TABLE 1
Fish and Benthic Invertebrate Sampling Locations, 1993

REACH	STATION	LOCATION	DATE SAMPLED
1	1	Lincolnshire, I-294 near Old Mill Road	9-10-93
1	2	Deerfield, Greenwood Ave at Wilmont Road	8-26-93
1	3	Techny, north and south of Techny Road bridge	8-26-93
1	4	Golf, north of Golf Road bridge	8-26-93
2A	1	Glenview, north of Golf Road bridge	8-12-93
2A	2	Glenview, north of Glenview Road bridge	8-26-93
2B	1	Waukegan, between Atkinson Road & IL Route 137.	8-20-93
2B	2	Lake Forest, north of IL Route 60	8-20-93
2B	3	Lake Forest, north and south of Old Mill Road bridge	8-20-93
2B	4	Deerfield, at Warwick Road pump house	8-20-93
2B	5	Northbrook, north of Dundee Road bridge	8-20-93
2B	6	Northfield, north and south of Winnetka Road bridge	9-10-93
3	1	Lake Forest, west of Laurel Avenue, north of foot bridge	8-12-93
3	2	Lake Forest, north of Old Elm Road bridge	8-12-93
3	3	Winnetka, north of Winnetka Road bridge to weir	8-12-93
5A	1	Morton Grove, north of Oakton Street bridge	9-10-93
5A	2	Chicago, west of Pulaski Avenue bridge, at St. Lucas Cemetary	9-10-93

Sources: U.S. Fish and Wildlife Service and U.S. Army Corps of Engineers, 1993.

TABLE 2
Fishes Known to Occur in Chicago Waterways

ORDER CLUPEIFORMES	
Clupeidae - herrings	
Alewife	*Alosa pseudoharengus*
Gizzard shad	*Dorosoma cepedianum*
ORDER CYPRINIFORMES	
Cyprinidae - carps and minnows	
Bluntnose minnow	*Pimephales notatus*
Bullhead minnow	*Pimephales vigilax*
Carp	*Cyprinus carpio*
Creek chub	*Semotilus atromaculatus*
Emerald shiner	*Notropis atherinoides*
Fathead minnow	*Pimephales promelas*
Golden shiner	*Notemigonus crysoleucas*
Goldfish	*Carassius auratus*
Longnose dace	*Rhinichthys cataractae*
Pugnose minnow	*Notropis emiliae*
Sand shiner	*Notropis stramineus*
Silvery minnow	*Hybognathus sp.*
Spottail shiner	*Notropis hudsonius*
Carp x goldfish hybrid	
Catostomidae - suckers	
Black buffalo	*Ictiobus niger*
Quillback	*Carpiodes cyprinus*
Shorthead redhorse	*Moxostoma macrolepidotum*
White sucker	*Catostomus commersoni*
Cobitidae - loaches	
Oriental weatherfish	*Misgurnus anguillicaudatus*
ORDER SILURIFORMES	
Ictaluridae - bullhead catfishes	
Black bullhead	*Ameiurus melas*
Yellow bullhead	*Ameiurus natalis*
Channel catfish	*Ictalurus punctatus*
Madtom catfish	*Noturus sp.*
ORDER SALMONIFORMES	
Esocidae - pikes	
Grass pickerel	*Esox americanus vermiculatus*
Northern pike	*Esox lucius*
Umbridae - mudminnows	
Central mudminnow	*Umbra limi*
Osmeridae - smelts	
Rainbow smelt	*Osmerus mordax*
Salmonidae - trouts	
Brown trout	*Salmo trutta*
Chinook salmon	*Oncorhynchus tshawytscha*
Coho salmon	*Oncorhynchus kisutch*
Rainbow trout	*Oncorhynchus mykiss*
ORDER PERCOPSIFORMES	
Percopsidae - trout-perches	
Trout-perch	*Percopsis omiscomaycus*
ORDER GADIFORMES	
Gadidae - cods	
Burbot	*Lota lota*
ORDER ATHERINIFORMES	
Poeciliidae - livebearers	
Western mosquitofish	*Gambusia affinis*
ORDER GASTEROSTEIFORMES	
Gasterosteidae - sticklebacks	
Ninespine stickleback	*Pungitius pungitius*
Threespine stickleback	*Gasterosteus aculeatus*
ORDER SCORPAENIFORMES	
Cottidae - sculpins	
Mottled sculpin	*Cottus bairdi*
ORDER PERCIFORMES	
Centrarchidae - sunfishes	
Black crappie	*Pomoxis nigromaculatus*
Bluegill	*Lepomis macrochirus Rafinesque*
Green sunfish	*Lepomis cyanellus Rafinesque*
Largemouth bass	*Micropterus salmoides*
Orangespotted sunfish	*Lepomis humilis*
Pumpkinseed	*Lepomis gibbosus*
Rock bass	*Ambloplites rupestris*
Smallmouth bass	*Micropterus dolomieu*
White crappie	*Pomoxis annularis*
Green sunfish x pumpkinseed hybrid	
Green sunfish x bluegill hybrid	
Pumpkinseed x bluegill hybrid	
Percidae - perches	
Iowa darter	*Etheostoma exile*
Johnny darter	*Etheostoma nigrum*
Yellow perch	*Perca flavescens*
Percichthyidae - temperate perches	
White bass	*Morone chrysops*
White perch	*Morone americana*
Yellow bass	*Morone mississippiensis*
Sciaenidae - drums	
Freshwater drum	*Aplodinotus grunniens*

Source: U.S. Fish and Wildlife Service, 1994.

TABLE 3
Stream Channel Morphology and Cover Characteristics of Chicago Waterways, 1993

