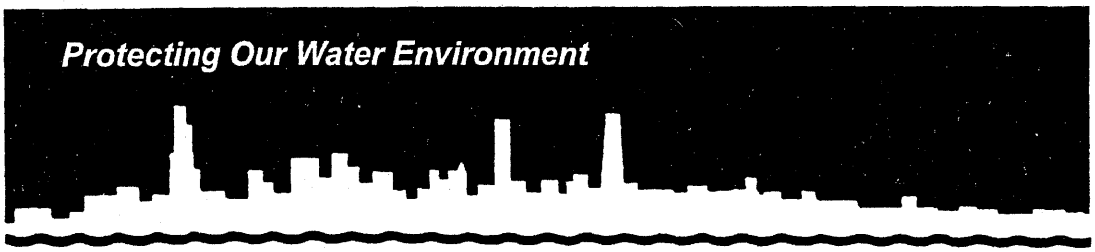

Metropolitan Water Reclamation District of Greater Chicago

RESEARCH AND DEVELOPMENT DEPARTMENT

REPORT NO. 04-4

A STUDY OF THE BENTHIC MACROINVERTEBRATE COMMUNITY IN SELECTED CHICAGO METROPOLITAN AREA WATERWAYS DURING 2001 AND 2002

Prepared By

EA Engineering, Science, and Technology, Inc.

March 2004

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Research and Development Department
Richard Lanyon, Director

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Prepared for:

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1. INTRODUCTION

The Upper Illinois River watershed consists of several natural, constructed, and altered waterways and their tributaries. The major waterways of the Chicago Metropolitan Area within the Upper Illinois River watershed include, in part, the Calumet River, Calumet-Saginaw Channel, North Branch of the Chicago River, South Branch of the Chicago River, Chicago Sanitary and Ship Canal, and Des Plaines River. Through their comprehensive ambient water quality program (AWQM), the Metropolitan Water Reclamation District of Greater Chicago (District) has collected a substantial amount of physicochemical and biological data describing the condition of these waterways since 1972. These data serve to provide the Illinois Environmental protection Agency (IEPA) with current information to assess the quality of the waterways within the District's service area as well as offering the unique opportunity to examine trends via the District's long-term database.

In an effort to support and strengthen their AWQM program, the District has implemented an accessory monitoring program to evaluate the biological resources, sediment quality, and habitat condition on waterways within their service area. As part of this initiative, a benthic macroinvertebrate sampling program began in 2001 to collect samples at established stations in four watersheds: North Branch Chicago River, South Branch Chicago River and Chicago Sanitary and Ship Canal, Calumet River, and Des Plaines River. Each of these watersheds will be sampled on a four-year rotation. The first two watersheds sampled were the North Branch Chicago River (2001) and the South Branch Chicago River and Chicago Sanitary and Ship Canal (2002). In addition to the target watersheds, a core group of stations throughout the District's service area will be evaluated annually. This report presents the study design and benthic macroinvertebrate data for the initial two years of the program.

2. METHODS

During 2001 and 2002, benthic macroinvertebrates were monitored at 35 stations in the Chicago Metropolitan Area waterways. Of these stations, 15 were sampled during both years. In 2001, Benthic macroinvertebrate samples were collected at 27 stations in the Calumet River, Calumet-Saginaw Channel, North Branch of the Chicago River, Chicago Sanitary and Ship Canal, and Des Plaines River waterways (Table 2-1). During 2002, benthic macroinvertebrates were monitored at 23 stations in the Calumet River, Calumet-Saginaw Channel, North Branch of the Chicago River, South Branch of the Chicago River (SBCR), Chicago Sanitary and Ship Canal (CSSC), and Des Plaines River waterways (Table 2-2). Figure 2-1 presents the benthic macroinvertebrate sampling locations for the District's ambient water quality program.

Field sampling was conducted by District personnel using a combination of Hester-Dendy (HD) artificial substrates and Ponar grabs. Each HD sampler consisted of nine, three-inch square plates with uniform spacing. The total surface area of one HD sampler, excluding the bolt and spacers was 0.031 m^2. At each location, a group of three HD samplers (sampler array) were deployed near shore in the littoral zone and an additional group of three samplers were deployed mid-channel of the waterway. Each HD sampler array was constructed of a 10-16" length of 2" diameter transparent, schedule 80 PVC pipe secured to the top of an 18 pound river anchor by placing a ¼" stainless steel bolt through the anchor eye and two holes drilled in the pipe. Three-inch stainless steel eyebolts are located radially, approximately 120 degrees apart, through holes drilled one-inch from the top of the PVC pipe. The HD arrays were suspended from the eyebolts approximately 12-18" off the bottom using nylon cable ties (Figure 2-2). One cable was used to anchor both arrays to a structure on shore.

The two HD sampler arrays at each station were retrieved by using the shore-attachment cable to lift the samplers into a custom-made dipnet with an attached plankton bucket. The mesh size of both the dipnet and plankton bucket was Standard Testing No. 60 (250 μ) mesh (Figure 2-3). The cable tie connecting each H-D sampler to the anchoring system was cut and each sampler was placed, fully assembled into a one-gallon plastic sample pail. The dipnet was thoroughly rinsed with river water and contents of the plankton bucket were transferred to the sample pail. The contents of each sample pail were fixed with approximately 5% formalin before the lid was attached. Deployment and retrieval dates for the HD samples in each watershed were as follows:

	2001	
Watershed	**Deployed**	**Retrieved**
Calumet	21-22 June	24-27 August
North Branch Chicago River	25 June – 12 July	10-28 August
SBCR and CSSC	18-19 June	30 July – 1 August
Des Plaines River	11-14 June	23-27 August

	2002	
Watershed	**Deployed**	**Retrieved**
Calumet	9-19 July	5-16 September
North Branch Chicago River	10-18 June	29 July – 1 August
SBCR and CSSC	10 June – 15 July	2 August – 11 September
Des Plaines River	12-19 June	22-30 July

Table 2-1. Description of benthic macroinvertebrate monitoring stations sampled during 2001. Stations arranged by major watershed, upstream to downstream within each waterway.

Watershed	Sampling Station		Waterway	Lat./Lon.	Location Description
Calumet	**55-**	**130th St.(2)**	**Calumet River**	**41° 39' 33.9"N 87° 34' 20.1"W**	**50' upstream of 130th St. (40' from east bank and center channel**
	76-	**Halsted St.(2)**	**Little Calumet River**	**41° 39' 25.9"N 87° 38' 27.3"W**	**20' upstream of Halsted St. (20' from south bank and center channel)**
	59-	**Cicero Ave.(2)**	**Calumet-Sag Channel**	**41° 359' 19.4"N 87° 44' 15.6"W**	**150' upstream of Cicero Ave. (30' from north bank and center channel)**
North Branch Chicago River	106-	Dundee Rd.	W. Fork N. Branch Chicago R.	42° 08' 19.03"N 87° 50' 5.07"W	0.1 mile downstream of Dundee Rd. (5' from west bank and center channel)
	103-	Golf Rd.	W. Fork N. Branch Chicago R.	42° 03' 19.21"N 87° 46' 54.99"W	20' upstream of Golf Rd. (5' from east bank and center channel)
	31-	Lake-Cook Rd.	Middle Fork N. Branch Chicago R.	42° 08' 56.5"N 87° 48' 51.0"W	900' above I-94, 75' below diversion channel to Middle Fork Reservoir (5' from west bank and center channel)
	32-	Lake-Cook Rd.	Skokie River	42° 09' 9.7"N 87° 47' 38.0"W	10' upstream of Lake-Cook Rd. (10' from east bank and center channel)
	105-	Frontage Rd.	Skokie River	42° 05' 16.1"N 87° 45' 38.2"W	100' downstream of Frontage Rd. (10' from south bank and center channel)
	35-	Central Rd.	N. Shore Channel	42° 3' 52.93"N 87° 41' 13.97"W	30' feet upstream of Central St. (15' from east bank and center channel)
	102-	Oakton St.	N. Shore Channel	42° 01' 35.50"N 87° 42' 35.96"W	75' upstream of Oakton St. (15' from east bank and center channel)
	36-	**Touhy Ave.(2)**	**N. Shore Channel**	**42° 00' 43.7"N 87° 42' 37.2"W**	**10' upstream of Touhy Ave. (15' from east bank and center channel)**
	101-	Foster Ave.	N. Shore Channel	41° 58' 32.59"N 87° 42' 16.61"W	50' upstream of Foster Ave. (10' from west bank and center channel)

(1) SBCR = South Branch of Chicago River, CSSC = Chicago Sanitary and Ship Canal
(2) Stations were sampled during both 2001 and 2002.

Table 2-1 - Continued

Watershed	Sampling Station		Waterway	Lat./Lon.	Location Description
North Branch Chicago River	104-	Glenview Rd.	N. Branch Chicago R.	42° 04' 8.33"N 87° 46' 27.47"W	100' upstream of Glenview Rd. (5' from east bank and center channel)
	34-	Dempster St.	N. Branch Chicago R.	42° 02' 30.9"N 87° 47' 16.9"W	500' upstream of Dempster St. (5' from east bank and center channel)
	96-	**Albany Ave. (2)**	**N. Branch Chicago R.**	**41° 58' 21.7"N 87° 42' 44.3"W**	**250' downstream of Kimball Ave. (5' from south bank and center channel)**
	37-	Wilson Ave.	N. Branch Chicago R.	41° 57' 52.66"N 87° 41' 50.50"W	10' upstream of Wilson Ave. (10' from west bank and center channel)
	73-	Diversey Pkwy.	N. Branch Chicago R.	41° 55' 55.79"N 87° 40' 56.89"W	50' upstream of Diversey Ave. (30' from east bank and center channel)
	46-	**Grand Ave.(2)**	**N. Branch Chicago R.**	**41° 53' 29.16" N 87° 38' 9.29" W**	**50' upstream of Grand Ave. (40' from east bank and center channel)**
SBCR and CSSC (1)	**75-**	**Cicero Ave.(2)**	**Chicago Sanitary and Ship Canal**	**41° 49' 11.4"N 87° 44' 35.7"W**	**20' upstream of Cicero Ave. (70' from north bank and center channel)**
	41-	**Harlem Ave.(2)**	**Chicago Sanitary and Ship Canal**	**41° 48' 4.01"N 87° 48' 5.64"W**	**50' upstream of Harlem Ave. (50' from south bank and center channel)**
	92-	**Lockport (16th St.)(2)**	**Chicago Sanitary and Ship Canal**	**41° 34' 58"N 88° 04' 09.4"W**	**75' upstream of former Division St. bridge location (20' from west bank and center channel)**
Des Plaines River	**78-**	**Wille Road(2)**	**Higgins Cr.**	**42° 01' 7.24"N 87° 56' 12.03"W**	**200' downstream of Wille Rd., inside entrance to culvert (5' from west bank and center channel)**
	18-	**Devon Ave.(2)**	**Salt Cr.**	**41° 59'34.6"N 87° 59' 42.9"W**	**150' feet upstream of Devon Ave. (10' from west bank and center channel)**
	64-	**Lake St.(2)**	**W Branch Du Page R.**	**41° 58'43.1"N 88° 07' 59.4"W**	**75' upstream of Lake St. (5' from west bank and center channel)**

(1) SBCR = South Branch of Chicago River, CSSC = Chicago Sanitary and Ship Canal
(2) Stations were sampled during both 2001 and 2002.

Table 2-1 - Continued

Watershed	Sampling Station		Waterway	Lat./Lon.	Location Description
Des Plaines River	13-	Lake-Cook Rd.[2]	Des Plaines R.	42° 09' 9.8"N 87° 54' 36.2"W	20' downstream of Lake-Cook Rd. (20' from west bank and center channel)
	22-	Ogden Ave.[2]	Des Plaines R.	41° 49'14.4"N 87° 48' 38.2"W	50' upstream of Ogden Ave. (20' from east bank and center channel)
	91-	Material Service Rd.[2]	Des Plaines R.	41° 35' 29.3"N 88° 4' 8.30"W	20' upstream of Material Service Rd. (20' from east bank and center channel)

(1) SBCR = South Branch of Chicago River, CSSC = Chicago Sanitary and Ship Canal
(2) Stations were sampled during both 2001 and 2002.

Table 2-2. Description of benthic macroinvertebrate monitoring stations sampled during 2002. Stations arranged by major watershed, upstream to downstream within each waterway.

Watershed	Sampling Station		Waterway	Lat./Lon.	Location Description
Calumet	**55-**	**130th St.[2]**	**Calumet River**	**41° 39' 33.9"N 87° 34' 20.1"W**	**50' upstream of 130th St. (40' from east bank and at center channel**
	76-	**Halsted St.[2]**	**Little Calumet River**	**41° 39' 25.9"N 87° 38' 27.3"W**	**75' upstream of Halsted St. (15' from south bank and at center channel)**
	59-	**Cicero Ave.[2]**	**Calumet-Sag Channel**	**41° 59' 19.4"N 87° 44' 15.6"W**	**75' upstream of Cicero Ave. (20' from north bank and at center channel)**
North Branch Chicago River	**36-**	**Touhy Ave.[2]**	**N. Shore Channel**	**42° 00' 43.7"N 87° 42' 37.2"W**	**40' upstream of Touhy Ave. (15' from east bank and at center channel)**
	96-	**Albany Ave.[2]**	**N. Branch Chicago R.**	**41° 58' 21.7"N 87° 42' 44.3"W**	**250' downstream of Kimball Ave. (5' from south bank and at center channel)**
	46-	**Grand Ave.[2]**	**N. Branch Chicago R.**	**41° 53' 29.16"N 87° 38' 29.29"W**	**25' upstream of Grand Ave. (40' from east bank and at center channel)**
SBCR and CSSC [1]	74-	Lake Shore Dr. (Outer Drive)	Chicago R.	41° 53' 19.9"N 87° 36' 48.6"W	50' upstream of Lake Shore Dr. (5' from north bank and at center channel)
	100-	Wells St.	Chicago R.	41° 53' 16"N 87° 38' 1.2"W	40' upstream of Wells St. (30' from south bank and at center channel)
	39-	Madison St.	S. Branch Chicago R.	41° 52' 55.4"N 87° 38' 18.7"W	40' upstream of Madison St. (30' from west bank and at center channel)
	108-	Loomis St.	S. Branch Chicago R.	41° 50' 47.3"N 87° 39' 37.1"W	50' upstream of Loomis St. (10' from north bank and at center channel)
	99-	Archer Ave.	S. Fork S. Branch Chicago River	41° 50' 18.4"N 87° 39' 50.5"W	30' upstream of Archer Ave. (20' from west bank and at center channel)

(1) SBCR = South Branch of Chicago River, CSSC = Chicago Sanitary and Ship Canal
(2) Stations were sampled during both 2001 and 2002.

Table 2-2 - Continued

Watershed	Sampling Station		Waterway	Lat./Lon.	Location Description
SBCR and CSSC [1]	40-	Damen Ave.	Chicago Sanitary and Ship Canal	41° 50' 31.9"N 87°40' 31.1"W	40' upstream of Damen Ave. (40' from north bank and at center channel)
	75-	**Cicero Ave.[2]**	**Chicago Sanitary and Ship Canal**	**41° 49' 11.4"N 87° 44' 35.7"W**	**20' upstream of Cicero Ave. (70' from north bank and at center channel)**
	41-	**Harlem Ave.[2]**	**Chicago Sanitary and Ship Canal**	**41° 48' 4.01"N 87° 48' 5.64"W**	**50' upstream of Harlem Ave. (50' from south bank and at center channel)**
	42-	Rt. 83	Chicago Sanitary and Ship Canal	41° 42' 29.5"N 87° 55' 38.6"W	4000' upstream of Rt. 83 (5' from south bank and at center channel)
	48-	Stephen St.	Chicago Sanitary and Ship Canal	41° 41.127'N 87° 58.862'W	1.1 miles upstream of Stephen St. (10' from west bank and at center channel)
	92-	**Lockport (16th St.)[2]**	**Chicago Sanitary and Ship Canal**	**41° 34' 59.2"N 88° 04' 8.7"W**	**75' upstream of former Division St. bridge location (20' from west bank and at center channel)**
Des Plaines River	**78-**	**Wille Road[2]**	**Higgins Cr.**	**42° 01' 7.24"N 87° 56' 12.03"W**	**200' downstream of Wille Rd., inside entrance to culvert (5' from west bank and at center channel)**
	18-	**Devon Ave.[2]**	**Salt Cr.**	**41° 59'34.6"N 87° 59' 42.9"W**	**200' feet upstream of Devon Ave. (10' from west bank and at center channel)**
	64-	**Lake St.[2]**	**W Branch Du Page R.**	**41° 58'43.1"N 88° 07' 59.4"W**	**125' upstream of Lake St. (5' from west bank and at center channel)**
	13-	**Lake-Cook Rd.[2]**	**Des Plaines R.**	**42° 09' 9.8"N 87° 54' 36.2"W**	**20' downstream of Lake-Cook Rd. (20' from west bank and at center channel)**
	22-	**Ogden Ave.[2]**	**Des Plaines R.**	**41° 49'14.4"N 87° 48' 38.2"W**	**200' upstream of Ogden Ave. (15' from east bank and at center channel)**
	91-	**Material Service Rd.[2]**	**Des Plaines R.**	**41° 35' 29.3"N 88° 4' 8.30"W**	**20-30' downstream of Material Service Rd. (20' from east bank and at center channel)**

(1) SBCR = South Branch of Chicago River, CSSC = Chicago Sanitary and Ship Canal
(2) Stations were sampled during both 2001 and 2002.

Figure 2-1: Sampling stations for the MWRDGC benthic macroinvertebrate program.

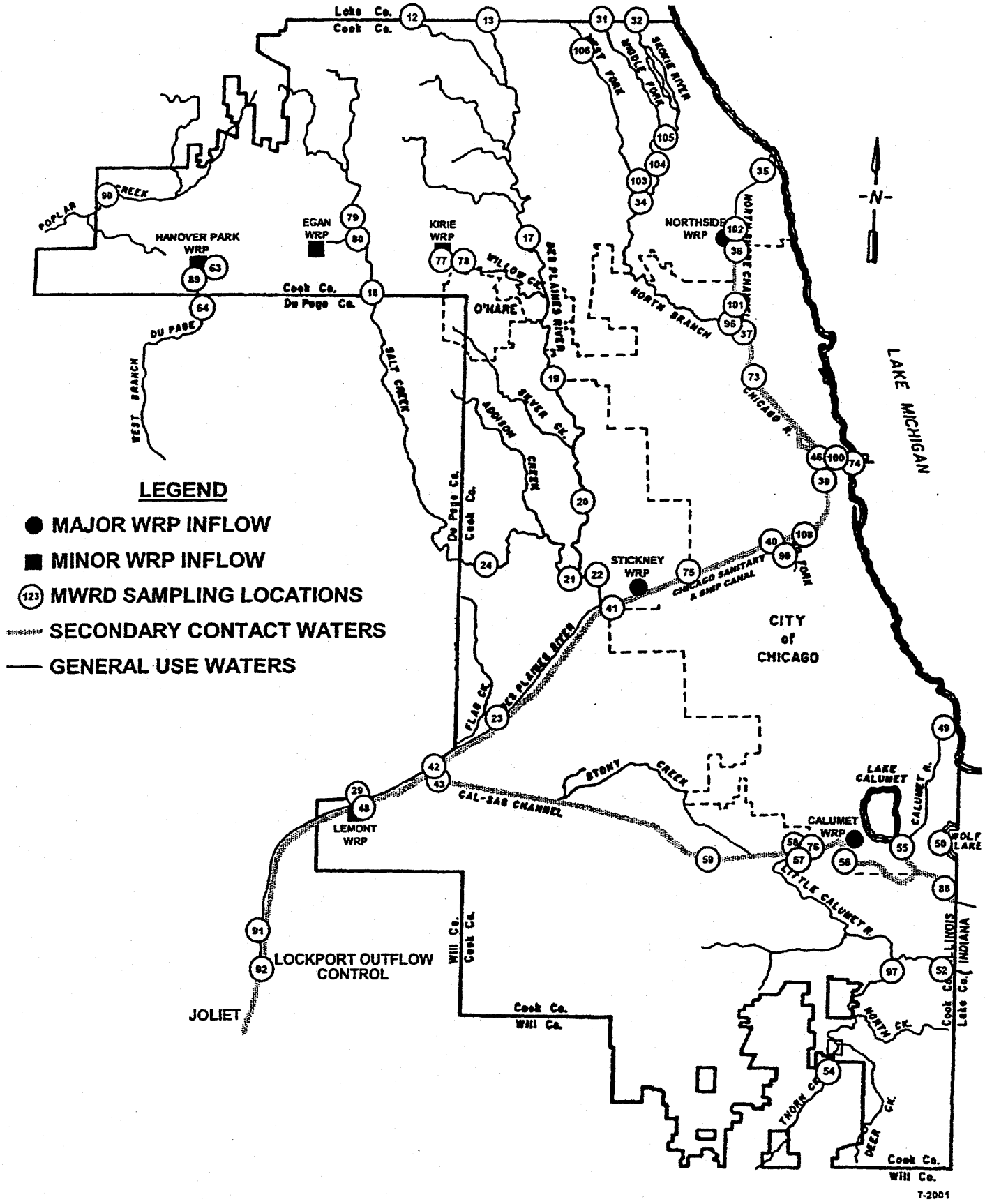


Figure 2-2. Hester-Dendy sampling array.

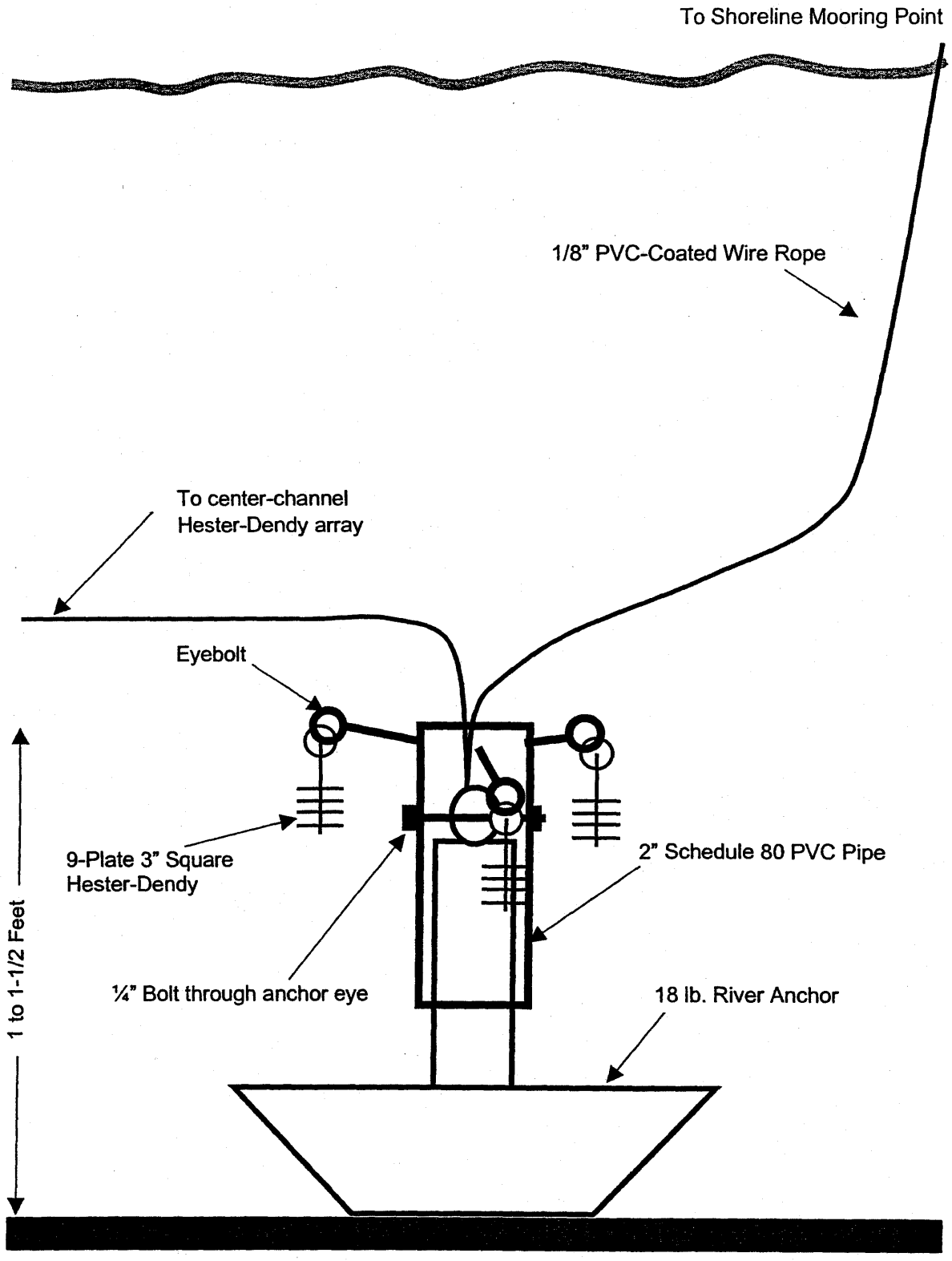
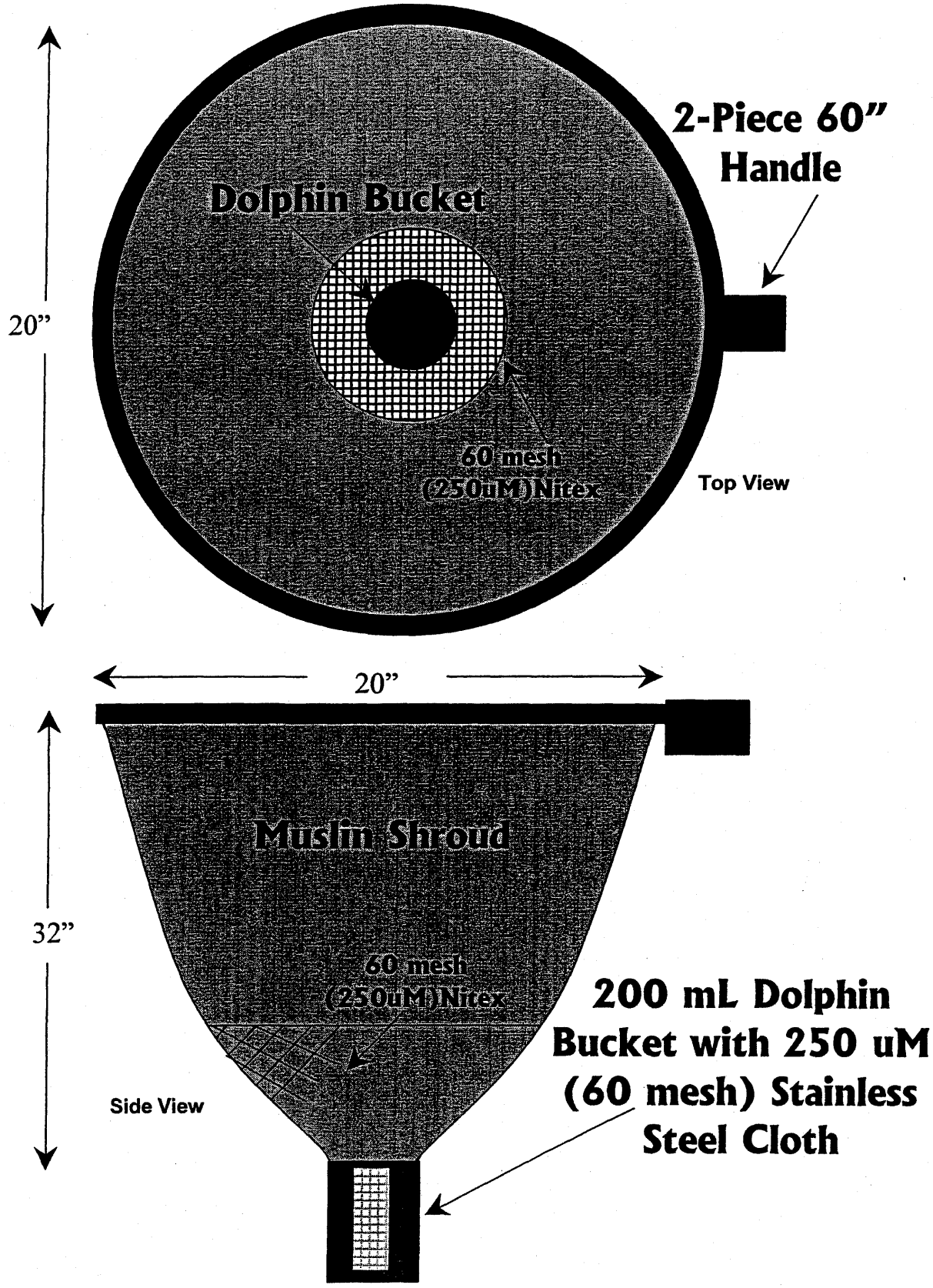


Figure 2-3. Dipnet for Hester-Dendy sampler retrieval.



HD samples were collected from the near-shore area and mid-channel at all 27 sample stations in 2001. However, during 2002, HD samples could not be collected from either the near shore area or mid-channel of the Chicago Sanitary and Ship Canal (CSSC) at Route 83 or Stephens Street (Stations 42 and 48, respectively).

Ponar grab samples were collected at each station in conjunction with the HD retrieval. The grab samples were collected using a 6" X 6" Petite-Ponar sampler. As with the HD sampling, two Ponar samples were collected at each station; one from a near shore area and one from mid-channel. Each Ponar sample consisted of three grabs. All Ponar samples were collected within 30 to 50 feet of the HD samples. All three grabs for each sample were combined in the field and washed in a No. 60 (250 μ) mesh sieving bucket to remove most of the fine sediment. The sample was then transferred to a one-gallon bottle and preserved with 5% formalin. Ponar samples could not be collected from the mid-channel location of the Des Plaines River at Material Service Road (Station 91) in 2001 and during both years from the mid-channel of the North Branch of the Chicago River (NBCR) at Albany Avenue (Station 96).

In the laboratory, each sample was processed by first pouring the contents of the sample bottle into a No. 60 mesh sieve where it could be rinsed. Under a stream of water, the individual HD plates and hardware were scrubbed with a 2-inch paintbrush into the sieve. The sample was then rinsed from the sieve into a white plastic tray partially filled with water. Sample aliquots were removed from the tray and placed in a small petri dish for counting under a dissecting microscope with 15X to 40X magnification. Following counting, the samples were preserved with 70% isopropanol solution. The subject samples were delivered to EA Engineering, Science, and Technology, Inc. (EA) in Deerfield, Illinois for further processing and taxonomic identification.

Upon arrival at EA's laboratory, the samples were logged in. Except for Oligochaeta, macroinvertebrate identifications were made to the lowest practical taxonomic level using the most current literature available (see Section 5). If necessary, Chironomidae larvae were subsampled. Chironomid larvae were placed in a grided petri dish. Squares were randomly chosen until at least 100 larvae were removed. Chironomid larvae were then cleared in 10% potassium hydroxide and permanently mounted in CMC-10. All specimens were identified, enumerated, and coded on EA's standard laboratory bench sheet for data processing.

Each slide-mounted chironomid specimen was examined for a variety of head capsule deformities. For Orthocladiinae, Chironomini, and Tanytarsini specimens, the structures examined for deformities included the mentum, mandibles, premandibles, and pecten epipharyngis (Sæther 1980). Tanypodinae structures included the ligula, dorsomentum, mandibles, paraligula, and pecten hypopharyngis (Sæther 1980). Guidance as to what constituted a deformity as well as descriptions of deformities for the structures and taxa listed above was derived from a variety of sources, most notably Dermott (1991), Dickman et al. (1992), Groenendijk et al. (1998), Hudson and Ciborowski (1996a), Warwick (1985 and 1991), and Warwick and Tisdale (1988), among others. A conservative approach was used to distinguish deformities or malformations from broken or severely worn larval structures. In general, deformities and malformations were easily distinguished from worn or damaged structures for the specimens examined during this study. However, if any suspicion existed as to the cause of an irregular structure, that irregularity was not counted as a deformity. Due to the

condition of the Chironomidae specimens in several samples, particularly from 2001, identification down to genus or species level and examination of deformities was problematic. This likely resulted in both lower taxa richness and, possibly, low-biased the percent occurrence of deformities at these stations in 2001.

Whenever possible, for the waterways with multiple sampling stations, comparisons were made longitudinally between monitoring stations. Temporal comparisons also were made for those stations that were sampled during both years. Metrics used included density, relative abundance (percent), total taxa richness, number of Ephemeroptera+Plecoptera+Trichoptera (EPT) taxa, dominant taxa composition, and percent Chironomidae head capsule deformities. In some instances, notable differences in the benthic macroinvertebrate community were observed among the stations. These differences could be the result of differences in water or sediment quality related to point and non-point sources, differences in habitat quality, or natural variability within the benthic community. However, since it was unclear what factors may have affected the sample results, the differences were described in varying degrees of "stress", which is intended to encompass all potential impact types. For the purpose of summarizing and discussing the 2001 and 2002 results, the center and near shore samples were combined for each site by sample type. The center and near shore data are presented separately for each station and sample type in Appendices A and B.

3. RESULTS AND DISCUSSION

3.1 2001 Benthic Macroinvertebrate Results

During 2001, 54 HD samples and 52 Ponar samples were collected from 27 stations in 13 different waterways (Table 2-1). Combined, these samples yielded 101 total taxa and 20 relatively pollution sensitive EPT taxa (Table 3-1). Chironomidae was the most taxa rich group with 40 taxa followed by Ephemeroptera and Trichoptera with 11 and 10 taxa, respectively. The taxa that are underlined in Table 3-1 represent those that are considered highly tolerant of pollution caused stressors. For the purposes of this study, several literature sources were considered to determine the tolerance of any particular taxon including Barbour et al. (1999), Illinois Environmental Protection Agency (IEPA) (1987), Ohio Environmental Protection Agency (OEPA) (1988), and Simpson and Bode (1980). Taxa were regarded as highly tolerant if they were listed as such in the literature and/or their assigned tolerance values from various regions in the U.S. averaged eight or greater on a zero to ten or eleven scale with ten/eleven being the most tolerant.

3.1.1 Calumet Watershed

Three stations were sampled in the Calumet watershed during 2001: one station in the Calumet River, one station in the Little Calumet River, and one station in the Calumet-Saginaw Channel (Cal-Sag) (Table 2-1).

Overall, the HD samples from the Calumet watershed were either dominated by zebra mussels or Oligochaeta whereas all of the Ponar samples were dominated by Oligochaeta. Although no chironomid deformities were observed, the benthic community in the Calumet watershed largely consisted of tolerant taxa.

3.1.1.1 Calumet River

Combined, the HD and Ponar samples from the single station in the Calumet River (Station 55) yielded 18 total taxa and one EPT taxon (Tables 3-2 and 3-3). Ten total taxa and one EPT taxon were observed in the HD samples while 12 total taxa were present in the Ponar samples. Total density in the HD samples was nearly ten times higher than in the Ponar samples. The higher density in the HD samples was almost exclusively due to the abundance of zebra mussels (*Dreissena polymorpha*), which prefer hard surfaces, like the HD samplers for attachment (Table 3-2). Zebra mussel was the most dominant HD taxon, representing over 94 percent of the total density. Except for the side swimmer *Gammarus fasciatus* and Oligochaeta, the remaining taxa observed in the HD samples were individually represented by less than one percent of the total density. In contrast to the HD samples, Oligochaeta was the most dominant taxon by percent in the Ponars (Table 3-3). With the exception of *D. polymorpha*, *G. fasciatus*, and the midge *Procladius (Holotanypus)*, none of the other taxa collected in the Ponar samples was represented by more than one percent of the total density.

No Chironomidae head capsule deformities were observed in either the HD or Ponar samples. However, the benthic community represented in both the HD and Ponar samples largely

Table 3-1. List of benthic macroinvertebrate taxa collected in Hester-Dendy and Ponar samples from several Chicago Metropolitan Area waterways. Underlined taxa are those considered to be highly tolerant based on literature sources.

Taxa	Hester-Dendy 2001	Ponar 2001	Hester-Dendy 2002	Ponar 2002
COELENTERATA (Hydroids)				
Hydra	X	X	X	X
PLATYHELMINTHES (Flat worms)				
Turbellaria	X	X	X	X
ENTOPROCTA (Moss Animalcules)				
Urnatella gracilis		X		
ECTOPROCTA (Bryozoans)				
Plumatella	X	X	X	X
ANNELLIDA				
Oligochaeta (Aquatic Worms)	X	X	X	X
Hirudinea (Leeches)				
Glossiphoniidae[1]			X	X
Helobdella[1]	X			
Helobdella stagnalis	X	X	X	X
Helobdella triserialis	X	X	X	
Placobdella			X	
Erpobdella punctata punctata	X	X		X
Mooreobdella microstoma	X	X	X	X
CRUSTACEA				
Ostracoda (Seed Shrimp)		X		
Isopoda (Sow Bugs)				
Caecidotea	X	X	X	X
Amphipoda (Side Swimmers)				
Gammarus[1]				X
Gammarus fasciatus	X	X	X	X
Decapoda (Crayfish)				
Orconectes immunis		X		
Orconectes virilis	X			X
ARACHNOIDEA				
Hydracarina (Water Mites)	X	X		

Table 3-1 (cont.)

Taxa	Hester-Dendy 2001	Ponar 2001	Hester-Dendy 2002	Ponar 2002
INSECTA				
Ephemeroptera (Mayflies)				
Isonychia	X		X	
Baetis intercalaris	X	X	X	X
Pseudocloeon ephippiatum	X			
Heptageniidae[1]	X	X		
Heptagenia	X		X	
Leucrocuta	X		X	
Stenacron	X		X	
Stenonema	X[1]	X		
Stenonema integrum	X		X	
Stenonema terminatum	X		X	
Tricorythodes	X	X	X	X
Caenis		X		
Hexagenia bilineata				X
Odonata (Damselflies and Dragonflies)				
Calopteryx	X			
Argia	X		X	
Enallagma	X	X	X	
Somatochlora			X	
Stylurus		X		
Hemiptera (True Bugs)				
Trepobates			X	
Corixidae			X	X
Palmacorixa		X		
Trichoptera (Caddisflies)				
Cyrnellus fraternus	X	X	X	
Hydropsychidae[1]				X
Ceratopsyche morosa	X		X	
Cheumatopsyche	X	X	X	X
Hydropsyche	X		X	
Hydropsyche betteni	X	X	X	
Hydropsyche orris	X		X	

Table 3-1 (cont.)

Taxa	Hester-Dendy 2001	Ponar 2001	Hester-Dendy 2002	Ponar 2002
Trichoptera (cont.)				
Hydropsyche simulans	X		X	
Hydropsyche bidens	X		X	
Potamyia flava	X	X	X	X
Hydroptila	X		X	
Lepidoptera (Aquatic Moths)				
Petrophila	X		X	
Coleoptera (Beetles)				
Copelatus			X	
Laccophilus maculosus			X	
Dubiraphia	X	X		X
Macronychus glabratus	X	X	X	
Stenelmis [1]	X	X		X
Stenelmis crenata grp.	X	X	X	X
Tropisternus			X	
Berosus	X	X		
Diptera (True Flies)				
Bezzia		X		
Chaoborus	X	X		
Hemerodromia	X			
Simulium	X	X		
Tipula			X	
Chironomidae (Midges)[1]	X	X	X	X
Ablabesmyia janta	X		X	X
Ablabesmyia mallochi	X	X	X	X
Clinotanypus		X		
Coelotanypus				X
Natarsia sp. A		X		
Nilotanypus fimbriatus	X		X	
Procladius (Holotanypus)	X	X	X	X
Tanypus		X		
Thienemannimyia grp.	X	X	X	X
Corynoneura	X	X		
Cricotopus tremulus grp.	X		X	X
Cricotopus bicinctus grp.	X	X	X	X

Table 3-1 (cont.)

Taxa		Hester-Dendy 2001	Ponar 2001	Hester-Dendy 2002	Ponar 2002
	Chironomidae (cont.)				
	Cricotopus trifascia grp.			X	X
	Cricotopus sylvestris grp.	X	X	X	X
	Heterotrissocladius			X	
	Nanocladius [1]		X		
	Nanocladius distinctus	X	X	X	X
	Nanocladius crassicornus/rectinervis	X	X	X	
	Rheocricotopus robacki	X		X	
	Thienemanniella xena	X		X	
	Thienemanniella similis	X	X		
	Chironomus	X	X	X	X
	Cladopelma		X	X	
	Cryptochironomus	X	X	X	X
	Dicrotendipes neomodestus	X	X	X	X
	Dicrotendipes simpsoni	X	X	X	X
	Endochironomus nigricans	X			
	Glyptotendipes	X	X	X	X
	Microchironomus		X	X	
	Microtendipes		X		X
	Parachironomus	X	X	X	X
	Paracladopelma	X	X		X
	Phaenopsectra	X			
	Polypedilum fallax grp.	X	X	X	
	Polypedilum flavum	X	X	X	X
	Polypedilum halterale grp.	X	X	X	X
	Polypedilum illinoense	X	X	X	X
	Polypedilum scalaenum grp.	X	X	X	X
	Stenochironomus	X	X	X	
	Xenochironomus xenolabis			X	
	Cladotanytarsus mancus grp.		X	X	X
	Cladotanytarsus vanderwulpi grp.		X		
	Micropsectra			X	
	Paratanytarsus	X		X	X
	Rheotanytarsus	X	X	X	
	Tanytarsus			X	X

Table 3-1 (cont.)

Taxa	Hester-Dendy 2001	Ponar 2001	Hester-Dendy 2002	Ponar 2002
Chironomidae (cont.)				
Tanytarsus glabrescens grp.				X
Tanytarsus guerlus grp.	X	X	X	
GASTROPODA (Snails)				
Amnicola		X		X
Pleuroceridae	X	X		
Ferrissia	X		X	X
Menetus dilatatus	X	X	X	
Physella	X	X	X	
PELECYPODA (Mussels and Clams)[1]	X			
Corbicula fluminea	X	X	X	X
Musculium		X[1]	X	
Musculium transversum	X	X		X
Pisidium	X	X[1]		
Pisidium compressum		X		
Pisidium nitidum				X
Sphaerium simile		X		
Lasmigona complanata		X		
Dreissena polymorpha	X	X	X	X
TOTAL RICHNESS BY SAMPLE TYPE	83	74	81	50
EPT RICHNESS BY SAMPLE TYPE	19	8	18	5
TOTAL RICHNESS BY YEAR	101		90	
EPT RICHNESS BY YEAR	20		19	

[1]Not counted as a discreet taxa.

TABLE 3-2. HESTER-DENDY DENSITIES AT SAMPLING STATION 55 WITHIN THE CALUMET RIVER, AUGUST 2001.

TAXA	55 130TH ST. #/m2	%
Plumatella	1.8	0.00
Oligochaeta	556.2	1.44
Gammarus fasciatus	1,273.8	3.30
Cyrnellus fraternus	35.9	0.09
Ablabesmyia mallochi	17.9	0.05
Nanocladius distinctus	17.9	0.05
Chironomus	179.4	0.47
Dicrotendipes simpsoni	143.5	0.37
Glyptotendipes	35.9	0.09
Dreissena polymorpha	36,311.4	94.14
TOTAL BENTHOS	38,573.7	100.00
TOTAL TAXA RICHNESS	10	
EPT TAXA RICHNESS	1	

TABLE 3-3. PETITE PONAR DENSITIES AT SAMPLING STATION 55 WITHIN THE CALUMET RIVER, AUGUST 2001.

TAXA	55 130TH ST. #/m2	%
Hydra	7.2	0.18
Turbellaria	7.2	0.18
Oligochaeta	3,674.4	92.25
Gammarus fasciatus	57.4	1.44
Procladius (Holotanypus)	50.2	1.26
Clinotanypus	7.2	0.18
Chironomus	7.2	0.18
Cryptochironomus	28.7	0.72
Microchironomus	7.2	0.18
Polypedilum scalaenum grp.	21.5	0.54
Pisidium compressum	14.4	0.36
Dreissena polymorpha	100.5	2.52
TOTAL BENTHOS	3,983.0	100.00
TOTAL TAXA RICHNESS	12	
EPT TAXA RICHNESS	0	

consisted of taxa that are considered moderately to extremely tolerant of pollution. Of the 18 taxa, seven are typically classified as tolerant suggesting some degree and type of environmental stress is affecting the benthic community at Station 55 (Table 3-1).

3.1.1.2 Little Calumet River

Combined, the HD and Ponar samples from the single station in the Little Calumet River (Station 76) yielded 14 total taxa (Tables 3-4 and 3-5). Total taxa richness ranged from 13 taxa in the HD samples to five taxa in the Ponar samples. No EPT taxa were observed in either sample type. Total Ponar density was slightly greater than half of that observed in the HDs. Again, zebra mussel was the most dominant taxon by percent in the HD samples, accounting for over half of the total density (Table 3-4). However, unlike the HD sample from the Calumet River, eight of the 13 taxa were individually represented by more than one percent of the total density. In contrast to the HD samples, the Ponar samples from the Little Calumet were dominated by Oligochaeta, which comprised nearly 97 percent of the total density (Table 3-5). With the exception of the flatworm Turbellaria, none of the other taxa collected in the Ponar samples achieved one percent of the total density.

As with the Calumet River samples, no Chironomidae head capsule deformities were observed in either the HD or Ponar samples. However, over half of the taxa represented in the HD and Ponar samples combined are considered highly tolerant of pollution indicating a stressed environment (Table 3-1).

3.1.1.3 Calumet-Saginaw Channel

Combined, the HD and Ponar samples from the single station in the Cal-Sag (Station 59) yielded 16 total taxa (Tables 3-6 and 3-7). Fourteen total taxa were observed in the HD samples while six total taxa were present in the Ponar samples. Total density was approximately three times greater in the Ponar samples compared to the HDs. This difference was almost exclusively due to the abundance of Oligochaeta in the Ponars. The most dominant taxa by percent in the HD samples were the midge *Dicrotendipes simpsoni* and Oligochaeta (Table 3-6), which represented over half the total density. Oligochaeta also was the most dominant taxon by percent in the Ponar samples (Table 3-7). With the exception of the midge *Procladius (Holotanypus)* and the Asiatic mussel *Corbicula fluminea*, none of the other taxa collected in the Ponar samples was represented by more than one percent of the total density.

