A STUDY OF THE BENTHIC MACROINVERTEBRATE COMMUNITY IN SELECTED CHICAGO METROPOLITAN AREA WATERWAYS DURING 2005

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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-Sag 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 monitoring 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 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 ancillary 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 five watersheds: North Branch Chicago River, South Branch Chicago River and Chicago Sanitary and Ship Canal, Calumet River, Fox River, and Des Plaines River. Each of these watersheds will be sampled on a four-year rotation. In addition to the target watersheds, a core group of stations throughout the District's service area will be evaluated annually. The first primary watershed sampled was the North Branch Chicago River. The 2005 monitoring year represents the start of a new four year cycle. As in 2001, the primary watershed sampled in 2005 was the North Branch of the Chicago River (EA 2004). This report presents the study design and benthic macroinvertebrate data for the 2005 program year.

2. METHODS

In 2005, benthic macroinvertebrate samples were collected at 33 stations on 13 Chicago Metropolitan Area waterways. All locations were located in the Calumet River, North Branch of the Chicago River, South Branch of the Chicago River (SBCR) and Chicago Sanitary and Ship Canal (CSSC), and Des Plaines River watersheds (Table 2-1). Of the 33 stations, 29 were sampled as part of the District's ambient monitoring program and four were sampled as part of an Illinois Council on Food and Agricultural Research (CFAR) study specifically designed to address phosphorus issues in Illinois streams. Field sampling was conducted by District personnel using Hester-Dendy (HD) artificial substrates and Ponar grabs. A combination of HD and Ponar samples were collected at ambient stations while CFAR collections consisted of only Ponar sampling. Figure 2-1 presents the benthic macroinvertebrate sampling locations for the District's ambient water quality program.

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 (Figure 2-2). 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. 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 HD 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:

Watershed	Deployed	Retrieved
Calumet	3-6 June	29 August – 28 September
North Branch Chicago River	2-23 May	21 June – 28 July
SBCR and CSSC	31 May – 10 June	22 August – 15 September
Des Plaines River	2 May – 16 June	20 June – 18 August

HD samples were collected from the near-shore and mid-channel area at 28 of the 29 sample stations. The samplers set at Busse Dam on Salt Creek were vandalized shortly before the scheduled retrieval in early August.

Table 2-1. Description of benthic macroinvertebrate monitoring stations sampled during 2005. Stations arranged by major watershed, upstream to downstream within each waterway. Highlighted stations were sampled every year from 2001 to 2005.

Watershed	Sampling Station		Waterway	Lat./Lon.	Location Description
Calumet	**55-**	**130th St.**	**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.**	**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.**	**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.**	**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)

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.**	**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)
	CFAR	Fullerton Ave.	N. Branch Chicago R.		
	46-	**Grand Ave.**	**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.**	**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.**	**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.)**	**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**	**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)**
		Busse Dam	Salt Cr.		
	CFAR	J.F. Kennedy Blvd.	Salt Cr.		
		Thorndale Ave.	Salt Cr.		

[1]SBCR = South Branch of the Chicago River, CSSC = Chicago Sanitary and Ship Canal.

Table 2-1 - Continued

Watershed	Sampling Station	Waterway	Lat./Lon.	Location Description
Des Plaines River	18- Devon Ave.	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)
	24- CFAR Wolf Rd.	Salt Cr.	41° 49.548' N 87° 54.025' W	150' upstream of Wolf Rd. (10' from north bank and center channel)
	64- Lake St.	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)
	13- Lake-Cook Rd.	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)
	CFAR Irving Park Road	Des Plaines R.		
	22- Ogden Ave.	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.	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)

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

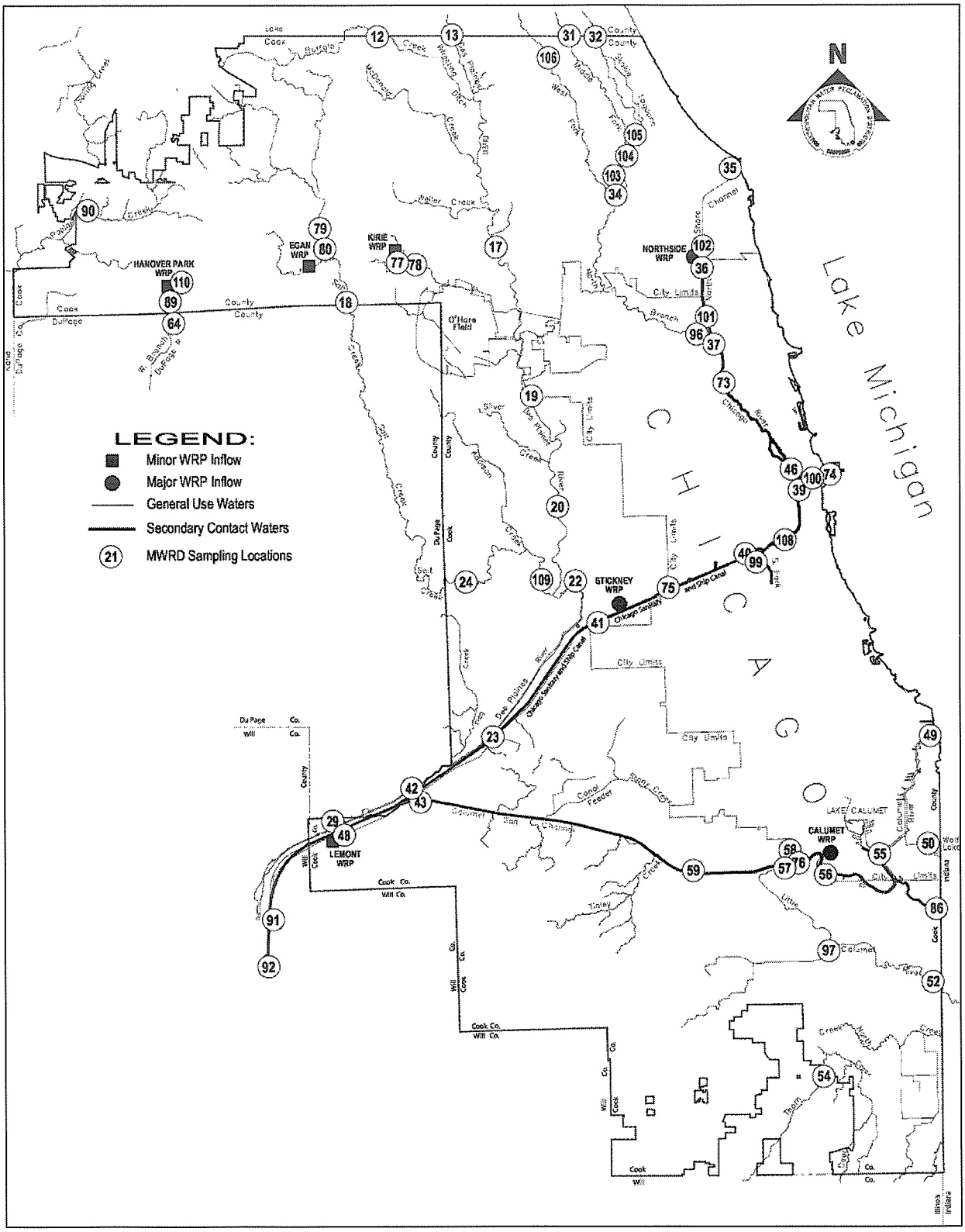


Figure 2-2. Hester-Dendy sampling array.

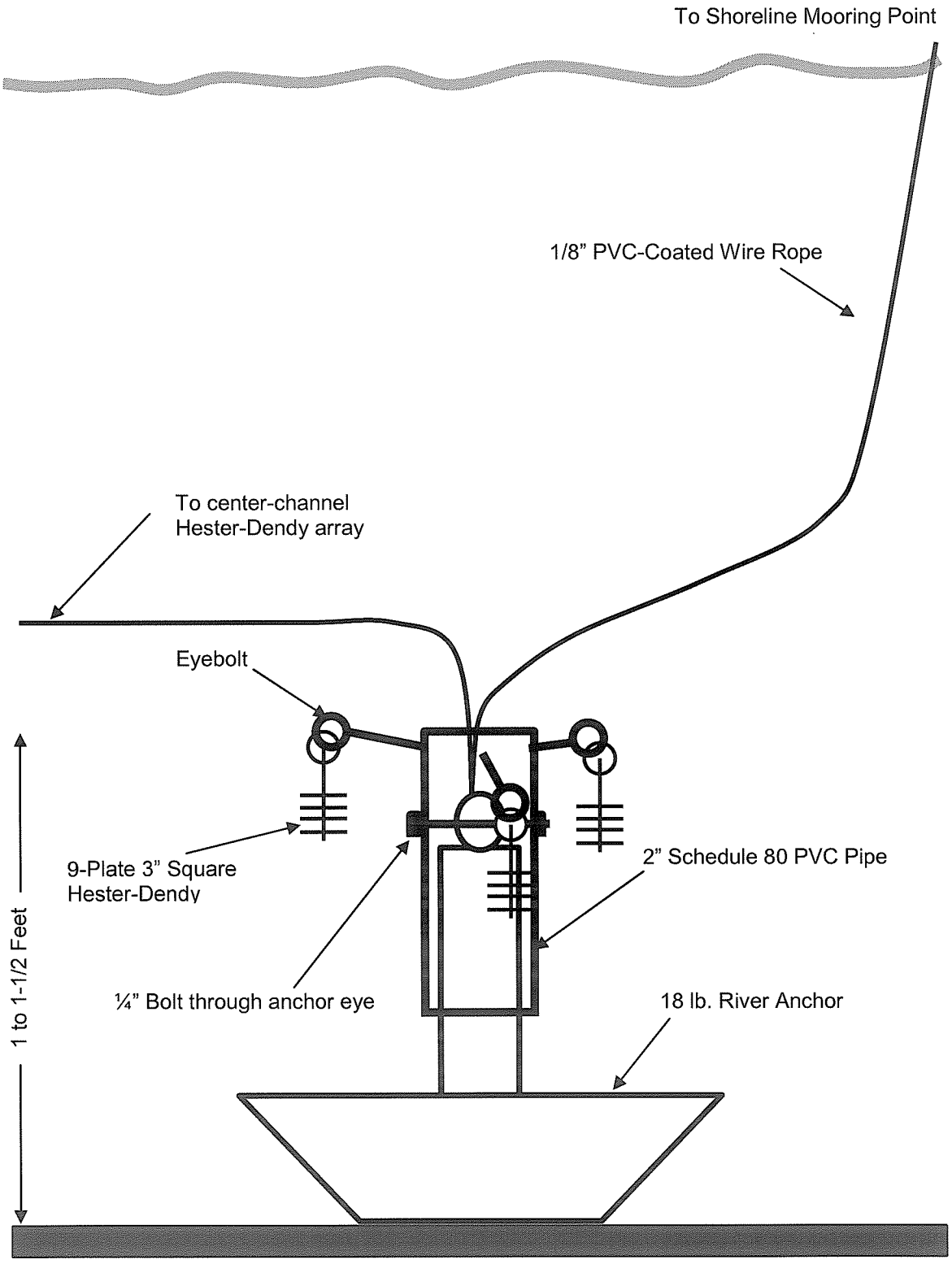
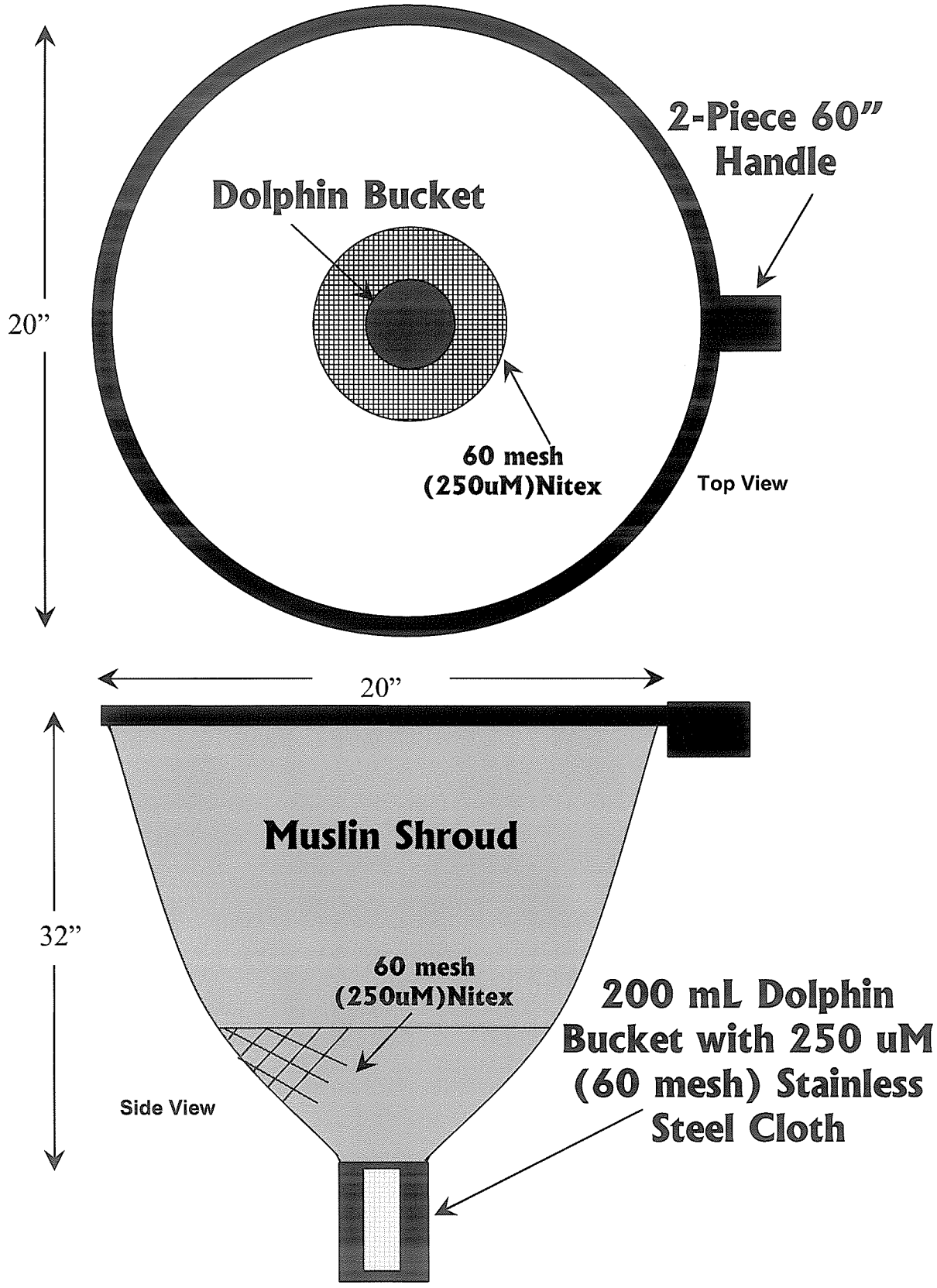


Figure 2-3. Dipnet for Hester-Dendy sampler retrieval.



Ponar grab samples were collected at each ambient station in conjunction with the HD retrieval. All grab samples were collected using a 6" X 6" Petite-Ponar sampler. As with the HD sampling, two Ponar samples were collected at each ambient station; one from a near shore area and one from mid-channel. Each ambient Ponar sample consisted of three grabs. For the CFAR stations, Ponar samples were collected only in mid-channel but consisted of three composite grabs. Ambient 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 near-shore location of the Des Plaines River at Material Service Road (Station 91).

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 and assigned an individual tracking number. 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. The use of chironomid head capsule deformities as indicators of benthic community quality has become widely accepted throughout the world (Burt et al. 2003, Canfield et al. 1996, De Pauw and Heylen 2001, Jeyasingham and Ling 2000, Lenat 1993). However, factors such as seasonal, temporal, and climatic variability, as well as limited baseline information and poorly understood relationships with a variety of contaminants may complicate the interpretation of deformity results (Servia et al. 2000, Servia et al. 2004, Burt et al 2003). Nonetheless, the relationship between increasing levels of environmental perturbation and incidence of chironomid deformities has been thoroughly documented. Recent studies have linked several agents found in industrial and domestic waste to midge deformities. These include endocrine disruptors (e.g., detergents; Kwak and Lee 2005, Vazquez-Duhalt et al. 2005, Vermeulen et al. 2000), heavy metals (e.g., Cu, Hg, Pb, Zn; Janssens de Bisthoven and Ollevier 1998, Janssens de Bisthoven et al. 1998, Martinez et al. 2004, Swansburg et al. 2002), polynuclear aromatic hydrocarbons (e.g., coal tar; Dickman et al. 1992, Hudson and Ciborowski 1996a), organochlorine compounds (e.g., pesticides; Hudson and Ciborowski 1996b) and radionuclides (e.g., radium and uranium refining; Warwick et al. 1987). In addition, as more studies are conducted under a variety of conditions

in different regions, reasonable expectations of what constitutes baseline conditions will become more established. Therefore, chironomid deformity analysis is likely to become an even more integral tool of bioassessment over time.

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 Bird (1994), Dermott (1991), Dickman et al. (1992), Groenendijk et al. (1998), Hudson and Ciborowski (1996b), MacDonald and Taylor (2006), Nazarova et al. (2004), Warwick (1985 and 1991), Warwick and Tisdale (1988), and Warwick et al. (1987). 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.

Whenever possible, for the waterways with multiple sampling stations, comparisons were made longitudinally between monitoring stations. 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 2005 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 Appendix A.

3. RESULTS AND DISCUSSION

3.1 2005 Benthic Macroinvertebrate Results

During 2005, 56 HD samples and 61 Ponar samples were collected from 33 stations in 13 different waterways (Table 2-1). Combined, these samples yielded 135 total taxa and 23 relatively pollution sensitive EPT taxa (Table 3-1). Chironomidae was the most taxa rich group with 61 taxa followed by Ephemeroptera and Trichoptera with 11 and 12 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 2005: one station in the Calumet River, one station in the Little Calumet River, and one station in the Cal-Sag Channel (Table 2-1).

Overall, the HD samples from the Calumet watershed were either dominated by zebra mussels (*Dreissena polymorpha*) or highly tolerant taxa whereas all of the Ponar samples were dominated by zebra mussels or Oligochaeta. Chironomid head capsule deformities were absent at two of the stations sampled and low at the third station. Despite the absence of deformities in the majority of midge specimens examined, 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 20 total taxa and two EPT taxa (Tables 3-2 and 3-3). Eight total taxa and one EPT taxon were observed in the HD samples while 14 total taxa and one EPT taxon were present in the Ponar samples. Total density in the HD samples was nearly thirty times higher than in the Ponar samples. The higher density in the HD samples was almost exclusively due to the abundance of zebra mussels, which prefer hard surfaces, like the HD samplers for attachment (Table 3-2). Zebra mussel was the most dominant HD taxon, representing over 93 percent of the total density. Except for the side swimmer *Gammarus*, the remaining taxa observed in the HD samples were individually represented by less than one percent of the total density. As with the HD samples, zebra mussel also was the most dominant taxon by percent in the Ponars (Table 3-3). With the exception of Oligochaeta, no other taxon collected in the Ponar samples attained one percent of the total density.

Table 3-1. List of benthic macroinvertebrate taxa collected in Hester-Dendy and Ponar samples from several Chicago Metropolitan Area waterways (EA 2004 and 2006). Underlined taxa are those considered to be highly tolerant based on literature sources.

Taxa	HD 2001	Ponar 2001	HD 2002	Ponar 2002	HD 2003	Ponar 2003	HD 2004	Ponar 2004	HD 2005	Ponar 2005
PORIFERA (Sponges)									X	
COELENTERATA (Hydroids)										
Hydra	X	X	X	X	X	X	X	X	X	X
PLATYHELMINTHES (Flat worms)										
Turbellaria	X	X	X	X	X	X	X	X	X	X
NEMATODA (Round worms)							X	X		
ENTOPROCTA (Moss Animalcules)										
Urnatella gracilis		X					X	X	X	X
ECTOPROCTA (Bryozoans)										
Plumatella	X	X	X	X	X		X	X	X	X
ANNELLIDA										
Oligochaeta (Aquatic Worms)	X	X	X	X	X	X	X	X	X	X
Hirudinea (Leeches)										
Glossiphoniidae[1]			X[1]	X[1]						
Desserobdella phalera									X	
Helobdella[1]	X[1]						X[1]	X[1]	X[1]	
Helobdella papillata							X			
Helobdella stagnalis	X	X	X	X	X	X	X	X	X	X
Helobdella triserialis	X	X	X		X	X			X	X
Placobdella			X							
Placobdella montifera									X	
Placobdella pediculata							X	X		
Erpobdella punctata punctata	X	X		X	X	X	X	X	X	X
Mooreobdella bucera								X		
Mooreobdella microstoma	X	X	X	X	X	X	X	X	X	X

Table 3-1 (cont.)

Taxa	HD 2001	Ponar 2001	HD 2002	Ponar 2002	HD 2003	Ponar 2003	HD 2004	Ponar 2004	HD 2005	Ponar 2005
CRUSTACEA										
Ostracoda (Seed Shrimp)		X					X	X		
Isopoda (Sow Bugs)										
Caecidotea	X	X	X	X	X	X	X	X	X	X
Amphipoda (Side Swimmers)										
Crangonyx							X		X	
Gammarus [1]				X[1]	X[1]	X[1]			X	X
Gammarus fasciatus	X	X	X	X	X	X	X	X		
Hyalella azteca							X	X	X	X
Decapoda (Crayfish)										
Cambarus bartonii							X			
Orconectes [1]					X[1]	X			X	X
Orconectes immunis		X								
Orconectes virilis	X			X	X					
Procambarus acutus									X	
ARACHNOIDEA										
Hydracarina (Water Mites)	X	X					X		X	X
INSECTA										
Collembola (Springtails)									X	X
Ephemeroptera (Mayflies)										
Isonychia	X		X						X	
Baetis [1]							X[1]			
Baetis flavistriga							X	X		
Baetis intercalaris	X	X	X	X	X	X	X	X	X	X
Callibaetis							X			
Centroptilum									X	X
Pseudocloeon ephippiatum	X									

Table 3-1 (cont.)

Taxa	HD 2001	Ponar 2001	HD 2002	Ponar 2002	HD 2003	Ponar 2003	HD 2004	Ponar 2004	HD 2005	Ponar 2005
Ephemeroptera (cont.)										
Heptageniidae[1]	X[1]	X[1]								
Heptagenia	X		X						X	
Leucrocuta	X		X							
Maccaffertium [1, 2]	X[1]	X								
Maccaffertium exiguum					X					
Maccaffertium integrum	X		X		X		X		X	
Maccaffertium terminatum	X		X				X	X	X	
Stenacron	X		X		X		X	X	X	X
Stenonema femoratum									X	
Caenis		X			X	X	X	X		X
Tricorythodes	X	X	X	X	X	X	X	X	X	X
Anthopotamus myops grp.					X		X	X		X
Hexagenia [1]					X	X[1]				
Hexagenia bilineata				X						
Hexagenia limbata						X				
Odonata (Damselflies and Dragonflies)										
Zygoptera[1]										X[1]
Calopteryx	X									
Coenagrionidae[1]						X[1]	X[1]		X[1]	
Argia	X		X		X		X		X	
Enallagma	X	X	X		X	X	X		X	X
Lestes						X				
Libellulidae								X		
Somatochlora			X				X			
Stylurus		X						X		

Table 3-1 (cont.)

Taxa	HD 2001	Ponar 2001	HD 2002	Ponar 2002	HD 2003	Ponar 2003	HD 2004	Ponar 2004	HD 2005	Ponar 2005
Plecoptera										
Perlesta					X					
Hemiptera (True Bugs)										
Rheumatobates									X	
Trepobates			X				X			
Corixidae			X	X		X	X	X	X	
Palmacorixa		X								
Megaloptera (Dobsonflies and Alderflies)										
Corydalus cornutus						X				
Sialis							X			
Neuroptera (Spongillaflies)										
Sisyridae									X	
Trichoptera (Caddisflies)										
Cyrnellus fraternus	X	X	X		X		X		X	
Hydropsychidae[1]				X[1]				X[1]		
Ceratopsyche morosa	X		X		X		X	X	X	
Cheumatopsyche	X	X	X	X	X	X	X	X	X	X
Hydropsyche	X		X		X		X		X	
Hydropsyche betteni	X	X	X		X		X		X	
Hydropsyche bidens	X		X		X		X		X	
Hydropsyche orris	X		X		X		X		X	
Hydropsyche simulans	X		X		X		X		X	
Potamyia flava	X	X	X	X	X					
Hydroptila	X		X		X	X	X	X	X	X
Oxyethira										X
Ceraclea[1]					X		X			
Ceraclea maculata									X	
Ocecetis						X	X	X	X	X

Table 3-1 (cont.)

Taxa	HD 2001	Ponar 2001	HD 2002	Ponar 2002	HD 2003	Ponar 2003	HD 2004	Ponar 2004	HD 2005	Ponar 2005
Lepidoptera (Aquatic Moths)										
Noctuidae										X
Petrophila	X		X				X		X	
Coleoptera (Beetles)										
Agabus							X			
Copelatus			X							
Laccophilus maculosus			X				X			
Ancyronyx variegata					X		X			
Dubiraphia	X	X		X		X	X	X	X	X
Macronychus glabratus	X	X	X		X	X	X	X	X	
Stenelmis	X	X	X	X	X	X	X	X	X	X
Peltodytes								X		
Berosus	X	X			X					X
Enochrus									X	
Paracymus					X					
Tropisternus			X				X			
Ectopria								X		
Diptera (True Flies)										
Chaoborus	X	X								X
Ceratopogonidae					X	X			X	X
Atrichopogon					X					
Bezzia		X					X	X		
Ceratopogon							X	X		
Culicoides							X	X		
Serromyia							X			
Culicidae					X					
Hemerodromia	X					X	X	X	X	
Rhamphomyia							X			

Table 3-1 (cont.)

Taxa	HD 2001	Ponar 2001	HD 2002	Ponar 2002	HD 2003	Ponar 2003	HD 2004	Ponar 2004	HD 2005	Ponar 2005
Diptera (cont.)										
Muscidae										X
Pericoma								X		
Psychoda									X	
Simulium	X	X			X	X	X	X	X	
Tipulidae						X				
Tipula			X		X					
Chironomidae (Midges)[1]	X[1]	X[1]	X[1]	X[1]	X[1]	X[1]				
Alotanypus									X	
Procladius	X	X	X	X	X	X	X	X	X	X
Tanypus		X			X	X	X	X	X	X
Psectrotanypus								X		X
Clinotanypus		X								
Coelotanypus				X		X		X		X
Ablabesmyia							X		X	
Ablabesmyia annulata									X	
Ablabesmyia janta	X		X	X	X	X	X		X	X
Ablabesmyia mallochi	X	X	X	X	X	X	X	X	X	X
Labrundinia neopilosella										X
Larsia										X
Natarsia								X		
Natarsia sp. A		X					X			
Nilotanypus fimbriatus	X		X				X			
Pentaneura									X	X
Thienemannimyia grp.	X	X	X	X	X	X	X	X	X	X
Corynoneura	X	X			X		X		X	
Corynoneura lobata							X	X		
Cricotopus							X	X		X

Table 3-1 (cont.)

