% gravel, 25% cobble, 20% silt-mud, 2% sand, and 1% boulders. Streambed scour was present in one bend (to a depth of 3 1/2 feet). Silt deposition was in the deep area only. Most of station is clean gravel or cobble.

RIPARIAN CHARACTERISTICS: Bank scour is moderate except in the one bend. Riparian corridor is woody vegetation and reed canary grass on the park side (east side). The west side is dense reed canary grass, which covers a wide flood-plain (up to 100 feet in width).

MACROINVERTEBRATE COLLECTION DATA

Number of Individuals Collected: 115 Number of Taxa Represented: 10
 Macroinvertebrate Biotic Index (MBI): 5.11 Water Quality Rating: GOOD

FISH COLLECTION DATA

Number of Fish Collected: 688 Number of Species Represented: 20
 Fish/Minute (CPUE): 19.7 Index of Biotic Integrity (IBI): 40
 Biological Stream Characterization (BSC) rating: C

Fish species collected BBC-4 listed by order of numerical abundance they represented in the sample.

COMMON NAME	SCIENTIFIC NAME	NUMBER	% OF TOTAL
1. Bluntnose Minnow	<i>Pimephales notatus</i>	265	38.5%
2. Sand Shiner	<i>Notropis ludibundus</i>	218	31.7%
3. Bluegill Sunfish	<i>Lepomis macrochirus</i>	43	6.3%
4. Spotfin Shiner	<i>Cyprinella spiloptera</i>	31	4.5%
5. Green Sunfish	<i>Lepomis cyanellus</i>	24	3.5%
6. Johnny Darter	<i>Etheostoma nigrum</i>	17	2.5%
7. White Sucker	<i>Catostomus commersoni</i>	17	2.5%
8. Suckermouth Minnow	<i>Phenacobius mirabilis</i>	17	2.5%
9. Hornyhead Chub	<i>Nocomis biguttatus</i>	11	1.6%
10. Golden Redhorse Sucker	<i>Moxostoma erthrurum</i>	10	1.5%
11. Blackstripe Topminnow	<i>Fundulus notatus</i>	9	1.3%

FISH DATA CONTINUED ON FOLLOWING PAGE

STREAM NAME: Blackberry Creek STATION #: BBC-4 CONTINUED...

	COMMON NAME	SCIENTIFIC NAME	NUMBER	% OF TOTAL
12.	Redfin Shiner	<i>Lythrurus umbratilis</i>	6	0.9%
13.	Northern Hogsucker	<i>Hypentelium nigricans</i>	5	0.7%
14.	Stonecat Madtom	<i>Noturus flavus</i>	5	0.7%
15.	Central Stoneroller	<i>Campostoma pullum</i>	3	0.4%
16.	Carp	<i>Cyprinus carpio</i>	2	0.3%
17.	Largemouth Bass	<i>Micropterus salmoides</i>	2	0.3%
18.	Gizzard Shad	<i>Dorosoma cepedianum</i>	1	-
19.	Common Shiner	<i>Luxilus cornutus</i>	1	-
20.	Black Crappie	<i>Pomoxis nigromaculatus</i>	1	-

APPENDIX 5: Station BBC-5 Summary - Blackberry Creek

S)))))))))))))

Survey Date: 9-17-97 IEPA Station Code: NA Stream Order, This Station: 4

County: Kendall Nearest Town: Bristol T: 37N R: 7E 1/4 Sec: NW 16

Sample Location: parallel to Kennedy Rd, on the Linden's property

Gear Type: Electric Seine Sampling Effort(MIN): 33 Station Length(ft): 450

Water Temp: 75 °F Air Temp: 86 °F Conductivity: 808 _{mo}hm/ml Turbidity: 21 _{NTU}

Alkalinity: 20 _{gr/gal} 342 _{mg/l} RAIN OVER-NIGHT

Average Width of Water(ft): 20 Bankfull Width of Channel (ft): 26 Average Depth(ft): 1.0

Maximum Depth(ft): 3.0 Water Level Stage: normal Stage Trend: rising

IN-STREAM HABITAT AND COVER: Cover in this station was comprised of debris (car parts), brush, logs, and deep pools. Station was 45% runs (n=4), 40% riffles (n=5), and 15% pools (n=4). No emergent or submergent plants were observed.