Like the other two stations in the watershed, no Chironomidae head capsule deformities were observed in either the HD or Ponar samples. However, tolerant taxa continued to comprise the majority of the total density, which suggests the benthic community is moderately to highly stressed (Table 3-1).

3.1.2 North Branch Chicago River Watershed

Sampling was conducted at 15 stations in the North Branch of the Chicago River watershed during 2001: two stations in the West Fork of the North Branch of the Chicago River (WFNBCR), one station in the Middle Fork of the North Branch of the Chicago River

TABLE 3-4. HESTER-DENDY DENSITIES AT SAMPLING STATION 76 WITHIN THE LITTLE CALUMET RIVER, AUGUST 2001.

TAXA	76 HALSTED ST. #/m2	%
Hydra	1,435.2	6.79
Turbellaria	2,350.2	11.11
Oligochaeta	1,650.5	7.80
Mooreobdella microstoma	17.9	0.08
Caecidotea	35.9	0.17
Gammarus fasciatus	1,650.5	7.80
Nanocladius distinctus	233.2	1.10
Dicrotendipes simpsoni	950.8	4.50
Glyptotendipes	71.8	0.34
Physella	17.9	0.08
Menetus dilatatus	717.6	3.39
Ferrissia	53.8	0.25
Dreissena polymorpha	11,966.3	56.57
TOTAL BENTHOS	21,151.8	100.00
TOTAL TAXA RICHNESS	13	
EPT TAXA RICHNESS	0	

TABLE 3-5. PETITE PONAR DENSITIES AT SAMPLING STATION 76 WITHIN THE LITTLE CALUMET RIVER, AUGUST 2001.

TAXA	76 HALSTED ST. #/m2	%
Turbellaria	279.9	2.29
Oligochaeta	11,855.8	96.95
Gammarus fasciatus	28.7	0.23
Pisidium compressum	50.2	0.41
Dreissena polymorpha	14.4	0.12
TOTAL BENTHOS	12,229.0	100.00
TOTAL TAXA RICHNESS	5	
EPT TAXA RICHNESS	0	

TABLE 3-6. HESTER-DENDY DENSITIES AT SAMPLING STATION 59 WITHIN THE CAL-SAG CHANNEL, AUGUST 2001.

TAXA	59 CICERO AVE. #/m2	%
Hydra	1,883.7	15.81
Turbellaria	161.5	1.36
Oligochaeta	2,924.3	24.55
Caecidotea	17.9	0.15
Gammarus fasciatus	1,776.1	14.91
Argia	17.9	0.15
Ablabesmyia mallochi	35.9	0.30
Nanocladius distinctus	197.3	1.66
Dicrotendipes neomodestus	17.9	0.15
Dicrotendipes simpsoni	3,480.4	29.22
Glyptotendipes	17.9	0.15
Menetus dilatatus	35.9	0.30
Ferrissia	53.8	0.45
Dreissena polymorpha	1,291.7	10.84
TOTAL BENTHOS	11,912.5	100.00
TOTAL TAXA RICHNESS	14	
EPT TAXA RICHNESS	0	

TABLE 3-7. PETITE PONAR DENSITIES AT SAMPLING STATION 59 WITHIN THE CAL-SAG CHANNEL, AUGUST 2001.

TAXA	59 CICERO AVE. #/m2	%
Oligochaeta	32,495.8	96.01
Gammarus fasciatus	71.8	0.21
Procladius (Holotanypus)	868.4	2.57
Dicrotendipes simpsoni	21.5	0.06
Corbicula fluminea	358.8	1.06
Dreissena polymorpha	28.7	0.08
TOTAL BENTHOS	33,845.0	100.00
TOTAL TAXA RICHNESS	6	
EPT TAXA RICHNESS	0	

(MFNBCR), two stations in the Skokie River, four stations in the North Shore Channel (NSC), and six stations in the North Branch of the Chicago River (NBCR) (Table 2-1).

In the majority of HD samples collected from the North Branch Chicago River watershed, the dominant taxon was either Oligochaeta or the sow bug *Caecidotea*. Likewise, Oligochaeta was the dominant taxon in the Ponar samples at all but one of the stations. The incidence of Chironomidae deformities was generally low in the watershed. Based on the dominance of a single taxon, dominance by tolerant taxa, taxa richness, and EPT richness, several stations in the watershed exhibited varying degrees of stress. However, by these same measures, a few, primarily upstream or "headwater" stations exhibited relatively more balanced benthic assemblages.

3.1.2.1 West Fork of the North Branch of the Chicago River

Together, the HD and Ponar samples from the two WFNBCR stations (Stations 106 and 103) yielded 31 total taxa and two EPT taxa (Tables 3-8 and 3-9). HD total taxa richness was similar between the two stations with 18 and 14 taxa being collected at Stations 106 and 103, respectively (Table 3-8). The only two EPT taxa observed in the WFNBCR samples were collected in the HD samples from Station 103 (Table 3-8). Total density was nearly three times higher at Station 103 compared to Station 106. This difference was primarily due to noticeably higher numbers of Turbellaria, Oligochaeta, *Caecidotea*, and *Dicrotendipes simpsoni*. The dominant taxon at Station 106 was the midge *Dicrotendipes neomodestus* while at Station 103 Oligochaeta and *Caecidotea* were the dominants.

Ponar total taxa richness was noticeably higher at Station 106 with 17 taxa than at Station 103 with nine taxa (Table 3-9). As with the HD samples, total density was substantially higher downstream at Station 103 compared to Station 106. This difference was primarily due to higher numbers of Oligochaeta and *Glyptotendipes*. The dominant taxon at both Ponar stations was Oligochaeta. However, the fingernail clam *Musculium transversum* also was relatively abundant at Station 106.

The incidence of chironomid head capsule deformities in the WFNBCR was restricted to a single taxon from the Station 106 HD samples. Of the 90 *Dicrotendipes neomodestus* examined, 2.2 percent or 1.1 percent of all midges examined were deformed (Table 3-10). All observed deformities were expressed on the mentum (teeth). This taxon was also observed in the HD samples from Station 103 and the Ponar samples from Station 106; however, none of these specimens or any other taxon observed in the WFNBCR exhibited a deformity.

Although the benthic community at both stations could be characterized as relatively pollution tolerant based on composition and relative abundance of tolerant taxa (Table 3-1), the substantially higher abundance of tolerant taxa such as Oligochaeta, *Dicrotendipes simpsoni*, and *Glyptotendipes* suggests the benthic community at the downstream Station 103 is relatively more stressed compared to Station 106.

TABLE 3-8. HESTER-DENDY DENSITIES AT EACH SAMPLING STATION WITHIN THE WEST FORK NORTH BRANCH CHICAGO RIVER, AUGUST 2001.

TAXA	106 DUNDEE RD.		103 GOLF RD.	
	#/m2	%	#/m2	%
Turbellaria	156.1	7.61	1,112.3	18.16
Oligochaeta	256.5	12.51	1,444.2	23.57
Helobdella stagnalis	12.6	0.61	--	--
Mooreobdella microstoma	5.4	0.26	--	--
Caecidotea	398.3	19.42	1,300.7	21.23
Stenacron	--	--	9.0	0.15
Argia	5.4	0.26	62.8	1.02
Enallagma	43.1	2.10	--	--
Cheumatopsyche	--	--	26.9	0.44
Berosus	14.4	0.70	--	--
Procladius (Holotanypus)	19.7	0.96	26.9	0.44
Ablabesmyia mallochi	12.6	0.61	--	--
Thienemannimyia grp.	109.4	5.34	35.9	0.59
Cricotopus sylvestris grp.	10.8	0.52	--	--
Nanocladius crassicornus/rectinervis	5.4	0.26	--	--
Dicrotendipes neomodestus	566.9	27.65	170.4	2.78
Dicrotendipes simpsoni	17.9	0.87	1,112.3	18.16
Glyptotendipes	--	--	538.2	8.78
Polypedilum flavum	30.5	1.49	80.7	1.32
Polypedilum illinoense	378.5	18.46	197.3	3.22
Polypedilum scalaenum grp.	--	--	9.0	0.15
Paratanytarsus	7.2	0.35	--	--
TOTAL BENTHOS	2,050.6	100.00	6,126.7	100.00
TOTAL TAXA RICHNESS	18		14	
EPT TAXA RICHNESS	0		2	

TABLE 3-9. PETITE PONAR DENSITIES AT EACH SAMPLING STATION WITHIN THE WEST FORK NORTH BRANCH CHICAGO RIVER, AUGUST 2001.

TAXA	106 DUNDEE RD.		103 GOLF RD.	
	#/m2	%	#/m2	%
Turbellaria	21.5	0.12	71.8	0.21
Oligochaeta	7,334.5	40.35	32,459.9	93.24
Helobdella stagnalis	21.5	0.12	--	--
Erpobdella punctata punctata	21.5	0.12	--	--
Mooreobdella microstoma	624.4	3.43	--	--
Caecidotea	416.2	2.29	--	--
Procladius (Holotanypus)	21.5	0.12	57.4	0.16
Thienemannimyia grp.	21.5	0.12	--	--
Cricotopus bicinctus grp.	14.4	0.08	--	--
Chironomus	--	--	14.4	0.04
Cryptochironomus	35.9	0.20	--	--
Dicrotendipes neomodestus	50.2	0.28	--	--
Glyptotendipes	--	--	1,076.5	3.09
Polypedilum illinoense	14.4	0.08	--	--
Polypedilum scalaenum grp.	1,205.7	6.63	1,004.7	2.89
Amnicola	--	--	50.2	0.14
Physella	28.7	0.16	--	--
Menetus dilatatus	14.4	0.08	--	--
Musculium	--	--	71.8	0.21
Musculium transversum	6,229.3	34.27	--	--
Pisidium compressum	2,102.8	11.57	7.2	0.02
TOTAL BENTHOS	18,178.4	100.00	34,813.9	100.00
TOTAL TAXA RICHNESS	17		9	
EPT TAXA RICHNESS	0		0	

Table 3-10. Chironomidae head capsule deformities observed in Hester-Dendy and Ponar samples from the North Branch of the Chicago River watershed, August 2001.

	Hester Dendy Samples				Ponar Sample
Taxa	W.F.N.B.C.R. @ Dundee Sta. 106	Skokie R. @ Lake Cook Sta. 32	Skokie R. @ Frontage Sta. 105	N.B.C.R. @ Dempster Sta. 34	N.B.C.R. @ Dempster Sta. 34
Procladius (Holotanypus)					
Number Examined	3	2	16	3	65
Percent Deformed	0.0	0.0	6.3	33.0	0.0
Chironomus					
Number Examined	--	--	1	--	6
Percent Deformed	--	--	0.0	--	33.3
Dicrotendipes neomodestus					
Number Examined	90	21	9	10	3
Percent Deformed	2.2	0.0	0.0	0.0	0.0
Dicrotendipes simpsoni					
Number Examined	3	54	28	20	2
Percent Deformed	0.0	1.8	3.6	0.0	0.0
***Polypedilum halterale* grp.**					
Number Examined	--	--	1	--	--
Percent Deformed	--	--	100.0	--	--
Polypedilum illinoense					
Number Examined	61	2	6	3	1
Percent Deformed	0.0	0.0	16.7	0.0	0.0
TOTAL SAMPLE					
Total Midges Examined	186	81	191	187	132
Percent Deformed	1.1	1.2	2.1	0.5	1.5

3.1.2.2 Middle Fork of the North Branch of the Chicago River

Combined, the HD and Ponar samples from the single station in the MFNBCR (Station 31) yielded 20 total taxa (Tables 3-11 and 3-12). Eighteen total taxa were observed in the HD samples while 10 total taxa were present in the Ponar samples. Total density in the Ponar samples was approximately three times higher than in the HD samples primarily due to the abundance of Oligochaeta, which comprised 94 percent of the total density in the Ponar samples but only three percent in the HDs. The dominant taxon in the HD samples was *Caecidotea*. However, several other taxa in the HD samples were represented by more than five percent of the total density including Turbellaria, *Nanocladius crassicornus/rectinervis*, *Dicrotendipes simpsoni*, and *Polypedilum illinoense*. In contrast, no taxon besides Oligochaeta achieved more than five percent in the Ponar samples.

No Chironomidae head capsule deformities were observed in either the HD or Ponar samples. However, several of the benthic taxa represented in both the HD and Ponar samples are considered moderately to extremely tolerant of pollution. Of the 20 taxa, seven are typically classified as tolerant (Table 3-1). As such, it is reasonable to consider the benthic community at Station 31 as moderately stressed.

3.1.2.3 Skokie River

Combined, the HD and Ponar samples from the two Skokie River stations (Stations 32 and 105) yielded 43 total taxa and seven EPT taxa (Tables 3-13 and 3-14). HD total taxa richness was nearly three times greater at the downstream Station 105 (32 taxa) compared to Station 32 (13 taxa) (Table 3-13). In addition, EPT richness was zero at Station 32 while six EPT taxa were observed in the Station 105 HDs. Total density was approximately double at Station 32 compared to Station 105. This was primarily due to noticeably higher numbers of Turbellaria, and the tolerant taxa Oligochaeta and *Dicrotendipes simpsoni* at Station 32. The dominant taxa at both stations were Turbellaria and Oligochaeta.

Ponar total taxa richness was noticeably higher at Station 105 with 13 taxa than at Station 32 with six taxa (Table 3-14). As with the HD samples, no EPT were observed at Station 32 compared to two EPT taxa at Station 105. Oligochaeta was clearly the dominant taxon at both stations. However, the abundance of Oligochaeta was substantially greater at Station 32 relative to Station 105. This resulted in nearly a five-fold difference in total density between the two stations.

Chironomid head capsule deformities were observed only in the HD samples but from both stations (Table 3-10). At Station 32, 1.8 percent (n=54) of the *Dicrotendipes simpsoni* examined, or 1.2 percent (n=81) of all midges examined were deformed (Table 3-10). The incidence of deformities at Station 105 was 2.1 percent (n=191) of the total number examined (Table 3-10). Four separate taxa in the Station 105 HD samples exhibited head capsule deformities including *Dicrotendipes simpsoni*. Of those taxa at Station 105 that were represented by more than one specimen, the percent incidence of deformity was greatest for *Polypedilum illinoense* with 16.7 percent (n=6). However, for all species only a single specimen exhibited a deformity. All of the deformities appeared to be restricted to the mentum or ligula and

TABLE 3-11. HESTER-DENDY DENSITIES AT SAMPLING STATION 31 WITHIN THE MIDDLE FORK NORTH BRANCH CHICAGO RIVER, AUGUST 2001.

TAXA	31 LAKE COOK RD. #/m2	%
Hydra	5.4	0.29
Turbellaria	192.0	10.35
Oligochaeta	52.0	2.80
Caecidotea	988.5	53.29
Ablabesmyia mallochi	7.2	0.39
Thienemannimyia grp.	16.1	0.87
Corynoneura	3.6	0.19
Nanocladius distinctus	64.6	3.48
Nanocladius crassicornus/rectinervis	125.6	6.77
Rheocricotopus robacki	3.6	0.19
Cryptochironomus	3.6	0.19
Dicrotendipes neomodestus	82.5	4.45
Dicrotendipes simpsoni	166.8	8.99
Polypedilum flavum	3.6	0.19
Polypedilum illinoense	98.7	5.32
Polypedilum scalaenum grp.	35.9	1.93
Physella	1.8	0.10
Pelecypoda	3.6	0.19
TOTAL BENTHOS	1,855.0	100.00
TOTAL TAXA RICHNESS	18	
EPT TAXA RICHNESS	0	

TABLE 3-12. PETITE PONAR DENSITIES AT SAMPLING STATION 31 WITHIN THE MIDDLE FORK NORTH BRANCH CHICAGO RIVER, AUGUST 2001.

TAXA	31 LAKE COOK RD. #/m2	%
Turbellaria	78.9	1.22
Oligochaeta	6,049.9	93.88
Caecidotea	64.6	1.00
Procladius (Holotanypus)	21.5	0.33
Cryptochironomus	14.4	0.22
Dicrotendipes simpsoni	21.5	0.33
Polypedilum illinoense	35.9	0.56
Polypedilum scalaenum grp.	14.4	0.22
Sphaerium simile	136.4	2.12
Musculium	7.2	0.11
TOTAL BENTHOS	6,444.6	100.00
TOTAL TAXA RICHNESS	10	
EPT TAXA RICHNESS	0	

TABLE 3-13. HESTER-DENDY DENSITIES AT EACH SAMPLING STATION WITHIN THE SKOKIE RIVER, AUGUST 2001.

TAXA	32 LAKE COOK RD.		105 FRONTAGE RD.	
	#/m2	%	#/m2	%
Hydra	—	—	43.1	1.98
Turbellaria	1,686.4	38.20	308.6	14.17
Oligochaeta	1,340.2	30.35	446.7	20.51
Helobdella stagnalis	77.1	1.75	—	—
Helobdella triserialis	—	—	1.8	0.08
Mooreobdella microstoma	5.4	0.12	—	—
Caecidotea	387.5	8.78	34.1	1.57
Hydracarina	5.4	0.12	—	—
Stenacron	—	—	61.0	2.80
Stenonema	—	—	23.3	1.07
Argia	48.4	1.10	23.3	1.07
Enallagma	—	—	7.2	0.33
Cyrnellus fraternus	—	—	109.4	5.02
Cheumatopsyche	—	—	222.5	10.21
Hydropsyche betteni	—	—	1.8	0.08
Hydroptila	—	—	39.5	1.81
Procladius (Holotanypus)	25.1	0.57	70.0	3.21
Ablabesmyia janta	—	—	26.9	1.24
Thienemannimyia grp.	—	—	12.6	0.58
Cricotopus bicinctus grp.	—	—	5.4	0.25
Nanocladius distinctus	—	—	12.6	0.58
Nanocladius crassicornus/rectinervis	—	—	1.8	0.08
Chironomus	—	—	1.8	0.08
Cryptochironomus	—	—	1.8	0.08
Dicrotendipes neomodestus	245.8	5.57	26.9	1.24
Dicrotendipes simpsoni	543.6	12.31	150.7	6.92
Endochironomus nigricans	12.6	0.28	102.3	4.70
Glyptotendipes	—	—	247.6	11.37
Phaenopsectra	12.6	0.28	—	—
Polypedilum flavum	—	—	73.6	3.38
Polypedilum halterale grp.	—	—	1.8	0.08
Polypedilum illinoense	25.1	0.57	26.9	1.24
Polypedilum scalaenum grp.	—	—	25.1	1.15
Stenochironomus	—	—	59.2	2.72
Rheotanytarsus	—	—	5.4	0.25
Ferrissia	—	—	3.6	0.16
TOTAL BENTHOS	4,415.1	100.00	2,178.0	100.00
TOTAL TAXA RICHNESS	13		32	
EPT TAXA RICHNESS	0		6	

TABLE 3-14. PETITE PONAR DENSITIES AT EACH SAMPLING STATION WITHIN THE SKOKIE RIVER, AUGUST 2001.

TAXA	32 LAKE COOK RD.		105 FRONTAGE RD.	
	#/m2	%	#/m2	%
Turbellaria	—	—	14.4	0.27
Oligochaeta	23,460.4	93.69	4,478.2	83.98
Caecidotea	35.9	0.14	7.2	0.13
Gammarus fasciatus	—	—	7.2	0.13
Caenis	—	—	50.2	0.94
Cheumatopsyche	—	—	7.2	0.13
Dubiraphia	—	—	50.2	0.94
Chironomidae	71.8	0.29	301.4	5.65
Procladius (Holotanypus)	107.6	0.43	294.2	5.52
Cryptochironomus	—	—	21.5	0.40
Dicrotendipes simpsoni	—	—	50.2	0.94
Polypedilum flavum	—	—	21.5	0.40
Polypedilum illinoense	—	—	21.5	0.40
Physella	143.5	0.57	—	—
Musculium transversum	430.6	1.72	—	—
Pisidium compressum	789.4	3.15	—	—
Lasmigona complanata	—	—	7.2	0.13
TOTAL BENTHOS	25,039.3	100.00	5,332.2	100.00
TOTAL TAXA RICHNESS	6		13	
EPT TAXA RICHNESS	0		2	

mandibles and involved larger than normal gaps between teeth (Köhn gaps), extra teeth, or missing teeth. Deformities of this nature have been linked to elevated levels of organochlorines, polynuclear aromatic hydrocarbons, and heavy metals (Bisthoven and Ollevier 1998, Bisthoven et al. 1998, Dermont 1991, Doherty et al. *in prep.*, Hudson and Ciborowski 1996a, Hudson and Ciborowski 1996b, Swansburg et al. 2002). A study of deformity levels at various reference sites throughout the Great Lakes found that background levels were 2.27 percent for *Procladius (Holotanypus)* and 1.38 percent for *Polypedilum* (Burt 1998). Hudson and Ciborowski (1996a) and Dermont (1991) suggest that an incidence of three percent is typical of reference conditions. Since deformity reference levels have not been defined for the waterways of the Chicago Metropolitan Area and given the relatively small sample size of target taxa, it is difficult to determine whether these levels represent an impact or background conditions.

The benthic community at both stations could be characterized as relatively pollution tolerant based on composition, relative abundance of tolerant taxa, and incidence of chironomid deformities (Tables 3-1 and 3-10). However, based on the substantially higher abundance of tolerant taxa such as Oligochaeta and *Dicrotendipes simpsoni* combined with the noticeably lower taxa richness and lack of EPT taxa, it appears that the benthic community at the upstream Station 32 is relatively more stressed compared to Station 105.

3.1.2.4 North Shore Channel

HD and Ponar samples from the four NSC stations (Stations 35, 102, 36, and 101) yielded a combined 20 total taxa (Tables 3-15 and 3-16). EPT taxa were absent from both the HD and Ponar Samples. HD total taxa richness was similar among Stations 35, 36, and 101 (9-11 taxa) but noticeably lower at Station 102 with only two taxa (Table 3-15). Total density was highest at Station 36 and lowest at Station 35 but varied considerably among the four stations largely depending on the abundance of Turbellaria, Oligochaeta, and *Dicrotendipes simpsoni*. Oligochaeta clearly was the dominant taxon at all the stations.

Like the HDs, Ponar total taxa richness was fairly similar among Stations 35, 36, and 101 ranging from five to nine taxa while Station 102 was represented by one midge taxon and Oligochaeta (Table 3-16). Total HD density was relatively similar between Stations 35 and 101 but substantially higher at Stations 102 and 36. This difference was almost exclusively due to variations in the abundance of Oligochaeta among the stations, which was the dominant taxon accounting for greater than 90 percent of the total density at all four stations.

No chironomid head capsule deformities were observed out of the more than 600 chironomids examined from the NSC samples. Nonetheless, the benthic community of the NSC could be characterized as moderately to highly stressed. This assertion is supported by the fact that of the 20 total taxa observed 11 are considered highly tolerant and tolerant taxa comprised between 82 and 100 percent of the benthic community at each station regardless of sample type (Table 3-1). However, based on the relatively low taxa richness combined with the relatively higher contribution of tolerant taxa, it appears the benthic community at Station 102 is more stressed compared to the three remaining stations sampled in the NSC.

TABLE 3-15. HESTER-DENDY DENSITIES AT EACH SAMPLING STATION WITHIN THE NORTH SHORE CHANNEL, AUGUST 2001.

TAXA	35 CENTRAL RD.		102 OAKTON ST.		36 TOUHY AVE.		101 FOSTER AVE.	
	#/m2	%	#/m2	%	#/m2	%	#/m2	%
Turbellaria	—	—	—	—	4,485.1	9.18	4,126.3	16.44
Oligochaeta	999.3	67.76	16,128.5	91.45	31,341.9	64.16	16,684.6	66.48
Helobdella	—	—	—	—	—	—	17.9	0.07
Helobdella stagnalis	17.9	1.22	—	—	—	—	—	—
Caecidotea	102.3	6.93	—	—	17.9	0.04	71.8	0.29
Gammarus fasciatus	93.3	6.33	—	—	143.5	0.29	340.9	1.36
Chironomidae	—	—	17.9	0.10	—	—	—	—
Cricotopus bicinctus grp.	—	—	—	—	484.4	0.99	—	—
Nanocladius distinctus	—	—	—	—	1,489.1	3.05	215.3	0.86
Nanocladius crassicornus/rectinervis	3.6	0.24	—	—	—	—	—	—
Dicrotendipes simpsoni	213.5	14.48	1,489.1	8.44	9,759.6	19.98	3,516.3	14.01
Glyptotendipes	—	—	—	—	376.7	0.77	35.9	0.14
Parachironomus	3.6	0.24	—	—	610.0	1.25	—	—
Polypedilum flavum	3.6	0.24	—	—	—	—	—	—
Polypedilum illinoense	—	—	—	—	71.8	0.15	—	—
Paratanytarsus	32.3	2.19	—	—	—	—	—	—
Menetus dilatatus	—	—	—	—	71.8	0.15	—	—
Ferrissia	—	—	—	—	—	—	89.7	0.36
Dreissena polymorpha	5.4	0.36	—	—	—	—	—	—
TOTAL BENTHOS	1,474.7	100.00	17,635.5	100.00	48,851.8	100.00	25,098.7	100.00
TOTAL TAXA RICHNESS	10		2		11		9	
EPT TAXA RICHNESS	0		0		0		0	

TABLE 3-16. PETITE PONAR DENSITIES AT EACH SAMPLING STATION WITHIN THE NORTH SHORE CHANNEL, AUGUST 2001.

TAXA	35 CENTRAL RD.		102 OAKTON ST.		36 TOUHY AVE.		101 FOSTER AVE.	
	#/m2	%	#/m2	%	#/m2	%	#/m2	%
Turbellaria	—	—	—	—	1,837.2	2.08	179.4	0.68
Oligochaeta	37,957.2	99.75	149,274.0	99.81	79,875.9	90.61	25,656.5	97.28
Helobdella stagnalis	7.2	0.02	—	—	—	—	—	—
Caecidotea	14.4	0.04	—	—	7.2	0.01	—	—
Gammarus fasciatus	7.2	0.02	—	—	71.8	0.08	143.5	0.54
Chironomidae	—	—	—	—	5,310.7	6.02	358.8	1.36
Procladius (Holotanypus)	7.2	0.02	287.1	0.19	—	—	—	—
Ablabesmyia mallochi	7.2	0.02	—	—	—	—	—	—
Cricotopus bicinctus grp.	—	—	—	—	114.8	0.13	—	—
Cricotopus sylvestris grp.	—	—	—	—	28.7	0.03	—	—
Nanocladius distinctus	—	—	—	—	43.1	0.05	—	—
Dicrotendipes simpsoni	—	—	—	—	251.2	0.28	—	—
Parachironomus	—	—	—	—	617.2	0.70	—	—
Dreissena polymorpha	50.2	0.13	—	—	—	—	35.9	0.14
TOTAL BENTHOS	38,050.5	100.00	149,561.1	100.00	88,157.8	100.00	26,374.1	100.00
TOTAL TAXA RICHNESS	7		2		9		5	
EPT TAXA RICHNESS	0		0		0		0	

3.1.2.5 North Branch of the Chicago River

The combined number of taxa collected in the HD and Ponar samples from the six NBCR stations (Stations 104, 34, 96, 37, 73, and 46) was 43 total taxa and four EPT taxa (Tables 3-17 and 3-18). HD total taxa richness was similar between the two upstream stations (Stations 104 and 34) with 23 to 26 taxa and substantially lower at the remaining four downstream stations (Stations 96, 37, 73, and 46) with five to 11 taxa (Table 3-17). Likewise, EPT taxa richness also decreased longitudinally from upstream than downstream. As with total and EPT taxa richness, total density was similar between Stations 104 and 34. However, density at the four downstream stations ranged from twice to four times as high compared to upstream. At Station 96, the higher density was primarily due to greater numbers of *Caecidotea* whereas higher numbers of Oligochaeta increased the density at the three remaining stations. Dominance was rather variable among the upstream NBCR stations. The midge *Polypedilum flavum*, Turbellaria, and *Caecidotea* were the dominant taxa at Stations 104, 34, and 96, respectively while the more tolerant Oligochaeta was the dominant taxa among the three downstream stations, which are in the section of the NCBR with a Secondary Contact use classification.

Ponar total taxa richness followed a trend similar to what was observed in the HD samples. Among the three upstream stations, total richness similar ranging from 15 to 19 taxa while the three downstream stations had between three and six total taxa (Table 3-18). Three EPT taxa were collected in the NBCR Ponars however; all were collected at the most upstream Station 104. Oligochaeta was the dominant taxon at all stations except for Station 96 where *Musculium transversum* was dominant. Total density was lowest at Station 96 and nearly 35 times greater at Station 73. As was the case at most of the stations sampled during 2001, density was largely dependent upon the abundance of Oligochaeta.

Chironomid head capsule deformities were observed only at Station 34 in both the HD and Ponar samples (Table 3-10). However, deformity analysis in the NBCR was problematic since all or most of the Chironomidae specimens in five of the 12 samples could not be accurately identified or completely examined due to their poor condition. Regardless, the incidence of deformity was fairly low for both sample types. In the Station 34 HD samples, one out of 187 chironomids examined was deformed while in the Ponar samples two specimens exhibited deformities out of 132 chironomids examined. The levels of total deformity incidence observed in the NBCR were both below background levels observed in the Great Lakes region (Burt 1998, Hudson and Ciborowski 1996a). That combined with the small sample size suggests that the deformity levels observed at Station 34 were insignificant.

Overall, the dominant taxon in three of the six HD samples and five of the six Ponar samples were tolerant (Table 3-1). In addition, 16 of the 43 taxa observed in the NBCR samples are considered highly tolerant. In both the HD and Ponar samples the quality of the macroinvertebrate community declined sequentially from upstream to downstream between Stations 104 and 96. However, based on the parameters analyzed, it appears that the benthic community at Stations 37, 73, and 46 are subject to greater stress than the three upstream stations.

TABLE 3-17. HESTER-DENDY DENSITIES AT EACH SAMPLING STATION WITHIN THE NORTH BRANCH CHICAGO RIVER, AUGUST 2001.

TAXA	104 GLENVIEW RD.		34 DEMPSTER ST.		96 ALBANY AVE.		37 WILSON AVE.		73 DIVERSEY PKWY.		46 GRAND AVE.	
	#/m2	%	#/m2	%	#/m2	%	#/m2	%	#/m2	%	#/m2	%
Hydra	--	--	1,026.2	17.32	--	--	--	--	53.8	0.51	--	--
Turbellaria	1,370.6	21.72	1,279.2	21.59	206.3	2.00	2,296.4	11.71	915.0	8.59	89.7	0.36
Oligochaeta	192.0	3.04	979.5	16.53	98.7	0.96	16,424.5	83.72	8,442.8	79.28	23,896.7	94.87
Helobdella	--	--	--	--	--	--	--	--	17.9	0.17	--	--
Helobdella triserialis	--	--	25.1	0.42	--	--	--	--	--	--	--	--
Erpobdella punctata punctata	--	--	5.4	0.09	--	--	--	--	--	--	--	--
Mooreobdella microstoma	--	--	--	--	--	--	--	--	35.9	0.34	--	--
Caecidotea	84.3	1.34	1,115.9	18.83	9,714.7	94.17	376.7	1.92	287.0	2.70	17.9	0.07
Gammarus fasciatus	--	--	--	--	--	--	--	--	53.8	0.51	179.4	0.71
Heptageniidae	59.2	0.94	--	--	--	--	--	--	--	--	--	--
Stenacron	17.9	0.28	19.7	0.33	--	--	--	--	--	--	--	--
Stenonema	89.7	1.42	--	--	--	--	--	--	--	--	--	--
Calopteryx	5.4	0.09	--	--	--	--	--	--	--	--	--	--
Argia	48.4	0.77	105.8	1.79	--	--	--	--	--	--	--	--
Cheumatopsyche	1,489.1	23.59	236.8	4.00	9.0	0.09	--	--	--	--	--	--
Hydropsyche betteni	17.9	0.28	1.8	0.03	--	--	--	--	--	--	--	--
Stenelmis	17.9	0.28	--	--	--	--	--	--	--	--	--	--
Stenelmis crenata grp.	--	--	10.8	0.18	--	--	--	--	--	--	--	--
Chironomidae	--	--	--	--	--	--	--	--	--	--	1,004.7	3.99
Procladius (Holotanypus)	--	--	19.7	0.33	--	--	--	--	--	--	--	--
Thienemannimyia grp.	120.2	1.90	--	--	107.6	1.04	--	--	--	--	--	--
Corynoneura	17.9	0.28	--	--	--	--	--	--	--	--	--	--
Cricotopus sylvestris grp.	--	--	7.2	0.12	--	--	--	--	--	--	--	--
Nanocladius distinctus	17.9	0.28	44.9	0.76	35.9	0.35	--	--	17.9	0.17	--	--
Nanocladius crassicornus/rectinervis	35.9	0.57	25.1	0.42	17.9	0.17	--	--	--	--	--	--
Rheocricotopus robacki	35.9	0.57	--	--	17.9	0.17	--	--	--	--	--	--
Cryptochironomus	--	--	12.6	0.21	--	--	--	--	--	--	--	--
Dicrotendipes neomodestus	17.9	0.28	57.4	0.97	--	--	--	--	--	--	--	--
Dicrotendipes simpsoni	17.9	0.28	107.6	1.82	--	--	484.4	2.47	753.5	7.08	--	--
Endochironomus nigricans	17.9	0.28	--	--	--	--	--	--	--	--	--	--
Glyptotendipes	--	--	10.8	0.18	--	--	--	--	53.8	0.51	--	--
Paracladopelma	--	--	5.4	0.09	--	--	--	--	--	--	--	--
Polypedilum flavum	2,357.4	37.35	93.3	1.57	44.9	0.43	--	--	--	--	--	--
Polypedilum illinoense	17.9	0.28	17.9	0.30	62.8	0.61	--	--	--	--	--	--
Polypedilum scalaenum grp.	238.6	3.78	705.1	11.90	--	--	--	--	--	--	--	--
Stenochironomus	17.9	0.28	--	--	--	--	--	--	--	--	--	--
Tanytarsus guerlus grp.	--	--	7.2	0.12	--	--	--	--	--	--	--	--
Ferrissia	--	--	--	--	--	--	35.9	0.18	17.9	0.17	--	--
Pelecypoda	5.4	0.09	--	--	--	--	--	--	--	--	--	--
Musculium transversum	--	--	1.8	0.03	--	--	--	--	--	--	--	--
Pisidium	--	--	3.6	0.06	--	--	--	--	--	--	--	--
TOTAL BENTHOS	6,311.4	100.00	5,925.7	100.00	10,315.8	100.00	19,617.9	100.00	10,649.4	100.00	25,188.4	100.00
TOTAL TAXA RICHNESS	23		26		10		5		11		5	
EPT TAXA RICHNESS	4		3		1		0		0		0	

TABLE 3-18. PETITE PONAR DENSITIES AT EACH SAMPLING STATION WITHIN THE NORTH BRANCH CHICAGO RIVER, AUGUST 2001.

TAXA	104 GLENVIEW RD.		34 DEMPSTER ST.		96 ALBANY AVE.		37 WILSON AVE.		73 DIVERSEY PKWY.		46 GRAND AVE.	
	#/m2	%	#/m2	%	#/m2	%	#/m2	%	#/m2	%	#/m2	%
Turbellaria	208.1	4.94	--	--	14.4	0.40	215.3	0.59	--	--	7.2	0.06
Plumatella	--	--	--	--	--	--	--	--	--	--	7.2	0.06
Oligochaeta	1,758.3	41.74	10,729.1	60.14	387.5	10.84	36,026.7	98.82	124,371.1	99.48	12,049.6	98.36
Helobdella triserialis	--	--	--	--	28.7	0.80	--	--	--	--	--	--
Mooreobdella microstoma	14.4	0.34	--	--	14.4	0.40	--	--	71.8	0.06	--	--
Caecidotea	7.2	0.17	50.2	0.28	14.4	0.40	--	--	--	--	--	--
Heptageniidae	7.2	0.17	--	--	--	--	--	--	--	--	--	--
Cheumatopsyche	445.0	10.56	--	--	28.7	0.80	--	--	--	--	--	--
Hydropsyche betteni	7.2	0.17	--	--	--	--	--	--	--	--	--	--
Macronychus glabratus	14.4	0.34	--	--	--	--	--	--	--	--	--	--
Stenelmis	--	--	35.9	0.20	--	--	--	--	--	--	--	--
Stenelmis crenata grp.	129.2	3.07	--	--	--	--	--	--	--	--	--	--
Chironomidae	--	--	--	--	--	--	215.3	0.59	574.1	0.46	114.8	0.94
Procladius (Holotanypus)	122.0	2.90	839.7	4.71	--	--	--	--	--	--	50.2	0.41
Thienemannimyia grp.	--	--	86.1	0.48	14.4	0.40	--	--	--	--	--	--
Cricotopus bicinctus grp.	--	--	--	--	14.4	0.40	--	--	--	--	--	--
Chironomus	7.2	0.17	78.9	0.44	--	--	--	--	--	--	--	--
Cryptochironomus	21.5	0.51	28.7	0.16	14.4	0.40	--	--	--	--	--	--
Dicrotendipes neomodestus	86.1	2.04	251.2	1.41	14.4	0.40	--	--	--	--	--	--
Dicrotendipes simpsoni	21.5	0.51	172.2	0.97	--	--	--	--	--	--	--	--
Glyptotendipes	--	--	--	--	--	--	--	--	--	--	14.4	0.12
Polypedilum flavum	983.2	23.34	86.1	0.48	--	--	--	--	--	--	--	--
Polypedilum illinoense	14.4	0.34	14.4	0.08	57.4	1.61	--	--	--	--	--	--
Polypedilum scalaenum grp.	165.1	3.92	5,246.1	29.40	244.0	6.83	--	--	--	--	--	--
Stenochironomus	--	--	14.4	0.08	--	--	--	--	--	--	--	--
Physella	--	--	--	--	14.4	0.40	--	--	--	--	--	--
Menetus dilatatus	--	--	--	--	14.4	0.40	--	--	--	--	--	--
Corbicula fluminea	--	--	--	--	--	--	--	--	--	--	7.2	0.06
Musculium transversum	193.8	4.60	136.4	0.76	2,382.6	66.67	--	--	--	--	--	--
Pisidium	7.2	0.17	--	--	28.7	0.80	--	--	--	--	--	--
Pisidium compressum	--	--	71.8	0.40	287.1	8.03	--	--	--	--	--	--
TOTAL BENTHOS	4,212.7	100.00	17,841.1	100.00	3,574.0	100.00	36,457.3	100.00	125,017.0	100.00	12,250.5	100.00
TOTAL TAXA RICHNESS	19		15		16		3		3		6	
EPT TAXA RICHNESS	3		0		1		0		0		0	

3.1.3 South Branch Chicago River and Chicago Sanitary and Ship Canal Watershed

Benthic macroinvertebrate sampling was conducted at three stations all within the Chicago Sanitary and Ship Canal (CSSC) (Table 2-1).

3.1.3.1 Chicago Sanitary and Ship Canal

Together, the HD and Ponar samples from the three CSSC stations (Stations 75, 41, and 92) yielded 19 total taxa and three EPT taxa (Tables 3-19 and 3-20). HD total taxa richness was similar between the two downstream stations (41 and 92) with 9 and 11 taxa and somewhat lower upstream (Station 75) with four taxa (Table 3-19). The two EPT taxa observed in the HD samples were both collected at Station 92. Total density was similar between Stations 75 and 92 but three to four times higher at Station 41. Density among the three stations primarily was driven by the abundance of Turbellaria, Oligochaeta, and *Dicrotendipes simpsoni*. However, Oligochaeta was the dominant taxon at all three stations accounting for 65 to 95 percent of the total density.

Ponar total taxa richness was identical between Stations 41 and 92 with 7 taxa (Table 3-20). Taxa richness in the Station 75 Ponars was equal to total HD taxa richness for that station. As with the HD samples, the only EPT taxon in the Ponars was observed at Station 92. Total density varied greatly among the three stations. However, Ponar density was again highest at Station 41. Oligochaeta was the dominant taxon and the difference in density among the three locations was almost exclusively dependent upon Oligochaeta abundance. Chironomid head capsule deformities were observed in the HD samples at two stations in the CSSC (Table 3-21). In both cases, *Dicrotendipes simpsoni* was the taxon exhibiting the deformities. In addition, at both stations the head capsule deformities only were observed in one or two specimens.

Given the relatively small sample size at Station 75 and the low number or lack of deformed specimens observed in the CSSC, it is very likely that these incidence levels are insignificant. The tolerant taxon Oligochaeta was dominant at all three stations for both sample types (Table 3-1). However, the density of Oligochaeta in the HD samples and total taxa richness for both sample types increased from upstream to downstream. Therefore, it appears that the upstream Station 75 is more stressed compared to Stations 41 and 92.

3.1.4 Des Plaines River Watershed

Sampling was conducted at six stations in the Des Plaines River watershed during 2001: one station in Higgins Creek, one station in Salt Creek, one station in the West Branch of the DuPage River (WB DuPage River), and three stations in the Des Plaines River (Table 2-1).

The benthic community in the Des Plaines River watershed exhibited a substantial amount of variability. The dominant taxon in the HD samples was different for nearly all of the waterways sampled. However, Oligochaeta was the dominant taxon in the majority of Ponar samples from the watershed. The incidence of chironomid deformities was generally low among stations in the Des Plaines watershed. However, the highest number of deformed specimens in 2001 was

TABLE 3-19. HESTER-DENDY DENSITIES AT EACH SAMPLING STATION WITHIN THE CHICAGO SANITARY AND SHIP CANAL, JULY-AUGUST 2001.

TAXA	75 CICERO AVE.		41 HARLEM AVE.		92 LOCKPORT	
	#/m2	%	#/m2	%	#/m2	%
Hydra	—	—	—	—	861.1	5.08
Turbellaria	—	—	2,260.5	4.41	1,130.2	6.67
Plumatella	—	—	1.8	0.00	—	—
Oligochaeta	11,130.2	94.80	43,164.7	84.27	11,042.3	65.20
Helobdella	—	—	—	—	35.9	0.21
Caecidotea	—	—	35.9	0.07	—	—
Gammarus fasciatus	—	—	215.3	0.42	1,193.0	7.04
Cyrnellus fraternus	—	—	—	—	17.9	0.11
Hydropsyche	—	—	—	—	9.0	0.05
Ablabesmyia janta	—	—	—	—	179.4	1.06
Cricotopus sylvestris grp.	—	—	53.8	0.11	—	—
Nanocladius distinctus	71.8	0.61	89.7	0.18	340.9	2.01
Dicrotendipes simpsoni	520.3	4.43	5,346.3	10.44	1,838.9	10.86
Parachironomus	—	—	53.8	0.11	—	—
Corbicula fluminea	17.9	0.15	—	—	287.0	1.69
TOTAL BENTHOS	11,740.2	100.00	51,221.7	100.00	16,935.8	100.00
TOTAL TAXA RICHNESS	4		9		11	
EPT TAXA RICHNESS	0		0		2	

TABLE 3-20. PETITE PONAR DENSITIES AT EACH SAMPLING STATION WITHIN THE CHICAGO SANITARY AND SHIP CANAL, JULY-AUGUST 2001.

TAXA	75 CICERO AVE.		41 HARLEM AVE.		92 LOCKPORT	
	#/m2	%	#/m2	%	#/m2	%
Turbellaria	—	—	861.2	1.36	—	—
Plumatella	—	—	7.2	0.01	—	—
Oligochaeta	2,626.6	97.34	61,719.1	97.38	28,670.7	93.41
Gammarus fasciatus	—	—	215.3	0.34	114.8	0.37
Cheumatopsyche	—	—	—	—	71.8	0.23
Procladius (Holotanypus)	43.1	1.60	—	—	968.8	3.16
Nanocladius distinctus	—	—	—	—	466.5	1.52
Chironomus	7.2	0.27	71.8	0.11	—	—
Dicrotendipes simpsoni	—	—	358.8	0.57	322.9	1.05
Polypedilum illinoense	—	—	143.5	0.23	—	—
Corbicula fluminea	21.5	0.80	—	—	78.9	0.26
TOTAL BENTHOS	2,698.4	100.00	63,376.9	100.00	30,694.5	100.00
TOTAL TAXA RICHNESS	4		7		7	
EPT TAXA RICHNESS	0		0		1	

Table 3-21. Chironomidae head capsule deformities observed in Hester-Dendy samples from the Chicago Sanitary and Ship Canal, July 2001.

	Hester-Dendy Sample	
Taxa	**C.S.S.C @ Cicero Sta. 75**	**C.S.S.C. @ Lockport Sta. 92**
Dicrotendipes simpsoni		
Number Examined	29	84
Percent Deformed	6.9	1.2
TOTAL SAMPLE		
Total Midges Examined	33	104
Percent Deformed	6.1	1.0

observed in Salt Creek. In addition, the highest total richness and highest EPT richness for any station were observed in the Des Plaines River watershed.

3.1.4.1 Higgins Creek

Combined, the HD and Ponar samples from the single station in Higgins Creek (Station 78) yielded 21 total taxa (Tables 3-22 and 3-23). Nine total taxa were observed in the HD samples while 18 taxa were present in the Ponar samples. Turbellaria was the dominant taxon in the HD samples while *Caecidotea* was the dominant in the Ponars. However, both taxa were abundant in each sample type. Total density was higher in the Ponar samples compared to the HDs but not dramatically.

No chironomid head capsule deformities were observed in Higgins Creek. Although highly tolerant taxa comprised one-third of the combined total taxa, these taxa represented less than ten percent of the total density for each sample type (Table 3-1). This suggests that despite the low richness in the HD samples, pollution type stress may be relatively low in Higgins Creek.

3.1.4.2 Salt Creek

HD and Ponar samples from the single station in Salt Creek (Station 18) yielded 38 total taxa and three EPT taxa (Tables 3-24 and 3-25). Total taxa richness ranged from 31 taxa in the HD samples to 20 taxa in the Ponar samples. EPT taxa were observed in both sample types with three and two EPT taxa being represented in the HD and Ponar samples, respectively. *Polypedilum flavum* was the dominant taxon in the HD samples whereas Oligochaeta was the dominant in the Ponars. Total density was very similar between the two sample types. Higher numbers of Turbellaria, *Cheumatopsyche*, *Polypedilum flavum*, and *Polypedilum illinoense* produced a greater density in the HD samples compared to the Ponars.