Taxa	HD 2001	Ponar 2001	HD 2002	Ponar 2002	HD 2003	Ponar 2003	HD 2004	Ponar 2004	HD 2005	Ponar 2005
Chironomidae (cont.)										
Cricotopus bicinctus grp.	X	X	X	X	X	X	X	X	X	X
Cricotopus sylvestris grp.	X	X	X	X	X	X	X	X	X	X
Cricotopus tremulus grp.	X		X	X	X	X	X	X	X	X
Cricotopus trifascia grp.			X	X		X		X		X
Cricotopus/Orthocladius							X	X		
Euryhapsis					X					
Heterotrissocladius			X							
Nanocladius [1]		X[1]					X[1]		X[1]	
Nanocladius crassicornus/rectinervis	X	X	X		X		X	X	X	
Nanocladius distinctus	X	X	X	X	X	X	X	X	X	X
Nanocladius spiniplenus									X	
Orthocladius							X	X		
Parakiefferiella							X	X	X	X
Psectrocladius										X
Rheocricotopus robacki	X		X		X	X	X	X	X	X
Thienemanniella n. sp. 3								X		
Thienemanniella similis	X	X			X	X			X	X
Thienemanniella xena	X		X		X	X	X	X	X	X
Tvetenia discoloripes grp							X			
Chironomini[1]							X[1]			
Chironomus	X	X	X	X	X	X	X	X	X	X
Cladopelma		X	X			X	X	X	X	X
Cryptochironomus	X	X	X	X	X	X	X	X	X	X
Cryptotendipes								X	X	X
Cryptotendipes sp. 15						X				
Dicrotendipes [1]					X[1]	X[1]	X[1]	X[1]		X[1]
Dicrotendipes fumidus					X	X			X	X

Table 3-1 (cont.)

Taxa		HD 2001	Ponar 2001	HD 2002	Ponar 2002	HD 2003	Ponar 2003	HD 2004	Ponar 2004	HD 2005	Ponar 2005
	Chironomidae (cont.)										
	Dicrotendipes modestus									X	X
	Dicrotendipes neomodestus	X	X	X	X	X	X	X	X	X	X
	Dicrotendipes simpsoni	X	X	X	X	X	X	X	X	X	X
	Endochironomus nigricans	X				X	X	X	X	X	
	Glyptotendipes	X	X	X	X	X	X	X	X	X	X
	Harnischia							X	X	X	X
	Microchironomus		X	X			X				
	Microtendipes		X		X		X	X	X	X	
	Parachironomus	X	X	X	X	X	X	X	X	X	X
	Paracladopelma	X	X		X	X	X		X		
	Paralauterborniella nigrohalteralis										X
	Paratendipes							X	X	X	X
	Phaenopsectra	X									X
	Phaenopsectra obediens grp.									X	X
	Phaenopsectra punctipes					X				X	X
	Polypedilum fallax grp.	X	X	X		X	X	X		X	
	Polypedilum flavum	X	X	X	X	X	X	X	X	X	X
	Polypedilum halterale grp.	X	X	X	X		X	X	X	X	X
	Polypedilum illinoense	X	X	X	X	X	X	X	X	X	X
	Polypedilum scalaenum grp.	X	X	X	X	X	X	X	X	X	X
	Pseudochironomus							X	X	X	X
	Saetheria						X		X		
	Stenochironomus	X	X	X		X		X	X	X	X
	Stictochironomus						X	X	X		X
	Tribelos fusciorne					X	X	X	X		
	Xenochironomus xenolabis			X		X	X	X		X	
	Cladotanytarsus [1]						X[1]				

Table 3-1 (cont.)

Taxa	HD 2001	Ponar 2001	HD 2002	Ponar 2002	HD 2003	Ponar 2003	HD 2004	Ponar 2004	HD 2005	Ponar 2005
Chironomidae (cont.)										
Cladotanytarsus mancus grp.		X	X	X	X	X	X	X	X	X
Cladotanytarsus vanderwulpi grp.		X				X		X	X	X
Micropsectra			X				X	X		
Paratanytarsus	X		X	X	X	X	X	X	X	X
Rheotanytarsus	X	X	X		X	X	X	X	X	
Tanytarsus			X	X	X	X	X	X	X	X
Tanytarsus glabrescens grp.				X	X				X	
Tanytarsus guerlus grp.	X	X	X			X			X	X
GASTROPODA (Snails)										
Ferrissia	X		X	X	X	X	X	X	X	X
Bithynia tentaculata									X	X
Amnicola		X		X	X	X	X	X	X	X
Physa	X	X	X		X	X	X	X	X	X
Gyraulus							X	X	X	
Helisoma					X	X	X	X	X	X
Menetus dilatatus	X	X	X				X	X	X	X
Planorbella							X			
Pleurocera	X	X			X	X	X	X	X	X
Valvata						X	X	X		
Campeloma decisum								X		
Viviparus							X	X		
PELECYPODA (Mussels and Clams)[1]	X[1]									
Corbicula fluminea	X	X	X	X	X	X	X	X	X	X
Dreissena polymorpha	X	X	X	X	X	X	X	X	X	X
Sphaeriidae[1]								X[1]		
Musculium[1]		X[1]	X		X	X	X[1]	X[1]	X	X

Table 3-1 (cont.)

Taxa	HD 2001	Ponar 2001	HD 2002	Ponar 2002	HD 2003	Ponar 2003	HD 2004	Ponar 2004	HD 2005	Ponar 2005
PELECYPODA (cont.)										
Musculium transversum	X	X		X			X	X		
Pisidium [1]	X	X[1]			X	X		X	X	X
Pisidium compressum		X								
Pisidium nitidum				X						
Sphaerium [1]							X	X[1]	X	X
Sphaerium simile		X						X		
Lasmigona complanata		X						X		
TOTAL RICHNESS BY SAMPLE TYPE[3]	82	74	81	50	89	80	121	105	118	94
EPT RICHNESS BY SAMPLE TYPE[3]	19	8	18	5	20	7	20	11	20	10
TOTAL RICHNESS BY YEAR[3]	100		90		108		139		135	
EPT RICHNESS BY YEAR[3]	20		19		21		20		23	

[1]Taxon unidentifiable beyond level indicated. Not counted as a discreet taxon for all samples and years combined. May be counted as a discreet taxon for individual samples, sample types, stations, or locations if it is the only representative of that taxonomic order, family, or genus.

[2]The *Stenonema* subgenus *Maccaffertium* was elevated to genus status by Wang and McCafferty (2004). Only *S. femoratum* remains in *Stenonema*.

[3]Data for sample years 2001 and 2005 are comparable. However, sample stations during 2002-2004 are different than 2001 and 2005. Therefore, any comparisons among the various years must take this fact into consideration.

TABLE 3-2. HESTER-DENDY DENSITIES AT SAMPLING STATION 55 WITHIN THE CALUMET RIVER, SEPTEMBER 2005.

TAXA	55 130TH ST. #/m2	%
Hydra	179.4	0.21
Oligochaeta	448.5	0.51
Gammarus	4,843.9	5.54
Cyrnellus fraternus	89.7	0.10
Dicrotendipes simpsoni	89.7	0.10
Glyptotendipes	89.7	0.10
Ferrissia	89.7	0.10
Dreissena polymorpha	81,629.0	93.33
TOTAL BENTHOS	87,459.6	100.00
TOTAL TAXA RICHNESS	8	
EPT TAXA RICHNESS	1	

TABLE 3-3. PETITE PONAR DENSITIES AT SAMPLING STATION 55 WITHIN THE CALUMET RIVER, SEPTEMBER 2005.

TAXA	55 130TH ST. #/m2	%
Plumatella	7.2	0.22
Oligochaeta	574.1	17.74
Hydroptila	7.2	0.22
Ablabesmyia mallochi	7.2	0.22
Parakiefferiella	14.4	0.44
Psectrocladius	21.5	0.67
Chironomus	21.5	0.67
Cryptochironomus	7.2	0.22
Dicrotendipes modestus	28.7	0.89
Dicrotendipes neomodestus	7.2	0.22
Parachironomus	7.2	0.22
Polypedilum halterale grp.	7.2	0.22
Paratanytarsus	21.5	0.67
Dreissena polymorpha	2,504.6	77.38
TOTAL BENTHOS	3,236.7	100.00
TOTAL TAXA RICHNESS	14	
EPT TAXA RICHNESS	1	

No chironomid deformities were observed in either the HD or Ponar samples. However, the benthic community represented in both the HD and Ponar samples largely consisted of taxa that are considered moderately to extremely tolerant of pollution. Of the 20 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 32 total taxa and two EPT taxa (Tables 3-4 and 3-5). Total taxa richness ranged from 30 taxa in the HD samples to seven taxa in the Ponar samples. The two EPT taxa only were observed in HD samples. Total Ponar density was slightly less than one-fifth of that observed in the HDs due primarily to the abundance of zebra mussel and the tolerant chironomid *Dicrotendipes simpsoni* on the artificial substrates. Again, zebra mussel was the most abundant taxon by percent in the HD samples (Table 3-4). However, unlike the HD sample from the Calumet River, 10 of the 30 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 composed over 90 percent of the total density (Table 3-5). Four other taxa, including the fingernail clam *Pisidium* and zebra mussel achieved more than one percent of 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 the dominant taxon in the Ponar samples are considered highly tolerant of pollution indicating a stressed environment (Table 3-1).

3.1.1.3 Calumet-Sag Channel

Combined, the HD and Ponar samples from the single station in the Calumet-Sag Channel (Station 59) yielded 25 total taxa and one EPT taxon (Tables 3-6 and 3-7). There were 23 total taxa and one EPT taxon in the HD samples while only five total taxa were present in the Ponar samples. Total density in the HD samples was nearly two times greater than in the Ponars. This difference was largely due to the abundance of three tolerant taxa: *Dicrotendipes simpsoni*, the chironomid *Nanocladius distinctus*, and the snail *Ferrissia*, which represented 65 percent of the total density (Table 3-6). Although the tolerant midge *Procladius* was well represented in the Ponar samples, Oligochaeta was clearly the most dominant taxon accounting for nearly 87 percent of the total density (Table 3-7). No other taxon collected in the Ponar samples was represented by more than 0.5 percent of the total density.

The only head capsule deformities in samples from the Calumet River watershed were observed at Station 59 (Table 3-8). One *Dicrotendipes neomodestus* with a deformity was observed in the HD samples while four of 57 *Procladius* specimens exhibited deformities in the Station 59 Ponar samples. All deformities were expressed on the mentum or ligula (teeth) in the affected specimens.

TABLE 3-4. HESTER-DENDY DENSITIES AT SAMPLING STATION 76 WITHIN THE LITTLE CALUMET RIVER, SEPTEMBER 2005.

TAXA	76 HALSTED ST. #/m2	%
Porifera	3.6	0.07
Hydra	78.9	1.47
Turbellaria	134.6	2.51
Oligochaeta	468.2	8.72
Mooreobdella microstoma	5.4	0.10
Caecidotea	5.4	0.10
Hyalella azteca	1.8	0.03
Gammarus	139.9	2.61
Argia	3.6	0.07
Enallagma	3.6	0.07
Sisyridae	1.8	0.03
Cyrnellus fraternus	511.3	9.52
Hydroptila	1.8	0.03
Procladius	12.6	0.23
Ablabesmyia janta	26.9	0.50
Ablabesmyia mallochi	7.2	0.13
Cricotopus bicinctus grp.	14.4	0.27
Nanocladius distinctus	253.0	4.71
Chironomus	7.2	0.13
Dicrotendipes simpsoni	1,221.7	22.75
Glyptotendipes	55.6	1.04
Parachironomus	12.6	0.23
Stenochironomus	141.7	2.64
Xenochironomus xenolabis	233.2	4.34
Bithynia tentaculata	3.6	0.07
Physa	12.6	0.23
Helisoma	1.8	0.03
Ferrissia	37.7	0.70
Corbicula fluminea	35.9	0.67
Dreissena polymorpha	1,934.0	36.01
TOTAL BENTHOS	5,371.4	100.00
TOTAL TAXA RICHNESS	30	
EPT TAXA RICHNESS	2	

TABLE 3-5. PETITE PONAR DENSITIES AT SAMPLING STATION 76 WITHIN THE LITTLE CALUMET RIVER, SEPTEMBER 2005.

TAXA	76 HALSTED ST. #/m2	%
Oligochaeta	861.2	90.23
Gammarus	14.4	1.50
Dicrotendipes simpsoni	7.2	0.75
Polypedilum halterale grp.	7.2	0.75
Corbicula fluminea	14.4	1.50
Pisidium	21.5	2.26
Dreissena polymorpha	28.7	3.01
TOTAL BENTHOS	954.5	100.00
TOTAL TAXA RICHNESS	7	
EPT TAXA RICHNESS	0	

TABLE 3-6. HESTER-DENDY DENSITIES AT SAMPLING STATION 59 WITHIN THE CAL-SAG CHANNEL, AUGUST 2005.

TAXA	59 CICERO AVE. #/m2	%
Hydra	475.4	7.96
Turbellaria	50.2	0.84
Oligochaeta	104.1	1.74
Caecidotea	1.8	0.03
Hyalella azteca	107.6	1.80
Gammarus	186.6	3.12
Collembola	9.0	0.15
Argia	1.8	0.03
Enallagma	1.8	0.03
Cyrnellus fraternus	62.8	1.05
Procladius	48.4	0.81
Ablabesmyia janta	71.8	1.20
Cricotopus bicinctus grp.	12.6	0.21
Nanocladius distinctus	936.5	15.67
Dicrotendipes neomodestus	100.5	1.68
Dicrotendipes simpsoni	2,366.3	39.60
Glyptotendipes	98.7	1.65
Parachironomus	26.9	0.45
Stenochironomus	150.7	2.52
Xenochironomus xenolabis	141.7	2.37
Ferrissia	613.6	10.27
Corbicula fluminea	41.3	0.69
Dreissena polymorpha	366.0	6.12
TOTAL BENTHOS	5,976.0	100.00
TOTAL TAXA RICHNESS	23	
EPT TAXA RICHNESS	1	

TABLE 3-7. PETITE PONAR DENSITIES AT SAMPLING STATION 59 WITHIN THE CAL-SAG CHANNEL, AUGUST 2005.

TAXA	59 CICERO AVE. #/m2	%
Oligochaeta	2,712.8	86.90
Procladius	380.4	12.18
Coelotanypus	7.2	0.23
Cryptochironomus	7.2	0.23
Dicrotendipes simpsoni	14.4	0.46
TOTAL BENTHOS	3,121.8	100.00
TOTAL TAXA RICHNESS	5	
EPT TAXA RICHNESS	0	

Table 3-8. Chironomidae head capsule deformities observed in Hester-Dendy and Ponar samples from the Cal-Sag Channel, August 2005.

Taxa	Hester-Dendy Sample C.S.C @ Cicero Sta. 59	Ponar Sample C.S.C @ Cicero Sta. 59
Procladius		
Number Examined	4	53
Percent Deformed	0.0	7.5
Dicrotendipes neomodestus		
Number Examined	21	0
Percent Deformed	4.8	0.0
TOTAL SAMPLE		
Total Midges Examined	198	57
Percent Deformed	0.5	7.0

Baseline deformity levels have not been established for Chironomidae in the Chicago Metropolitan Area waterways. A study of deformity levels at 211 reference sites throughout the Great Lakes, including lower Lake Michigan, found that background levels were 2.27 percent for *Procladius* (Burt et al. 2003). However, the sample size used in this study was far greater than the number specimens examined at Station 59 in 2005. Additional studies conducted in the Great Lakes region by Hudson and Ciborowski (1996b) and Dermont (1991) suggest that an incidence of three percent is typical of reference conditions. Since the number of deformed *Procladius* observed in the Ponar samples is only slightly higher than these reference levels and given the small sample size, it is unlikely that the level observed in the Station 59 Ponar sample is indicative of an impact.

Although the incidence of head capsule deformities does not provide clear evidence, the abundance of tolerant taxa at Station 59 suggests that the benthic community is at least moderately stressed (Table 3-1).

3.1.2 North Branch Chicago River Watershed

Sampling was conducted at 16 stations in the North Branch of the Chicago River watershed during 2005: 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 (MFNBCR), two stations in the Skokie River, four stations in the North Shore Channel (NSC), and seven stations in the North Branch of the Chicago River (NBCR) (Table 2-1).

Tolerant taxa were the most abundant organisms in nine of the 15 HD samples collected from the North Branch Chicago River watershed. Likewise, Oligochaeta was the dominant taxon in 13 of

16 Ponar samples. Chironomidae deformities were observed in the majority of HD and Ponar samples collected in the watershed with some incidence levels being among the highest observed in the 2005 samples. Based on the dominance of a single taxon, dominance by tolerant taxa, total richness, EPT richness, and/or head capsule deformities, several stations in the watershed exhibited varying degrees of stress.

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 40 total taxa and two EPT taxa (Tables 3-9 and 3-10). HD total taxa richness at Station 106 was double the total richness at Station 103 (Table 3-9). This difference was largely due to a more diverse chironomid assemblage at Station 106 where 16 midge taxa were observed compared to nine midge taxa at Station 103. In addition, the only EPT taxon observed in the HD samples was collected from Station 106. Total density was more than four times higher at Station 103 compared to Station 106. This difference was primarily due to noticeably higher numbers of *Hydra* and Turbellaria, as well as the tolerant taxa Oligochaeta and *Dicrotendipes simpsoni*. The most abundant taxa at Station 106 were Oligochaeta, *Caecidotea*, and *Chironomus* while at Station 103 *Hydra* was the dominant taxon.

Results from the HD and Ponar samples were generally similar. Ponar total taxa richness was noticeably higher at Station 106 with 22 taxa compared to nine taxa at Station 103 (Table 3-10). Again, total density was substantially greater downstream at Station 103 compared to Station 106. This difference was primarily due to a higher number of Oligochaeta at Station 103. Oligochaeta was abundant at both Stations. However, at Station 103, Oligochaeta contributed 98 percent of the total density while *Chironomus* and Oligochaeta combined to yield only 61 percent of the density at Station 106.

Chironomid head capsule deformities in the WFNBCR were restricted to *Chironomus* in both the HD and Ponar samples from the Station 106. This taxon was not observed in the HD and Ponar samples from Station 103 and no deformities were observed in the samples from Station 103. Of the 111 *Chironomus* examined in the HD samples, 54.1 percent were deformed (Table 3-11). Likewise, 26.5 percent of the 102 *Chironomus* in the Ponars samples exhibited clear deformities (Table 3-12). Overall, the deformity levels observed in the HD and Ponar samples from Station 106 were either the highest or among the highest observed among all the stations sampled in 2005.

All of the observed deformities were expressed on the mentum except one specimen from the Ponar samples that had both a deformed mentum and antenna. Of the mentum deformities, the vast majority involved extra teeth or malformed 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, Hudson and Ciborowski 1996a, Hudson and Ciborowski 1996b, Swansburg et al. 2002). Burt et al. (2003) found that reference deformity levels for *Chironomus* were 2.15 percent in the Great Lakes. Other investigators have reported background levels from zero to 14 percent for *Chironomus* (Bird 1994, Burt et al. 2003, Lenat 1993, Swansburg et al. 2002). Despite the lack of consensus

TABLE 3-9. HESTER-DENDY DENSITIES AT EACH SAMPLING STATION WITHIN THE WEST FORK NORTH BRANCH CHICAGO RIVER, JUNE 2005.

TAXA	106 DUNDEE RD.		103 GOLF RD.	
	#/m2	%	#/m2	%
Hydra	321.1	6.92	8,396.1	48.17
Turbellaria	209.9	4.53	1,838.9	10.55
Oligochaeta	1,227.1	26.46	2,691.1	15.44
Helobdella stagnalis	224.3	4.84	--	--
Erpobdella punctata punctata	35.9	0.77	--	--
Caecidotea	940.1	20.27	1,211.0	6.95
Crangonyx	3.6	0.08	--	--
Coenagrionidae	3.6	0.08	--	--
Cheumatopsyche	1.8	0.04	--	--
Enochrus	3.6	0.08	--	--
Alotanypus	5.4	0.12	--	--
Procladius	114.8	2.48	143.5	0.82
Ablabesmyia	10.8	0.23	--	--
Pentaneura	21.5	0.46	--	--
Thienemannimyia grp.	217.1	4.68	--	--
Cricotopus tremulus grp.	10.8	0.23	--	--
Cricotopus bicinctus grp.	39.5	0.85	--	--
Cricotopus sylvestris grp.	5.4	0.12	35.9	0.21
Nanocladius crassicornus/rectinervis	16.1	0.35	35.9	0.21
Chironomus	904.2	19.50	--	--
Cryptochironomus	10.8	0.23	--	--
Dicrotendipes neomodestus	5.4	0.12	--	--
Dicrotendipes simpsoni	26.9	0.58	2,583.4	14.82
Glyptotendipes	--	--	161.5	0.93
Harnischia	--	--	53.8	0.31
Polypedilum halterale grp.	--	--	35.9	0.21
Polypedilum illinoense	16.1	0.35	125.6	0.72
Polypedilum scalaenum grp.	--	--	17.9	0.10
Paratanytarsus	204.5	4.41	--	--
Tanytarsus guerlus grp.	16.1	0.35	--	--
Psychoda	1.8	0.04	--	--
Physa	23.3	0.50	26.9	0.15
Menetus dilatatus	1.8	0.04	--	--
Ferrissia	--	--	71.8	0.41
Musculium	3.6	0.08	--	--
Pisidium	10.8	0.23	--	--
TOTAL BENTHOS	4,637.6	100.00	17,429.1	100.00
TOTAL TAXA RICHNESS	31		15	
EPT TAXA RICHNESS	1		0	

TABLE 3-10. PETITE PONAR DENSITIES AT EACH SAMPLING STATION WITHIN THE WEST FORK NORTH BRANCH CHICAGO RIVER, JUNE 2005.

TAXA	106 DUNDEE RD.		103 GOLF RD.	
	#/m2	%	#/m2	%
Hydra	--	--	71.8	0.13
Oligochaeta	3,251.0	28.87	54,183.6	98.18
Erpobdella punctata punctata	416.2	3.70	--	--
Caecidotea	21.5	0.19	--	--
Collembola	7.2	0.06	--	--
Oecetis	129.2	1.15	71.8	0.13
Procladius	265.5	2.36	143.5	0.26
Pentaneura	21.5	0.19	--	--
Thienemannimyia grp.	21.5	0.19	--	--
Cricotopus bicinctus grp.	21.5	0.19	--	--
Cricotopus sylvestris grp.	21.5	0.19	--	--
Nanocladius distinctus	21.5	0.19	--	--
Chironomus	3,638.6	32.31	--	--
Cryptochironomus	165.1	1.47	143.5	0.26
Dicrotendipes neomodestus	1,521.4	13.51	--	--
Dicrotendipes simpsoni	--	--	71.8	0.13
Paratendipes	21.5	0.19	--	--
Polypedilum halterale grp.	43.1	0.38	71.8	0.13
Polypedilum scalaenum grp.	409.1	3.63	--	--
Paratanytarsus	215.3	1.91	--	--
Physa	57.4	0.51	--	--
Menetus dilatatus	7.2	0.06	--	--
Musculium	610.0	5.42	358.8	0.65
Pisidium	373.2	3.31	71.8	0.13
TOTAL BENTHOS	11,260.1	100.00	55,188.3	100.00
TOTAL TAXA RICHNESS	22		9	
EPT TAXA RICHNESS	1		1	

Table 3-11. Chironomidae head capsule deformities observed in Hester-Dendy samples from the North Branch of the Chicago River watershed, June - July 2005.

	Hester Dendy Samples							
Taxa	W.F.N.B.C.R. @ Dundee Sta. 106	Skokie R. @ Lake Cook Sta. 32	Skokie R. @ Frontage Sta. 105	N.S.C. @ Central Sta. 35	N.S.C. @ Oakton Sta. 102	N.S.C. @ Touhy Sta. 36	N.B.C.R. @ Dempster Sta. 34	N.B.C.R. @ Diversey Sta. 73
Chironomus								
Number Examined	111	49	47	6	1	--	--	--
Percent Deformed	54.1	22.4	8.5	33.3	0.0	--	--	--
Dicrotendipes modestus								
Number Examined	--	--	32	81	18	4	13	--
Percent Deformed	--	--	0.0	0.0	0.0	0.0	7.7	--
Dicrotendipes simpsoni								
Number Examined	1	13	29	67	163	134	27	162
Percent Deformed	0.0	7.7	3.4	0.0	1.8	0.0	0.0	0.6
Glyptotendipes								
Number Examined	2	--	13	--	1	68	7	9
Percent Deformed	0.0	--	0.0	--	0.0	1.5	0.0	0.0
TOTAL SAMPLE								
Total Midges Examined	198	72	175	202	195	231	165	194
Percent Deformed	30.3	16.7	2.9	1.0	1.5	0.4	0.6	0.5

Table 3-12. Chironomidae head capsule deformities observed in Ponar samples from the North Branch of the Chicago River watershed, June - July 2005.

	Ponar Samples						
Taxa	W.F.N.B.C.R. @ Dundee Sta. 106	M.F.N.B.C.R. @ Lake Cook Sta. 31	Skokie R. @ Lake Cook Sta. 32	Skokie R. @ Frontage Sta. 105	N.S.C. @ Central Sta. 35	N.S.C. @ Oakton Sta. 102	N.S.C. @ Foster Sta. 101
Procladius							
Number Examined	9	57	7	6	23	29	1
Percent Deformed	0.0	0.0	0.0	33.3	8.7	6.9	0.0
Chironomus							
Number Examined	102	24	182	126	23	1	30
Percent Deformed	26.5	4.2	8.8	1.6	0.0	0.0	13.3
TOTAL SAMPLE							
Total Midges Examined	195	84	197	154	145	63	51
Percent Deformed	13.8	1.2	8.1	2.6	1.4	3.2	7.8

	Ponar Samples			
Taxa	N.B.C.R. @ Glenview Sta. 104	N.B.C.R. @ Dempster Sta. 34	N.B.C.R. @ Wilson Sta. 37	N.B.C.R. @ Diversey Sta. 73
Procladius				
Number Examined	2	65	6	23
Percent Deformed	0.0	3.1	0.0	0.0
Chironomus				
Number Examined	28	21	21	5
Percent Deformed	35.7	42.9	52.4	40.0
TOTAL SAMPLE				
Total Midges Examined	123	139	59	30
Percent Deformed	8.1	7.9	18.6	6.7

regarding reference levels, the incidence of deformities observed at Station 106 are substantially greater than previously identified background levels. While the absence of midge deformities at Station 103 may be indicative of less toxic stress compared to Station 106 (Lenat 1993), it equally could be the result of conditions at Station 103 being stressed beyond the survival threshold for *Chironomus* or other taxa that may exhibit deformities (Janssens de Bisthoven et al. 1998, Wiederholm 1984). These results suggest that the benthic communities at both stations are moderately stressed. However, based on the noticeably higher total richness and more even distribution of abundance among taxa, impairment at Station 106 appears to be relatively less compared to Station 103.

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 21 total taxa (Tables 3-13 and 3-14). Thirteen total taxa were observed in the HD samples while 18 total taxa were present in the Ponar samples. Total density in the HD and Ponar samples was similar though slightly higher in the Ponars. The dominant taxon in both the HD and Ponar samples was *Caecidotea*. However, in addition to *Caecidotea*, Oligochaeta, *Procladius*, and *Pisidium* were represented by more than five percent of the total density in the Ponar samples (Table 3-14). In contrast, only *Caecidotea* and *Hydra* achieved more than five percent in the HD samples (Table 3-13).

A single *Chironomus* specimen in the Ponar samples exhibited a head capsule deformity (Table 3-12). This specimen composed 4.2 percent of the *Chironomus* and 1.2 percent of all the chironomids examined in the Ponar samples. Given the small sample size, the percent incidence of deformity observed in these samples is likely insignificant. However, several of the benthic taxa represented in both the HD and Ponar samples are considered moderately to extremely tolerant of pollution. Of the 21 taxa observed, nine 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 44 total taxa and three EPT taxa (Tables 3-15 and 3-16). HD total taxa richness was slightly higher at the downstream Station 105 (29 taxa) compared to Station 32 (20 taxa) (Table 3-15). In addition, EPT richness was zero at Station 32 while three EPT taxa were observed in the Station 105 HDs. Total density was nearly identical between the two stations and the dominant taxon at each station was Oligochaeta.

