

## Final Report

### **Stream Assessment in Mitchell's Grove Nature Preserve**

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#### Project Objectives:

1. To conduct site inventory of the stream macroinvertebrate population through a biodiversity census method. We are using methods adopted by Eco Watch.
2. To conduct and analyze inventory of abiotic stream factors including flow characteristics and water chemistry under protocols established as part of the ongoing Rivers Project.
3. To illustrate the practical application of information obtained in the classroom and to instill an appreciation for the ecosystem.
4. To train area teachers in proper techniques needed to monitor water quality.
5. To loan equipment to teachers for their monitoring activity.

#### Materials and Methods:

1. The materials used for this project include Hach kits containing pH conductivity meter, turbidimeter, DR2000, thermometers, dip nets, and biological supplies used for fecal coliform testing.
2. The Mitchell Grove Nature Preserve was used for the sampling. The macroinvertebrates were collected using dip nets and scraping the bottom of rocks. Up to one hundred macroinvertebrates were sampled and identified to determine the biodiversity of the stream. The chemical tests that were done included nitrates, phosphates, dissolved oxygen, and total dissolved solids using Hach methods. Physical methods such as temperature, flow rate, total discharge, and turbidity were also performed. Water samples were taken back to the lab to be tested for BOD. The fecal coliform testing was also done on site.

3. Area high school teachers and a few of their students were invited to go along with us to the site. We were able to train some of the area teachers so that they could test their area stream using some of our equipment.
4. Our data will be compared with information from previous studies undertaken along the Little Vermilion River. Habitat assessment and other parameters will be recorded and disseminated to local advocacy groups as with the Rivers Curriculum Project and Eco Watch.

Results:

Two sites were studied in the Mitchell Grove Nature Preserve, one on Tomahawk Creek(site # 6 see figure 1 and 2) and one on the Little Vermilion River(site#7 see figure 1 and 2)

On August 28<sup>th</sup> fifteen IVCC students, six IVCC faculty, Dominic from Eco Watch, a high school teacher with four students, and a former student with his wife and two eighth graders all helped to test at the two sites within Mitchell's Grove Nature Preserve. On June 23<sup>rd</sup> twelve IVCC students and three faculty members helped to test site #6.

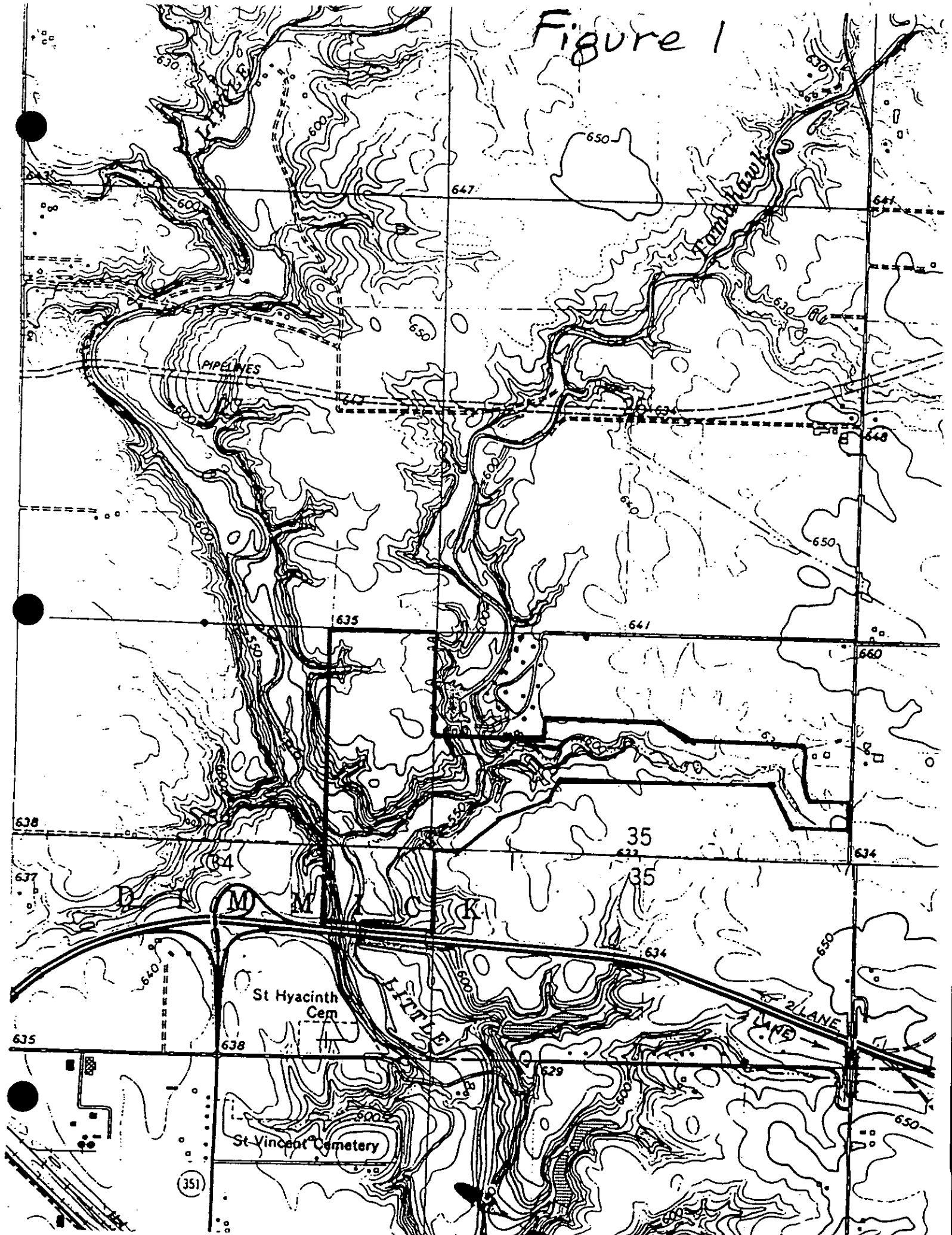
The biological, chemical and physical tests were performed. The chemical and biological test indicated good water quality. The test results were comparable to the previous testing at these sites. See Table 1 and Table 2 for the summary of the past two years of testing. The nitrates have seasonally fluctuated, with the higher readings in the spring or early summer and the lower readings in the fall, due to the nitrate run-off from the agricultural fields. The other results have been quite uniform and indicate good water quality. The fecal coliform was lower in June despite more rainfall and higher water levels. The MBI was under 6.0 all year at both sites, indicating that the diversity of the macroinvertebrates was in the good category, a sign of good water quality.