CHANNEL CHARACTERISTICS: Channel substrate was 30% gravel, 25% sand, 15% cobble, 10% silt-mud, and 1% boulders. Mild channel scour was present on the inside of bends, two of which were created by obstructions. No evidence of channel straightening.

RIPARIAN CHARACTERISTICS: South side buffer is up to 300 feet wide and mostly turf grass (area used for picnics by owner). North side buffer is very wide, and is lightly wooded and weedy. Bank erosion is mild.

MACROINVERTEBRATE COLLECTION DATA

Number of Individuals Collected: 85 Number of Taxa Represented: 14

Macroinvertebrate Biotic Index (MBI): 5.33 Water Quality Rating: GOOD

FISH COLLECTION DATA

Number of Fish Collected: 541 Number of Species Represented: 17

Fish/Minute (CPUE): 16.4 Index of Biotic Integrity (IBI): 44

Biological Stream Characterization (BSC) rating: B

Fish species collected BBC-5 listed by order of numerical abundance they represented in the sample.

	COMMON NAME	SCIENTIFIC NAME	NUMBER	% OF TOTAL
1.	Sand Shiner	<i>Notropis ludibundus</i>	183	33.8%
2.	Bluntnose Minnow	<i>Pimephales notatus</i>	179	33.1%
3.	Spotfin Shiner	<i>Cyprinella spiloptera</i>	63	11.6%
4.	Suckermouth Minnow	<i>Phenacobius mirabilis</i>	22	4.1%
5.	White Sucker	<i>Catostomus commersoni</i>	21	3.9%
6.	Golden Redhorse Sucker	<i>Moxostoma erythrurum</i>	19	3.5%
7.	Green Sunfish	<i>Lepomis cyanellus</i>	17	3.1%
8.	Bluegill Sunfish	<i>Lepomis macrochirus</i>	8	1.5%
9.	Hornyhead Chub	<i>Nocomis biguttatus</i>	7	1.3%
10.	Largemouth Bass	<i>Micropterus salmoides</i>	6	1.1%
11.	Johnny Darter	<i>Etheostoma nigrum</i>	5	0.9%
12.	Golden Shiner	<i>Notemigonus crysoleucas</i>	2	0.4%
13.	Northern Hogsucker	<i>Hypentelium nigricans</i>	2	0.4%

FISH DATA CONTINUED ON FOLLOWING PAGE

Blackberry Creek, station BBC-5, continued....

COMMON NAME	SCIENTIFIC NAME	NUMBER	% OF TOTAL
14. Yellow Bullhead	<i>Ameiurus natalis</i>	2	0.4%
15. Channel Catfish	<i>Ictalurus punctatus</i>	2	0.4%
16. Blackstripe Topminnow	<i>Fundulus notatus</i>	2	0.4%
17. Stonecat Madtom	<i>Noturus flavus</i>	1	-

APPENDIX 6: Station BBC-6 Summary - Blackberry Creek

S)))))))))
Survey Date: 9-18-97 IEPA Station Code: NA Stream Order, this station: 4

County: Kendall Nearest Town: Yorkville T: 37N R: 7E 1/4 Sec: NW 16
Sample Location: Behind 'new' Yorkville HS, approx 1 mile south of Rt 34

Gear Type: Electric Seine Sampling Effort (min): 41 Station Length (ft): 543

Water Temp: 71 °F Air Temp: 70 °F Conductivity: 798 µohm/ml Turbidity: 18 NTU
Alkalinity: 16 gr/gal 274 mg/l

Average Width of Water (ft): 30 Bankfull Width of Channel (ft): 60 Average Depth (ft): 1.0
Maximum Depth (ft): 3.0 Water Level Stage: normal Stage Trend: stable

IN-STREAM HABITAT AND COVER: Minimal habitat exists in this station (approx. 5% of station had brush or logs). Station was 45% cobble, 30% gravel, 20% sand, and 5% boulders. No aquatic plants were observed in this station.

CHANNEL CHARACTERISTICS: Station was comprised of 45% riffles (n=6), 40% runs (n=4), and 1% pool (n=1). Streambed scour was apparent as only one pool location. Bedload deposition was evident as extensive riffles. Gradient was steeper than most other stations.

RIPARIAN CHARACTERISTICS: Minimal bank erosion was apparent. Riparian zone is mostly wooded and shaded. East bank is very wide (approx 300 feet), flat and almost 'pristine'. West bank is a steep, wooded, hill.