Ponar taxa richness was similar with 16 and 13 total at Stations 32 and 105, respectively and no EPT taxa (Table 3-16). In addition, Oligochaeta was similarly the dominant taxon at both stations in terms of relative abundance. However, the density of Oligochaeta was more than two times greater at Station 32 compared to Station 105. That combined with the substantially higher density of *Chironomus* at Station 32 resulted in a nearly three-fold difference in total density between the two stations.

TABLE 3-13. HESTER-DENDY DENSITIES AT SAMPLING STATION 31 WITHIN THE MIDDLE FORK NORTH BRANCH CHICAGO RIVER, JUNE 2005.

TAXA	31 LAKE COOK RD. #/m2	%
Hydra	1,892.7	5.78
Turbellaria	1,453.2	4.43
Oligochaeta	170.4	0.52
Helobdella stagnalis	35.9	0.11
Caecidotea	28,597.1	87.27
Hydracarina	17.9	0.05
Procladius	17.9	0.05
Thienemannimyia grp.	35.9	0.11
Chironomus	44.9	0.14
Glyptotendipes	35.9	0.11
Physa	251.2	0.77
Sphaerium	89.7	0.27
Musculium	125.6	0.38
TOTAL BENTHOS	32,768.2	100.00
TOTAL TAXA RICHNESS	13	
EPT TAXA RICHNESS	0	

TABLE 3-14. PETITE PONAR DENSITIES AT SAMPLING STATION 31 WITHIN THE MIDDLE FORK NORTH BRANCH CHICAGO RIVER, JUNE 2005.

TAXA	31 LAKE COOK RD. #/m2	%
Hydra	251.2	0.66
Turbellaria	265.5	0.70
Oligochaeta	10,664.5	27.98
Helobdella stagnalis	172.2	0.45
Erpobdella punctata punctata	129.2	0.34
Caecidotea	19,341.0	50.74
Enallagma	21.5	0.06
Procladius	2,368.3	6.21
Chironomus	172.2	0.45
Paratendipes	43.1	0.11
Polypedilum flavum	35.9	0.09
Amnicola	7.2	0.02
Physa	552.6	1.45
Menetus dilatatus	7.2	0.02
Ferrissia	35.9	0.09
Sphaerium	588.5	1.54
Musculium	480.8	1.26
Pisidium	2,978.3	7.81
TOTAL BENTHOS	38,115.1	100.00
TOTAL TAXA RICHNESS	18	
EPT TAXA RICHNESS	0	

TABLE 3-15. HESTER-DENDY DENSITIES AT EACH SAMPLING STATION WITHIN THE SKOKIE RIVER, JUNE 2005.

TAXA	32 LAKE COOK RD.		105 FRONTAGE RD.	
	#/m2	%	#/m2	%
Turbellaria	165.1	9.81	26.9	1.64
Oligochaeta	958.0	56.93	586.7	35.86
Helobdella stagnalis	120.2	7.14	--	--
Helobdella triserialis	1.8	0.11	--	--
Erpobdella punctata punctata	3.6	0.21	--	--
Caecidotea	253.0	15.03	30.5	1.86
Gammarus	3.6	0.21	407.2	24.89
Procambarus acutus	1.8	0.11	5.4	0.33
Hydracarina	1.8	0.11	--	--
Stenacron	--	--	3.6	0.22
Rheumatobates	--	--	1.8	0.11
Cyrnellus fraternus	--	--	14.4	0.88
Cheumatopsyche	--	--	10.8	0.66
Procladius	3.6	0.21	41.3	2.52
Ablabesmyia annulata	--	--	7.2	0.44
Cricotopus bicinctus grp.	--	--	9.0	0.55
Cricotopus sylvestris grp.	9.0	0.53	7.2	0.44
Nanocladius distinctus	--	--	1.8	0.11
Chironomus	116.6	6.93	116.6	7.13
Dicrotendipes modestus	--	--	73.6	4.50
Dicrotendipes neomodestus	1.8	0.11	7.2	0.44
Dicrotendipes simpsoni	23.3	1.39	59.2	3.62
Glyptotendipes	--	--	23.3	1.43
Harnischia	--	--	12.6	0.77
Paratendipes	--	--	7.2	0.44
Phaenopsectra punctipes grp.	3.6	0.21	--	--
Polypedilum halterale grp.	--	--	1.8	0.11
Polypedilum illinoense	1.8	0.11	1.8	0.11
Polypedilum scalaenum grp.	--	--	1.8	0.11
Paratanytarsus	1.8	0.11	5.4	0.33
Rheotanytarsus	--	--	10.8	0.66
Physa	7.2	0.43	--	--
Ferrissia	--	--	12.6	0.77
Corbicula fluminea	--	--	86.1	5.26
Sphaerium	--	--	62.8	3.84
Musculium	1.8	0.11	--	--
Pisidium	3.6	0.21	--	--
TOTAL BENTHOS	1,682.8	100.00	1,636.2	100.00
TOTAL TAXA RICHNESS	20		29	
EPT TAXA RICHNESS	0		3	

TABLE 3-16. PETITE PONAR DENSITIES AT EACH SAMPLING STATION WITHIN THE SKOKIE RIVER, JUNE 2005.

TAXA	32 LAKE COOK RD.		105 FRONTAGE RD.	
	#/m2	%	#/m2	%
Turbellaria	14.4	0.08	--	--
Oligochaeta	12,458.6	70.54	5,030.8	72.12
Helobdella stagnalis	28.7	0.16	--	--
Erpobdella punctata punctata	7.2	0.04	--	--
Caecidotea	43.1	0.24	--	--
Gammarus	14.4	0.08	35.9	0.51
Enallagma	7.2	0.04	--	--
Noctuidae	--	--	7.2	0.10
Dubiraphia	--	--	64.6	0.93
Ceratopogonidae	--	--	7.2	0.10
Tanypus	200.9	1.14	--	--
Procladius	129.2	0.73	64.6	0.93
Cricotopus bicinctus grp.	14.4	0.08	--	--
Cricotopus sylvestris grp.	14.4	0.08	--	--
Chironomus	4,478.2	25.36	1,363.6	19.55
Cryptochironomus	--	--	157.9	2.26
Dicrotendipes modestus	--	--	28.7	0.41
Harnischia	--	--	50.2	0.72
Polypedilum scalaenum grp.	--	--	7.2	0.10
Amnicola	--	--	7.2	0.10
Physa	14.4	0.08	--	--
Corbicula fluminea	--	--	150.7	2.16
Sphaerium	71.8	0.41	--	--
Musculium	43.1	0.24	--	--
Pisidium	122.0	0.69	--	--
TOTAL BENTHOS	17,661.7	100.00	6,975.7	100.00
TOTAL TAXA RICHNESS	16		13	
EPT TAXA RICHNESS	0		0	

Chironomid head capsule deformities were observed in the HD and Ponar samples from both stations (Table 3-11 and 3-12). In the HD samples, deformities were observed in 22.4 percent (n=49) and 8.5 (n=47) of *Chironomus* examined from Stations 32 and 105, respectively (Table 3-11). In contrast, a single deformed specimen of *Dicrotendipes simpsoni* was observed in the HD samples from each station. Mentum anomalies were also observed on *Chironomus* specimens in the Ponar samples at both Stations (Table 3-12). Again, the specimens examined from Station 32 exhibited a noticeably higher incidence of deformity with 8.8 percent (n=182) compared to 1.6 percent (n=126) of the *Chironomus* examined from Station 105. In addition to *Chironomus*, deformities were also observed on *Procladius* in Ponars collected from Station 105. Although the sample size for *Chironomus* was fairly small at each station and both sample types, the number of deformities observed at Station 32 was above expected background levels (Burt et al. 2003) and suggests the presence of one or more persistent stressors.

The benthic community at both stations could be characterized as relatively pollution tolerant and moderately stressed based on composition, relative abundance of tolerant taxa, and incidence of chironomid deformities (Tables 3-1, 3-11, and 3-12). However, based on the substantially higher density of tolerant taxa such as Oligochaeta and *Dicrotendipes simpsoni* combined with the noticeably higher incidence of deformities 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 44 total taxa (Tables 3-17 and 3-18). The three EPT taxa observed in the NSC were restricted to the HD samples at two of the Stations. HD total taxa richness decreased consecutively among the stations from upstream to downstream from 31 taxa at Station 35 to 13 taxa at Station 101 (Table 3-17). Likewise, two EPT taxa were observed in samples from the upstream Stations 35 and 102 but were absent from Stations 36 and 101. Total density was nearly the opposite of richness in that it was noticeably higher at the downstream Stations 36 and 101 compared to Stations 35 and 102. This difference was partly due to higher densities of Turbellaria and Oligochaeta downstream. However, dominance in terms of relative abundance and density varied greatly among the four stations. The most abundant taxa at Station 35 were Oligochaeta, *Dicrotendipes fumidus*, and *Dicrotendipes simpsoni*, which each composed greater than 20 percent of the total density. In contrast, the relative abundance of *Dicrotendipes simpsoni* was nearly double that of Oligochaeta at Station 102 whereas Turbellaria and Oligochaeta clearly were the dominant taxa at Stations 36 and 101.

Ponar total taxa richness was fairly similar among Stations 35, 102, and 101 ranging from 14 to 18 taxa while Station 36 was represented by seven total taxa (Table 3-18). Similarly, total Ponar density did not exhibit any discernable longitudinal pattern. Total density was substantially higher at Station 36, similarly moderate at Stations 35 and 101, and noticeably lower at Station 102. The density at Station 36 was the highest observed among all stations sampled in 2005. At all stations, total density was almost exclusively driven by variability of the dominant taxon, Oligochaeta.

TABLE 3-17. HESTER-DENDY DENSITIES AT EACH SAMPLING STATION WITHIN THE NORTH SHORE CHANNEL, JULY 2005.

TAXA	35 CENTRAL RD.		102 OAKTON ST.		36 TOUHY AVE.		101 FOSTER AVE.	
	#/m2	%	#/m2	%	#/m2	%	#/m2	%
Hydra	109.4	3.31	--	--	376.7	1.97	9.0	0.07
Turbellaria	82.5	2.50	493.4	5.37	4,345.2	22.74	6,727.7	48.80
Oligochaeta	798.3	24.16	2,547.5	27.71	7,228.2	37.83	4,377.5	31.75
Helobdella stagnalis	1.8	0.05	53.8	0.59	--	--	--	--
Helobdella triserialis	3.6	0.11	--	--	--	--	--	--
Caecidotea	3.6	0.11	107.6	1.17	125.6	0.66	287.0	2.08
Hyalella azteca	--	--	--	--	1,076.4	5.63	98.7	0.72
Gammarus	193.8	5.86	53.8	0.59	--	--	--	--
Baetis intercalaris	--	--	9.0	0.10	--	--	--	--
Stenacron	1.8	0.05	9.0	0.10	--	--	--	--
Enallagma	3.6	0.11	--	--	--	--	--	--
Ceraclea maculata	3.6	0.11	--	--	--	--	--	--
Procladius	41.3	1.25	26.9	0.29	--	--	17.9	0.13
Ablabesmyia annulata	23.3	0.71	26.9	0.29	--	--	--	--
Thienemannimyia grp.	12.6	0.38	--	--	3.6	0.02	--	--
Cricotopus tremulus grp.	9.0	0.27	--	--	--	--	--	--
Cricotopus bicinctus grp.	21.5	0.65	26.9	0.29	--	--	26.9	0.20
Cricotopus sylvestris grp.	23.3	0.71	89.7	0.98	5.4	0.03	--	--
Nanocladius distinctus	12.6	0.38	--	--	21.5	0.11	170.4	1.24
Parakiefferiella	32.3	0.98	--	--	--	--	--	--
Chironomus	70.0	2.12	26.9	0.29	107.6	0.56	--	--
Cladopelma	--	--	26.9	0.29	--	--	--	--
Cryptochironomus	9.0	0.27	--	--	--	--	--	--
Cryptotendipes	12.6	0.38	--	--	--	--	--	--
Dicrotendipes modestus	78.9	2.39	538.2	5.85	12.6	0.07	17.9	0.13
Dicrotendipes fumidus	832.4	25.19	--	--	9.0	0.05	--	--
Dicrotendipes simpsoni	672.8	20.36	4,969.5	54.05	2,253.3	11.79	1,865.8	13.53
Glyptotendipes	--	--	26.9	0.29	3,310.0	17.32	62.8	0.46
Parachironomus	--	--	26.9	0.29	229.6	1.20	116.6	0.85
Phaenopsectra obediens grp.	12.6	0.38	--	--	--	--	--	--
Phaenopsectra punctipes grp.	53.8	1.63	26.9	0.29	--	--	--	--
Polypedilum illinoense	--	--	26.9	0.29	3.6	0.02	--	--
Paratanytarsus	--	--	62.8	0.68	--	--	--	--
Tanytarsus	154.3	4.67	--	--	--	--	--	--
Physa	3.6	0.11	--	--	--	--	--	--
Gyraulus	19.7	0.60	17.9	0.20	--	--	9.0	0.07
Helisoma	1.8	0.05	--	--	--	--	--	--
Menetus dilatatus	5.4	0.16	--	--	--	--	--	--
TOTAL BENTHOS	3,304.6	100.00	9,194.5	100.00	19,108.4	100.00	13,787.2	100.00
TOTAL TAXA RICHNESS	31		21		15		13	
EPT TAXA RICHNESS	2		2		0		0	

TABLE 3-18. PETITE PONAR DENSITIES AT EACH SAMPLING STATION WITHIN THE NORTH SHORE CHANNEL, JULY 2005.

TAXA	35 CENTRAL RD.		102 OAKTON ST.		36 TOUHY AVE.		101 FOSTER AVE.	
	#/m2	%	#/m2	%	#/m2	%	#/m2	%
Turbellaria	--	--	21.5	0.22	143.5	0.11	35.9	0.10
Oligochaeta	33,278.1	85.55	9,164.6	92.47	127,837.4	99.16	35,050.7	98.37
Helobdella stagnalis	14.4	0.04	122.0	1.23	--	--	--	--
Mooreobdella microstoma	--	--	21.5	0.22	--	--	--	--
Caecidotea	7.2	0.02	78.9	0.80	--	--	14.4	0.04
Hyalella azteca	--	--	--	--	--	--	78.9	0.22
Gammarus	78.9	0.20	35.9	0.36	--	--	--	--
Tanypus	--	--	7.2	0.07	--	--	--	--
Procladius	732.0	1.88	208.1	2.10	--	--	7.2	0.02
Psectrotanypus	71.8	0.18	--	--	--	--	--	--
Ablabesmyia mallochi	--	--	7.2	0.07	--	--	--	--
Cricotopus sylvestris grp.	--	--	--	--	215.3	0.17	--	--
Nanocladius distinctus	--	--	--	--	--	--	71.8	0.20
Parakiefferiella	14.4	0.04	--	--	--	--	--	--
Chironomus	1,650.6	4.24	7.2	0.07	--	--	215.3	0.60
Cladopelma	933.0	2.40	14.4	0.14	--	--	--	--
Cryptochironomus	--	--	35.9	0.36	--	--	35.9	0.10
Dicrotendipes modestus	107.6	0.28	129.2	1.30	--	--	21.5	0.06
Dicrotendipes simpsoni	--	--	21.5	0.22	358.8	0.28	50.2	0.14
Glyptotendipes	--	--	--	--	71.8	0.06	14.4	0.04
Parachironomus	--	--	--	--	215.3	0.17	7.2	0.02
Phaenopsectra obediens grp.	14.4	0.04	--	--	--	--	--	--
Phaenopsectra punctipes grp.	14.4	0.04	--	--	--	--	--	--
Polypedilum flavum	--	--	--	--	--	--	7.2	0.02
Polypedilum halterale grp.	674.6	1.73	14.4	0.14	--	--	--	--
Paratanytarsus	--	--	--	--	71.8	0.06	--	--
Tanytarsus	940.1	2.42	7.2	0.07	--	--	--	--
Sphaerium	358.8	0.92	7.2	0.07	--	--	--	--
Pisidium	--	--	7.2	0.07	--	--	21.5	0.06
Dreissena polymorpha	7.2	0.02	--	--	--	--	--	--
TOTAL BENTHOS	38,897.4	100.00	9,910.9	100.00	128,913.9	100.00	35,632.0	100.00
TOTAL TAXA RICHNESS	16		18		7		14	
EPT TAXA RICHNESS	0		0		0		0	

Chironomid head capsule deformities were observed in HD and Ponar samples from Stations 35 and 102, in the HD samples from Station 36, and in the Ponar samples from Station 101 (Tables 3-11 and 3-12). In the HD samples, two *Chironomus*, three *Dicrotendipes simpsoni*, and one *Glyptotendipes* were deformed at Stations 35, 102, and 36, respectively (Table 3-11). These deformities amounted to less than two percent of the midges examined at each Station. In the Ponar samples, Stations 35 and 102 each had two *Procladius* specimens with head capsule deformities while four *Chironomus* exhibited deformities at Station 101. Overall, the deformity levels observed at Stations 35, 102, and 36 are below or near expected background levels (Burt et al. 2003) while the higher incidence of deformities at Station 101 may be more suggestive of environmental stress (Lenat 1993).

Based on the number of tolerant taxa and abundance of tolerant taxa, particularly in the Ponar samples, the benthic community of the NSC could be characterized as moderately stressed (Table 3-1). However, in terms of total and EPT richness in the HD samples, it appears that environmental stress increases from upstream to downstream and is less evident in the water column (Table 3-17 and 3-18).

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 ambient stations and one CFAR station in the NBCR (Stations 104, 34, 96, 37, 73, CFAR Fullerton Avenue, and 46) was 63 total and five EPT taxa (Tables 3-19 and 3-20). HD total taxa richness ranged from 37 taxa at Station 34 to 12 taxa at the most downstream Station 46 (Table 3-19). The total richness observed at Station 34 was the highest recorded in the NBCR watershed in 2005. Total richness was highest among the three most upstream stations and decreased consecutively among the three downstream stations. As with total richness, EPT richness was lowest at Station 46 where no EPT taxa were collected. However, EPT richness ranged from two to five taxa among the remaining five stations. Although no discernable longitudinal trend was evident among the stations, the five EPT taxa observed at Station 96 was the highest among all stations sampled in the NCBR watershed. As with EPT richness, no trends were observed in total density, which was lowest at Stations 104, 34, and 37 and two to four times higher at Stations 96, 73, and 46. At Station 96, the higher density was due to greater numbers of several taxa including *Caecidotea*, *Gammarus*, *Cheumatopsyche*, and *Ferrissia* whereas higher numbers of the tolerant taxa Oligochaeta and *Dicrotendipes simpsoni* increased the density at Stations 73 and 46. Similarly, there was no single dominant taxon among the majority of the NBCR stations. Five different taxa achieved dominance among the six stations. Most notable of these was the abundance of the relatively sensitive EPT taxon, *Cheumatopsyche* at Station 96 and the magnitude of Oligochaeta abundance at Station 46.

Ponar total taxa richness followed a trend similar to what was observed in the HD samples. Total richness was similarly higher among the three upstream stations, ranging from 20 to 23 taxa, and generally decreased among the four downstream stations (Table 3-20). The lowest number of total taxa observed among the seven Stations was three at the Fullerton Avenue CFAR Station. The single EPT taxon, *Cheumatopsyche* was only observed at Stations 104 and 96 where it composed less than one percent of the total density. Oligochaeta was the dominant taxon at all stations except the upstream Station 104 where *Polypedilum scalaenum* grp. was

TABLE 3-19. HESTER-DENDY DENSITIES AT EACH SAMPLING STATION WITHIN THE NORTH BRANCH CHICAGO RIVER, JUNE-JULY 2005.

TAXA	104 GLENVIEW RD.		34 DEMPSTER ST.		96 ALBANY AVE.		37 WILSON AVE.		73 DIVERSY AVE.		46 GRAND AVE.	
	#/m2	%	#/m2	%	#/m2	%	#/m2	%	#/m2	%	#/m2	%
Hydra	--	--	161.5	2.62	197.3	1.62	--	--	10.8	0.10	23.3	0.20
Turbellaria	141.7	3.04	387.5	6.29	846.8	6.93	1,957.3	53.90	2,267.7	21.02	927.5	8.00
Plumatella	--	--	--	--	--	--	--	--	--	--	1.8	0.02
Oligochaeta	419.8	9.01	3,193.4	51.85	41.3	0.34	1,194.8	32.91	3,139.6	29.10	8,729.8	75.33
Helobdella triserialis	--	--	--	--	--	--	3.6	0.10	--	--	--	--
Placobdella montifera	--	--	1.8	0.03	--	--	--	--	--	--	--	--
Mooreobdella microstoma	--	--	1.8	0.03	--	--	--	--	--	--	--	--
Caecidotea	14.4	0.31	511.3	8.30	1,013.6	8.30	61.0	1.68	--	--	--	--
Hyalella azteca	--	--	--	--	--	--	30.5	0.84	46.6	0.43	192.0	1.66
Gammarus	1,978.8	42.47	575.9	9.35	3,078.6	25.20	3.6	0.10	--	--	3.6	0.03
Orconectes	--	--	3.6	0.06	--	--	--	--	--	--	--	--
Hydracarina	--	--	--	--	1.8	0.01	--	--	--	--	--	--
Baetis intercalaris	--	--	--	--	46.6	0.38	--	--	--	--	--	--
Stenacron	5.4	0.12	9.0	0.15	105.8	0.87	1.8	0.05	1.8	0.02	--	--
Argia	5.4	0.12	1.8	0.03	--	--	--	--	--	--	--	--
Cheumatopsyche	579.5	12.44	423.4	6.87	3,683.2	30.15	3.6	0.10	3.6	0.03	--	--
Hydropsyche betteni	--	--	--	--	23.3	0.19	--	--	--	--	--	--
Hydroptila	--	--	3.6	0.06	466.5	3.82	--	--	--	--	--	--
Dubiraphia	--	--	1.8	0.03	--	--	--	--	--	--	--	--
Tanypus	14.4	0.31	9.0	0.15	--	--	--	--	--	--	--	--
Procladius	73.6	1.58	249.4	4.05	--	--	1.8	0.05	--	--	5.4	0.05
Ablabesmyia mallochi	--	--	--	--	--	--	--	--	35.9	0.33	--	--
Ablabesmyia annulata	--	--	--	--	3.6	0.03	--	--	--	--	--	--
Thienemannimyia grp.	14.4	0.31	17.9	0.29	143.5	1.17	--	--	--	--	--	--
Thienemanniella xena	740.9	15.90	3.6	0.06	227.8	1.86	--	--	--	--	--	--
Cricotopus tremulus grp.	14.4	0.31	--	--	--	--	--	--	--	--	--	--
Cricotopus bicinctus grp.	26.9	0.58	30.5	0.50	148.9	1.22	9.0	0.25	--	--	--	--
Cricotopus sylvestris grp.	41.3	0.89	3.6	0.06	--	--	1.8	0.05	--	--	--	--
Nanocladius distinctus	16.1	0.35	1.8	0.03	14.4	0.12	3.6	0.10	57.4	0.53	9.0	0.08
Nanocladius spiniplenus	--	--	--	--	34.1	0.28	--	--	--	--	--	--
Rheocricotopus robacki	--	--	1.8	0.03	592.0	4.85	--	--	--	--	--	--
Chironomus	3.6	0.08	30.5	0.50	--	--	5.4	0.15	--	--	17.9	0.15
Cryptochironomus	--	--	1.8	0.03	--	--	--	--	--	--	--	--
Dicrotendipes modestus	--	--	95.1	1.54	--	--	--	--	--	--	--	--
Dicrotendipes neomodestus	--	--	12.6	0.20	3.6	0.03	--	--	37.7	0.35	--	--
Dicrotendipes fumidus	--	--	3.6	0.06	--	--	--	--	--	--	--	--
Dicrotendipes simpsoni	30.5	0.65	215.3	3.50	3.6	0.03	306.8	8.45	4,569.4	42.36	1,659.5	14.32
Glyptotendipes	--	--	19.7	0.32	3.6	0.03	23.3	0.64	238.6	2.21	--	--
Harnischia	1.8	0.04	--	--	--	--	--	--	--	--	--	--
Parachironomus	--	--	--	--	--	--	7.2	0.20	--	--	17.9	0.15
Polypedilum fallax grp.	14.4	0.31	--	--	17.9	0.15	--	--	19.7	0.18	--	--
Polypedilum flavum	41.3	0.89	25.1	0.41	281.7	2.31	3.6	0.10	55.6	0.52	--	--
Polypedilum halterale grp.	--	--	3.6	0.06	--	--	--	--	--	--	--	--
Polypedilum illinoense	265.5	5.70	48.4	0.79	111.2	0.91	7.2	0.20	152.5	1.41	--	--
Polypedilum scalaenum grp.	57.4	1.23	23.3	0.38	--	--	1.8	0.05	131.0	1.21	--	--
Stenochironomus	--	--	1.8	0.03	66.4	0.54	--	--	--	--	--	--
Paratanytarsus	70.0	1.50	10.8	0.17	--	--	--	--	--	--	--	--
Rheotanytarsus	26.9	0.58	--	--	7.2	0.06	--	--	--	--	--	--
Tanytarsus	14.4	0.31	3.6	0.06	--	--	--	--	--	--	--	--
Simulium	--	--	--	--	3.6	0.03	--	--	--	--	--	--
Amnicola	1.8	0.04	--	--	--	--	--	--	--	--	--	--
Gyraulus	--	--	17.9	0.29	--	--	--	--	--	--	--	--
Menetus dilatatus	--	--	--	--	--	--	--	--	5.4	0.05	1.8	0.02
Ferrissia	44.9	0.96	52.0	0.84	1,049.5	8.59	1.8	0.05	10.8	0.10	--	--
Corbicula fluminea	--	--	--	--	--	--	1.8	0.05	3.6	0.03	--	--
TOTAL BENTHOS	4,659.1	100.00	6,159.0	100.00	12,217.4	100.00	3,631.1	100.00	10,787.6	100.00	11,589.5	100.00
TOTAL TAXA RICHNESS	27		37		28		21		18		12	
EPT TAXA RICHNESS	2		3		5		2		2		0	

TABLE 3-20. PETITE PONAR DENSITIES AT EACH SAMPLING STATION WITHIN THE NORTH BRANCH CHICAGO RIVER, JUNE-JULY 2005.