We continue to use this project for educational purposes. We were accompanied by an English teacher and his class in the fall so that the class could write a technical report using our river data. In February we held a river testing workshop for area teachers and students.

Summary:

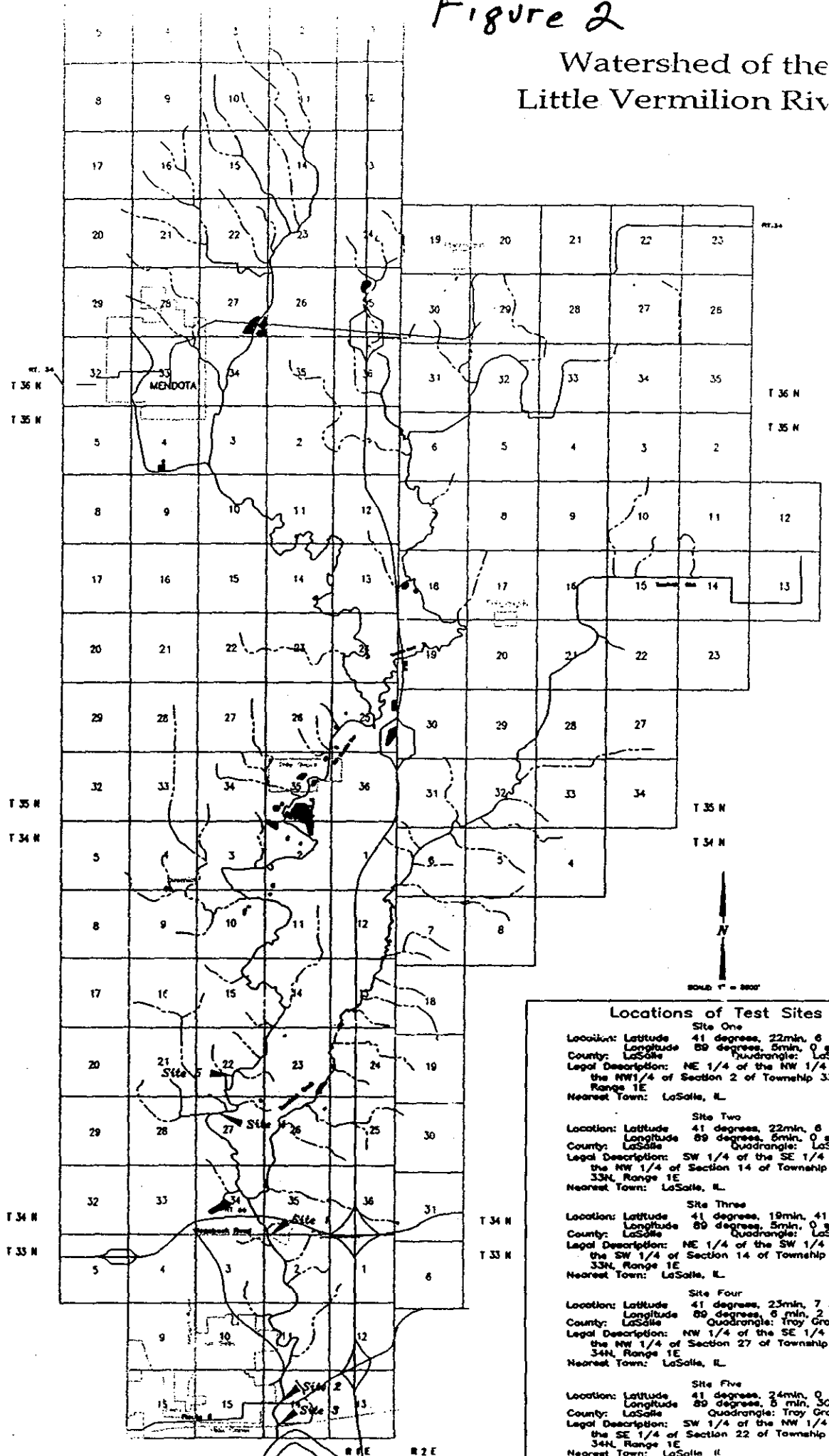
In conclusion the water quality has continued to be good in the Mitchell Grove Nature Preserve. Testing will be continued in order to monitor the water quality in the Nature Preserve. We will also continue to promote awareness and the need to preserve our environment. Newspaper articles and pictures are also included at the end of the report.