Chironomid head capsule deformities only were observed in the Ponar samples (Table 3-26). With seven malformed specimens, Salt Creek had the highest number of chironomids that exhibited deformities during 2001. In addition, missing or extra teeth were the most common deformities observed. All but one of the deformed specimens (11.3 percent) was *Procladius (Holotanypus)*, a highly tolerant taxa that has been studied extensively for deformity investigations (Burt 1998, Dorherty et al. *in prep.*, Warwick 1991, Warwick and Tisdale 1988). These studies found that background levels of incidence consistently ranged from 2.27 to 3.9 percent (Burt 1998, Dorherty et al. *in prep.*, Warwick 1991, Warwick and Tisdale 1988). Although reference levels are lacking for the waterways of the Chicago Metropolitan Area, percent incidence as described in the literature suggest that the deformity levels observed for *Procladius (Holotanypus)* in Salt Creek are above expected background conditions.

Results from the 2001 sampling of Salt Creek were mixed. Tolerant taxa comprised approximately 25 and 75 percent of the HD and Ponar total density (Table 3-1). This combined with the elevated incidence of deformity for *Procladius (Holotanypus)* as well as the high density of Oligochaeta in the Ponars suggests that the Salt Creek benthic community is moderately stressed. In contrast, the presence of perturbation sensitive EPT and Tanytarsini

TABLE 3-22. HESTER-DENDY DENSITIES AT SAMPLING STATION 78 WITHIN HIGGINS CREEK, JULY 2001.

TAXA	78 WILLE RD. #/m2	%
Turbellaria	14,036.6	80.72
Oligochaeta	986.7	5.67
Mooreobdella microstoma	35.9	0.21
Caecidotea	1,828.1	10.51
Orconectes virilis	17.9	0.10
Cricotopus sylvestris grp.	197.3	1.13
Nanocladius crassicornus/rectinervis	35.9	0.21
Dicrotendipes neomodestus	233.2	1.34
Paratanytarsus	17.9	0.10
TOTAL BENTHOS	17,389.7	100.00
TOTAL TAXA RICHNESS	9	
EPT TAXA RICHNESS	0	

TABLE 3-23. PETITE PONAR DENSITIES AT SAMPLING STATION 78 WITHIN HIGGINS CREEK, JULY 2001.

TAXA	78 WILLE RD. #/m2	%
Turbellaria	6,825.0	23.17
Oligochaeta	1,822.9	6.19
Erpobdella punctata punctata	7.2	0.02
Mooreobdella microstoma	466.5	1.58
Ostracoda	3,602.7	12.23
Caecidotea	16,197.7	54.98
Orconectes immunis	7.2	0.02
Enallagma	7.2	0.02
Bezzia	7.2	0.02
Tanypus	7.2	0.02
Thienemannimyia grp.	35.9	0.12
Cricotopus bicinctus grp.	114.8	0.39
Cricotopus sylvestris grp.	179.4	0.61
Chironomus	14.4	0.05
Cryptochironomus	14.4	0.05
Dicrotendipes neomodestus	35.9	0.12
Musculium transversum	35.9	0.12
Pisidium	78.9	0.27
TOTAL BENTHOS	29,460.1	100.00
TOTAL TAXA RICHNESS	18	
EPT TAXA RICHNESS	0	

TABLE 3-24. HESTER-DENDY DENSITIES AT SAMPLING STATION 18 WITHIN SALT CREEK, JULY 2001.

TAXA	18 DEVON AVE. #/m2	%
Turbellaria	1,130.2	7.07
Oligochaeta	1,148.2	7.18
Caecidotea	35.9	0.22
Hydracarina	17.9	0.11
Tricorythodes	35.9	0.22
Enallagma	17.9	0.11
Cheumatopsyche	2,942.2	18.41
Hydroptila	53.8	0.34
Chaoborus	17.9	0.11
Procladius (Holotanypus)	107.6	0.67
Ablabesmyia janta	340.9	2.13
Ablabesmyia mallochi	125.6	0.79
Thienemannimyia grp.	879.1	5.50
Thienemanniella xena	394.7	2.47
Cricotopus tremulus grp.	179.4	1.12
Cricotopus bicinctus grp.	269.1	1.68
Cricotopus sylvestris grp.	35.9	0.22
Nanocladius distinctus	125.6	0.79
Nanocladius crassicornus/rectinervis	466.5	2.92
Dicrotendipes neomodestus	71.8	0.45
Dicrotendipes simpsoni	107.6	0.67
Endochironomus nigricans	161.5	1.01
Polypedilum flavum	4,395.4	27.50
Polypedilum illinoense	2,134.9	13.36
Polypedilum scalaenum grp.	179.4	1.12
Stenochironomus	71.8	0.45
Paratanytarsus	71.8	0.45
Tanytarsus guerlus grp.	394.7	2.47
Hemerodromia	17.9	0.11
Physella	17.9	0.11
Menetus dilatatus	35.9	0.22
TOTAL BENTHOS	15,984.9	100.00
TOTAL TAXA RICHNESS	31	
EPT TAXA RICHNESS	3	

TABLE 3-25. PETITE PONAR DENSITIES AT SAMPLING STATION 18 WITHIN SALT CREEK, JULY 2001.

TAXA	18 DEVON AVE. #/m2	%
Turbellaria	7.2	0.05
Oligochaeta	8,899.0	65.30
Hydracarina	7.2	0.05
Tricorythodes	7.2	0.05
Cheumatopsyche	64.6	0.47
Dubiraphia	64.6	0.47
Chaoborus	437.8	3.21
Procladius (Holotanypus)	516.7	3.79
Chironomus	64.6	0.47
Cladopelma	35.9	0.26
Cryptochironomus	308.6	2.26
Dicrotendipes neomodestus	208.1	1.53
Paracladopelma	57.4	0.42
Polypedilum halterale grp.	258.4	1.90
Polypedilum illinoense	28.7	0.21
Polypedilum scalaenum grp.	538.2	3.95
Cladotanytarsus mancus grp.	1,557.3	11.43
Tanytarsus guerlus grp.	301.4	2.21
Menetus dilatatus	14.4	0.11
Corbicula fluminea	251.2	1.84
TOTAL BENTHOS	13,628.4	100.00
TOTAL TAXA RICHNESS	20	
EPT TAXA RICHNESS	2	

Table 3-26. Chironomidae head capsule deformities observed in Hester-Dendy and Ponar samples from the Des Plaines River watershed, July 2001.

Taxa	Hester-Dendy Sample	Ponar Samples	
	Des Plaines R. @ Material Service Rd. Sta. 91	Salt Cr. @ Devon Sta. 18	Des Plaines R. @ Ogden Sta. 22
Procladius (Holotanypus)			
Number Examined	--	53	5
Percent Deformed	--	11.3	0.0
Chironomus			
Number Examined	--	3	7
Percent Deformed	--	0.0	14.2
Dicrotendipes neomodestus			
Number Examined	--	7	1
Percent Deformed	--	14.2	0.0
Polypedilum flavum			
Number Examined	177	--	2
Percent Deformed	0.6	--	0.0
TOTAL SAMPLE			
Total Midges Examined	187	196	157
Percent Deformed	0.5	3.6	0.6

midge taxa as well as the relatively high taxa richness observed in both the HDs and Ponars indicates a healthier benthic assemblage compared to several of the stations surveyed in 2001.

3.1.4.3 West Branch of the DuPage River

The benthic macroinvertebrate community in the WB DuPage River at Station 64 was represented by 31 total taxa and three EPT taxa in the HD and Ponar samples (Tables 3-27 and 3-28). The HD and Ponar samples yielded similar numbers of total taxa with 26 and 21 taxa, respectively. EPT taxa richness was slightly higher in the HD samples with three taxa while a single EPT taxon was observed in the Ponars. The dominant taxa in the HD samples were the highly tolerant taxon *Glyptotendipes*, the relatively pollution sensitive *Cheumatopsyche*, and the facultative Turbellaria. In the Ponar samples, the highly tolerant taxon Oligochaeta was clearly the dominant. Total density was higher in the Ponar samples compared to the HDs primarily due to the elevated abundance of Oligochaeta.

No chironomid head capsule deformities were observed in the WB DuPage River. However, tolerant taxa comprised 42 and 91 percent of the total density in the HDs and Ponars, respectively (Table 3-1). Despite the relatively high taxa richness in each sample type and the presence of some EPT taxa, based on the richness and relative abundance of tolerant taxa in the samples, it is reasonable to characterize the WB DuPage River benthic community as slightly to moderately stressed.

3.1.4.4 Des Plaines River

Combined, the HD and Ponar samples from the three Des Plaines River stations (Stations 13, 22, and 91) yielded 73 total taxa and 17 EPT taxa (Tables 3-29 and 3-30). These were the highest richness values observed among all the waterways sampled in 2001. HD total taxa richness decreased longitudinally upstream to downstream among the three stations from 39 taxa at Station 13 to 16 taxa at Station 91 (Table 3-29). Likewise, EPT taxa richness was highest at the upstream Station 13 with 15 taxa compared to eight EPT taxa at both downstream Stations 22 and 91. The HD richness values observed at Station 13 were highest observed among all the stations sampled during 2001. The dominant taxon at Station 13 was the relatively pollution sensitive midge *Rheotanytarsus*. The pollution sensitive EPT taxon *Cheumatopsyche* was relatively common at all three stations and was the dominant taxon at Stations 22 and 91. Total density was nearly identical at Stations 13 and 91but over seven times lower at Station 22. The cause for decline in density at Station 22 was attributable to lower abundance of Turbellaria, *Cheumatopsyche*, *Polypedilum flavum*, and/or *Rheotanytarsus*.

Ponar total taxa richness was similar at Stations 13 and 22 with 27 and 32 taxa, respectively and slightly lower at Station 91 with 21 taxa (Table 3-30). EPT taxa richness decreased upstream to downstream with six EPT at Station 13 and one EPT taxa at Station 91. The dominant taxon at Station 13 was *Caecidotea* while Oligochaeta was the dominant taxon at Stations 22 and 91. The tolerant taxa Oligochaeta and *Cryptochironomus* as well as the relatively pollution sensitive *Tanytarsus guerlus* grp. also were well represented at Station 13. In addition, *Cryptochironomus* and *Polypedilum scalaenum* grp. also were noticeably common at Station 22. However, except for Oligochaeta, no other taxon was represented by more than three percent at Station 91. Total

TABLE 3-27. HESTER-DENDY DENSITIES AT SAMPLING STATION 64 WITHIN THE WEST BRANCH DUPAGE RIVER, JULY 2001.

TAXA	64 LAKE ST. #/m2	%
Turbellaria	2,565.5	19.07
Plumatella	3.6	0.03
Oligochaeta	855.8	6.36
Baetis intercalaris	39.5	0.29
Argia	17.9	0.13
Enallagma	1.8	0.01
Cheumatopsyche	3,143.2	23.36
Hydroptila	93.3	0.69
Procladius (Holotanypus)	21.5	0.16
Thienemannimyia grp.	773.2	5.75
Thienemanniella xena	89.7	0.67
Cricotopus bicinctus grp.	143.5	1.07
Cricotopus sylvestris grp.	21.5	0.16
Nanocladius distinctus	143.5	1.07
Nanocladius crassicornus/rectinervis	389.3	2.89
Cryptochironomus	53.8	0.40
Dicrotendipes neomodestus	200.9	1.49
Dicrotendipes simpsoni	265.5	1.97
Endochironomus nigricans	111.2	0.83
Glyptotendipes	3,335.1	24.79
Polypedilum flavum	177.6	1.32
Polypedilum illinoense	742.7	5.52
Polypedilum scalaenum grp.	165.1	1.23
Simulium	62.8	0.47
Hemerodromia	17.9	0.13
Menetus dilatatus	17.9	0.13
TOTAL BENTHOS	13,453.5	100.00
TOTAL TAXA RICHNESS	26	
EPT TAXA RICHNESS	3	

TABLE 3-28. PETITE PONAR DENSITIES AT SAMPLING STATION 64 WITHIN THE WEST BRANCH DUPAGE RIVER, JULY 2001.

TAXA	64 LAKE ST. #/m2	%
Turbellaria	258.4	1.28
Oligochaeta	16,893.8	83.39
Mooreobdella microstoma	21.5	0.11
Cheumatopsyche	93.3	0.46
Berosus	7.2	0.04
Procladius (Holotanypus)	14.4	0.07
Thienemannimyia grp.	50.2	0.25
Cricotopus bicinctus grp.	28.7	0.14
Cricotopus sylvestris grp.	107.6	0.53
Nanocladius distinctus	43.1	0.21
Cryptochironomus	538.2	2.66
Dicrotendipes neomodestus	14.4	0.07
Dicrotendipes simpsoni	64.6	0.32
Glyptotendipes	473.7	2.34
Paracladopelma	28.7	0.14
Polypedilum flavum	308.6	1.52
Polypedilum illinoense	258.4	1.28
Polypedilum scalaenum grp.	724.8	3.58
Simulium	150.7	0.74
Corbicula fluminea	107.6	0.53
Musculium transversum	71.8	0.35
TOTAL BENTHOS	20,259.6	100.00
TOTAL TAXA RICHNESS	21	
EPT TAXA RICHNESS	1	

TABLE 3-29. HESTER-DENDY DENSITIES AT EACH SAMPLING STATION WITHIN THE DES PLAINES RIVER, JULY 2001.

TAXA	13 LAKE COOK RD.		22 OGDEN AVE.		91 MATERIAL SERVICE RD.	
	#/m2	%	#/m2	%	#/m2	%
Hydra	3.6	0.02	--	--	--	--
Turbellaria	428.8	2.87	19.7	1.15	3,310.0	21.34
Plumatella	1.8	0.01	--	--	--	--
Oligochaeta	50.2	0.34	220.7	12.81	358.8	2.31
Caecidotea	--	--	5.4	0.31	--	--
Gammarus fasciatus	3.6	0.02	--	--	--	--
Hydracarina	5.4	0.04	--	--	--	--
Isonychia	35.9	0.24	--	--	--	--
Baetis intercalaris	663.8	4.44	30.5	1.77	44.9	0.29
Pseudocloeon ephippiatum	1.8	0.01	--	--	--	--
Leucrocuta	57.4	0.38	35.9	2.08	--	--
Heptagenia	28.7	0.19	--	--	--	--
Stenacron	78.9	0.53	104.1	6.04	9.0	0.06
Stenonema	--	--	30.5	1.77	--	--
Stenonema integrum	220.7	1.47	--	--	--	--
Stenonema terminatum	543.6	3.63	--	--	--	--
Tricorythodes	188.4	1.26	17.9	1.04	26.9	0.17
Argia	--	--	3.6	0.21	--	--
Cyrnellus fraternus	3.6	0.02	--	--	--	--
Cheumatopsyche	2,865.1	19.15	495.2	28.75	5,660.2	36.50
Hydropsyche betteni	--	--	7.2	0.42	9.0	0.06
Hydropsyche orris	--	--	--	--	349.8	2.26
Hydropsyche simulans	272.7	1.82	--	--	26.9	0.17
Hydropsyche bidens	615.4	4.11	--	--	--	--
Ceratopsyche morosa	253.0	1.69	25.1	1.46	9.0	0.06
Potamyia flava	71.8	0.48	--	--	--	--
Petrophila	--	--	--	--	17.9	0.12
Dubiraphia	3.6	0.02	--	--	--	--
Macronychus glabratus	55.6	0.37	7.2	0.42	--	--
Stenelmis crenata grp.	16.1	0.11	1.8	0.10	17.9	0.12
Procladius (Holotanypus)	21.5	0.14	1.8	0.10	--	--
Ablabesmyia janta	21.5	0.14	--	--	--	--
Ablabesmyia mallochi	--	--	1.8	0.10	--	--
Nilotanypus fimbriatus	21.5	0.14	19.7	1.15	--	--
Thienemannimyia grp.	192.0	1.28	70.0	4.06	--	--
Corynoneura	--	--	10.8	0.63	--	--
Thienemanniella xena	64.6	0.43	5.4	0.31	--	--
Thienemanniella similis	--	--	5.4	0.31	--	--
Cricotopus sylvestris grp.	86.1	0.58	--	--	--	--
Nanocladius distinctus	--	--	41.3	2.40	134.6	0.87
Nanocladius crassicornus/rectinervis	64.6	0.43	--	--	125.6	0.81
Rheocricotopus robacki	64.6	0.43	14.4	0.83	--	--
Chironomus	21.5	0.14	--	--	--	--
Cryptochironomus	--	--	5.4	0.31	--	--
Dicrotendipes neomodestus	21.5	0.14	--	--	--	--
Endochironomus nigricans	86.1	0.58	--	--	--	--
Glyptotendipes	193.8	1.30	--	--	35.9	0.23
Paracladopelma	--	--	5.4	0.31	--	--
Polypedilum fallax grp.	--	--	16.1	0.94	--	--
Polypedilum flavum	1,980.6	13.24	235.0	13.65	5,373.2	34.64
Polypedilum illinoense	--	--	1.8	0.10	--	--
Polypedilum scalaenum grp.	--	--	84.3	4.90	--	--
Rheotanytarsus	5,649.4	37.76	86.1	5.00	--	--
Simulium	1.8	0.01	--	--	--	--
Pleuroceridae	--	--	1.8	0.10	--	--
Ferrissia	--	--	111.2	6.46	--	--
TOTAL BENTHOS	14,960.5	100.00	1,722.3	100.00	15,509.5	100.00
TOTAL TAXA RICHNESS	39		32		16	
EPT TAXA RICHNESS	15		8		8	

TABLE 3-30. PETITE PONAR DENSITIES AT EACH SAMPLING STATION WITHIN THE DES PLAINES RIVER, JULY 2001.

TAXA	13 LAKE COOK RD.		22 OGDEN AVE.		91 MATERIAL SERVICE RD.	
	#/m2	%	#/m2	%	#/m2	%
Turbellaria	86.1	2.06	258.4	3.86	86.1	1.03
Urnatella gracilis	7.2	0.17	--	--	--	--
Oligochaeta	732.0	17.53	2,985.5	44.59	7,191.0	86.38
Helobdella stagnalis	--	--	7.2	0.11	57.4	0.69
Helobdella triserialis	--	--	7.2	0.11	--	--
Mooreobdella microstoma	--	--	7.2	0.11	14.4	0.17
Ostracoda	64.6	1.55	--	--	--	--
Caecidotea	868.4	20.79	100.5	1.50	28.7	0.34
Gammarus fasciatus	--	--	14.4	0.21	258.4	3.10
Baetis intercalaris	7.2	0.17	35.9	0.54	--	--
Stenonema	35.9	0.86	--	--	--	--
Tricorythodes	43.1	1.03	236.8	3.54	--	--
Stylurus	7.2	0.17	--	--	--	--
Palmacorixa	--	--	--	--	57.4	0.69
Cyrnellus fraternus	7.2	0.17	--	--	--	--
Cheumatopsyche	251.2	6.01	107.6	1.61	71.8	0.86
Potamyia flava	28.7	0.69	--	--	--	--
Dubiraphia	78.9	1.89	--	--	--	--
Macronychus glabratus	--	--	7.2	0.11	--	--
Stenelmis crenata grp.	--	--	78.9	1.18	86.1	1.03
Natarsia sp. A	--	--	--	--	14.4	0.17
Procladius (Holotanypus)	--	--	43.1	0.64	114.8	1.38
Ablabesmyia mallochi	--	--	28.7	0.43	--	--
Thienemannimyia grp.	43.1	1.03	172.2	2.57	--	--
Corynoneura	--	--	7.2	0.11	--	--
Thienemanniella similis	--	--	7.2	0.11	--	--
Nanocladius	--	--	7.2	0.11	--	--
Nanocladius crassicornus/rectinervis	100.5	2.41	--	--	--	--
Chironomus	--	--	57.4	0.86	14.4	0.17
Cladopelma	35.9	0.86	--	--	--	--
Cryptochironomus	660.3	15.81	488.0	7.29	14.4	0.17
Dicrotendipes neomodestus	28.7	0.69	7.2	0.11	14.4	0.17
Dicrotendipes simpsoni	64.6	1.55	--	--	--	--
Glyptotendipes	28.7	0.69	--	--	14.4	0.17
Microtendipes	129.2	3.09	--	--	--	--
Paracladopelma	229.7	5.50	14.4	0.21	--	--
Polypedilum fallax grp.	--	--	14.4	0.21	--	--
Polypedilum flavum	--	--	35.9	0.54	14.4	0.17
Polypedilum halterale grp.	--	--	143.5	2.14	--	--
Polypedilum illinoense	100.5	2.41	--	--	--	--
Polypedilum scalaenum grp.	64.6	1.55	1,550.2	23.15	186.6	2.24
Cladotanytarsus vanderwulpi grp.	--	--	28.7	0.43	--	--
Rheotanytarsus	--	--	21.5	0.32	--	--
Tanytarsus guerlus grp.	380.4	9.11	--	--	--	--
Amnicola	--	--	--	--	14.4	0.17
Pleuroceridae	--	--	14.4	0.21	28.7	0.34
Corbicula fluminea	28.7	0.69	7.2	0.11	28.7	0.34
Musculium	--	--	21.5	0.32	--	--
Musculium transversum	--	--	--	--	14.4	0.17
Pisidium	64.6	1.55	179.4	2.68	--	--
TOTAL BENTHOS	4,176.8	100.00	6,695.8	100.00	8,324.9	100.00
TOTAL TAXA RICHNESS	27		32		21	
EPT TAXA RICHNESS	6		3		1	

density was lowest at Station 13 and increased longitudinally to Station 91. Elevated numbers of Oligochaeta and/or *Polypedilum scalaenum* grp. contributed the most to the higher densities observed at Stations 22 and 91.

Chironomid head capsule deformities were observed in the HD sample from Station 91 and in the Ponar sample from Station 22. However, in both cases, only one specimen exhibited a deformity. Therefore, the percent incidence of deformity observed in these two samples is likely insignificant.

Based on relative abundance, tolerant taxa were a relatively minor component in the HD samples from Stations 13 and 91 accounting for 2.5 and 3.4 percent of the total density at those stations compared to 23.1 percent at Station 22 (Table 3-1). In contrast, tolerant taxa were a relatively more important component in the Ponar samples at all three stations. However, tolerant taxa relative abundance in the Ponars increased sequentially in a longitudinal manner from 38 percent at Station 13 to 88.6 percent at Station 91. This combined with the upstream to downstream decline of HD total taxa richness and EPT richness for both sample types suggests that benthic community quality and decreases and environmental stress increases in a downstream manner between Station 13 and Station 91.

3.2 2002 Benthic Macroinvertebrate Results

During 2002, 42 HD samples and 45 Ponar samples were collected from 23 stations in 13 different waterways (Table 2-2). Combined, these samples yielded similar results compared to 2001 with 90 total taxa and 19 EPT taxa (Table 3-1). As in 2001, Chironomidae was the most taxa rich group with 39 taxa followed by Trichoptera and Ephemeroptera with 10 and 9 taxa, respectively.

3.2.1 Calumet Watershed

The same three stations in the Calumet watershed that were surveyed during 2001 were sampled again during 2002: one station in the Calumet River, one station in the Little Calumet River, and one station in the Cal-Sag (Table 2-2).

As in 2001, zebra mussel was the dominant taxon in the 2002 HD samples while Oligochaeta was the dominant taxon in the 2002 Ponar samples from the Calumet watershed. In addition, Chironomidae head capsule deformities again were absent in the 2002 collections. However, contrary to 2001, tolerant taxa were generally not as common in 2002 representing 50 percent or less of the taxa richness at each station.

3.2.1.1 Calumet River

Combined, the HD and Ponar samples from the single station in the Calumet River (Station 55) yielded 12 total taxa and one EPT taxon (Tables 3-31 and 3-32). Six total taxa and one EPT taxon were observed in the HD samples while nine total taxa were present in the Ponar samples. Total density in the HD samples was nearly considerably higher than in the Ponar samples due to the extreme abundance of zebra mussels (*Dreissena polymorpha*) (Table 3-31). Zebra mussel

TABLE 3-31. HESTER-DENDY DENSITIES AT SAMPLING STATION 55 WITHIN THE CALUMET RIVER, SEPTEMBER 2002.

TAXA	55 130TH ST. #/m2	%
Hydra	179.4	0.12
Oligochaeta	1,435.2	0.98
Cyrnellus fraternus	1.8	0.00
Ablabesmyia janta	179.4	0.12
Dicrotendipes simpsoni	538.2	0.37
Dreissena polymorpha	143,882.3	98.40
TOTAL BENTHOS	146,216.4	100.00
TOTAL TAXA RICHNESS	6	
EPT TAXA RICHNESS	1	

TABLE 3-32. PETITE PONAR DENSITIES AT SAMPLING STATION 55 WITHIN THE CALUMET RIVER, SEPTEMBER 2002.

TAXA	55 130TH ST. #/m2	%
Oligochaeta	811.0	61.75
Caecidotea	114.8	8.74
Procladius (Holotanypus)	14.4	1.09
Coelotanypus	21.5	1.64
Ablabesmyia janta	7.2	0.55
Cryptochironomus	14.4	1.09
Polypedilum halterale grp.	7.2	0.55
Amnicola	7.2	0.55
Dreissena polymorpha	315.8	24.04
TOTAL BENTHOS	1,313.3	100.00
TOTAL TAXA RICHNESS RICHNESS	9	
EPT TAXA RICHNESS	0	

was the most dominant HD taxon, representing over 98 percent of the total density. All the remaining taxa observed in the HD samples were individually represented by less than one percent of the total density. In contrast to the HD samples, Oligochaeta was the most dominant taxon by percent in the Ponars (Table 3-32). However, *Caecidotea* and *D. polymorpha* also were well represented in the Ponar samples.

No Chironomidae head capsule deformities were observed in either the HD or Ponar samples. Based on the relatively low taxa richness in both sample types, the fact that tolerant taxa comprised greater than 60 percent of the total density in the Ponars (Table 3-1), and tolerant taxa comprised a third of the total richness, it reasonable to characterize the benthic community at Station 55 in the Calumet River as moderately to highly stressed.

3.2.1.2 Little Calumet River

The HD and Ponar samples from the single station in the Little Calumet River (Station 76) yielded 13 total taxa and one EPT taxon (Tables 3-33 and 3-34). Total taxa richness in the HD samples was three times higher compared to the Ponars with 12 and 4 taxa being collected, respectively. The single EPT taxon *Cyrnellus fraternus* was observed in the HD samples. As was the case for the Calumet River, zebra mussel was the dominant taxon in the HD samples while Oligochaeta was the dominant in the Ponars. In addition, the tolerant taxon *Dicrotendipes simpsoni* also was common in both sample types. Again, primarily due to the abundance of *Dreissena polymorpha*, HD total density was several orders of magnitude higher than the total Ponar density.

As with the Calumet River samples, no Chironomidae head capsule deformities were observed in either the HD or Ponar samples. However, nearly half of the taxa represented in the HD and Ponar samples combined are considered highly tolerant of pollution indicating a moderately to highly stressed benthic assemblage (Table 3-1).

3.2.1.3 Calumet-Saginaw Channel

Together, the HD and Ponar samples from the single station in the Cal-Sag (Station 59) combined to yield 15 total taxa and one EPT taxon (Tables 3-35 and 3-36). All 15 total taxa and the one EPT taxon were observed in the HD samples compared to six total taxa and no EPT taxa in the Ponar samples. Zebra mussel and Oligochaeta were, again the two dominant taxa in the HD and Ponar samples, respectively. Likewise, HD total density was considerably higher compared to Ponar total density. However, although the difference between the two sample types was largely driven by *Dreissena polymorpha* abundance in the HDs, the tolerant taxa Oligochaeta and *Dicrotendipes simpsoni* also were relatively common in the HD samples.

Like the other two stations in the watershed, no Chironomidae head capsule deformities were observed in either the HD or Ponar samples. The abundance of tolerant taxa combined in both sample types together with the low density of pollution sensitive taxa (i.e., EPT) suggests that the benthic community at Station 59 in the Cal-Sag is moderately stressed (Table 3-1).

TABLE 3-33. HESTER-DENDY DENSITIES AT SAMPLING STATION 76 WITHIN THE LITTLE CALUMET RIVER, SEPTEMBER 2002.

TAXA	76 HALSTED ST. #/m2	%
Turbellaria	358.8	1.34
Oligochaeta	125.6	0.47
Gammarus fasciatus	520.3	1.94
Argia	35.9	0.13
Cyrnellus fraternus	35.9	0.13
Ablabesmyia janta	89.7	0.33
Nanocladius distinctus	53.8	0.20
Dicrotendipes simpsoni	1,560.8	5.82
Glyptotendipes	35.9	0.13
Menetus dilatatus	358.8	1.34
Ferrissia	143.5	0.53
Dreissena polymorpha	23,519.9	87.63
TOTAL BENTHOS	26,838.9	100.00
TOTAL TAXA RICHNESS	12	
EPT TAXA RICHNESS	1	

TABLE 3-34. PETITE PONAR DENSITIES AT SAMPLING STATION 76 WITHIN THE LITTLE CALUMET RIVER, SEPTEMBER 2002.

TAXA	76 HALSTED ST. #/m2	%
Oligochaeta	602.8	88.42
Gammarus fasciatus	7.2	1.05
Chironomidae	7.2	1.05
Dicrotendipes simpsoni	21.5	3.16
Corbicula fluminea	43.1	6.32
TOTAL BENTHOS	681.8	100.00
TOTAL TAXA RICHNESS RICHNESS	4	
EPT TAXA RICHNESS	0	

TABLE 3-35. HESTER-DENDY DENSITIES AT SAMPLING STATION 59 WITHIN THE CAL-SAG CHANNEL, SEPTEMBER 2002.

TAXA	59 CICERO AVE. #/m2	%
Hydra	17.9	0.15
Turbellaria	17.9	0.15
Oligochaeta	1,444.2	11.90
Caecidotea	9.0	0.07
Gammarus fasciatus	53.8	0.44
Argia	9.0	0.07
Cyrnellus fraternus	35.9	0.30
Ablabesmyia janta	7.2	0.06
Ablabesmyia mallochi	53.8	0.44
Nanocladius distinctus	491.6	4.05
Dicrotendipes neomodestus	14.4	0.12
Dicrotendipes simpsoni	2,335.8	19.24
Glyptotendipes	50.2	0.41
Corbicula fluminea	17.9	0.15
Dreissena polymorpha	7,579.8	62.44
TOTAL BENTHOS	12,138.5	100.00
TOTAL TAXA RICHNESS	15	
EPT TAXA RICHNESS	1	

TABLE 3-36. PETITE PONAR DENSITIES AT SAMPLING STATION 59 WITHIN THE CAL-SAG CHANNEL, SEPTEMBER 2002.

TAXA	59 CICERO AVE. #/m2	%
Hydra	7.2	0.71
Oligochaeta	846.8	83.69
Gammarus fasciatus	7.2	0.71
Nanocladius distinctus	35.9	3.55
Corbicula fluminea	21.5	2.13
Dreissena polymorpha	93.3	9.22
TOTAL BENTHOS	1,011.9	100.00
TOTAL TAXA RICHNESS RICHNESS	6	
EPT TAXA RICHNESS	0	

3.2.2 North Branch Chicago River Watershed

Sampling was conducted at three stations in the North Branch Chicago River watershed during 2002: one station in the NSC and two stations in the NBCR (Table 2-2).

Contrary to 2001, dominance in the 2002 HD samples varied by station. However, Oligochaeta was the dominant taxon in the Ponar samples at two of the three stations in 2002. Although chironomid head capsule deformities were observed only at one station in the watershed, the level of incidence was the highest observed among any station sampled in either 2001 or 2002.

3.2.2.1 North Shore Channel

The HD and Ponar samples from the single station in the NSC (Station 36) yielded 15 total taxa and two EPT taxa combined (Tables 3-37 and 3-38). All 15 total taxa including the two EPT taxa were observed in the HD samples compared to seven total taxa and no EPT taxa in the Ponars. Turbellaria was the dominant taxon in the HD samples and Oligochaeta was the dominant taxon in Ponar samples. Total density in the Ponar samples was considerably higher than in the HD samples exclusively due to the abundance of Oligochaeta, which comprised over 99 percent of the total density in the Ponar samples compared to 30 percent in the HDs.

No Chironomidae head capsule deformities were observed in either the HD or Ponar samples. However, over half of the total taxa collected in the HD samples and all but one of the taxa observed in the Ponars were highly tolerant taxa. In addition, based on density, tolerant taxa were a major component of the benthos in the HDs and the dominant component of the benthos in the Ponars (Table 3-1). As such, it appears the benthic community at Station 36 in the NSC is moderately stressed.

3.2.2.2 North Branch of the Chicago River

The combined number of taxa collected in the HD and Ponar samples from the two NBCR stations (Stations 96 and 46) was 39 total taxa and four EPT taxa (Tables 3-39 and 3-40). HD total taxa richness was twice as high at the upstream Station 96 (26 taxa) compared to the 13 taxa observed at Station 46 (Table 3-39). In addition, the four EPT taxa observed in the NBCR only were collected at Station 96. Turbellaria and *Caecidotea* were the dominant taxa at Station 96 representing 47 and 42 percent of the total density. In contrast, the highly tolerant taxon Oligochaeta clearly was the dominant taxon at Station 46 representing 83 percent of the total density. Due to the higher abundance of Oligochaeta, total density was over three times higher at Station 46 compared to Station 96.

As with the HD samples, Ponar total taxa richness was four times higher at Station 96 compared to Station 46 with 16 and four total taxa, respectively (Table 3-40). No EPT taxa were collected in the Ponar samples at either station. The fingernail clam *Musculium transversum* was dominant taxon at Station 96 whereas Oligochaeta comprised nearly 100 percent of the total benthos at Station 46. The relationship between the two stations for Ponar total density was

TABLE 3-37. HESTER-DENDY DENSITIES AT SAMPLING STATION 36 WITHIN THE NORTH SHORE CHANNEL, JULY 2002.

TAXA	36 TOUHY AVE. #/m2	%
Turbellaria	8,076.8	65.86
Oligochaeta	3,674.2	29.96
Caecidotea	35.9	0.29
Cyrnellus fraternus	17.9	0.15
Cheumatopsyche	3.6	0.03
Thienemannimyia grp.	3.6	0.03
Cricotopus bicinctus grp.	10.8	0.09
Cricotopus sylvestris grp.	21.5	0.18
Nanocladius distinctus	32.3	0.26
Dicrotendipes neomodestus	3.6	0.03
Dicrotendipes simpsoni	258.3	2.11
Glyptotendipes	14.4	0.12
Parachironomus	89.7	0.73
Polypedilum flavum	3.6	0.03
Menetus dilatatus	17.9	0.15
TOTAL BENTHOS	12,264.1	100.00
TOTAL TAXA RICHNESS	15	
EPT TAXA RICHNESS	2	

TABLE 3-38. PETITE PONAR DENSITIES AT SAMPLING STATION 36 WITHIN THE NORTH SHORE CHANNEL, JULY 2002.

TAXA	36 TOUHY AVE. #/m2	%
Turbellaria	1,263.1	0.31
Oligochaeta	401,511.2	99.42
Cricotopus bicinctus grp.	14.4	0.00
Cricotopus sylvestris grp.	21.5	0.01
Nanocladius distinctus	50.2	0.01
Dicrotendipes simpsoni	71.8	0.02
Parachironomus	940.1	0.23
TOTAL BENTHOS	403,872.3	100.00
TOTAL TAXA RICHNESS RICHNESS	7	
EPT TAXA RICHNESS	0	

TABLE 3-39. HESTER-DENDY DENSITIES AT EACH SAMPLING STATION WITHIN THE NORTH BRANCH CHICAGO RIVER, JULY-AUGUST 2002.

TAXA	96 ALBANY AVE. #/m2	%	46 GRAND AVE. #/m2	%
Hydra	1.8	0.04	1.8	0.01
Turbellaria	2,348.4	47.00	961.6	6.83
Oligochaeta	34.1	0.68	11,645.1	82.77
Helobdella stagnalis	3.6	0.07	1.8	0.01
Placobdella	1.8	0.04	--	--
Mooreobdella microstoma	3.6	0.07	--	--
Caecidotea	2,122.4	42.48	73.6	0.52
Gammarus fasciatus	--	--	52.0	0.37
Stenacron	145.3	2.91	--	--
Corixidae	1.8	0.04	--	--
Cheumatopsyche	14.4	0.29	--	--
Hydropsyche betteni	10.8	0.22	--	--
Hydroptila	14.4	0.29	--	--
Procladius (Holotanypus)	1.8	0.04	--	--
Thienemannimyia grp.	26.9	0.54	--	--
Thienemanniella xena	1.8	0.04	--	--
Cricotopus bicinctus grp.	10.8	0.22	--	--
Cricotopus sylvestris grp.	--	--	9.0	0.06
Nanocladius distinctus	3.6	0.07	9.0	0.06
Rheocricotopus robacki	14.4	0.29	--	--
Chironomus	--	--	159.7	1.13
Dicrotendipes neomodestus	44.9	0.90	--	--
Dicrotendipes simpsoni	1.8	0.04	1,099.7	7.82
Glyptotendipes	1.8	0.04	9.0	0.06
Parachironomus	--	--	34.1	0.24
Polypedilum fallax grp.	1.8	0.04	--	--
Polypedilum flavum	46.6	0.93	--	--
Polypedilum illinoense	21.5	0.43	--	--
Polypedilum scalaenum grp.	114.8	2.30	--	--
Micropsectra	1.8	0.04	--	--
Menetus dilatatus	--	--	12.6	0.09
TOTAL BENTHOS	4,996.4	100.00	14,068.9	100.00
TOTAL TAXA RICHNESS	26		13	
EPT TAXA RICHNESS	4		0	

TABLE 3-40. PETITE PONAR DENSITIES AT EACH SAMPLING STATION WITHIN THE NORTH BRANCH CHICAGO RIVER, JULY-AUGUST 2002.

TAXA	96 ALBANY AVE.		46 GRAND AVE.	
	#/m2	%	#/m2	%
Oligochaeta	301.4	2.82	46,023.8	99.89
Helobdella stagnalis	114.8	1.07	—	—
Erpobdella punctata punctata	129.2	1.21	—	—
Mooreobdella microstoma	1,435.3	13.42	—	—
Caecidotea	1,105.2	10.34	—	—
Stenelmis	14.4	0.13	—	—
Procladius (Holotanypus)	—	—	14.4	0.03
Cricotopus bicinctus grp.	43.1	0.40	—	—
Cryptochironomus	14.4	0.13	—	—
Dicrotendipes neomodestus	229.7	2.15	—	—
Parachironomus	—	—	7.2	0.02
Polypedilum flavum	14.4	0.13	—	—
Polypedilum scalaenum grp.	100.5	0.94	—	—
Paratanytarsus	14.4	0.13	—	—
Tanytarsus glabrescens grp.	14.4	0.13	—	—
Amnicola	43.1	0.40	—	—
Musculium transversum	7,076.2	66.17	28.7	0.06
Pisidium nitidum	43.1	0.40	—	—
TOTAL BENTHOS	10,693.2	100.00	46,074.0	100.00
TOTAL TAXA RICHNESS RICHNESS	16		4	
EPT TAXA RICHNESS	0		0	

nearly identical to that of the HD samples with density being four times higher downstream at Station 46 largely due to the abundance of Oligochaeta at that station.

Chironomid head capsule deformities were observed only in the HD samples at Station 46 (Table 3-41). Of the 117 midge specimens examined from Station 46, 15 or 12.8 percent exhibited deformities. This was the highest number of deformed specimens observed at any station in.either year. The two taxa with malformed specimens were *Chironomus* and *Dicrotendipes simpsoni* As with *Procladius*, several studies involving chironomid deformity analysis have included *Chironomus* (Bisthoven et al. 1998, Bisthoven and Ollevier 1998, Dermot 1991, Groenenduk et al. 1998, Hudson and Ciborowski 1996a, Hudson and Ciborowski 1996b, Lenat 1993, and Warwick 1985, among others). Just over half of the 19 *Chironomus* examined from Station 46 were deformed. Although many researches advocate the need for 100 specimens or more of a particular target taxon in order to define statistical significance with deformity analysis (Hudson and Ciborowski 1996a), Lenat (1993) found that a minimum of 15 specimens was adequate for his analysis of *Chironomus* deformities in impacted and unimpacted streams of North Carolina. Lenat (1993) indicates that typically less than five percent of *Chironomus* from non-toxic sites exhibited deformities while toxic sites were generally double that incidence level. Regardless of how many specimens were examined in these studies, the 53 percent incidence of deformity for *Chironomus* collected in the HD samples from Station 46 is substantially higher than background levels in literature for this taxon (Bisthoven et al. 1998, Bisthoven and Ollevier 1998, Dermot 1991, Groenenduk et al. 1998, Hudson and Ciborowski 1996a, Hudson and Ciborowski 1996b, Lenat 1993, and Warwick 1985). Although the typical reference deformity level for *Dicrotendipes simpsoni* is not known, the sample size was fairly large (n=92) and the number of deformed specimens (n=5) at Station 46 was one of the highest observed during the 2001 and 2002 studies.

Table 3-41. Chironomidae head capsule deformities observed in Hester-Dendy samples from the North Branch Chicago River watershed, August 2002.

Taxa	Hester-Dendy Sample N.B.C.R. @ Grand Sta. 46
Chironomus	
Number Examined	19
Percent Deformed	52.6
Dicrotendipes simpsoni	
Number Examined	92
Percent Deformed	5.4
TOTAL SAMPLE	
Total Midges Examined	117
Percent Deformed	12.8

Overall, based on the higher taxa richness and presence of EPT taxa at Station 96, combined with the relatively high density of tolerant taxa (Table 3-1) and incidence of chironomid deformity at Station 46, it appears the benthic community at Station 46 is considerably more stressed than at Station 96.

3.2.3 South Branch Chicago River and Chicago Sanitary and Ship Canal Watershed

Benthic macroinvertebrate sampling was conducted at 12 stations within the CSSC watershed: two stations in the Chicago River, two stations in the South Branch of the Chicago River (SBCR), one station in the South Fork of the South Branch of the Chicago River (SFSBCR), and six stations in the CSSC (Table 2-2).

Tolerant taxa were dominant at eight of the nine HD sampling stations and nine of 11 Ponar sampling stations in the SBCR and CSSC watershed during 2002. In all but one of these instances, the tolerant taxon was Oligochaeta. The incidence of chironomid head capsule deformities was generally low at the majority of the stations with the watershed but somewhat elevated at three of the HD sampling stations.

3.2.3.1 Chicago River

Together, the HD and Ponar samples from the two Chicago River stations (Stations 100 and 74) yielded 22 total taxa and two EPT taxa (Tables 3-42 and 3-43). HD total taxa richness was slightly higher at the upstream Station 74 with 18 total taxa and two EPT taxa compared to 12 total taxa and no EPT at Station 100 (Table 3-42). Total density was over twice as high at Station 100 compared to Station 74 primarily due to the elevated abundance of Oligochaeta, which was the dominant taxon at that station and comprised 92 percent of the total density. *Gammarus fasciatus* was the dominant taxon at Station 74. However, Oligochaeta also was fairly abundant.

Ponar total taxa richness was relatively low at both stations with five and two taxa at Stations 74 and 100, respectively (Table 3-43). No EPT taxa were collected in the Ponars from either station. Oligochaeta was the dominant taxon in the Chicago River Ponar samples representing over 98 percent of the total density at both stations. However, Oligochaeta was three times more abundant at Station 74, which partly resulted in a four-fold difference in total density between the two stations.

Chironomid head capsule deformities were observed at both stations in the HD samples and at Station 74 in the Ponar samples (Table 3-44). *Chironomus* exhibited deformities on all three occasions whereas the single specimen of *Xenochironomus xenolabis* only was observed in the HD samples from Station 100. The percentages of deformed specimens observed at both stations are misleading since the taxa exhibiting deformities were present in relatively low numbers (one to five specimens). With the small sample sizes, it is problematic to speculate as to what these levels of incidence represent.

TABLE 3-42. HESTER-DENDY DENSITIES AT EACH SAMPLING STATION WITHIN THE CHICAGO RIVER, AUGUST 2002.

TAXA	74 LAKE SHORE DR. #/m2	%	100 WELLS ST. #/m2	%
Hydra	3.6	0.40	--	--
Plumatella	1.8	0.20	--	--
Oligochaeta	256.5	28.43	2,086.5	92.16
Gammarus fasciatus	502.3	55.67	95.1	4.20
Cheumatopsyche	1.8	0.20	--	--
Hydroptila	1.8	0.20	--	--
Ablabesmyia mallochi	--	--	3.6	0.16
Cricotopus bicinctus grp.	19.7	2.19	--	--
Cricotopus sylvestris grp.	5.4	0.60	--	--
Heterotrissocladius	1.8	0.20	--	--
Nanocladius distinctus	--	--	1.8	0.08
Chironomus	9.0	0.99	10.8	0.48
Cladopelma	9.0	0.99	--	--
Cryptochironomus	1.8	0.20	--	--
Dicrotendipes neomodestus	3.6	0.40	1.8	0.08
Dicrotendipes simpsoni	9.0	0.99	43.1	1.90
Glyptotendipes	7.2	0.80	1.8	0.08
Microchironomus	--	--	1.8	0.08
Parachironomus	16.1	1.79	10.8	0.48
Polypedilum halterale grp.	32.3	3.58	5.4	0.24
Xenochironomus xenolabis	--	--	1.8	0.08
Dreissena polymorpha	19.7	2.19	--	--
TOTAL BENTHOS	902.4	100.00	2,264.1	100.00
TOTAL TAXA RICHNESS	18		12	
EPT TAXA RICHNESS	2		0	

TABLE 3-43. PETITE PONAR DENSITIES AT EACH SAMPLING STATION WITHIN THE CHICAGO RIVER, AUGUST 2002.

TAXA	74 LAKE SHORE DR. #/m2	%	100 WELLS ST. #/m2	%
Oligochaeta	7,951.7	98.40	2,504.6	99.71
Nanocladius distinctus	7.2	0.09	--	--
Chironomus	7.2	0.09	--	--
Polypedilum halterale grp.	21.5	0.27	--	--
Dreissena polymorpha	93.3	1.15	7.2	0.29
TOTAL BENTHOS	8,080.9	100.00	2,511.8	100.00
TOTAL TAXA RICHNESS RICHNESS	5		2	
EPT TAXA RICHNESS	0		0	

Table 3-44. Chironomidae head capsule deformities observed in Hester-Dendy and Ponar samples from the South Branch Chicago River and Chicago Sanitary and Ship Canal watershed, August and September 2002.