TAXA	104 GLENVIEW RD.		34 DEMPSTER ST.		96 ALBANY AVE.		37 WILSON AVE.		73 DIVERSY AVE.		CFAR FULLERTON AVE.		46 GRAND AVE.	
	#/m2	%	#/m2	%	#/m2	%	#/m2	%	#/m2	%	#/m2	%	#/m2	%
Turbellaria	14.4	0.47	--	--	--	--	86.1	0.09	7.2	0.01	--	--	21.5	0.25
Oligochaeta	846.8	27.51	8,899.0	88.01	1,550.2	43.11	99,504.0	98.46	76,553.2	99.37	15,243.2	99.81	8,619.1	99.09
Erpobdella punctata punctata	--	--	--	--	57.4	1.60	--	--	--	--	--	--	--	--
Mooreobdella microstoma	14.4	0.47	7.2	0.07	--	--	--	--	--	--	--	--	--	--
Caecidotea	7.2	0.23	14.4	0.14	179.4	4.99	--	--	--	--	--	--	--	--
Hyalella azteca	--	--	--	--	--	--	--	--	7.2	0.01	--	--	--	--
Gammarus	107.6	3.50	136.4	1.35	107.6	2.99	--	--	21.5	0.03	--	--	--	--
Orconectes	--	--	--	--	7.2	0.20	--	--	--	--	--	--	--	--
Hydracarina	7.2	0.23	--	--	--	--	--	--	--	--	--	--	--	--
Cheumatopsyche	7.2	0.23	--	--	14.4	0.40	--	--	--	--	--	--	--	--
Stenelmis	78.9	2.56	--	--	--	--	--	--	--	--	--	--	--	--
Chaoborus	--	--	--	--	--	--	--	--	7.2	0.01	--	--	--	--
Procladius	21.5	0.70	466.5	4.61	1,047.8	29.14	430.6	0.43	394.7	0.51	--	--	35.9	0.41
Ablabesmyia mallochi	--	--	--	--	14.4	0.40	--	--	--	--	--	--	--	--
Thienemannimyia grp.	--	--	--	--	14.4	0.40	--	--	--	--	--	--	--	--
Thienemanniella xena	--	--	14.4	0.14	14.4	0.40	--	--	--	--	--	--	--	--
Cricotopus	--	--	--	--	50.2	1.40	--	--	--	--	--	--	--	--
Cricotopus tremulus grp.	14.4	0.47	--	--	--	--	--	--	--	--	--	--	--	--
Cricotopus bicinctus grp.	--	--	50.2	0.50	--	--	--	--	--	--	14.4	0.09	--	--
Cricotopus sylvestris grp.	50.2	1.63	14.4	0.14	--	--	--	--	--	--	--	--	--	--
Nanocladius distinctus	--	--	7.2	0.07	7.2	0.20	71.8	0.07	--	--	--	--	--	--
Rheocricotopus robacki	--	--	--	--	21.5	0.60	--	--	--	--	--	--	--	--
Chironomus	287.1	9.32	150.7	1.49	50.2	1.40	667.4	0.66	35.9	0.05	--	--	--	--
Cryptochironomus	78.9	2.56	57.4	0.57	21.5	0.60	100.5	0.10	--	--	--	--	--	--
Dicrotendipes modestus	--	--	7.2	0.07	--	--	--	--	--	--	--	--	--	--
Dicrotendipes neomodestus	57.4	1.86	21.5	0.21	64.6	1.80	--	--	--	--	--	--	--	--
Dicrotendipes simpsoni	--	--	7.2	0.07	--	--	71.8	0.07	--	--	--	--	21.5	0.25
Parachironomus	--	--	--	--	--	--	--	--	14.4	0.02	--	--	--	--
Paratendipes	14.4	0.47	--	--	--	--	--	--	--	--	--	--	--	--
Polypedilum flavum	93.3	3.03	7.2	0.07	--	--	--	--	--	--	14.4	0.09	--	--
Polypedilum halterale grp.	--	--	86.1	0.85	--	--	--	--	--	--	--	--	--	--
Polypedilum illinoense	--	--	7.2	0.07	--	--	--	--	--	--	--	--	--	--
Polypedilum scalaenum grp.	1,191.3	38.69	100.5	0.99	28.7	0.80	107.6	0.11	--	--	--	--	--	--
Paratanytarsus	--	--	--	--	7.2	0.20	--	--	--	--	--	--	--	--
Tanytarsus	50.2	1.63	--	--	14.4	0.40	7.2	0.01	--	--	--	--	--	--
Amnicola	--	--	--	--	21.5	0.60	--	--	--	--	--	--	--	--
Ferrissia	--	--	--	--	7.2	0.20	--	--	--	--	--	--	--	--
Corbicula fluminea	93.3	3.03	--	--	--	--	14.4	0.01	--	--	--	--	--	--
Sphaerium	--	--	--	--	21.5	0.60	--	--	--	--	--	--	--	--
Musculium	43.1	1.40	35.9	0.35	272.7	7.58	--	--	--	--	--	--	--	--
Pisidium	--	--	21.5	0.21	--	--	--	--	--	--	--	--	--	--
TOTAL BENTHOS	3,078.8	100.00	10,111.9	100.00	3,595.5	100.00	101061.4	100.00	77,041.2	100.00	15,271.9	100.00	8,698.1	100.00
TOTAL TAXA RICHNESS	20		20		23		10		8		3		4	
EPT TAXA RICHNESS	1		0		1		0		0		0		0	

dominant. As with the HD samples, total Ponar density was variable among the seven stations and was dictated solely by Oligochaeta density.

Chironomid head capsule deformities were observed in HD samples from two stations and in the Ponar samples at four stations (Tables 3-11 and 3-12). In the HD samples, chironomid head capsule deformities affected only one species at both Stations 34 and 73 and were very low, accounting for less than one percent of all midges examined at these stations (Table 3-11). However, deformities in the Ponar samples were noticeably more common. The majority of malformed structures were observed on *Chironomus* at Stations 104, 34, 37, and 73 (Table 3-12). Despite being collected at each of these four stations, *Procladius* with anomalies were only observed at Station 34. Total incidence levels in the affected Ponar samples ranged from 6.7 percent (n=30) at Station 73 to 18.6 percent (n=59) at Station 37. The number of deformed *Chironomus* was relatively similar among Stations 104, 34, and 37 but noticeably lower at Station 73. The lack of chironomid deformities at the downstream stations may be the result of conditions at those stations being degraded beyond the survival threshold for taxa that routinely express deformities under moderately stressed conditions (Janssens de Bisthoven et al. 1998, Wiederhom 1984). Although small sample size may have inflated *Chironomus* incidence levels, especially at Station 73, the numbers of deformed specimens observed at Stations 104, 34, and 37 are above expected reference levels (Burt et al. 2003) and are likely indicative of one or more persistent stressors.

The seven sampling stations generally clustered into three major groups of decreasing quality from upstream to downstream: 1) Stations 104, 34, and 96; 2) Stations 37 and 73; and 3) Station 46. This assertion is based on the higher total richness, EPT richness, and abundance of more environmentally sensitive EPT and Tanytarsini among the three upstream stations as well as the generally higher abundance of the more tolerant Oligochaeta downstream. Overall, benthic community quality as measured by these parameters suggests that the NBCR sampling stations range from moderately stressed upstream to highly stressed downstream.

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 37 total taxa and four EPT taxa (Tables 3-21 and 3-22). HD total and EPT taxa richness was identical between the two upstream stations (75 and 41) with 11 total taxa and one EPT taxon (Table 3-21). However, total richness was substantially higher and EPT richness was slightly higher at the downstream Station 92. Total density was similar between Stations 75 and 92 but more than five times higher at Station 41 primarily due to relatively greater abundance of Oligochaeta. However, tolerant taxa were dominant taxon at all three stations (Table 3-1).

Ponar total taxa richness was nearly identical among all three stations ranging from three to five taxa (Table 3-22). No EPT taxa were observed in the Ponar samples. Total density decreased

TABLE 3-21. HESTER-DENDY DENSITIES AT EACH SAMPLING STATION WITHIN THE CHICAGO SANITARY AND SHIP CANAL, AUGUST-SEPTEMBER 2005.

TAXA	75 CICERO AVE.		41 HARLEM AVE.		92 LOCKPORT	
	#/m2	%	#/m2	%	#/m2	%
Hydra	59.2	1.89	53.8	0.32	95.1	2.79
Turbellaria	335.5	10.73	3,902.0	23.45	656.6	19.24
Urnatella gracilis	1.8	0.06	--	--	--	--
Plumatella	--	--	--	--	1.8	0.05
Oligochaeta	841.4	26.91	11,105.1	66.74	46.6	1.37
Helobdella triserialis	5.4	0.17	--	--	--	--
Hyalella azteca	--	--	98.7	0.59	267.3	7.83
Gammarus	--	--	--	--	16.1	0.47
Stenacron	--	--	--	--	21.5	0.63
Cyrnellus fraternus	--	--	89.7	0.54	48.4	1.42
Hydropsyche	5.4	0.17	--	--	--	--
Hydroptila	--	--	--	--	1.8	0.05
Procladius	--	--	--	--	1.8	0.05
Ablabesmyia janta	35.9	1.15	71.8	0.43	26.9	0.79
Thienemannimyia grp.	--	--	--	--	1.8	0.05
Thienemanniella similis	--	--	--	--	5.4	0.16
Cricotopus bicinctus grp.	--	--	--	--	5.4	0.16
Cricotopus sylvestris grp.	--	--	--	--	3.6	0.11
Nanocladius distinctus	59.2	1.89	71.8	0.43	3.6	0.11
Dicrotendipes neomodestus	--	--	--	--	7.2	0.21
Dicrotendipes simpsoni	1,734.8	55.48	1,040.5	6.25	242.2	7.10
Glyptotendipes	--	--	--	--	12.6	0.37
Parachironomus	35.9	1.15	--	--	3.6	0.11
Polypedilum flavum	--	--	--	--	5.4	0.16
Polypedilum scalaenum grp.	--	--	--	--	5.4	0.16
Pseudochironomus	--	--	179.4	1.08	--	--
Stenochironomus	--	--	--	--	48.4	1.42
Cladotanytarsus mancus grp.	--	--	17.9	0.11	--	--
Xenochironomus xenolabis	--	--	--	--	44.9	1.31
Physa	--	--	--	--	25.1	0.74
Helisoma	--	--	--	--	14.4	0.42
Ferrissia	12.6	0.40	--	--	1,706.1	50.00
Corbicula fluminea	--	--	--	--	53.8	1.58
Musculium	--	--	9.0	0.05	39.5	1.16
TOTAL BENTHOS	3,127.0	100.00	16,639.8	100.00	3,412.3	100.00
TOTAL TAXA RICHNESS	11		11		29	
EPT TAXA RICHNESS	1		1		3	

TABLE 3-22. PETITE PONAR DENSITIES AT EACH SAMPLING STATION WITHIN THE CHICAGO SANITARY AND SHIP CANAL, AUGUST-SEPTEMBER 2005.

TAXA	75 CICERO AVE.		41 HARLEM AVE.		92 LOCKPORT	
	#/m2	%	#/m2	%	#/m2	%
Oligochaeta	9,860.7	99.28	6,537.9	99.35	3,258.2	94.39
Hyalella azteca	--	--	7.2	0.11	--	--
Dubiraphia	--	--	7.2	0.11	--	--
Procladius	50.2	0.51	--	--	14.4	0.42
Cryptochironomus	--	--	21.5	0.33	50.2	1.46
Polypedilum halterale grp.	--	--	7.2	0.11	--	--
Corbicula fluminea	21.5	0.22	--	--	129.2	3.74
TOTAL BENTHOS	9,932.5	100.00	6,581.0	100.00	3,452.0	100.00
TOTAL TAXA RICHNESS	3		5		4	
EPT TAXA RICHNESS	0		0		0	

three-fold from upstream to downstream. Oligochaeta was the dominant taxon and the difference in density among the three locations.

Chironomid head capsule deformities were observed in the HD samples at Stations 75 and 41 (Table 3-23). In both cases, *Dicrotendipes simpsoni* was the taxon exhibiting the deformities. At Station 75, only one deformed specimen was observed while four specimens at Station 41 expressed deformities. The single deformed specimen observed at Station 75 is likely representative of background conditions. However, the higher incidence of deformities at Station 41 may be more suggestive of environmental stress.

Table 3-23. Chironomidae head capsule deformities observed in Hester-Dendy samples from the Chicago Sanitary and Ship Canal, August 2005.

	Hester-Dendy Samples	
Taxa	**C.S.S.C @ Cicero Sta. 75**	**C.S.S.C. @ Harlem Sta. 41**
Dicrotendipes simpsoni		
Number Examined	91	68
Percent Deformed	1.1	5.9
TOTAL SAMPLE		
Total Midges Examined	98	75
Percent Deformed	1.0	5.3

Although the dominance by tolerant taxa at all three stations and both sample types suggests that three stations are equally impaired, based on total and EPT richness in the HDs and decreasing abundance of Oligochaeta in the Ponar samples, it appears that Station 92 is less stressed compared to Stations 75 and 41.

3.1.4 Des Plaines River Watershed

Sampling was conducted at 11 stations in the Des Plaines River watershed during 2005: one station in Higgins Creek, two CFAR and three ambient stations in Salt Creek, one station in the West Branch of the DuPage River (WB DuPage River), and one CFAR station and three ambient stations in the Des Plaines River (Table 2-1).

The benthic community in the Des Plaines River watershed exhibited a substantial amount of variability. In the HD samples density was spread more evenly among a variety of taxa in 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 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 23 total taxa (Tables 3-24 and 3-25). Ten total taxa were observed in the HD samples while 21 taxa were present in the Ponar samples. Turbellaria and *Caecidotea* were the most abundant taxa in the HD samples while Turbellaria, *Caecidotea*, and *Cricotopus bicinctus* grp. were most abundant in the Ponars. Total density was nearly four times higher in the Ponar samples compared to the HDs due to the greater abundance of the dominant taxa in those samples.

No chironomid head capsule deformities were observed in Higgins Creek. Although highly tolerant taxa composed nearly half of the combined total taxa richness, these taxa represented less than five percent of the total density in the HD samples and approximately one-fourth of the density in the Ponars (Tables 3-1, 3-24, and 3-25). This suggests that despite the low richness in the HD samples and lack of EPT taxa, pollution type stress may be relatively low in Higgins Creek.

3.1.4.2 Salt Creek

In 2005, HD samples were collected at two ambient monitoring stations in Salt Creek at Thorndale and Station 18 (Table 2-1). Vandalism prevented the collection of HD samples at the ambient Busse Dam station. Ponar samples were collected from the three ambient stations and two CFAR stations in Salt Creek (Busse Dam, CFAR JFK Boulevard, Thorndale, Station 18, and CFAR Wolf Road). Combined the HD and Ponar samples yielded 74 total taxa and 13 EPT taxa (Tables 3-26 and 3-27). HD total richness was nearly identical between the two HD stations with 46 and 47 taxa observed at Thorndale and Station 18 (Table 3-26). However, one additional mayfly taxon and two additional caddisfly taxa contributed to the slightly higher EPT richness observed at the Thorndale station. *Cheumatopsyche*, *Thienemannimyia* grp., and *Dicrotendipes neomodestus* were the most abundant taxa at the Thorndale station whereas Oligochaeta was the dominant taxa at Station 18. Total density was nearly twice as high at the downstream Station 18 compared to Thorndale primarily due to higher densities of Turbellaria, Oligochaeta and several chironomid taxa.

Ponar total richness was substantially higher among the four upstream locations compared to the Wolf Road CFAR station (Table 3-27). Total richness among the four upstream stations was similar at Busse Dam, Thorndale, and Station 18, slightly lower at the JFK Boulevard station, and four to seven times lower at the Wolf Road CFAR station. EPT richness ranged from zero at the two CFAR stations to six at the Busse Dam station. The total and EPT richness observed at Busse Dam was the highest recorded among all Ponar samples collected in 2005. Numerical dominance varied among the five sampling stations and exhibited no discernable pattern. Likewise, no trends were observed in terms of total density. Total density was highest at Busse Dam, moderate at Thorndale and Station 18, and substantially lower at the two CFAR stations.

Chironomid head capsule deformities were observed in both the HD and Ponar samples and were exhibited by two taxa, *Procladius* and *Polypedilum halterale* grp. (Table 3-28). The number of deformed specimens in the Busse Dam and Station 18 Ponar samples was fairly low with only

TABLE 3-24. HESTER-DENDY DENSITIES AT SAMPLING STATION 78 WITHIN HIGGINS CREEK, JULY 2005.

TAXA	78 WILLE RD. #/m2	%
Hydra	107.6	0.71
Turbellaria	9,110.2	59.78
Oligochaeta	369.6	2.43
Caecidotea	5,383.9	35.33
Procladius	17.9	0.12
Cricotopus tremulus grp.	23.3	0.15
Cricotopus bicinctus grp.	116.6	0.77
Cricotopus sylvestris grp.	37.7	0.25
Dicrotendipes simpsoni	17.9	0.12
Physa	53.8	0.35
TOTAL BENTHOS	15,238.6	100.00
TOTAL TAXA RICHNESS	10	
EPT TAXA RICHNESS	0	

TABLE 3-25. PETITE PONAR DENSITIES AT SAMPLING STATION 78 WITHIN HIGGINS CREEK, JULY 2005.

TAXA	78 WILLE RD. #/m2	%
Hydra	143.5	0.24
Turbellaria	19,298.0	32.08
Oligochaeta	1,076.5	1.79
Mooreobdella microstoma	373.2	0.62
Caecidotea	22,642.3	37.64
Hydracarina	7.2	0.01
Enallagma	71.8	0.12
Ceratopogonidae	71.8	0.12
Thienemannimyia grp.	143.5	0.24
Cricotopus tremulus grp.	301.4	0.50
Cricotopus bicinctus grp.	13,362.9	22.22
Cricotopus trifascia grp.	14.4	0.02
Cricotopus sylvestris grp.	1,076.5	1.79
Chironomus	287.1	0.48
Dicrotendipes neomodestus	301.4	0.50
Dicrotendipes fumidus	574.1	0.95
Dicrotendipes simpsoni	14.4	0.02
Cladotanytarsus mancus grp.	143.5	0.24
Amnicola	7.2	0.01
Musculium	71.8	0.12
Pisidium	165.1	0.27
TOTAL BENTHOS	60,147.4	100.00
TOTAL TAXA RICHNESS	21	
EPT TAXA RICHNESS	0	

TABLE 3-26. HESTER-DENDY DENSITIES AT EACH SAMPLING STATION WITHIN SALT CREEK, JULY-AUGUST 2005.

	18			
	THORNDALE		DEVON AVE.	
TAXA	#/m2	%	#/m2	%
Hydra	26.9	0.57	55.6	0.68
Turbellaria	147.1	3.12	495.2	6.06
Oligochaeta	200.9	4.26	1,919.6	23.51
Desserobdella phalera	--	--	1.8	0.02
Helobdella triserialis	5.4	0.11	32.3	0.40
Caecidotea	--	--	497.0	6.09
Hydracarina	1.8	0.04	--	--
Baetis intercalaris	105.8	2.24	12.6	0.15
Stenacron	3.6	0.08	--	--
Stenonema femoratum	1.8	0.04	--	--
Tricorythodes	43.1	0.91	1.8	0.02
Argia	32.3	0.68	--	--
Enallagma	3.6	0.08	5.4	0.07
Cyrnellus fraternus	71.8	1.52	26.9	0.33
Cheumatopsyche	710.4	15.06	430.6	5.27
Hydropsyche betteni	23.3	0.49	--	--
Ceratopsyche morosa	5.4	0.11	--	--
Hydroptila	186.6	3.96	484.4	5.93
Oecetis	--	--	1.8	0.02
Dubiraphia	7.2	0.15	9.0	0.11
Stenelmis	--	--	5.4	0.07
Ceratopogonidae	5.4	0.11	--	--
Tanypus	17.9	0.38	--	--
Procladius	145.3	3.08	148.9	1.82
Ablabesmyia janta	147.1	3.12	285.3	3.49
Ablabesmyia mallochi	41.3	0.87	--	--
Thienemannimyia grp.	502.3	10.65	520.3	6.37
Thienemanniella xena	281.7	5.97	--	--
Cricotopus tremulus grp.	--	--	35.9	0.44
Cricotopus bicinctus grp.	53.8	1.14	35.9	0.44
Cricotopus sylvestris grp.	--	--	44.9	0.55
Nanocladius	--	--	62.8	0.77
Nanocladius distinctus	30.5	0.65	44.9	0.55
Nanocladius crassicornus/rectinervis	12.6	0.27	--	--
Cryptochironomus	53.8	1.14	17.9	0.22
Dicrotendipes modestus	--	--	9.0	0.11
Dicrotendipes neomodestus	502.3	10.65	410.8	5.03
Dicrotendipes fumidus	41.3	0.87	349.8	4.28
Dicrotendipes simpsoni	25.1	0.53	224.3	2.75
Endochironomus nigricans	12.6	0.27	89.7	1.10
Glyptotendipes	170.4	3.61	9.0	0.11
Harnischia	17.9	0.38	17.9	0.22
Microtendipes	--	--	9.0	0.11
Parachironomus	30.5	0.65	35.9	0.44
Phaenopsectra obediens grp.	--	--	17.9	0.22
Polypedilum flavum	148.9	3.16	482.6	5.91
Polypedilum illinoense	287.0	6.09	516.7	6.33
Polypedilum scalaenum grp.	43.1	0.91	52.0	0.64
Pseudochironomus	30.5	0.65	44.9	0.55
Stenochironomus	30.5	0.65	44.9	0.55
Cladotanytarsus mancus grp.	17.9	0.38	9.0	0.11
Paratanytarsus	131.0	2.78	285.3	3.49
Tanytarsus	--	--	17.9	0.22
Tanytarsus glabrescens grp.	66.4	1.41	--	--
Tanytarsus guerlus grp.	220.7	4.68	53.8	0.66
Hemerodromia	--	--	10.8	0.13
Helisoma	--	--	118.4	1.45
Ferrissia	53.8	1.14	172.2	2.11
Corbicula fluminea	17.9	0.38	5.4	0.07
Pisidium	--	--	1.8	0.02
TOTAL BENTHOS	4,716.5	100.00	8,164.7	100.00
TOTAL TAXA RICHNESS	46		47	
EPT TAXA RICHNESS	9		6	

TABLE 3-27. PETITE PONAR DENSITIES AT EACH SAMPLING STATION WITHIN SALT CREEK, JULY-AUGUST 2005.

TAXA	CFAR BUSSE DAM		J.F.K. BLVD.		THORNDALE		18 DEVON AVE.		CFAR WOLF RD.	
	#/m2	%	#/m2	%	#/m2	%	#/m2	%	#/m2	%
Turbellaria	--	--	--	--	7.2	0.06	--	--	--	--
Oligochaeta	3,186.4	7.72	445.0	24.41	1,464.0	13.25	6,487.7	41.28	28.7	22.22
Hydracarina	14.4	0.03	--	--	--	--	--	--	--	--
Baetis intercalaris	--	--	--	--	35.9	0.32	--	--	--	--
Centroptilum	14.4	0.03	--	--	--	--	--	--	--	--
Tricorythodes	--	--	--	--	7.2	0.06	--	--	--	--
Caenis	437.8	1.06	--	--	--	--	--	--	--	--
Enallagma	28.7	0.07	--	--	--	--	21.5	0.14	--	--
Cheumatopsyche	7.2	0.02	--	--	7.2	0.06	--	--	--	--
Hydroptila	251.2	0.61	--	--	14.4	0.13	7.2	0.05	--	--
Oxyethira	43.1	0.10	--	--	--	--	--	--	--	--
Oecetis	100.5	0.24	--	--	--	--	7.2	0.05	--	--
Dubiraphia	14.4	0.03	14.4	0.79	21.5	0.19	7.2	0.05	--	--
Stenelmis	--	--	143.5	7.87	28.7	0.26	--	--	14.4	11.11
Berosus	7.2	0.02	--	--	--	--	--	--	--	--
Ceratopogonidae	136.4	0.33	--	--	--	--	21.5	0.14	--	--
Procladius	4,686.3	11.35	100.5	5.51	122.0	1.10	1,184.1	7.53	--	--
Ablabesmyia janta	--	--	--	--	--	--	7.2	0.05	--	--
Ablabesmyia mallochi	287.1	0.70	--	--	--	--	--	--	--	--
Labrundinia neopilosella	337.3	0.82	--	--	--	--	--	--	--	--
Larsia	107.6	0.26	--	--	--	--	--	--	--	--
Thienemannimyia grp.	660.3	1.60	14.4	0.79	724.8	6.56	--	--	--	--
Chironomus	--	--	43.1	2.36	--	--	7.2	0.05	--	--
Cryptochironomus	5,368.1	13.00	186.6	10.24	3,423.3	30.97	1,205.7	7.67	--	--
Cryptotendipes	50.2	0.12	--	--	--	--	--	--	--	--
Dicrotendipes modestus	50.2	0.12	--	--	--	--	100.5	0.64	--	--
Dicrotendipes neomodestus	--	--	28.7	1.57	545.4	4.94	7.2	0.05	--	--
Dicrotendipes fumidus	--	--	344.5	18.90	100.5	0.91	--	--	--	--
Dicrotendipes simpsoni	50.2	0.12	--	--	--	--	--	--	--	--
Harnischia	--	--	--	--	14.4	0.13	7.2	0.05	--	--
Paratendipes	--	--	--	--	--	--	14.4	0.09	--	--
Phaenopsectra	--	--	--	--	--	--	93.3	0.59	--	--
Phaenopsectra obediens grp.	--	--	14.4	0.79	--	--	--	--	--	--
Polypedilum halterale grp.	3,832.3	9.28	28.7	1.57	186.6	1.69	1,995.1	12.69	--	--
Polypedilum illinoense	--	--	--	--	7.2	0.06	7.2	0.05	--	--
Polypedilum scalaenum grp.	--	--	143.5	7.87	179.4	1.62	724.8	4.61	--	--
Pseudochironomus	16,671.3	40.37	57.4	3.15	100.5	0.91	--	--	--	--
Stenochironomus	50.2	0.12	--	--	--	--	--	--	--	--
Stictochironomus	--	--	86.1	4.72	93.3	0.84	107.6	0.68	--	--
Cladotanytarsus mancus grp.	3,545.3	8.59	157.9	8.66	3,588.3	32.47	3,373.0	21.46	--	--
Tanytarsus	--	--	--	--	93.3	0.84	--	--	--	--
Tanytarsus guerlus grp.	854.0	2.07	--	--	179.4	1.62	265.5	1.69	--	--
Muscidae	--	--	--	--	--	--	--	--	57.4	44.44
Pleurocera	--	--	--	--	--	--	--	--	28.7	22.22
Physa	21.5	0.05	--	--	--	--	--	--	--	--
Corbicula fluminea	480.8	1.16	14.4	0.79	107.6	0.97	64.6	0.41	--	--
TOTAL BENTHOS	41,294.4	100.00	1,822.9	100.00	11,052.0	100.00	15,716.8	100.00	129.2	100.00
TOTAL TAXA RICHNESS	28		16		23		22		4	
EPT TAXA RICHNESS	6		0		4		2		0	

Table 3-28. Chironomidae head capsule deformities observed in Hester-Dendy and Ponar samples from the Des Plaines River watershed, June - August 2005.

Taxa	Hester-Dendy Samples		Ponar Samples		
	Salt Cr. @ Devon Sta. 18	W.B. Du Page R. @ Lake Sta. 64	Salt Cr. @ Busse Dam	Salt Cr. @ Devon Sta. 18	Des Plaines R. @ Lake Cook Sta. 13
Procladius					
Number Examined	12	1	34	36	2
Percent Deformed	33.3	0.0	2.9	2.8	0.0
Chironomus					
Number Examined	--	--	--	1	83
Percent Deformed	--	--	--	0.0	13.3
Polypedilum flavum					
Number Examined	18	37	--	--	--
Percent Deformed	0.0	2.7	--	--	--
Polypedilum halterale **grp.**					
Number Examined	--	--	18	23	--
Percent Deformed	--	--	0.0	4.3	--
TOTAL SAMPLE					
Total Midges Examined	195	202	205	142	133
Percent Deformed	2.1	0.5	0.5	1.4	8.3

one or two affected specimens. These levels of incidence are below published reference levels (Burt eat al. 2003). However, despite the low sample size, the slightly higher number of deformities in the Station 18 HD samples may be more suggestive of environmental stress.

Based on total and EPT richness, abundance of the dominant taxa, tolerant taxa abundance, the abundance of sensitive EPT and Tanytarsini midge taxa, and the low incidence of head capsule deformities, the benthic communities at the Busse Dam and Thorndale stations are among the best observed in 2005 and likely represent slightly stressed conditions. Based on the greater abundance of tolerant taxa (Table 3-1), lower abundance of sensitive taxa, and the slightly higher incidence of chironomid deformities Station 18 appears to be somewhat more stressed compared to the upstream stations, while the two CFAR stations appear to be moderately to highly stressed according to these same measures.

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 35 total taxa and three EPT taxa in the HD and Ponar samples (Tables 3-29 and 3-30). Total richness was noticeably higher in the HD compared to the Ponar samples with 28 and 18 taxa, respectively. However, EPT richness was only slightly higher in the HDs (three taxa) relative to the Ponars (one taxon). Tolerant taxa were the dominant for both sample types. The most abundant taxa in the HD samples were Oligochaeta, *Nanocladius distinctus*, *Glyptotendipes*, and *Polypedilum flavum* while Oligochaeta was clearly the dominant taxon in the Ponars. Total density was considerably higher in the HD samples due to several taxa, including the relatively pollution sensitive *Cheumatopsyche*.