Figure 1



# Figure 2

## Watershed of the Little Vermilion Riv



### Locations of Test Sites

- Site One**  
 Location: Latitude 41 degrees, 22min, 6 s  
 Longitude 89 degrees, 5min, 0 s  
 County: LaSalle  
 Quadrangle: LaSalle  
 Legal Description: NE 1/4 of the NW 1/4 of the NW 1/4 of Section 2 of Township 33N, Range 1E  
 Nearest Town: LaSalle, IL
- Site Two**  
 Location: Latitude 41 degrees, 22min, 6 s  
 Longitude 89 degrees, 5min, 0 s  
 County: LaSalle  
 Quadrangle: LaSalle  
 Legal Description: SW 1/4 of the SE 1/4 of Section 14 of Township 33N, Range 1E  
 Nearest Town: LaSalle, IL
- Site Three**  
 Location: Latitude 41 degrees, 19min, 41 s  
 Longitude 89 degrees, 5min, 0 s  
 County: LaSalle  
 Quadrangle: LaSalle  
 Legal Description: NE 1/4 of the SW 1/4 of the SW 1/4 of Section 14 of Township 33N, Range 1E  
 Nearest Town: LaSalle, IL
- Site Four**  
 Location: Latitude 41 degrees, 25min, 7 s  
 Longitude 89 degrees, 6 min, 2 s  
 County: LaSalle  
 Quadrangle: Troy Grov  
 Legal Description: NW 1/4 of the SE 1/4 of the NW 1/4 of Section 27 of Township 34N, Range 1E  
 Nearest Town: LaSalle, IL
- Site Five**  
 Location: Latitude 41 degrees, 24min, 0 s  
 Longitude 89 degrees, 5 min, 30 s  
 County: LaSalle  
 Quadrangle: Troy Grov  
 Legal Description: SW 1/4 of the NW 1/4 of the SE 1/4 of Section 22 of Township 34N, Range 1E  
 Nearest Town: LaSalle, IL





#6

STUDENT SHEET 3.3 - DIVERSITY INDEX

River/Stream: Tomahawk (Mitchell)

River Mile Marker: \_\_\_\_\_

School: IUC

Location: Latitude: \_\_\_\_\_ ° \_\_\_\_\_ min \_\_\_\_\_ sec

Date: 6-28-99 Time: 11:00

Longitude: \_\_\_\_\_ ° \_\_\_\_\_ min \_\_\_\_\_ sec

Water Conditions: \_\_\_\_\_

County: \_\_\_\_\_ Quadrangle: \_\_\_\_\_

Weather Conditions: \_\_\_\_\_

Legal Description: 1/4 of the \_\_\_\_\_ 1/4 of the \_\_\_\_\_ 1/4.