Reach	Station	Channel Modification	Bank Height (feet)	Slope (Degrees)	Bank Stabilized	Bank Composition	Channel Substrate	In-Stream Cover*	Percentage of Canopy
1	Duffy Lane	Old Channelization	10	30	No	Clay	Silt-mud	4,8	50%
1	Dundee Road	Old Channelization	10	25	No	Clay	Silt-mud	6,7	30%
1	Techny Road	Old Channelization	4	35	No	Clay	Gravel, Silt-mud	4,2,8	50%
1	Glenview Road	Old Channelization	10	35	No	Rock, Clay	Gravel	2,4,7	70%
1	Greenwood Road	Old Channelization	8	45	No	Clay	Gravel, Sand, Silt	4,8 & Concrete	60%
1	Golf Road	Old Channel w/Rock	5	30	Yes	Silt & Rock	Silt-mud, Gravel	7,8	20%
2A	Near Glenview Road	Old Channelization	3,12	2,45	No	Clay, Sand	Silt-mud, Sand	2,4,8	60%
2B	Atkinson Road	Old Channelization	4	80	No	Clay w/rock	Gravel, Sand, Silt	2,4,5,6,7,8	100%
2B	IL Route 60	Old Channelization	8	35	No	Clay, Silt	Silt-mud	2,4,5,6,7	75%
2B	Old Mill Road	Old Channelization	8	35	R bank only	Clay	Gravel, Sand	1,2,4,5,6,7	100%
2B	Warwick Road	Old Channelization	9	45	No	Clay w/gravel	Gravel, Silt-mud	1,2,4,6,7	90%
2B	Dundee Road	Old Channelization	6	30	No	Clay	Silt-mud	4,8,6, & Bricks	80%
2B	Winnetka Road	Old Channelization	2,5	7	No	Clay, Silt	Gravel, Silt-mud	None	75%
3	1/2 mile north of Route 176	Old Channelization	10,4	20,5	No	Clay, Sand	Sand, Gravel, Silt-mud	4,5,6,8 & Concrete	60%
3	Laurel Avenue	Old Channelization	8	30	No	Clay, Sand	Gravel, Sand	2,4,6,7	90%
3	Old Elm Road	Old Channelization	5	45	No	Clay, Sand, Gravel	Gravel, Silt-mud	2,4,6,7	75%
3	Winnetka Road	Old Channelization	9	30	No	Clay	Silt-mud	2,4,8	50%
4	Touhy Avenue	Old Channelization	15	35	No	Clay	Silt, compacted soil	2,4,8	25%
5A	Oakton Street	Old Channelization	3,10	35,5	No	Clay, Silt	Silt-mud, Gravel	2,4,5,6,8	75%
5A	Foster @ Pulaski	Old Channel with stone walls	4	55	No	Clay, Silt	Silt-mud, Gravel, Logs	2,4,5,6,7,8	60%
5A	Central Avenue	Old Channelization	3,30	35,5	No	Clay	Silt-mud	4,6,8	50%
5A	Confluence w/NSC	Old Channel with concrete walls	5	35	Yes	Clay	Silt-mud	2,4,6,8, & Trash	50%
5B	Lawrence Avenue	Old Channelization	10	30	Yes	Clay, Silt	Silt-mud	7,8	20%
5B	Wilson Avenue	Old Channelization	15-20	85	Yes	Clay	Silt-mud	Piers	10%
5B	Division Street	Old Channelization	8	90	Yes	Silt, Sheet Pilings	Silt-mud	None	0
7	Ashland Avenue	Old Channelization	15	25	No	Clay, Rock	Silt-mud	8	5%
8	Western Avenue	Old Channelization	8	90	Yes	Silt, Sheet Pilings	Silt-mud	None	0
8	Pulaski Avenue	Old Channelization	40	30	No	Clay, Rock, Gravel Sand	Silt-mud	None	0
8	IL Route 171 @ US 55	Old Channelization	10	30	Yes	Rock, Clay	Unknown	Tree limbs	0
9A	IL Route 83	Old Channelization	10	90	Yes	Rock	Unknown	3	15%
9B	16th Street bridge	Old Channelization	10	90	Yes	Rock	Unknown	None	5%
9B	Stevens Street bridge	Old Channel, Mining & Bank Stabilization	10-15	90	Yes	Rock	Unknown	3,7	0
10A	Kedzi Road	Old Channel & Bank Stabilization	15	70	Yes	Rock	Claypan, compacted soil	1,2,3,7	10%
10A	IL Route 7/ 86th Street	Old Channel & Bank Stabilization	>15	50	Yes	Rock, Clay	Silt-mud	2,7,8	5%
10A	West of IL Route 83	Old Channel, Mining & Bank Stabilization	10	80	Yes	Rock Wall	Silt-mud	None	0
10B	At Calumet Exp.	Old Channel & Turning Basin	10-15	30	Yes	Clay, Sand, Rock	Silt-mud	4	10%
10B	Halsted Street bridge	Old Channelization	6	90	Yes	Sheet Pilings	Silt-mud	3,7	5%
10C	Turning Basin #1	Old Channelization	10	90	Yes	Rock, Sheet Pilings	Silt-mud, Sand	None	0

*CODES: 1=BOULDERS, 2=UNDERCUT BANK, 3=ROCK LEDGE, 4=SUBMERGED TREE ROOTS, 5=BRUSH JAMS, 6=SUBMERGED LOGS, 7=AQUATIC VEGETATION, 8=SUBMERGED TERRESTRIAL VEGETATION

Source: U.S. Fish and Wildlife Service, 1993.

TABLE 4
Illinois Natural Areas Inventory Sites within the Chicago Waterways Study Corridor

Site Name (general location)	Reach	County	Acreage	Unique Features
Dolton Ave Prairie (Dolton Avenue @ Torrence, Dolton, IL.)	10B	Cook	50	wet-mesic prairie
Burnham Prairie (146th Street and Burnham Avenue)	10B	Cook	79	dry-mesic prairie wet-mesic prairie
Calumet City Prairie (146th Street @ Torrence Avenue)	10B	Cook	133	dry-mesic sand prairie mesic prairie
The Bowl (McCarthy Road @ Route 83, Lemont)	9B	Cook	18	stream
Lemont Geological Area (New Road @ DesPlaines River, Lemont)	9B	DuPage/Cook	49	outstanding fossils
Lemont Bluff Geological Area (McCarthy @ IL Route 83, Lemont)	9B	Cook	25	unique rock formations
Moraine Valley Community College Nature Area	10A	Cook	40	wetland and prairie
Little Red Schoolhouse Nature Center (95th Street @ Flavin Road)	9A	Cook	320	marsh
Chicago Ridge Prairie (Central Avenue @ 105th Street)	10A	Cook	29	mesic gravel prairie
Worth Outdoor Classroom (115th Avenue @ Ridgeland)	10A	Cook	2.3	marsh
Oak Lawn Prairie (Central Ave @ 111th Street)	10A	Cook	34	mesic gravel prairie
Lake Calumet	10C	Cook	3145	outstanding avi-fauna, marsh systems
Powderhorn Lake (Burnham Avenue @ Brainard Avenue)	10B	Cook	222	marsh, sand prairie
Santa Fe Prairie	9A	Cook	11	mesic gravel prairie
Reavis High School Natural Area	9A	Cook	4	—
Edgebrook Flatwoods (Devon @ Caldwell, Chicago)	5A	Cook	70	sand flatwoods
Glencoe Balsam Poplar Site	3	Cook	4	unique trees
130th Street marsh	10C	Cook		breeding marsh birds
Calumet Sedge Meadow (Lake Calumet @ 96th Street)	10C	Cook		sedge meadow
Clayton Smith Forest Preserve (Touhy @ Caldwell, Chicago & Niles)	5A	Cook		—
Indigo Oak Openings (Dempster @ Waukegan Roads, Morton Grove)	5A	Cook		—
Miami Woods Prairie (Oakton Street @ Caldwell Avenue, Morton Grove)	5A	Cook		prairie remnant
Riverdale Marsh Heron Colony (Halsted @ 138th Street)	10B	Cook		heron colony
Sauganash Prairie (Bryn Mawr Ave @ Pulaski, Chicago)	5A	Cook		prairie remnant
Somme Prairie Grove (Dundee @ Waukegan Roads, Northbrook)	1	Cook		prairie/savanna remnant
Wayside Prairie (Lehigh @ Dempster, Morton Grove)	5A	Cook		prairie remnant
Wolf Lake (114th Street @ S. State Street, Chicago)	10C	Cook		bird habitat
McGinnis Slough (143rd & IL Route 45)	10A	Cook		bird habitat
Middle Fork Savanna	2B	Lake	477	mesic savanna
Waterfall Glen (Argonne Labs property)	9B	DuPage	1185	dolomite cliff community
Getz Property (Everett at Riverwoods Roads)	1	Lake	15	wetlands
Barat Ravine	3	Lake	52	dry-mesic forest, bluff community
McCormick Nature Preserve	3	Lake	135	dry-mesic forest, bluff community
Berkeley Prairie	2B	Lake	18	mesic prairie
Lake Forest High School Natural Area	2B	Lake	16	stream
Oak Grove White Fringed Orchid site	2B	Lake	3	sedge meadow, mesic prairie, orchids
McLaughlin Prairie	3	Lake	21	mesic prairie
Shaw Prairie	3	Lake	29	sedge meadow
Tangley Oaks	3	Lake	83	dry-mesic upland forest
Crabtree Farm Woods	3	Lake	37	dry-mesic upland forest
Romeoville Prairie	9B	Will	200	dolomite prairie
Lockport Prairie East	9B	Will	53	dolomite prairie
Material Service Prairie	9B	Will	72	mesic dolomite prairie
Long Run Seep	9B	Will	120	seep

Source: Illinois Nature Preserves Commission, 1994.