MACROINVERTEBRATE COLLECTION DATA

Number of individuals Collected: 107 Number of Taxa Represented: 15
Macroinvertebrate Biotic Index (MBI): 4.79 Water Quality Rating: GOOD

FISH COLLECTION DATA

Number of Fish Collected: 305 Number of Species Represented: 16
Fish/Minute (CPUE): 7.4 Index of Biotic Integrity (IBI): 42
Biological Stream Characterization (BSC) rating: B

Fish species collected this station listed by order of numerical abundance they represented in the sample.

COMMON NAME	SCIENTIFIC NAME	NUMBER	% OF TOTAL
1. Bluntnose Minnow	<i>Pimephales notatus</i>	82	26.9%
2. Hornyhead Chub	<i>Nocomis biguttatus</i>	64	21.0%
3. Sand Shiner	<i>Notropis ludibundus</i>	48	15.7%
4. White Sucker	<i>Catostomus commersoni</i>	33	10.8%
5. Spotfin Shiner	<i>Cyprinella spiloptera</i>	24	7.9%
6. Creek Chub	<i>Semotilus atromaculatus</i>	12	3.9%
7. Suckermouth Minnow	<i>Phenacobius mirabilis</i>	11	3.6%
8. Stonecat Madtom	<i>Noturus flavus</i>	7	2.3%
9. Fantail Darter	<i>Etheostoma flabellare</i>	5	1.6%
10. Northern Hogsucker	<i>Hypentelium nigricans</i>	4	1.3%
11. Johnny Darter	<i>Etheostoma nigrum</i>	4	1.3%
12. Blackstripe Topminnow	<i>Fundulus notatus</i>	3	1.0%
13. Green Sunfish	<i>Lepomis cyanellus</i>	3	1.0%
14. Golden Redhorse Sucker	<i>Moxostoma erythrurum</i>	2	0.7%
15. Largemouth Bass	<i>Micropterus salmoides</i>	2	0.7%
16. Redfin Shiner	<i>Lythrurus umbratilus</i>	1	-

APPENDIX 7: Station BBC-7 Summary - Blackberry Creek

S)))))))))0

Survey Date: 9-18-97 IEPA Station Code: NA Stream Order, this station: 4

County: Kendall Nearest Town: Yorkville T: 37N R: 7E 1/4 Sec: NE 32
Sample Location: downstream of River Rd bridge, up-stream of confluence/Fox River

Gear Type: Boat electrofishing & seine haul Sampling Effort (min): 49
Station Length (ft): 600

Water Temp: 66 °F Air Temp: 84 °F Conductivity: 785 mohm/ml Turbidity: 40 NTU
Alkalinity: 22 gr/gal 376 mg/l

Average Width of Water (ft): 50 Bankfull Width of Channel (ft): 75 Average Depth (ft): 2.0
Maximum Depth (ft): 5.0 Water Level Stage: normal Stage Trend: rising

IN-STREAM HABITAT AND COVER: Numerous branches, brush piles, logs, boulders, aquatic plants, and deep pools occur in this station. Station is 75% pools (n=2), 20% runs (n=1), and 5% riffles (n=1). Emergent plants this station, Water Willow (*Justicia americana*). Submergent plants, Leafy Pondweed (*Potamogeton foliosus*).

CHANNEL CHARACTERISTICS: Severe channel scour on outside bend, and significant bedload deposition below bridge and dam. Dam precludes fish migration upstream. Water flow over dam has developed a plunge pool that has undermined the bridge pilings. Kendall County DOT reports the pool below the dam (and under the bridge) is 10 feet deep. Station is 30% sand, 25% silt-mud, 20% cobble, 20% gravel, and 5% boulders.

RIPARIAN CHARACTERISTICS: East bank is Yorkville Sanitary Plant property. It has a vertical bank which exhibits severe scour. West bank is wooded and weedy, with high banks starting about 100 feet down from bridge.

MACROINVERTEBRATE COLLECTION DATA

Number of Individuals Collected: 133 Number of Taxa Represented: 13
Macroinvertebrate Biotic Index (MBI): 5.42 Water Quality Rating: GOOD

FISH COLLECTION DATA

Number of Fish Collected: 879 Number of Species Represented: 29
Fish/Minute (CPUE): 17.9 Index of Biotic Integrity (IBI): 46
Biological Stream Characterization (BSC) rating: B

Fish species collected this station listed by order of numerical abundance they represented in the sample.