Previous 24 hrs. \_\_\_\_\_

Section \_\_\_\_\_ of Township: \_\_\_\_\_ Range: \_\_\_\_\_

Air Temp: \_\_\_\_\_ °C

Nearest Town: \_\_\_\_\_

Flow Rate: \_\_\_\_\_ meters/sec

Site Location or Address: 46

TAXON	# of ORGS.	# per taxon Σ org.	ENTER P	Log 10	+	.301	X	Enter P	INDEX VALUE
flat worms	15	.15	.15	-.82		-2.74		.15	-.41
aquatic worms	8	.08		-1.10		-3.64		.08	-.29
slugs	5	.05		-1.30		-4.32		.05	-.22
leeches	2	.02		-1.70		-5.64		.02	-.11
amphipods	3	.03		-1.52		-5.06		.03	-.15
clinging mollusks	23	.23		-.64		-2.12		.23	-.49
catfish	14	.14		-.85		-2.84		.14	-.40
beetle	15	.15	.15	-.82		-2.74		.15	-.41
snails	2	.02		-1.70		-5.64		.02	-.11
wholly fly	2	.02		-1.70		-5.64		.02	-.11
L. Horn	2	.02		-1.70		-5.64		.02	-.11
R. Horn	9	.09		-1.05		-3.47		.09	-.31

Total # of Taxon = \_\_\_\_\_

Total # of organ. = \_\_\_\_\_

Total Index Values = 3.12  
 Inverse Sign = 3.12  
 Diversity index = 3.12

Sample Number 1 \_\_\_\_\_

Sample Number 2 \_\_\_\_\_

Sample Number 3 \_\_\_\_\_

Average Diversity Index \_\_\_\_\_

- Values
- less than 1 Indicates few taxa, some with many individuals, and may indicate pollution.
  - between 1-3 May indicate moderated polluted water.
  - exceeding 3 May indicate relatively clean and unpolluted water.



#6

STUDENT SHEET 3.3 - DIVERSITY INDEX

River/Stream: TOMAHAWK (Mitchell) Creek

River Mile Marker: \_\_\_\_\_

School: IUC

Location: Latitude: \_\_\_\_\_ ° \_\_\_\_\_ min \_\_\_\_\_ sec

Date: 6-28-99 Time: 11:00

Longitude: \_\_\_\_\_ ° \_\_\_\_\_ min \_\_\_\_\_ sec

Water Conditions: \_\_\_\_\_

County: \_\_\_\_\_ Quadrangle: \_\_\_\_\_

Weather Conditions: \_\_\_\_\_

Legal Description: \_\_\_\_\_ 1/4 of the \_\_\_\_\_ 1/4 of the \_\_\_\_\_ 1/4.

Previous 24 hrs. \_\_\_\_\_

Section \_\_\_\_\_ of Township: \_\_\_\_\_ Range: \_\_\_\_\_

Air Temp: \_\_\_\_\_ °C

Nearest Town: \_\_\_\_\_

Flow Rate: \_\_\_\_\_ meters/sec

Site Location or Address: 26

TAXON	# of ORGS.	# per taxon Σ org.	ENTER P	Log 10	÷	.301	X	Enter P	INDEX VALUE
flatworm	15	.15	.15	-.82		-2.74		.15	-.41
aquatic worm	8	.08		-1.10		-3.64		.08	-.29
helminths	5	.05		-1.30		-4.32		.05	-.22
insects	2	.02		-1.70		-5.64		.02	-.11
amphibians	3	.03		-1.52		-5.06		.03	-.15
snails	23	.23		-.64		-2.12		.23	-.49
crustaceans	14	.14		-.85		-2.84		.14	-.40
beetles	15	.15	.15	-.82		-2.74		.15	-.41
rodents	2	.02		-1.70		-5.64		.02	-.11
birds	2	.02		-1.70		-5.64		.02	-.11
Littoral animal	2	.02		-1.70		-5.64		.02	-.11
R-habitat animal	9	.09		-1.05		-3.47		.09	-.31

Total # of Taxon = \_\_\_\_\_

Total # of organ. = \_\_\_\_\_

Total Index Values = 3.12  
 Inverse Sign = 3.12  
 Diversity index = 3.12

Sample Number 1 \_\_\_\_\_

Sample Number 2 \_\_\_\_\_

Sample Number 3 \_\_\_\_\_

Average Diversity Index \_\_\_\_\_

Values

- less than 1 Indicates few taxa, some with many individuals, and may indicate pollution.
- between 1-3 May indicate moderated polluted water.
- exceeding 3 May indicate relatively clean and unpolluted water.