TABLE 5
Location and Size of Illinois Nature Preserves within Chicago Waterways Study Corridor

Illinois Nature Preserve	County	Acres	Dedicated	Reach
Somme Prairie	Cook	70	1984	1
Liberty Prairie	Lake	47.1	1990	2B
Oak Openings	Lake	16.1	1990	2B
Hybernia	Lake	27	1990	2B
Highmoor Park	Lake	10	1991	3
Skokie River	Lake	100	1992	3
Morton Grove Prairie	Cook	1.3	1979	5A
Cranberry Slough	Cook	372	1965	9A
Paw Paw Woods	Cook	105	1965	9A
Black Partridge Woods	Cook	80	1965	9B
Lockport Prairie	Will	254	1983	9B
O'Hara Woods	Will	70	1982	9B
Romeoville Prairie	Will	108.4	1984	9B
Cap Sauers Holdings	Cook	1,520	1965	10A
Palos Fen	Cook	70	1984	10A
Sagawau Canyon	Cook	12	1984	10A
TOTAL ACRES		**2,862.9**		

Source: Illinois Nature Preserves Commission, 1994.

TABLE 6
Forest Preserve District Lands Within or Contiguous to Chicago Waterways Study Corridor

Reach	River Miles	Acres*
1	14	454
2A	3	650
2B	21	995
3	17	2,243
4	17.6	0
5A	10	1,800
5B	7.2	0
6	1.4	0
7	3.9	0
8	8.2	80
9A	10	6,635
9B	12.5	3,961
10A	15.9	7,190
10B	7.1	600
10C	6.8	249
TOTALS	**156**	**24,857**

*Includes forest preserve lands adjacent to the river, but not in direct contact with it.
Source: U.S. Fish and Wildlife Service, 1994.

TABLE 7
State and Federally Listed Threatened and Endangered Species in or Near Study Corridor

SPECIES	STATUS[a]	REACH 1	2A	2B	3	4	5A	5B	6	7	8	9A&B	10A,B&C
PLANTS													
American Slough Grass *Beckmannia syzigachne*	SE	X			X		X[b]						
Beaked Spikerush *Eleocharis rostellata*	ST											X	
Crawe's Sedge *Carex crawei*	ST						X					X	
Downy Solomon's Seal *Polygonatum pubescens*	ST			X			X						
Dwarf Raspberry *Rubus pubescens*	ST			X	X[b]		X[b]						
Ear-Leafed Foxglove *Tomanthera auriculata*	ST											X	
Eastern Prairie Fringed Orchid *Platanthera leucophaea*	SE FT			X	X[b]		X[b]						
Grass Pink Orchid *Calopogon tuberosus*	SE											X	
Ground Juniper *Juniperus communis*	ST				X[c]								
Hairy White Violet *Viola incognita*	SE						X						
Lakeside Daisy *Actinea herbacea*	SE FT											X	
Leafy Prairie Clover *Petalostemum foliosum*	SE FE											X	
Mountain Blue-eyed Grass *Sisyrinchium montanum*	SE			X			X						
Oval Milkweed *Asclepias ovalifolia*	SE	X											
Seaside Crowfoot *Ranunculus cymbalaria*	SE	X											
Slender Bog Arrowgrass *Triglochin palustris*	SE											X	
Slender Sandwort *Arenaria patula*	ST											X	
Small Sundrops *Oenothera perennis*	SE						X						
Spreading Sedge *Carex laxiculmis*	ST				X[b]		X[b]						
White Lady's Slipper *Cypripedium candidum*	SE											X	X
REPTILES													
Spotted Turtle *Clemmys guttata*	SE											X	
BIRDS													
Black-crowned Night Heron *Nycticorax nycticorax*	SE												X
Black Tern *Chlidonias niger*	SE												X
Common Moorhen *Gallinula chloropus*	ST											X	X
Great Egret *Casmerodius albus*	ST												X

(Continued on next page)

TABLE 7 (Continued)
State and Federally Listed Threatened and Endangered Species in or Near Study Corridor

SPECIES	STATUS[a]	REACH 1	2A	2B	3	4	5A	5B	6	7	8	9A&B	10A,B&C
King Rail *Rallus elegans*	ST											X	
Least Bittern *Ixobrychus exilis*	SE											X	
Peregrine Falcon *Falco peregrinus*	SE FE			X									
Pied-billed Grebe *Podilymbus podiceps*	ST											X	X
Veery *Catharus fuscescens*	ST												X
Yellow-headed Blackbird *Xanthocephalus xanthocephalus*	SE												X
FISHES													
Iowa Darter *Etheostoma exile*	SE	X											
INSECTS													
Hine's Emerald Dragonfly *Somatochlora hineana*	SE FE											X	
MAMMALS													
River Otter *Lutra canadensis*	SE											X	X

[a]SE = State Endangered; ST = State Threatened; FE = Federally Endangered; FT = Federally Threatened

Source: Illinois Department of Natural Resources Natural Heritage Database, 1994, except Ruederbusch and Green, 1993(b); Schwartz and Thomas, 1993(c).