	Hester Dendy Samples				
Taxa	**Chicago R. @ Lake Shore Sta. 74**	**Chicago R. @ Wells Sta. 100**	**S.B.C.R. @ Madison Sta. 39**	**S.B.C.R. @ Loomis Sta. 108**	**S.F.S.B.C.R. @ Archer Sta. 99**
Chironomus					
Number Examined	4	5	--	--	--
Percent Deformed	25.0	40.0	--	--	--
Dicrotendipes simpsoni					
Number Examined	4	21	158	184	182
Percent Deformed	0.0	0.0	0.6	4.9	1.6
Xenochironomus xenolabis					
Number Examined	--	1	--	--	--
Percent Deformed	--	100.0	--	--	--
TOTAL SAMPLE					
Total Midges Examined	51	41	166	187	185
Percent Deformed	2.0	7.3	0.6	4.8	1.6

	Hester Dendy Samples			Ponar Sample
Taxa	**C.S.S.C. @ Damen Sta. 40**	**C.S.S.C. @ Harlem Sta. 41**	**C.S.S.C. @ Lockport Sta. 92**	**Chicago R. @ Lake Shore Sta. 74**
Chironomus				
Number Examined	--	--	--	1
Percent Deformed	--	--	--	100.0
Dicrotendipes simpsoni				
Number Examined	178	47	12	--
Percent Deformed	3.9	10.6	16.7	--
TOTAL SAMPLE				
Total Midges Examined	180	49	24	5
Percent Deformed	3.9	10.2	8.3	20.0

Based on the slightly lower taxa richness and lack of EPT in both the HD and Ponar samples as well as the higher relative abundance of tolerant taxa in the HD samples (Table 3-1), it appears the benthic community at the downstream Station 100 is more stressed compared to the community observed at Station 74.

3.2.3.2 South Branch of the Chicago River

The HD and Ponar samples from the two SBCR stations (Stations 39 and 108) yielded 23 combined total taxa and two EPT taxa (Tables 3-45 and 3-46). HD total taxa richness was very similar between the two stations with 15 taxa at Station 39 and 13 taxa at Station 108 (Table 3-45). Although EPT richness was identical between the two stations with one taxon at each station, the caddisfly *Potamyia flava* was collected at Station 39 while the mayfly *Stenacron* was collected at Station 108. The dominant taxa at Station 39 were the tolerant taxa *Dicrotendipes simpsoni* and Oligochaeta. Oligochaeta was the dominant taxon at Station 108. However, Turbellaria and *Dicrotendipes simpsoni* also were relatively abundant. HD total density also was similar between the two stations. The slightly higher density observed at Station 39 was primarily due to higher numbers of *Caecidotea* and *Dicrotendipes simpsoni* compared to Station 108.

Ponar total taxa richness was somewhat higher at Station 39 with 10 taxa compared to Station 108 with six taxa (Table 3-46). No EPT taxa were observed at either station. Total density was nearly identical at the two stations. However, density was primarily dictated by different taxa at each station. Zebra mussel and Oligochaeta were the dominant taxa at Station 39 while Oligochaeta was the sole dominant taxon at Station 108 accounting for 95 percent of the total density.

Chironomid head capsule deformities were observed at both stations but only in the HD samples (Table 3-44). At both Station 39 and Station 108, *Dicrotendipes simpsoni* was the species that exhibited the deformities. However, the incidence of deformity was noticeably higher at Station 108 with 4.8 percent compared to 0.6 percent at Station 39.

The benthic community at both stations could be characterized as relatively pollution tolerant based on community composition and relative abundance of tolerant taxa. The incidence of chironomid deformity and relative abundance of tolerant taxa in the Ponars was noticeably higher downstream at Station 108 compared to upstream (Tables 3-1). However, the number and relative abundance of tolerant taxa in the HD samples was higher upstream at Station 39 compared to downstream. Therefore, it appears that the benthic community at each station is equally and moderately stressed.

3.2.3.3 South Fork of the South Branch of the Chicago River

The benthic macroinvertebrate community in the SFSBCR at Station 99 was represented by 10 total taxa in the HD and Ponar samples (Tables 3-47 and 3-48). Eight total taxa were observed in the HD samples while three taxa were in the Ponars. No EPT taxa were observed in the SFSBCR samples. Oligochaeta was the dominant taxa for both sample types. However, another tolerant taxon *Dicrotendipes simpsoni* also was well represented in the HD samples. Due to the

TABLE 3-45. HESTER-DENDY DENSITIES AT EACH SAMPLING STATION WITHIN THE SOUTH BRANCH CHICAGO RIVER, AUGUST 2002.

TAXA	39 MADISON ST. #/m2	%	108 LOOMIS ST. #/m2	%
Hydra	7.2	0.12	1.8	0.04
Turbellaria	638.7	10.35	1,289.9	27.22
Oligochaeta	2,073.9	33.59	2,036.2	42.98
Helobdella stagnalis	--	--	1.8	0.04
Helobdella triserialis	17.9	0.29	9.0	0.19
Caecidotea	504.1	8.17	134.6	2.84
Gammarus fasciatus	134.6	2.18	80.7	1.70
Stenacron	1.8	0.03	--	--
Argia	--	--	5.4	0.11
Potamyia flava	--	--	5.4	0.11
Nanocladius distinctus	78.9	1.28	--	--
Dicrotendipes simpsoni	2,544.0	41.21	1,153.6	24.35
Glyptotendipes	17.9	0.29	5.4	0.11
Polypedilum halterale grp.	17.9	0.29	--	--
Polypedilum illinoense	17.9	0.29	12.6	0.27
Polypedilum scalaenum grp.	14.4	0.23	--	--
Menetus dilatatus	71.8	1.16	--	--
Dreissena polymorpha	32.3	0.52	1.8	0.04
TOTAL BENTHOS	6,173.3	100.00	4,738.1	100.00
TOTAL TAXA RICHNESS	15		13	
EPT TAXA RICHNESS	1		1	

TABLE 3-46. PETITE PONAR DENSITIES AT EACH SAMPLING STATION WITHIN THE SOUTH BRANCH CHICAGO RIVER, AUGUST 2002.

TAXA	39 MADISON ST. #/m2	%	108 LOOMIS ST. #/m2	%
Turbellaria	57.4	1.52	--	--
Oligochaeta	1,586.0	41.94	2,913.7	94.64
Caecidotea	7.2	0.19	--	--
Procladius (Holotanypus)	7.2	0.19	43.1	1.40
Dicrotendipes neomodestus	14.4	0.38	--	--
Dicrotendipes simpsoni	21.5	0.57	7.2	0.23
Polypedilum illinoense	7.2	0.19	7.2	0.23
Corbicula fluminea	--	--	71.8	2.33
Musculium transversum	7.2	0.19	--	--
Pisidium nitidum	7.2	0.19	--	--
Dreissena polymorpha	2,066.9	54.65	35.9	1.17
TOTAL BENTHOS	3,782.1	100.00	3,078.8	100.00
TOTAL TAXA RICHNESS RICHNESS	10		6	
EPT TAXA RICHNESS	0		0	

TABLE 3-47. HESTER-DENDY DENSITIES AT SAMPLING STATION 99 WITHIN THE SOUTH FORK SOUTH BRANCH CHICAGO RIVER, AUGUST 2002.

TAXA	99 ARCHER AVE. #/m2	%
Hydra	19.7	0.17
Oligochaeta	7,578.0	63.44
Helobdella triserialis	3.6	0.03
Thienemannimyia grp.	35.9	0.30
Dicrotendipes simpsoni	4,282.4	35.85
Glyptotendipes	3.6	0.03
Parachironomus	3.6	0.03
Physella	17.9	0.15
TOTAL BENTHOS	11,944.7	100.00
TOTAL TAXA RICHNESS	8	
EPT TAXA RICHNESS	0	

TABLE 3-48. PETITE PONAR DENSITIES AT SAMPLING STATION 99 WITHIN THE SOUTH FORK SOUTH BRANCH CHICAGO RIVER, AUGUST 2002.

TAXA	99 ARCHER AVE. #/m2	%
Turbellaria	7.2	0.25
Oligochaeta	2,813.2	98.74
Procladius (Holotanypus)	28.7	1.01
TOTAL BENTHOS	2,849.1	100.00
TOTAL TAXA RICHNESS RICHNESS	3	
EPT TAXA RICHNESS	0	

higher density of Oligochaeta, total density was nearly six times higher in the HD samples compared to the Ponars.

Chironomid head capsule deformities only were exhibited by *Dicrotendipes simpsoni* in the HD samples from Station 99 (Table 3-44). Of the 182 midges examined, three were malformed. As stated above, reference incidence levels are not available for this species. However, the 1.6 percent incidence level observed at Station 99 is below the published background levels for other chironomid species (Bisthoven and Ollevier 1998, Bisthoven et al. 1998, Dermont 1991, Doherty et al. *in prep.*, Hudson and Ciborowski 1996a, Hudson and Ciborowski 1996b, Lenat 1993, Swansburg et al. 2002). Nonetheless, based on the relatively low taxa richness, lack of EPT taxa, and the fact that tolerant taxa comprised over 99 percent of the total density in both the HDs and Ponars (Table 3-1), these data clearly indicate that the benthic community at Station 99 in the SFSBCR is highly stressed.

3.2.3.4 Chicago Sanitary and Ship Canal

During 2002, HD samples were collected at four stations in the CSSC (Stations 40, 75, 41, and 92). However, Ponar samples were collected at these four stations plus two additional stations at Route 83 and Stephen Street (Stations 42 and 48) (Table 2-2).

The HD samples from the four CSSC stations and Ponar samples from the six CSSC stations combined yielded 25 total taxa and no EPT taxa (Tables 3-49 and 3-50). HD total taxa richness ranged from 13 taxa at Station 92 to five taxa at Station 41 (Table 3-49). Total richness was similar among Stations 40, 75, and 92 but noticeably lower at Station 41. Oligochaeta was the dominant taxon at all four stations. However, Turbellaria and/or *Dicrotendipes simpsoni* also were fairly common. Total density was nearly identical between the furthest upstream and downstream Stations 40 and 92 but three or more times higher at Stations 75 and 41. Density among the four stations was largely driven by the abundance of Oligochaeta, which represented between 71 and 91 percent of the total density at the four stations.

Ponar total taxa richness was similarly low at all six sampling stations ranging from three taxa at Stations 75 and 92 to six taxa at Stations 40 and 48 (Table 3-50). Oligochaeta was the dominant taxon at five of the six stations representing between 87 and 99 percent of the total density. Although Oligochaeta remained relatively common, Turbellaria was the dominant taxon at Station 48. Total density varied greatly among the six stations. Ponar density was similarly low at Stations 75, 42, and 48 and considerably higher at Stations 40 and 92. The total density observed at Station 92 was nearly 2.5 times greater compared to Station 40. However, total density among the six stations was exclusively dictated by the abundance of Oligochaeta in the samples.

Chironomid head capsule deformities only were observed in the HD samples at three of the four stations sampled in the CSSC (Table 3-44). In all cases, *Dicrotendipes simpsoni* was the taxon exhibiting the deformities. The number of specimens with deformities at each station ranged from two at Station 92 to seven at Station 40 and appeared to be directly related to sample size. Despite the smaller sample size at Station 92, incidence levels and/or number of deformed

TABLE 3-49. HESTER-DENDY DENSITIES AT EACH SAMPLING STATION WITHIN THE CHICAGO SANITARY AND SHIP CANAL, AUGUST-SEPTEMBER 2002.

TAXA	40 DAMEN AVE.		75 CICERO AVE.		41 HARLEM AVE.		92 LOCKPORT	
	#/m2	%	#/m2	%	#/m2	%	#/m2	%
Hydra	1.8	0.03	--	--	17.9	0.08	1.8	0.03
Turbellaria	830.6	12.17	317.5	1.86	3,695.7	17.31	737.4	10.71
Oligochaeta	4,861.9	71.24	15,536.4	91.19	17,348.4	81.26	5,760.7	83.64
Glossiphoniidae	--	--	--	--	--	--	17.9	0.26
Helobdella stagnalis	--	--	--	--	--	--	17.9	0.26
Helobdella triserialis	1.8	0.03	--	--	--	--	--	--
Mooreobdella microstoma	--	--	--	--	--	--	1.8	0.03
Caecidotea	7.2	0.11	--	--	--	--	--	--
Gammarus fasciatus	91.5	1.34	--	--	--	--	86.1	1.25
Somatochlora	1.8	0.03	--	--	--	--	--	--
Procladius (Holotanypus)	3.6	0.05	--	--	--	--	--	--
Ablabesmyia janta	--	--	35.9	0.21	21.5	0.10	--	--
Ablabesmyia mallochi	--	--	--	--	--	--	14.4	0.21
Thienemannimyia grp.	--	--	17.9	0.11	--	--	--	--
Nanocladius distinctus	--	--	107.6	0.63	--	--	107.6	1.56
Dicrotendipes simpsoni	1,024.4	15.01	861.1	5.05	265.5	1.24	123.8	1.80
Parachironomus	--	--	89.7	0.53	--	--	--	--
Polypedilum flavum	--	--	17.9	0.11	--	--	1.8	0.03
Physella	--	--	17.9	0.11	--	--	--	--
Menetus dilatatus	--	--	23.3	0.14	--	--	--	--
Ferrissia	--	--	--	--	--	--	9.0	0.13
Corbicula fluminea	--	--	12.6	0.07	--	--	5.4	0.08
Dreissena polymorpha	--	--	--	--	--	--	1.8	0.03
TOTAL BENTHOS	6,824.5	100.00	17,038.0	100.00	21,349.1	100.00	6,887.3	100.00
TOTAL TAXA RICHNESS	9		11		5		13	
EPT TAXA RICHNESS	0		0		0		0	

TABLE 3-50. PETITE PONAR DENSITIES AT EACH SAMPLING STATION WITHIN THE CHICAGO SANITARY AND SHIP CANAL, AUGUST-SEPTEMBER 2002.

TAXA	40 DAMEN AVE.		75 CICERO AVE.		41 HARLEM AVE.		42 ROUTE 83		48 STEPHEN ST.		92 LOCKPORT	
	#/m2	%	#/m2	%	#/m2	%	#/m2	%	#/m2	%	#/m2	%
Turbellaria	7.2	0.03	--	--	229.7	5.85	14.4	3.23	50.2	30.43	21.5	0.03
Oligochaeta	26,338.2	99.38	660.3	95.83	3,437.6	87.57	416.2	93.55	21.5	13.04	63,549.1	99.85
Glossiphoniidae	--	--	--	--	--	--	--	--	14.4	8.70	--	--
Caecidotea	--	--	--	--	--	--	7.2	1.61	--	--	--	--
Procladius (Holotanypus)	7.2	0.03	--	--	--	--	--	--	--	--	--	--
Ablabesmyia mallochi	--	--	--	--	--	--	7.2	1.61	--	--	--	--
Cryptochironomus	--	--	--	--	--	--	--	--	14.4	8.70	--	--
Glyptotendipes	71.8	0.27	--	--	--	--	--	--	--	--	--	--
Parachironomus	7.2	0.03	14.4	2.08	--	--	--	--	--	--	--	--
Polypedilum scalaenum grp.	--	--	--	--	14.4	0.37	--	--	--	--	--	--
Ferrissia	--	--	--	--	244.0	6.22	--	--	--	--	--	--
Corbicula fluminea	71.8	0.27	14.4	2.08	--	--	--	--	7.2	4.35	71.8	0.11
Dreissena polymorpha	--	--	--	--	--	--	--	--	57.4	34.78	--	--
TOTAL BENTHOS	26,503.3	100.00	689.0	100.00	3,925.6	100.00	445.0	100.00	165.1	100.00	63,642.4	100.00
TOTAL TAXA RICHNESS RICHNESS	6		3		4		4		6		3	
EPT TAXA RICHNESS	0		0		0		0		0		0	

specimens were relatively high at all three stations compared to several other stations sampled in 2002.

In terms of relative abundance and regardless of sample type, highly tolerant taxa dominated the benthic community at all sampling stations in the CSSC (Table 3-1). This combined with the lack of EPT taxa and low total taxa richness in the majority of samples suggests that the benthic community in the CSSC is moderately to highly stressed.

3.2.4 Des Plaines River Watershed

The same six stations in the Des Plaines River watershed that were surveyed during 2001 were sampled again during 2002: one station in Higgins Creek, one station in Salt Creek, one station in the West Branch of the DuPage River, and three stations in the Des Plaines River (Table 2-2).

As in 2001, Oligochaeta was the dominant taxon at the majority of the Ponar sampling stations in 2002. However, contrary to 2001, tolerant taxa were dominant at half of the HD sampling stations in 2002. Despite this apparent shift, chironomidae capsule deformities remained relatively rare in the watershed while taxa richness and EPT richness remained relatively high compared to the other watersheds sampled in 2002.

3.2.4.1 Higgins Creek

Combined, the HD and Ponar samples from the single station in Higgins Creek (Station 78) yielded 20 total taxa (Tables 3-51 and 3-52). Sixteen total taxa were observed in the HD samples while 12 taxa were present in the Ponar samples. *Caecidotea* was the dominant taxon in the HD samples while the tolerant taxa Oligochaeta, *Cricotopus bicinctus*, and *C. sylvestris* were the dominants in the Ponars. Total density was very similar between the HD and Ponar samples.

No chironomid head capsule deformities were observed in Higgins Creek. However, the lack of EPT taxa and the fact that tolerant taxa comprised 32 and 84 percent of the total density in the HD and Ponar samples, respectively (Table 3-1) indicates a stressed benthic community exists in Higgins Creek.

3.2.4.2 Salt Creek

HD and Ponar samples from the single station in Salt Creek (Station 18) yielded 31 total taxa and three EPT taxa (Tables 3-53 and 3-54). The HD samples produced 27 total taxa and three EPT taxa whereas the Ponar samples 10 total taxa and no EPT. Although dominant taxa differed between the HD and Ponar samples, total density was nearly identical. The caddisfly *Cheumatopsyche* was the dominant taxon in the HD samples. However, Turbellaria and the tolerant taxon *Glyptotendipes* also were well represented in the HD samples. In contrast, Oligochaeta was clearly the dominant taxon in the Ponar samples.

No chironomid head capsule deformities were observed in the HD and Ponar samples. As in 2001, results from the 2002 sampling of Salt Creek were mixed. Tolerant taxa comprised approximately 34 and 94 percent of the HD and Ponar total density (Table 3-1), which suggests

TABLE 3-51. HESTER-DENDY DENSITIES AT SAMPLING STATION 78 WITHIN HIGGINS CREEK, JULY 2002.

TAXA	78 WILLE RD. #/m2	%
Turbellaria	272.7	13.52
Oligochaeta	57.4	2.85
Mooreobdella microstoma	5.4	0.27
Caecidotea	1,010.0	50.09
Copelatus	1.8	0.09
Laccophilus maculosus	1.8	0.09
Tropisternus	1.8	0.09
Thienemannimyia grp.	21.5	1.07
Cricotopus tremulus grp.	98.7	4.89
Cricotopus bicinctus grp.	279.9	13.88
Cricotopus trifascia grp.	48.4	2.40
Cricotopus sylvestris grp.	208.1	10.32
Dicrotendipes neomodestus	1.8	0.09
Polypedilum illinoense	3.6	0.18
Tipula	1.8	0.09
Ferrissia	1.8	0.09
TOTAL BENTHOS	2,016.5	100.00
TOTAL TAXA RICHNESS	16	
EPT TAXA RICHNESS	0	

TABLE 3-52. PETITE PONAR DENSITIES AT SAMPLING STATION 78 WITHIN HIGGINS CREEK, JULY 2002.

TAXA	78 WILLE RD. #/m2	%
Turbellaria	35.9	1.52
Oligochaeta	617.2	26.06
Caecidotea	143.5	6.06
Cricotopus tremulus grp.	107.6	4.55
Cricotopus bicinctus grp.	595.7	25.15
Cricotopus trifascia grp.	14.4	0.61
Cricotopus sylvestris grp.	617.2	26.06
Chironomus	14.4	0.61
Dicrotendipes neomodestus	157.9	6.67
Glyptotendipes	35.9	1.52
Microtendipes	14.4	0.61
Tanytarsus	14.4	0.61
TOTAL BENTHOS	2,368.3	100.00
TOTAL TAXA RICHNESS RICHNESS	12	
EPT TAXA RICHNESS	0	

TABLE 3-53. HESTER-DENDY DENSITIES AT SAMPLING STATION 18 WITHIN SALT CREEK, JULY 2002.

TAXA	18 DEVON AVE. #/m2	%
Turbellaria	593.8	18.09
Oligochaeta	123.8	3.77
Caecidotea	16.1	0.49
Stenacron	7.2	0.22
Tricorythodes	43.1	1.31
Argia	1.8	0.05
Cheumatopsyche	823.5	25.08
Ablabesmyia mallochi	17.9	0.55
Thienemannimyia grp.	21.5	0.66
Thienemanniella xena	3.6	0.11
Cricotopus tremulus grp.	30.5	0.93
Cricotopus bicinctus grp.	3.6	0.11
Cricotopus sylvestris grp.	12.6	0.38
Nanocladius distinctus	39.5	1.20
Chironomus	14.4	0.44
Cryptochironomus	14.4	0.44
Dicrotendipes neomodestus	100.5	3.06
Dicrotendipes simpsoni	114.8	3.50
Glyptotendipes	371.4	11.31
Polypedilum flavum	278.1	8.47
Polypedilum illinoense	303.2	9.23
Polypedilum scalaenum grp.	125.6	3.83
Paratanytarsus	70.0	2.13
Tanytarsus	26.9	0.82
Tanytarsus guerlus grp.	48.4	1.48
Menetus dilatatus	70.0	2.13
Ferrissia	7.2	0.22
TOTAL BENTHOS	3,283.1	100.00
TOTAL TAXA RICHNESS	27	
EPT TAXA RICHNESS	3	

TABLE 3-54. PETITE PONAR DENSITIES AT SAMPLING STATION 18 WITHIN SALT CREEK, JULY 2002.

TAXA	18 DEVON AVE. #/m2	%
Plumatella	7.2	0.22
Oligochaeta	2,533.4	76.08
Dubiraphia	21.5	0.65
Procladius (Holotanypus)	208.1	6.25
Cricotopus sylvestris grp.	136.4	4.09
Chironomus	71.8	2.16
Cryptochironomus	136.4	4.09
Dicrotendipes simpsoni	35.9	1.08
Polypedilum flavum	136.4	4.09
Corbicula fluminea	43.1	1.29
TOTAL BENTHOS	3,330.0	100.00
TOTAL TAXA RICHNESS RICHNESS	10	
EPT TAXA RICHNESS	0	

some degree of environmental stress is affecting the benthic community. However, the abundance of EPT taxa in the HD samples, presence of environmentally sensitive Tanytarsini midge taxa, and the relatively high taxa richness observed in HD samples indicates a healthier benthic assemblage compared to many of the stations surveyed in 2002.

3.2.4.3 West Branch of the DuPage River

The benthic macroinvertebrate community in the WB DuPage River at Station 64 was represented by 19 total taxa and three EPT taxa in the HD and Ponar samples combined (Tables 3-55 and 3-56). Total taxa richness was considerably higher in the HD samples with 19 taxa compared to the three total taxa in the Ponar samples. However, comparison of the total richness values is problematic since the condition of the Chironomidae specimens in the Ponar samples precluded their identification below the family level. Since Chironomidae accounted for 12 of the 19 taxa observed in the HD samples, it is reasonable to suspect that the Ponar total richness would have been higher had the specimens been in better condition. EPT taxa richness was slightly higher in the HD samples with three taxa while a single EPT taxon was observed in the Ponars. The dominant taxa in the HD samples were the highly tolerant taxa *Nanocladius distinctus* and *Polypedilum illinoense*. In the Ponar samples, Chironomidae was the dominant taxon though the highly tolerant taxon Oligochaeta also was relatively abundant. Total density was slightly higher in the HD samples but very similar compared to the total density observed in the Ponars.

Again, deformity analysis of the WB DuPage River chironomids was complicated by the poor condition of the Ponar midge specimens. Chironomid head capsule deformities only were observed in the HD samples at Station 64 (Table 3-57). A single specimen of *Polypedilum illinoense* or 0.8 percent of all midges examined in the HD samples was deformed. Given the low number of deformed specimens observed, it is very likely that the incidence level is insignificant. However, based solely on the HD results, tolerant taxa accounted for half of the total taxa richness and 80 percent of the total density at Station 64. As such, it is reasonable to characterize the benthic community at Station 64 as moderately stressed.

3.2.4.4 Des Plaines River

Combined, the HD and Ponar samples from the three Des Plaines River stations (Stations 13, 22, and 91) yielded 60 total taxa and 18 EPT taxa (Tables 3-58 and 3-59). These were the highest richness values observed among all the waterways sampled in 2002. In addition, the EPT richness from the Des Plaines River in 2002 was the highest observed for any station during 2001 and 2002. HD total taxa richness decreased longitudinally upstream to downstream among the three stations from 34 taxa at Station 13 to 19 taxa at Station 91 (Table 3-58). Likewise, EPT taxa richness was highest at the upstream Station 13 with 14 taxa compared to seven and eight EPT taxa at the two downstream Stations 22 and 91, respectively. The HD richness values observed at Station 13 were the highest observed among all the stations sampled during 2002. The highly tolerant midge *Glyptotendipes* was clearly the dominant taxon at Station 13. No other taxa collected in the HD samples from Station 13 achieved more than four percent of the total density. In contrast, the facultative chironomid *Polypedilum flavum* was the dominant taxon at both Stations 22 and 91. In addition, the tolerant taxa Oligochaeta and *Cricotopus*

TABLE 3-55. HESTER-DENDY DENSITIES AT SAMPLING STATION 64 WITHIN THE WEST BRANCH DUPAGE RIVER, JULY 2002.

TAXA	64 LAKE ST. #/m2	%
Turbellaria	251.2	1.45
Plumatella	3.6	0.02
Oligochaeta	732.0	4.22
Argia	12.6	0.07
Cheumatopsyche	1,566.2	9.04
Hydropsyche betteni	66.4	0.38
Hydropsyche bidens	5.4	0.03
Thienemannimyia grp.	855.8	4.94
Thienemanniella xena	179.4	1.04
Cricotopus tremulus grp.	179.4	1.04
Cricotopus bicinctus grp.	1,422.7	8.21
Cricotopus sylvestris grp.	394.7	2.28
Nanocladius distinctus	4,413.3	25.46
Dicrotendipes neomodestus	53.8	0.31
Dicrotendipes simpsoni	879.1	5.07
Glyptotendipes	915.0	5.28
Parachironomus	102.3	0.59
Polypedilum flavum	497.0	2.87
Polypedilum illinoense	4,802.7	27.71
TOTAL BENTHOS	17,332.3	100.00
TOTAL TAXA RICHNESS	19	
EPT TAXA RICHNESS	3	

TABLE 3-56. PETITE PONAR DENSITIES AT SAMPLING STATION 64 WITHIN THE WEST BRANCH DUPAGE RIVER, JULY 2002.

TAXA	64 LAKE ST. #/m2	%
Oligochaeta	4,664.8	29.00
Hydropsychidae	215.3	1.34
Cheumatopsyche	7.2	0.04
Chironomidae	11,195.5	69.61
TOTAL BENTHOS	16,082.8	100.00
TOTAL TAXA RICHNESS RICHNESS	3	
EPT TAXA RICHNESS	1	

Table 3-57. Chironomidae head capsule deformities observed in Hester-Dendy samples from the Des Plaines River watershed, July 2002.

Taxa	Hester-Dendy Samples: W.B. Du Page R. @ Lake Sta. 64	Hester-Dendy Samples: Des Plaines R. @ Lake Cook Sta. 13
Glyptotendipes		
Number Examined	6	102
Percent Deformed	0.0	1.0
Polypedilum illinoense		
Number Examined	41	--
Percent Deformed	2.4	--
TOTAL SAMPLE		
Total Midges Examined	131	198
Percent Deformed	0.8	0.5

TABLE 3-58. HESTER-DENDY DENSITIES AT EACH SAMPLING STATION WITHIN THE DES PLAINES RIVER, JULY 2002.

TAXA	13 LAKE COOK RD.		22 OGDEN AVE.		91 MATERIAL SERVICE RD.	
	#/m2	%	#/m2	%	#/m2	%
Hydra	17.9	0.05	—	—	—	—
Turbellaria	35.9	0.10	64.6	3.55	2,875.9	18.67
Plumatella	—	—	—	—	1.8	0.01
Oligochaeta	233.2	0.65	290.6	15.98	9.0	0.06
Caecidotea	—	—	1.8	0.10	—	—
Gammarus fasciatus	1,298.9	3.62	—	—	—	—
Isonychia	43.1	0.12	—	—	—	—
Baetis intercalaris	89.7	0.25	46.6	2.56	333.7	2.17
Leucrocuta	16.1	0.05	32.3	1.78	—	—
Heptagenia	19.7	0.06	—	—	—	—
Stenacron	136.3	0.38	—	—	—	—
Stenonema integrum	231.4	0.65	—	—	—	—
Stenonema terminatum	497.0	1.39	25.1	1.38	—	—
Tricorythodes	642.3	1.79	25.1	1.38	30.5	0.20
Enallagma	17.9	0.05	—	—	—	—
Trepobates	—	—	—	—	1.8	0.01
Cyrnellus fraternus	82.5	0.23	—	—	—	—
Cheumatopsyche	988.5	2.76	200.9	11.05	2,768.2	17.97
Hydropsyche	—	—	—	—	1.8	0.01
Hydropsyche betteni	—	—	10.8	0.59	—	—
Hydropsyche orris	—	—	—	—	254.8	1.65
Hydropsyche simulans	62.8	0.18	—	—	7.2	0.05
Hydropsyche bidens	84.3	0.24	—	—	19.7	0.13
Ceratopsyche morosa	7.2	0.02	17.9	0.99	37.7	0.24
Potamyia flava	68.2	0.19	—	—	—	—
Petrophila	—	—	—	—	16.1	0.10
Laccophilus maculosus	73.6	0.21	—	—	—	—
Macronychus glabratus	39.5	0.11	—	—	—	—
Stenelmis crenata grp.	222.5	0.62	5.4	0.30	9.0	0.06
Chironomidae	—	—	7.2	0.39	—	—
Ablabesmyia janta	14.4	0.04	—	—	—	—
Ablabesmyia mallochi	—	—	10.8	0.59	—	—
Nilotanypus fimbriatus	14.4	0.04	10.8	0.59	—	—
Thienemannimyia grp.	98.7	0.28	71.8	3.94	—	—
Thienemanniella xena	—	—	10.8	0.59	—	—
Cricotopus tremulus grp.	14.4	0.04	10.8	0.59	—	—
Cricotopus bicinctus grp.	84.3	0.24	236.8	13.02	—	—
Nanocladius distinctus	—	—	46.6	2.56	34.1	0.22
Nanocladius crassicornus/rectinervis	41.3	0.12	—	—	—	—
Dicrotendipes neomodestus	41.3	0.12	10.8	0.59	34.1	0.22
Glyptotendipes	29,307.5	81.78	25.1	1.38	68.2	0.44
Polypedilum flavum	154.3	0.43	545.4	29.98	8,880.5	57.66
Polypedilum illinoense	—	—	25.1	1.38	—	—
Polypedilum scalaenum grp.	315.8	0.88	35.9	1.97	—	—
Stenochironomus	—	—	25.1	1.38	—	—
Cladotanytarsus mancus grp.	28.7	0.08	—	—	—	—
Rheotanytarsus	814.5	2.27	25.1	1.38	—	—
Musculium	—	—	—	—	17.9	0.12
TOTAL BENTHOS	35,837.8	100.00	1,819.2	100.00	15,401.9	100.00
TOTAL TAXA RICHNESS	34		25		19	
EPT TAXA RICHNESS	14		7		8	

TABLE 3-59. PETITE PONAR DENSITIES AT EACH SAMPLING STATION WITHIN THE DES PLAINES RIVER, JULY AND SEPTEMBER 2002.

TAXA	13 LAKE COOK RD.		22 OGDEN AVE.		91 MATERIAL SERVICE RD.	
	#/m2	%	#/m2	%	#/m2	%
Oligochaeta	4,664.8	16.86	2,612.3	72.80	5,418.4	92.52
Helobdella stagnalis	—	—	—	—	21.5	0.37
Mooreobdella microstoma	—	—	7.2	0.20	57.4	0.98
Gammarus fasciatus	129.2	0.47	—	—	7.2	0.12
Orconectes virilis	—	—	—	—	7.2	0.12
Baetis intercalaris	—	—	—	—	7.2	0.12
Tricorythodes	143.5	0.52	7.2	0.20	7.2	0.12
Hexagenia bilineata	7.2	0.03	—	—	—	—
Corixidae	—	—	—	—	86.1	1.47
Cheumatopsyche	—	—	7.2	0.20	7.2	0.12
Potamyia flava	21.5	0.08	7.2	0.20	—	—
Dubiraphia	129.2	0.47	—	—	—	—
Stenelmis	—	—	35.9	1.00	—	—
Stenelmis crenata grp.	215.3	0.78	—	—	—	—
Procladius (Holotanypus)	358.8	1.30	64.6	1.80	35.9	0.61
Ablabesmyia mallochi	—	—	14.4	0.40	—	—
Thienemannimyia grp.	1,076.5	3.89	—	—	—	—
Chironomus	1,076.5	3.89	—	—	—	—
Cryptochironomus	760.7	2.75	—	—	14.4	0.25
Dicrotendipes neomodestus	2,511.8	9.08	—	—	—	—
Glyptotendipes	445.0	1.61	21.5	0.60	—	—
Paracladopelma	358.8	1.30	—	—	—	—
Polypedilum flavum	358.8	1.30	—	—	7.2	0.12
Polypedilum scalaenum grp.	3,229.5	11.67	315.8	8.80	64.6	1.10
Cladotanytarsus mancus grp.	358.8	1.30	7.2	0.20	—	—
Tanytarsus	11,317.6	40.90	—	—	—	—
Corbicula fluminea	509.5	1.84	488.0	13.60	107.6	1.84
Musculium transversum	—	—	—	—	7.2	0.12
TOTAL BENTHOS	27,673.1	100.00	3,588.3	100.00	5,856.1	100.00
TOTAL TAXA RICHNESS RICHNESS	19		12		15	
EPT TAXA RICHNESS	3		3		3	

bicinctus and the EPT taxon *Cheumatopsyche* also were relatively abundant at Station 22 while Turbellaria and *Cheumatopsyche* were fairly well represented at Station 91. Total density varied greatly among the three stations being lowest at Station 22, more than seven times higher at Station 91, and nearly twenty times higher at Station 13. The noticeably higher densities at Stations 13 and 91 were primarily due to the elevated abundance of dominant taxa at both stations.

Ponar total taxa richness was slightly higher at Station 13 compared to Stations 22 and 91, which were similar (Table 3-59). However, EPT taxa richness was identical among the three stations. The dominant taxon at Station 13 was *Tanytarsus*. Ohio EPA (1988) found that Tanytarsini midges often are absent from stations with even slight disturbance indicating their low threshold for environmental perturbation. At Stations 22 and 91, Oligochaeta was the dominant taxon. The tolerant taxa Oligochaeta and facultative taxa *Dicrotendipes* neomodestus and *Polypedilum scalaenum* also were well represented at Station 13. In addition, the Asiatic clam *Corbicula fluminea* was relatively common at Station 22. However, except for Oligochaeta, no other taxon was represented by more than two percent at Station 91. As with the HD samples, Ponar total density was highest at Station 13 but nearly eight and five times lower at Stations 22 and 91, respectively. Elevated numbers of several chironomid taxa contributed to the higher density observed at Station13.

A single *Glyptotendipes* specimen in the HD sample from Station 13 exhibited a head capsule deformity (Table 3-57). This specimen comprised one percent of the *Glyptotendipes* and half a percent of all the chironomids examined in the HD samples from Station 13. Therefore, the percent incidence of deformity observed in these samples is likely insignificant.

Results of the Des Plaines River benthic macroinvertebrate sampling were mixed. Station 13 had the highest total richness in both the HD and Ponar samples and the highest EPT richness in the HD samples. In addition, the Station 13 Ponars had the lowest percentage of tolerant taxa among the stations and were dominated by a relatively pollution sensitive Tanytarsini midge taxon (OEPA 1988). In contrast, the Station 13 HD samples had the highest number and percentage of tolerant taxa (Table 3-1). Overall, it appears that the benthic community at all three stations is affected by environmental perturbation in varying degrees of severity and/or types of disturbance. However, based on the collection of positive community attributes expressed at Station 13, it appears that the benthic community at the two downstream Stations 22 and 91 is generally more stressed compared to Station 13.

3.3 Inter-Year Comparisons: 2001 vs. 2002

Of the 35 stations sampled in 2001 and 2002, 15 stations in 10 different waterways were sampled during both years (Tables 2-1 and 2-2). In an effort to analyze for trends and gauge variability within these systems, comparisons between the two years by sample type and total station are summarized in the following sections. Differences between years could be the result of changes in meteorological conditions, changes in the amount and type of stressors, or natural variability. However, for the purposes of these studies, no attempt was made to ascertain a specific cause.

3.3.1 Calumet Watershed

The same three stations in the Calumet watershed were surveyed during 2001 and 2002: Station 55 in the Calumet River, Station 76 in the Little Calumet River, and Station 59 in the Cal-Sag (Tables 2-1 and 2-2).

3.3.1.1 Calumet River

The HD results from Station 55 were largely similar between the two years (Table 3-60). Total taxa richness was somewhat higher in 2001 compared to 2002. One taxon absent from the 2002 samples was *Gammarus fasciatus*, which was fairly common in 2001. The remaining three taxa that were absent from the 2002 samples were all represented by less than one percent in the 2001 samples. EPT richness was identical between the two years. Although zebra mussel was the dominant taxon in both years representing greater than 90 percent of the total density each year, zebra mussel density was nearly four times higher in 2002 compared to 2001. As a result of the increased abundance of zebra mussels, total density was considerably higher in 2002.

As with the HD samples, Ponar results from 2001 and 2002 were comparable (Table 3-61). Like the HDs, total taxa richness was slightly higher in 2001 relative to 2002. In addition, no EPT taxa were observed in the Ponars during either year. Total density was slightly higher in 2001 compared to 2002 largely due to increased Oligochaeta abundance. Although Oligochaeta was the dominant taxon in both years, due to a combined decrease in Oligochaeta density and an increase in zebra mussel abundance, the relative abundance of Oligochaeta decreased from 92 percent in 2001 to 62 percent in 2002.

Overall, 18 total taxa and one EPT taxon were collected in the 2001 HD and Ponar samples from Station 55 compared to 12 total taxa and one EPT in 2002 (Tables 3-60 and 3-61). In general, the taxa absent in the 2002 samples were collected in fairly low densities during 2001. Chironomid head capsule deformities were not observed in either year. However, in terms of density, relative abundance and richness, tolerant taxa decreased in 2002 compared to 2001 (Table 3-1). Although the cause of these differences is not completely clear, the fact that the 2001 samples were collected a month earlier than the 2002 samples may have been a contributing factor.

3.3.1.2 Little Calumet River

Results from the HD sampling at Station 76 were very similar over the two years (Table 3-62). Total taxa richness was nearly identical between the years. One EPT taxon was collected in 2002 compared to zero in 2001. However, EPT taxon *Cyrnellus fraternus* was relatively rare in the 2002 samples accounting for only 0.13 percent of the total density. Zebra mussel was the dominant taxon during both years. Despite the fact that zebra mussel density nearly doubled between 2001 and 2002, a combined decrease in the density of *Hydra*, Turbellaria, Oligochaeta, and *Gammarus fasciatus* resulted in total density being only slightly higher in 2002.

Ponar results from 2001 and 2002 also were comparable (Table 3-63). Total taxa richness differed by one taxon and EPT richness was identical between the two years. Oligochaeta was

TABLE 3-60. COMPARISON OF HESTER-DENDY DENSITIES BETWEEN AUGUST 2001 AND SEPTEMBER 2002 FOR SAMPLING STATION 55 WITHIN THE CALUMET RIVER.

	55 130TH ST.			
	2001		2002	
TAXA	#/m2	%	#/m2	%
Hydra	—	—	179.4	0.12
Plumatella	1.8	0.00	—	—
Oligochaeta	556.2	1.44	1,435.2	0.98
Gammarus fasciatus	1,273.8	3.30	—	—
Cyrnellus fraternus	35.9	0.09	1.8	0.00
Ablabesmyia janta	—	—	179.4	0.12
Ablabesmyia mallochi	17.9	0.05	—	—
Nanocladius distinctus	17.9	0.05	—	—
Chironomus	179.4	0.47	—	—
Dicrotendipes simpsoni	143.5	0.37	538.2	0.37
Glyptotendipes	35.9	0.09	—	—
Dreissena polymorpha	36,311.4	94.14	143,882.3	98.40
TOTAL BENTHOS	38,573.7	100.00	146,216.4	100.00
TOTAL TAXA RICHNESS	10		6	
EPT TAXA RICHNESS	1		1	

TABLE 3-61. COMPARISON OF PETITE PONAR DENSITIES BETWEEN AUGUST 2001 AND SEPTEMBER 2002 FOR SAMPLING STATION 55 WITHIN THE CALUMET RIVER.

	55 130TH ST.			
	2001		2002	
TAXA	#/m2	%	#/m2	%
Hydra	7.2	0.18	—	—
Turbellaria	7.2	0.18	—	—
Oligochaeta	3,674.4	92.25	811.0	61.75
Caecidotea	—	—	114.8	8.74
Gammarus fasciatus	57.4	1.44	—	—
Procladius (Holotanypus)	50.2	1.26	14.4	1.09
Clinotanypus	7.2	0.18	—	—
Coelotanypus	—	—	21.5	1.64
Ablabesmyia janta	—	—	7.2	0.55
Chironomus	7.2	0.18	—	—
Cryptochironomus	28.7	0.72	14.4	1.09
Microchironomus	7.2	0.18	—	—
Polypedilum halterale grp.	—	—	7.2	0.55
Polypedilum scalaenum grp.	21.5	0.54	—	—
Amnicola	—	—	7.2	0.55
Pisidium compressum	14.4	0.36	—	—
Dreissena polymorpha	100.5	2.52	315.8	24.04
TOTAL BENTHOS	3,983.0	100.00	1,313.3	100.00
TOTAL TAXA RICHNESS	12		9	
EPT TAXA RICHNESS	0		0	

TABLE 3-62. COMPARISON OF HESTER-DENDY DENSITIES BETWEEN AUGUST 2001 AND SEPTEMBER 2002 FOR SAMPLING STATION 76 WITHIN THE LITTLE CALUMET RIVER.

	76 HALSTED ST.			
	2001		2002	
TAXA	#/m2	%	#/m2	%
Hydra	1,435.2	6.79	—	—
Turbellaria	2,350.2	11.11	358.8	1.34
Oligochaeta	1,650.5	7.80	125.6	0.47
Mooreobdella microstoma	17.9	0.08	—	—
Caecidotea	35.9	0.17	—	—
Gammarus fasciatus	1,650.5	7.80	520.3	1.94
Argia	—	—	35.9	0.13
Cyrnellus fraternus	—	—	35.9	0.13
Ablabesmyia janta	—	—	89.7	0.33
Nanocladius distinctus	233.2	1.10	53.8	0.20
Dicrotendipes simpsoni	950.8	4.50	1,560.8	5.82
Glyptotendipes	71.8	0.34	35.9	0.13
Physella	17.9	0.08	—	—
Menetus dilatatus	717.6	3.39	358.8	1.34
Ferrissia	53.8	0.25	143.5	0.53
Dreissena polymorpha	11,966.3	56.57	23,519.9	87.63
TOTAL BENTHOS	21,151.8	100.00	26,838.9	100.00
TOTAL TAXA RICHNESS	13		12	
EPT TAXA RICHNESS	0		1	

TABLE 3-63. COMPARISON OF PETITE PONAR DENSITIES BETWEEN AUGUST 2001 AND SEPTEMBER 2002 FOR SAMPLING STATION 76 WITHIN THE LITTLE CALUMET RIVER.

	76 HALSTED ST.			
	2001		2002	
TAXA	#/m2	%	#/m2	%
Turbellaria	279.9	2.29	—	—
Oligochaeta	11,855.8	96.95	602.8	88.42
Gammarus fasciatus	28.7	0.23	7.2	1.05
Chironomidae	—	—	7.2	1.05
Dicrotendipes simpsoni	—	—	21.5	3.16
Corbicula fluminea	—	—	43.1	6.32
Pisidium compressum	50.2	0.41	—	—
Dreissena polymorpha	14.4	0.12	—	—
TOTAL BENTHOS	12,229.0	100.00	681.8	100.00
TOTAL TAXA RICHNESS	5		4	
EPT TAXA RICHNESS	0		0	

the dominant taxon in both years. However, the higher numbers of Oligochaeta in 2001 produced a considerable difference in total density between years.

In 2001, 14 total taxa and no EPT taxa were collected in HD and Ponar samples from Station 76 compared to 13 total taxa and one EPT in 2002 (Tables 3-62 and 3-63). As with the Calumet River, no chironomid deformities were observed in either year at Station 76. Although tolerant taxa decreased the most in terms of richness and density (Table 3-1); this appeared to produce only minor differences with respect to community composition, as the dominant taxa remained unchanged between the years.

3.3.1.3 Calumet-Saginaw Channel

The benthic community in the HD samples exhibited only minor changes between 2001 and 2002 (Table 3-64). Total taxa and EPT richness both increased by one taxon from 2001 to 2002. All differences in richness between the two years involved taxa that comprised a small fraction of the total density. Total density was nearly identical between the two years. However, there were notable changes in composition. With the exception of zebra mussel, all of the major taxa observed in 2001 decreased in 2002. In contrast, zebra mussel exhibited nearly a six-fold increase in density between 2001 and 2002. As result, *Dicrotendipes simpsoni*, which was the dominant taxon in 2001, became the second most abundant organism in 2002 after zebra mussel.