ILLINOIS RIVERWATCH  
ACROINVERTEBRATE DATA SHEET  
acroinvertebrate Identification

10/1/97

#6

ORGANISM	N	T <sub>v</sub>	T <sub>c</sub>
Flatworm	<del>     </del>	6.0	90
AQW Aquatic Worm	<del>     </del>	10.0	80
LEE Leech		8.0	
SBG Sowbug		6.0	
SCD Scud		4.0	
DGF Dragonfly		4.5	
DM1 Broadwing Damselfly		3.5	
DM2 Narrow-winged		5.5	
ILL Hellgrammites	<del>  </del>	3.5	17.5
AF1 Torpedo Mayfly	<del>  </del>	3.0	6
AF2 Swimming Mayfly	<del>   </del>	4.0	12
AF3 Clinging Mayfly	<del>     </del>	3.5	80.5
AF4 Crawling Mayfly		5.5	
AF5 Burrowing Mayfly		5.0	
AF6 Two-Tailed Mayfly		3.0	
STF Stonefly		1.5	
CF1 Hydropsychid Caddisfly	<del>     </del>	5.5	77
CF2 Non-Hydropsy. Caddisfly		3.5	
RF3 Riffle Beetle	<del>     </del>	5.0	75
WHB Whirligig Beetle		4.0	
WPB Water Penny Beetle		4.0	
CRF Crane fly		4.0	
BIM Biting Midge		5.0	
BLW Blood Worm		11.0	
MID Midge	<del>  </del>	6.0	12
BLF Black Fly	<del>  </del>	6.0	12
SNF Snipe Fly		4.0	
OTF Other fly		10.0	
LHS Left-Handed Snail	<del>  </del>	9.0	18
RHS Right-Handed Snail	<del>     </del>	7.0	63
PLS Planorbid Snail		6.5	
LIM Limpet		7.0	
OPS Oxytate Snail		6.0	
TOTALS	100		543
Σ TAXA =	Σ N		Σ T <sub>c</sub>

MBI =  $\sum T_v + \sum N =$

543

<6.0 = GOOD Water Quality  
6.1 - 7.5 = FAIR Water Quality  
7.6 - 8.9 = POOR Water Quality  
> or = 9.0 = VERY POOR Water Quality

SAMPLE DENSITY =  $\sum N =$

100

TAXA RICHNESS =  $\sum TAXA =$

12

PERCENT COMPOSITION OF INDICATOR ORGANISMS

ORGANISM	N	÷	Σ N	x 100 =	% C
MAYFLIES (MF#)	28	÷	100	x 100 =	28
STONEFLIES (STF)		÷		x 100 =	
CADDISFLIES (CF#)	14	÷	100	x 100 =	14
BLOODWORMS (BLW)		÷		x 100 =	
AQUATIC WORMS (AQW)	8	÷		x 100 =	8

SUBTOTAL % = 50

% ALL OTHERS (100% - SUBTOTAL %) = 50

NOTES (MNT):

#7

Water-Quality Index (WQI)

River/Stream Little Vermillion  
 School IVCC  
 Date 8/28/99 Time 9:35  
 Water Conditions Clear + low  
 Weather Conditions mostly sunny  
very warm  
 Air temperature 28.5 °C  
 Flow rate 3.9 ft/s  
discharge 66 ft/s

River Mile Marker Sportsman Club  
 Location N Latitude: 41 ° 22 ' 187 "  
 W Longitude: 89 ° 05 ' 703 "  
 County La Salle Quadrangle Troy Grove  
 Legal Description: \_\_\_ 1/4 of the \_\_\_ 1/4 of the \_\_\_ 1/4  
 Section \_\_\_ of Township \_\_\_ Range \_\_\_  
 Nearest Town \_\_\_  
 Site Location or Address Site 7

Test	Test Results (mean values)	Standard Deviation	Q-Value	Weighting Factor	Total (%)
Dissolved Oxygen	<u>10</u> mg/L (DO <sub>day 1</sub> ) <u>115</u> % Sat		<u>96</u>	0.17	<u>16.3</u>
Fecal Coliform	<u>40</u> colonies/100 mL		<u>57</u>	0.16	<u>9.1</u>
pH	<u>8.3</u> units		<u>70</u>	0.11	<u>7.7</u>
BOD	DO <sub>day 1</sub> <u>10</u> mg/L DO <sub>day 5</sub> <u>10</u> mg/L BOD = <u>0</u> mg/L		<u>98</u>	0.11	<u>10.8</u>
Temperature Change	Temp <sub>site 1</sub> <u>23.6</u> °C Temp <sub>site 2</sub> <u>23.6</u> °C ΔT = ___ °C		<u>93</u>	0.10	<u>9.3</u>
Phosphate	<u>.18</u> mg/L		<u>90</u>	0.10	<u>9.0</u>
Nitrate	<u>1.8</u> mg/L <u>2</u>		<u>92</u>	0.10	<u>9.2</u>
Turbidity	<u>14.1</u> meters or JTU/NTU		<u>58</u>	0.08	<u>4.5</u>
Total Solids	<u>128</u> mg/L		<u>80</u>	0.07	<u>5.6</u>
<u>conductivity 263</u>			OVERALL WATER-QUALITY INDEX <u>81.6</u> %		

Overall Water-Quality Index	Quality of Water
90-100%	Excellent
70-89%	<u>Good</u>
50-69%	Medium
25-49%	Bad
0-24%	Very Bad