TABLE 8
Fishes Collected from Upper Reaches of Chicago Waterways, 1993

SPECIES		REACH:	3	3	3	2A	2A	2B	2B	2B	2B	2B	2B	1	1	1	1	5A	5A	Totals	Percentage of Total
		STATION:	1	2	3	1	2	1	2	3	4	5	6	1	2	3	4	1	2		
ICTALURIDAE																					
Black Bullhead	*Ameiurus melas*		—	—	55	—	1	—	—	1	—	—	—	—	—	—	—	—	—	57	12.72%
Madtom Catfish	*Noturus sp.*		—	—	—	—	—	—	1	—	—	—	—	1	—	—	—	—	—	2	0.44%
Yellow Bullhead[T]	*Ameiurus natalis*		—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1	0.22%
CENTRARCHIDAE																					
Bluegill	*Lepomis macrochirus*		—	1	4	1	—	—	12	5	—	3	13	4	15	—	—	—	—	58	12.95%
Green Sunfish[T]	*Lepomis cyanellus*		—	3	—	—	—	—	1	8	5	1	42	2	54	3	—	—	—	119	26.56%
Largemouth Bass	*Micropterus salmoides*		2	1	1	—	1	—	4	1	1	1	4	—	7	—	—	—	—	23	5.13%
Pumpkinseed	*Lepomis gibbosus*		—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	1	0.22%
Sunfish	*Lepomis YOY*		—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	0.22%
CYPRINIDAE																					
Fathead Minnows[T]	*Pimephales promelas*		—	4	—	—	—	—	—	1	1	3	2	—	40	—	—	—	—	51	11.38%
Minnow	*Cyprinidae*		—	—	—	—	—	—	—	9	2	3	—	—	33	1	—	—	—	48	10.71%
Bluntnose Minnows[T]	*Pimephales notatus*		—	—	—	—	—	—	—	—	—	—	—	—	5	—	—	—	—	5	1.12%
Bullhead Minnows	*Pimephales vigilax*		—	—	1	—	—	—	—	—	—	—	5	—	—	—	—	—	—	6	1.34%
Pugnose Minnows	*Notropis emiliae*		—	—	—	—	—	—	—	—	—	—	—	—	2	—	—	—	—	2	0.45%
Carp[T]	*Cyprinus carpio*		4	9	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	14	3.13%
Emerald Shiner	*Notropis atherinoides*		—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	1	0.22%
Golden Shiner[T]	*Notemigonus crysoleucas*		—	—	2	—	1	—	—	—	—	—	5	—	8	1	—	—	—	17	3.79%
UMBRIDAE																					
Central Mudminnows[T]	*Umbra limi*		—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	1	0.22%
CLUPEIDAE																					
Gizzard Shad	*Dorosoma cepedianum*		—	—	—	—	—	—	—	—	—	—	4	—	3	—	—	—	—	7	1.56%
PERCIDAE																					
Iowa Darter	*Etheostoma exile*		—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	1	0.22%
POECILIIDAE																					
Mosquitofish	*Gambusia affinis*		—	—	—	—	—	—	—	—	2	—	—	—	1	—	—	—	—	3	0.67%
ESOCIDAE																					
Northern Pike	*Esox lucius*		—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	1	0.22%
CATOSTOMIDAE																					
White Sucker[T]	*Catostomus commersoni*		—	—	—	—	—	—	—	—	1	1	26	—	1	—	—	—	—	29	6.47%
TOTALS:			**6**	**19**	**63**	**3**	**3**	**0**	**18**	**26**	**13**	**12**	**102**	**8**	**170**	**5**	**0**	**0**	**0**	**448**	**100.00%**

T = tolerant species

Sources: U.S. Fish and Wildlife Service and U.S. Army Corps of Engineers, 1993.

TABLE 9
Fishes Collected from Reaches 1, 2B and 3, North Branch Chicago River, 1976.

FISHES	REACH: 1 STATION: 51	2B 52	3 53	TOTAL NUMBER	PERCENTAGE OF TOTAL
CYPRINIDAE					
Carp	—	—	18	18	7
Goldfish	—	—	26	26	10
Fathead minnow	29	2	8	39	15
Carp x goldfish (hybrid)	—	—	8	8	3
ICTALURIDAE					
Black bullhead	—	—	16	16	6
CENTRARCHIDAE					
Green sunfish	30	8	56	94	37
Pumpkinseed	7	—	—	7	3
Orangespotted sunfish	—	—	2	2	1
Bluegill	2	2	35	39	15
Largemouth bass	1	—	4	5	2
Black crappie	—	—	2	2	1
NUMBER OF INDIVIDUALS	69	12	175	256	100%
NUMBER OF SPECIES	5	3	10	11	—

Source: W.U. Brigham, D.A. McCormick, M.J. Wetzel, The watersheds of Northeastern Illinois: quality of the aquatic environment based upon water quality and fishery data, 1978.

TABLE 10
Fishes Collected from the North Branch Chicago River and its Tributaries, 1980.

Reach	Station No.	Station Name	Stream*	Sample Date	Species	Number Collected
1	280	DEERFIELD RD	W.FK.NBCR	6/13	FATHEAD MINNOW	1
1	280	DEERFIELD RD	W.FK.NBCR	6/13	GREEN SUNFISH	5
1	51	DUNDEE RD	W.FK.NBCR	7/3	FATHEAD MINNOW	1
1	51	DUNDEE RD	W.FK.NBCR	7/3	GREEN SUNFISH	10
1	51	DUNDEE RD	W.FK.NBCR	7/3	LARGEMOUTH BASS	4
1	51	DUNDEE RD	W.FK.NBCR	11/19	GOLDFISH	6
1	51	DUNDEE RD	W.FK.NBCR	11/19	GOLDEN SHINER	2
1	51	DUNDEE RD	W.FK.NBCR	11/19	FATHEAD MINNOW	1
1	51	DUNDEE RD	W.FK.NBCR	11/19	GREEN SUNFISH	1
1	51	DUNDEE RD	W.FK.NBCR	11/19	LARGEMOUTH BASS	1
2	53	W. FRONTAGE RD	SKOKIE R.	11/19	LARGEMOUTH BASS	1
2A	285	GLENVIEW RD	NBCR	7/1	GREEN SUNFISH	4
2A	285	GLENVIEW RD	NBCR	11/18	CARP	1
2A	285	GLENVIEW RD	NBCR	11/18	FATHEAD MINNOW	2
2A	285	GLENVIEW RD	NBCR	11/18	GREEN SUNFISH	4
2B	281	HALF DAY RD	M.FK.NBCR	6/13	BLUNTNOSE MINNOW	2
2B	281	HALF DAY RD	M.FK.NBCR	6/13	GREEN SUNFISH	65
2B	281	HALF DAY RD	M.FK.NBCR	6/13	BLUEGILL	6
2B	281	HALF DAY RD	M.FK.NBCR	6/13	GREEN X PUMPKINSEED	1
2B	282	LAKE COOK RD	M.FK.NBCR	7/3	GOLDFISH	1
2B	282	LAKE COOK RD	M.FK.NBCR	7/3	GOLDEN SHINER	6
2B	282	LAKE COOK RD	M.FK.NBCR	7/3	FATHEAD MINNOW	5
2B	282	LAKE COOK RD	M.FK.NBCR	7/3	GREEN SUNFISH	11
2B	282	LAKE COOK RD	M.FK.NBCR	7/3	BLUEGILL	1
2B	282	LAKE COOK RD	M.FK.NBCR	7/3	LARGEMOUTH BASS	14
2B	282	LAKE COOK RD	M.FK.NBCR	11/19	GOLDFISH	1
2B	282	LAKE COOK RD	M.FK.NBCR	11/19	WHITE SUCKER	7
3	283	HALF DAY RD	SKOKIE R.	6/13	GOLDFISH	2
3	283	HALF DAY RD	SKOKIE R.	6/13	CARP	12
3	283	HALF DAY RD	SKOKIE R.	6/13	CARP X GOLDFISH	3
3	283	HALF DAY RD	SKOKIE R.	6/13	FATHEAD MINNOW	1
3	283	HALF DAY RD	SKOKIE R.	6/13	BLACK BULLHEAD	4
3	283	HALF DAY RD	SKOKIE R.	6/13	GREEN SUNFISH	16
3	283	HALF DAY RD	SKOKIE R.	6/13	BLUEGILL	1
3	284	LAKE COOK RD	SKOKIE R.	7/3	NO FISH	0
3	284	LAKE COOK RD	SKOKIE R.	7/3	GREEN SUNFISH	1
3	284	LAKE COOK RD	SKOKIE R.	11/18	GREEN SUNFISH	35
3	53	W. FRONTAGE RD	SKOKIE R.	11/19	GOLDEN SHINER	1
3	53	W. RONTAGE RD	SKOKIE R.	11/19	BLACK BULLHEAD	1
3	53	W. FRONTAGE RD	SKOKIE R.	11/19	GREEN SUNFISH	18
3	53	W. FRONTAGE RD	SKOKIE R.	11/19	PUMPKINSEED	1
3	53	W. FRONTAGE RD	SKOKIE R.	11/19	BLUEGILL	2
5A	286	DEMPSTER ST	NBCR	7/11	CARP	1
5A	287	ALBANY AVE	NBCR	7/3	NO FISH	0
5A	287	ALBANY AVE	NBCR	7/3	NO FISH	0
5A	286	DEMPSTER ST	NBCR	11/18	PUMPKINSEED	5
5A	287	ALBANY AVE	NBCR	11/18	FATHEAD MINNOW	1

*NBCR = NORTH BRANCH OF THE CHICAGO RIVER, W. FK. = WEST FORK, M. FK. = MIDDLE FORK.