The Station 59 Ponar data were very similar between 2001 and 2002 (Table 3-65). Total taxa and EPT richness was identical between the two years. In addition, Oligochaeta was the dominant taxon both years. However, substantially lower numbers of Oligochaeta in 2002 resulted in a 33-fold decrease in total density between years.

Based on the HD and Ponar data combined, there were relatively few differences in the benthic community at Station 59 between 2001 and 2002. Total taxa and EPT richness differed by a single taxon with 16 total taxa and no EPT being observed in 2001 and 15 total taxa and one EPT in 2002 (Tables 3-64 and 3-65). Chironomidae deformities were not observed in either sample type during 2001 and 2002. Composition in terms of relative abundance and density changed somewhat between the two years and as with the previous stations, tolerant taxa decreased in abundance and richness in 2002 (Table 3-1). However, these differences do not appear to have changed the overall quality of the benthic community at Station 59.

3.3.2 North Branch Chicago River Watershed

Of the 15 stations sampled in the NBCR Watershed during 2001 and 2002, three were sampled during both years: Station 36 in the NSC and Stations 96 and 46 in the NBCR (Tables 2-1 and 2-2).

3.3.2.1 North Shore Channel

HD results from Station 36 were slightly different in 2001 and 2002 (Table 3-66). Total taxa richness was slightly higher in 2002 with 15 taxa compared to 11 taxa in 2001. Most notable of the additions to the 2002 taxa list were the two EPT taxa *Cyrnellus fraternus* and

TABLE 3-64. COMPARISON OF HESTER-DENDY DENSITIES BETWEEN AUGUST 2001 AND SEPTEMBER 2002 FOR SAMPLING STATION 59 WITHIN THE CAL-SAG CHANNEL.

	59 CICERO AVE.			
	2001		2002	
TAXA	#/m2	%	#/m2	%
Hydra	1,883.7	15.81	17.9	0.15
Turbellaria	161.5	1.36	17.9	0.15
Oligochaeta	2,924.3	24.55	1,444.2	11.90
Caecidotea	17.9	0.15	9.0	0.07
Gammarus fasciatus	1,776.1	14.91	53.8	0.44
Argia	17.9	0.15	9.0	0.07
Cyrnellus fraternus	—	—	35.9	0.30
Ablabesmyia janta	—	—	7.2	0.06
Ablabesmyia mallochi	35.9	0.30	53.8	0.44
Nanocladius distinctus	197.3	1.66	491.6	4.05
Dicrotendipes neomodestus	17.9	0.15	14.4	0.12
Dicrotendipes simpsoni	3,480.4	29.22	2,335.8	19.24
Glyptotendipes	17.9	0.15	50.2	0.41
Menetus dilatatus	35.9	0.30	—	—
Ferrissia	53.8	0.45	—	—
Corbicula fluminea	—	—	17.9	0.15
Dreissena polymorpha	1,291.7	10.84	7,579.8	62.44
TOTAL BENTHOS	11,912.5	100.00	12,138.5	100.00
TOTAL TAXA RICHNESS	14		15	
EPT TAXA RICHNESS	0		1	

TABLE 3-65. COMPARISON OF PETITE PONAR DENSITIES BETWEEN AUGUST 2001 AND SEPTEMBER 2002 FOR SAMPLING STATION 59 WITHIN THE CAL-SAG CHANNEL.

	59 CICERO AVE.			
	2001		2002	
TAXA	#/m2	%	#/m2	%
Hydra	—	—	7.2	0.71
Oligochaeta	32,495.8	96.01	846.8	83.69
Gammarus fasciatus	71.8	0.21	7.2	0.71
Procladius (Holotanypus)	868.4	2.57	—	—
Nanocladius distinctus	—	—	35.9	3.55
Dicrotendipes simpsoni	21.5	0.06	—	—
Corbicula fluminea	358.8	1.06	21.5	2.13
Dreissena polymorpha	28.7	0.08	93.3	9.22
TOTAL BENTHOS	33,845.0	100.00	1,011.9	100.00
TOTAL TAXA RICHNESS	6		6	
EPT TAXA RICHNESS	0		0	

TABLE 3-66. COMPARISON OF HESTER-DENDY DENSITIES BETWEEN AUGUST 2001 AND JULY 2002 FOR SAMPLING STATION 36 WITHIN THE NORTH SHORE CHANNEL.

	36 TOUHY AVE.			
	2001		2002	
TAXA	#/m2	%	#/m2	%
Turbellaria	4,485.1	9.18	8,076.8	65.86
Oligochaeta	31,341.9	64.16	3,674.2	29.96
Caecidotea	17.9	0.04	35.9	0.29
Gammarus fasciatus	143.5	0.29	—	—
Cyrnellus fraternus	—	—	17.9	0.15
Cheumatopsyche	—	—	3.6	0.03
Thienemannimyia grp.	—	—	3.6	0.03
Cricotopus bicinctus grp.	484.4	0.99	10.8	0.09
Cricotopus sylvestris grp.	—	—	21.5	0.18
Nanocladius distinctus	1,489.1	3.05	32.3	0.26
Dicrotendipes neomodestus	—	—	3.6	0.03
Dicrotendipes simpsoni	9,759.6	19.98	258.3	2.11
Glyptotendipes	376.7	0.77	14.4	0.12
Parachironomus	610.0	1.25	89.7	0.73
Polypedilum flavum	—	—	3.6	0.03
Polypedilum illinoense	71.8	0.15	—	—
Menetus dilatatus	71.8	0.15	17.9	0.15
TOTAL BENTHOS	48,851.8	100.00	12,264.1	100.00
TOTAL TAXA RICHNESS	11		15	
EPT TAXA RICHNESS	0		2	

TABLE 3-67. COMPARISON OF PETITE PONAR DENSITIES BETWEEN AUGUST 2001 AND JULY 2002 FOR SAMPLING STATION 36 WITHIN THE NORTH SHORE CHANNEL.

	36 TOUHY AVE.			
	2001		2002	
TAXA	#/m2	%	#/m2	%
Turbellaria	1,837.2	2.08	1,263.1	0.31
Oligochaeta	79,875.9	90.61	401,511.2	99.42
Caecidotea	7.2	0.01	—	—
Gammarus fasciatus	71.8	0.08	—	—
Chironomidae	5,310.7	6.02	—	—
Cricotopus bicinctus grp.	114.8	0.13	14.4	0.00
Cricotopus sylvestris grp.	28.7	0.03	21.5	0.01
Nanocladius distinctus	43.1	0.05	50.2	0.01
Dicrotendipes simpsoni	251.2	0.28	71.8	0.02
Parachironomus	617.2	0.70	940.1	0.23
TOTAL BENTHOS	88,157.8	100.00	403,872.3	100.00
TOTAL TAXA RICHNESS	9		7	
EPT TAXA RICHNESS	0		0	

Cheumatopsyche. In addition, dominance and total density differed noticeably between the two years. In 2001, the benthic community in the HD samples was dominated by two tolerant taxa Oligochaeta and *Dicrotendipes simpsoni*. In 2002, although Oligochaeta remained relatively abundant, both it and *D. simpsoni* decreased considerably in abundance and total density falling by 75 percent. In contrast, Turbellaria nearly doubled in density and became the dominant taxon in 2002.

The results from the Ponar sampling were generally more similar between years than the HD samples (Table 3-67). Total and EPT richness varied little if any between 2001 and 2002. In addition, despite a five-fold increase in Oligochaeta density between 2001 and 2002, community composition changed very little. Oligochaeta was the dominant taxon followed by Turbellaria in both years.

Overall, the benthic macroinvertebrate community was represented by 12 total taxa in 2001 compared to 15 total taxa and two EPT taxa in 2002 (Tables 3-66 and 3-67). Chironomid head capsule deformities were not observed in either year at Station 36. Oligochaeta density decreased in the HD samples between 2001 and 2002, however, Oligochaeta increased dramatically between years in the Ponar samples. Despite these differences between sample types, with nine taxa in 2001 and eight taxa in 2002 tolerant organisms represented over half the total richness observed in each year.

3.3.2.2 North Branch of the Chicago River

The HD results from both Station 96 and Station 46 exhibited noticeable differences between the two study years (Table 3-68). Total taxa richness at each of the respective stations more than doubled between 2001 and 2002. However, richness values from Station 46 in 2001 may be artificially low due to the fact that midges in those samples could not be identified beyond Chironomidae. Although EPT taxa were lacking at Station 46 during both years, EPT richness increased from one taxon in 2001 to four taxa in 2002 at Station 96. *Caecidotea* was clearly the dominant taxon at Station 96 in 2001 whereas Turbellaria was slightly more abundant and the dominant taxon in 2002. Compositional differences were not evident at Station 46 with Oligochaeta being the dominant taxon by a substantial margin each year. Total density was nearly twice as high in 2001 compared to 2002 at Stations 96 and 46. At both stations, the decline in density observed in 2002 was almost exclusively due to the lower abundance of the 2001 dominant taxa.

The 2001 and 2002 Ponar results were generally more similar at the two stations compared to the HD results (Table 3-69). Total taxa and EPT richness was either identical or very similar between the two years at both Station 96 and Station 46. In addition, the dominant taxon at each respective station was the same during both years attaining a similar level of relative abundance in each year. In contrast to the HD results, total density was higher at both stations in 2002. Although the difference in density between the two years was noticeably greater at Station 96, at both stations, the higher density was primarily due to the increased abundance of the dominant taxa.

TABLE 3-68. COMPARISON OF HESTER-DENDY DENSITIES BETWEEN AUGUST 2001 AND JULY/AUGUST 2002 FOR SAMPLING STATIONS WITHIN THE NORTH BRANCH CHICAGO RIVER.

	96				46			
	ALBANY AVE.				GRAND AVE.			
	2001		2002		2001		2002	
TAXA	#/m2	%	#/m2	%	#/m2	%	#/m2	%
Hydra	—	—	1.8	0.04	—	—	1.8	0.01
Turbellaria	206.3	2.00	2,348.4	47.00	89.7	0.36	961.6	6.83
Oligochaeta	98.7	0.96	34.1	0.68	23,896.7	94.87	11,645.1	82.77
Helobdella stagnalis	—	—	3.6	0.07	—	—	1.8	0.01
Placobdella	—	—	1.8	0.04	—	—	—	—
Mooreobdella microstoma	—	—	3.6	0.07	—	—	—	—
Caecidotea	9,714.7	94.17	2,122.4	42.48	17.9	0.07	73.6	0.52
Gammarus fasciatus	—	—	—	—	179.4	0.71	52.0	0.37
Stenacron	—	—	145.3	2.91	—	—	—	—
Corixidae	—	—	1.8	0.04	—	—	—	—
Cheumatopsyche	9.0	0.09	14.4	0.29	—	—	—	—
Hydropsyche betteni	—	—	10.8	0.22	—	—	—	—
Hydroptila	—	—	14.4	0.29	—	—	—	—
Chironomidae	—	—	—	—	1,004.7	3.99	—	—
Procladius (Holotanypus)	—	—	1.8	0.04	—	—	—	—
Thienemannimyia grp.	107.6	1.04	26.9	0.54	—	—	—	—
Thienemanniella xena	—	—	1.8	0.04	—	—	—	—
Cricotopus bicinctus grp.	—	—	10.8	0.22	—	—	—	—
Cricotopus sylvestris grp.	—	—	—	—	—	—	9.0	0.06
Nanocladius distinctus	35.9	0.35	3.6	0.07	—	—	9.0	0.06
Nanocladius crassicornus/rectinervis	17.9	0.17	—	—	—	—	—	—
Rheocricotopus robacki	17.9	0.17	14.4	0.29	—	—	—	—
Chironomus	—	—	—	—	—	—	159.7	1.13
Dicrotendipes neomodestus	—	—	44.9	0.90	—	—	—	—
Dicrotendipes simpsoni	—	—	1.8	0.04	—	—	1,099.7	7.82
Glyptotendipes	—	—	1.8	0.04	—	—	9.0	0.06
Parachironomus	—	—	—	—	—	—	34.1	0.24
Polypedilum fallax grp.	—	—	1.8	0.04	—	—	—	—
Polypedilum flavum	44.9	0.43	46.6	0.93	—	—	—	—
Polypedilum illinoense	62.8	0.61	21.5	0.43	—	—	—	—
Polypedilum scalaenum grp.	—	—	114.8	2.30	—	—	—	—
Micropsectra	—	—	1.8	0.04	—	—	—	—
Menetus dilatatus	—	—	—	—	—	—	12.6	0.09
TOTAL BENTHOS	10,315.8	100.00	4,996.4	100.00	25,188.4	100.00	14,068.9	100.00
TOTAL TAXA RICHNESS	10		26		5		13	
EPT TAXA RICHNESS	1		4		0		0	

TABLE 3-69. COMPARISON OF PETITE PONAR DENSITIES BETWEEN AUGUST 2001 AND JULY/AUGUST 2002 FOR SAMPLING STATIONS WITHIN THE NORTH BRANCH CHICAGO RIVER.

	96				46			
	ALBANY AVE.				GRAND AVE.			
	2001		2002		2001		2002	
TAXA	#/m2	%	#/m2	%	#/m2	%	#/m2	%
Turbellaria	14.4	0.40	—	—	7.2	0.06	—	—
Plumatella	—	—	—	—	7.2	0.06	—	—
Oligochaeta	387.5	10.84	301.4	2.82	12,049.6	98.36	46,023.8	99.89
Helobdella stagnalis	—	—	114.8	1.07	—	—	—	—
Helobdella triserialis	28.7	0.80	—	—	—	—	—	—
Erpobdella punctata punctata	—	—	129.2	1.21	—	—	—	—
Mooreobdella microstoma	14.4	0.40	1,435.3	13.42	—	—	—	—
Caecidotea	14.4	0.40	1,105.2	10.34	—	—	—	—
Cheumatopsyche	28.7	0.80	—	—	—	—	—	—
Stenelmis	—	—	14.4	0.13	—	—	—	—
Chironomidae	—	—	—	—	114.8	0.94	—	—
Procladius (Holotanypus)	—	—	—	—	50.2	0.41	14.4	0.03
Thienemannimyia grp.	14.4	0.40	—	—	—	—	—	—
Cricotopus bicinctus grp.	14.4	0.40	43.1	0.40	—	—	—	—
Cryptochironomus	14.4	0.40	14.4	0.13	—	—	—	—
Dicrotendipes neomodestus	14.4	0.40	229.7	2.15	—	—	—	—
Glyptotendipes	—	—	—	—	14.4	0.12	—	—
Parachironomus	—	—	—	—	—	—	7.2	0.02
Polypedilum flavum	—	—	14.4	0.13	—	—	—	—
Polypedilum illinoense	57.4	1.61	—	—	—	—	—	—
Polypedilum scalaenum grp.	244.0	6.83	100.5	0.94	—	—	—	—
Paratanytarsus	—	—	14.4	0.13	—	—	—	—
Tanytarsus glabrescens grp.	—	—	14.4	0.13	—	—	—	—
Amnicola	—	—	43.1	0.40	—	—	—	—
Physella	14.4	0.40	—	—	—	—	—	—
Menetus dilatatus	14.4	0.40	—	—	—	—	—	—
Corbicula fluminea	—	—	—	—	7.2	0.06	—	—
Musculium transversum	2,382.6	66.67	7,076.2	66.17	—	—	28.7	0.06
Pisidium	28.7	0.80	—	—	—	—	—	—
Pisidium compressum	287.1	8.03	—	—	—	—	—	—
Pisidium nitidum	—	—	43.1	0.40	—	—	—	—
TOTAL BENTHOS	3,574.0	100.00	10,693.2	100.00	12,250.5	100.00	46,074.0	100.00
TOTAL TAXA RICHNESS	16		16		6		4	
EPT TAXA RICHNESS	1		0		0		0	

Chironomid head capsule deformities only were observed at the Station 46 HD samples in 2002 (Table 3-41). However, comparison of deformity incidence between years is problematic since all of the chironomids in the 2001 HD samples and over half of the specimens in the 2001 Ponars from Station 46 were not in adequate condition for deformities to be determined.

Based on the combined results of the HD and Ponar samples, richness increased at Station 96 from 21 total taxa and one EPT in 2001 to 34 total taxa and 4 EPT in 2002 (Tables 3-68 and 3-69). Similarly, total taxa richness at Station 46 increased from eight taxa in 2001 to 15 taxa in 2002. Tolerant taxa richness and density at Station 96 was slightly higher in 2002 compared to 2001. In contrast, tolerant taxa density was similar in both years at Station 46.

3.3.3 South Branch Chicago River and Chicago Sanitary and Ship Canal Watershed

Of the 11 stations sampled in the SBCR and CSSC watershed in 2001 and 2002, three were sampled during both years: Stations 75, 41, and 92 in the CSSC.

The HD sampling at the three CSSC stations exhibited some differences between the two years. However, few consistent trends were evident among all three stations. Total taxa richness showed a notable increase at Station 75 and a slight decrease at Station 41 (Table 3-70). Total taxa richness at Station 92 was similar both years. However, the only EPT taxa collected among the three HD stations in either year were at Station 92 in 2001. The higher taxa richness at Station 75 in 2002 was exclusively due to increased numbers of Chironomidae taxa whereas the decrease observed at Station 41 was due to the loss of chironomid and crustacean taxa. At Station 75, total density increased slightly between 2001 and 2002. In contrast, density decreased in 2002 at Stations 41 and 92. Although temporal variability differed somewhat by station, the magnitude and direction of change was strongly related to the abundance of Oligochaeta, which was the dominant taxon at all three stations each year.

The Ponar data collected from the three CSSC stations in 2001 and 2002 exhibited a lesser degree of variability compared to the HD data. Total richness was relatively similar between years at each station, albeit slightly higher in 2001 at Stations 41 and 92 (Table 3-71). Again, the only EPT taxon collected in the Ponars among the three stations was observed at Station 92 in 2001. At Stations 75 and 41, 2001 total density was four and 16 times higher, respectively compared to 2002. In contrast, total density more than doubled in 2002 at Station 92. As with the HD data, the differences in total density observed between years at each station was primarily attributable to changes in Oligochaeta density.

Chironomidae head capsule deformities were observed in the HD samples at Station 75 in 2001, Station 41 in 2002, and Station 92 during both years (Tables 3-21 and 3-44). Deformities were also observed at Station 40, however that station was not sampled in during both years (Table 3-44). In all cases, the deformities were exhibited by only one or two specimens, except Station 41 (five specimens). In addition, at Station 92 in 2002, the sample size was relatively small (n=12). Nonetheless, the occurrence of deformities at multiple stations and in two consecutive years is suggestive of potential toxic conditions.

TABLE 3-70. COMPARISON OF HESTER-DENDY DENSITIES BETWEEN JULY 2001 AND AUGUST/SEPTEMBER 2002 FOR SAMPLING STATIONS WITHIN THE CHICAGO SANITARY AND SHIP CANAL.

	75 CICERO AVE.				41 HARLEM AVE.				92 LOCKPORT			
	2001		2002		2001		2002		2001		2002	
TAXA	#/m2	%	#/m2	%	#/m2	%	#/m2	%	#/m2	%	#/m2	%
Hydra	--	--	--	--	--	--	17.9	0.08	861.1	5.08	1.8	0.03
Turbellaria	--	--	317.5	1.86	2,260.5	4.41	3,695.7	17.31	1,130.2	6.67	737.4	10.71
Plumatella	--	--	--	--	1.8	0.00	--	--	--	--	--	--
Oligochaeta	11,130.2	94.80	15,536.4	91.19	43,164.7	84.27	17,348.4	81.26	11,042.3	65.20	5,760.7	83.64
Glossiphoniidae	--	--	--	--	--	--	--	--	--	--	17.9	0.26
Helobdella stagnalis	--	--	--	--	--	--	--	--	--	--	17.9	0.26
Mooreobdella microstoma	--	--	--	--	--	--	--	--	--	--	1.8	0.03
Caecidotea	--	--	--	--	35.9	0.07	--	--	--	--	--	--
Gammarus fasciatus	--	--	--	--	215.3	0.42	--	--	1,193.0	7.04	86.1	1.25
Cyrnellus fraternus	--	--	--	--	--	--	--	--	17.9	0.11	--	--
Hydropsyche	--	--	--	--	--	--	--	--	9.0	0.05	--	--
Ablabesmyia janta	--	--	35.9	0.21	--	--	21.5	0.10	179.4	1.06	--	--
Ablabesmyia mallochi	--	--	--	--	--	--	--	--	--	--	14.4	0.21
Thienemannimyia grp.	--	--	17.9	0.11	--	--	--	--	--	--	--	--
Cricotopus sylvestris grp.	--	--	--	--	53.8	0.11	--	--	--	--	--	--
Nanocladius distinctus	71.8	0.61	107.6	0.63	89.7	0.18	--	--	340.9	2.01	107.6	1.56
Dicrotendipes simpsoni	520.3	4.43	861.1	5.05	5,346.3	10.44	265.5	1.24	1,838.9	10.86	123.8	1.80
Parachironomus	--	--	89.7	0.53	53.8	0.11	--	--	--	--	--	--
Polypedilum flavum	--	--	17.9	0.11	--	--	--	--	--	--	1.8	0.03
Physella	--	--	17.9	0.11	--	--	--	--	--	--	--	--
Menetus dilatatus	--	--	23.3	0.14	--	--	--	--	--	--	--	--
Ferrissia	--	--	--	--	--	--	--	--	--	--	9.0	0.13
Corbicula fluminea	17.9	0.15	12.6	0.07	--	--	--	--	287.0	1.69	5.4	0.08
Dreissena polymorpha	--	--	--	--	--	--	--	--	--	--	1.8	0.03
TOTAL BENTHOS	11,740.2	100.00	17,038.0	100.00	51,221.7	100.00	21,349.1	100.00	16,935.8	100.00	6,887.3	100.00
TOTAL TAXA RICHNESS	4		11		9		5		11		13	
EPT TAXA RICHNESS	0		0		0		0		2		0	

TABLE 3-71. COMPARISON OF HESTER-DENDY DENSITIES BETWEEN JULY 2001 AND AUGUST/SEPTEMBER 2002 FOR SAMPLING STATIONS WITHIN THE CHICAGO SANITARY AND SHIP CANAL.

	75				41				92			
	CICERO AVE.				HARLEM AVE.				LOCKPORT			
	2001		2002		2001		2002		2001		2002	
TAXA	#/m2	%	#/m2	%	#/m2	%	#/m2	%	#/m2	%	#/m2	%
Turbellaria	--	--	--	--	861.2	1.36	229.7	5.85	--	--	21.5	0.03
Plumatella	--	--	--	--	7.2	0.01	--	--	--	--	--	--
Oligochaeta	2,626.6	97.34	660.3	95.83	61,719.1	97.38	3,437.6	87.57	28,670.7	93.41	63,549.1	99.85
Gammarus fasciatus	--	--	--	--	215.3	0.34	--	--	114.8	0.37	--	--
Cheumatopsyche	--	--	--	--	--	--	--	--	71.8	0.23	--	--
Procladius (Holotanypus)	43.1	1.60	--	--	--	--	--	--	968.8	3.16	--	--
Nanocladius distinctus	--	--	--	--	--	--	--	--	466.5	1.52	--	--
Chironomus	7.2	0.27	--	--	71.8	0.11	--	--	--	--	--	--
Dicrotendipes simpsoni	--	--	--	--	358.8	0.57	--	--	322.9	1.05	--	--
Parachironomus	--	--	14.4	2.08	--	--	--	--	--	--	--	--
Polypedilum illinoense	--	--	--	--	143.5	0.23	--	--	--	--	--	--
Polypedilum scalaenum grp.	--	--	--	--	--	--	14.4	0.37	--	--	--	--
Ferrissia	--	--	--	--	--	--	244.0	6.22	--	--	--	--
Corbicula fluminea	21.5	0.80	14.4	2.08	--	--	--	--	78.9	0.26	71.8	0.11
TOTAL BENTHOS	2,698.4	100.00	689.0	100.00	63,376.9	100.00	3,925.6	100.00	30,694.5	100.00	63,642.4	100.00
TOTAL TAXA RICHNESS	4		3		7		4		7		3	
EPT TAXA RICHNESS	0		0		0		0		1		0	

Based on the HD and Ponar data combined, total richness at Station 75 increased from six taxa in 2001 to 11 taxa in 2002 but decreased from 11 taxa in 2001 to seven taxa in 2002 at Station 41 (Tables 3-70 and 3-71). In contrast, total richness remained unchanged at Station 92 with 13 taxa each year, however EPT richness decreased from three taxa in 2001 to zero in 2002. Community composition changed relatively little at each site between years. Although the presence and densities of individual taxa at each station may have differed somewhat year to year, overall the benthic community at each station was dominated by tolerant taxa during both 2001 and 2002 (Table 3-1).

3.3.4 Des Plaines River Watershed

The same six stations in the Des Plaines River watershed were sampled during both 2001 and 2002: Station 78 in Higgins Creek, Station 18 in Salt Creek, Station 64 in the West Branch of the DuPage River, and Stations 13, 22, and 91 in the Des Plaines River (Tables 2-1 and 2-2).

3.3.4.1 Higgins Creek

Results from the HD sampling at Station 78 were noticeably different over the two years (Table 3-72). Total taxa richness was nearly twice as high in 2002 compared to 2001. EPT taxa were not collected from Higgins Creek during either year. Turbellaria was the dominant taxon in 2001 but declined substantially in 2002. *Caecidotea* was the dominant taxon in 2002 despite having similar densities in both years. Due to the elevated abundance of Turbellaria, total density was substantially higher in 2001.

Ponar results also were somewhat different between years (Table 3-73). In contrast to the HD results, total taxa richness was slightly higher in 2002. *Caecidotea* was the dominant taxon in 2001 while the more tolerant Oligochaeta and *Cricotopus sylvestris* were dominant in 2002. As in the HD results, total density decreased considerably between 2001 and 2002. Several taxa collected in 2001 experienced sharp declines in 2002, however the largest decrease was for the taxon *Caecidotea*.

Based on the combined HD and Ponar data by year, total taxa richness was relatively similar with 21 taxa in 2001 and 19 taxa in 2002 (Tables 3-72 and 3-73). In 2001 the majority of the taxa observed at the station were collected in the Ponar samples. However, in 2002 more taxa were collected in the HD samples than in the Ponar samples. No chironomid deformities were observed in either year at Station 78. Despite the differences exhibited by the individual sample types in each year, collectively the Higgins Creek benthic community was relatively similar in 2001 and 2002.

3.3.4.2 Salt Creek

The HD results from Station 18 were fairly similar between 2001 and 2002 (Table 3-74). Total taxa richness was slightly higher in 2001 but EPT richness was identical between years. *Polypedilum flavum* was the dominant taxon in 2001 while *Cheumatopsyche* was the dominant taxon in 2002. By comparison, *Cheumatopsyche* was relatively abundant both years and actually

TABLE 3-72. COMPARISON OF HESTER-DENDY DENSITIES BETWEEN JULY 2001 AND JULY 2002 FOR SAMPLING STATION 78 WITHIN HIGGINS CREEK.

	78 WILLE RD.			
	2001		2002	
TAXA	#/m2	%	#/m2	%
Turbellaria	14,036.6	80.72	272.7	13.52
Oligochaeta	986.7	5.67	57.4	2.85
Mooreobdella microstoma	35.9	0.21	5.4	0.27
Caecidotea	1,828.1	10.51	1,010.0	50.09
Orconectes virilis	17.9	0.10	—	—
Copelatus	—	—	1.8	0.09
Laccophilus maculosus	—	—	1.8	0.09
Tropisternus	—	—	1.8	0.09
Thienemannimyia grp.	—	—	21.5	1.07
Cricotopus tremulus grp.	—	—	98.7	4.89
Cricotopus bicinctus grp.	—	—	279.9	13.88
Cricotopus trifascia grp.	—	—	48.4	2.40
Cricotopus sylvestris grp.	197.3	1.13	208.1	10.32
Nanocladius crassicornus/rectinervis	35.9	0.21	—	—
Dicrotendipes neomodestus	233.2	1.34	1.8	0.09
Polypedilum illinoense	—	—	3.6	0.18
Paratanytarsus	17.9	0.10	—	—
Tipula	—	—	1.8	0.09
Ferrissia	—	—	1.8	0.09
TOTAL BENTHOS	17,389.7	100.00	2,016.5	100.00
TOTAL TAXA RICHNESS	9		16	
EPT TAXA RICHNESS	0		0	

TABLE 3-73. COMPARISON OF PETITE PONAR DENSITIES BETWEEN JULY 2001 AND JULY 2002 FOR SAMPLING STATION 78 WITHIN HIGGINS CREEK.

	78 WILLE RD.			
	2001		2002	
TAXA	#/m2	%	#/m2	%
Turbellaria	6,825.0	23.17	35.9	1.52
Oligochaeta	1,822.9	6.19	617.2	26.06
Erpobdella punctata punctata	7.2	0.02	--	--
Mooreobdella microstoma	466.5	1.58	--	--
Ostracoda	3,602.7	12.23	--	--
Caecidotea	16,197.7	54.98	143.5	6.06
Orconectes immunis	7.2	0.02	--	--
Enallagma	7.2	0.02	--	--
Bezzia	7.2	0.02	--	--
Tanypus	7.2	0.02	--	--
Thienemannimyia grp.	35.9	0.12	--	--
Cricotopus tremulus grp.	--	--	107.6	4.55
Cricotopus bicinctus grp.	114.8	0.39	595.7	25.15
Cricotopus trifascia grp.	--	--	14.4	0.61
Cricotopus sylvestris grp.	179.4	0.61	617.2	26.06
Chironomus	14.4	0.05	14.4	0.61
Cryptochironomus	14.4	0.05	--	--
Dicrotendipes neomodestus	35.9	0.12	157.9	6.67
Glyptotendipes	--	--	35.9	1.52
Microtendipes	--	--	14.4	0.61
Tanytarsus	--	--	14.4	0.61
Musculium transversum	35.9	0.12	--	--
Pisidium	78.9	0.27	--	--
TOTAL BENTHOS	29,460.1	100.00	2,368.3	100.00
TOTAL TAXA RICHNESS	18		12	
EPT TAXA RICHNESS	0		0	

TABLE 3-74. COMPARISON OF HESTER-DENDY DENSITIES BETWEEN JULY 2001 AND JULY 2002 FOR SAMPLING STATION 18 WITHIN SALT CREEK.

	18			
	DEVON AVE.			
	2001		2002	
TAXA	#/m2	%	#/m2	%
Turbellaria	1,130.2	7.07	593.8	18.09
Oligochaeta	1,148.2	7.18	123.8	3.77
Caecidotea	35.9	0.22	16.1	0.49
Hydracarina	17.9	0.11	—	—
Stenacron	—	—	7.2	0.22
Tricorythodes	35.9	0.22	43.1	1.31
Argia	—	—	1.8	0.05
Enallagma	17.9	0.11	—	—
Cheumatopsyche	2,942.2	18.41	823.5	25.08
Hydroptila	53.8	0.34	—	—
Chaoborus	17.9	0.11	—	—
Procladius (Holotanypus)	107.6	0.67	—	—
Ablabesmyia janta	340.9	2.13	—	—
Ablabesmyia mallochi	125.6	0.79	17.9	0.55
Thienemannimyia grp.	879.1	5.50	21.5	0.66
Thienemanniella xena	394.7	2.47	3.6	0.11
Cricotopus tremulus grp.	179.4	1.12	30.5	0.93
Cricotopus bicinctus grp.	269.1	1.68	3.6	0.11
Cricotopus sylvestris grp.	35.9	0.22	12.6	0.38
Nanocladius distinctus	125.6	0.79	39.5	1.20
Nanocladius crassicornus/rectinervis	466.5	2.92	—	—
Chironomus	—	—	14.4	0.44
Cryptochironomus	—	—	14.4	0.44
Dicrotendipes neomodestus	71.8	0.45	100.5	3.06
Dicrotendipes simpsoni	107.6	0.67	114.8	3.50
Endochironomus nigricans	161.5	1.01	—	—
Glyptotendipes	—	—	371.4	11.31
Polypedilum flavum	4,395.4	27.50	278.1	8.47
Polypedilum illinoense	2,134.9	13.36	303.2	9.23
Polypedilum scalaenum grp.	179.4	1.12	125.6	3.83
Stenochironomus	71.8	0.45	—	—
Paratanytarsus	71.8	0.45	70.0	2.13
Tanytarsus	—	—	26.9	0.82
Tanytarsus guerlus grp.	394.7	2.47	48.4	1.48
Hemerodromia	17.9	0.11	—	—
Physella	17.9	0.11	—	—
Menetus dilatatus	35.9	0.22	70.0	2.13
Ferrissia	—	—	7.2	0.22
TOTAL BENTHOS	15,984.9	100.00	3,283.1	100.00
TOTAL TAXA RICHNESS	31		27	
EPT TAXA RICHNESS	3		3	

achieved a higher density in 2001. Due to the elevated abundance of several taxa, total density was approximately five times higher in 2001 compared to 2002.

Seven chironomid specimens representing two taxa in the 2001 Ponar samples exhibited head capsule deformities (Table 3-26). Of these, six were *Procladius (Holotanypus)*. Despite the absence of deformities in the 2002 samples, the incidence level of 11.3 percent for *Procladius (Holotanypus)* is well above the expected background level for this taxon and may be indicative of an intermittent adverse condition in Salt Creek.

In contrast to the HD data, results from the Ponar sampling were noticeably different between years (Table 3-75). Total richness was twice as high in 2001 primarily due to six more chironomid taxa compared to 2002. In addition, two EPT taxa were collected in 2001 compared to zero in 2002. Oligochaeta was the dominant taxon both years despite the fact that it experienced a 3.5-fold decrease in density between 2001 and 2002. As with the HD results, Ponar total density was over four times higher in 2001. Elevated densities of several taxa contributed to this difference. However, most notably among those taxa was the Tanytarsini midge *Cladotanytarsus mancus*, which represented 11 percent of the total density in 2001 but was absent in the 2002 collections.

Based on the HD and Ponar results combined, total richness was very similar between years with 38 total taxa and 3 EPT taxa in 2001 and 31 total taxa and three EPT taxa in 2002 (Tables 3-75 and 3-76). Total density decreased substantially from 2001 to 2002 for both sample types. However, it appears the overall quality of the benthic community in Salt Creek was relatively stable.

3.3.4.3 West Branch of the DuPage River

As with Salt Creek, the HD results from Station 64 were generally similar between years (Table 3-76). Total richness was slightly higher in 2001 while EPT richness was the same both years. *Glyptotendipes* was the dominant taxon in 2001 whereas *Polypedilum illinoense* was the dominant taxon in 2002. Both are considered highly tolerant (Table 3-1). EPT density decreased in 2002 largely due to the lower abundance of *Cheumatopsyche*. In contrast, the density of several tolerant taxa increased in 2002. Despite these changes, total density was similar between years though slightly higher in 2002.

In contrast, the Ponar results were somewhat different between years (Table 3-77). Total taxa richness was seven times higher in 2001. However, the total richness value for 2002 is likely artificially low due to the fact that the midges in those samples could not be identified beyond Chironomidae. Ponar EPT richness was the same for both study years being represented by the same taxon *Cheumatopsyche* each year. Oligochaeta was the dominant taxa in 2001 whereas Chironomidae was dominant in 2002. Again, this is likely artificial based on the number of midge taxa observed in 2001. Nonetheless, Oligochaeta abundance decreased in 2002 by nearly four-fold while chironomid density increased by the same margin.

Chironomid head capsule deformities were restricted to a single specimen collected in the 2002 HD sample. Despite the lack of deformity information from the 2001 Ponars, based on the lack

TABLE 3-75. COMPARISON OF PETITE PONAR DENSITIES BETWEEN JULY 2001 AND JULY 2002 FOR SAMPLING STATION 18 WITHIN SALT CREEK.

	18			
	DEVON AVE.			
	2001		2002	
TAXA	#/m2	%	#/m2	%
Turbellaria	7.2	0.05	—	—
Plumatella	—	—	7.2	0.22
Oligochaeta	8,899.0	65.30	2,533.4	76.08
Hydracarina	7.2	0.05	—	—
Tricorythodes	7.2	0.05	—	—
Cheumatopsyche	64.6	0.47	—	—
Dubiraphia	64.6	0.47	21.5	0.65
Chaoborus	437.8	3.21	—	—
Procladius (Holotanypus)	516.7	3.79	208.1	6.25
Cricotopus sylvestris grp.	—	—	136.4	4.09
Chironomus	64.6	0.47	71.8	2.16
Cladopelma	35.9	0.26	—	—
Cryptochironomus	308.6	2.26	136.4	4.09
Dicrotendipes neomodestus	208.1	1.53	—	—
Dicrotendipes simpsoni	—	—	35.9	1.08
Paracladopelma	57.4	0.42	—	—
Polypedilum flavum	—	—	136.4	4.09
Polypedilum halterale grp.	258.4	1.90	—	—
Polypedilum illinoense	28.7	0.21	—	—
Polypedilum scalaenum grp.	538.2	3.95	—	—
Cladotanytarsus mancus grp.	1,557.3	11.43	—	—
Tanytarsus guerlus grp.	301.4	2.21	—	—
Menetus dilatatus	14.4	0.11	—	—
Corbicula fluminea	251.2	1.84	43.1	1.29
TOTAL BENTHOS	13,628.4	100.00	3,330.0	100.00
TOTAL TAXA RICHNESS	20		10	
EPT TAXA RICHNESS	2		0	

TABLE 3-76. COMPARISON OF HESTER-DENDY DENSITIES BETWEEN JULY 2001 AND JULY 2002 FOR SAMPLING STATION 64 WITHIN THE WEST BRANCH DUPAGE RIVER.

	64 LAKE ST.			
	2001		2002	
TAXA	#/m2	%	#/m2	%
Turbellaria	2,565.5	19.07	251.2	1.45
Plumatella	3.6	0.03	3.6	0.02
Oligochaeta	855.8	6.36	732.0	4.22
Baetis intercalaris	39.5	0.29	—	—
Argia	17.9	0.13	12.6	0.07
Enallagma	1.8	0.01	—	—
Cheumatopsyche	3,143.2	23.36	1,566.2	9.04
Hydropsyche betteni	—	—	66.4	0.38
Hydropsyche bidens	—	—	5.4	0.03
Hydroptila	93.3	0.69	—	—
Procladius (Holotanypus)	21.5	0.16	—	—
Thienemannimyia grp.	773.2	5.75	855.8	4.94
Thienemanniella xena	89.7	0.67	179.4	1.04
Cricotopus tremulus grp.	—	—	179.4	1.04
Cricotopus bicinctus grp.	143.5	1.07	1,422.7	8.21
Cricotopus sylvestris grp.	21.5	0.16	394.7	2.28
Nanocladius distinctus	143.5	1.07	4,413.3	25.46
Nanocladius crassicornus/rectinervis	389.3	2.89	—	—
Cryptochironomus	53.8	0.40	—	—
Dicrotendipes neomodestus	200.9	1.49	53.8	0.31
Dicrotendipes simpsoni	265.5	1.97	879.1	5.07
Endochironomus nigricans	111.2	0.83	—	—
Glyptotendipes	3,335.1	24.79	915.0	5.28
Parachironomus	—	—	102.3	0.59
Polypedilum flavum	177.6	1.32	497.0	2.87
Polypedilum illinoense	742.7	5.52	4,802.7	27.71
Polypedilum scalaenum grp.	165.1	1.23	—	—
Simulium	62.8	0.47	—	—
Hemerodromia	17.9	0.13	—	—
Menetus dilatatus	17.9	0.13	—	—
TOTAL BENTHOS	13,453.5	100.00	17,332.3	100.00
TOTAL TAXA RICHNESS	26		19	
EPT TAXA RICHNESS	3		3	

TABLE 3-77. COMPARISON OF PETITE PONAR DENSITIES BETWEEN JULY 2001 AND JULY 2002 FOR SAMPLING STATION 64 WITHIN THE WEST BRANCH DUPAGE RIVER.

	64 LAKE ST.			
	2001		2002	
TAXA	#/m2	%	#/m2	%
Turbellaria	258.4	1.28	—	—
Oligochaeta	16,893.8	83.39	4,664.8	29.00
Mooreobdella microstoma	21.5	0.11	—	—
Hydropsychidae	—	—	215.3	1.34
Cheumatopsyche	93.3	0.46	7.2	0.04
Berosus	7.2	0.04	—	—
Chironomidae	—	—	11,195.5	69.61
Procladius (Holotanypus)	14.4	0.07	—	—
Thienemannimyia grp.	50.2	0.25	—	—
Cricotopus bicinctus grp.	28.7	0.14	—	—
Cricotopus sylvestris grp.	107.6	0.53	—	—
Nanocladius distinctus	43.1	0.21	—	—
Cryptochironomus	538.2	2.66	—	—
Dicrotendipes neomodestus	14.4	0.07	—	—
Dicrotendipes simpsoni	64.6	0.32	—	—
Glyptotendipes	473.7	2.34	—	—
Paracladopelma	28.7	0.14	—	—
Polypedilum flavum	308.6	1.52	—	—
Polypedilum illinoense	258.4	1.28	—	—
Polypedilum scalaenum grp.	724.8	3.58	—	—
Simulium	150.7	0.74	—	—
Corbicula fluminea	107.6	0.53	—	—
Musculium transversum	71.8	0.35	—	—
TOTAL BENTHOS	20,259.6	100.00	16,082.8	100.00
TOTAL TAXA RICHNESS	21		3	
EPT TAXA RICHNESS	1		1	

of deformities observed in the 2001 HD and Ponar samples, it is likely the 2002 HD incidence level is insignificant.

Comparisons of the combined HD and Ponar data are problematic given the lack of chironomid data from the 2002 Ponars. However, based on the HD samples, there appeared to be a noticeable increase in pollution tolerant taxa and a decrease in pollution sensitive taxa from 2001 to 2002 (Tables 3-1 and 3-76).

3.3.4.4 Des Plaines River

The HD results from the three Des Plaines River stations generally exhibited a fair amount of agreement between the two years (Table 3-78). For example, total taxa richness was relatively similar at all stations differing in three to seven taxa between 2001 and 2002. In addition, EPT richness was the same in both years or differed by a single taxon depending on the station. However, there were notable differences with regard to dominant taxa among the stations. In 2001, the benthic community at all three stations was dominated by relatively pollution sensitive taxa such as *Rheotanytarsus* (Station 13) or *Cheumatopsyche* (Stations 22 and 91). In 2002, the dominant taxa were the highly tolerant *Glyptotendipes* (Station 13) and the facultative taxon *Polypedilum flavum* (Stations 22 and 91). Although some EPT taxa (e.g., *Baetis intercalaris, Stenonema integrum,* and *Tricorythodes*) actually increased in density at Station 13 in 2002, due to the extreme abundance of *Glyptotendipes* the relative abundance of these EPT taxa was minimized. This was not as evident at the two downstream stations, which exhibited more modest shifts in composition. Total density was very similar between years at Stations 22 and 91 but increased considerably in 2002 at Station 13 in response to the elevated abundance of *Glyptotendipes*.

There was generally less agreement in the Ponar data between years compared to the HD data. Total taxa richness decreased from 2001 to 2002 at each of the three stations (Table 3-79). The difference in EPT richness varied by station. EPT richness decreased in 2002 at Station 13, remained the same at Station 22, and increased at Station 91. Dominance based on relative abundance remained unchanged at Stations 22 and 91 with Oligochaeta representing greater than 44 percent at each station in both years. However, at Station 13, *Caecidotea* was the dominant taxon in 2001 but was absent in 2002 and *Tanytarsus* became the dominant taxon. Contrary to the Station 13 HD results, the Station 13 Ponars results exhibited a general decline in EPT richness and density while more pollution tolerant taxa increased. As with the HD total density, Ponar total density remained relatively similar in 2002 at Stations 22 and 91 but increased substantially at Station 13 when compared to 2001.

Chironomidae head capsule deformities were observed at all three stations over the two study years though never at the same station in both years (Tables 3-26 and 3-57). In all cases, a single specimen exhibited a deformity. Based on literature accounts, these incidence levels are likely below expected background levels (Bisthoven et al. 1998, Bisthoven and Ollevier 1998, Dermot 1991, Groenenduk et al. 1998, Hudson and Ciborowski 1996a, Hudson and Ciborowski 1996b, Lenat 1993, and Warwick 1985).

TABLE 3-78. COMPARISON OF HESTER-DENDY DENSITIES BETWEEN JULY 2001 AND JULY 2002 FOR SAMPLING STATIONS WITHIN THE DES PLAINES RIVER.