COMMON NAME	SCIENTIFIC NAME	NUMBER	% OF TOTAL
1. Spotfin Shiner	<i>Cyprinella spiloptera</i>	325	37.0%
2. Bluntnose Minnow	<i>Pimephales notatus</i>	193	22.0%
3. Sand Shiner	<i>Notropis ludibundus</i>	109	12.4%
4. Green Sunfish	<i>Lepomis cyanellus</i>	87	9.9%
5. Striped Shiner	<i>Luxilus chrysocephalus</i>	33	3.8%
6. Largemouth Bass	<i>Micropterus salmoides</i>	25	2.8%
7. Orangespotted Sunfish	<i>Lepomis humilis</i>	16	1.8%
8. Redfin Shiner	<i>Lythrurus umbratilis</i>	15	1.7%
9. Banded Darter	<i>Etheostoma zonale</i>	10	1.1%

FISH DATA CONTINUED ON FOLLOWING PAGE(S)

STREAM NAME: Blackberry Creek STATION #: BBC-7 CONTINUED...

	COMMON NAME	SCIENTIFIC NAME	NUMBER	% OF TOTAL
10.	White Sucker	<i>Catostomus commersoni</i>	9	1.0%
11.	Quillback Carpsucker	<i>Carpodes cyprinus</i>	8	0.9%
12.	Rosyface Shiner	<i>Notropis rubellus</i>	6	0.7%
13.	Bluegill Sunfish	<i>Lepomis macrochirus</i>	6	0.7%
14.	Carp	<i>Cyprinus carpio</i>	5	0.6%
15.	River Carpsucker	<i>Carpodes carpio</i>	5	0.6%
16.	Gizzard Shad	<i>Dorosoma cepedianum</i>	4	0.5%
17.	Emerald Shiner	<i>Notropis atherinoides</i>	3	0.3%
18.	Golden Redhorse Sucker	<i>Moxostoma erythrurum</i>	3	0.3%
19.	Walleye	<i>Stizostedion vitreum</i>	2	0.2%
20.	Muskellunge	<i>Esox masquinongy</i>	2	0.2%
21.	Central Stoneroller	<i>Campostoma pullum</i>	2	0.2%
22.	Fathead Minnow	<i>Pimephales promelas</i>	2	0.2%
23.	Creek Chub	<i>Semotilus atromaculatus</i>	2	0.2%
24.	Johnny Darter	<i>Etheostoma nigrum</i>	2	0.2%
25.	Northern Pike	<i>Esox lucius</i>	1	-
26.	Hornyhead Chub	<i>Nocomis biguttatus</i>	1	-
27.	Golden Shiner	<i>Notemigonus crysoleucas</i>	1	-
28.	Bigmouth Shiner	<i>Notropis dorsalis</i>	1	-
29.	Smallmouth Bass	<i>Micropterus dolomieu</i>	1	-

APPENDIX 8: Station BBC-M1 Summary - Blackberry Creek

S)))))))))))))0

MUSSEL SURVEY DATA

Survey Date: 7-3-97 IEPA Station Code: NA Stream Order, this station: 2

County: Kane Nearest Town: Elburn T: 39N R: 7E 1/4 Sec: S 17
Sample Location: upstrm of Smith Road bridge, 3 miles S of Elburn

Gear Type: hand-picking Sampling Effort: 4 man-hours Station Length (ft): 225

Water Temp: 64 °F Water Clarity: 8 inches visibility Flow Rate: 0.2 fps

Average Width of Water (ft): 12 Average Depth (ft): 1.0

CHANNEL CHARACTERISTICS: Water quite cool, probably fed by field tiles. Substrate comprised of sand, gravel, cobble, and some silt.

RIPARIAN CHARACTERISTICS: Residential and agricultural

MUSSEL COLLECTION DATA

Number of Mussels Collected: 11

Number of Species Represented: 3

Mussel species collected BBC-M1 listed by order of numerical abundance.