Source: The Metropolitan Sanitary District of Greater Chicago, Annual Report No. 84-2-B, 1980.

TABLE 11
Fishes collected from the North Branch Chicago River and its forks by MWRDGC in 1981

Reach	Station No.	Station Name	Stream*	Sample Date	Species	Number Collected
1	290	HALF DAY RD	W.FK.NBCR	7/2	FATHEAD MINNOW	2
1	290	HALF DAY RD	W.FK.NBCR	7/2	BLUEGILL	1
1	289	HALF DAY RD	W.FK.NBCR	7/2	LARGEMOUTH BASS	8
1	51	DUNDEE RD	W.FK.NBCR	7/14	CARP X GOLDFISH	1
1	51	DUNDEE RD	W.FK.NBCR	7/14	GOLDEN SHINER	3
1	51	DUNDEE RD	W.FK.NBCR	7/14	GREEN SUNFISH	5
1	51	DUNDEE RD	W.FK.NBCR	7/14	BLUEGILL	1
1	51	DUNDEE RD	W.FK.NBCR	7/14	LARGEMOUTH BASS	5
1	51	DUNDEE RD	W.FK.NBCR	7/14	CARP	1
1	51	DUNDEE RD	W.FK.NBCR	7/14	GOLDEN SHINER	2
1	51	DUNDEE RD	W.FK.NBCR	7/14	GREEN SUNFISH	8
1	51	DUNDEE RD	W.FK.NBCR	7/14	BLUEGILL	2
1	51	DUNDEE RD	W.FK.NBCR	7/14	LARGEMOUTH BASS	1
1	51	DUNDEE RD	W.FK.NBCR	11/19	GOLDEN SHINER	2
1	51	DUNDEE RD	W.FK.NBCR	11/19	FATHEAD MINNOW	1
1	51	DUNDEE RD	W.FK.NBCR	11/19	GREEN SUNFISH	32
2A	285	GLENVIEW RD	NBCR	7/16	CARP	2
2A	285	GLENVIEW RD	NBCR	7/16	FATHEAD MINNOW	8
2A	285	GLENVIEW RD	NBCR	7/16	GREEN SUNFISH	13
2A	285	GLENVIEW RD	NBCR	7/16	NO FISH	0
2A	285	GLENVIEW RD	NBCR	7/16	LARGEMOUTH BASS	3
2A	285	GLENVIEW RD	NBCR	7/16	BLACK CRAPPIE	1
2A	285	GLENVIEW RD	NBCR	7/16	FATHEAD MINNOW	2
2A	285	GLENVIEW RD	NBCR	7/16	NO FISH	0
2A	285	GLENVIEW RD	NBCR	11/12	GREEN SUNFISH	15
2A	285	GLENVIEW RD	NBCR	11/12	PUMPKINSEED	1
2A	285	GLENVIEW RD	NBCR	11/12	GREEN SUNFISH	11
2B	281	HALF DAY RD	M.FK.NBCR	6/23	GOLDEN SHINER	2
2B	281	HALF DAY RD	M.FK.NBCR	6/23	FATHEAD MINNOW	3
2B	281	HALF DAY RD	M.FK.NBCR	6/23	BLACK BULLHEAD	1
2B	281	HALF DAY RD	M.FK.NBCR	6/23	GREEN SUNFISH	30
2B	281	HALF DAY RD	M.FK.NBCR	6/23	BLUEGILL	30
2B	281	HALF DAY RD	M.FK.NBCR	6/23	GREEN X BLUEGILL	1
2B	281	HALF DAY RD	M.FK.NBCR	6/23	BLACK CRAPPIE	1
2B	281	HALF DAY RD	M.FK.NBCR	6/23	FATHEAD MINNOW	3
2B	281	HALF DAY RD	M.FK.NBCR	6/23	GREEN SUNFISH	15
2B	281	HALF DAY RD	M.FK.NBCR	6/23	BLUEGILL	3
2B	281	HALF DAY RD	M.FK.NBCR	6/23	LARGEMOUTH BASS	2
2B	281	HALF DAY RD	M.FK.NBCR	6/23	BLACK CRAPPIE	1
2B	282	LAKE COOK RD	M.FK.NBCR	7/23	FATHEAD MINNOW	12
2B	282	LAKE COOK RD	M.FK.NBCR	7/23	GREEN SUNFISH	11
2B	282	LAKE COOK RD	M.FK.NBCR	7/23	PUMPKINSEED	2
2B	282	LAKE COOK RD	M.FK.NBCR	7/23	BLUEGILL	3
2B	282	LAKE COOK RD	M.FK.NBCR	7/23	CARP	1
2B	282	LAKE COOK RD	M.FK.NBCR	7/23	FATHEAD MINNOW	1
2B	282	LAKE COOK RD	M.FK.NBCR	7/23	WHITE SUCKER	5
2B	282	LAKE COOK RD	M.FK.NBCR	7/23	GREEN SUNFISH	2
2B	282	LAKE COOK RD	M.FK.NBCR	7/23	BLUEGILL	3
2B	282	LAKE COOK RD	M.FK.NBCR	7/23	LARGEMOUTH BASS	3

TABLE 11 (Continued)
Fishes collected from the North Branch Chicago River and its forks by MWRDGC in 1981