Chironomid head capsule deformities were observed in a single *Polypedilum flavum* specimen collected in the HD samples (Table 3-28). However, tolerant taxa composed 62 and 90 percent of the total density in the HDs and Ponars, respectively (Table 3-1). Despite the moderately high taxa richness in each sample type and the presence of some environmentally sensitive EPT and Tanytarsini 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 at Station 64 as moderately stressed.

3.1.4.4 Des Plaines River

Combined, the HD and Ponar samples from the three ambient stations (Stations 13, 22, and 91) and the CFAR Irving Park Road station on the Des Plaines River yielded 79 total taxa and 17 EPT taxa (Tables 3-31 and 3-32). These were the highest richness values observed among all the waterways sampled in 2005. HD total taxa richness decreased upstream to downstream among the three stations from 50 taxa at Station 13 to 31 taxa at Station 91 (Table 3-31). Likewise, EPT taxa richness was highest at the upstream Station 13 with 15 taxa compared to seven 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 2005. The dominant taxon at Station 13 was *Polypedilum flavum*. However, at Stations 22 and 91, abundance was more evenly distributed among Oligochaeta, *Cheumatopsyche*, and *Polypedilum flavum*. Total density was noticeably higher at Station 13 and similarly lower at Stations 22 and 91. The primary cause for

TABLE 3-29. HESTER-DENDY DENSITIES AT SAMPLING STATION 64 WITHIN THE WEST BRANCH DUPAGE RIVER, JULY 2005.

TAXA	64 LAKE ST. #/m2	%
Hydra	71.8	0.28
Turbellaria	627.9	2.45
Plumatella	1.8	0.01
Oligochaeta	5,059.2	19.75
Caecidotea	53.8	0.21
Hydracarina	17.9	0.07
Baetis intercalaris	35.9	0.14
Cheumatopsyche	2,134.9	8.33
Hydroptila	17.9	0.07
Dubiraphia	17.9	0.07
Procladius	89.7	0.35
Ablabesmyia janta	520.3	2.03
Thienemannimyia grp.	950.8	3.71
Thienemanniella xena	430.6	1.68
Cricotopus tremulus grp.	179.4	0.70
Cricotopus bicinctus grp.	502.3	1.96
Cricotopus sylvestris grp.	89.7	0.35
Nanocladius distinctus	3,390.7	13.23
Rheocricotopus robacki	89.7	0.35
Cladopelma	89.7	0.35
Dicrotendipes simpsoni	2,404.0	9.38
Glyptotendipes	4,126.3	16.11
Polypedilum flavum	3,157.5	12.32
Polypedilum scalaenum grp.	179.4	0.70
Paratanytarsus	1,094.4	4.27
Simulium	89.7	0.35
Helisoma	179.4	0.70
Ferrissia	17.9	0.07
TOTAL BENTHOS	25,620.7	100.00
TOTAL TAXA RICHNESS	28	
EPT TAXA RICHNESS	3	

TABLE 3-30. PETITE PONAR DENSITIES AT SAMPLING STATION 64 WITHIN THE WEST BRANCH DUPAGE RIVER, JULY 2005.

TAXA	64 LAKE ST. #/m2	%
Oligochaeta	1,428.2	65.25
Zygoptera	7.2	0.33
Cheumatopsyche	7.2	0.33
Procladius	136.4	6.23
Ablabesmyia janta	14.4	0.66
Ablabesmyia mallochi	14.4	0.66
Thienemannimyia grp.	7.2	0.33
Nanocladius distinctus	35.9	1.64
Chironomus	7.2	0.33
Cryptochironomus	86.1	3.93
Dicrotendipes modestus	14.4	0.66
Dicrotendipes simpsoni	107.6	4.92
Glyptotendipes	157.9	7.21
Polypedilum illinoense	21.5	0.98
Polypedilum scalaenum grp.	50.2	2.30
Cladotanytarsus mancus grp.	21.5	0.98
Paratanytarsus	57.4	2.62
Helisoma	14.4	0.66
TOTAL BENTHOS	2,188.9	100.00
TOTAL TAXA RICHNESS	18	
EPT TAXA RICHNESS	1	

TABLE 3-31. HESTER-DENDY DENSITIES AT EACH SAMPLING STATION WITHIN THE DES PLAINES RIVER, JUNE-AUGUST 2005.

TAXA	13 LAKE COOK RD.		22 OGDEN AVE.		91 MATERIAL SERVICE RD.	
	#/m2	%	#/m2	%	#/m2	%
Porifera	--	--	--	--	1.8	0.01
Hydra	19.7	0.10	--	--	--	--
Turbellaria	846.8	4.22	1,905.3	21.82	4,329.0	33.25
Urnatella gracilis	--	--	1.8	0.02	--	--
Plumatella	1.8	0.01	3.6	0.04	3.6	0.03
Oligochaeta	1,381.4	6.88	845.0	9.68	837.8	6.43
Helobdella	--	--	--	--	5.4	0.04
Caecidotea	17.9	0.09	5.4	0.06	--	--
Gammarus	712.2	3.55	35.9	0.41	--	--
Hydracarina	--	--	--	--	9.0	0.07
Isonychia	1.8	0.01	--	--	--	--
Baetis intercalaris	12.6	0.06	14.4	0.16	84.3	0.65
Centroptilum	1.8	0.01	--	--	--	--
Heptagenia	9.0	0.04	--	--	--	--
Stenacron	5.4	0.03	23.3	0.27	--	--
Maccaffertium integrum	251.2	1.25	--	--	--	--
Maccaffertium terminatum	10.8	0.05	--	--	--	--
Tricorythodes	82.5	0.41	100.5	1.15	--	--
Argia	1.8	0.01	14.4	0.16	5.4	0.04
Corixidae	17.9	0.09	--	--	--	--
Cheumatopsyche	873.7	4.35	2,068.5	23.70	4,795.5	36.83
Hydropsyche	3.6	0.02	--	--	5.4	0.04
Hydropsyche betteni	--	--	17.9	0.21	--	--
Hydropsyche orris	9.0	0.04	--	--	165.1	1.27
Hydropsyche simulans	87.9	0.44	--	--	--	--
Hydropsyche bidens	86.1	0.43	--	--	26.9	0.21
Ceratopsyche morosa	12.6	0.06	5.4	0.06	80.7	0.62
Hydroptila	1.8	0.01	154.3	1.77	5.4	0.04
Petrophila	--	--	--	--	5.4	0.04
Dubiraphia	35.9	0.18	--	--	--	--
Macronychus glabratus	3.6	0.02	9.0	0.10	--	--
Stenelmis	35.9	0.18	--	--	--	--
Procladius	--	--	23.3	0.27	--	--
Ablabesmyia janta	287.0	1.43	--	--	53.8	0.41
Ablabesmyia mallochi	--	--	23.3	0.27	--	--
Thienemannimyia grp.	91.5	0.46	131.0	1.50	--	--
Corynoneura	--	--	14.4	0.16	--	--
Thienemanniella xena	3.6	0.02	37.7	0.43	53.8	0.41
Thienemanniella similis	--	--	--	--	53.8	0.41
Cricotopus tremulus grp.	7.2	0.04	--	--	--	--
Cricotopus bicinctus grp.	9.0	0.04	283.5	3.25	35.9	0.28
Cricotopus sylvestris grp.	3.6	0.02	--	--	--	--
Nanocladius distinctus	601.0	3.00	364.2	4.17	26.9	0.21
Nanocladius spiniplenus	9.0	0.04	62.8	0.72	17.9	0.14
Rheocricotopus robacki	3.6	0.02	--	--	--	--
Chironomus	592.0	2.95	--	--	--	--
Dicrotendipes modestus	--	--	23.3	0.27	--	--
Dicrotendipes neomodestus	37.7	0.19	82.5	0.95	53.8	0.41
Dicrotendipes fumidus	--	--	14.4	0.16	17.9	0.14
Dicrotendipes simpsoni	7.2	0.04	152.5	1.75	17.9	0.14
Endochironomus nigricans	143.5	0.72	--	--	--	--
Glyptotendipes	37.7	0.19	--	--	283.5	2.18
Parachironomus	3.6	0.02	23.3	0.27	17.9	0.14
Polypedilum flavum	12,709.0	63.33	1,856.8	21.27	1,180.5	9.07
Polypedilum illinoense	3.6	0.02	23.3	0.27	--	--
Polypedilum scalaenum grp.	592.0	2.95	59.2	0.68	26.9	0.21
Stenochironomus	--	--	247.6	2.84	--	--
Cladotanytarsus vanderwulpi grp.	3.6	0.02	--	--	--	--
Paratanytarsus	3.6	0.02	23.3	0.27	--	--
Rheotanytarsus	7.2	0.04	23.3	0.27	694.3	5.33
Xenochironomus xenolabis	--	--	--	--	107.6	0.83
Pleurocera	--	--	26.9	0.31	--	--
Helisoma	358.8	1.79	--	--	--	--
Ferrissia	9.0	0.04	23.3	0.27	17.9	0.14
Corbicula fluminea	17.9	0.09	5.4	0.06	--	--
TOTAL BENTHOS	20,066.4	100.00	8,729.8	100.00	13,021.2	100.00
TOTAL TAXA RICHNESS	50		37		31	
EPT TAXA RICHNESS	15		7		7	

TABLE 3-32. PETITE PONAR DENSITIES AT EACH SAMPLING STATION WITHIN THE DES PLAINES RIVER, JUNE-AUGUST 2005.

TAXA	13 LAKE COOK RD.		CFAR IRVING PARK RD.		22 OGDEN AVE.		91 MATERIAL SERVICE RD.	
	#/m2	%	#/m2	%	#/m2	%	#/m2	%
Turbellaria	--	--	--	--	71.8	1.54	14.4	1.92
Urnatella gracilis	--	--	--	--	--	--	14.4	1.92
Oligochaeta	3,889.7	55.48	5,296.4	81.82	1,499.9	32.15	545.4	73.08
Helobdella triserialis	--	--	14.4	0.22	35.9	0.77	--	--
Mooreobdella microstoma	--	--	157.9	2.44	--	--	--	--
Gammarus	--	--	--	--	7.2	0.15	--	--
Baetis intercalaris	--	--	--	--	78.9	1.69	14.4	1.92
Stenacron	7.2	0.10	--	--	--	--	--	--
Tricorythodes	--	--	--	--	1,521.4	32.62	--	--
Anthopotamus myops grp.	7.2	0.10	--	--	--	--	--	--
Cheumatopsyche	--	--	--	--	71.8	1.54	14.4	1.92
Hydroptila	--	--	--	--	7.2	0.15	--	--
Dubiraphia	28.7	0.41	--	--	--	--	--	--
Stenelmis	--	--	--	--	64.6	1.38	28.7	3.85
Ceratopogonidae	14.4	0.20	--	--	--	--	--	--
Procladius	35.9	0.51	28.7	0.44	--	--	--	--
Thienemannimyia grp.	21.5	0.31	--	--	43.1	0.92	--	--
Thienemanniella similis	--	--	--	--	14.4	0.31	--	--
Cricotopus sylvestris grp.	--	--	--	--	7.2	0.15	--	--
Chironomus	2,375.5	33.88	--	--	--	--	--	--
Cryptochironomus	71.8	1.02	--	--	93.3	2.00	--	--
Dicrotendipes	28.7	0.41	--	--	--	--	--	--
Harnischia	165.1	2.35	--	--	--	--	--	--
Paralauterborniella nigrohalteralis	28.7	0.41	--	--	--	--	--	--
Paratendipes	28.7	0.41	--	--	--	--	--	--
Polypedilum flavum	--	--	--	--	35.9	0.77	28.7	3.85
Polypedilum illinoense	28.7	0.41	--	--	7.2	0.15	--	--
Polypedilum scalaenum grp.	57.4	0.82	--	--	136.4	2.92	86.1	11.54
Cladotanytarsus mancus grp.	7.2	0.10	--	--	--	--	--	--
Cladotanytarsus vanderwulpi grp.	78.9	1.13	--	--	--	--	--	--
Tanytarsus guerlus grp.	43.1	0.61	--	--	--	--	--	--
Bithynia tentaculata	--	--	631.5	9.76	--	--	--	--
Amnicola	--	--	43.1	0.67	--	--	--	--
Pleurocera	--	--	14.4	0.22	122.0	2.62	--	--
Helisoma	7.2	0.10	--	--	--	--	--	--
Ferrissia	--	--	--	--	7.2	0.15	--	--
Corbicula fluminea	21.5	0.31	--	--	811.0	17.38	--	--
Sphaerium	--	--	287.1	4.43	--	--	--	--
Musculium	7.2	0.10	--	--	--	--	--	--
Pisidium	57.4	0.82	--	--	28.7	0.62	--	--
TOTAL BENTHOS	7,011.6	100.00	6,473.3	100.00	4,664.8	100.00	746.4	100.00
TOTAL TAXA RICHNESS	22		8		20		8	
EPT TAXA RICHNESS	2		0		4		2	

this difference was the greater density of *Polypedilum flavum* at Station 13, which as high or higher than the total density at both Stations 22 and 91.

Ponar total taxa richness was similar at Stations 13 and 22 with 22 and 20 taxa, respectively and identically lower at the CFAR station and Stations 91 and with 8 taxa (Table 3-32). EPT taxa richness was highest at Station 22 (four taxa) and slightly lower at Station 13 and 91 (two taxa). No EPT taxa were observed at the CFAR station. Although Oligochaeta was abundant at all the stations, it was clearly the dominant taxon at the CFAR station and Station 91. At Station 13, Oligochaeta and *Chironomus* were the most abundant taxa while at Station 22, Oligochaeta and the mayfly *Tricorythodes* were equally abundant. Total density decreased from upstream to downstream but was considerably lower at Station 91 compared to upstream.

Chironomid head capsule deformities were only observed in *Chironomus* from the Station 13 Ponar sample (Table 3-28). However, the 13.3 percent (n=83) level of incidence was well above published background levels (Burt et al. 2003, Lenat 1993, Hudson and Ciborowski 1996b) and is likely indicative of pollution stress.

Based on abundance, tolerant taxa were a relatively minor component in the HD samples compared to the Ponars. This suggests a level of disparity between water and sediment quality particularly at Station 13 where tolerant taxa abundance increased nearly seven-fold between the HD and Ponar samples and the incidence of head capsule deformities in the Ponars was clearly above expected reference levels. However, based on total richness in both sample types, and EPT richness in the HDs, environmental stress appeared to increase longitudinally among the three ambient stations while the benthic community at the CFAR station was decidedly poor.

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APPENDIX A

2005 CENTER AND NEAR SHORE HD AND PONAR DATA

APPENDIX A - 2005 MACROINVERTEBRATE SAMPLES - RAW DATA SUMMARY - HESTER-DENDY DATA

WATERWAY= CALUMET RIVER,
LOCATION= 130TH ST.,
STATION= 55,
and DATE= 28SEP05

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Hydra	50	179.4	0.28	50	179.4	0.16
Oligochaeta	100	358.8	0.56	150	538.2	0.48
Gammarus	1,100	3,946.9	6.18	1,600	5,740.9	5.17
Cyrnellus fraternus	50	179.4	0.28	0	0.0	0.00
Dicrotendipes simpsoni	50	179.4	0.28	0	0.0	0.00
Glyptotendipes	0	0.0	0.00	50	179.4	0.16
Ferrissia	50	179.4	0.28	0	0.0	0.00
Dreissena polymorpha	16,400	58,844.6	92.13	29,100	104,413.3	94.02
TOTAL BENTHOS	17,800	63,868.0	100.00	30,950	111,051.3	100.00

WATERWAY= L.C.R.,
LOCATION= HALSTED ST.,
STATION= 76,
and DATE= 27SEP05

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Porifera	1	3.6	0.07	1	3.6	0.06
Hydra	43	154.3	3.17	1	3.6	0.06
Turbellaria	66	236.8	4.86	9	32.3	0.55
Oligochaeta	86	308.6	6.34	175	627.9	10.69
Mooreobdella microstoma	3	10.8	0.22	0	0.0	0.00
Caecidotea	3	10.8	0.22	0	0.0	0.00
Hyalella azteca	0	0.0	0.00	1	3.6	0.06
Gammarus	68	244.0	5.01	10	35.9	0.61
Argia	2	7.2	0.15	0	0.0	0.00
Enallagma	1	3.6	0.07	1	3.6	0.06
Sisyridae	0	0.0	0.00	1	3.6	0.06
Cyrnellus fraternus	12	43.1	0.88	273	979.5	16.68
Hydroptila	1	3.6	0.07	0	0.0	0.00
Procladius	0	0.0	0.00	7	25.1	0.43
Ablabesmyia janta	0	0.0	0.00	15	53.8	0.92
Ablabesmyia mallochi	4	14.4	0.29	0	0.0	0.00
Cricotopus bicinctus grp.	8	28.7	0.59	0	0.0	0.00
Nanocladius distinctus	53	190.2	3.91	88	315.8	5.38
Chironomus	4	14.4	0.29	0	0.0	0.00
Dicrotendipes simpsoni	241	864.7	17.76	440	1,578.8	26.88
Glyptotendipes	16	57.4	1.18	15	53.8	0.92
Parachironomus	0	0.0	0.00	7	25.1	0.43
Stenochironomus	20	71.8	1.47	59	211.7	3.60
Xenochironomus xenolabis	49	175.8	3.61	81	290.6	4.95
Bithynia tentaculata	2	7.2	0.15	0	0.0	0.00
Physa	7	25.1	0.52	0	0.0	0.00
Helisoma	0	0.0	0.00	1	3.6	0.06
Ferrissia	0	0.0	0.00	21	75.3	1.28
Corbicula fluminea	2	7.2	0.15	18	64.6	1.10
Dreissena polymorpha	665	2,386.1	49.01	413	1,481.9	25.23
TOTAL BENTHOS	1,357	4,869.0	100.00	1,637	5,873.7	100.00

APPENDIX A - 2005 MACROINVERTEBRATE SAMPLES - RAW DATA SUMMARY - HESTER-DENDY DATA

WATERWAY= C.S.C.,
LOCATION= CICERO AVE.,
STATION= 59,
and DATE= 29AUG05

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Hydra	245	879.1	10.45	20	71.8	2.03
Turbellaria	5	17.9	0.21	23	82.5	2.33
Oligochaeta	50	179.4	2.13	8	28.7	0.81
Caecidotea	0	0.0	0.00	1	3.6	0.10
Hyalella azteca	0	0.0	0.00	60	215.3	6.08
Gammarus	25	89.7	1.07	79	283.5	8.00
Collembola	5	17.9	0.21	0	0.0	0.00
Argia	0	0.0	0.00	1	3.6	0.10
Enallagma	0	0.0	0.00	1	3.6	0.10
Cyrnellus fraternus	25	89.7	1.07	10	35.9	1.01
Procladius	0	0.0	0.00	27	96.9	2.74
Ablabesmyia janta	19	68.2	0.81	21	75.3	2.13
Cricotopus bicinctus grp.	0	0.0	0.00	7	25.1	0.71
Nanocladius distinctus	440	1,578.8	18.77	82	294.2	8.31
Dicrotendipes neomodestus	15	53.8	0.64	41	147.1	4.15
Dicrotendipes simpsoni	970	3,480.4	41.38	349	1,252.2	35.36
Glyptotendipes	0	0.0	0.00	55	197.3	5.57
Parachironomus	15	53.8	0.64	0	0.0	0.00
Stenochironomus	15	53.8	0.64	69	247.6	6.99
Xenochironomus xenolabis	45	161.5	1.92	34	122.0	3.44
Ferrissia	320	1,148.2	13.65	22	78.9	2.23
Corbicula fluminea	20	71.8	0.85	3	10.8	0.30
Dreissena polymorpha	130	466.5	5.55	74	265.5	7.50
TOTAL BENTHOS	2,344	8,410.5	100.00	987	3,541.4	100.00

WATERWAY= W.F.N.B.C.R.,
LOCATION= DUNDEE RD.,
STATION= 106,
and DATE= 23JUN05

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Hydra	20	71.8	2.20	159	570.5	9.49
Turbellaria	48	172.2	5.28	69	247.6	4.12
Oligochaeta	283	1,015.4	31.13	401	1,438.8	23.93
Helobdella stagnalis	97	348.0	10.67	28	100.5	1.67
Erpobdella punctata punctata	16	57.4	1.76	4	14.4	0.24
Caecidotea	128	459.3	14.08	396	1,420.9	23.63
Crangonyx	1	3.6	0.11	1	3.6	0.06
Coenagrionidae	0	0.0	0.00	2	7.2	0.12
Cheumatopsyche	1	3.6	0.11	0	0.0	0.00
Enochrus	1	3.6	0.11	1	3.6	0.06
Alotanypus	3	10.8	0.33	0	0.0	0.00
Procladius	27	96.9	2.97	37	132.8	2.21
Ablabesmyia	0	0.0	0.00	6	21.5	0.36
Pentaneura	0	0.0	0.00	12	43.1	0.72
Thienemannimyia grp.	40	143.5	4.40	81	290.6	4.83
Cricotopus tremulus grp.	0	0.0	0.00	6	21.5	0.36
Cricotopus bicinctus grp.	22	78.9	2.42	0	0.0	0.00
Cricotopus sylvestris grp.	3	10.8	0.33	0	0.0	0.00
Nanocladius crassicornus/rectinervis	3	10.8	0.33	6	21.5	0.36
Chironomus	177	635.1	19.47	327	1,173.3	19.51
Cryptochironomus	0	0.0	0.00	6	21.5	0.36
Dicrotendipes neomodestus	3	10.8	0.33	0	0.0	0.00
Dicrotendipes simpsoni	3	10.8	0.33	12	43.1	0.72
Polypedilum illinoense	3	10.8	0.33	6	21.5	0.36
Paratanytarsus	21	75.3	2.31	93	333.7	5.55
Tanytarsus guerlus grp.	3	10.8	0.33	6	21.5	0.36
Psychoda	0	0.0	0.00	1	3.6	0.06
Physa	0	0.0	0.00	13	46.6	0.78
Menetus dilatatus	1	3.6	0.11	0	0.0	0.00
Musculium	0	0.0	0.00	2	7.2	0.12
Pisidium	5	17.9	0.55	1	3.6	0.06
TOTAL BENTHOS	909	3,261.6	100.00	1,676	6,013.6	100.00

APPENDIX A - 2005 MACROINVERTEBRATE SAMPLES - RAW DATA SUMMARY - HESTER-DENDY DATA

WATERWAY= W.F.N.B.C.R.,
LOCATION= GOLF RD.,
STATION= 103,
and DATE= 28JUN05

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Hydra	3,240	11,625.4	52.43	1,440	5,166.8	40.74
Turbellaria	670	2,404.0	10.84	355	1,273.8	10.04
Oligochaeta	1,010	3,624.0	16.34	490	1,758.2	13.86
Caecidotea	410	1,471.1	6.63	265	950.8	7.50
Procladius	50	179.4	0.81	30	107.6	0.85
Cricotopus sylvestris grp.	20	71.8	0.32	0	0.0	0.00
Nanocladius crassicornus/rectinervis	20	71.8	0.32	0	0.0	0.00
Dicrotendipes simpsoni	590	2,117.0	9.55	850	3,049.9	24.05
Glyptotendipes	20	71.8	0.32	70	251.2	1.98
Harnischia	30	107.6	0.49	0	0.0	0.00
Polypedilum halterale grp.	20	71.8	0.32	0	0.0	0.00
Polypedilum illinoense	60	215.3	0.97	10	35.9	0.28
Polypedilum scalaenum grp.	0	0.0	0.00	10	35.9	0.28
Physa	0	0.0	0.00	15	53.8	0.42
Ferrissia	40	143.5	0.65	0	0.0	0.00
TOTAL BENTHOS	6,180	22,174.4	100.00	3,535	12,683.9	100.00

WATERWAY= M.F.N.B.C.R.,
LOCATION= LAKE COOK RD.,
STATION= 31,
and DATE= 21JUN05

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Hydra	780	2,798.7	9.30	275	986.7	2.78
Turbellaria	610	2,188.7	7.27	200	717.6	2.03
Oligochaeta	70	251.2	0.83	25	89.7	0.25
Helobdella stagnalis	20	71.8	0.24	0	0.0	0.00
Caecidotea	6,740	24,183.7	80.33	9,200	33,010.4	93.16
Hydracarina	10	35.9	0.12	0	0.0	0.00
Procladius	10	35.9	0.12	0	0.0	0.00
Thienemannimyia grp.	20	71.8	0.24	0	0.0	0.00
Chironomus	0	0.0	0.00	25	89.7	0.25
Glyptotendipes	20	71.8	0.24	0	0.0	0.00
Physa	40	143.5	0.48	100	358.8	1.01
Sphaerium	0	0.0	0.00	50	179.4	0.51
Musculium	70	251.2	0.83	0	0.0	0.00
TOTAL BENTHOS	8,390	30,104.1	100.00	9,875	35,432.4	100.00

WATERWAY= SKOKIE R.,
LOCATION= LAKE COOK RD.,
STATION= 32,
and DATE= 22JUN05

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Turbellaria	74	265.5	9.92	18	64.6	9.38
Oligochaeta	494	1,772.5	66.22	40	143.5	20.83
Helobdella stagnalis	29	104.1	3.89	38	136.3	19.79
Helobdella triserialis	1	3.6	0.13	0	0.0	0.00
Erpobdella punctata punctata	2	7.2	0.27	0	0.0	0.00
Caecidotea	106	380.3	14.21	35	125.6	18.23
Gammarus	2	7.2	0.27	0	0.0	0.00
Procambarus acutus	1	3.6	0.13	0	0.0	0.00
Hydracarina	0	0.0	0.00	1	3.6	0.52
Procladius	2	7.2	0.27	0	0.0	0.00
Cricotopus sylvestris grp.	2	7.2	0.27	3	10.8	1.56
Chironomus	16	57.4	2.14	49	175.8	25.52
Dicrotendipes neomodestus	1	3.6	0.13	0	0.0	0.00
Dicrotendipes simpsoni	10	35.9	1.34	3	10.8	1.56
Phaenopsectra punctipes	2	7.2	0.27	0	0.0	0.00
Polypedilum illinoense	0	0.0	0.00	1	3.6	0.52
Paratanytarsus	1	3.6	0.13	0	0.0	0.00
Physa	3	10.8	0.40	1	3.6	0.52
Musculium	0	0.0	0.00	1	3.6	0.52
Pisidium	0	0.0	0.00	2	7.2	1.04
TOTAL BENTHOS	746	2,676.7	100.00	192	688.9	100.00

WATERWAY= SKOKIE R.,
LOCATION= FRONTAGE RD.,
STATION= 105,
and DATE= 29JUN05

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Turbellaria	3	10.8	1.01	12	43.1	1.95
Oligochaeta	37	132.8	12.46	290	1,040.5	47.15
Caecidotea	1	3.6	0.34	16	57.4	2.60
Gammarus	131	470.0	44.11	96	344.5	15.61
Procambarus acutus	0	0.0	0.00	3	10.8	0.49
Stenacron	1	3.6	0.34	1	3.6	0.16
Rheumatobates	1	3.6	0.34	0	0.0	0.00
Cyrnellus fraternus	7	25.1	2.36	1	3.6	0.16
Cheumatopsyche	6	21.5	2.02	0	0.0	0.00
Procladius	3	10.8	1.01	20	71.8	3.25
Ablabesmyia annulata	0	0.0	0.00	4	14.4	0.65
Cricotopus bicinctus grp.	4	14.4	1.35	1	3.6	0.16
Cricotopus sylvestris grp.	4	14.4	1.35	0	0.0	0.00
Nanocladius distinctus	1	3.6	0.34	0	0.0	0.00
Chironomus	7	25.1	2.36	58	208.1	9.43
Dicrotendipes modestus	11	39.5	3.70	30	107.6	4.88
Dicrotendipes neomodestus	0	0.0	0.00	4	14.4	0.65
Dicrotendipes simpsoni	19	68.2	6.40	14	50.2	2.28
Glyptotendipes	13	46.6	4.38	0	0.0	0.00
Harnischia	3	10.8	1.01	4	14.4	0.65
Paratendipes	0	0.0	0.00	4	14.4	0.65
Polypedilum halterale grp.	1	3.6	0.34	0	0.0	0.00
Polypedilum illinoense	1	3.6	0.34	0	0.0	0.00
Polypedilum scalaenum grp.	0	0.0	0.00	1	3.6	0.16
Paratanytarsus	3	10.8	1.01	0	0.0	0.00
Rheotanytarsus	6	21.5	2.02	0	0.0	0.00
Ferrissia	2	7.2	0.67	5	17.9	0.81
Corbicula fluminea	0	0.0	0.00	48	172.2	7.80
Sphaerium	32	114.8	10.77	3	10.8	0.49
TOTAL BENTHOS	297	1,065.7	100.00	615	2,206.7	100.00