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#7

STUDENT SHEET 3.3 - DIVERSITY INDEX

River/Stream: L. Vermilion (Sportsman club) River Mile Marker: \_\_\_\_\_  
 School: NCC Location: Latitude: \_\_\_\_\_ min sec  
 Date: 8-28-99 Time: 10:00 Longitude: \_\_\_\_\_ min sec  
 Water Conditions: \_\_\_\_\_ County: \_\_\_\_\_ Quadrangle: \_\_\_\_\_  
 Weather Conditions: \_\_\_\_\_ Legal Description: \_\_\_\_\_ 1/4 of the \_\_\_\_\_ 1/4 of the \_\_\_\_\_ 1/4.  
 Previous 24 hrs. \_\_\_\_\_ Section \_\_\_\_\_ of Township: \_\_\_\_\_ Range: \_\_\_\_\_  
 Air Temp: \_\_\_\_\_ °C Nearest Town: \_\_\_\_\_  
 Flow Rate: \_\_\_\_\_ meters/sec Site Location or Address: # 7

TAXON	# of ORGS.	# per taxon P = $\frac{\Sigma \text{org.}}{P}$	ENTER P	Log 10	÷	.301	X	Enter P	INDEX VALUE
Flatworm	5	5/100	.05	-1.30		-4.32		.05	-.22
aquatic worm	6	.06		-1.22		-4.06		.06	-.24
brooding damselfly	1	.01		-2.10		-6.64		.01	-.07
summer mayfly	27	.27		-.57		-1.89		.27	-.51
cliff mayfly	12	.12		-.92		-3.06		.12	-.37
cutthroat	23	.23		-.64		-2.12		.23	-.49
weather		.16		-.80		-2.64		.16	-.42
bloodworm	2	.02		-1.70		-5.64		.02	-.11
midge	3	.03		-1.52		-5.06		.03	-.15
slimy snail	4	.04		-1.40		-4.64		.04	-.19
speckled snail	1	.01		-2.00		-6.64		.01	-.07

Total # of Taxon = \_\_\_\_\_ Total # of organ. = \_\_\_\_\_ Total Index Values = -2.84  
 Inverse Sign = 2.84  
 Diversity index = 2.84

Sample Number 1 \_\_\_\_\_  
 Sample Number 2 \_\_\_\_\_  
 Sample Number 3 \_\_\_\_\_  
 Average Diversity Index \_\_\_\_\_

Values  
 less than 1 Indicates few taxa, some with many individuals, and may indicate pollution.  
 between 1-3 May indicate moderated polluted water.  
 exceeding 3 May indicate relatively clean and unpolluted water.

MACROINVERTEBRATE DATA SHEET  
Macroinvertebrate Identification

# 7

CODE	ORGANISM	N	T <sub>v</sub>	T <sub>c</sub>
	Flatworm		6.0	30
AQW	Aquatic Worm	1	10.0	60
LEE	Leech		8.0	
SHG	Sowbug		6.0	
SCD	Scud		4.0	
DGF	Dragonfly		4.5	
DM1	Broadwing Damselfly		3.5	3.5
DM2	Narrow-winged		5.5	
HLL	Hellgrammites		3.5	
MF1	Torpedo Mayfly		3.0	
MF2	Swimming Mayfly		4.0	128
MF3	Clinging Mayfly		3.5	22
MF4	Crawling Mayfly		5.5	
MF5	Burrowing Mayfly		5.0	
MF6	Two-Tailed Mayfly		3.0	
STF	Stonefly		1.5	
CF1	Hydropsychid Caddisfly		5.5	22.5
	Non-Hydropsy. Caddisfly		3.5	
RFB	Rifle Beetle		5.0	80
WHB	Whirligig Beetle		4.0	
WPB	Water Penny Beetle		4.0	
CRF	Craffly		4.0	
BIM	Biting Midge		5.0	
BLW	Blood Worm		11.0	22
MID	Midge		6.0	18
BLF	Black Fly		6.0	
SNF	Snipe Fly		4.0	
OTF	Other Fly		10.0	
LHS	Left-Handed Snail		9.0	
RHS	Right-Handed Snail		7.0	
PLS	Planorbid Snail		6.5	26
LIM	Limpet		7.0	
OPS	Operculate Snail		6.0	6
	TOTALS	100		542
	Σ TAXA =	Σ N		Σ T <sub>c</sub>

MBI = ΣT<sub>v</sub> ÷ ΣN =

5.42

<6.0 = GOOD Water Quality  
6.1 - 7.5 = FAIR Water Quality  
7.6 - 8.9 = POOR Water Quality  
> or = 9.0 = VERY POOR Water Quality