Reach	Station No.	Station Name	Stream*	Sample Date	Species	Number Collected
2B	282	LAKE COOK RD	RESERVOIR	7/23	GREEN SUNFISH	53
2B	282	LAKE COOK RD	RESERVOIR	7/23	GREEN X BLUEGILL	2
2B	282	LAKE COOK RD	RESERVOIR	7/23	BLUEGILL	1
2B	282	LAKE COOK RD	RESERVOIR	7/23	LARGEMOUTH BASS	1
3	283	HALF DAY RD	SKOKIE R.	7/14	CARP	5
3	283	HALF DAY RD	SKOKIE R.	7/14	FATHEAD MINNOW	9
3	283	HALF DAY RD	SKOKIE R.	7/14	GREEN SUNFISH	10
3	283	HALF DAY RD	SKOKIE R.	7/14	BLUEGILL	1
3	283	HALF DAY RD	SKOKIE R.	7/14	BLACK CRAPPIE	1
3	283	HALF DAY RD	SKOKIE R.	6/25	NO FISH	0
3	283	HALF DAY RD	SKOKIE R.	6/25	GOLDEN SHINER	1
3	283	HALF DAY RD	SKOKIE R.	7/14	CARP X GOLDFISH	1
3	283	HALF DAY RD	SKOKIE R.	7/14	FATHEAD MINNOW	1
3	283	HALF DAY RD	SKOKIE R.	7/14	GREEN SUNFISH	4
3	284	LAKE COOK RD	SKOKIE R.	6/30	CARP	3
3	284	LAKE COOK RD	SKOKIE R.	6/30	GREEN SUNFISH	3
3	53	W.FRONTAGE RD	SKOKIE R.	7/7	FATHEAD MINNOW	40
3	53	W.FRONTAGE RD	SKOKIE R.	7/7	WHITE SUCKER	1
3	53	W.FRONTAGE RD	SKOKIE R.	7/7	BLACK BULLHEAD	1
3	53	W.FRONTAGE RD	SKOKIE R.	7/7	GREEN SUNFISH	1
3	53	W.FRONTAGE RD	SKOKIE R.	7/7	BLACK BULLHEAD	240
3	53	W.FRONTAGE RD	SKOKIE R.	7/7	GREEN SUNFISH	26
3	53	W.FRONTAGE RD	SKOKIE R.	7/7	GREEN X BLUEGILL	1
3	53	W.FRONTAGE RD	SKOKIE R.	7/7	BLUEGILL	1
3	53	W.FRONTAGE RD	SKOKIE R.	7/7	LARGEMOUTH BASS	2
3	53	W.FRONTAGE RD	SKOKIE R.	11/19	ORANGESPOTTED SUNFISH	2
3	284	LAKE COOK RD	SKOKIE R.	11/17	GREEN SUNFISH	4
3	284	LAKE COOK RD	SKOKIE R.	11/17	ORANGESPOTTED SUNFISH	1
3	284	LAKE COOK RD	SKOKIE R.	11/17	GREEN SUNFISH	4
3	53	W.FRONTAGE RD	SKOKIE R.	11/19	BLACK BULLHEAD	2
3	53	W.FRONTAGE RD	SKOKIE R.	11/19	GREEN SUNFISH	32
3	53	W.FRONTAGE RD	SKOKIE R.	11/19	PUMPKINSEED	2
3	53	W.FRONTAGE RD	SKOKIE R.	11/19	BLUEGILL	2
3	53	W.FRONTAGE RD	SKOKIE R.	11/19	LARGEMOUTH BASS	3
5A	286	DEMPSTER ST	NBCR	7/21	FATHEAD MINNOW	2
5A	286	DEMPSTER ST	NBCR	7/21	BLACK BULLHEAD	3
5A	286	DEMPSTER ST	NBCR	7/21	GREEN SUNFISH	18
5A	286	DEMPSTER ST	NBCR	7/21	BLUEGILL	13
5A	286	DEMPSTER ST	NBCR	7/21	SUNFISH FRY	22
5A	286	DEMPSTER ST	NBCR	7/21	LARGEMOUTH BASS	2
5A	286	DEMPSTER ST	NBCR	7/21	BLACK CRAPPIE	1
5A	286	DEMPSTER ST	NBCR	7/21	FATHEAD MINNOW	1
5A	286	DEMPSTER ST	NBCR	7/21	GREEN SUNFISH	4
5A	286	DEMPSTER ST	NBCR	11/12	GREEN SUNFISH	11
5A	286	DEMPSTER ST	NBCR	11/12	GREEN SUNFISH	2
5A	287	ALBANY AVE	NBCR	11/12	GREEN SUNFISH	4

* NBCR = NORTH BRANCH OF THE CHICAGO RIVER; W.FK. = WEST FORK; M.FK. = MIDDLE FORK.

Source: The Metropolitan Sanitary District of Greater Chicago, Annual Report No. 84-2-B, 1981.

TABLE 12
Benthic Macroinvertebrates Collected from the Chicago River, 1993

REACH	1	1	1	1	2A	2A	2B	2B	2B	2B	2B	2B	3	3	3	5A	5A	Tolerance Values
STATION	1	2	3	4	1	2	1	2	3	4	5	6	1	2	3	1	2	
PORIFERA				1				2										—
ANNELIDA																		
HIRUDINEA		1	1				1	4	1	6	5	1	9	6	2		36	8
ARTHROPODA																		
CRUSTACEA																		
ISOPODA																		
Asellidae																		
Caecidotea communis	3		3	7			36	41	10	13	17	4	10	8		2	179	6
AMPHIPODA																		
Gammeridae							10											3
DECAPODA																		
Cambarinae	1				12	9		7	33	17		5	4	2	12			5
Procambarus clarki		1		1											2			5
Orconectes virilis										1								5
INSECTA																		5
EPHEMEROPTERA										3								5
Baetidae				1														5
Heptageniidae				1														2
ODONATA																		
ANISOPTERA																		
Aeshnidae																		
Aeshna		1					2											4
Libellulidae							2											4
Orthemis	1																	3
Plathemis		1																3
ZYGOPTERA																		
Coenagrionidae	5		6															6
Enallagma		1		1		3	4	3							5			6
Lestidae																		
Archilestes												2						1
HEMIPTERA																		—
Belostomatidae																		—
Belostoma							10	4										—
Corixidae																		—
Corixinae								3										—
Trichocorixa		2	6	3			5					1						—
Cymatinae																		—
Cymatia														1				—
Gerridae							2											—
Limnoporus	1												2		1	1	1	—
Trepobates						1							4	3		2	1	—
Gerris	10				2	2	3	3	4		4				3			—
Rheumatobates												2						—
Notonectidae																		—
Martarega				1														—
Notonecta							3	6										—
Pleidae																		—
Neoplea							1											—
MEGALOPTERA																		

TABLE 12 (Continued)
Benthic Macroinvertebrates Collected from the Chicago River, 1993

REACH	1	1	1	1	2A	2A	2B	2B	2B	2B	2B	2B	3	3	3	5A	5A	Tolerance Values
STATION	1	2	3	4	1	2	1	2	3	4	5	6	1	2	3	1	2	
Corydalidae																		
Chauliodes					4	2	7											4
Sialidae																		
Sialis									1									4
NEUROPTERA																		
Sisyridae																		1
Climacia				5														1
TRICHOPTERA																		
Hydropsychidae																		
Arctopsyche			4															5
Hydropsyche					26		3		3	7			7	1				5
COLEOPTERA																		
Chrysomelidae																		
Donacia												1						—
Dytiscidae							7											—
Laccophilinae	1						1	1										—
Gyrinidae																		—
Dineutus		6						1										—
Gyrinus			1					1	1									—
Haliplidae																		—
Peltodytes	1		1	1			3	1	1	1					1			—
Haliplus			1															—
Hydrophilidae															1			—
Tropisternus					1			1							2			—
Hydrophilus							6											—
Berosus		1	2				3						1					—
Hydrochara								1										—
DIPTERA																		
Stratiomyidae		1	1															
Brachycera												1						5
Dolichopodidae																		5
Tipulidae															1			5
Adult - species unknown												1						5
MOLLUSCA																		
GASTROPODA																		
Hydrobiidae																		
Amnicola																		4
Lymnaeidae																	1	
Lymnaea stagnalis							5							1		3		7
Physidae				1								4						8
Physa		1	1	11			5	1		2	1		1		3		3	9
Planorbidae																		
Gyraulus			2	3					1						1			6
Helisoma				1			1	1			1		1		6		18	7
PELECYPODA																		
Sphaeriidae																		
Musculium				1								1						5
Pisidium																	7	5
Sphaerium		1	1	2				3		1	4					4	19	5
TOTAL NO. OF TAXA	8	11	13	16	5	5	22	18	9	9	6	11	10	5	15	4	9	
MACROINVERTEBRATE BIOTIC INDEX	5.6	5.6	5.9	6.1	4.9	5.1	5.6	6	5.3	5.8	6.4	5.6	6.4	6.5	6.2	5.3	6.3	
DATE SAMPLED	9/10/1993	8/26/1993	8/26/1993	8/26/1993	8/12/1993	8/26/1993	8/26/1993	8/26/1993	8/26/1993	8/26/1993	8/20/1993	9/10/1993	8/12/1993	8/12/1993	8/12/1993	9/10/1993	9/10/1993	

Source: U.S. Fish and Wildlife Service and Illinois Environmental Protection Agency, 1993.