WATERWAY= N.S.C.,
LOCATION= CENTRAL AVE.,
STATION= 35,
and DATE= 07JUL05

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Hydra	56	200.9	5.86	5	17.9	0.56
Turbellaria	2	7.2	0.21	44	157.9	4.97
Oligochaeta	164	588.4	17.15	281	1,008.3	31.72
Helobdella stagnalis	0	0.0	0.00	1	3.6	0.11
Helobdella triserialis	0	0.0	0.00	2	7.2	0.23
Caecidotea	0	0.0	0.00	2	7.2	0.23
Gammarus	71	254.8	7.43	37	132.8	4.18
Stenacron	1	3.6	0.10	0	0.0	0.00
Enallagma	1	3.6	0.10	1	3.6	0.11
Ceraclea maculata	2	7.2	0.21	0	0.0	0.00
Procladius	13	46.6	1.36	10	35.9	1.13
Ablabesmyia annulata	13	46.6	1.36	0	0.0	0.00
Thienemannimyia grp.	7	25.1	0.73	0	0.0	0.00
Cricotopus tremulus grp.	0	0.0	0.00	5	17.9	0.56
Cricotopus bicinctus grp.	7	25.1	0.73	5	17.9	0.56
Cricotopus sylvestris grp.	13	46.6	1.36	0	0.0	0.00
Nanocladius distinctus	7	25.1	0.73	0	0.0	0.00
Parakiefferiella	13	46.6	1.36	5	17.9	0.56
Chironomus	39	139.9	4.08	0	0.0	0.00
Cryptochironomus	0	0.0	0.00	5	17.9	0.56
Cryptotendipes	7	25.1	0.73	0	0.0	0.00
Dicrotendipes modestus	39	139.9	4.08	5	17.9	0.56
Dicrotendipes fumidus	268	961.6	28.03	196	703.3	22.12
Dicrotendipes simpsoni	189	678.1	19.77	186	667.4	20.99
Phaenopsectra obediens grp.	7	25.1	0.73	0	0.0	0.00
Phaenopsectra punctipes	20	71.8	2.09	10	35.9	1.13
Tanytarsus	13	46.6	1.36	73	261.9	8.24
Physa	0	0.0	0.00	2	7.2	0.23
Gyraulus	0	0.0	0.00	11	39.5	1.24
Helisoma	1	3.6	0.10	0	0.0	0.00
Menetus dilatatus	3	10.8	0.31	0	0.0	0.00
TOTAL BENTHOS	956	3,430.2	100.00	886	3,179.0	100.00

WATERWAY= N.S.C.,
LOCATION= OAKTON AVE.,
STATION= 102,
and DATE= 20JUL05

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Turbellaria	215	771.4	7.41	60	215.3	2.70
Oligochaeta	970	3,480.4	33.45	450	1,614.6	20.22
Helobdella stagnalis	15	53.8	0.52	15	53.8	0.67
Caecidotea	60	215.3	2.07	0	0.0	0.00
Gammarus	5	17.9	0.17	25	89.7	1.12
Baetis intercalaris	0	0.0	0.00	5	17.9	0.22
Stenacron	0	0.0	0.00	5	17.9	0.22
Procladius	0	0.0	0.00	15	53.8	0.67
Ablabesmyia annulata	0	0.0	0.00	15	53.8	0.67
Cricotopus bicinctus grp.	15	53.8	0.52	0	0.0	0.00
Cricotopus sylvestris grp.	35	125.6	1.21	15	53.8	0.67
Chironomus	15	53.8	0.52	0	0.0	0.00
Cladopelma	15	53.8	0.52	0	0.0	0.00
Dicrotendipes modestus	265	950.8	9.14	35	125.6	1.57
Dicrotendipes simpsoni	1,190	4,269.8	41.03	1,580	5,669.2	71.01
Glyptotendipes	15	53.8	0.52	0	0.0	0.00
Parachironomus	15	53.8	0.52	0	0.0	0.00
Phaenopsectra punctipes	15	53.8	0.52	0	0.0	0.00
Polypedilum illinoense	15	53.8	0.52	0	0.0	0.00
Paratanytarsus	35	125.6	1.21	0	0.0	0.00
Gyraulus	5	17.9	0.17	5	17.9	0.22
TOTAL BENTHOS	2,900	10,405.5	100.00	2,225	7,983.5	100.00

WATERWAY= N.S.C.,
LOCATION= TOUHY AVE.,
STATION= 36,
and DATE= 21JUL05

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Hydra	0	0.0	0.00	210	753.5	2.34
Turbellaria	872	3,128.8	51.87	1,550	5,561.5	17.28
Oligochaeta	589	2,113.4	35.04	3,440	12,343.0	38.35
Caecidotea	0	0.0	0.00	70	251.2	0.78
Hyalella azteca	0	0.0	0.00	600	2,152.9	6.69
Thienemannimyia grp.	2	7.2	0.12	0	0.0	0.00
Cricotopus sylvestris grp.	3	10.8	0.18	0	0.0	0.00
Nanocladius distinctus	12	43.1	0.71	0	0.0	0.00
Chironomus	0	0.0	0.00	60	215.3	0.67
Dicrotendipes modestus	7	25.1	0.42	0	0.0	0.00
Dicrotendipes fumidus	5	17.9	0.30	0	0.0	0.00
Dicrotendipes simpsoni	166	595.6	9.88	1,090	3,911.0	12.15
Glyptotendipes	15	53.8	0.89	1,830	6,566.2	20.40
Parachironomus	8	28.7	0.48	120	430.6	1.34
Polypedilum illinoense	2	7.2	0.12	0	0.0	0.00
TOTAL BENTHOS	1,681	6,031.6	100.00	8,970	32,185.1	100.00

WATERWAY= N.S.C., LOCATION= FOSTER AVE.,
STATION= 101,
and DATE= 27JUL05

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Hydra	0	0.0	0.00	5	17.9	0.13
Turbellaria	3,040	10,907.8	76.77	710	2,547.5	19.06
Oligochaeta	450	1,614.6	11.36	1,990	7,140.3	53.42
Caecidotea	10	35.9	0.25	150	538.2	4.03
Hyalella azteca	0	0.0	0.00	55	197.3	1.48
Procladius	10	35.9	0.25	0	0.0	0.00
Cricotopus bicinctus grp.	0	0.0	0.00	15	53.8	0.40
Nanocladius distinctus	70	251.2	1.77	25	89.7	0.67
Dicrotendipes modestus	10	35.9	0.25	0	0.0	0.00
Dicrotendipes simpsoni	350	1,255.8	8.84	690	2,475.8	18.52
Glyptotendipes	10	35.9	0.25	25	89.7	0.67
Parachironomus	10	35.9	0.25	55	197.3	1.48
Gyraulus	0	0.0	0.00	5	17.9	0.13
TOTAL BENTHOS	3,960	14,208.8	100.00	3,725	13,365.6	100.00

WATERWAY= N.B.C.R.,
LOCATION= GLENVIEW RD.,
STATION= 104,
and DATE= 30JUN05

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Turbellaria	68	244.0	3.11	11	39.5	2.66
Oligochaeta	220	789.4	10.08	14	50.2	3.38
Caecidotea	5	17.9	0.23	3	10.8	0.72
Gammarus	738	2,648.0	33.81	365	1,309.7	88.16
Stenacron	3	10.8	0.14	0	0.0	0.00
Argia	3	10.8	0.14	0	0.0	0.00
Cheumatopsyche	323	1,159.0	14.80	0	0.0	0.00
Tanypus	8	28.7	0.37	0	0.0	0.00
Procladius	30	107.6	1.37	11	39.5	2.66
Thienemannimyia grp.	8	28.7	0.37	0	0.0	0.00
Thienemanniella xena	413	1,481.9	18.92	0	0.0	0.00
Cricotopus tremulus grp.	8	28.7	0.37	0	0.0	0.00
Cricotopus bicinctus grp.	15	53.8	0.69	0	0.0	0.00
Cricotopus sylvestris grp.	23	82.5	1.05	0	0.0	0.00
Nanocladius distinctus	8	28.7	0.37	1	3.6	0.24
Chironomus	0	0.0	0.00	2	7.2	0.48
Dicrotendipes simpsoni	15	53.8	0.69	2	7.2	0.48
Harnischia	0	0.0	0.00	1	3.6	0.24
Polypedilum fallax grp.	8	28.7	0.37	0	0.0	0.00
Polypedilum flavum	23	82.5	1.05	0	0.0	0.00
Polypedilum illinoense	148	531.0	6.78	0	0.0	0.00
Polypedilum scalaenum grp.	30	107.6	1.37	2	7.2	0.48
Paratanytarsus	38	136.3	1.74	1	3.6	0.24
Rheotanytarsus	15	53.8	0.69	0	0.0	0.00
Tanytarsus	8	28.7	0.37	0	0.0	0.00
Amnicola	0	0.0	0.00	1	3.6	0.24
Ferrissia	25	89.7	1.15	0	0.0	0.00
TOTAL BENTHOS	2,183	7,832.8	100.00	414	1,485.5	100.00

WATERWAY= N.B.C.R.,
LOCATION= DEMPSTER ST.,
STATION= 34,
and DATE= 13JUL05

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Hydra	0	0.0	0.00	90	322.9	3.42
Turbellaria	101	362.4	12.66	115	412.6	4.36
Oligochaeta	55	197.3	6.89	1,725	6,189.5	65.46
Placobdella montifera	1	3.6	0.13	0	0.0	0.00
Mooreobdella microstoma	1	3.6	0.13	0	0.0	0.00
Caecidotea	0	0.0	0.00	285	1,022.6	10.82
Gammarus	291	1,044.1	36.47	30	107.6	1.14
Orconectes	2	7.2	0.25	0	0.0	0.00
Stenacron	5	17.9	0.63	0	0.0	0.00
Argia	1	3.6	0.13	0	0.0	0.00
Cheumatopsyche	236	846.8	29.57	0	0.0	0.00
Hydroptila	2	7.2	0.25	0	0.0	0.00
Dubiraphia	1	3.6	0.13	0	0.0	0.00
Tanypus	0	0.0	0.00	5	17.9	0.19
Procladius	4	14.4	0.50	135	484.4	5.12
Thienemannimyia grp.	5	17.9	0.63	5	17.9	0.19
Thienemanniella xena	2	7.2	0.25	0	0.0	0.00
Cricotopus bicinctus grp.	17	61.0	2.13	0	0.0	0.00
Cricotopus sylvestris grp.	2	7.2	0.25	0	0.0	0.00
Nanocladius distinctus	1	3.6	0.13	0	0.0	0.00
Rheocricotopus robacki	1	3.6	0.13	0	0.0	0.00
Chironomus	2	7.2	0.25	15	53.8	0.57
Cryptochironomus	1	3.6	0.13	0	0.0	0.00
Dicrotendipes modestus	3	10.8	0.38	50	179.4	1.90
Dicrotendipes neomodestus	2	7.2	0.25	5	17.9	0.19
Dicrotendipes fumidus	2	7.2	0.25	0	0.0	0.00
Dicrotendipes simpsoni	5	17.9	0.63	115	412.6	4.36
Glyptotendipes	6	21.5	0.75	5	17.9	0.19
Polypedilum flavum	14	50.2	1.75	0	0.0	0.00
Polypedilum halterale grp.	2	7.2	0.25	0	0.0	0.00
Polypedilum illinoense	7	25.1	0.88	20	71.8	0.76
Polypedilum scalaenum grp.	8	28.7	1.00	5	17.9	0.19
Stenochironomus	1	3.6	0.13	0	0.0	0.00
Paratanytarsus	6	21.5	0.75	0	0.0	0.00
Tanytarsus	2	7.2	0.25	0	0.0	0.00
Gyraulus	0	0.0	0.00	10	35.9	0.38
Ferrissia	9	32.3	1.13	20	71.8	0.76
TOTAL BENTHOS	798	2,863.3	100.00	2,635	9,454.6	100.00

WATERWAY= N.B.C.R.,
LOCATION= ALBANY AVE.,
STATION= 96,
and DATE= 19JUL05

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Hydra	10	35.9	0.82	100	358.8	1.79
Turbellaria	62	222.5	5.08	410	1,471.1	7.33
Oligochaeta	18	64.6	1.48	5	17.9	0.09
Caecidotea	5	17.9	0.41	560	2,009.3	10.02
Gammarus	266	954.4	21.80	1,450	5,202.7	25.94
Hydracarina	1	3.6	0.08	0	0.0	0.00
Baetis intercalaris	21	75.3	1.72	5	17.9	0.09
Stenacron	24	86.1	1.97	35	125.6	0.63
Cheumatopsyche	413	1,481.9	33.85	1,640	5,884.5	29.34
Hydropsyche betteni	3	10.8	0.25	10	35.9	0.18
Hydroptila	15	53.8	1.23	245	879.1	4.38
Ablabesmyia annulata	2	7.2	0.16	0	0.0	0.00
Thienemannimyia grp.	20	71.8	1.64	60	215.3	1.07
Thienemanniella xena	12	43.1	0.98	115	412.6	2.06
Cricotopus bicinctus grp.	8	28.7	0.66	75	269.1	1.34
Nanocladius distinctus	8	28.7	0.66	0	0.0	0.00
Nanocladius spiniplenus	4	14.4	0.33	15	53.8	0.27
Rheocricotopus robacki	55	197.3	4.51	275	986.7	4.92
Dicrotendipes neomodestus	2	7.2	0.16	0	0.0	0.00
Dicrotendipes simpsoni	2	7.2	0.16	0	0.0	0.00
Glyptotendipes	2	7.2	0.16	0	0.0	0.00
Polypedilum fallax grp.	0	0.0	0.00	10	35.9	0.18
Polypedilum flavum	37	132.8	3.03	120	430.6	2.15
Polypedilum illinoense	2	7.2	0.16	60	215.3	1.07
Stenochironomus	27	96.9	2.21	10	35.9	0.18
Rheotanytarsus	4	14.4	0.33	0	0.0	0.00
Simulium	2	7.2	0.16	0	0.0	0.00
Ferrissia	195	699.7	15.98	390	1,399.4	6.98
TOTAL BENTHOS	1,220	4,377.5	100.00	5,590	20,057.4	100.00

WATERWAY= N.B.C.R.,
LOCATION= WILSON AVE.,
STATION= 37,
and DATE= 27JUL05

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Turbellaria	1,005	3,606.0	58.26	86	308.6	28.76
Oligochaeta	541	1,941.2	31.36	125	448.5	41.81
Helobdella triserialis	2	7.2	0.12	0	0.0	0.00
Caecidotea	29	104.1	1.68	5	17.9	1.67
Hyalella azteca	15	53.8	0.87	2	7.2	0.67
Gammarus	2	7.2	0.12	0	0.0	0.00
Stenacron	1	3.6	0.06	0	0.0	0.00
Cheumatopsyche	1	3.6	0.06	1	3.6	0.33
Procladius	1	3.6	0.06	0	0.0	0.00
Cricotopus bicinctus grp.	4	14.4	0.23	1	3.6	0.33
Cricotopus sylvestris grp.	0	0.0	0.00	1	3.6	0.33
Nanocladius distinctus	1	3.6	0.06	1	3.6	0.33
Chironomus	3	10.8	0.17	0	0.0	0.00
Dicrotendipes simpsoni	103	369.6	5.97	68	244.0	22.74
Glyptotendipes	8	28.7	0.46	5	17.9	1.67
Parachironomus	4	14.4	0.23	0	0.0	0.00
Polypedilum flavum	1	3.6	0.06	1	3.6	0.33
Polypedilum illinoense	1	3.6	0.06	3	10.8	1.00
Polypedilum scalaenum grp.	1	3.6	0.06	0	0.0	0.00
Ferrissia	1	3.6	0.06	0	0.0	0.00
Corbicula fluminea	1	3.6	0.06	0	0.0	0.00
TOTAL BENTHOS	1,725	6,189.5	100.00	299	1,072.8	100.00

WATERWAY= N.B.C.R.,
LOCATION= DIVERSY AVE.,
STATION= 73,
and DATE= 28JUL05

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Hydra	5	17.9	0.14	1	3.6	0.04
Turbellaria	1,065	3,821.3	29.79	199	714.0	8.16
Oligochaeta	565	2,027.3	15.80	1,185	4,251.9	48.61
Hyalella azteca	10	35.9	0.28	16	57.4	0.66
Stenacron	0	0.0	0.00	1	3.6	0.04
Cheumatopsyche	0	0.0	0.00	2	7.2	0.08
Ablabesmyia mallochi	20	71.8	0.56	0	0.0	0.00
Nanocladius distinctus	0	0.0	0.00	32	114.8	1.31
Dicrotendipes neomodestus	0	0.0	0.00	21	75.3	0.86
Dicrotendipes simpsoni	1,790	6,422.7	50.07	757	2,716.2	31.05
Glyptotendipes	80	287.0	2.24	53	190.2	2.17
Polypedilum fallax grp.	0	0.0	0.00	11	39.5	0.45
Polypedilum flavum	20	71.8	0.56	11	39.5	0.45
Polypedilum illinoense	0	0.0	0.00	85	305.0	3.49
Polypedilum scalaenum grp.	20	71.8	0.56	53	190.2	2.17
Menetus dilatatus	0	0.0	0.00	3	10.8	0.12
Ferrissia	0	0.0	0.00	6	21.5	0.25
Corbicula fluminea	0	0.0	0.00	2	7.2	0.08
TOTAL BENTHOS	3,575	12,827.4	100.00	2,438	8,747.8	100.00

WATERWAY= N.B.C.R.,
LOCATION= GRAND AVE.,
STATION= 46,
and DATE= 18JUL05

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Hydra	13	46.6	1.76	0	0.0	0.00
Turbellaria	147	527.4	19.86	370	1,327.6	6.47
Plumatella	1	3.6	0.14	0	0.0	0.00
Oligochaeta	386	1,385.0	52.16	4,480	16,074.6	78.32
Hyalella azteca	37	132.8	5.00	70	251.2	1.22
Gammarus	2	7.2	0.27	0	0.0	0.00
Procladius	3	10.8	0.41	0	0.0	0.00
Nanocladius distinctus	5	17.9	0.68	0	0.0	0.00
Chironomus	0	0.0	0.00	10	35.9	0.17
Dicrotendipes simpsoni	145	520.3	19.59	780	2,798.7	13.64
Parachironomus	0	0.0	0.00	10	35.9	0.17
Menetus dilatatus	1	3.6	0.14	0	0.0	0.00
TOTAL BENTHOS	740	2,655.2	100.00	5,720	20,523.9	100.00

WATERWAY= C.S.S.C,
LOCATION= CICERO AVE.,
STATION= 75,
and DATE= 22AUG05

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Hydra	0	0.0	0.00	33	118.4	1.93
Turbellaria	0	0.0	0.00	187	671.0	10.91
Urnatella gracilis	0	0.0	0.00	1	3.6	0.06
Oligochaeta	29	104.1	100.00	440	1,578.8	25.67
Helobdella triserialis	0	0.0	0.00	3	10.8	0.18
Hydropsyche	0	0.0	0.00	3	10.8	0.18
Ablabesmyia janta	0	0.0	0.00	20	71.8	1.17
Nanocladius distinctus	0	0.0	0.00	33	118.4	1.93
Dicrotendipes simpsoni	0	0.0	0.00	967	3,469.7	56.42
Parachironomus	0	0.0	0.00	20	71.8	1.17
Ferrissia	0	0.0	0.00	7	25.1	0.41
TOTAL BENTHOS	29	104.1	100.00	1,714	6,150.0	100.00

APPENDIX A - 2005 MACROINVERTEBRATE SAMPLES - RAW DATA SUMMARY - HESTER-DENDY DATA

WATERWAY= C.S.S.C,
LOCATION= HARLEM AVE.,
STATION= 41,
and DATE= 26AUG05

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Hydra	0	0.0	0.00	30	107.6	0.77
Turbellaria	1,170	4,198.1	21.75	1,005	3,606.0	25.80
Oligochaeta	4,120	14,782.9	76.58	2,070	7,427.3	53.15
Hyalella azteca	20	71.8	0.37	35	125.6	0.90
Cyrnellus fraternus	0	0.0	0.00	50	179.4	1.28
Ablabesmyia janta	0	0.0	0.00	40	143.5	1.03
Nanocladius distinctus	10	35.9	0.19	30	107.6	0.77
Dicrotendipes simpsoni	60	215.3	1.12	520	1,865.8	13.35
Pseudochironomus	0	0.0	0.00	100	358.8	2.57
Cladotanytarsus mancus grp.	0	0.0	0.00	10	35.9	0.26
Musculium	0	0.0	0.00	5	17.9	0.13
TOTAL BENTHOS	5,380	19,303.9	100.00	3,895	13,975.6	100.00

WATERWAY= C.S.S.C,
LOCATION= LOCKPORT,
STATION= 92,
and DATE= 15SEP05

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Hydra	23	82.5	7.35	30	107.6	1.89
Turbellaria	65	233.2	20.77	301	1,080.0	18.94
Plumatella	0	0.0	0.00	1	3.6	0.06
Oligochaeta	10	35.9	3.19	16	57.4	1.01
Hyalella azteca	32	114.8	10.22	117	419.8	7.36
Gammarus	4	14.4	1.28	5	17.9	0.31
Stenacron	3	10.8	0.96	9	32.3	0.57
Cyrnellus fraternus	15	53.8	4.79	12	43.1	0.76
Hydroptila	0	0.0	0.00	1	3.6	0.06
Procladius	1	3.6	0.32	0	0.0	0.00
Ablabesmyia janta	6	21.5	1.92	9	32.3	0.57
Thienemannimyia grp.	1	3.6	0.32	0	0.0	0.00
Thienemanniella similis	0	0.0	0.00	3	10.8	0.19
Cricotopus bicinctus grp.	0	0.0	0.00	3	10.8	0.19
Cricotopus sylvestris grp.	0	0.0	0.00	2	7.2	0.13
Nanocladius distinctus	0	0.0	0.00	2	7.2	0.13
Dicrotendipes neomodestus	2	7.2	0.64	2	7.2	0.13
Dicrotendipes simpsoni	56	200.9	17.89	79	283.5	4.97
Glyptotendipes	2	7.2	0.64	5	17.9	0.31
Parachironomus	0	0.0	0.00	2	7.2	0.13
Polypedilum flavum	0	0.0	0.00	3	10.8	0.19
Polypedilum scalaenum grp.	3	10.8	0.96	0	0.0	0.00
Stenochironomus	2	7.2	0.64	25	89.7	1.57
Xenochironomus xenolabis	5	17.9	1.60	20	71.8	1.26
Physa	13	46.6	4.15	1	3.6	0.06
Helisoma	7	25.1	2.24	1	3.6	0.06
Ferrissia	13	46.6	4.15	938	3,365.6	59.03
Corbicula fluminea	28	100.5	8.95	2	7.2	0.13
Musculium	22	78.9	7.03	0	0.0	0.00
TOTAL BENTHOS	313	1,123.1	100.00	1,589	5,701.5	100.00

WATERWAY= HIGGINS CR.,
LOCATION= WILLE RD.,
STATION= 78,
and DATE= 14JUL05

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Hydra	60	215.3	0.75	0	0.0	0.00
Turbellaria	4,970	17,832.8	62.20	108	387.5	21.43
Oligochaeta	180	645.9	2.25	26	93.3	5.16
Caecidotea	2,640	9,472.6	33.04	361	1,295.3	71.63
Procladius	10	35.9	0.13	0	0.0	0.00
Cricotopus tremulus grp.	10	35.9	0.13	3	10.8	0.60
Cricotopus bicinctus grp.	60	215.3	0.75	5	17.9	0.99
Cricotopus sylvestris grp.	20	71.8	0.25	1	3.6	0.20
Dicrotendipes simpsoni	10	35.9	0.13	0	0.0	0.00
Physa	30	107.6	0.38	0	0.0	0.00
TOTAL BENTHOS	7,990	28,668.8	100.00	504	1,808.4	100.00

APPENDIX A - 2005 MACROINVERTEBRATE SAMPLES - RAW DATA SUMMARY - HESTER-DENDY DATA

WATERWAY= SALT CR.,
LOCATION= THORNDALE,
STATION=
and DATE= 03AUG05

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Hydra	10	35.9	0.58	5	17.9	0.54
Turbellaria	40	143.5	2.34	42	150.7	4.57
Oligochaeta	80	287.0	4.68	32	114.8	3.48
Helobdella triserialis	3	10.8	0.18	0	0.0	0.00
Hydracarina	0	0.0	0.00	1	3.6	0.11
Baetis intercalaris	37	132.8	2.16	22	78.9	2.39
Stenacron	0	0.0	0.00	2	7.2	0.22
Stenonema femoratum	0	0.0	0.00	1	3.6	0.11
Tricorythodes	23	82.5	1.35	1	3.6	0.11
Argia	13	46.6	0.76	5	17.9	0.54
Enallagma	0	0.0	0.00	2	7.2	0.22
Cyrnellus fraternus	27	96.9	1.58	13	46.6	1.41
Cheumatopsyche	277	993.9	16.20	119	427.0	12.95
Hydropsyche betteni	13	46.6	0.76	0	0.0	0.00
Ceratopsyche morosa	3	10.8	0.18	0	0.0	0.00
Hydroptila	90	322.9	5.26	14	50.2	1.52
Dubiraphia	0	0.0	0.00	4	14.4	0.44
Ceratopogonidae	3	10.8	0.18	0	0.0	0.00
Tanypus	10	35.9	0.58	0	0.0	0.00
Procladius	67	240.4	3.92	14	50.2	1.52
Ablabesmyia janta	53	190.2	3.10	29	104.1	3.16
Ablabesmyia mallochi	23	82.5	1.35	0	0.0	0.00
Thienemannimyia grp.	187	671.0	10.94	93	333.7	10.12
Thienemanniella xena	43	154.3	2.51	114	409.0	12.40
Cricotopus bicinctus grp.	23	82.5	1.35	7	25.1	0.76
Nanocladius distinctus	10	35.9	0.58	7	25.1	0.76
Nanocladius crassicornus/rectinervis	0	0.0	0.00	7	25.1	0.76
Cryptochironomus	23	82.5	1.35	7	25.1	0.76
Dicrotendipes neomodestus	230	825.3	13.45	50	179.4	5.44
Dicrotendipes fumidus	23	82.5	1.35	0	0.0	0.00
Dicrotendipes simpsoni	0	0.0	0.00	14	50.2	1.52
Endochironomus nigricans	0	0.0	0.00	7	25.1	0.76
Glyptotendipes	23	82.5	1.35	72	258.3	7.83
Harnischia	10	35.9	0.58	0	0.0	0.00
Parachironomus	10	35.9	0.58	7	25.1	0.76
Polypedilum flavum	33	118.4	1.93	50	179.4	5.44
Polypedilum illinoense	110	394.7	6.43	50	179.4	5.44
Polypedilum scalaenum grp.	10	35.9	0.58	14	50.2	1.52
Pseudochironomus	10	35.9	0.58	7	25.1	0.76
Stenochironomus	10	35.9	0.58	7	25.1	0.76
Cladotanytarsus mancus grp.	10	35.9	0.58	0	0.0	0.00
Paratanytarsus	23	82.5	1.35	50	179.4	5.44
Tanytarsus glabrescens grp.	23	82.5	1.35	14	50.2	1.52
Tanytarsus guerlus grp.	87	312.2	5.09	36	129.2	3.92
Ferrissia	30	107.6	1.75	0	0.0	0.00
Corbicula fluminea	10	35.9	0.58	0	0.0	0.00
TOTAL BENTHOS	1,710	6,135.6	100.00	919	3,297.5	100.00