TAXA	13 LAKE COOK RD.				22 OGDEN AVE.				91 MATERIAL SERVICE RD.			
	2001		2002		2001		2002		2001		2002	
	#/m2	%	#/m2	%	#/m2	%	#/m2	%	#/m2	%	#/m2	%
Hydra	3.6	0.02	17.9	0.05	--	--	--	--	--	--	--	--
Turbellaria	428.8	2.87	35.9	0.10	19.7	1.15	64.6	3.55	3,310.0	21.34	2,875.9	18.67
Plumatella	1.8	0.01	--	--	--	--	--	--	--	--	1.8	0.01
Oligochaeta	50.2	0.34	233.2	0.65	220.7	12.81	290.6	15.98	358.8	2.31	9.0	0.06
Caecidotea	--	--	--	--	5.4	0.31	1.8	0.10	--	--	--	--
Gammarus fasciatus	3.6	0.02	1,298.9	3.62	--	--	--	--	--	--	--	--
Hydracarina	5.4	0.04	--	--	--	--	--	--	--	--	--	--
Isonychia	35.9	0.24	43.1	0.12	--	--	--	--	--	--	--	--
Baetis intercalaris	663.8	4.44	89.7	0.25	30.5	1.77	46.6	2.56	44.9	0.29	333.7	2.17
Pseudocloeon ephippiatum	1.8	0.01	--	--	--	--	--	--	--	--	--	--
Leucrocuta	57.4	0.38	16.1	0.05	35.9	2.08	32.3	1.78	--	--	--	--
Heptagenia	28.7	0.19	19.7	0.06	--	--	--	--	--	--	--	--
Stenacron	78.9	0.53	136.3	0.38	104.1	6.04	--	--	9.0	0.06	--	--
Stenonema	--	--	--	--	30.5	1.77	--	--	--	--	--	--
Stenonema integrum	220.7	1.47	231.4	0.65	--	--	--	--	--	--	--	--
Stenonema terminatum	543.6	3.63	497.0	1.39	--	--	25.1	1.38	--	--	--	--
Tricorythodes	188.4	1.26	642.3	1.79	17.9	1.04	25.1	1.38	26.9	0.17	30.5	0.20
Argia	--	--	--	--	3.6	0.21	--	--	--	--	--	--
Enallagma	--	--	17.9	0.05	--	--	--	--	--	--	--	--
Trepobates	--	--	--	--	--	--	--	--	--	--	1.8	0.01
Cyrnellus fraternus	3.6	0.02	82.5	0.23	--	--	--	--	--	--	--	--
Cheumatopsyche	2,865.1	19.15	988.5	2.76	495.2	28.75	200.9	11.05	5,660.2	36.50	2,768.2	17.97
Hydropsyche	--	--	--	--	--	--	--	--	--	--	1.8	0.01
Hydropsyche betteni	--	--	--	--	7.2	0.42	10.8	0.59	9.0	0.06	--	--
Hydropsyche orris	--	--	--	--	--	--	--	--	349.8	2.26	254.8	1.65
Hydropsyche simulans	272.7	1.82	62.8	0.18	--	--	--	--	26.9	0.17	7.2	0.05
Hydropsyche bidens	615.4	4.11	84.3	0.24	--	--	--	--	--	--	19.7	0.13
Ceratopsyche morosa	253.0	1.69	7.2	0.02	25.1	1.46	17.9	0.99	9.0	0.06	37.7	0.24
Potamyia flava	71.8	0.48	68.2	0.19	--	--	--	--	--	--	--	--
Petrophila	--	--	--	--	--	--	--	--	17.9	0.12	16.1	0.10
Laccophilus maculosus	--	--	73.6	0.21	--	--	--	--	--	--	--	--
Dubiraphia	3.6	0.02	--	--	--	--	--	--	--	--	--	--
Macronychus glabratus	55.6	0.37	39.5	0.11	7.2	0.42	--	--	--	--	--	--
Stenelmis crenata grp.	16.1	0.11	222.5	0.62	1.8	0.10	5.4	0.30	17.9	0.12	9.0	0.06
Chironomidae	--	--	--	--	--	--	7.2	0.39	--	--	--	--
Procladius (Holotanypus)	21.5	0.14	--	--	1.8	0.10	--	--	--	--	--	--
Ablabesmyia janta	21.5	0.14	14.4	0.04	--	--	--	--	--	--	--	--
Ablabesmyia mallochi	--	--	--	--	1.8	0.10	10.8	0.59	--	--	--	--

TABLE 3-78 (cont.)

TAXA	13 LAKE COOK RD.				22 OGDEN AVE.				91 MATERIAL SERVICE RD.			
	2001		2002		2001		2002		2001		2002	
	#/m2	%	#/m2	%	#/m2	%	#/m2	%	#/m2	%	#/m2	%
Nilotanypus fimbriatus	21.5	0.14	14.4	0.04	19.7	1.15	10.8	0.59	--	--	--	--
Thienemannimyia grp.	192.0	1.28	98.7	0.28	70.0	4.06	71.8	3.94	--	--	--	--
Corynoneura	--	--	--	--	10.8	0.63	--	--	--	--	--	--
Thienemanniella xena	64.6	0.43	--	--	5.4	0.31	10.8	0.59	--	--	--	--
Thienemanniella similis	--	--	--	--	5.4	0.31	--	--	--	--	--	--
Cricotopus tremulus grp.	--	--	14.4	0.04	--	--	10.8	0.59	--	--	--	--
Cricotopus bicinctus grp.	--	--	84.3	0.24	--	--	236.8	13.02	--	--	--	--
Cricotopus sylvestris grp.	86.1	0.58	--	--	--	--	--	--	--	--	--	--
Nanocladius distinctus	--	--	--	--	41.3	2.40	46.6	2.56	134.6	0.87	34.1	0.22
Nanocladius crassicornus/rectinervis	64.6	0.43	41.3	0.12	--	--	--	--	125.6	0.81	--	--
Rheocricotopus robacki	64.6	0.43	--	--	14.4	0.83	--	--	--	--	--	--
Chironomus	21.5	0.14	--	--	--	--	--	--	--	--	--	--
Cryptochironomus	--	--	--	--	5.4	0.31	--	--	--	--	--	--
Dicrotendipes neomodestus	21.5	0.14	41.3	0.12	--	--	10.8	0.59	--	--	34.1	0.22
Endochironomus nigricans	86.1	0.58	--	--	--	--	--	--	--	--	--	--
Glyptotendipes	193.8	1.30	29,307.5	81.78	--	--	25.1	1.38	35.9	0.23	68.2	0.44
Paracladopelma	--	--	--	--	5.4	0.31	--	--	--	--	--	--
Polypedilum fallax grp.	--	--	--	--	16.1	0.94	--	--	--	--	--	--
Polypedilum flavum	1,980.6	13.24	154.3	0.43	235.0	13.65	545.4	29.98	5,373.2	34.64	8,880.5	57.66
Polypedilum illinoense	--	--	--	--	1.8	0.10	25.1	1.38	--	--	--	--
Polypedilum scalaenum grp.	--	--	315.8	0.88	84.3	4.90	35.9	1.97	--	--	--	--
Stenochironomus	--	--	--	--	--	--	25.1	1.38	--	--	--	--
Cladotanytarsus mancus grp.	--	--	28.7	0.08	--	--	--	--	--	--	--	--
Rheotanytarsus	5,649.4	37.76	814.5	2.27	86.1	5.00	25.1	1.38	--	--	--	--
Simulium	1.8	0.01	--	--	--	--	--	--	--	--	--	--
Pleuroceridae	--	--	--	--	1.8	0.10	--	--	--	--	--	--
Ferrissia	--	--	--	--	111.2	6.46	--	--	--	--	--	--
Musculium	--	--	--	--	--	--	--	--	--	--	17.9	0.12
TOTAL BENTHOS	14,960.5	100.00	35,837.8	100.00	1,722.3	100.00	1,819.2	100.00	15,509.5	100.00	15,401.9	100.00
TOTAL TAXA RICHNESS	39		34		32		25		16		19	
EPT TAXA RICHNESS	15		14		8		7		8		8	

TABLE 3-79. COMPARISON OF PETITE PONAR DENSITIES BETWEEN JULY 2001 AND JULY 2002 FOR SAMPLING STATIONS WITHIN THE DES PLAINES RIVER.

TAXA	13 LAKE COOK RD.				22 OGDEN AVE.				91 MATERIAL SERVICE RD.			
	2001		2002		2001		2002		2001		2002	
	#/m2	%	#/m2	%	#/m2	%	#/m2	%	#/m2	%	#/m2	%
Turbellaria	86.1	2.06	--	--	258.4	3.86	--	--	86.1	1.03	--	--
Urnatella gracilis	7.2	0.17	--	--	--	--	--	--	--	--	--	--
Oligochaeta	732.0	17.53	4,664.8	16.86	2,985.5	44.59	2,612.3	72.80	7,191.0	86.38	5,418.4	92.52
Helobdella stagnalis	--	--	--	--	7.2	0.11	--	--	57.4	0.69	21.5	0.37
Helobdella triserialis	--	--	--	--	7.2	0.11	--	--	--	--	--	--
Mooreobdella microstoma	--	--	--	--	7.2	0.11	7.2	0.20	14.4	0.17	57.4	0.98
Ostracoda	64.6	1.55	--	--	--	--	--	--	--	--	--	--
Caecidotea	868.4	20.79	--	--	100.5	1.50	--	--	28.7	0.34	--	--
Gammarus	--	--	129.2	0.47	--	--	--	--	--	--	--	--
Gammarus fasciatus	--	--	--	--	14.4	0.21	--	--	258.4	3.10	7.2	0.12
Orconectes virilis	--	--	--	--	--	--	--	--	--	--	7.2	0.12
Baetis intercalaris	7.2	0.17	--	--	35.9	0.54	--	--	--	--	7.2	0.12
Stenonema	35.9	0.86	--	--	--	--	--	--	--	--	--	--
Tricorythodes	43.1	1.03	143.5	0.52	236.8	3.54	7.2	0.20	--	--	7.2	0.12
Hexagenia bilineata	--	--	7.2	0.03	--	--	--	--	--	--	--	--
Stylurus	7.2	0.17	--	--	--	--	--	--	--	--	--	--
Corixidae	--	--	--	--	--	--	--	--	--	--	86.1	1.47
Palmacorixa	--	--	--	--	--	--	--	--	57.4	0.69	--	--
Cyrnellus fraternus	7.2	0.17	--	--	--	--	--	--	--	--	--	--
Cheumatopsyche	251.2	6.01	--	--	107.6	1.61	7.2	0.20	71.8	0.86	7.2	0.12
Potamyia flava	28.7	0.69	21.5	0.08	--	--	7.2	0.20	--	--	--	--
Dubiraphia	78.9	1.89	129.2	0.47	--	--	--	--	--	--	--	--
Macronychus glabratus	--	--	--	--	7.2	0.11	--	--	--	--	--	--
Stenelmis	--	--	--	--	--	--	35.9	1.00	--	--	--	--
Stenelmis crenata grp.	--	--	215.3	0.78	78.9	1.18	--	--	86.1	1.03	--	--
Natarsia sp. A	--	--	--	--	--	--	--	--	14.4	0.17	--	--
Procladius (Holotanypus)	--	--	358.8	1.30	43.1	0.64	64.6	1.80	114.8	1.38	35.9	0.61
Ablabesmyia mallochi	--	--	--	--	28.7	0.43	14.4	0.40	--	--	--	--
Thienemannimyia grp.	43.1	1.03	1,076.5	3.89	172.2	2.57	--	--	--	--	--	--
Corynoneura	--	--	--	--	7.2	0.11	--	--	--	--	--	--
Thienemanniella similis	--	--	--	--	7.2	0.11	--	--	--	--	--	--
Nanocladius	--	--	--	--	7.2	0.11	--	--	--	--	--	--
Nanocladius crassicornus/rectinervis	100.5	2.41	--	--	--	--	--	--	--	--	--	--
Chironomus	--	--	1,076.5	3.89	57.4	0.86	--	--	14.4	0.17	--	--
Cladopelma	35.9	0.86	--	--	--	--	--	--	--	--	--	--
Cryptochironomus	660.3	15.81	760.7	2.75	488.0	7.29	--	--	14.4	0.17	14.4	0.25
Dicrotendipes neomodestus	28.7	0.69	2,511.8	9.08	7.2	0.11	--	--	14.4	0.17	--	--
Dicrotendipes simpsoni	64.6	1.55	--	--	--	--	--	--	--	--	--	--

TABLE 3-79 (cont.)

TAXA	13 LAKE COOK RD.				22 OGDEN AVE.				91 MATERIAL SERVICE RD.			
	2001		2002		2001		2002		2001		2002	
	#/m2	%	#/m2	%	#/m2	%	#/m2	%	#/m2	%	#/m2	%
Glyptotendipes	28.7	0.69	445.0	1.61	--	--	21.5	0.60	14.4	0.17	--	--
Microtendipes	129.2	3.09	--	--	--	--	--	--	--	--	--	--
Paracladopelma	229.7	5.50	358.8	1.30	14.4	0.21	--	--	--	--	--	--
Polypedilum fallax grp.	--	--	--	--	14.4	0.21	--	--	--	--	--	--
Polypedilum flavum	--	--	358.8	1.30	35.9	0.54	--	--	14.4	0.17	7.2	0.12
Polypedilum halterale grp.	--	--	--	--	143.5	2.14	--	--	--	--	--	--
Polypedilum illinoense	100.5	2.41	--	--	--	--	--	--	--	--	--	--
Polypedilum scalaenum grp.	64.6	1.55	3,229.5	11.67	1,550.2	23.15	315.8	8.80	186.6	2.24	64.6	1.10
Cladotanytarsus mancus grp.	--	--	358.8	1.30	--	--	7.2	0.20	--	--	--	--
Cladotanytarsus vanderwulpi grp.	--	--	--	--	28.7	0.43	--	--	--	--	--	--
Rheotanytarsus	--	--	--	--	21.5	0.32	--	--	--	--	--	--
Tanytarsus	--	--	11,317.6	40.90	--	--	--	--	--	--	--	--
Tanytarsus guerlus grp.	380.4	9.11	--	--	--	--	--	--	--	--	--	--
Amnicola	--	--	--	--	--	--	--	--	14.4	0.17	--	--
Pleuroceridae	--	--	--	--	14.4	0.21	--	--	28.7	0.34	--	--
Corbicula fluminea	28.7	0.69	509.5	1.84	7.2	0.11	488.0	13.60	28.7	0.34	107.6	1.84
Musculium	--	--	--	--	21.5	0.32	--	--	--	--	--	--
Musculium transversum	--	--	--	--	--	--	--	--	14.4	0.17	7.2	0.12
Pisidium	64.6	1.55	--	--	179.4	2.68	--	--	--	--	--	--
TOTAL BENTHOS	4,176.8	100.00	27,673.1	100.00	6,695.8	100.00	3,588.3	100.00	8,324.9	100.00	5,856.1	100.00
TOTAL TAXA RICHNESS	27		19		32		12		21		15	
EPT TAXA RICHNESS	6		3		3		3		1		3	

Based on the HD and Ponar data combined, total richness decreased at Station 13 from 53 to 42 taxa in 2002, decreased from 42 to 29 taxa at Station 22, and decreased from 30 to 28 taxa at Station 91 (Tables 3-78 and 3-79). EPT richness was the same between years at Station 13 (15 taxa) and Station 22 (eight taxa) but increased from eight to nine taxa at Station 91 in 2002. However, in each year and for each sample type total and EPT taxa richness was generally higher upstream at Station 13 and decreased in a downstream direction. This suggests that the benthic community among these three locations becomes increasingly impaired from upstream to downstream.

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APPENDIX A

2001 CENTER AND NEAR SHORE HD AND PONAR DATA

APPENDIX A - 2001 MACROINVERTEBRATE SAMPLES - RAW DATA SUMMARY - HESTER-DENDY DATA

WATERWAY= CAL-SAG CHANNEL,
LOCATION= CICERO AVE.,
STATION= 59,
and DATE= 24AUG01

TAXA	CENTER			SIDE		
	#_	#/m2_	%_	#_	#/m2_	%_
Hydra	1,050	3,767.5	26.45	0	0.0	0.00
Turbellaria	10	35.9	0.25	80	287.0	3.00
Oligochaeta	1,080	3,875.1	27.20	550	1,973.4	20.60
Caecidotea	10	35.9	0.25	0	0.0	0.00
Gammarus fasciatus	460	1,650.5	11.59	530	1,901.7	19.85
Argia	10	35.9	0.25	0	0.0	0.00
Ablabesmyia mallochi	20	71.8	0.50	0	0.0	0.00
Nanocladius distinctus	70	251.2	1.76	40	143.5	1.50
Dicrotendipes neomodestus	0	0.0	0.00	10	35.9	0.37
Dicrotendipes simpsoni	650	2,332.3	16.37	1,290	4,628.6	48.31
Glyptotendipes	0	0.0	0.00	10	35.9	0.37
Menetus dilatatus	20	71.8	0.50	0	0.0	0.00
Ferrissia	30	107.6	0.76	0	0.0	0.00
Dreissena polymorpha	560	2,009.3	14.11	160	574.1	5.99
TOTAL BENTHOS	3,970	14,244.7	100.00	2,670	9,580.2	100.00

WATERWAY= CHICAGO SANITARY AND SHIP CANAL,
LOCATION= CICERO AVE.,
STATION= 75,
and DATE= 30JUL01

TAXA	CENTER			SIDE		
	#_	#/m2_	%_	#_	#/m2_	%_
Oligochaeta	2,734	9,809.8	96.13	3,470	12,450.7	93.78
Nanocladius distinctus	0	0.0	0.00	40	143.5	1.08
Dicrotendipes simpsoni	100	358.8	3.52	190	681.7	5.14
Corbicula fluminea	10	35.9	0.35	0	0.0	0.00
TOTAL BENTHOS	2,844	10,204.5	100.00	3,700	13,275.9	100.00

WATERWAY= CHICAGO SANITARY AND SHIP CANAL,
LOCATION= HARLEM AVE.,
STATION= 41,
and DATE= 30JUL01

TAXA	CENTER			SIDE		
	#_	#/m2_	%_	#_	#/m2_	%_
Turbellaria	380	1,363.5	2.48	880	3,157.5	6.65
Plumatella	0	0.0	0.00	1	3.6	0.01
Oligochaeta	13,770	49,408.0	89.94	10,290	36,921.4	77.71
Caecidotea	10	35.9	0.07	10	35.9	0.08
Gammarus fasciatus	120	430.6	0.78	0	0.0	0.00
Cricotopus sylvestris grp.	0	0.0	0.00	30	107.6	0.23
Nanocladius distinctus	20	71.8	0.13	30	107.6	0.23
Dicrotendipes simpsoni	1,010	3,624.0	6.60	1,970	7,068.5	14.88
Parachironomus	0	0.0	0.00	30	107.6	0.23
TOTAL BENTHOS	15,310	54,933.6	100.00	13,241	47,509.9	100.00

WATERWAY= CHICAGO SANITARY AND SHIP CANAL,
LOCATION= LOCKPORT,
STATION= 92,
and DATE= 01AUG01

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Hydra	480	1,722.3	5.85	0	0.0	0.00
Turbellaria	630	2,260.5	7.67	0	0.0	0.00
Oligochaeta	5,440	19,519.2	66.26	715	2,565.5	58.13
Helobdella	20	71.8	0.24	0	0.0	0.00
Gammarus fasciatus	380	1,363.5	4.63	285	1,022.6	23.17
Cyrnellus fraternus	10	35.9	0.12	0	0.0	0.00
Hydropsyche	0	0.0	0.00	5	17.9	0.41
Ablabesmyia janta	100	358.8	1.22	0	0.0	0.00
Nanocladius distinctus	120	430.6	1.46	70	251.2	5.69
Dicrotendipes simpsoni	870	3,121.6	10.60	155	556.2	12.60
Corbicula fluminea	160	574.1	1.95	0	0.0	0.00
TOTAL BENTHOS	8,210	29,458.2	100.00	1,230	4,413.3	100.00

WATERWAY= CALUMET R.,
LOCATION= 130TH ST.,
STATION= 55,
and DATE= 24AUG01

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Plumatella	0	0.0	0.00	1	3.6	0.01
Oligochaeta	200	717.6	1.52	110	394.7	1.33
Gammarus fasciatus	400	1,435.2	3.03	310	1,112.3	3.73
Cyrnellus fraternus	0	0.0	0.00	20	71.8	0.24
Ablabesmyia mallochi	0	0.0	0.00	10	35.9	0.12
Nanocladius distinctus	0	0.0	0.00	10	35.9	0.12
Chironomus	100	358.8	0.76	0	0.0	0.00
Dicrotendipes simpsoni	0	0.0	0.00	80	287.0	0.96
Glyptotendipes	0	0.0	0.00	20	71.8	0.24
Dreissena polymorpha	12,500	44,851.1	94.70	7,740	27,771.8	93.24
TOTAL BENTHOS	13,200	47,362.8	100.00	8,301	29,784.7	100.00

WATERWAY= DES PLAINES R.,
LOCATION= LAKE COOK RD.,
STATION= 13, and DATE= 25JUL01

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Hydra	0	0.0	0.00	2	7.2	0.10
Turbellaria	224	803.7	3.57	15	53.8	0.73
Plumatella	1	3.6	0.02	0	0.0	0.00
Oligochaeta	26	93.3	0.41	2	7.2	0.10
Gammarus fasciatus	0	0.0	0.00	2	7.2	0.10
Hydracarina	3	10.8	0.05	0	0.0	0.00
Isonychia	17	61.0	0.27	3	10.8	0.15
Baetis intercalaris	342	1,227.1	5.45	28	100.5	1.36
Pseudocloeon ephippiatum	0	0.0	0.00	1	3.6	0.05
Leucrocuta	2	7.2	0.03	30	107.6	1.46
Heptagenia	5	17.9	0.08	11	39.5	0.53
Stenacron	13	46.6	0.21	31	111.2	1.51
Stenonema integrum	78	279.9	1.24	45	161.5	2.19
Stenonema terminatum	195	699.7	3.11	108	387.5	5.25
Tricorythodes	56	200.9	0.89	49	175.8	2.38
Cyrnellus fraternus	2	7.2	0.03	0	0.0	0.00
Cheumatopsyche	1,167	4,187.3	18.58	430	1,542.9	20.88
Hydropsyche simulans	136	488.0	2.17	16	57.4	0.78
Hydropsyche bidens	311	1,115.9	4.95	32	114.8	1.55
Ceratopsyche morosa	117	419.8	1.86	24	86.1	1.17
Potamyia flava	0	0.0	0.00	40	143.5	1.94
Dubiraphia	1	3.6	0.02	1	3.6	0.05
Macronychus glabratus	19	68.2	0.30	12	43.1	0.58
Stenelmis crenata grp.	7	25.1	0.11	2	7.2	0.10
Procladius (Holotanypus)	0	0.0	0.00	12	43.1	0.58

WATERWAY= DES PLAINES R.,
LOCATION= LAKE COOK RD.,
STATION= 13 (cont.),
and DATE= 25JUL01

TAXA (cont.)	CENTER			SIDE		
	#_	#/m2_	%_	#_	#/m2_	%_
Ablabesmyia janta	0	0.0	0.00	12	43.1	0.58
Nilotanypus fimbriatus	0	0.0	0.00	12	43.1	0.58
Thienemannimyia grp.	71	254.8	1.13	36	129.2	1.75
Thienemanniella xena	36	129.2	0.57	0	0.0	0.00
Cricotopus sylvestris grp.	36	129.2	0.57	12	43.1	0.58
Nanocladius crassicornus/rectinervis	0	0.0	0.00	36	129.2	1.75
Rheocricotopus robacki	36	129.2	0.57	0	0.0	0.00
Chironomus	0	0.0	0.00	12	43.1	0.58
Dicrotendipes neomodestus	0	0.0	0.00	12	43.1	0.58
Endochironomus nigricans	36	129.2	0.57	12	43.1	0.58
Glyptotendipes	36	129.2	0.57	72	258.3	3.50
Polypedilum flavum	924	3,315.4	14.71	180	645.9	8.74
Rheotanytarsus	2,382	8,546.8	37.93	767	2,752.1	37.25
Simulium	1	3.6	0.02	0	0.0	0.00
TOTAL BENTHOS	6,280	22,533.2	100.00	2,059	7,387.9	100.00

WATERWAY= DES PLAINES R.,
LOCATION= MATERIAL SERVICE RD.,
STATION= 91,
and DATE= 26JUL01

TAXA	CENTER			SIDE		
	#_	#/m2_	%_	#_	#/m2_	%_
Turbellaria	1,690	6,063.9	29.60	155	556.2	5.28
Oligochaeta	70	251.2	1.23	130	466.5	4.43
Baetis intercalaris	10	35.9	0.18	15	53.8	0.51
Stenacron	0	0.0	0.00	5	17.9	0.17
Tricorythodes	0	0.0	0.00	15	53.8	0.51
Cheumatopsyche	2,510	9,006.1	43.96	645	2,314.3	21.98
Hydropsyche betteni	0	0.0	0.00	5	17.9	0.17
Hydropsyche orris	170	610.0	2.98	25	89.7	0.85
Hydropsyche simulans	10	35.9	0.18	5	17.9	0.17
Ceratopsyche morosa	0	0.0	0.00	5	17.9	0.17
Petrophila	10	35.9	0.18	0	0.0	0.00
Stenelmis crenata grp.	10	35.9	0.18	0	0.0	0.00
Nanocladius distinctus	0	0.0	0.00	75	269.1	2.56
Nanocladius crassicornus/rectinervis	10	35.9	0.18	60	215.3	2.04
Glyptotendipes	0	0.0	0.00	20	71.8	0.68
Polypedilum flavum	1,220	4,377.5	21.37	1,775	6,368.9	60.48
TOTAL BENTHOS	5,710	20,488.0	100.00	2,935	10,531.0	100.00

WATERWAY= DES PLAINES R.,
LOCATION= OGDEN AVE.,
STATION= 22, and DATE= 26JUL01

TAXA	CENTER			SIDE		
	#_	#/m2_	%_	#_	#/m2_	%_
Turbellaria	2	7.2	0.28	9	32.3	3.78
Oligochaeta	97	348.0	13.43	26	93.3	10.92
Caecidotea	0	0.0	0.00	3	10.8	1.26
Baetis intercalaris	16	57.4	2.22	1	3.6	0.42
Leucrocuta	20	71.8	2.77	0	0.0	0.00
Stenacron	3	10.8	0.42	55	197.3	23.11
Stenonema	17	61.0	2.35	0	0.0	0.00
Tricorythodes	10	35.9	1.39	0	0.0	0.00
Argia	0	0.0	0.00	2	7.2	0.84
Cheumatopsyche	268	961.6	37.12	8	28.7	3.36
Hydropsyche betteni	4	14.4	0.55	0	0.0	0.00
Ceratopsyche morosa	14	50.2	1.94	0	0.0	0.00
Macronychus glabratus	3	10.8	0.42	1	3.6	0.42
Stenelmis crenata grp.	1	3.6	0.14	0	0.0	0.00
Procladius (Holotanypus)	0	0.0	0.00	1	3.6	0.42
Ablabesmyia mallochi	0	0.0	0.00	1	3.6	0.42
Nilotanypus fimbriatus	11	39.5	1.52	0	0.0	0.00

WATERWAY= DES PLAINES R.,
LOCATION= OGDEN AVE.,
STATION= 22 (cont.),
and DATE= 26JUL01

TAXA (cont.)	CENTER			SIDE		
	#_	#/m2	%	#_	#/m2	%
Thienemannimyia grp.	36	129.2	4.99	3	10.8	1.26
Corynoneura	0	0.0	0.00	6	21.5	2.52
Thienemanniella xena	0	0.0	0.00	3	10.8	1.26
Thienemanniella similis	3	10.8	0.42	0	0.0	0.00
Nanocladius distinctus	22	78.9	3.05	1	3.6	0.42
Rheocricotopus robacki	8	28.7	1.11	0	0.0	0.00
Cryptochironomus	3	10.8	0.42	0	0.0	0.00
Paracladopelma	3	10.8	0.42	0	0.0	0.00
Polypedilum fallax grp.	3	10.8	0.42	6	21.5	2.52
Polypedilum flavum	115	412.6	15.93	16	57.4	6.72
Polypedilum illinoense	0	0.0	0.00	1	3.6	0.42
Polypedilum scalaenum grp.	22	78.9	3.05	25	89.7	10.50
Rheotanytarsus	41	147.1	5.68	7	25.1	2.94
Pleuroceridae	0	0.0	0.00	1	3.6	0.42
Ferrissia	0	0.0	0.00	62	222.5	26.05
TOTAL BENTHOS	722	2,590.6	100.00	238	854.0	100.00

WATERWAY= HIGGINS CR.,
LOCATION= WILLE RD.,
STATION= 78,
and DATE= 23JUL01

TAXA	CENTER			SIDE		
	#_	#/m2	%	#_	#/m2	%
Turbellaria	3,780	13,563.0	87.30	4,044	14,510.2	75.41
Oligochaeta	10	35.9	0.23	540	1,937.6	10.07
Mooreobdella microstoma	0	0.0	0.00	20	71.8	0.37
Caecidotea	450	1,614.6	10.39	569	2,041.6	10.61
Orconectes virilis	0	0.0	0.00	10	35.9	0.19
Cricotopus sylvestris grp.	0	0.0	0.00	110	394.7	2.05
Nanocladius crassicornus/rectinervis	0	0.0	0.00	20	71.8	0.37
Dicrotendipes neomodestus	90	322.9	2.08	40	143.5	0.75
Paratanytarsus	0	0.0	0.00	10	35.9	0.19
TOTAL BENTHOS	4,330	15,536.4	100.00	5,363	19,242.9	100.00

WATERWAY= LITTLE CALUMET R.,
LOCATION= HALSTED ST.,
STATION= 76,
and DATE= 24AUG01

TAXA	CENTER			SIDE		
	#_	#/m2	%	#_	#/m2	%
Hydra	760	2,726.9	10.12	40	143.5	0.93
Turbellaria	1,310	4,700.4	17.44	0	0.0	0.00
Oligochaeta	460	1,650.5	6.13	460	1,650.5	10.75
Mooreobdella microstoma	10	35.9	0.13	0	0.0	0.00
Caecidotea	0	0.0	0.00	20	71.8	0.47
Gammarus fasciatus	640	2,296.4	8.52	280	1,004.7	6.54
Nanocladius distinctus	90	322.9	1.20	40	143.5	0.93
Dicrotendipes simpsoni	150	538.2	2.00	380	1,363.5	8.88
Glyptotendipes	40	143.5	0.53	0	0.0	0.00
Physella	10	35.9	0.13	0	0.0	0.00
Menetus dilatatus	400	1,435.2	5.33	0	0.0	0.00
Ferrissia	20	71.8	0.27	10	35.9	0.23
Dreissena polymorpha	3,620	12,988.9	48.20	3,050	10,943.7	71.26
TOTAL BENTHOS	7,510	26,946.5	100.00	4,280	15,357.0	100.00

WATERWAY= MIDDLE FORK NORTH BRANCH CHICAGO R.
LOCATION= LAKE COOK RD.,
STATION= 31,
and DATE= 13AUG01

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Hydra	3	10.8	0.51	0	0.0	0.00
Turbellaria	75	269.1	12.78	32	114.8	7.16
Oligochaeta	6	21.5	1.02	23	82.5	5.15
Caecidotea	361	1,295.3	61.50	190	681.7	42.51
Ablabesmyia mallochi	0	0.0	0.00	4	14.4	0.89
Thienemannimyia grp.	9	32.3	1.53	0	0.0	0.00
Corynoneura	2	7.2	0.34	0	0.0	0.00
Nanocladius distinctus	4	14.4	0.68	32	114.8	7.16
Nanocladius crassicornus/rectinervis	54	193.8	9.20	16	57.4	3.58
Rheocricotopus robacki	0	0.0	0.00	2	7.2	0.45
Cryptochironomus	0	0.0	0.00	2	7.2	0.45
Dicrotendipes neomodestus	4	14.4	0.68	42	150.7	9.40
Dicrotendipes simpsoni	41	147.1	6.98	52	186.6	11.63
Polypedilum flavum	0	0.0	0.00	2	7.2	0.45
Polypedilum illinoense	25	89.7	4.26	30	107.6	6.71
Polypedilum scalaenum grp.	2	7.2	0.34	18	64.6	4.03
Physella	1	3.6	0.17	0	0.0	0.00
Pelecypoda	0	0.0	0.00	2	7.2	0.45
TOTAL BENTHOS	587	2,106.2	100.00	447	1,603.9	100.00

WATERWAY= NORTH BRANCH CHICAGO R.,
LOCATION= ALBANY AVE.,
STATION= 96,
and DATE= 21AUG01

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Turbellaria	70	251.2	1.53	45	161.5	3.81
Oligochaeta	10	35.9	0.22	45	161.5	3.81
Caecidotea	4,480	16,074.6	98.03	935	3,354.9	79.24
Cheumatopsyche	0	0.0	0.00	5	17.9	0.42
Thienemannimyia grp.	0	0.0	0.00	60	215.3	5.08
Nanocladius distinctus	0	0.0	0.00	20	71.8	1.69
Nanocladius crassicornus/rectinervis	10	35.9	0.22	0	0.0	0.00
Rheocricotopus robacki	0	0.0	0.00	10	35.9	0.85
Polypedilum flavum	0	0.0	0.00	25	89.7	2.12
Polypedilum illinoense	0	0.0	0.00	35	125.6	2.97
TOTAL BENTHOS	4,570	16,397.6	100.00	1,180	4,233.9	100.00

WATERWAY= NORTH BRANCH CHICAGO R.,
LOCATION= DEMPSTER ST.,
STATION= 34, and DATE= 20AUG01

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Hydra	114	409.0	7.52	458	1,643.3	25.62
Turbellaria	566	2,030.9	37.36	147	527.4	8.22
Oligochaeta	172	617.2	11.35	374	1,341.9	20.92
Helobdella triserialis	2	7.2	0.13	12	43.1	0.67
Erpobdella punctata punctata	1	3.6	0.07	2	7.2	0.11
Caecidotea	202	724.8	13.33	420	1,507.0	23.49
Stenacron	5	17.9	0.33	6	21.5	0.34
Argia	19	68.2	1.25	40	143.5	2.24
Cheumatopsyche	84	301.4	5.54	48	172.2	2.68
Hydropsyche betteni	1	3.6	0.07	0	0.0	0.00
Stenelmis crenata grp.	2	7.2	0.13	4	14.4	0.22
Procladius (Holotanypus)	11	39.5	0.73	0	0.0	0.00
Cricotopus sylvestris grp.	4	14.4	0.26	0	0.0	0.00
Nanocladius distinctus	4	14.4	0.26	21	75.3	1.17
Nanocladius crassicornus/rectinervis	11	39.5	0.73	3	10.8	0.17
Cryptochironomus	7	25.1	0.46	0	0.0	0.00
Dicrotendipes neomodestus	11	39.5	0.73	21	75.3	1.17
Dicrotendipes simpsoni	4	14.4	0.26	56	200.9	3.13
Glyptotendipes	0	0.0	0.00	6	21.5	0.34

WATERWAY= NORTH BRANCH CHICAGO R.,
LOCATION= DEMPSTER ST.,
STATION= 34 (cont.),
and DATE= 20AUG01

TAXA (cont.)	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Paracladopelma	0	0.0	0.00	3	10.8	0.17
Polypedilum flavum	40	143.5	2.64	12	43.1	0.67
Polypedilum illinoense	7	25.1	0.46	3	10.8	0.17
Polypedilum scalaenum grp.	244	875.5	16.11	149	534.6	8.33
Tanytarsus guerlus grp.	4	14.4	0.26	0	0.0	0.00
Musculium transversum	0	0.0	0.00	1	3.6	0.06
Pisidium	0	0.0	0.00	2	7.2	0.11
TOTAL BENTHOS	1,515	5,436.0	100.00	1,788	6,415.5	100.00

WATERWAY= NORTH BRANCH CHICAGO R.,
LOCATION= DIVERSEY PKWY.,
STATION= 73,
and DATE= 27AUG01

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Hydra	0	0.0	0.00	30	107.6	0.51
Turbellaria	0	0.0	0.00	510	1,829.9	8.61
Oligochaeta	16	57.4	100.00	4,690	16,828.1	79.22
Helobdella	0	0.0	0.00	10	35.9	0.17
Mooreobdella microstoma	0	0.0	0.00	20	71.8	0.34
Caecidotea	0	0.0	0.00	160	574.1	2.70
Gammarus fasciatus	0	0.0	0.00	30	107.6	0.51
Nanocladius distinctus	0	0.0	0.00	10	35.9	0.17
Dicrotendipes simpsoni	0	0.0	0.00	420	1,507.0	7.09
Glyptotendipes	0	0.0	0.00	30	107.6	0.51
Ferrissia	0	0.0	0.00	10	35.9	0.17
TOTAL BENTHOS	16	57.4	100.00	5,920	21,241.5	100.00

WATERWAY= NORTH BRANCH CHICAGO R.,
LOCATION= GLENVIEW RD.,
STATION= 104,
and DATE= 15AUG01

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Turbellaria	627	2,249.7	32.04	137	491.6	8.78
Oligochaeta	67	240.4	3.42	40	143.5	2.56
Caecidotea	40	143.5	2.04	7	25.1	0.45
Heptageniidae	33	118.4	1.69	0	0.0	0.00
Stenacron	3	10.8	0.15	7	25.1	0.45
Stenonema	17	61.0	0.87	33	118.4	2.11
Calopteryx	0	0.0	0.00	3	10.8	0.19
Argia	17	61.0	0.87	10	35.9	0.64
Cheumatopsyche	333	1,194.8	17.02	497	1,783.3	31.84
Hydropsyche betteni	7	25.1	0.36	3	10.8	0.19
Stenelmis	10	35.9	0.51	0	0.0	0.00
Thienemannimyia grp.	20	71.8	1.02	47	168.6	3.01
Corynoneura	10	35.9	0.51	0	0.0	0.00
Nanocladius distinctus	0	0.0	0.00	10	35.9	0.64
Nanocladius crassicornus/rectinervis	10	35.9	0.51	10	35.9	0.64
Rheocricotopus robacki	10	35.9	0.51	10	35.9	0.64
Dicrotendipes neomodestus	0	0.0	0.00	10	35.9	0.64
Dicrotendipes simpsoni	10	35.9	0.51	0	0.0	0.00
Endochironomus nigricans	10	35.9	0.51	0	0.0	0.00
Polypedilum flavum	627	2,249.7	32.04	687	2,465.0	44.01
Polypedilum illinoense	0	0.0	0.00	10	35.9	0.64
Polypedilum scalaenum grp.	93	333.7	4.75	40	143.5	2.56
Stenochironomus	10	35.9	0.51	0	0.0	0.00
Pelecypoda	3	10.8	0.15	0	0.0	0.00
TOTAL BENTHOS	1,957	7,021.9	100.00	1,561	5,601.0	100.00

WATERWAY= NORTH BRANCH CHICAGO R.,
LOCATION= GRAND AVE.,
STATION= 46,
and DATE= 27AUG01

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Turbellaria	50	179.4	0.87	0	0.0	0.00
Oligochaeta	5,270	18,909.2	91.65	8,050	28,884.1	97.10
Caecidotea	0	0.0	0.00	10	35.9	0.12
Gammarus fasciatus	80	287.0	1.39	20	71.8	0.24
Chironomidae	350	1,255.8	6.09	210	753.5	2.53
TOTAL BENTHOS	5,750	20,631.5	100.00	8,290	29,745.2	100.00

WATERWAY= NORTH BRANCH CHICAGO R.,
LOCATION= WILSON AVE.,
STATION= 37,
and DATE= 27AUG01

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Turbellaria	480	1,722.3	16.81	800	2,870.5	9.90
Oligochaeta	2,195	7,875.9	76.88	6,960	24,973.1	86.14
Caecidotea	100	358.8	3.50	110	394.7	1.36
Dicrotendipes simpsoni	70	251.2	2.45	200	717.6	2.48
Ferrissia	10	35.9	0.35	10	35.9	0.12
TOTAL BENTHOS	2,855	10,244.0	100.00	8,080	28,991.7	100.00

WATERWAY= NORTH SHORE CHANNEL,
LOCATION= CENTRAL RD.,
STATION= 35,
and DATE= 28AUG01

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Oligochaeta	293	1,051.3	73.43	264	947.3	62.41
Helobdella stagnalis	10	35.9	2.51	0	0.0	0.00
Caecidotea	2	7.2	0.50	55	197.3	13.00
Gammarus fasciatus	0	0.0	0.00	52	186.6	12.29
Nanocladius crassicornus/rectinervis	0	0.0	0.00	2	7.2	0.47
Dicrotendipes simpsoni	92	330.1	23.06	27	96.9	6.38
Parachironomus	0	0.0	0.00	2	7.2	0.47
Polypedilum flavum	0	0.0	0.00	2	7.2	0.47
Paratanytarsus	2	7.2	0.50	16	57.4	3.78
Dreissena polymorpha	0	0.0	0.00	3	10.8	0.71
TOTAL BENTHOS	399	1,431.6	100.00	423	1,517.8	100.00

WATERWAY= NORTH SHORE CHANNEL,
LOCATION= FOSTER AVE.,
STATION= 101,
and DATE= 27AUG01

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Turbellaria	1,720	6,171.5	27.97	580	2,081.1	7.40
Oligochaeta	3,630	13,024.8	59.02	5,670	20,344.5	72.32
Helobdella	0	0.0	0.00	10	35.9	0.13
Caecidotea	0	0.0	0.00	40	143.5	0.51
Gammarus fasciatus	0	0.0	0.00	190	681.7	2.42
Nanocladius distinctus	50	179.4	0.81	70	251.2	0.89
Dicrotendipes simpsoni	750	2,691.1	12.20	1,210	4,341.6	15.43
Glyptotendipes	0	0.0	0.00	20	71.8	0.26
Ferrissia	0	0.0	0.00	50	179.4	0.64
TOTAL BENTHOS	6,150	22,066.7	100.00	7,840	28,130.6	100.00

APPENDIX A - 2001 MACROINVERTEBRATE SAMPLES - RAW DATA SUMMARY - HESTER-DENDY DATA

WATERWAY= NORTH SHORE CHANNEL,
LOCATION= OAKTON ST.,
STATION= 102,
and DATE= 28AUG01

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Oligochaeta	3,110	11,159.0	99.68	5,880	21,098.0	87.63
Chironomidae	10	35.9	0.32	0	0.0	0.00
Dicrotendipes simpsoni	0	0.0	0.00	830	2,978.1	12.37
TOTAL BENTHOS	3,120	11,194.8	100.00	6,710	24,076.1	100.00

WATERWAY= NORTH SHORE CHANNEL,
LOCATION= TOUHY AVE.,
STATION= 36,
and DATE= 28AUG01

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Turbellaria	1,770	6,350.9	12.11	730	2,619.3	5.78
Oligochaeta	10,150	36,419.1	69.47	7,320	26,264.8	58.00
Caecidotea	0	0.0	0.00	10	35.9	0.08
Gammarus fasciatus	0	0.0	0.00	80	287.0	0.63
Cricotopus bicinctus grp.	0	0.0	0.00	270	968.8	2.14
Nanocladius distinctus	430	1,542.9	2.94	400	1,435.2	3.17
Dicrotendipes simpsoni	2,140	7,678.5	14.65	3,300	11,840.7	26.15
Glyptotendipes	80	287.0	0.55	130	466.5	1.03
Parachironomus	0	0.0	0.00	340	1,219.9	2.69
Polypedilum illinoense	40	143.5	0.27	0	0.0	0.00
Menetus dilatatus	0	0.0	0.00	40	143.5	0.32
TOTAL BENTHOS	14,610	52,422.0	100.00	12,620	45,281.7	100.00

WATERWAY= SALT CR.,
LOCATION= DEVON AVE.,
STATION= 18,
and DATE= 24JUL01

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Turbellaria	90	322.9	1.75	540	1,937.6	14.36
Oligochaeta	330	1,184.1	6.41	310	1,112.3	8.24
Caecidotea	0	0.0	0.00	20	71.8	0.53
Hydracarina	10	35.9	0.19	0	0.0	0.00
Tricorythodes	20	71.8	0.39	0	0.0	0.00
Enallagma	10	35.9	0.19	0	0.0	0.00
Cheumatopsyche	1,070	3,839.3	20.78	570	2,045.2	15.16
Hydroptila	20	71.8	0.39	10	35.9	0.27
Chaoborus	0	0.0	0.00	10	35.9	0.27
Procladius (Holotanypus)	40	143.5	0.78	20	71.8	0.53
Ablabesmyia janta	170	610.0	3.30	20	71.8	0.53
Ablabesmyia mallochi	0	0.0	0.00	70	251.2	1.86
Thienemannimyia grp.	370	1,327.6	7.18	120	430.6	3.19
Thienemanniella xena	170	610.0	3.30	50	179.4	1.33
Cricotopus tremulus grp.	0	0.0	0.00	100	358.8	2.66
Cricotopus bicinctus grp.	80	287.0	1.55	70	251.2	1.86
Cricotopus sylvestris grp.	0	0.0	0.00	20	71.8	0.53
Nanocladius distinctus	0	0.0	0.00	70	251.2	1.86
Nanocladius crassicornus/rectinervis	120	430.6	2.33	140	502.3	3.72
Dicrotendipes neomodestus	40	143.5	0.78	0	0.0	0.00
Dicrotendipes simpsoni	40	143.5	0.78	20	71.8	0.53
Endochironomus nigricans	40	143.5	0.78	50	179.4	1.33
Polypedilum flavum	1,450	5,202.7	28.16	1,000	3,588.1	26.60
Polypedilum illinoense	790	2,834.6	15.34	400	1,435.2	10.64
Polypedilum scalaenum grp.	50	179.4	0.97	50	179.4	1.33
Stenochironomus	40	143.5	0.78	0	0.0	0.00
Paratanytarsus	40	143.5	0.78	0	0.0	0.00
Tanytarsus guerlus grp.	120	430.6	2.33	100	358.8	2.66
Hemerodromia	10	35.9	0.19	0	0.0	0.00
Physella	10	35.9	0.19	0	0.0	0.00
Menetus dilatatus	20	71.8	0.39	0	0.0	0.00
TOTAL BENTHOS	5,150	18,478.7	100.00	3,760	13,491.2	100.00

APPENDIX A - 2001 MACROINVERTEBRATE SAMPLES - RAW DATA SUMMARY - HESTER-DENDY DATA

WATERWAY= SKOKIE R.,
LOCATION= FRONTAGE RD.,
STATION= 105,
and DATE= 14AUG01

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Hydra	6	21.5	1.38	18	64.6	2.31
Turbellaria	50	179.4	11.49	122	437.7	15.66
Oligochaeta	163	584.9	37.47	86	308.6	11.04
Helobdella triserialis	1	3.6	0.23	0	0.0	0.00
Caecidotea	8	28.7	1.84	11	39.5	1.41
Stenacron	14	50.2	3.22	20	71.8	2.57
Stenonema	13	46.6	2.99	0	0.0	0.00
Argia	7	25.1	1.61	6	21.5	0.77
Enallagma	0	0.0	0.00	4	14.4	0.51
Cyrnellus fraternus	32	114.8	7.36	29	104.1	3.72
Cheumatopsyche	4	14.4	0.92	120	430.6	15.40
Hydropsyche betteni	0	0.0	0.00	1	3.6	0.13
Hydroptila	12	43.1	2.76	10	35.9	1.28
Procladius (Holotanypus)	11	39.5	2.53	28	100.5	3.59
Ablabesmyia janta	8	28.7	1.84	7	25.1	0.90
Thienemannimyia grp.	7	25.1	1.61	0	0.0	0.00
Cricotopus bicinctus grp.	3	10.8	0.69	0	0.0	0.00
Nanocladius distinctus	3	10.8	0.69	4	14.4	0.51
Nanocladius crassicornus/rectinervis	1	3.6	0.23	0	0.0	0.00
Chironomus	1	3.6	0.23	0	0.0	0.00
Cryptochironomus	1	3.6	0.23	0	0.0	0.00
Dicrotendipes neomodestus	11	39.5	2.53	4	14.4	0.51
Dicrotendipes simpsoni	9	32.3	2.07	75	269.1	9.63
Endochironomus nigricans	4	14.4	0.92	53	190.2	6.80
Glyptotendipes	24	86.1	5.52	114	409.0	14.63
Polypedilum flavum	23	82.5	5.29	18	64.6	2.31
Polypedilum halterale grp.	1	3.6	0.23	0	0.0	0.00
Polypedilum illinoense	4	14.4	0.92	11	39.5	1.41
Polypedilum scalaenum grp.	3	10.8	0.69	11	39.5	1.41
Stenochironomus	8	28.7	1.84	25	89.7	3.21
Rheotanytarsus	3	10.8	0.69	0	0.0	0.00
Ferrissia	0	0.0	0.00	2	7.2	0.26
TOTAL BENTHOS	435	1,560.8	100.00	779	2,795.1	100.00