TABLE 13
Macroinvertebrates Collected from Chicago Waterways, 1983-84
Macroinvertebrate Biotic Index (MBI) Values

	REACH					
	3 (HCCD-09)	2A (HCCC-04)	1 (HCCB-05)	5A (HCC-07)	10A (H-01)	9B (GI-02)
TURBELLARIA		6	5	42		
OLIGOCHAETA		4				
Chaetagaster sp.						1
Dero pectinata						1
Limnodrilus cervix						1
Limnodrilus hoffmeisteri						6
Limnodrilus sp.			1			
HIRUDINEA						
Erpobdellidae	2	1	10			
Erpobdella punctata				1		
Helobdella triserialis				1		
CRUSTACEA						
Isopoda						
Caecidotea sp.		30				
Caecidotea intermedia	53		22	27		
Amphipoda						
Hyalella azteca	53					
EPHEMEROPTERA						
Baetis sp.		13				
Stenacron interpunctatum		12				
ODONATA						
Zygoptera						
Argia sp.		3	3			
Enallagma sp.		3				
Anisoptera						
Anax sp.			1			
TRICHOPTERA						
Cheumatopsyche sp.		41				
DIPTERA						
Chironomidae						
Cryptochironomus sp.		3				
Cryptochironomus fulvus			1			1
Dicrotendipes neomodestus						3
Glyptotendipes sp.		6				
Orthocladius sp.						2
Polypedilum illinoense			2			3
Polypedilum scalaenum		1				
Procladius sp.		2	11			1
Thienemannimyia gr.		6	1			2
MOLLUSCA						
Amnicola sp.				1		
Ferrissia sp.				8		
Gyraulus sp.				1		
Lymnaea sp.					1	
Physa sp.			7	41	10	6
Sphaeriidae					11	17
Sphaerium sp.				4		
TOTAL NUMBER OF ORGANISMS	**108**	**131**	**64**	**126**	**22**	**44**
Total number of taxa	**3**	**8**	**8**	**4**	**1**	**3**
MBI	5.9	6.6	6.6	6.2	—	7.6
Sample type (hp=hand picked; p=plate)	hp	hp	hp	hp	p	p
Date sampled	11-27-83	7-19-84	9-9-83	8-2-84	8-2 to 9-14-83	8-2 to 9-14-83

Source: Illinois Environmental Protection Agency, An Intensive Survey of the Des Plaines River Basin from the WI State Line to Joliet, IL, 1988.

TABLE 14
Characteristic Streambank Vegetation at Fish and Invertebrate Sampling Stations Along Upper Reaches of Chicago Waterways, 1993

		REACH				
		1	2A	2B	3	5A
TREES & SHRUBS						
American Elm	*Ulmus americana*	●	●	●	●	●
Amur Honeysuckle	*Lonicera maackii*				●	
Black Willow	*Salix nigra*	●				●
Box Elder	*Acer negundo*	●		●	●	
Buttonbush	*Cephalanthus occidentalis*		●			
Common Buckthorn	*Rhamnus cathartica*			●	●	●
Cottonwood	*Populus deltoides*		●	●	●	●
Green Ash	*Fraxinus pennsylvanica*		●	●	●	●
Hawthorn	*Crategus sp.*			●		
Maple-leaved Viburnum	*Viburnum acerifolium*			●		
Red-osier Dogwood	*Cornus stolonifera*			●		
Silver Maple	*Acer saccharinum*	●		●	●	●
Swamp White Oak	*Quercus bicolor*		●	●		
White Mulberry	*Morus alba*	●				
GRASSES & SEDGES						
Bur Sedge	*Carex grayii*		●	●		
Hop Sedge	*Carex lupulina*		●			
Orchard Grass	*Dactylis glomerata*				●	
Reed Canarygrass	*Phalaris arundinacea*	●		●		
Silky Wild Rye	*Elymus villosus*				●	●
Virginia Wild Rye	*Elymus virginicus*		●			
FORBS						
Arrow-leaved Aster	*Aster sagittifolius*				●	●
Beggars Tick/Sticktight	*Bidens frondosa*			●	●	
Bittersweet Nightshade	*Solanum dulcamara*	●		●		
Blue Iris	*Iris virginica shrevei*		●	●	●	●
Blue-Stemmed/Wreath Goldenrod	*Solidago caesia*				●	
Broad-leafed Cattail	*Typha latifolia*	●				
Clearweed/Richweed	*Pilea pumila*			●	●	
Cluster Snakeroot	*Sanicula gregaria*				●	●
Common Arrowhead	*Sagittaria latifolia*			●	●	
Common Burdock	*Arctium minus*			●		
Common Dandelion	*Taraxacum officinale*				●	
Enchanter's Nighshade	*Circaea quadrisulcata canadensis*				●	
Garlic Mustard	*Alliaria officinalis*			●	●	●
Great Ragweed	*Ambrosia trifida*	●	●			
Horse Nettle	*Solanum carolinense*	●				
Jumpseed/Virginia Knotweed	*Tovara virginiana*				●	●
Lesser Duckweed	*Lemna minor*			●		
Lizard's Tail	*Saururus cernuus*		●			
Moneywort	*Lysimachia nummularia*		●	●		
Narrow-leaved Cattail	*Typha angustifolia*			●		
Poison Ivy	*Rhus radicans*	●		●	●	
Purple-leaved Willow Herb	*Epilobium coloratum*			●		
Purple Loosestrife	*Lythrum salicaria*	●		●	●	
Riverbank Grape	*Vitis riparia*	●		●	●	●
Rose sp.	*Rosa sp.*			●		
Rough Avens	*Geum laciniatum trichocarpum*	●			●	
Smartweed	*Polygonum punctatum*				●	●
Sneezeweed	*Helenium autumnale*				●	●
Spotted Touch-Me-Not	*Impatiens capensis*	●		●	●	
Tall Goldenrod	*Solidago altissima*	●		●		
Tall Nettle	*Urtica procera*			●		
Virginia Creeper	*Parthenocissus quinquefolia*	●		●	●	●
White Vervain	*Verbena urticifolia*			●		
Yellow Swamp Buttercup	*Ranunculus septentrionalis*		●			

● = OCCURRENCE
Source: U.S. Fish and Wildlife Service, 1994.