COMMON NAME	SCIENTIFIC NAME	NUMBER
1. Cylindrical Papershell	<i>Anodontoides ferussacianus</i>	7
2. Slippershell	<i>Alasmidonta viridis</i> *	3
3. Creek Heel-splitter	<i>Lasmigona compressa</i>	1

*** State Endangered Species**

Collectors: Robert Schanzle, Glen Kruse, Joe Kath, Bob and Walter Rung

APPENDIX 9: Station BBC-M2 Summary - Blackberry Creek

S))0

MUSSEL SURVEY DATA

Survey Date: 7-13-97 IEPA Station Code: NA Stream Order, this station: 3

County: Kane Nearest Town: Sugar Grove T: 38N R: 7E 1/4 Sec: SW 9

Sample Location: downstrm of Ka-De-Ka Road bridge 1.5 miles N of Sugar Grove

Gear Type: hand-picking Sampling Effort: 4 man-hours Station Length (ft): 450

Water Temp: 62 °F Water Clarity: 6 inches visibility Flow Rate: 0.5 fps

Average Width of Water (ft): 20 Average Depth (ft): 1.0

CHANNEL CHARACTERISTICS: Substrate comprised of silty sand and gravel

RIPARIAN CHARACTERISTICS: Residential and Forest Preserve

MUSSEL COLLECTION DATA

Number of Mussels Collected: 21

Number of Species Represented: 8

Mussel species collected BBC-M2 listed by order of numerical abundance.

COMMON NAME	SCIENTIFIC NAME	NUMBER
1. Giant Floater	<i>Anadonta grandis</i>	12
2. Cylindrical Papershell	<i>Anadontoides ferussacianus</i>	2
3. Wabash Pigtoe	<i>Fusconaia flava</i>	2
4. Fat Mucket	<i>Lampsilis siliquoidea</i>	2
5. Creek Heel-splitter	<i>Lasmigona compressa</i>	1
6. Elk-Toe	<i>Alasmidonta marginata</i>	1
7. Ellipse	<i>Venustaconcha ellipsiformis</i>	1

DEAD MATERIAL:			weathered
1. Slippershell	<i>Alasmidonta viridis</i> *	2	"

*** STATE ENDANGERED SPECIES**

Collectors: Robert Schanzle, Glen Kruse, Joe Kath

APPENDIX 10: Station BBC-M3 Summary - Blackberry Creek

S))0

MUSSEL SURVEY DATA

Survey Date: 7-13-97 IEPA Station Code: NA Stream Order, this station: 4

County: Kendall Nearest Town: Bristol T: 37N R: 7E 1/4 Sec: SE 10

Sample Location: downstream of Galena Road bridge, 1 mile NE of Bristol

Gear Type: hand-picking Sampling Effort: 4 man-hours Station Length (ft): 300

Water Temp: 70 °F Water Clarity: 5 inches visibility Flow Rate: 0.5 fps

Average Width of Water (ft): 30 Average Depth (ft): 1.0

CHANNEL CHARACTERISTICS: Substrate comprised of sand, gravel, and silt.

RIPARIAN CHARACTERISTICS: Pasture and woodland

MUSSEL COLLECTION DATA

Number of Mussels Collected: 34

Number of Species Represented: 8

Mussel species collected BBC-M3 listed by order of numerical abundance.

	COMMON NAME	SCIENTIFIC NAME	NUMBER
1.	Giant Floater	<i>Anodonta grandis</i>	8
2.	Fluted Shell	<i>Lasmigona costata</i>	8
3.	Elk-Toe	<i>Alasmidonta marginata</i>	6
4.	Plain Pocket-Book	<i>Lampsilis cardium</i>	5
5.	Round Pig-Toe	<i>Pleurobema sintoxia</i>	3
6.	Creek Heel-Splitter	<i>Lasmigona compressa</i>	2
7.	Wabash Pig-Toe	<i>Fusconaia flava</i>	1
8.	Fat Mucket	<i>Lamsilis siliquoidea</i>	1

DEAD MATERIAL:			weathered	
1.	Paper Pond-Shell	<i>Anodonta imbecillis</i>	1/2	"
2.	Cylindrical Paper-Shell	<i>Anodontoides ferussacianus</i>	1	"
3.	Asiatic Clam	<i>Corbicula fluminea</i>	1	"
4.	Squaw Foot	<i>Strophitus undulatus</i>	1	"
5.	Ellipse	<i>Venustaconcha ellipsiformis</i>	1	"

Collectors: Robert Schanzle, Glen Kruse, Joe Kath