APPENDIX A - 2005 MACROINVERTEBRATE SAMPLES - RAW DATA SUMMARY - HESTER-DENDY DATA

WATERWAY= SALT CR.,
LOCATION= DEVON AVE.,
STATION= 18,
and DATE= 15JUL05

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Hydra	26	93.3	1.17	5	17.9	0.21
Turbellaria	131	470.0	5.90	145	520.3	6.22
Oligochaeta	785	2,816.6	35.34	285	1,022.6	12.23
Desserobdella phalera	1	3.6	0.05	0	0.0	0.00
Helobdella triserialis	18	64.6	0.81	0	0.0	0.00
Caecidotea	262	940.1	11.80	15	53.8	0.64
Baetis intercalaris	7	25.1	0.32	0	0.0	0.00
Tricorythodes	1	3.6	0.05	0	0.0	0.00
Enallagma	3	10.8	0.14	0	0.0	0.00
Cyrnellus fraternus	10	35.9	0.45	5	17.9	0.21
Cheumatopsyche	90	322.9	4.05	150	538.2	6.44
Hydroptila	220	789.4	9.91	50	179.4	2.15
Oecetis	1	3.6	0.05	0	0.0	0.00
Dubiraphia	0	0.0	0.00	5	17.9	0.21
Stenelmis	3	10.8	0.14	0	0.0	0.00
Procladius	48	172.2	2.16	35	125.6	1.50
Ablabesmyia janta	34	122.0	1.53	125	448.5	5.36
Thienemannimyia grp.	150	538.2	6.75	140	502.3	6.01
Cricotopus tremulus grp.	0	0.0	0.00	20	71.8	0.86
Cricotopus bicinctus grp.	0	0.0	0.00	20	71.8	0.86
Cricotopus sylvestris grp.	5	17.9	0.23	20	71.8	0.86
Nanocladius	0	0.0	0.00	35	125.6	1.50
Nanocladius distinctus	5	17.9	0.23	20	71.8	0.86
Cryptochironomus	10	35.9	0.45	0	0.0	0.00
Dicrotendipes modestus	5	17.9	0.23	0	0.0	0.00
Dicrotendipes neomodestus	19	68.2	0.86	210	753.5	9.01
Dicrotendipes fumidus	15	53.8	0.68	180	645.9	7.73
Dicrotendipes simpsoni	0	0.0	0.00	125	448.5	5.36
Endochironomus nigricans	15	53.8	0.68	35	125.6	1.50
Glyptotendipes	5	17.9	0.23	0	0.0	0.00
Harnischia	10	35.9	0.45	0	0.0	0.00
Microtendipes	5	17.9	0.23	0	0.0	0.00
Parachironomus	0	0.0	0.00	20	71.8	0.86
Phaenopsectra obediens grp.	10	35.9	0.45	0	0.0	0.00
Polypedilum flavum	19	68.2	0.86	250	897.0	10.73
Polypedilum illinoense	58	208.1	2.61	230	825.3	9.87
Polypedilum scalaenum grp.	29	104.1	1.31	0	0.0	0.00
Pseudochironomus	5	17.9	0.23	20	71.8	0.86
Stenochironomus	5	17.9	0.23	20	71.8	0.86
Cladotanytarsus mancus grp.	5	17.9	0.23	0	0.0	0.00
Paratanytarsus	19	68.2	0.86	140	502.3	6.01
Tanytarsus	10	35.9	0.45	0	0.0	0.00
Tanytarsus guerlus grp.	10	35.9	0.45	20	71.8	0.86
Hemerodromia	1	3.6	0.05	5	17.9	0.21
Helisoma	66	236.8	2.97	0	0.0	0.00
Ferrissia	96	344.5	4.32	0	0.0	0.00
Corbicula fluminea	3	10.8	0.14	0	0.0	0.00
Pisidium	1	3.6	0.05	0	0.0	0.00
TOTAL BENTHOS	2,221	7,969.1	100.00	2,330	8,360.2	100.00

APPENDIX A - 2005 MACROINVERTEBRATE SAMPLES - RAW DATA SUMMARY - HESTER-DENDY DATA

WATERWAY= W.B. DUPAGE R.,
LOCATION= LAKE ST.,
STATION= 64,
and DATE= 06JUL05

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Hydra	10	35.9	0.15	30	107.6	0.39
Turbellaria	140	502.3	2.11	210	753.5	2.74
Plumatella	1	3.6	0.02	0	0.0	0.00
Oligochaeta	800	2,870.5	12.08	2,020	7,247.9	26.37
Caecidotea	30	107.6	0.45	0	0.0	0.00
Hydracarina	10	35.9	0.15	0	0.0	0.00
Baetis intercalaris	20	71.8	0.30	0	0.0	0.00
Cheumatopsyche	910	3,265.2	13.74	280	1,004.7	3.66
Hydroptila	10	35.9	0.15	0	0.0	0.00
Dubiraphia	10	35.9	0.15	0	0.0	0.00
Procladius	50	179.4	0.76	0	0.0	0.00
Ablabesmyia janta	90	322.9	1.36	200	717.6	2.61
Thienemannimyia grp.	280	1,004.7	4.23	250	897.0	3.26
Thienemanniella xena	140	502.3	2.11	100	358.8	1.31
Cricotopus tremulus grp.	0	0.0	0.00	100	358.8	1.31
Cricotopus bicinctus grp.	230	825.3	3.47	50	179.4	0.65
Cricotopus sylvestris grp.	50	179.4	0.76	0	0.0	0.00
Nanocladius distinctus	1,010	3,624.0	15.25	880	3,157.5	11.49
Rheocricotopus robacki	50	179.4	0.76	0	0.0	0.00
Cladopelma	0	0.0	0.00	50	179.4	0.65
Dicrotendipes simpsoni	550	1,973.4	8.31	790	2,834.6	10.31
Glyptotendipes	780	2,798.7	11.78	1,520	5,453.9	19.84
Polypedilum flavum	920	3,301.0	13.90	840	3,014.0	10.97
Polypedilum scalaenum grp.	0	0.0	0.00	100	358.8	1.31
Paratanytarsus	460	1,650.5	6.95	150	538.2	1.96
Simulium	40	143.5	0.60	10	35.9	0.13
Helisoma	20	71.8	0.30	80	287.0	1.04
Ferrissia	10	35.9	0.15	0	0.0	0.00
TOTAL BENTHOS	6,621	23,756.7	100.00	7,660	27,484.8	100.00

APPENDIX A - 2005 MACROINVERTEBRATE SAMPLES - RAW DATA SUMMARY - HESTER-DENDY DATA

WATERWAY= DES PLAINES R.,
LOCATION= LAKE COOK RD.,
STATION= 13,
and DATE= 20JUN05

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Hydra	11	39.5	0.99	0	0.0	0.00
Turbellaria	102	366.0	9.15	370	1,327.6	3.67
Plumatella	1	3.6	0.09	0	0.0	0.00
Oligochaeta	0	0.0	0.00	770	2,762.8	7.65
Caecidotea	0	0.0	0.00	10	35.9	0.10
Gammarus	7	25.1	0.63	390	1,399.4	3.87
Isonychia	1	3.6	0.09	0	0.0	0.00
Baetis intercalaris	7	25.1	0.63	0	0.0	0.00
Centroptilum	1	3.6	0.09	0	0.0	0.00
Heptagenia	5	17.9	0.45	0	0.0	0.00
Stenacron	3	10.8	0.27	0	0.0	0.00
Maccaffertium integrum	140	502.3	12.56	0	0.0	0.00
Maccaffertium terminatum	6	21.5	0.54	0	0.0	0.00
Tricorythodes	46	165.1	4.13	0	0.0	0.00
Argia	1	3.6	0.09	0	0.0	0.00
Corixidae	0	0.0	0.00	10	35.9	0.10
Cheumatopsyche	487	1,747.4	43.68	0	0.0	0.00
Hydropsyche	2	7.2	0.18	0	0.0	0.00
Hydropsyche orris	5	17.9	0.45	0	0.0	0.00
Hydropsyche simulans	49	175.8	4.39	0	0.0	0.00
Hydropsyche bidens	48	172.2	4.30	0	0.0	0.00
Ceratopsyche morosa	7	25.1	0.63	0	0.0	0.00
Hydroptila	1	3.6	0.09	0	0.0	0.00
Dubiraphia	0	0.0	0.00	20	71.8	0.20
Macronychus glabratus	2	7.2	0.18	0	0.0	0.00
Stenelmis	0	0.0	0.00	20	71.8	0.20
Ablabesmyia janta	0	0.0	0.00	160	574.1	1.59
Thienemannimyia grp.	51	183.0	4.57	0	0.0	0.00
Thienemanniella xena	2	7.2	0.18	0	0.0	0.00
Cricotopus tremulus grp.	4	14.4	0.36	0	0.0	0.00
Cricotopus bicinctus grp.	5	17.9	0.45	0	0.0	0.00
Cricotopus sylvestris grp.	2	7.2	0.18	0	0.0	0.00
Nanocladius distinctus	5	17.9	0.45	330	1,184.1	3.28
Nanocladius spiniplenus	5	17.9	0.45	0	0.0	0.00
Rheocricotopus robacki	2	7.2	0.18	0	0.0	0.00
Chironomus	0	0.0	0.00	330	1,184.1	3.28
Dicrotendipes neomodestus	21	75.3	1.88	0	0.0	0.00
Dicrotendipes simpsoni	4	14.4	0.36	0	0.0	0.00
Endochironomus nigricans	0	0.0	0.00	80	287.0	0.79
Glyptotendipes	21	75.3	1.88	0	0.0	0.00
Parachironomus	2	7.2	0.18	0	0.0	0.00
Polypedilum flavum	44	157.9	3.95	7,040	25,260.1	69.91
Polypedilum illinoense	2	7.2	0.18	0	0.0	0.00
Polypedilum scalaenum grp.	0	0.0	0.00	330	1,184.1	3.28
Cladotanytarsus vanderwulpi grp.	2	7.2	0.18	0	0.0	0.00
Paratanytarsus	2	7.2	0.18	0	0.0	0.00
Rheotanytarsus	4	14.4	0.36	0	0.0	0.00
Helisoma	0	0.0	0.00	200	717.6	1.99
Ferrissia	5	17.9	0.45	0	0.0	0.00
Corbicula fluminea	0	0.0	0.00	10	35.9	0.10
TOTAL BENTHOS	1,115	4,000.7	100.00	10,070	36,132.0	100.00

APPENDIX A - 2005 MACROINVERTEBRATE SAMPLES - RAW DATA SUMMARY - HESTER-DENDY DATA

WATERWAY= DES PLAINES R.,
LOCATION= OGDEN AVE.,
STATION= 22,
and DATE= 26JUL05

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Turbellaria	77	276.3	3.06	985	3,534.3	41.93
Urnatella gracilis	0	0.0	0.00	1	3.6	0.04
Plumatella	1	3.6	0.04	1	3.6	0.04
Oligochaeta	33	118.4	1.31	438	1,571.6	18.65
Caecidotea	0	0.0	0.00	3	10.8	0.13
Gammarus	0	0.0	0.00	20	71.8	0.85
Baetis intercalaris	3	10.8	0.12	5	17.9	0.21
Stenacron	0	0.0	0.00	13	46.6	0.55
Tricorythodes	43	154.3	1.71	13	46.6	0.55
Argia	0	0.0	0.00	8	28.7	0.34
Cheumatopsyche	973	3,491.2	38.66	180	645.9	7.66
Hydropsyche betteni	10	35.9	0.40	0	0.0	0.00
Ceratopsyche morosa	3	10.8	0.12	0	0.0	0.00
Hydroptila	73	261.9	2.90	13	46.6	0.55
Macronychus glabratus	0	0.0	0.00	5	17.9	0.21
Procladius	13	46.6	0.52	0	0.0	0.00
Ablabesmyia mallochi	0	0.0	0.00	13	46.6	0.55
Thienemannimyia grp.	40	143.5	1.59	33	118.4	1.40
Corynoneura	0	0.0	0.00	8	28.7	0.34
Thienemanniella xena	13	46.6	0.52	8	28.7	0.34
Cricotopus bicinctus grp.	53	190.2	2.11	105	376.7	4.47
Nanocladius distinctus	93	333.7	3.69	110	394.7	4.68
Nanocladius spiniplenus	27	96.9	1.07	8	28.7	0.34
Dicrotendipes modestus	13	46.6	0.52	0	0.0	0.00
Dicrotendipes neomodestus	13	46.6	0.52	33	118.4	1.40
Dicrotendipes fumidus	0	0.0	0.00	8	28.7	0.34
Dicrotendipes simpsoni	0	0.0	0.00	85	305.0	3.62
Parachironomus	0	0.0	0.00	13	46.6	0.55
Polypedilum flavum	1,010	3,624.0	40.13	25	89.7	1.06
Polypedilum illinoense	0	0.0	0.00	13	46.6	0.55
Polypedilum scalaenum grp.	0	0.0	0.00	33	118.4	1.40
Stenochironomus	0	0.0	0.00	138	495.2	5.87
Paratanytarsus	13	46.6	0.52	0	0.0	0.00
Rheotanytarsus	13	46.6	0.52	0	0.0	0.00
Pleurocera	0	0.0	0.00	15	53.8	0.64
Ferrissia	0	0.0	0.00	13	46.6	0.55
Corbicula fluminea	0	0.0	0.00	3	10.8	0.13
TOTAL BENTHOS	2,517	9,031.2	100.00	2,349	8,428.4	100.00

APPENDIX A - 2005 MACROINVERTEBRATE SAMPLES - RAW DATA SUMMARY - HESTER-DENDY DATA

WATERWAY= DES PLAINES R.,
LOCATION= MATERIAL SERVICE RD.,
STATION= 91,
and DATE= 18AUG05

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Porifera	1	3.6	0.02	0	0.0	0.00
Turbellaria	2,250	8,073.2	53.42	163	584.9	5.35
Plumatella	1	3.6	0.02	1	3.6	0.03
Oligochaeta	100	358.8	2.37	367	1,316.8	12.05
Helobdella	0	0.0	0.00	3	10.8	0.10
Hydracarina	5	17.9	0.12	0	0.0	0.00
Baetis intercalaris	10	35.9	0.24	37	132.8	1.21
Argia	0	0.0	0.00	3	10.8	0.10
Cheumatopsyche	1,280	4,592.8	30.39	1,393	4,998.2	45.73
Hydropsyche	0	0.0	0.00	3	10.8	0.10
Hydropsyche orris	55	197.3	1.31	37	132.8	1.21
Hydropsyche bidens	15	53.8	0.36	0	0.0	0.00
Ceratopsyche morosa	35	125.6	0.83	10	35.9	0.33
Hydroptila	0	0.0	0.00	3	10.8	0.10
Petrophila	0	0.0	0.00	3	10.8	0.10
Ablabesmyia janta	0	0.0	0.00	30	107.6	0.98
Thienemanniella xena	0	0.0	0.00	30	107.6	0.98
Thienemanniella similis	10	35.9	0.24	20	71.8	0.66
Cricotopus bicinctus grp.	0	0.0	0.00	20	71.8	0.66
Nanocladius distinctus	5	17.9	0.12	10	35.9	0.33
Nanocladius spiniplenus	10	35.9	0.24	0	0.0	0.00
Dicrotendipes neomodestus	0	0.0	0.00	30	107.6	0.98
Dicrotendipes fumidus	0	0.0	0.00	10	35.9	0.33
Dicrotendipes simpsoni	10	35.9	0.24	0	0.0	0.00
Glyptotendipes	5	17.9	0.12	153	549.0	5.02
Parachironomus	0	0.0	0.00	10	35.9	0.33
Polypedilum flavum	285	1,022.6	6.77	373	1,338.4	12.25
Polypedilum scalaenum grp.	15	53.8	0.36	0	0.0	0.00
Rheotanytarsus	50	179.4	1.19	337	1,209.2	11.06
Xenochironomus xenolabis	60	215.3	1.42	0	0.0	0.00
Ferrissia	10	35.9	0.24	0	0.0	0.00
TOTAL BENTHOS	4,212	15,113.0	100.00	3,046	10,929.3	100.00

WATERWAY= CALUMET RIVER,
LOCATION= 130TH ST.,
STATION= 55,
and DATE= 28SEP05

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Plumatella	0	0.0	0.00	1	14.4	0.22
Oligochaeta	3	43.1	100.00	77	1,105.2	17.19
Hydroptila	0	0.0	0.00	1	14.4	0.22
Ablabesmyia mallochi	0	0.0	0.00	1	14.4	0.22
Parakiefferiella	0	0.0	0.00	2	28.7	0.45
Psectrocladius	0	0.0	0.00	3	43.1	0.67
Chironomus	0	0.0	0.00	3	43.1	0.67
Cryptochironomus	0	0.0	0.00	1	14.4	0.22
Dicrotendipes modestus	0	0.0	0.00	4	57.4	0.89
Dicrotendipes neomodestus	0	0.0	0.00	1	14.4	0.22
Parachironomus	0	0.0	0.00	1	14.4	0.22
Polypedilum halterale grp.	0	0.0	0.00	1	14.4	0.22
Paratanytarsus	0	0.0	0.00	3	43.1	0.67
Dreissena polymorpha	0	0.0	0.00	349	5,009.3	77.90
TOTAL BENTHOS	3	43.1	100.00	448	6,430.3	100.00

WATERWAY= L.C.R.,
LOCATION= HALSTED ST.,
STATION= 76,
and DATE= 27SEP05

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Oligochaeta	73	1,047.8	90.12	47	674.6	90.38
Gammarus	2	28.7	2.47	0	0.0	0.00
Dicrotendipes simpsoni	0	0.0	0.00	1	14.4	1.92
Polypedilum halterale grp.	0	0.0	0.00	1	14.4	1.92
Corbicula fluminea	0	0.0	0.00	2	28.7	3.85
Pisidium	3	43.1	3.70	0	0.0	0.00
Dreissena polymorpha	3	43.1	3.70	1	14.4	1.92
TOTAL BENTHOS	81	1,162.6	100.00	52	746.4	100.00

WATERWAY= C.S.C.,
LOCATION= CICERO AVE.,
STATION= 59,
and DATE= 29AUG05

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Oligochaeta	296	4,248.6	85.06	82	1,177.0	94.25
Procladius	50	717.7	14.37	3	43.1	3.45
Coelotanypus	1	14.4	0.29	0	0.0	0.00
Cryptochironomus	0	0.0	0.00	1	14.4	1.15
Dicrotendipes simpsoni	1	14.4	0.29	1	14.4	1.15
TOTAL BENTHOS	348	4,994.9	100.00	87	1,248.7	100.00

WATERWAY= W.F.N.B.C.R.,
LOCATION= DUNDEE RD.,
STATION= 106,
and DATE= 23JUN05

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Oligochaeta	362	5,195.9	34.25	91	1,306.1	17.77
Erpobdella punctata punctata	23	330.1	2.18	35	502.4	6.84
Caecidotea	0	0.0	0.00	3	43.1	0.59
Collembola	0	0.0	0.00	1	14.4	0.20
Oecetis	0	0.0	0.00	18	258.4	3.52
Procladius	17	244.0	1.61	20	287.1	3.91
Pentaneura	0	0.0	0.00	3	43.1	0.59
Thienemannimyia grp.	0	0.0	0.00	3	43.1	0.59
Cricotopus bicinctus grp.	0	0.0	0.00	3	43.1	0.59
Cricotopus sylvestris grp.	0	0.0	0.00	3	43.1	0.59
Nanocladius distinctus	0	0.0	0.00	3	43.1	0.59
Chironomus	395	5,669.5	37.37	112	1,607.6	21.88
Cryptochironomus	23	330.1	2.18	0	0.0	0.00
Dicrotendipes neomodestus	114	1,636.3	10.79	98	1,406.6	19.14
Paratendipes	0	0.0	0.00	3	43.1	0.59
Polypedilum halterale grp.	6	86.1	0.57	0	0.0	0.00
Polypedilum scalaenum grp.	17	244.0	1.61	40	574.1	7.81
Paratanytarsus	0	0.0	0.00	30	430.6	5.86
Physa	3	43.1	0.28	5	71.8	0.98
Menetus dilatatus	0	0.0	0.00	1	14.4	0.20
Musculium	45	645.9	4.26	40	574.1	7.81
Pisidium	52	746.4	4.92	0	0.0	0.00
TOTAL BENTHOS	1,057	15,171.4	100.00	512	7,348.9	100.00

WATERWAY= W.F.N.B.C.R.,
LOCATION= GOLF RD.,
STATION= 103,
and DATE= 28JUN05

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Hydra	10	143.5	0.24	0	0.0	0.00
Oligochaeta	4,090	58,704.9	99.03	3,460	49,662.3	97.19
Oecetis	0	0.0	0.00	10	143.5	0.28
Procladius	0	0.0	0.00	20	287.1	0.56
Cryptochironomus	20	287.1	0.48	0	0.0	0.00
Dicrotendipes simpsoni	0	0.0	0.00	10	143.5	0.28
Polypedilum halterale grp.	10	143.5	0.24	0	0.0	0.00
Musculium	0	0.0	0.00	50	717.7	1.40
Pisidium	0	0.0	0.00	10	143.5	0.28
TOTAL BENTHOS	4,130	59,279.0	100.00	3,560	51,097.6	100.00

WATERWAY= M.F.N.B.C.R.,
LOCATION= LAKE COOK RD.,
STATION= 31,
and DATE= 21JUN05

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Hydra	35	502.4	0.93	0	0.0	0.00
Turbellaria	30	430.6	0.80	7	100.5	0.45
Oligochaeta	565	8,109.6	14.99	921	13,219.4	59.77
Helobdella stagnalis	15	215.3	0.40	9	129.2	0.58
Erpobdella punctata punctata	15	215.3	0.40	3	43.1	0.19
Caecidotea	2,265	32,510.2	60.08	430	6,171.9	27.90
Enallagma	0	0.0	0.00	3	43.1	0.19
Procladius	275	3,947.1	7.29	55	789.4	3.57
Chironomus	0	0.0	0.00	24	344.5	1.56
Paratendipes	5	71.8	0.13	1	14.4	0.06
Polypedilum flavum	5	71.8	0.13	0	0.0	0.00
Amnicola	0	0.0	0.00	1	14.4	0.06
Physa	45	645.9	1.19	32	459.3	2.08
Menetus dilatatus	0	0.0	0.00	1	14.4	0.06
Ferrissia	5	71.8	0.13	0	0.0	0.00
Sphaerium	65	933.0	1.72	17	244.0	1.10
Musculium	60	861.2	1.59	7	100.5	0.45
Pisidium	385	5,526.0	10.21	30	430.6	1.95
TOTAL BENTHOS	3,770	54,111.8	100.00	1,541	22,118.4	100.00

WATERWAY= SKOKIE R.,
LOCATION= LAKE COOK RD.,
STATION= 32,
and DATE= 22JUN05

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Turbellaria	1	14.4	0.07	1	14.4	0.10
Oligochaeta	1,211	17,381.8	82.61	525	7,535.5	52.76
Helobdella stagnalis	3	43.1	0.20	1	14.4	0.10
Erpobdella punctata punctata	0	0.0	0.00	1	14.4	0.10
Caecidotea	3	43.1	0.20	3	43.1	0.30
Gammarus	1	14.4	0.07	1	14.4	0.10
Enallagma	1	14.4	0.07	0	0.0	0.00
Tanypus	0	0.0	0.00	28	401.9	2.81
Procladius	13	186.6	0.89	5	71.8	0.50
Cricotopus bicinctus grp.	2	28.7	0.14	0	0.0	0.00
Cricotopus sylvestris grp.	2	28.7	0.14	0	0.0	0.00
Chironomus	199	2,856.3	13.57	425	6,100.1	42.71
Physa	1	14.4	0.07	1	14.4	0.10
Sphaerium	10	143.5	0.68	0	0.0	0.00
Musculium	4	57.4	0.27	2	28.7	0.20
Pisidium	15	215.3	1.02	2	28.7	0.20
TOTAL BENTHOS	1,466	21,041.9	100.00	995	14,281.5	100.00

WATERWAY= SKOKIE R.,
LOCATION= FRONTAGE RD.,
STATION= 105,
and DATE= 29JUN05

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Oligochaeta	230	3,301.3	79.86	471	6,760.4	68.86
Gammarus	0	0.0	0.00	5	71.8	0.73
Noctuidae	0	0.0	0.00	1	14.4	0.15
Dubiraphia	2	28.7	0.69	7	100.5	1.02
Ceratopogonidae	0	0.0	0.00	1	14.4	0.15
Procladius	2	28.7	0.69	7	100.5	1.02
Chironomus	45	645.9	15.63	145	2,081.2	21.20
Cryptochironomus	4	57.4	1.39	18	258.4	2.63
Dicrotendipes modestus	0	0.0	0.00	4	57.4	0.58
Harnischia	3	43.1	1.04	4	57.4	0.58
Polypedilum scalaenum grp.	1	14.4	0.35	0	0.0	0.00
Amnicola	0	0.0	0.00	1	14.4	0.15
Corbicula fluminea	1	14.4	0.35	20	287.1	2.92
TOTAL BENTHOS	288	4,133.7	100.00	684	9,817.6	100.00

WATERWAY= N.S.C.,
LOCATION= CENTRAL AVE.,
STATION= 35,
and DATE= 07JUL05

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Oligochaeta	4,370	62,723.8	89.18	267	3,832.3	51.35
Helobdella stagnalis	0	0.0	0.00	2	28.7	0.38
Caecidotea	0	0.0	0.00	1	14.4	0.19
Gammarus	0	0.0	0.00	11	157.9	2.12
Procladius	60	861.2	1.22	42	602.8	8.08
Psectrotanypus	10	143.5	0.20	0	0.0	0.00
Parakiefferiella	0	0.0	0.00	2	28.7	0.38
Chironomus	230	3,301.3	4.69	0	0.0	0.00
Cladopelma	130	1,865.9	2.65	0	0.0	0.00
Dicrotendipes modestus	0	0.0	0.00	15	215.3	2.88
Phaenopsectra obediens grp.	0	0.0	0.00	2	28.7	0.38
Phaenopsectra punctipes	0	0.0	0.00	2	28.7	0.38
Polypedilum halterale grp.	40	574.1	0.82	54	775.1	10.38
Tanytarsus	10	143.5	0.20	121	1,736.7	23.27
Sphaerium	50	717.7	1.02	0	0.0	0.00
Dreissena polymorpha	0	0.0	0.00	1	14.4	0.19
TOTAL BENTHOS	4,900	70,331.0	100.00	520	7,463.7	100.00

WATERWAY= N.S.C.,
LOCATION= OAKTON AVE.,
STATION= 102,
and DATE= 20JUL05

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Turbellaria	0	0.0	0.00	3	43.1	0.54
Oligochaeta	796	11,425.2	96.95	481	6,903.9	85.89
Helobdella stagnalis	0	0.0	0.00	17	244.0	3.04
Mooreobdella microstoma	0	0.0	0.00	3	43.1	0.54
Caecidotea	0	0.0	0.00	11	157.9	1.96
Gammarus	0	0.0	0.00	5	71.8	0.89
Tanypus	0	0.0	0.00	1	14.4	0.18
Procladius	20	287.1	2.44	9	129.2	1.61
Ablabesmyia mallochi	0	0.0	0.00	1	14.4	0.18
Chironomus	0	0.0	0.00	1	14.4	0.18
Cladopelma	0	0.0	0.00	2	28.7	0.36
Cryptochironomus	4	57.4	0.49	1	14.4	0.18
Dicrotendipes modestus	0	0.0	0.00	18	258.4	3.21
Dicrotendipes simpsoni	0	0.0	0.00	3	43.1	0.54
Polypedilum halterale grp.	0	0.0	0.00	2	28.7	0.36
Tanytarsus	0	0.0	0.00	1	14.4	0.18
Sphaerium	0	0.0	0.00	1	14.4	0.18
Pisidium	1	14.4	0.12	0	0.0	0.00
TOTAL BENTHOS	821	11,784.0	100.00	560	8,037.8	100.00