SAMPLE DENSITY = ΣN =

100

TAXA RICHNESS = Σ TAXA =

11

PERCENT COMPOSITION OF INDICATOR ORGANISMS

ORGANISM	N	÷	ΣN	x 100 =	%C
MAYFLIES (MF#)	39	÷	100	x 100 =	39
STONEFLIES (STF)		÷		x 100 =	
CADDISFLIES (CF#)	23	÷	100	x 100 =	23
BLOODWORMS (BLW)	2	÷	100	x 100 =	2
AQUATIC WORMS (AQW)	6	÷	100	x 100 =	6

SUBTOTAL % = 70

% ALL OTHERS (100% - SUBTOTAL %) = 30

NOTES (MNT):

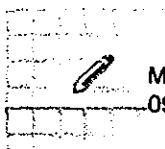
# RIVER TESTING RESULTS for 8/28/99

## Quantitative Results of 8/28/99 River Test

Sportsman Club	<u>Full</u>	<u>1/10 dilution</u>
CPS	26	4
Tomahawk	TNC	11

## Qualitative Results of 8/28/99 River Test

Sportsman Club	<u>Full</u>	<u>1/10 dilution</u>
CPS		
LT	--	--
DSL	--	--
Tomahawk		
LT	--	--
DSL	+	--
	(gas growth)	



Mike Phillips  
09/09/99 04:44 PM

To: Bob Byrne/faculty/IVCC@IVCC  
cc:  
Subject: river testing

data for august:

1-80 site

#7

width = 19 ft  
avg depth = 0.92 ft  
avg velocity = 3.8 ft/sec  
discharge = 66 cu ft/sec

mithchell grove

#6

width = 4.25 ft  
avg depth = 0.24 ft  
avg velocity = 4.0 ft/sec  
discharge = 4.1 cu ft/sec

Mike

## Water-Quality Index (WQI)

River/Stream Tomahawk Creek  
 School F.V.C.C.  
 Date 6/23/00 Time 9:45am  
 Water Conditions slight  
 Weather Conditions Sunny  
 Air temperature 24.5 °C  
 Flow rate 4.76 ft<sup>3</sup>/s

River Mile Marker \_\_\_\_\_  
 Location Latitude: 41 • 22 • 65  
 Longitude: 89 • 5 • 09  
 County La Salle Quadrangle \_\_\_\_\_  
 Legal Description: \_\_\_\_\_ 1/4 of the \_\_\_\_\_ 1/4 of the \_\_\_\_\_ 1/4  
 Section \_\_\_\_\_ of Township \_\_\_\_\_ Range \_\_\_\_\_  
 Nearest Town \_\_\_\_\_  
 Site Location or Address #6

discharge 92.2 ft<sup>3</sup>/s

Test	Test Results (mean values)	Standard Deviation	Q-value	Weighting Factor	Total (%)
Dissolved Oxygen	<u>11</u> mg/L (DO <sub>day 1</sub> ) <u>123</u> % Sat		<u>88</u>	0.17	<u>14.96</u>
Fecal Coliform	<u>82</u> colonies/100 mL		<u>90</u>	0.16	<u>14.4</u>
pH	<u>9.2</u> units		<u>78</u>	0.11	<u>8.58</u>
BOD	DO <sub>day 1</sub> <u>11</u> mg/L - DO <sub>day 5</sub> <u>7</u> mg/L BOD = <u>4</u> mg/L		<u>80</u>	0.11	<u>6.6</u>
Temperature Change	Temp <sub>site 1</sub> <u>20.3</u> °C Temp <sub>site 2</sub> _____ °C ΔT = _____ °C		<u>92</u>	0.10	<u>9.2</u>
Phosphate	<u>0.19</u> mg/L		<u>90</u>	0.10	<u>9.0</u>
Nitrate	<u>8.9</u> mg/L		<u>56</u>	0.10	<u>5.6</u>
Turbidity	<u>5.05</u> meters or JTU/NTU		<u>84</u>	0.08	<u>6.72</u>
Total Solids	<u>179</u> mg/L		<u>76</u>	0.07	<u>5.32</u>

OVERALL WATER-QUALITY INDEX 80

## Overall Water-Quality Index

## Quality of Water

90-100%	Excellent
70-89%	<u>Good</u>
50-69%	Medium
25-49%	Bad
0-24%	Very Bad



ILLINOIS RIVERWATCH  
 BIOLOGICAL SURVEY SHEET  
 Macroinvertebrate Identification