WATERWAY= SKOKIE R.,
LOCATION= LAKE COOK RD.,
STATION= 32,
and DATE= 13AUG01

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Turbellaria	530	1,901.7	38.29	410	1,471.1	38.07
Oligochaeta	447	1,603.9	32.30	300	1,076.4	27.86
Helobdella stagnalis	20	71.8	1.45	23	82.5	2.14
Mooreobdella microstoma	3	10.8	0.22	0	0.0	0.00
Caecidotea	153	549.0	11.05	63	226.0	5.85
Hydracarina	3	10.8	0.22	0	0.0	0.00
Argia	20	71.8	1.45	7	25.1	0.65
Procladius (Holotanypus)	7	25.1	0.51	7	25.1	0.65
Dicrotendipes neomodestus	87	312.2	6.29	50	179.4	4.64
Dicrotendipes simpsoni	93	333.7	6.72	210	753.5	19.50
Endochironomus nigricans	7	25.1	0.51	0	0.0	0.00
Phaenopsectra	7	25.1	0.51	0	0.0	0.00
Polypedilum illinoense	7	25.1	0.51	7	25.1	0.65
TOTAL BENTHOS	1,384	4,965.9	100.00	1,077	3,864.4	100.00

APPENDIX A - 2001 MACROINVERTEBRATE SAMPLES - RAW DATA SUMMARY - HESTER-DENDY DATA

WATERWAY= W.B. DUPAGE R.,
LOCATION= LAKE ST.,
STATION= 64,
and DATE= 24JUL01

TAXA	CENTER			SIDE		
	#_	#/m2_	%_	#_	#/m2_	%_
Turbellaria	1,280	4,592.8	21.84	150	538.2	9.16
Plumatella	1	3.6	0.02	1	3.6	0.06
Oligochaeta	390	1,399.4	6.65	87	312.2	5.31
Baetis intercalaris	20	71.8	0.34	2	7.2	0.12
Argia	10	35.9	0.17	0	0.0	0.00
Enallagma	0	0.0	0.00	1	3.6	0.06
Cheumatopsyche	1,600	5,740.9	27.30	152	545.4	9.28
Hydroptila	40	143.5	0.68	12	43.1	0.73
Procladius (Holotanypus)	0	0.0	0.00	12	43.1	0.73
Thienemannimyia grp.	320	1,148.2	5.46	111	398.3	6.78
Thienemanniella xena	50	179.4	0.85	0	0.0	0.00
Cricotopus bicinctus grp.	80	287.0	1.36	0	0.0	0.00
Cricotopus sylvestris grp.	0	0.0	0.00	12	43.1	0.73
Nanocladius distinctus	80	287.0	1.36	0	0.0	0.00
Nanocladius crassicornus/rectinervis	180	645.9	3.07	37	132.8	2.26
Cryptochironomus	30	107.6	0.51	0	0.0	0.00
Dicrotendipes neomodestus	100	358.8	1.71	12	43.1	0.73
Dicrotendipes simpsoni	50	179.4	0.85	98	351.6	5.98
Endochironomus nigricans	50	179.4	0.85	12	43.1	0.73
Glyptotendipes	1,060	3,803.4	18.09	799	2,866.9	48.78
Polypedilum flavum	50	179.4	0.85	49	175.8	2.99
Polypedilum illinoense	340	1,219.9	5.80	74	265.5	4.52
Polypedilum scalaenum grp.	80	287.0	1.36	12	43.1	0.73
Simulium	30	107.6	0.51	5	17.9	0.31
Hemerodromia	10	35.9	0.17	0	0.0	0.00
Menetus dilatatus	10	35.9	0.17	0	0.0	0.00
TOTAL BENTHOS	5,861	21,029.8	100.00	1,638	5,877.3	100.00

WATERWAY= WEST FORK NORTH BRANCH CHICAGO R.,
LOCATION= DUNDEE RD.,
STATION= 106,
and DATE= 10AUG01

TAXA	CENTER			SIDE		
	#_	#/m2_	%_	#_	#/m2_	%_
Turbellaria	35	125.6	8.06	52	186.6	7.33
Oligochaeta	8	28.7	1.84	135	484.4	19.04
Helobdella stagnalis	2	7.2	0.46	5	17.9	0.71
Mooreobdella microstoma	0	0.0	0.00	3	10.8	0.42
Caecidotea	97	348.0	22.35	125	448.5	17.63
Argia	0	0.0	0.00	3	10.8	0.42
Enallagma	6	21.5	1.38	18	64.6	2.54
Berosus	2	7.2	0.46	6	21.5	0.85
Procladius (Holotanypus)	0	0.0	0.00	11	39.5	1.55
Ablabesmyia mallochi	3	10.8	0.69	4	14.4	0.56
Thienemannimyia grp.	35	125.6	8.06	26	93.3	3.67
Cricotopus sylvestris grp.	6	21.5	1.38	0	0.0	0.00
Nanocladius crassicornus/rectinervis	3	10.8	0.69	0	0.0	0.00
Dicrotendipes neomodestus	127	455.7	29.26	189	678.1	26.66
Dicrotendipes simpsoni	6	21.5	1.38	4	14.4	0.56
Polypedilum flavum	6	21.5	1.38	11	39.5	1.55
Polypedilum illinoense	98	351.6	22.58	113	405.5	15.94
Paratanytarsus	0	0.0	0.00	4	14.4	0.56
TOTAL BENTHOS	434	1,557.2	100.00	709	2,544.0	100.00

APPENDIX A - 2001 MACROINVERTEBRATE SAMPLES - RAW DATA SUMMARY - HESTER-DENDY DATA

WATERWAY= WEST FORK NORTH BRANCH CHICAGO R.,
LOCATION= GOLF RD.,
STATION= 103,
and DATE= 17AUG01

TAXA	CENTER			SIDE		
	#_	#/m2	%	#_	#/m2	%
Turbellaria	545	1,955.5	30.19	75	269.1	4.66
Oligochaeta	365	1,309.7	20.22	440	1,578.8	27.33
Caecidotea	500	1,794.0	27.70	225	807.3	13.98
Stenacron	0	0.0	0.00	5	17.9	0.31
Argia	20	71.8	1.11	15	53.8	0.93
Cheumatopsyche	0	0.0	0.00	15	53.8	0.93
Procladius (Holotanypus)	10	35.9	0.55	5	17.9	0.31
Thienemannimyia grp.	0	0.0	0.00	20	71.8	1.24
Dicrotendipes neomodestus	40	143.5	2.22	55	197.3	3.42
Dicrotendipes simpsoni	175	627.9	9.70	445	1,596.7	27.64
Glyptotendipes	100	358.8	5.54	200	717.6	12.42
Polypedilum flavum	20	71.8	1.11	25	89.7	1.55
Polypedilum illinoense	30	107.6	1.66	80	287.0	4.97
Polypedilum scalaenum grp.	0	0.0	0.00	5	17.9	0.31
TOTAL BENTHOS	1,805	6,476.5	100.00	1,610	5,776.8	100.00

WATERWAY= CAL-SAG CHANNEL.,
LOCATION= CICERO AVE.,
STATION= 59,
and DATE= 24AUG01

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Oligochaeta	588	8,439.7	97.03	3,940	56,551.9	95.86
Gammarus fasciatus	0	0.0	0.00	10	143.5	0.24
Procladius (Holotanypus)	11	157.9	1.82	110	1,578.9	2.68
Dicrotendipes simpsoni	3	43.1	0.50	0	0.0	0.00
Corbicula fluminea	0	0.0	0.00	50	717.7	1.22
Dreissena polymorpha	4	57.4	0.66	0	0.0	0.00
TOTAL BENTHOS	606	8,698.1	100.00	4,110	58,991.9	100.00

WATERWAY= CHICAGO SANITARY AND SHIP CANAL,
LOCATION= CICERO AVE.,
STATION= 75,
and DATE= 30JUL01

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Oligochaeta	156	2,239.1	97.50	210	3,014.2	97.22
Procladius (Holotanypus)	3	43.1	1.88	3	43.1	1.39
Chironomus	1	14.4	0.63	0	0.0	0.00
Corbicula fluminea	0	0.0	0.00	3	43.1	1.39
TOTAL BENTHOS	160	2,296.5	100.00	216	3,100.3	100.00

WATERWAY= CHICAGO SANITARY AND SHIP CANAL,
LOCATION= HARLEM AVE.,
STATION= 41,
and DATE= 30JUL01

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Turbellaria	0	0.0	0.00	120	1,722.4	2.90
Plumatella	0	0.0	0.00	1	14.4	0.02
Oligochaeta	4,680	67,173.3	99.57	3,920	56,264.8	94.89
Gammarus fasciatus	10	143.5	0.21	20	287.1	0.48
Chironomus	10	143.5	0.21	0	0.0	0.00
Dicrotendipes simpsoni	0	0.0	0.00	50	717.7	1.21
Polypedilum illinoense	0	0.0	0.00	20	287.1	0.48
TOTAL BENTHOS	4,700	67,460.4	100.00	4,131	59,293.4	100.00

WATERWAY= CHICAGO SANITARY AND SHIP CANAL,
LOCATION= LOCKPORT,
STATION= 92,
and DATE= 01AUG01

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Oligochaeta	2,140	30,716.0	93.04	1,855	26,625.3	93.83
Gammarus fasciatus	0	0.0	0.00	16	229.7	0.81
Cheumatopsyche	10	143.5	0.43	0	0.0	0.00
Procladius (Holotanypus)	130	1,865.9	5.65	5	71.8	0.25
Nanocladius distinctus	0	0.0	0.00	65	933.0	3.29
Dicrotendipes simpsoni	10	143.5	0.43	35	502.4	1.77
Corbicula fluminea	10	143.5	0.43	1	14.4	0.05
TOTAL BENTHOS	2,300	33,012.5	100.00	1,977	28,376.4	100.00

WATERWAY= CALUMET R.,
LOCATION= 130TH ST.,
STATION= 55,
and DATE= 24AUG01

TAXA	CENTER			SIDE		
	#_	#/m2_	%_	#_	#/m2_	%_
Hydra	0	0.0	0.00	1	14.4	0.76
Turbellaria	0	0.0	0.00	1	14.4	0.76
Oligochaeta	405	5,813.1	95.52	107	1,535.8	81.68
Gammarus fasciatus	0	0.0	0.00	8	114.8	6.11
Procladius (Holotanypus)	6	86.1	1.42	1	14.4	0.76
Clinotanypus	1	14.4	0.24	0	0.0	0.00
Chironomus	1	14.4	0.24	0	0.0	0.00
Cryptochironomus	3	43.1	0.71	1	14.4	0.76
Microchironomus	1	14.4	0.24	0	0.0	0.00
Polypedilum scalaenum grp.	1	14.4	0.24	2	28.7	1.53
Pisidium compressum	2	28.7	0.47	0	0.0	0.00
Dreissena polymorpha	4	57.4	0.94	10	143.5	7.63
TOTAL BENTHOS	424	6,085.8	100.00	131	1,880.3	100.00

WATERWAY= DES PLAINES R.,
LOCATION= LAKE COOK RD.,
STATION= 13,
and DATE= 25JUL01

TAXA	CENTER			SIDE		
	#_	#/m2_	%_	#_	#/m2_	%_
Turbellaria	12	172.2	4.07	0	0.0	0.00
Urnatella gracilis	0	0.0	0.00	1	14.4	0.35
Oligochaeta	23	330.1	7.80	79	1,133.9	27.53
Ostracoda	1	14.4	0.34	8	114.8	2.79
Caecidotea	121	1,736.7	41.02	0	0.0	0.00
Baetis intercalaris	1	14.4	0.34	0	0.0	0.00
Stenonema	5	71.8	1.69	0	0.0	0.00
Tricorythodes	6	86.1	2.03	0	0.0	0.00
Stylurus	0	0.0	0.00	1	14.4	0.35
Cyrnellus fraternus	1	14.4	0.34	0	0.0	0.00
Cheumatopsyche	34	488.0	11.53	1	14.4	0.35
Potamyia flava	4	57.4	1.36	0	0.0	0.00
Dubiraphia	0	0.0	0.00	11	157.9	3.83
Thienemannimyia grp.	4	57.4	1.36	2	28.7	0.70
Nanocladius crassicornus/rectinervis	14	200.9	4.75	0	0.0	0.00
Cladopelma	0	0.0	0.00	5	71.8	1.74
Cryptochironomus	4	57.4	1.36	88	1,263.1	30.66
Dicrotendipes neomodestus	4	57.4	1.36	0	0.0	0.00
Dicrotendipes simpsoni	9	129.2	3.05	0	0.0	0.00
Glyptotendipes	4	57.4	1.36	0	0.0	0.00
Microtendipes	18	258.4	6.10	0	0.0	0.00
Paracladopelma	0	0.0	0.00	32	459.3	11.15
Polypedilum illinoense	14	200.9	4.75	0	0.0	0.00
Polypedilum scalaenum grp.	0	0.0	0.00	9	129.2	3.14
Tanytarsus guerlus grp.	14	200.9	4.75	39	559.8	13.59
Corbicula fluminea	0	0.0	0.00	4	57.4	1.39
Pisidium	2	28.7	0.68	7	100.5	2.44
TOTAL BENTHOS	295	4,234.2	100.00	287	4,119.4	100.00

WATERWAY= DES PLAINES R.,
LOCATION= MATERIAL SERVICE RD.,
STATION= 91, and DATE= 26JUL01

TAXA	CENTER			SIDE		
	#_	#/m2_	%_	#_	#/m2_	%_
Turbellaria	--	--	--	6	86.1	1.03
Oligochaeta	--	--	--	501	7,191.0	86.38
Helobdella stagnalis	--	--	--	4	57.4	0.69
Mooreobdella microstoma	--	--	--	1	14.4	0.17
Caecidotea	--	--	--	2	28.7	0.34
Gammarus fasciatus	--	--	--	18	258.4	3.10
Palmacorixa	--	--	--	4	57.4	0.69
Cheumatopsyche	--	--	--	5	71.8	0.86

APPENDIX A - 2001 MACROINVERTEBRATE SAMPLES - RAW DATA SUMMARY - PETITE PONAR DATA

WATERWAY= DES PLAINES R.,
LOCATION= MATERIAL SERVICE RD.,
STATION= 91 (cont.),
and DATE= 26JUL01

TAXA (cont.)	CENTER			SIDE		
	#_	#/m2	%	#_	#/m2	%
Stenelmis crenata grp.	—	—	—	6	86.1	1.03
Natarsia sp. A	—	—	—	1	14.4	0.17
Procladius (Holotanypus)	—	—	—	8	114.8	1.38
Chironomus	—	—	—	1	14.4	0.17
Cryptochironomus	—	—	—	1	14.4	0.17
Dicrotendipes neomodestus	—	—	—	1	14.4	0.17
Glyptotendipes	—	—	—	1	14.4	0.17
Polypedilum flavum	—	—	—	1	14.4	0.17
Polypedilum scalaenum grp.	—	—	—	13	186.6	2.24
Amnicola	—	—	—	1	14.4	0.17
Pleuroceridae	—	—	—	2	28.7	0.34
Corbicula fluminea	—	—	—	2	28.7	0.34
Musculium transversum	—	—	—	1	14.4	0.17
TOTAL BENTHOS	—	—	—	580	8,324.9	100.00

WATERWAY= DES PLAINES R.,
LOCATION= OGDEN AVE.,
STATION= 22,
and DATE= 26JUL01

TAXA	CENTER			SIDE		
	#_	#/m2	%	#_	#/m2	%
Turbellaria	35	502.4	6.11	1	14.4	0.28
Oligochaeta	143	2,052.5	24.96	273	3,918.4	75.83
Helobdella stagnalis	0	0.0	0.00	1	14.4	0.28
Helobdella triserialis	1	14.4	0.17	0	0.0	0.00
Mooreobdella microstoma	1	14.4	0.17	0	0.0	0.00
Caecidotea	7	100.5	1.22	7	100.5	1.94
Gammarus fasciatus	1	14.4	0.17	1	14.4	0.28
Baetis intercalaris	4	57.4	0.70	1	14.4	0.28
Tricorythodes	33	473.7	5.76	0	0.0	0.00
Cheumatopsyche	14	200.9	2.44	1	14.4	0.28
Macronychus glabratus	1	14.4	0.17	0	0.0	0.00
Stenelmis crenata grp.	11	157.9	1.92	0	0.0	0.00
Procladius (Holotanypus)	0	0.0	0.00	6	86.1	1.67
Ablabesmyia mallochi	0	0.0	0.00	4	57.4	1.11
Thienemannimyia grp.	24	344.5	4.19	0	0.0	0.00
Corynoneura	0	0.0	0.00	1	14.4	0.28
Thienemanniella similis	0	0.0	0.00	1	14.4	0.28
Nanocladius	0	0.0	0.00	1	14.4	0.28
Chironomus	0	0.0	0.00	8	114.8	2.22
Cryptochironomus	64	918.6	11.17	4	57.4	1.11
Dicrotendipes neomodestus	0	0.0	0.00	1	14.4	0.28
Paracladopelma	0	0.0	0.00	2	28.7	0.56
Polypedilum fallax grp.	0	0.0	0.00	2	28.7	0.56
Polypedilum flavum	5	71.8	0.87	0	0.0	0.00
Polypedilum halterale grp.	16	229.7	2.79	4	57.4	1.11
Polypedilum scalaenum grp.	176	2,526.2	30.72	40	574.1	11.11
Cladotanytarsus vanderwulpi grp.	3	43.1	0.52	1	14.4	0.28
Rheotanytarsus	3	43.1	0.52	0	0.0	0.00
Pleuroceridae	2	28.7	0.35	0	0.0	0.00
Corbicula fluminea	1	14.4	0.17	0	0.0	0.00
Musculium	3	43.1	0.52	0	0.0	0.00
Pisidium	25	358.8	4.36	0	0.0	0.00
TOTAL BENTHOS	573	8,224.4	100.00	360	5,167.2	100.00

WATERWAY= HIGGINS CR.,
LOCATION= WILLE RD.,
STATION= 78,
and DATE= 23JUL01

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Turbellaria	334	4,794.0	31.16	617	8,856.0	20.34
Oligochaeta	30	430.6	2.80	224	3,215.1	7.39
Erpobdella punctata punctata	0	0.0	0.00	1	14.4	0.03
Mooreobdella microstoma	27	387.5	2.52	38	545.4	1.25
Ostracoda	5	71.8	0.47	497	7,133.6	16.39
Caecidotea	655	9,401.4	61.10	1,602	22,993.9	52.82
Orconectes immunis	1	14.4	0.09	0	0.0	0.00
Enallagma	0	0.0	0.00	1	14.4	0.03
Bezzia	0	0.0	0.00	1	14.4	0.03
Tanypus	1	14.4	0.09	0	0.0	0.00
Thienemannimyia grp.	3	43.1	0.28	2	28.7	0.07
Cricotopus bicinctus grp.	6	86.1	0.56	10	143.5	0.33
Cricotopus sylvestris grp.	6	86.1	0.56	19	272.7	0.63
Chironomus	0	0.0	0.00	2	28.7	0.07
Cryptochironomus	0	0.0	0.00	2	28.7	0.07
Dicrotendipes neomodestus	1	14.4	0.09	4	57.4	0.13
Musculium transversum	0	0.0	0.00	5	71.8	0.16
Pisidium	3	43.1	0.28	8	114.8	0.26
TOTAL BENTHOS	1,072	15,386.7	100.00	3,033	43,533.5	100.00

WATERWAY= LITTLE CALUMET R.,
LOCATION= HALSTED ST.,
STATION= 76,
and DATE= 24AUG01

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Turbellaria	39	559.8	20.10	0	0.0	0.00
Oligochaeta	142	2,038.2	73.20	1,510	21,673.4	100.00
Gammarus fasciatus	4	57.4	2.06	0	0.0	0.00
Pisidium compressum	7	100.5	3.61	0	0.0	0.00
Dreissena polymorpha	2	28.7	1.03	0	0.0	0.00
TOTAL BENTHOS	194	2,784.5	100.00	1,510	21,673.4	100.00

WATERWAY= MIDDLE FORK NORTH BRANCH CHICAGO R.,
LOCATION= LAKE COOK RD.,
STATION= 31,
and DATE= 13AUG01

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Turbellaria	0	0.0	0.00	11	157.9	1.51
Oligochaeta	156	2,239.1	92.31	687	9,860.7	94.24
Caecidotea	0	0.0	0.00	9	129.2	1.23
Procladius (Holotanypus)	0	0.0	0.00	3	43.1	0.41
Cryptochironomus	0	0.0	0.00	2	28.7	0.27
Dicrotendipes simpsoni	0	0.0	0.00	3	43.1	0.41
Polypedilum illinoense	0	0.0	0.00	5	71.8	0.69
Polypedilum scalaenum grp.	0	0.0	0.00	2	28.7	0.27
Sphaerium simile	13	186.6	7.69	6	86.1	0.82
Musculium	0	0.0	0.00	1	14.4	0.14
TOTAL BENTHOS	169	2,425.7	100.00	729	10,463.5	100.00

APPENDIX A - 2001 MACROINVERTEBRATE SAMPLES - RAW DATA SUMMARY - PETITE PONAR DATA

WATERWAY= NORTH BRANCH CHICAGO R.,
LOCATION= ALBANY AVE.,
STATION= 96,
and DATE= 21AUG01

TAXA	CENTER			SIDE		
	#_	#/m2_	%_	#_	#/m2_	%_
Turbellaria	--	--	--	1	14.4	0.40
Oligochaeta	--	--	--	27	387.5	10.84
Helobdella triserialis	--	--	--	2	28.7	0.80
Mooreobdella microstoma	--	--	--	1	14.4	0.40
Caecidotea	--	--	--	1	14.4	0.40
Cheumatopsyche	--	--	--	2	28.7	0.80
Thienemannimyia grp.	--	--	--	1	14.4	0.40
Cricotopus bicinctus grp.	--	--	--	1	14.4	0.40
Cryptochironomus	--	--	--	1	14.4	0.40
Dicrotendipes neomodestus	--	--	--	1	14.4	0.40
Polypedilum illinoense	--	--	--	4	57.4	1.61
Polypedilum scalaenum grp.	--	--	--	17	244.0	6.83
Physella	--	--	--	1	14.4	0.40
Menetus dilatatus	--	--	--	1	14.4	0.40
Musculium transversum	--	--	--	166	2,382.6	66.67
Pisidium	--	--	--	2	28.7	0.80
Pisidium compressum	--	--	--	20	287.1	8.03
TOTAL BENTHOS	--	--	--	249	3,574.0	100.00

WATERWAY= NORTH BRANCH CHICAGO R.,
LOCATION= DEMPSTER ST.,
STATION= 34,
and DATE= 20AUG01

TAXA	CENTER			SIDE		
	#_	#/m2_	%_	#_	#/m2_	%_
Oligochaeta	442	6,344.1	48.79	1,053	15,114.0	66.65
Caecidotea	3	43.1	0.33	4	57.4	0.25
Stenelmis	5	71.8	0.55	0	0.0	0.00
Procladius (Holotanypus)	0	0.0	0.00	117	1,679.3	7.41
Thienemannimyia grp.	12	172.2	1.32	0	0.0	0.00
Chironomus	0	0.0	0.00	11	157.9	0.70
Cryptochironomus	0	0.0	0.00	4	57.4	0.25
Dicrotendipes neomodestus	35	502.4	3.86	0	0.0	0.00
Dicrotendipes simpsoni	24	344.5	2.65	0	0.0	0.00
Polypedilum flavum	12	172.2	1.32	0	0.0	0.00
Polypedilum illinoense	0	0.0	0.00	2	28.7	0.13
Polypedilum scalaenum grp.	353	5,066.7	38.96	378	5,425.5	23.92
Stenochironomus	0	0.0	0.00	2	28.7	0.13
Musculium transversum	10	143.5	1.10	9	129.2	0.57
Pisidium compressum	10	143.5	1.10	0	0.0	0.00
TOTAL BENTHOS	906	13,004.1	100.00	1,580	22,678.2	100.00

WATERWAY= NORTH BRANCH CHICAGO R.,
LOCATION= DIVERSEY PKWY.,
STATION= 73,
and DATE= 27AUG01

TAXA	CENTER			SIDE		
	#_	#/m2_	%_	#_	#/m2_	%_
Oligochaeta	5,320	76,359.4	99.44	12,010	172,382.8	99.50
Mooreobdella microstoma	0	0.0	0.00	10	143.5	0.08
Chironomidae	30	430.6	0.56	50	717.7	0.41
TOTAL BENTHOS	5,350	76,790.0	100.00	12,070	173,244.0	100.00

WATERWAY= NORTH BRANCH CHICAGO R.,
LOCATION= GLENVIEW RD.,
STATION= 104, and DATE= 15AUG01

TAXA	CENTER			SIDE		
	#_	#/m2_	%_	#_	#/m2_	%_
Turbellaria	27	387.5	6.78	2	28.7	1.06
Oligochaeta	109	1,564.5	27.39	136	1,952.0	71.96
Mooreobdella microstoma	2	28.7	0.50	0	0.0	0.00
Caecidotea	1	14.4	0.25	0	0.0	0.00
Heptageniidae	0	0.0	0.00	1	14.4	0.53
Cheumatopsyche	53	760.7	13.32	9	129.2	4.76
Hydropsyche betteni	1	14.4	0.25	0	0.0	0.00
Macronychus glabratus	2	28.7	0.50	0	0.0	0.00
Stenelmis crenata grp.	18	258.4	4.52	0	0.0	0.00
Procladius (Holotanypus)	0	0.0	0.00	17	244.0	8.99
Chironomus	0	0.0	0.00	1	14.4	0.53
Cryptochironomus	3	43.1	0.75	0	0.0	0.00
Dicrotendipes neomodestus	12	172.2	3.02	0	0.0	0.00
Dicrotendipes simpsoni	3	43.1	0.75	0	0.0	0.00
Polypedilum flavum	136	1,952.0	34.17	1	14.4	0.53
Polypedilum illinoense	0	0.0	0.00	2	28.7	1.06
Polypedilum scalaenum grp.	18	258.4	4.52	5	71.8	2.65
Musculium transversum	13	186.6	3.27	14	200.9	7.41
Pisidium	0	0.0	0.00	1	14.4	0.53
TOTAL BENTHOS	398	5,712.6	100.00	189	2,712.8	100.00

WATERWAY= NORTH BRANCH CHICAGO R.,
LOCATION= GRAND AVE.,
STATION= 46,
and DATE= 27AUG01

TAXA	CENTER			SIDE		
	#_	#/m2_	%_	#_	#/m2_	%_
Turbellaria	1	14.4	0.09	0	0.0	0.00
Plumatella	0	0.0	0.00	1	14.4	0.18
Oligochaeta	1,138	16,334.0	99.13	541	7,765.1	96.78
Chironomidae	0	0.0	0.00	16	229.7	2.86
Procladius (Holotanypus)	7	100.5	0.61	0	0.0	0.00
Glyptotendipes	2	28.7	0.17	0	0.0	0.00
Corbicula fluminea	0	0.0	0.00	1	14.4	0.18
TOTAL BENTHOS	1,148	16,477.6	100.00	559	8,023.5	100.00

WATERWAY= NORTH BRANCH CHICAGO R.,
LOCATION= WILSON AVE.,
STATION= 37,
and DATE= 27AUG01

TAXA	CENTER			SIDE		
	#_	#/m2_	%_	#_	#/m2_	%_
Turbellaria	0	0.0	0.00	30	430.6	1.23
Oligochaeta	2,650	38,036.2	100.00	2,370	34,017.2	97.53
Chironomidae	0	0.0	0.00	30	430.6	1.23
TOTAL BENTHOS	2,650	38,036.2	100.00	2,430	34,878.4	100.00

WATERWAY= NORTH SHORE CHANNEL,
LOCATION= CENTRAL RD.,
STATION= 35, and DATE= 28AUG01

TAXA	CENTER			SIDE		
	#_	#/m2_	%_	#_	#/m2_	%_
Oligochaeta	4,590	65,881.5	100.00	699	10,032.9	98.17
Helobdella stagnalis	0	0.0	0.00	1	14.4	0.14
Caecidotea	0	0.0	0.00	2	28.7	0.28
Gammarus fasciatus	0	0.0	0.00	1	14.4	0.14
Procladius (Holotanypus)	0	0.0	0.00	1	14.4	0.14
Ablabesmyia mallochi	0	0.0	0.00	1	14.4	0.14
Dreissena polymorpha	0	0.0	0.00	7	100.5	0.98
TOTAL BENTHOS	4,590	65,881.5	100.00	712	10,219.5	100.00

WATERWAY= NORTH SHORE CHANNEL,
LOCATION= FOSTER AVE.,
STATION= 101,
and DATE= 27AUG01

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Turbellaria	0	0.0	0.00	25	358.8	1.56
Oligochaeta	2,060	29,567.7	99.52	1,515	21,745.2	94.39
Gammarus fasciatus	10	143.5	0.48	10	143.5	0.62
Chironomidae	0	0.0	0.00	50	717.7	3.12
Dreissena polymorpha	0	0.0	0.00	5	71.8	0.31
TOTAL BENTHOS	2,070	29,711.3	100.00	1,605	23,037.0	100.00

WATERWAY= NORTH SHORE CHANNEL,
LOCATION= OAKTON ST.,
STATION= 102, and DATE= 28AUG01

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Oligochaeta	17,710	254,196.4	99.83	3,090	44,351.6	99.68
Procladius (Holotanypus)	30	430.6	0.17	10	143.5	0.32
TOTAL BENTHOS	17,740	254,627.0	100.00	3,100	44,495.1	100.00

WATERWAY= NORTH SHORE CHANNEL,
LOCATION= TOUHY AVE.,
STATION= 36, and DATE= 28AUG01

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Turbellaria	136	1,952.0	10.27	120	1,722.4	1.09
Oligochaeta	1,040	14,927.4	78.55	10,090	144,824.5	92.06
Caecidotea	1	14.4	0.08	0	0.0	0.00
Gammarus fasciatus	0	0.0	0.00	10	143.5	0.09
Chironomidae	0	0.0	0.00	740	10,621.4	6.75
Cricotopus bicinctus grp.	16	229.7	1.21	0	0.0	0.00
Cricotopus sylvestris grp.	4	57.4	0.30	0	0.0	0.00
Nanocladius distinctus	6	86.1	0.45	0	0.0	0.00
Dicrotendipes simpsoni	35	502.4	2.64	0	0.0	0.00
Parachironomus	86	1,234.4	6.50	0	0.0	0.00
TOTAL BENTHOS	1,324	19,003.7	100.00	10,960	157,311.8	100.00

WATERWAY= SALT CR.,
LOCATION= DEVON AVE.,
STATION= 18, and DATE= 24JUL01

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Turbellaria	1	14.4	0.13	0	0.0	0.00
Oligochaeta	303	4,349.0	40.40	937	13,449.0	81.55
Hydracarina	1	14.4	0.13	0	0.0	0.00
Tricorythodes	1	14.4	0.13	0	0.0	0.00
Cheumatopsyche	9	129.2	1.20	0	0.0	0.00
Dubiraphia	1	14.4	0.13	8	114.8	0.70
Chaoborus	0	0.0	0.00	61	875.5	5.31
Procladius (Holotanypus)	0	0.0	0.00	72	1,033.4	6.27
Chironomus	8	114.8	1.07	1	14.4	0.09
Cladopelma	4	57.4	0.53	1	14.4	0.09
Cryptochironomus	17	244.0	2.27	26	373.2	2.26
Dicrotendipes neomodestus	29	416.2	3.87	0	0.0	0.00
Paracladopelma	4	57.4	0.53	4	57.4	0.35
Polypedilum halterale grp.	21	301.4	2.80	15	215.3	1.31
Polypedilum illinoense	4	57.4	0.53	0	0.0	0.00
Polypedilum scalaenum grp.	63	904.3	8.40	12	172.2	1.04
Cladotanytarsus mancus grp.	214	3,071.6	28.53	3	43.1	0.26
Tanytarsus guerlus grp.	42	602.8	5.60	0	0.0	0.00
Menetus dilatatus	2	28.7	0.27	0	0.0	0.00
Corbicula fluminea	26	373.2	3.47	9	129.2	0.78
TOTAL BENTHOS	750	10,765.0	100.00	1,149	16,491.9	100.00

WATERWAY= SKOKIE R.,
LOCATION= FRONTAGE RD.,
STATION= 105,
and DATE= 14AUG01

TAXA	CENTER			SIDE		
	#_	#/m2	%	#_	#/m2	%
Turbellaria	0	0.0	0.00	2	28.7	0.51
Oligochaeta	298	4,277.3	84.90	326	4,679.2	83.16
Caecidotea	0	0.0	0.00	1	14.4	0.26
Gammarus fasciatus	1	14.4	0.28	0	0.0	0.00
Caenis	5	71.8	1.42	2	28.7	0.51
Cheumatopsyche	0	0.0	0.00	1	14.4	0.26
Dubiraphia	4	57.4	1.14	3	43.1	0.77
Chironomidae	42	602.8	11.97	0	0.0	0.00
Procladius (Holotanypus)	0	0.0	0.00	41	588.5	10.46
Cryptochironomus	0	0.0	0.00	3	43.1	0.77
Dicrotendipes simpsoni	0	0.0	0.00	7	100.5	1.79
Polypedilum flavum	0	0.0	0.00	3	43.1	0.77
Polypedilum illinoense	0	0.0	0.00	3	43.1	0.77
Lasmigona complanata	1	14.4	0.28	0	0.0	0.00
TOTAL BENTHOS	351	5,038.0	100.00	392	5,626.5	100.00

WATERWAY= SKOKIE R.,
LOCATION= LAKE COOK RD.,
STATION= 32,
and DATE= 13AUG01

TAXA	CENTER			SIDE		
	#_	#/m2	%	#_	#/m2	%
Oligochaeta	329	4,722.2	97.05	2,940	42,198.6	93.33
Caecidotea	0	0.0	0.00	5	71.8	0.16
Chironomidae	10	143.5	2.95	0	0.0	0.00
Procladius (Holotanypus)	0	0.0	0.00	15	215.3	0.48
Physella	0	0.0	0.00	20	287.1	0.63
Musculium transversum	0	0.0	0.00	60	861.2	1.90
Pisidium compressum	0	0.0	0.00	110	1,578.9	3.49
TOTAL BENTHOS	339	4,865.8	100.00	3,150	45,212.8	100.00

WATERWAY= W.B. DUPAGE R.,
LOCATION= LAKE ST.,
STATION= 64,
and DATE= 24JUL01

TAXA	CENTER			SIDE		
	#_	#/m2	%	#_	#/m2	%
Turbellaria	0	0.0	0.00	36	516.7	3.43
Oligochaeta	1,510	21,673.4	85.17	844	12,114.2	80.38
Mooreobdella microstoma	0	0.0	0.00	3	43.1	0.29
Cheumatopsyche	6	86.1	0.34	7	100.5	0.67
Berosus	1	14.4	0.06	0	0.0	0.00
Procladius (Holotanypus)	0	0.0	0.00	2	28.7	0.19
Thienemannimyia grp.	2	28.7	0.11	5	71.8	0.48
Cricotopus bicinctus grp.	2	28.7	0.11	2	28.7	0.19
Cricotopus sylvestris grp.	15	215.3	0.85	0	0.0	0.00
Nanocladius distinctus	4	57.4	0.23	2	28.7	0.19
Cryptochironomus	61	875.5	3.44	14	200.9	1.33
Dicrotendipes neomodestus	0	0.0	0.00	2	28.7	0.19
Dicrotendipes simpsoni	0	0.0	0.00	9	129.2	0.86
Glyptotendipes	15	215.3	0.85	51	732.0	4.86
Paracladopelma	2	28.7	0.11	2	28.7	0.19
Polypedilum flavum	15	215.3	0.85	28	401.9	2.67
Polypedilum illinoense	4	57.4	0.23	32	459.3	3.05
Polypedilum scalaenum grp.	92	1,320.5	5.19	9	129.2	0.86
Simulium	19	272.7	1.07	2	28.7	0.19
Corbicula fluminea	15	215.3	0.85	0	0.0	0.00
Musculium transversum	10	143.5	0.56	0	0.0	0.00
TOTAL BENTHOS	1,773	25,448.3	100.00	1,050	15,070.9	100.00

APPENDIX A - 2001 MACROINVERTEBRATE SAMPLES - RAW DATA SUMMARY - PETITE PONAR DATA

WATERWAY= WEST FORK NORTH BRANCH CHICAGO R.,
LOCATION= DUNDEE RD.,
STATION= 106,
and DATE= 10AUG01

TAXA	CENTER			SIDE		
	#_	#/m2	%	#_	#/m2	%
Turbellaria	3	43.1	0.14	0	0.0	0.00
Oligochaeta	883	12,673.9	42.45	139	1,995.1	30.68
Helobdella stagnalis	3	43.1	0.14	0	0.0	0.00
Erpobdella punctata punctata	3	43.1	0.14	0	0.0	0.00
Mooreobdella microstoma	87	1,248.7	4.18	0	0.0	0.00
Caecidotea	57	818.1	2.74	1	14.4	0.22
Procladius (Holotanypus)	3	43.1	0.14	0	0.0	0.00
Thienemannimyia grp.	3	43.1	0.14	0	0.0	0.00
Cricotopus bicinctus grp.	0	0.0	0.00	2	28.7	0.44
Cryptochironomus	3	43.1	0.14	2	28.7	0.44
Dicrotendipes neomodestus	3	43.1	0.14	4	57.4	0.88
Polypedilum illinoense	0	0.0	0.00	2	28.7	0.44
Polypedilum scalaenum grp.	23	330.1	1.11	145	2,081.2	32.01
Physella	3	43.1	0.14	1	14.4	0.22
Menetus dilatatus	0	0.0	0.00	2	28.7	0.44
Musculium transversum	713	10,233.9	34.28	155	2,224.8	34.22
Pisidium compressum	293	4,205.5	14.09	0	0.0	0.00
TOTAL BENTHOS	2,080	29,854.8	100.00	453	6,502.0	100.00

WATERWAY= WEST FORK NORTH BRANCH CHICAGO R.,
LOCATION= GOLF RD.,
STATION= 103,
and DATE= 17AUG01

TAXA	CENTER			SIDE		
	#_	#/m2	%	#_	#/m2	%
Turbellaria	10	143.5	0.22	0	0.0	0.00
Oligochaeta	4,320	62,006.1	93.51	203	2,913.7	87.88
Procladius (Holotanypus)	0	0.0	0.00	8	114.8	3.46
Chironomus	0	0.0	0.00	2	28.7	0.87
Glyptotendipes	150	2,153.0	3.25	0	0.0	0.00
Polypedilum scalaenum grp.	140	2,009.5	3.03	0	0.0	0.00
Amnicola	0	0.0	0.00	7	100.5	3.03
Musculium	0	0.0	0.00	10	143.5	4.33
Pisidium compressum	0	0.0	0.00	1	14.4	0.43
TOTAL BENTHOS	4,620	66,312.1	100.00	231	3,315.6	100.00

APPENDIX B

2002 CENTER AND NEAR SHORE HD AND PONAR DATA

APPENDIX B - 2002 MACROINVERTEBRATE SAMPLES - RAW DATA SUMMARY - HESTER-DENDY DATA

WATERWAY= CAL-SAG CHANNEL,
LOCATION= CICERO AVE.,
STATION= 59,
and DATE= 05SEP02

TAXA	CENTER			SIDE		
	#_	#/m2_	%_	#_	#/m2_	%_
Hydra	5	17.9	0.16	5	17.9	0.14
Turbellaria	0	0.0	0.00	10	35.9	0.28
Oligochaeta	165	592.0	5.13	640	2,296.4	18.02
Caecidotea	0	0.0	0.00	5	17.9	0.14
Gammarus fasciatus	20	71.8	0.62	10	35.9	0.28
Argia	5	17.9	0.16	0	0.0	0.00
Cyrnellus fraternus	20	71.8	0.62	0	0.0	0.00
Ablabesmyia janta	0	0.0	0.00	4	14.4	0.11
Ablabesmyia mallochi	30	107.6	0.93	0	0.0	0.00
Nanocladius distinctus	260	932.9	8.09	14	50.2	0.39
Dicrotendipes neomodestus	0	0.0	0.00	8	28.7	0.23
Dicrotendipes simpsoni	1,050	3,767.5	32.66	252	904.2	7.10
Glyptotendipes	20	71.8	0.62	8	28.7	0.23
Corbicula fluminea	10	35.9	0.31	0	0.0	0.00
Dreissena polymorpha	1,630	5,848.6	50.70	2,595	9,311.1	73.08
TOTAL BENTHOS	3,215	11,535.7	100.00	3,551	12,741.3	100.00

WATERWAY= CHICAGO SANITARY AND SHIP CANAL,
LOCATION= CICERO AVE.,
STATION= 75,
and DATE= 29AUG02

TAXA	CENTER			SIDE		
	#_	#/m2_	%_	#_	#/m2_	%_
Turbellaria	47	168.6	3.99	130	466.5	1.56
Oligochaeta	1,050	3,767.5	89.21	7,610	27,305.3	91.47
Ablabesmyia janta	10	35.9	0.85	10	35.9	0.12
Thienemannimyia grp.	0	0.0	0.00	10	35.9	0.12
Nanocladius distinctus	10	35.9	0.85	50	179.4	0.60
Dicrotendipes simpsoni	50	179.4	4.25	430	1,542.9	5.17
Parachironomus	0	0.0	0.00	50	179.4	0.60
Polypedilum flavum	0	0.0	0.00	10	35.9	0.12
Physella	0	0.0	0.00	10	35.9	0.12
Menetus dilatatus	3	10.8	0.25	10	35.9	0.12
Corbicula fluminea	7	25.1	0.59	0	0.0	0.00
TOTAL BENTHOS	1,177	4,223.2	100.00	8,320	29,852.9	100.00

WATERWAY= CHICAGO SANITARY AND SHIP CANAL,
LOCATION= DAMEN AVE.,
STATION= 40,
and DATE= 18AUG02

TAXA	CENTER			SIDE		
	#_	#/m2_	%_	#_	#/m2_	%_
Hydra	1	3.6	0.04	0	0.0	0.00
Turbellaria	363	1,302.5	13.31	100	358.8	9.29
Oligochaeta	1,879	6,742.0	68.90	831	2,981.7	77.16
Helobdella triserialis	0	0.0	0.00	1	3.6	0.09
Caecidotea	1	3.6	0.04	3	10.8	0.28
Gammarus fasciatus	5	17.9	0.18	46	165.1	4.27
Somatochlora	0	0.0	0.00	1	3.6	0.09
Procladius (Holotanypus)	0	0.0	0.00	2	7.2	0.19
Dicrotendipes simpsoni	478	1,715.1	17.53	93	333.7	8.64
TOTAL BENTHOS	2,727	9,784.7	100.00	1,077	3,864.4	100.00

APPENDIX B - 2002 MACROINVERTEBRATE SAMPLES - RAW DATA SUMMARY - HESTER-DENDY DATA

WATERWAY= CHICAGO SANITARY AND SHIP CANAL,
LOCATION= HARLEM AVE.,
STATION= 41,
and DATE= 03SEP02

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Hydra	10	35.9	0.11	0	0.0	0.00
Turbellaria	1,550	5,561.5	16.28	510	1,829.9	21.43
Oligochaeta	7,890	28,310.0	82.88	1,780	6,386.8	74.79
Ablabesmyia janta	10	35.9	0.11	2	7.2	0.08
Dicrotendipes simpsoni	60	215.3	0.63	88	315.8	3.70
TOTAL BENTHOS	9,520	34,158.6	100.00	2,380	8,539.6	100.00

WATERWAY= CHICAGO SANITARY AND SHIP CANAL,
LOCATION= LOCKPORT,
STATION= 92,
and DATE= 11SEP02

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Hydra	1	3.6	0.21	0	0.0	0.00
Turbellaria	321	1,151.8	67.01	90	322.9	2.68
Oligochaeta	111	398.3	23.17	3,100	11,123.1	92.26
Glossiphoniidae	0	0.0	0.00	10	35.9	0.30
Helobdella stagnalis	10	35.9	2.09	0	0.0	0.00
Mooreobdella microstoma	1	3.6	0.21	0	0.0	0.00
Gammarus fasciatus	8	28.7	1.67	40	143.5	1.19
Ablabesmyia mallochi	8	28.7	1.67	0	0.0	0.00
Nanocladius distinctus	0	0.0	0.00	60	215.3	1.79
Dicrotendipes simpsoni	9	32.3	1.88	60	215.3	1.79
Polypedilum flavum	1	3.6	0.21	0	0.0	0.00
Ferrissia	5	17.9	1.04	0	0.0	0.00
Corbicula fluminea	3	10.8	0.63	0	0.0	0.00
Dreissena polymorpha	1	3.6	0.21	0	0.0	0.00
TOTAL BENTHOS	479	1,718.7	100.00	3,360	12,056.0	100.00

WATERWAY= CALUMET R.,
LOCATION= 130TH ST.,
STATION= 55,
and DATE= 03SEP02

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Hydra	100	358.8	0.20	0	0.0	0.00
Oligochaeta	400	1,435.2	0.81	400	1,435.2	1.25
Cyrnellus fraternus	0	0.0	0.00	1	3.6	0.00
Ablabesmyia janta	0	0.0	0.00	100	358.8	0.31
Dicrotendipes simpsoni	300	1,076.4	0.60	0	0.0	0.00
Dreissena polymorpha	48,800	175,098.7	98.39	31,400	112,665.9	98.43
TOTAL BENTHOS	49,600	177,969.1	100.00	31,901	114,463.6	100.00