WATERWAY= N.S.C.,
LOCATION= TOUHY AVE.,
STATION= 36,
and DATE= 21JUL05

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Turbellaria	0	0.0	0.00	20	287.1	0.51
Oligochaeta	14,033	201,419.4	100.00	3,780	54,255.4	96.18
Cricotopus sylvestris grp.	0	0.0	0.00	30	430.6	0.76
Dicrotendipes simpsoni	0	0.0	0.00	50	717.7	1.27
Glyptotendipes	0	0.0	0.00	10	143.5	0.25
Parachironomus	0	0.0	0.00	30	430.6	0.76
Paratanytarsus	0	0.0	0.00	10	143.5	0.25
TOTAL BENTHOS	14,033	201,419.4	100.00	3,930	56,408.3	100.00

WATERWAY= N.S.C.,
LOCATION= FOSTER AVE.,
STATION= 101,
and DATE= 27JUL05

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Turbellaria	0	0.0	0.00	5	71.8	0.32
Oligochaeta	3,390	48,657.6	99.41	1,494	21,443.8	96.08
Caecidotea	0	0.0	0.00	2	28.7	0.13
Hyalella azteca	10	143.5	0.29	1	14.4	0.06
Procladius	0	0.0	0.00	1	14.4	0.06
Nanocladius distinctus	10	143.5	0.29	0	0.0	0.00
Chironomus	0	0.0	0.00	30	430.6	1.93
Cryptochironomus	0	0.0	0.00	5	71.8	0.32
Dicrotendipes modestus	0	0.0	0.00	3	43.1	0.19
Dicrotendipes simpsoni	0	0.0	0.00	7	100.5	0.45
Glyptotendipes	0	0.0	0.00	2	28.7	0.13
Parachironomus	0	0.0	0.00	1	14.4	0.06
Polypedilum flavum	0	0.0	0.00	1	14.4	0.06
Pisidium	0	0.0	0.00	3	43.1	0.19
TOTAL BENTHOS	3,410	48,944.6	100.00	1,555	22,319.3	100.00

WATERWAY= N.B.C.R.,
LOCATION= GLENVIEW RD.,
STATION= 104,
and DATE= 30JUN05

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Turbellaria	0	0.0	0.00	2	28.7	3.03
Oligochaeta	95	1,363.6	26.17	23	330.1	34.85
Mooreobdella microstoma	2	28.7	0.55	0	0.0	0.00
Caecidotea	1	14.4	0.28	0	0.0	0.00
Gammarus	12	172.2	3.31	3	43.1	4.55
Hydracarina	1	14.4	0.28	0	0.0	0.00
Cheumatopsyche	1	14.4	0.28	0	0.0	0.00
Stenelmis	10	143.5	2.75	1	14.4	1.52
Procladius	2	28.7	0.55	1	14.4	1.52
Cricotopus tremulus grp.	2	28.7	0.55	0	0.0	0.00
Cricotopus sylvestris grp.	7	100.5	1.93	0	0.0	0.00
Chironomus	20	287.1	5.51	20	287.1	30.30
Cryptochironomus	7	100.5	1.93	4	57.4	6.06
Dicrotendipes neomodestus	7	100.5	1.93	1	14.4	1.52
Paratendipes	2	28.7	0.55	0	0.0	0.00
Polypedilum flavum	12	172.2	3.31	1	14.4	1.52
Polypedilum scalaenum grp.	165	2,368.3	45.45	1	14.4	1.52
Tanytarsus	7	100.5	1.93	0	0.0	0.00
Corbicula fluminea	10	143.5	2.75	3	43.1	4.55
Musculium	0	0.0	0.00	6	86.1	9.09
TOTAL BENTHOS	363	5,210.2	100.00	66	947.3	100.00

WATERWAY= N.B.C.R.,
LOCATION= DEMPSTER ST.,
STATION= 34,
and DATE= 13JUL05

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Oligochaeta	116	1,665.0	61.05	1,124	16,133.1	92.21
Mooreobdella microstoma	0	0.0	0.00	1	14.4	0.08
Caecidotea	1	14.4	0.53	1	14.4	0.08
Gammarus	6	86.1	3.16	13	186.6	1.07
Procladius	2	28.7	1.05	63	904.3	5.17
Thienemanniella xena	1	14.4	0.53	1	14.4	0.08
Cricotopus bicinctus grp.	7	100.5	3.68	0	0.0	0.00
Cricotopus sylvestris grp.	0	0.0	0.00	2	28.7	0.16
Nanocladius distinctus	0	0.0	0.00	1	14.4	0.08
Chironomus	13	186.6	6.84	8	114.8	0.66
Cryptochironomus	8	114.8	4.21	0	0.0	0.00
Dicrotendipes modestus	1	14.4	0.53	0	0.0	0.00
Dicrotendipes neomodestus	3	43.1	1.58	0	0.0	0.00
Dicrotendipes simpsoni	1	14.4	0.53	0	0.0	0.00
Polypedilum flavum	1	14.4	0.53	0	0.0	0.00
Polypedilum halterale grp.	12	172.2	6.32	0	0.0	0.00
Polypedilum illinoense	1	14.4	0.53	0	0.0	0.00
Polypedilum scalaenum grp.	14	200.9	7.37	0	0.0	0.00
Musculium	3	43.1	1.58	2	28.7	0.16
Pisidium	0	0.0	0.00	3	43.1	0.25
TOTAL BENTHOS	190	2,727.1	100.00	1,219	17,496.6	100.00

WATERWAY= N.B.C.R.,
LOCATION= ALBANY AVE.,
STATION= 96,
and DATE= 19JUL05

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Oligochaeta	28	401.9	28.00	188	2,698.4	46.88
Erpobdella punctata punctata	0	0.0	0.00	8	114.8	2.00
Caecidotea	20	287.1	20.00	5	71.8	1.25
Gammarus	6	86.1	6.00	9	129.2	2.24
Orconectes	1	14.4	1.00	0	0.0	0.00
Cheumatopsyche	2	28.7	2.00	0	0.0	0.00
Procladius	2	28.7	2.00	144	2,066.9	35.91
Ablabesmyia mallochi	2	28.7	2.00	0	0.0	0.00
Thienemannimyia grp.	0	0.0	0.00	2	28.7	0.50
Thienemanniella xena	0	0.0	0.00	2	28.7	0.50
Cricotopus	7	100.5	7.00	0	0.0	0.00
Nanocladius distinctus	1	14.4	1.00	0	0.0	0.00
Rheocricotopus robacki	0	0.0	0.00	3	43.1	0.75
Chironomus	1	14.4	1.00	6	86.1	1.50
Cryptochironomus	3	43.1	3.00	0	0.0	0.00
Dicrotendipes neomodestus	7	100.5	7.00	2	28.7	0.50
Polypedilum scalaenum grp.	4	57.4	4.00	0	0.0	0.00
Paratanytarsus	1	14.4	1.00	0	0.0	0.00
Tanytarsus	0	0.0	0.00	2	28.7	0.50
Amnicola	0	0.0	0.00	3	43.1	0.75
Ferrissia	1	14.4	1.00	0	0.0	0.00
Sphaerium	3	43.1	3.00	0	0.0	0.00
Musculium	11	157.9	11.00	27	387.5	6.73
TOTAL BENTHOS	100	1,435.3	100.00	401	5,755.7	100.00

WATERWAY= N.B.C.R.,
LOCATION= WILSON AVE.,
STATION= 37,
and DATE= 27JUL05

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Turbellaria	2	28.7	0.06	10	143.5	0.09
Oligochaeta	3,065	43,992.8	98.49	10,800	155,015.3	98.45
Procladius	0	0.0	0.00	60	861.2	0.55
Nanocladius distinctus	0	0.0	0.00	10	143.5	0.09
Chironomus	13	186.6	0.42	80	1,148.3	0.73
Cryptochironomus	14	200.9	0.45	0	0.0	0.00
Dicrotendipes simpsoni	0	0.0	0.00	10	143.5	0.09
Polypedilum scalaenum grp.	15	215.3	0.48	0	0.0	0.00
Tanytarsus	1	14.4	0.03	0	0.0	0.00
Corbicula fluminea	2	28.7	0.06	0	0.0	0.00
TOTAL BENTHOS	3,112	44,667.4	100.00	10,970	157,455.4	100.00

WATERWAY= N.B.C.R.,
LOCATION= DIVERSY AVE.,
STATION= 73,
and DATE= 28JUL05

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Turbellaria	1	14.4	0.74	0	0.0	0.00
Oligochaeta	100	1,435.3	74.07	10,567	151,671.0	99.69
Hyalella azteca	1	14.4	0.74	0	0.0	0.00
Gammarus	3	43.1	2.22	0	0.0	0.00
Chaoborus	1	14.4	0.74	0	0.0	0.00
Procladius	22	315.8	16.30	33	473.7	0.31
Chironomus	5	71.8	3.70	0	0.0	0.00
Parachironomus	2	28.7	1.48	0	0.0	0.00
TOTAL BENTHOS	135	1,937.7	100.00	10,600	152,144.7	100.00

WATERWAY= N.B.C.R.,
LOCATION= FULLERTON AVE.,
STATION= CFAR,
and DATE= 28JUL05

TAXA	CFAR		
	#	#/m2	%
Oligochaeta	1,062	15,243.2	99.81
Cricotopus bicinctus grp.	1	14.4	0.09
Polypedilum flavum	1	14.4	0.09
TOTAL BENTHOS	1,064	15,271.9	100.00

WATERWAY= N.B.C.R.,
LOCATION= GRAND AVE.,
STATION= 46,
and DATE= 18JUL05

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Turbellaria	3	43.1	0.37	0	0.0	0.00
Oligochaeta	803	11,525.7	98.65	398	5,712.6	100.00
Procladius	5	71.8	0.61	0	0.0	0.00
Dicrotendipes simpsoni	3	43.1	0.37	0	0.0	0.00
TOTAL BENTHOS	814	11,683.6	100.00	398	5,712.6	100.00

WATERWAY= C.S.S.C,
LOCATION= CICERO AVE.,
STATION= 75,
and DATE= 22AUG05

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Oligochaeta	1,210	17,367.5	99.42	164	2,353.9	98.20
Procladius	7	100.5	0.58	0	0.0	0.00
Corbicula fluminea	0	0.0	0.00	3	43.1	1.80
TOTAL BENTHOS	1,217	17,467.9	100.00	167	2,397.0	100.00

WATERWAY= C.S.S.C,
LOCATION= HARLEM AVE.,
STATION= 41,
and DATE= 26AUG05

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Oligochaeta	402	5,770.0	100.00	509	7,305.8	98.83
Hyalella azteca	0	0.0	0.00	1	14.4	0.19
Dubiraphia	0	0.0	0.00	1	14.4	0.19
Cryptochironomus	0	0.0	0.00	3	43.1	0.58
Polypedilum halterale grp.	0	0.0	0.00	1	14.4	0.19
TOTAL BENTHOS	402	5,770.0	100.00	515	7,391.9	100.00

WATERWAY= C.S.S.C,
LOCATION= LOCKPORT,
STATION= 92,
and DATE= 15SEP05

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Oligochaeta	241	3,459.1	96.02	213	3,057.2	92.61
Procladius	2	28.7	0.80	0	0.0	0.00
Cryptochironomus	1	14.4	0.40	6	86.1	2.61
Corbicula fluminea	7	100.5	2.79	11	157.9	4.78
TOTAL BENTHOS	251	3,602.7	100.00	230	3,301.3	100.00

WATERWAY= HIGGINS CR.,
LOCATION= WILLE RD.,
STATION= 78,
and DATE= 14JUL05

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Hydra	10	143.5	1.06	10	143.5	0.13
Turbellaria	299	4,291.6	31.77	2,390	34,304.3	32.12
Oligochaeta	50	717.7	5.31	100	1,435.3	1.34
Mooreobdella microstoma	2	28.7	0.21	50	717.7	0.67
Caecidotea	385	5,526.0	40.91	2,770	39,758.6	37.23
Hydracarina	1	14.4	0.11	0	0.0	0.00
Enallagma	0	0.0	0.00	10	143.5	0.13
Ceratopogonidae	0	0.0	0.00	10	143.5	0.13
Thienemannimyia grp.	0	0.0	0.00	20	287.1	0.27
Cricotopus tremulus grp.	2	28.7	0.21	40	574.1	0.54
Cricotopus bicinctus grp.	172	2,468.8	18.28	1,690	24,257.0	22.72
Cricotopus trifascia grp.	2	28.7	0.21	0	0.0	0.00
Cricotopus sylvestris grp.	10	143.5	1.06	140	2,009.5	1.88
Chironomus	0	0.0	0.00	40	574.1	0.54
Dicrotendipes neomodestus	2	28.7	0.21	40	574.1	0.54
Dicrotendipes fumidus	0	0.0	0.00	80	1,148.3	1.08
Dicrotendipes simpsoni	2	28.7	0.21	0	0.0	0.00
Cladotanytarsus mancus grp.	0	0.0	0.00	20	287.1	0.27
Amnicola	1	14.4	0.11	0	0.0	0.00
Musculium	0	0.0	0.00	10	143.5	0.13
Pisidium	3	43.1	0.32	20	287.1	0.27
TOTAL BENTHOS	941	13,506.4	100.00	7,440	106,788.3	100.00

WATERWAY= SALT CR.,
LOCATION= BUSSE DAM,
STATION=
and DATE= 17AUG05

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Oligochaeta	265	3,803.6	5.59	179	2,569.2	17.65
Hydracarina	0	0.0	0.00	2	28.7	0.20
Centroptilum	0	0.0	0.00	2	28.7	0.20
Caenis	35	502.4	0.74	26	373.2	2.56
Enallagma	0	0.0	0.00	4	57.4	0.39
Cheumatopsyche	0	0.0	0.00	1	14.4	0.10
Hydroptila	35	502.4	0.74	0	0.0	0.00
Oxyethira	0	0.0	0.00	6	86.1	0.59
Oecetis	10	143.5	0.21	4	57.4	0.39
Dubiraphia	0	0.0	0.00	2	28.7	0.20
Berosus	0	0.0	0.00	1	14.4	0.10
Ceratopogonidae	5	71.8	0.11	14	200.9	1.38
Procladius	490	7,033.1	10.34	163	2,339.6	16.07
Ablabesmyia mallochi	40	574.1	0.84	0	0.0	0.00
Labrundinia neopilosella	40	574.1	0.84	7	100.5	0.69
Larsia	0	0.0	0.00	15	215.3	1.48
Thienemannimyia grp.	40	574.1	0.84	52	746.4	5.13
Cryptochironomus	615	8,827.3	12.97	133	1,909.0	13.12
Cryptotendipes	0	0.0	0.00	7	100.5	0.69
Dicrotendipes modestus	0	0.0	0.00	7	100.5	0.69
Dicrotendipes simpsoni	0	0.0	0.00	7	100.5	0.69
Polypedilum halterale grp.	490	7,033.1	10.34	44	631.5	4.34
Pseudochironomus	2,205	31,649.0	46.52	118	1,693.7	11.64
Stenochironomus	0	0.0	0.00	7	100.5	0.69
Cladotanytarsus mancus grp.	450	6,459.0	9.49	44	631.5	4.34
Tanytarsus guerlus grp.	0	0.0	0.00	119	1,708.0	11.74
Physa	0	0.0	0.00	3	43.1	0.30
Corbicula fluminea	20	287.1	0.42	47	674.6	4.64
TOTAL BENTHOS	4,740	68,034.5	100.00	1,014	14,554.2	100.00

APPENDIX A - 2005 MACROINVERTEBRATE SAMPLES - RAW DATA SUMMARY - PETITE PONAR DATA

WATERWAY= SALT CR.,
LOCATION= J.F.K. BLVD.,
STATION= CFAR,
and DATE= 01AUG05

TAXA	CFAR		
	#	#/m2	%
Oligochaeta	31	445.0	24.41
Dubiraphia	1	14.4	0.79
Stenelmis	10	143.5	7.87
Procladius	7	100.5	5.51
Thienemannimyia grp.	1	14.4	0.79
Chironomus	3	43.1	2.36
Cryptochironomus	13	186.6	10.24
Dicrotendipes neomodestus	2	28.7	1.57
Dicrotendipes fumidus	24	344.5	18.90
Phaenopsectra obediens grp.	1	14.4	0.79
Polypedilum halterale grp.	2	28.7	1.57
Polypedilum scalaenum grp.	10	143.5	7.87
Pseudochironomus	4	57.4	3.15
Stictochironomus	6	86.1	4.72
Cladotanytarsus mancus grp.	11	157.9	8.66
Corbicula fluminea	1	14.4	0.79
TOTAL BENTHOS	127	1,822.9	100.00

WATERWAY= SALT CR.,
LOCATION= THORNDALE,
STATION=
and DATE= 03AUG05

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Turbellaria	1	14.4	0.07	0	0.0	0.00
Oligochaeta	112	1,607.6	8.18	92	1,320.5	53.80
Baetis intercalaris	5	71.8	0.37	0	0.0	0.00
Tricorythodes	1	14.4	0.07	0	0.0	0.00
Cheumatopsyche	1	14.4	0.07	0	0.0	0.00
Hydroptila	2	28.7	0.15	0	0.0	0.00
Dubiraphia	2	28.7	0.15	1	14.4	0.58
Stenelmis	4	57.4	0.29	0	0.0	0.00
Procladius	13	186.6	0.95	4	57.4	2.34
Thienemannimyia grp.	100	1,435.3	7.30	1	14.4	0.58
Cryptochironomus	451	6,473.3	32.94	26	373.2	15.20
Dicrotendipes neomodestus	75	1,076.5	5.48	1	14.4	0.58
Dicrotendipes fumidus	13	186.6	0.95	1	14.4	0.58
Harnischia	0	0.0	0.00	2	28.7	1.17
Polypedilum halterale grp.	0	0.0	0.00	26	373.2	15.20
Polypedilum illinoense	0	0.0	0.00	1	14.4	0.58
Polypedilum scalaenum grp.	25	358.8	1.83	0	0.0	0.00
Pseudochironomus	13	186.6	0.95	1	14.4	0.58
Stictochironomus	13	186.6	0.95	0	0.0	0.00
Cladotanytarsus mancus grp.	489	7,018.7	35.72	11	157.9	6.43
Tanytarsus	13	186.6	0.95	0	0.0	0.00
Tanytarsus guerlus grp.	25	358.8	1.83	0	0.0	0.00
Corbicula fluminea	11	157.9	0.80	4	57.4	2.34
TOTAL BENTHOS	1,369	19,649.6	100.00	171	2,454.4	100.00

WATERWAY= SALT CR.,
LOCATION= DEVON AVE.,
STATION= 18,
and DATE= 15JUL05

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Oligochaeta	610	8,755.5	33.12	294	4,219.9	84.48
Enallagma	3	43.1	0.16	0	0.0	0.00
Hydroptila	0	0.0	0.00	1	14.4	0.29
Oecetis	0	0.0	0.00	1	14.4	0.29
Dubiraphia	0	0.0	0.00	1	14.4	0.29
Ceratopogonidae	3	43.1	0.16	0	0.0	0.00
Procladius	140	2,009.5	7.60	25	358.8	7.18
Ablabesmyia janta	0	0.0	0.00	1	14.4	0.29
Chironomus	0	0.0	0.00	1	14.4	0.29
Cryptochironomus	163	2,339.6	8.85	5	71.8	1.44
Dicrotendipes modestus	13	186.6	0.71	1	14.4	0.29
Dicrotendipes neomodestus	0	0.0	0.00	1	14.4	0.29
Harnischia	0	0.0	0.00	1	14.4	0.29
Paratendipes	0	0.0	0.00	2	28.7	0.57
Phaenopsectra	13	186.6	0.71	0	0.0	0.00
Polypedilum halterale grp.	277	3,975.9	15.04	1	14.4	0.29
Polypedilum illinoense	0	0.0	0.00	1	14.4	0.29
Polypedilum scalaenum grp.	100	1,435.3	5.43	1	14.4	0.29
Stictochironomus	13	186.6	0.71	2	28.7	0.57
Cladotanytarsus mancus grp.	467	6,703.0	25.35	3	43.1	0.86
Tanytarsus guerlus grp.	37	531.1	2.01	0	0.0	0.00
Corbicula fluminea	3	43.1	0.16	6	86.1	1.72
TOTAL BENTHOS	1,842	26,438.7	100.00	348	4,994.9	100.00

WATERWAY= SALT CR.,
LOCATION= WOLF RD.,
STATION= CFAR,
and DATE= 28JUL05

TAXA	CFAR		
	#	#/m2	%
Oligochaeta	2	28.7	22.22
Stenelmis	1	14.4	11.11
Muscidae	4	57.4	44.44
Pleurocera	2	28.7	22.22
TOTAL BENTHOS	9	129.2	100.00

WATERWAY= W.B. DUPAGE R.,
LOCATION= LAKE ST.,
STATION= 64,
and DATE= 06JUL05

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Oligochaeta	11	157.9	28.21	188	2,698.4	70.68
Zygoptera	0	0.0	0.00	1	14.4	0.38
Cheumatopsyche	0	0.0	0.00	1	14.4	0.38
Procladius	1	14.4	2.56	18	258.4	6.77
Ablabesmyia janta	0	0.0	0.00	2	28.7	0.75
Ablabesmyia mallochi	0	0.0	0.00	2	28.7	0.75
Thienemannimyia grp.	1	14.4	2.56	0	0.0	0.00
Nanocladius distinctus	1	14.4	2.56	4	57.4	1.50
Chironomus	0	0.0	0.00	1	14.4	0.38
Cryptochironomus	6	86.1	15.38	6	86.1	2.26
Dicrotendipes modestus	0	0.0	0.00	2	28.7	0.75
Dicrotendipes simpsoni	11	157.9	28.21	4	57.4	1.50
Glyptotendipes	0	0.0	0.00	22	315.8	8.27
Polypedilum illinoense	0	0.0	0.00	3	43.1	1.13
Polypedilum scalaenum grp.	6	86.1	15.38	1	14.4	0.38
Cladotanytarsus mancus grp.	2	28.7	5.13	1	14.4	0.38
Paratanytarsus	0	0.0	0.00	8	114.8	3.01
Helisoma	0	0.0	0.00	2	28.7	0.75
TOTAL BENTHOS	39	559.8	100.00	266	3,818.0	100.00

WATERWAY= DES PLAINES R.,
LOCATION= LAKE COOK RD.,
STATION= 13,
and DATE= 20JUN05

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Oligochaeta	12	172.2	21.43	530	7,607.2	57.55
Stenacron	0	0.0	0.00	1	14.4	0.11
Anthopotamus myops grp.	1	14.4	1.79	0	0.0	0.00
Dubiraphia	0	0.0	0.00	4	57.4	0.43
Ceratopogonidae	0	0.0	0.00	2	28.7	0.22
Procladius	1	14.4	1.79	4	57.4	0.43
Thienemannimyia grp.	3	43.1	5.36	0	0.0	0.00
Chironomus	0	0.0	0.00	331	4,750.9	35.94
Cryptochironomus	2	28.7	3.57	8	114.8	0.87
Dicrotendipes	4	57.4	7.14	0	0.0	0.00
Harnischia	3	43.1	5.36	20	287.1	2.17
Paralauterborniella nigrohalteralis	0	0.0	0.00	4	57.4	0.43
Paratendipes	0	0.0	0.00	4	57.4	0.43
Polypedilum illinoense	0	0.0	0.00	4	57.4	0.43
Polypedilum scalaenum grp.	8	114.8	14.29	0	0.0	0.00
Cladotanytarsus mancus grp.	1	14.4	1.79	0	0.0	0.00
Cladotanytarsus vanderwulpi grp.	11	157.9	19.64	0	0.0	0.00
Tanytarsus guerlus grp.	6	86.1	10.71	0	0.0	0.00
Helisoma	0	0.0	0.00	1	14.4	0.11
Corbicula fluminea	1	14.4	1.79	2	28.7	0.22
Musculium	1	14.4	1.79	0	0.0	0.00
Pisidium	2	28.7	3.57	6	86.1	0.65
TOTAL BENTHOS	56	803.8	100.00	921	13,219.4	100.00

WATERWAY= DES PLAINES R.,
LOCATION= IRVING PARK RD.,
STATION= CFAR,
and DATE= 01AUG05

TAXA	CFAR		
	#	#/m2	%
Oligochaeta	369	5,296.4	81.82
Helobdella triserialis	1	14.4	0.22
Mooreobdella microstoma	11	157.9	2.44
Procladius	2	28.7	0.44
Bithynia tentaculata	44	631.5	9.76
Amnicola	3	43.1	0.67
Pleurocera	1	14.4	0.22
Sphaerium	20	287.1	4.43
TOTAL BENTHOS	451	6,473.3	100.00

WATERWAY= DES PLAINES R.,
LOCATION= OGDEN AVE.,
STATION= 22,
and DATE= 25JUL05

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Turbellaria	10	143.5	2.39	0	0.0	0.00
Oligochaeta	37	531.1	8.83	172	2,468.8	74.46
Helobdella triserialis	5	71.8	1.19	0	0.0	0.00
Gammarus	0	0.0	0.00	1	14.4	0.43
Baetis intercalaris	11	157.9	2.63	0	0.0	0.00
Tricorythodes	211	3,028.5	50.36	1	14.4	0.43
Cheumatopsyche	10	143.5	2.39	0	0.0	0.00
Hydroptila	1	14.4	0.24	0	0.0	0.00
Stenelmis	9	129.2	2.15	0	0.0	0.00
Thienemannimyia grp.	6	86.1	1.43	0	0.0	0.00
Thienemanniella similis	2	28.7	0.48	0	0.0	0.00
Cricotopus sylvestris grp.	1	14.4	0.24	0	0.0	0.00
Cryptochironomus	1	14.4	0.24	12	172.2	5.19
Polypedilum flavum	4	57.4	0.95	1	14.4	0.43
Polypedilum illinoense	1	14.4	0.24	0	0.0	0.00
Polypedilum scalaenum grp.	17	244.0	4.06	2	28.7	0.87
Pleurocera	17	244.0	4.06	0	0.0	0.00
Ferrissia	1	14.4	0.24	0	0.0	0.00
Corbicula fluminea	72	1,033.4	17.18	41	588.5	17.75
Pisidium	3	43.1	0.72	1	14.4	0.43
TOTAL BENTHOS	419	6,014.0	100.00	231	3,315.6	100.00

APPENDIX A - 2005 MACROINVERTEBRATE SAMPLES - RAW DATA SUMMARY - PETITE PONAR DATA

WATERWAY= DES PLAINES R.,
LOCATION= MATERIAL SERVICE RD.,
STATION= 91,
and DATE= 18AUG05

TAXA	CENTER			SIDE		
	#	#/m2	%	#	#/m2	%
Turbellaria	1	14.4	1.92	--	--	--
Urnatella gracilis	1	14.4	1.92	--	--	--
Oligochaeta	38	545.4	73.08	--	--	--
Baetis intercalaris	1	14.4	1.92	--	--	--
Cheumatopsyche	1	14.4	1.92	--	--	--
Stenelmis	2	28.7	3.85	--	--	--
Polypedilum flavum	2	28.7	3.85	--	--	--
Polypedilum scalaenum grp.	6	86.1	11.54	--	--	--
TOTAL BENTHOS	52	746.4	100.00	--	--	--