#6  
 6/23/00

Jim  
 How close  
 were we?  
 LAJ

MBI =  $T_v + N =$

5157

CODE	ORGANISM	N	T <sub>i</sub>	T <sub>v</sub>
FLW	Flatworm		6.0	
AQW	Aquatic Earthworm		10.0	20
LEE	Leech		8.0	
SBG	Sowbug		6.0	12
SCD	Scud		4.0	
DGF	Dragonfly		4.5	4.5
DM1	Broadwing Damselfly		3.5	
DM2	Narrowwinged Damselfly		5.5	11
HLL	Hellgrammites		3.5	
MF1	Torpedo Mayfly		3.0	15
MF2	Swimming Mayfly		4.0	
MF3	Clinging Mayfly		3.5	66.5
MF4	Crawling Mayfly		5.5	
MF5	Burrowing Mayfly		5.0	
MF6	Two-Tailed Mayfly	-	3.0	18
STF	Stonefly		1.5	
CF1	Hydropsychid Caddisfly		5.5	
CF2	Non-Hydropsychid Caddisfly		3.5	
RFB	Riffle Beetle		5.0	65
WHB	Whirligig Beetle		4.0	12
WPB	Water Penny Beetle		4.0	
CRF	Cranefly		4.0	
BIM	Biting Midge		5.0	
BLW	Blood Worm		11.0	
MID	Midge		6.0	
BLF	Black Fly		5.0	
SNF	Snipe Fly		4.0	
OTF	Other Fly		10.0	
LHS	Left-Handed Snail		9.0	18
RHS	Right-Handed Snail		7.0	70
PLS	Planorbid Snail		6.5	
LIM	Limpet		7.0	
OPS	Operculate Snail	-	6.0	
	TOTALS	56		312
	TAXA =	N		T <sub>v</sub>

<6.0 = GOOD Water Quality  
 6.1 - 7.5 = FAIR Water Quality  
 7.6 - 8.9 = POOR Water Quality  
 > or = 9.0 = VERY POOR Water Quality

SAMPLE DENSITY = N =

56

TAXA RICHNESS = TAXA =

12

PERCENT COMPOSITION OF INDICATOR ORGANISMS

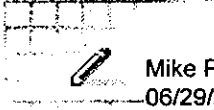
ORGANISM	N	÷	N	x 100 =
MAYFLIES (PMF)	20	÷	56	x 100 = 36
STONEFLIES (PSF)	0	÷		x 100 =
CADDISFLIES (PCF)	0	÷		x 100 =
BLOODWORMS(PBW)	0	÷		x 100 =
AQUATIC WORMS(PAW)	2	÷	56	x 100 = 3

SUBTOTAL % =

% ALL OTHERS (100% - SUBTOTAL %) = (PAO)

NOTES (MNT):

Clams (1)  
 Crayfish (2)



Mike Phillips

06/29/2000 12:45 PM

To: Bob Byrne/faculty/IVCC@IVCC

cc:

Subject: river testing

Mitchell Grove, June 23, 2000

width = 25.0 ft

avg depth = 0.78 ft

area = 19.38 square feet

avg velocity = 4.76 ft/sec

discharge = 92.18 cubic feet/second

River Testing Result 6/23/00

Site 6 Upper

Fecal Coliform	Full	1
Coliforms	1/10	2
	1/100	0

Site 6 Lower

Full	2
1/10	0
1/100	0

## IVCC instructor receives grant to study preserve

Bob Byrne, a chemistry instructor at Illinois Valley Community College, has been selected to receive a \$992 grant from the Illinois Department of Natural Resources' Natural Heritage Division from contributions to the Illinois Wildlife Preservation Fund.

The grant enables Byrne, the chemical club and other IVCC instructors and students to study the Mitchell's Grove Nature Preserve, which is located just north of Interstate 80 near the Little Vermillion River.

Students took part in a field study of the area in August and will return to Mitchell's Grove on Saturday, April 29 for river testing.

For more information about the project, call 224-0432.

*News Tribune  
3/2/00*

**BYRNE RECEIVES GRANT:**  
Chemistry instructor Bob Byrne has been selected to receive a \$992 grant from the Illinois Department of Natural Resources' Natural Heritage Division from contributions to the Illinois Wildlife Preservation Fund.

The grant will enable Byrne, the Chem Club and other IVCC students and faculty to study the Mitchell's Grove Nature Preserve, located just north of Interstate 80 near the Little Vermillion River. The group will return to Mitchell's Grove on April 29 for river testing.

*IVCC Mache  
3/13/00*  
celebration of

## IVCC continues eco-watch

IVCC chemistry instructor Bob Byrne, a 1999 recipient of the Illinois Department of Natural Resources grant, as well as four other instructors and some students will be out testing later this month on the Little Vermillion River and Tomahawk Creek.

The group tests for the levels of nitrates, pH, oxygen, phosphates and fecal coliform. Water clarity and insect life also are monitored.

The grant was made available by contributions to the Illinois Wildlife Preservation Fund, which derives its money from the checkoff on state income tax forms.

*News Tribune 4/15/00*  
The Evening