WATERWAY= CHICAGO R.,
LOCATION= LAKE SHORE DR.,
STATION= 74,
and DATE= 02AUG02

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Hydra	1	3.6	0.26	1	3.6	0.84
Plumatella	1	3.6	0.26	0	0.0	0.00
Oligochaeta	138	495.2	35.94	5	17.9	4.20
Gammarus fasciatus	191	685.3	49.74	89	319.3	74.79
Cheumatopsyche	0	0.0	0.00	1	3.6	0.84
Hydroptila	1	3.6	0.26	0	0.0	0.00
Cricotopus bicinctus grp.	11	39.5	2.86	0	0.0	0.00
Cricotopus sylvestris grp.	3	10.8	0.78	0	0.0	0.00
Heterotrissocladius	1	3.6	0.26	0	0.0	0.00

WATERWAY= CHICAGO R.,
LOCATION= LAKE SHORE DR.,
STATION= 74 (cont.),
and DATE= 02AUG02

TAXA (cont.)	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Chironomus	4	14.4	1.04	1	3.6	0.84
Cladopelma	4	14.4	1.04	1	3.6	0.84
Cryptochironomus	1	3.6	0.26	0	0.0	0.00
Dicrotendipes neomodestus	0	0.0	0.00	2	7.2	1.68
Dicrotendipes simpsoni	5	17.9	1.30	0	0.0	0.00
Glyptotendipes	4	14.4	1.04	0	0.0	0.00
Parachironomus	7	25.1	1.82	2	7.2	1.68
Polypedilum halterale grp.	12	43.1	3.13	6	21.5	5.04
Dreissena polymorpha	0	0.0	0.00	11	39.5	9.24
TOTAL BENTHOS	384	1,377.8	100.00	119	427.0	100.00

WATERWAY= CHICAGO R.,
LOCATION= WELLS ST.,
STATION= 100,
and DATE= 21AUG02

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Oligochaeta	889	3,189.8	93.88	274	983.1	86.98
Gammarus fasciatus	21	75.3	2.22	32	114.8	10.16
Ablabesmyia mallochi	2	7.2	0.21	0	0.0	0.00
Nanocladius distinctus	1	3.6	0.11	0	0.0	0.00
Chironomus	5	17.9	0.53	1	3.6	0.32
Dicrotendipes neomodestus	1	3.6	0.11	0	0.0	0.00
Dicrotendipes simpsoni	19	68.2	2.01	5	17.9	1.59
Glyptotendipes	1	3.6	0.11	0	0.0	0.00
Microchironomus	0	0.0	0.00	1	3.6	0.32
Parachironomus	6	21.5	0.63	0	0.0	0.00
Polypedilum halterale grp.	1	3.6	0.11	2	7.2	0.63
Xenochironomus xenolabis	1	3.6	0.11	0	0.0	0.00
TOTAL BENTHOS	947	3,397.9	100.00	315	1,130.2	100.00

WATERWAY= DES PLAINES R.,
LOCATION= LAKE COOK RD.,
STATION= 13,
and DATE= 25JUL02

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Hydra	0	0.0	0.00	10	35.9	0.06
Turbellaria	10	35.9	0.46	10	35.9	0.06
Oligochaeta	20	71.8	0.92	110	394.7	0.62
Gammarus fasciatus	44	157.9	2.02	680	2,439.9	3.82
Isonychia	24	86.1	1.10	0	0.0	0.00
Baetis intercalaris	50	179.4	2.30	0	0.0	0.00
Leucrocuta	9	32.3	0.41	0	0.0	0.00
Heptagenia	1	3.6	0.05	10	35.9	0.06
Stenacron	36	129.2	1.65	40	143.5	0.22
Stenonema integrum	69	247.6	3.17	60	215.3	0.34
Stenonema terminatum	217	778.6	9.97	60	215.3	0.34
Tricorythodes	258	925.7	11.86	100	358.8	0.56
Enallagma	0	0.0	0.00	10	35.9	0.06
Cyrnellus fraternus	6	21.5	0.28	40	143.5	0.22
Cheumatopsyche	531	1,905.3	24.40	20	71.8	0.11
Hydropsyche simulans	35	125.6	1.61	0	0.0	0.00
Hydropsyche bidens	47	168.6	2.16	0	0.0	0.00
Ceratopsyche morosa	4	14.4	0.18	0	0.0	0.00
Potamyia flava	38	136.3	1.75	0	0.0	0.00
Laccophilus maculosus	1	3.6	0.05	40	143.5	0.22
Macronychus glabratus	2	7.2	0.09	20	71.8	0.11
Stenelmis crenata grp.	14	50.2	0.64	110	394.7	0.62
Ablabesmyia janta	8	28.7	0.37	0	0.0	0.00
Nilotanypus fimbriatus	8	28.7	0.37	0	0.0	0.00

WATERWAY= DES PLAINES R.,
LOCATION= LAKE COOK RD.,
STATION= 13 (cont.),
and DATE= 25JUL02

TAXA (cont.)	CENTER			SIDE		
	#_	#/m2	%	#_	#/m2	%
Thienemannimyia grp.	55	197.3	2.53	0	0.0	0.00
Cricotopus tremulus grp.	8	28.7	0.37	0	0.0	0.00
Cricotopus bicinctus grp.	47	168.6	2.16	0	0.0	0.00
Nanocladius crassicornus/rectinervis	23	82.5	1.06	0	0.0	0.00
Dicrotendipes neomodestus	23	82.5	1.06	0	0.0	0.00
Glyptotendipes	16	57.4	0.74	16,320	58,557.6	91.69
Polypedilum flavum	86	308.6	3.95	0	0.0	0.00
Polypedilum scalaenum grp.	16	57.4	0.74	160	574.1	0.90
Cladotanytarsus mancus grp.	16	57.4	0.74	0	0.0	0.00
Rheotanytarsus	454	1,629.0	20.86	0	0.0	0.00
TOTAL BENTHOS	2,176	7,807.7	100.00	17,800	63,868.0	100.00

WATERWAY= DES PLAINES R.,
LOCATION= MATERIAL SERVICE RD.,
STATION= 91,
and DATE= 30JUL02

TAXA	CENTER			SIDE		
	#_	#/m2	%	#_	#/m2	%
Turbellaria	1,130	4,054.5	21.52	473	1,697.2	14.18
Plumatella	0	0.0	0.00	1	3.6	0.03
Oligochaeta	0	0.0	0.00	5	17.9	0.15
Baetis intercalaris	70	251.2	1.33	116	416.2	3.48
Tricorythodes	10	35.9	0.19	7	25.1	0.21
Trepobates	0	0.0	0.00	1	3.6	0.03
Cheumatopsyche	810	2,906.4	15.43	733	2,630.1	21.98
Hydropsyche	0	0.0	0.00	1	3.6	0.03
Hydropsyche orris	90	322.9	1.71	52	186.6	1.56
Hydropsyche simulans	0	0.0	0.00	4	14.4	0.12
Hydropsyche bidens	10	35.9	0.19	1	3.6	0.03
Ceratopsyche morosa	10	35.9	0.19	11	39.5	0.33
Petrophila	0	0.0	0.00	9	32.3	0.27
Stenelmis crenata grp.	0	0.0	0.00	5	17.9	0.15
Nanocladius distinctus	0	0.0	0.00	19	68.2	0.57
Dicrotendipes neomodestus	0	0.0	0.00	19	68.2	0.57
Glyptotendipes	0	0.0	0.00	38	136.3	1.14
Polypedilum flavum	3,110	11,159.0	59.24	1,840	6,602.1	55.17
Musculium	10	35.9	0.19	0	0.0	0.00
TOTAL BENTHOS	5,250	18,837.5	100.00	3,335	11,966.3	100.00

WATERWAY= DES PLAINES R.,
LOCATION= OGDEN AVE.,
STATION= 22,
and DATE= 26JUL02

TAXA	CENTER			SIDE		
	#_	#/m2	%	#_	#/m2	%
Turbellaria	36	129.2	4.05	0	0.0	0.00
Oligochaeta	42	150.7	4.73	120	430.6	95.24
Caecidotea	0	0.0	0.00	1	3.6	0.79
Baetis intercalaris	26	93.3	2.93	0	0.0	0.00
Leucrocuta	18	64.6	2.03	0	0.0	0.00
Stenonema terminatum	14	50.2	1.58	0	0.0	0.00
Tricorythodes	14	50.2	1.58	0	0.0	0.00
Cheumatopsyche	112	401.9	12.61	0	0.0	0.00
Hydropsyche betteni	6	21.5	0.68	0	0.0	0.00
Ceratopsyche morosa	10	35.9	1.13	0	0.0	0.00
Stenelmis crenata grp.	2	7.2	0.23	1	3.6	0.79
Chironomidae	0	0.0	0.00	4	14.4	3.17
Ablabesmyia mallochi	6	21.5	0.68	0	0.0	0.00
Nilotanypus fimbriatus	6	21.5	0.68	0	0.0	0.00
Thienemannimyia grp.	40	143.5	4.50	0	0.0	0.00
Thienemanniella xena	6	21.5	0.68	0	0.0	0.00

WATERWAY= DES PLAINES R.,
LOCATION= OGDEN AVE.,
STATION= 22 (cont.),
and DATE= 26JUL02

TAXA (cont.)	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Cricotopus tremulus grp.	6	21.5	0.68	0	0.0	0.00
Cricotopus bicinctus grp.	132	473.6	14.86	0	0.0	0.00
Nanocladius distinctus	26	93.3	2.93	0	0.0	0.00
Dicrotendipes neomodestus	6	21.5	0.68	0	0.0	0.00
Glyptotendipes	14	50.2	1.58	0	0.0	0.00
Polypedilum flavum	304	1,090.8	34.23	0	0.0	0.00
Polypedilum illinoense	14	50.2	1.58	0	0.0	0.00
Polypedilum scalaenum grp.	20	71.8	2.25	0	0.0	0.00
Stenochironomus	14	50.2	1.58	0	0.0	0.00
Rheotanytarsus	14	50.2	1.58	0	0.0	0.00
TOTAL BENTHOS	888	3,186.2	100.00	126	452.1	100.00

WATERWAY= HIGGINS CR.,
LOCATION= WILLE RD.,
STATION= 78,
and DATE= 22JUL02

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Turbellaria	114	409.0	11.00	38	136.3	43.18
Oligochaeta	23	82.5	2.22	9	32.3	10.23
Mooreobdella microstoma	2	7.2	0.19	1	3.6	1.14
Caecidotea	540	1,937.6	52.12	23	82.5	26.14
Copelatus	0	0.0	0.00	1	3.6	1.14
Laccophilus maculosus	0	0.0	0.00	1	3.6	1.14
Tropisternus	0	0.0	0.00	1	3.6	1.14
Thienemannimyia grp.	12	43.1	1.16	0	0.0	0.00
Cricotopus tremulus grp.	50	179.4	4.83	5	17.9	5.68
Cricotopus bicinctus grp.	155	556.2	14.96	1	3.6	1.14
Cricotopus trifascia grp.	27	96.9	2.61	0	0.0	0.00
Cricotopus sylvestris grp.	112	401.9	10.81	4	14.4	4.55
Dicrotendipes neomodestus	0	0.0	0.00	1	3.6	1.14
Polypedilum illinoense	0	0.0	0.00	2	7.2	2.27
Tipula	0	0.0	0.00	1	3.6	1.14
Ferrissia	1	3.6	0.10	0	0.0	0.00
TOTAL BENTHOS	1,036	3,717.3	100.00	88	315.8	100.00

WATERWAY= LITTLE CALUMET R.,
LOCATION= HALSTED ST.,
STATION= 76,
and DATE= 16SEP02

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Turbellaria	60	215.3	0.63	140	502.3	2.59
Oligochaeta	50	179.4	0.52	20	71.8	0.37
Gammarus fasciatus	160	574.1	1.67	130	466.5	2.41
Argia	0	0.0	0.00	20	71.8	0.37
Cyrnellus fraternus	0	0.0	0.00	20	71.8	0.37
Ablabesmyia janta	10	35.9	0.10	40	143.5	0.74
Nanocladius distinctus	0	0.0	0.00	30	107.6	0.56
Dicrotendipes simpsoni	400	1,435.2	4.18	470	1,686.4	8.70
Glyptotendipes	0	0.0	0.00	20	71.8	0.37
Menetus dilatatus	170	610.0	1.78	30	107.6	0.56
Ferrissia	70	251.2	0.73	10	35.9	0.19
Dreissena polymorpha	8,640	31,001.1	90.38	4,470	16,038.8	82.78
TOTAL BENTHOS	9,560	34,302.1	100.00	5,400	19,375.7	100.00

APPENDIX B - 2002 MACROINVERTEBRATE SAMPLES - RAW DATA SUMMARY - HESTER-DENDY DATA

WATERWAY= NORTH BRANCH CHICAGO R.,
LOCATION= ALBANY AVE.,
STATION= 96,
and DATE= 29JUL02

TAXA	CENTER			SIDE		
	#_	#/m2_	%_	#_	#/m2_	%_
Hydra	1	3.6	0.06	0	0.0	0.00
Turbellaria	696	2,497.3	38.47	613	2,199.5	62.81
Oligochaeta	5	17.9	0.28	14	50.2	1.43
Helobdella stagnalis	1	3.6	0.06	1	3.6	0.10
Placobdella	0	0.0	0.00	1	3.6	0.10
Mooreobdella microstoma	1	3.6	0.06	1	3.6	0.10
Caecidotea	970	3,480.4	53.62	213	764.3	21.82
Stenacron	34	122.0	1.88	47	168.6	4.82
Corixidae	0	0.0	0.00	1	3.6	0.10
Cheumatopsyche	8	28.7	0.44	0	0.0	0.00
Hydropsyche betteni	6	21.5	0.33	0	0.0	0.00
Hydroptila	8	28.7	0.44	0	0.0	0.00
Procladius (Holotanypus)	0	0.0	0.00	1	3.6	0.10
Thienemannimyia grp.	13	46.6	0.72	2	7.2	0.20
Thienemanniella xena	1	3.6	0.06	0	0.0	0.00
Cricotopus bicinctus grp.	5	17.9	0.28	1	3.6	0.10
Nanocladius distinctus	2	7.2	0.11	0	0.0	0.00
Rheocricotopus robacki	8	28.7	0.44	0	0.0	0.00
Dicrotendipes neomodestus	12	43.1	0.66	13	46.6	1.33
Dicrotendipes simpsoni	0	0.0	0.00	1	3.6	0.10
Glyptotendipes	1	3.6	0.06	0	0.0	0.00
Polypedilum fallax grp.	1	3.6	0.06	0	0.0	0.00
Polypedilum flavum	26	93.3	1.44	0	0.0	0.00
Polypedilum illinoense	2	7.2	0.11	10	35.9	1.02
Polypedilum scalaenum grp.	8	28.7	0.44	56	200.9	5.74
Micropsectra	0	0.0	0.00	1	3.6	0.10
TOTAL BENTHOS	1,809	6,490.9	100.00	976	3,502.0	100.00

WATERWAY= NORTH BRANCH CHICAGO R.,
LOCATION= GRAND AVE.,
STATION= 46,
and DATE= 01AUG02

TAXA	CENTER			SIDE		
	#_	#/m2_	%_	#_	#/m2_	%_
Hydra	0	0.0	0.00	1	3.6	0.04
Turbellaria	510	1,829.9	9.96	26	93.3	0.96
Oligochaeta	4,280	15,357.0	83.59	2,211	7,933.3	81.23
Helobdella stagnalis	0	0.0	0.00	1	3.6	0.04
Caecidotea	30	107.6	0.59	11	39.5	0.40
Gammarus fasciatus	20	71.8	0.39	9	32.3	0.33
Cricotopus sylvestris grp.	0	0.0	0.00	5	17.9	0.18
Nanocladius distinctus	0	0.0	0.00	5	17.9	0.18
Chironomus	0	0.0	0.00	89	319.3	3.27
Dicrotendipes simpsoni	270	968.8	5.27	343	1,230.7	12.60
Glyptotendipes	0	0.0	0.00	5	17.9	0.18
Parachironomus	10	35.9	0.20	9	32.3	0.33
Menetus dilatatus	0	0.0	0.00	7	25.1	0.26
TOTAL BENTHOS	5,120	18,371.0	100.00	2,722	9,766.8	100.00

WATERWAY= NORTH SHORE CHANNEL,
LOCATION= TOUHY AVE.,
STATION= 36,
and DATE= 31JUL02

TAXA	CENTER			SIDE		
	#_	#/m2_	%_	#_	#/m2_	%_
Turbellaria	3,420	12,271.3	66.41	1,082	3,882.3	64.18
Oligochaeta	1,680	6,028.0	32.62	368	1,320.4	21.83
Caecidotea	20	71.8	0.39	0	0.0	0.00
Cyrnellus fraternus	10	35.9	0.19	0	0.0	0.00
Cheumatopsyche	0	0.0	0.00	2	7.2	0.12
Thienemannimyia grp.	0	0.0	0.00	2	7.2	0.12

WATERWAY= NORTH SHORE CHANNEL,
LOCATION= TOUHY AVE.,
STATION= 36 (cont.),
and DATE= 31JUL02

TAXA (cont.)	CENTER			SIDE		
	#_	#/m2_	%_	#_	#/m2_	%_
Cricotopus bicinctus grp.	0	0.0	0.00	6	21.5	0.36
Cricotopus sylvestris grp.	0	0.0	0.00	12	43.1	0.71
Nanocladius distinctus	0	0.0	0.00	18	64.6	1.07
Dicrotendipes neomodestus	0	0.0	0.00	2	7.2	0.12
Dicrotendipes simpsoni	20	71.8	0.39	124	444.9	7.35
Glyptotendipes	0	0.0	0.00	8	28.7	0.47
Parachironomus	0	0.0	0.00	50	179.4	2.97
Polypedilum flavum	0	0.0	0.00	2	7.2	0.12
Menetus dilatatus	0	0.0	0.00	10	35.9	0.59
TOTAL BENTHOS	5,150	18,478.7	100.00	1,686	6,049.5	100.00

WATERWAY= SOUTH BRANCH CHICAGO R.,
LOCATION= LOOMIS ST.,
STATION= 108,
and DATE= 21AUG02

TAXA	CENTER			SIDE		
	#_	#/m2_	%_	#_	#/m2_	%_
Hydra	1	3.6	0.08	0	0.0	0.00
Turbellaria	621	2,228.2	51.41	98	351.6	6.84
Oligochaeta	160	574.1	13.25	975	3,498.4	68.04
Helobdella stagnalis	1	3.6	0.08	0	0.0	0.00
Helobdella triserialis	5	17.9	0.41	0	0.0	0.00
Caecidotea	72	258.3	5.96	3	10.8	0.21
Gammarus fasciatus	20	71.8	1.66	25	89.7	1.74
Argia	0	0.0	0.00	3	10.8	0.21
Potamyia flava	0	0.0	0.00	3	10.8	0.21
Dicrotendipes simpsoni	324	1,162.5	26.82	319	1,144.6	22.26
Glyptotendipes	3	10.8	0.25	0	0.0	0.00
Polypedilum illinoense	0	0.0	0.00	7	25.1	0.49
Dreissena polymorpha	1	3.6	0.08	0	0.0	0.00
TOTAL BENTHOS	1,208	4,334.4	100.00	1,433	5,141.7	100.00

WATERWAY= SOUTH BRANCH CHICAGO R.,
LOCATION= MADISON ST.,
STATION= 39,
and DATE= 27AUG02

TAXA	CENTER			SIDE		
	#_	#/m2_	%_	#_	#/m2_	%_
Hydra	3	10.8	0.11	1	3.6	0.16
Turbellaria	317	1,137.4	11.28	39	139.9	6.18
Oligochaeta	1,050	3,767.5	37.37	106	380.3	16.80
Helobdella triserialis	10	35.9	0.36	0	0.0	0.00
Caecidotea	247	886.3	8.79	34	122.0	5.39
Gammarus fasciatus	3	10.8	0.11	72	258.3	11.41
Stenacron	0	0.0	0.00	1	3.6	0.16
Nanocladius distinctus	40	143.5	1.42	4	14.4	0.63
Dicrotendipes simpsoni	1,110	3,982.8	39.50	308	1,105.1	48.81
Glyptotendipes	10	35.9	0.36	0	0.0	0.00
Polypedilum halterale grp.	10	35.9	0.36	0	0.0	0.00
Polypedilum illinoense	10	35.9	0.36	0	0.0	0.00
Polypedilum scalaenum grp.	0	0.0	0.00	8	28.7	1.27
Menetus dilatatus	0	0.0	0.00	40	143.5	6.34
Dreissena polymorpha	0	0.0	0.00	18	64.6	2.85
TOTAL BENTHOS	2,810	10,082.5	100.00	631	2,264.1	100.00

APPENDIX B - 2002 MACROINVERTEBRATE SAMPLES - RAW DATA SUMMARY - HESTER-DENDY DATA

WATERWAY= SOUTH FORK SOUTH BRANCH CHICAGO R.,
LOCATION= ARCHER AVE.,
STATION= 99,
and DATE= 22AUG02

TAXA	CENTER			SIDE		
	#_	#/m2	%	#_	#/m2	%
Hydra	10	35.9	0.18	1	3.6	0.10
Oligochaeta	3,430	12,307.1	61.03	794	2,848.9	76.49
Helobdella triserialis	0	0.0	0.00	2	7.2	0.19
Thienemannimyia grp.	20	71.8	0.36	0	0.0	0.00
Dicrotendipes simpsoni	2,150	7,714.4	38.26	237	850.4	22.83
Glyptotendipes	0	0.0	0.00	2	7.2	0.19
Parachironomus	0	0.0	0.00	2	7.2	0.19
Physella	10	35.9	0.18	0	0.0	0.00
TOTAL BENTHOS	5,620	20,165.1	100.00	1,038	3,724.4	100.00

WATERWAY= SALT CR.,
LOCATION= DEVON AVE.,
STATION= 18,
and DATE= 23JUL02

TAXA	CENTER			SIDE		
	#_	#/m2	%	#_	#/m2	%
Turbellaria	10	35.9	1.59	321	1,151.8	26.71
Oligochaeta	17	61.0	2.71	52	186.6	4.33
Caecidotea	0	0.0	0.00	9	32.3	0.75
Stenacron	0	0.0	0.00	4	14.4	0.33
Tricorythodes	23	82.5	3.66	1	3.6	0.08
Argia	0	0.0	0.00	1	3.6	0.08
Cheumatopsyche	427	1,532.1	67.99	32	114.8	2.66
Ablabesmyia mallochi	2	7.2	0.32	8	28.7	0.67
Thienemannimyia grp.	4	14.4	0.64	8	28.7	0.67
Thienemanniella xena	2	7.2	0.32	0	0.0	0.00
Cricotopus tremulus grp.	9	32.3	1.43	8	28.7	0.67
Cricotopus bicinctus grp.	2	7.2	0.32	0	0.0	0.00
Cricotopus sylvestris grp.	7	25.1	1.11	0	0.0	0.00
Nanocladius distinctus	7	25.1	1.11	15	53.8	1.25
Chironomus	0	0.0	0.00	8	28.7	0.67
Cryptochironomus	0	0.0	0.00	8	28.7	0.67
Dicrotendipes neomodestus	2	7.2	0.32	54	193.8	4.49
Dicrotendipes simpsoni	2	7.2	0.32	62	222.5	5.16
Glyptotendipes	4	14.4	0.64	203	728.4	16.89
Polypedilum flavum	85	305.0	13.54	70	251.2	5.82
Polypedilum illinoense	21	75.3	3.34	148	531.0	12.31
Polypedilum scalaenum grp.	0	0.0	0.00	70	251.2	5.82
Paratanytarsus	0	0.0	0.00	39	139.9	3.24
Tanytarsus	0	0.0	0.00	15	53.8	1.25
Tanytarsus guerlus grp.	4	14.4	0.64	23	82.5	1.91
Menetus dilatatus	0	0.0	0.00	39	139.9	3.24
Ferrissia	0	0.0	0.00	4	14.4	0.33
TOTAL BENTHOS	628	2,253.3	100.00	1,202	4,312.9	100.00

WATERWAY= W.B. DUPAGE R.,
LOCATION= LAKE ST.,
STATION= 64,
and DATE= 24JUL02

TAXA	CENTER			SIDE		
	#_	#/m2	%	#_	#/m2	%
Turbellaria	90	322.9	1.28	50	179.4	1.92
Plumatella	1	3.6	0.01	1	3.6	0.04
Oligochaeta	118	423.4	1.67	290	1,040.5	11.13
Argia	0	0.0	0.00	7	25.1	0.27
Cheumatopsyche	533	1,912.5	7.55	340	1,219.9	13.05
Hydropsyche betteni	20	71.8	0.28	17	61.0	0.65
Hydropsyche bidens	3	10.8	0.04	0	0.0	0.00
Thienemannimyia grp.	390	1,399.4	5.53	87	312.2	3.34

APPENDIX B - 2002 MACROINVERTEBRATE SAMPLES - RAW DATA SUMMARY - HESTER-DENDY DATA

WATERWAY= W.B. DUPAGE R.,
LOCATION= LAKE ST.,
STATION= 64 (cont.),
and DATE= 24JUL02

TAXA (cont.)	CENTER			SIDE		
	#_	#/m2_	%_	#_	#/m2_	%_
Thienemanniella xena	100	358.8	1.42	0	0.0	0.00
Cricotopus tremulus grp.	100	358.8	1.42	0	0.0	0.00
Cricotopus bicinctus grp.	680	2,439.9	9.64	113	405.5	4.34
Cricotopus sylvestris grp.	190	681.7	2.69	30	107.6	1.15
Nanocladius distinctus	1,740	6,243.3	24.66	720	2,583.4	27.63
Dicrotendipes neomodestus	0	0.0	0.00	30	107.6	1.15
Dicrotendipes simpsoni	290	1,040.5	4.11	200	717.6	7.67
Glyptotendipes	480	1,722.3	6.80	30	107.6	1.15
Parachironomus	0	0.0	0.00	57	204.5	2.19
Polypedilum flavum	190	681.7	2.69	87	312.2	3.34
Polypedilum illinoense	2,130	7,642.6	30.19	547	1,962.7	20.99
TOTAL BENTHOS	7,055	25,314.0	100.00	2,606	9,350.6	100.00

APPENDIX B - 2002 MACROINVERTEBRATE SAMPLES - RAW DATA SUMMARY - PETITE PONAR DATA

WATERWAY= CAL-SAG CHANNEL,
LOCATION= CICERO AVE.,
STATION= 59,
and DATE= 05SEP02

TAXA	CENTER			SIDE		
	#_	#/m2	%	#_	#/m2	%
Hydra	1	14.4	12.50	0	0.0	0.00
Oligochaeta	0	0.0	0.00	118	1,693.7	88.72
Gammarus fasciatus	1	14.4	12.50	0	0.0	0.00
Nanocladius distinctus	5	71.8	62.50	0	0.0	0.00
Corbicula fluminea	0	0.0	0.00	3	43.1	2.26
Dreissena polymorpha	1	14.4	12.50	12	172.2	9.02
TOTAL BENTHOS	8	114.8	100.00	133	1,909.0	100.00

WATERWAY= CHICAGO SANITARY AND SHIP CANAL,
LOCATION= CICERO AVE.,
STATION= 75,
and DATE= 29AUG02

TAXA	CENTER			SIDE		
	#_	#/m2	%	#_	#/m2	%
Oligochaeta	67	961.7	97.10	25	358.8	92.59
Parachironomus	0	0.0	0.00	2	28.7	7.41
Corbicula fluminea	2	28.7	2.90	0	0.0	0.00
TOTAL BENTHOS	69	990.4	100.00	27	387.5	100.00

WATERWAY= CHICAGO SANITARY AND SHIP CANAL,
LOCATION= DAMEN AVE.,
STATION= 40,
and DATE= 18AUG02

TAXA	CENTER			SIDE		
	#_	#/m2	%	#_	#/m2	%
Turbellaria	0	0.0	0.00	1	14.4	0.26
Oligochaeta	3,290	47,222.3	99.40	380	5,454.2	99.22
Procladius (Holotanypus)	0	0.0	0.00	1	14.4	0.26
Glyptotendipes	10	143.5	0.30	0	0.0	0.00
Parachironomus	0	0.0	0.00	1	14.4	0.26
Corbicula fluminea	10	143.5	0.30	0	0.0	0.00
TOTAL BENTHOS	3,310	47,509.3	100.00	383	5,497.3	100.00

WATERWAY= CHICAGO SANITARY AND SHIP CANAL,
LOCATION= HARLEM AVE.,
STATION= 41,
and DATE= 03SEP02

TAXA	CENTER			SIDE		
	#_	#/m2	%	#_	#/m2	%
Turbellaria	1	14.4	0.32	31	445.0	13.48
Oligochaeta	316	4,535.6	99.68	163	2,339.6	70.87
Polypedilum scalaenum grp.	0	0.0	0.00	2	28.7	0.87
Ferrissia	0	0.0	0.00	34	488.0	14.78
TOTAL BENTHOS	317	4,550.0	100.00	230	3,301.3	100.00

WATERWAY= CHICAGO SANITARY AND SHIP CANAL,
LOCATION= LOCKPORT,
STATION= 92, and DATE= 11SEP02

TAXA	CENTER			SIDE		
	#_	#/m2	%	#_	#/m2	%
Turbellaria	0	0.0	0.00	3	43.1	10.71
Oligochaeta	8,830	126,739.4	99.89	25	358.8	89.29
Corbicula fluminea	10	143.5	0.11	0	0.0	0.00
TOTAL BENTHOS	8,840	126,882.9	100.00	28	401.9	100.00

APPENDIX B - 2002 MACROINVERTEBRATE SAMPLES - RAW DATA SUMMARY - PETITE PONAR DATA

WATERWAY= CHICAGO SANITARY AND SHIP CANAL,
LOCATION= ROUTE 83,
STATION= 42, and DATE= 03SEP02

TAXA	CENTER			SIDE		
	#_	#/m2	%	#_	#/m2	%
Turbellaria	2	28.7	4.88	0	0.0	0.00
Oligochaeta	37	531.1	90.24	21	301.4	100.00
Caecidotea	1	14.4	2.44	0	0.0	0.00
Ablabesmyia mallochi	1	14.4	2.44	0	0.0	0.00
TOTAL BENTHOS	41	588.5	100.00	21	301.4	100.00

WATERWAY= CHICAGO SANITARY AND SHIP CANAL,
LOCATION= STEPHEN ST.,
STATION= 48, and DATE= 11SEP02

TAXA	CENTER			SIDE		
	#_	#/m2	%	#_	#/m2	%
Turbellaria	0	0.0	--	7	100.5	30.43
Oligochaeta	0	0.0	--	3	43.1	13.04
Glossiphoniidae	0	0.0	--	2	28.7	8.70
Cryptochironomus	0	0.0	--	2	28.7	8.70
Corbicula fluminea	0	0.0	--	1	14.4	4.35
Dreissena polymorpha	0	0.0	--	8	114.8	34.78
TOTAL BENTHOS	0	0.0	--	23	330.1	100.00

WATERWAY= CALUMET R.,
LOCATION= 130TH ST.,
STATION= 55, and DATE= 03SEP02

TAXA	CENTER			SIDE		
	#_	#/m2	%	#_	#/m2	%
Oligochaeta	96	1,377.9	80.67	17	244.0	26.56
Caecidotea	0	0.0	0.00	16	229.7	25.00
Procladius (Holotanypus)	2	28.7	1.68	0	0.0	0.00
Coelotanypus	3	43.1	2.52	0	0.0	0.00
Ablabesmyia janta	1	14.4	0.84	0	0.0	0.00
Cryptochironomus	1	14.4	0.84	1	14.4	1.56
Polypedilum halterale grp.	0	0.0	0.00	1	14.4	1.56
Amnicola	1	14.4	0.84	0	0.0	0.00
Dreissena polymorpha	15	215.3	12.61	29	416.2	45.31
TOTAL BENTHOS	119	1,708.0	100.00	64	918.6	100.00

WATERWAY= CHICAGO R.,
LOCATION= LAKE SHORE DR.,
STATION= 74, and DATE= 02AUG02

TAXA	CENTER			SIDE		
	#_	#/m2	%	#_	#/m2	%
Oligochaeta	885	12,702.6	100.00	223	3,200.8	92.53
Nanocladius distinctus	0	0.0	0.00	1	14.4	0.41
Chironomus	0	0.0	0.00	1	14.4	0.41
Polypedilum halterale grp.	0	0.0	0.00	3	43.1	1.24
Dreissena polymorpha	0	0.0	0.00	13	186.6	5.39
TOTAL BENTHOS	885	12,702.6	100.00	241	3,459.1	100.00

WATERWAY= CHICAGO R.,
LOCATION= WELLS ST.,
STATION= 100, and DATE= 21AUG02

TAXA	CENTER			SIDE		
	#_	#/m2	%	#_	#/m2	%
Oligochaeta	169	2,425.7	100.00	180	2,583.6	99.45
Dreissena polymorpha	0	0.0	0.00	1	14.4	0.55
TOTAL BENTHOS	169	2,425.7	100.00	181	2,597.9	100.00

APPENDIX B - 2002 MACROINVERTEBRATE SAMPLES - RAW DATA SUMMARY - PETITE PONAR DATA

WATERWAY= DES PLAINES R.,
LOCATION= LAKE COOK RD.,
STATION= 13, and DATE= 25JUL02

TAXA	CENTER			SIDE		
	#_	#/m2	%	#_	#/m2	%
Oligochaeta	60	861.2	1.88	590	8,468.4	88.19
Gammarus	17	244.0	0.53	1	14.4	0.15
Tricorythodes	20	287.1	0.63	0	0.0	0.00
Hexagenia bilineata	0	0.0	0.00	1	14.4	0.15
Potamyia flava	3	43.1	0.09	0	0.0	0.00
Dubiraphia	17	244.0	0.53	1	14.4	0.15
Stenelmis crenata grp.	23	330.1	0.72	7	100.5	1.05
Procladius (Holotanypus)	50	717.7	1.57	0	0.0	0.00
Thienemannimyia grp.	150	2,153.0	4.71	0	0.0	0.00
Chironomus	150	2,153.0	4.71	0	0.0	0.00
Cryptochironomus	100	1,435.3	3.14	6	86.1	0.90
Dicrotendipes neomodestus	350	5,023.6	10.98	0	0.0	0.00
Glyptotendipes	50	717.7	1.57	12	172.2	1.79
Paracladopelma	50	717.7	1.57	0	0.0	0.00
Polypedilum flavum	50	717.7	1.57	0	0.0	0.00
Polypedilum scalaenum grp.	450	6,459.0	14.12	0	0.0	0.00
Cladotanytarsus mancus grp.	50	717.7	1.57	0	0.0	0.00
Tanytarsus	1,540	22,104.0	48.32	37	531.1	5.53
Corbicula fluminea	57	818.1	1.79	14	200.9	2.09
TOTAL BENTHOS	3,187	45,743.9	100.00	669	9,602.3	100.00

WATERWAY= DES PLAINES R.,
LOCATION= MATERIAL SERVICE RD.,
STATION= 91, and DATE= 30JUL02

TAXA	CENTER			SIDE		
	#_	#/m2	%	#_	#/m2	%
Oligochaeta	294	4,219.9	90.74	461	6,616.9	93.70
Helobdella stagnalis	0	0.0	0.00	3	43.1	0.61
Mooreobdella microstoma	1	14.4	0.31	7	100.5	1.42
Gammarus fasciatus	0	0.0	0.00	1	14.4	0.20
Orconectes virilis	0	0.0	0.00	1	14.4	0.20
Baetis intercalaris	1	14.4	0.31	0	0.0	0.00
Tricorythodes	1	14.4	0.31	0	0.0	0.00
Corixidae	9	129.2	2.78	3	43.1	0.61
Cheumatopsyche	0	0.0	0.00	1	14.4	0.20
Procladius (Holotanypus)	0	0.0	0.00	5	71.8	1.02
Cryptochironomus	0	0.0	0.00	2	28.7	0.41
Polypedilum flavum	0	0.0	0.00	1	14.4	0.20
Polypedilum scalaenum grp.	6	86.1	1.85	3	43.1	0.61
Corbicula fluminea	12	172.2	3.70	3	43.1	0.61
Musculium transversum	0	0.0	0.00	1	14.4	0.20
TOTAL BENTHOS	324	4,650.5	100.00	492	7,061.8	100.00

WATERWAY= DES PLAINES R.,
LOCATION= OGDEN AVE.,
STATION= 22, and DATE= 26JUL02

TAXA	CENTER			SIDE		
	#_	#/m2	%	#_	#/m2	%
Oligochaeta	93	1,334.9	43.26	271	3,889.7	95.09
Mooreobdella microstoma	1	14.4	0.47	0	0.0	0.00
Tricorythodes	1	14.4	0.47	0	0.0	0.00
Cheumatopsyche	0	0.0	0.00	1	14.4	0.35
Potamyia flava	0	0.0	0.00	1	14.4	0.35
Stenelmis	5	71.8	2.33	0	0.0	0.00
Procladius (Holotanypus)	0	0.0	0.00	9	129.2	3.16
Ablabesmyia mallochi	2	28.7	0.93	0	0.0	0.00
Glyptotendipes	0	0.0	0.00	3	43.1	1.05
Polypedilum scalaenum grp.	44	631.5	20.47	0	0.0	0.00
Cladotanytarsus mancus grp.	1	14.4	0.47	0	0.0	0.00
Corbicula fluminea	68	976.0	31.63	0	0.0	0.00
TOTAL BENTHOS	215	3,086.0	100.00	285	4,090.7	100.00

WATERWAY= HIGGINS CR.,
LOCATION= WILLE RD.,
STATION= 78, and DATE= 22JUL02

TAXA	CENTER			SIDE		
	#_	#/m2_	%_	#_	#/m2_	%_
Turbellaria	5	71.8	3.52	0	0.0	0.00
Oligochaeta	30	430.6	21.13	56	803.8	29.79
Caecidotea	18	258.4	12.68	2	28.7	1.06
Cricotopus tremulus grp.	5	71.8	3.52	10	143.5	5.32
Cricotopus bicinctus grp.	19	272.7	13.38	64	918.6	34.04
Cricotopus trifascia grp.	0	0.0	0.00	2	28.7	1.06
Cricotopus sylvestris grp.	40	574.1	28.17	46	660.3	24.47
Chironomus	0	0.0	0.00	2	28.7	1.06
Dicrotendipes neomodestus	16	229.7	11.27	6	86.1	3.19
Glyptotendipes	5	71.8	3.52	0	0.0	0.00
Microtendipes	2	28.7	1.41	0	0.0	0.00
Tanytarsus	2	28.7	1.41	0	0.0	0.00
TOTAL BENTHOS	142	2,038.2	100.00	188	2,698.4	100.00

WATERWAY= LITTLE CALUMET R.,
LOCATION= HALSTED ST.,
STATION= 76, and DATE= 16SEP02

TAXA	CENTER			SIDE		
	#_	#/m2_	%_	#_	#/m2_	%_
Oligochaeta	27	387.5	90.00	57	818.1	87.69
Gammarus fasciatus	1	14.4	3.33	0	0.0	0.00
Chironomidae	1	14.4	3.33	0	0.0	0.00
Dicrotendipes simpsoni	0	0.0	0.00	3	43.1	4.62
Corbicula fluminea	1	14.4	3.33	5	71.8	7.69
TOTAL BENTHOS	30	430.6	100.00	65	933.0	100.00

WATERWAY= NORTH BRANCH CHICAGO R.,
LOCATION= ALBANY AVE.,
STATION= 96, and DATE= 29JUL02

TAXA	CENTER			SIDE		
	#_	#/m2_	%_	#_	#/m2_	%_
Oligochaeta	--	--	--	21	301.4	2.82
Helobdella stagnalis	--	--	--	8	114.8	1.07
Erpobdella punctata punctata	--	--	--	9	129.2	1.21
Mooreobdella microstoma	--	--	--	100	1,435.3	13.42
Caecidotea	--	--	--	77	1,105.2	10.34
Stenelmis	--	--	--	1	14.4	0.13
Cricotopus bicinctus grp.	--	--	--	3	43.1	0.40
Cryptochironomus	--	--	--	1	14.4	0.13
Dicrotendipes neomodestus	--	--	--	16	229.7	2.15
Polypedilum flavum	--	--	--	1	14.4	0.13
Polypedilum scalaenum grp.	--	--	--	7	100.5	0.94
Paratanytarsus	--	--	--	1	14.4	0.13
Tanytarsus glabrescens grp.	--	--	--	1	14.4	0.13
Amnicola	--	--	--	3	43.1	0.40
Musculium transversum	--	--	--	493	7,076.2	66.17
Pisidium nitidum	--	--	--	3	43.1	0.40
TOTAL BENTHOS	--	--	--	745	10,693.2	100.00

WATERWAY= NORTH BRANCH CHICAGO R.,
LOCATION= GRAND AVE., STATION= 46, and DATE= 01AUG02

TAXA	CENTER			SIDE		
	#_	#/m2_	%_	#_	#/m2_	%_
Oligochaeta	983	14,109.3	99.29	5,430	77,938.3	100.00
Procladius (Holotanypus)	2	28.7	0.20	0	0.0	0.00
Parachironomus	1	14.4	0.10	0	0.0	0.00
Musculium transversum	4	57.4	0.40	0	0.0	0.00
TOTAL BENTHOS	990	14,209.7	100.00	5,430	77,938.3	100.00

APPENDIX B - 2002 MACROINVERTEBRATE SAMPLES - RAW DATA SUMMARY - PETITE PONAR DATA

WATERWAY= NORTH SHORE CHANNEL,
LOCATION= TOUHY AVE.,
STATION= 36,
and DATE= 31JUL02

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Turbellaria	0	0.0	0.00	176	2,526.2	36.97
Oligochaeta	55,800	800,912.4	100.00	147	2,109.9	30.88
Cricotopus bicinctus grp.	0	0.0	0.00	2	28.7	0.42
Cricotopus sylvestris grp.	0	0.0	0.00	3	43.1	0.63
Nanocladius distinctus	0	0.0	0.00	7	100.5	1.47
Dicrotendipes simpsoni	0	0.0	0.00	10	143.5	2.10
Parachironomus	0	0.0	0.00	131	1,880.3	27.52
TOTAL BENTHOS	55,800	800,912.4	100.00	476	6,832.2	100.00

WATERWAY= SOUTH BRANCH CHICAGO R.,
LOCATION= LOOMIS ST.,
STATION= 108,
and DATE= 21AUG02

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Oligochaeta	64	918.6	96.97	342	4,908.8	94.21
Procladius (Holotanypus)	0	0.0	0.00	6	86.1	1.65
Dicrotendipes simpsoni	0	0.0	0.00	1	14.4	0.28
Polypedilum illinoense	0	0.0	0.00	1	14.4	0.28
Corbicula fluminea	2	28.7	3.03	8	114.8	2.20
Dreissena polymorpha	0	0.0	0.00	5	71.8	1.38
TOTAL BENTHOS	66	947.3	100.00	363	5,210.2	100.00

WATERWAY= SOUTH BRANCH CHICAGO R.,
LOCATION= MADISON ST.,
STATION= 39,
and DATE= 27AUG02

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Turbellaria	0	0.0	0.00	8	114.8	2.57
Oligochaeta	212	3,042.9	98.15	9	129.2	2.89
Caecidotea	0	0.0	0.00	1	14.4	0.32
Procladius (Holotanypus)	1	14.4	0.46	0	0.0	0.00
Dicrotendipes neomodestus	0	0.0	0.00	2	28.7	0.64
Dicrotendipes simpsoni	0	0.0	0.00	3	43.1	0.96
Polypedilum illinoense	1	14.4	0.46	0	0.0	0.00
Musculium transversum	1	14.4	0.46	0	0.0	0.00
Pisidium nitidum	1	14.4	0.46	0	0.0	0.00
Dreissena polymorpha	0	0.0	0.00	288	4,133.7	92.60
TOTAL BENTHOS	216	3,100.3	100.00	311	4,463.9	100.00

WATERWAY= SOUTH FORK SOUTH BRANCH CHICAGO R.,
LOCATION= ARCHER AVE.,
STATION= 99,
and DATE= 22AUG02

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Turbellaria	1	14.4	0.68	0	0.0	0.00
Oligochaeta	142	2,038.2	96.60	250	3,588.3	100.00
Procladius (Holotanypus)	4	57.4	2.72	0	0.0	0.00
TOTAL BENTHOS	147	2,109.9	100.00	250	3,588.3	100.00

APPENDIX B - 2002 MACROINVERTEBRATE SAMPLES - RAW DATA SUMMARY - PETITE PONAR DATA

WATERWAY= SALT CR.,
LOCATION= DEVON AVE.,
STATION= 18,
and DATE= 23JUL02

TAXA	CENTER			SIDE		
	#_	#/m2	%	#_	#/m2	%
Plumatella	0	0.0	0.00	1	14.4	0.28
Oligochaeta	43	617.2	40.57	310	4,449.5	86.59
Dubiraphia	0	0.0	0.00	3	43.1	0.84
Procladius (Holotanypus)	0	0.0	0.00	29	416.2	8.10
Cricotopus sylvestris grp.	19	272.7	17.92	0	0.0	0.00
Chironomus	0	0.0	0.00	10	143.5	2.79
Cryptochironomus	19	272.7	17.92	0	0.0	0.00
Dicrotendipes simpsoni	0	0.0	0.00	5	71.8	1.40
Polypedilum flavum	19	272.7	17.92	0	0.0	0.00
Corbicula fluminea	6	86.1	5.66	0	0.0	0.00
TOTAL BENTHOS	106	1,521.4	100.00	358	5,138.5	100.00

WATERWAY= W.B. DUPAGE R.,
LOCATION= LAKE ST.,
STATION= 64,
and DATE= 24JUL02

TAXA	CENTER			SIDE		
	#_	#/m2	%	#_	#/m2	%
Oligochaeta	420	6,028.4	21.00	230	3,301.3	95.44
Hydropsychidae	30	430.6	1.50	0	0.0	0.00
Cheumatopsyche	0	0.0	0.00	1	14.4	0.41
Chironomidae	1,550	22,247.6	77.50	10	143.5	4.15
TOTAL BENTHOS	2,000	28,706.5	100.00	241	3,459.1	100.00