TABLE 15
Distribution, Abundance, and Area of Wetlands in Study Corridor

Reach	Total Number of Wetlands	Total Acres	Most Abundant	Percentage of Total	Most Area	Percentage of Total	% Increase from NWI (Total Wetland Area)
1	17B	355.5	POWGx	43.8	POWGx	40.0	21.9
2A	24	76.7	PFO	70.8	PF01A	87.0	15.8
2B	227	668.1	POWx	41.0	POWx	28.0	20.3
3	202	676.4	POWGx	35.6	Pf01A	40.4	12.7
4	1	86.5	R20WHx	100.0	R20WHx	100.0	—
5A	54	311.4	PF01A/C	63.0	PF01A/C	93.7	56.0
5B	1	133.9	R20WHx	100.0	R20WHx	100.0	—
6	1	47.7	R20WHx	100.0	R20WHx	100.0	—
7	2	102.7	R20WHx	50.0	R20WHx	98.6	—
8	34	482.6	POW	50.0	R20WHx	68.9	<1.0
9A	102	1,598.3	POWkh	31.4	POWkh	17.6	<1.0
9B	171	2,441.1	PUBGx	19.3	PEMF	16.2	2.0
10A	131	983.9	POWHx	24.4	L20WHx	36.5	6.7
10B	68	857.5	POWx	30.9	R20WHx	59.8	5.5
10C	60	471.0	PEMF	21.7	R20WHx	44.8	<1.0

Source: U.S. Fish and Wildlife Service, 1994.

TABLE 16
Fishes Collected in the Middle Fork of the North Branch Chicago River (Reach 2B), 1993

Species		Number Collected
Golden shiner	*Notemigonas crysoleucas*	8
Fathead minnow	*Pimephales promelas*	202
White sucker	*Catostomus commersoni*	5
Black bullhead	*Ameiurus melas*	1
Green sunfish	*Lepomis cyanellus*	5
Largemouth Bass	*Micropterus salmoides*	1

Source: K.S. Mierzwa and E. Beltz, Habitat Associations and Distribution of Amphibians and Reptiles at Middle Fork Savanna, Lake County Illinois, 1994.

TABLE 17
Amphibians and Reptiles Collected at Middle Fork Savanna, 1991 and 1993

SPECIES	1991	1993	TOTAL COLLECTED	% OF TOTAL
Blue-spotted salamander *Ambystoma laterale*	1	121	122	28.0
Tiger salamander *Ambystoma tigrinum*	0	24	24	6.0
American toad *Bufo americanus*	0	56	56	13.0
Western chorus frog *Pseudacris triseriata*	0	84	84	20.0
Bullfrog *Rana catesbeiana*	0	1	1	0.2
Northern leopard frog *Rana pipiens*	0	26	26	6.0
Snapping turtle *Chelydra serpentina*	0	2	2	0.5
Blanding's turtle *Emydoidea blandingii*	1	0	1	0.2
Painted turtle *Chrysemys picta*	0	5	5	1.2
Smooth green snake *Opheodrys vernalis*	1	11	12	2.8
Plains garter snake *Thamnophis radix*	1	0	1	0.2
Common garter snake *Thamnophis sirtalis*	1	87	88	20.5
Redbelly snake *Storeria occipitomaculata*	0	8	8	1.9
TOTAL	**5**	**425**	**430**	**100**

Source: K.S. Mierzwa and E. Beltz, Habitat Associations and Distibution of Amphibians and Reptiles at Middle Fork Savanna, Lake County, Illinois, 1994.

TABLE 18
Benthic Invertebrates Collected from Chicago Waterways, 1976

Tolerance Category	Species	STATION NUMBER										
		70	71	72	73	74	75	76	77	78	79	80
		(Individuals/m²)										
F	*Caenis sp.* (mayfly)					43						
F	*Myzobdella moorei* (leech)							86	402	38		
M	*Sphaerium partemium* (fingernail clam)							86				
M	*S. transversum* (fingernail clam)									861		
M	*Asellus sp.* (aquatic sow bug)									43	1569	
M	*A. communis* (aquatic sow bug)									43	823	
T	*Chaoborum sp.* (phantom midge)	619	153	43								
T	*Chironomidae sp.* (midge)	57	38	57	171		7061	23250	387	128	670	498
T	Oligochaetae (aquatic worm)	19	325	421	128	12961	12745	259	293814	3186	2794	18193
T	Physa sp. (snail)									302		

Note: Stations 70-72 are in Reach 3, Station 73 is in Reach 5A, and Stations 74-80 are in Reach 10B

Source: T.L. Butts and R.L. Evans, Sediment Oxygen Demand Studies of Selected Northeastern Illinois Streams, Northeastern Illinois Planning Commission Staff Paper No. 29, 1979.

TABLE 19
Benthic Invertebrates Collected from the Skokie River and Skokie Lagoons, 1978

Tolerance	Species	B-1	B-2	B-3	B-4	B-5	B-6	B-7	B-8	B-9	B-10	B-11	B-12
	ARTHROPODA												
	Crustacea												
	Decapoda												
I	Astacidae (crayfishes)			1	1								3
	Amphipoda												
	Hyalellidae (scuds)												
I	*Hyalella azteca*												6
	Isopoda												
	Asellidae (aquatic sowbugs)												
M	*Asellus sp.*				7								
	INSECTA												
	Ephemeroptera												
	Caenidae (mayflies)												
F	*Caenis sp.*		2										4
	Odonata												
	Coenagrionidae (damselflies)												
I	*Ischnura sp.*	1	2	8	6								
	Libellulidae (dragonflies)												
M	*Libellula sp.*	1											
	Hemiptera												
F	Corixidae (water boatman)		4	1	1	1							
	Coleoptera												
	Helodidae (beetles)												
F	*Cyphon sp.*												2
F	Unidentified	1											
	Diptera												
I	Tipulidae (crane flies)	1											
T	Ephydridae (shoe flies)	1											
	Chaoboridae (phantom midges)												
T	*Chaoborus sp.*									4	4	2	
	Chironomidae (midges)												
M	*Cryptochironomus sp.*			8									2
M	*Cricotopus sp.*					4							
F	*Procladius sp.*		1	1						4		1	
F	*Ablabesmyia sp.*		1	1									1
F	*Thienemannimyia group*				3								
T	*Glyptotendipes sp.*												17
T	*Chironomus sp.*						25	14	2	2			
	MOLLUSCA												
	Pelecypoda												
	Sphaeriidae (fingernail clams)												
M	*Pisidium sp.*			16									
	Gastropoda (snails)												
	Lymnaeidae												
F	*Lymnaea sp.*		1			1							
	Planorbidae												
F	*Helisoma sp.*	1											
	Physidae												
T	*Physa sp.*	10	8	9	1								4
	PLATYHELMINTHES												
	Turbellaria												
M	Tricladida (flatworms)				4								
	ANNELIDA												
T	Oligochaeta (aquatic earthworms)	75	6	37	4	2	54		2	2		2	
T	Hirudinea (leeches)		1	1	1								
TOTAL NUMBER OF ORGANISMS		**91**	**27**	**85**	**29**	**28**	**68**	**2**	**4**	**10**	**4**	**5**	**40**
TOTAL NUMBER OF TAXA		**8**	**10**	**10**	**9**	**3**	**2**	**1**	**2**	**3**	**1**	**3**	**9**
PERCENT INTOLERANT ORGANISMS		**1.1**	**11.1**	**10.6**	**24.1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**22.5**
STREAM CLASSIFICATION		**SP**	**UB**	**UB**	**UB**	**SP**	**P**	**P**	**P**	**P**	**P**	**P**	**UB**

*Stations B-6 through B-11 are in the Lagoons, and Station B-12 is downstream of Lagoons. Skokie River Stations 1-5 and 12 were hand-picked. Stations 6-11, in the Skokie Lagoons, were sampled with a Petite Ponar dredge. Data represent actual numbers of organisms collected.

Source: Matsunaga, W.O. and P.M. Murphy, An intensive survey of the Skokie River, Illinois Environmental Protection Agency, 1979.

TABLE 20
Benthic Invertebrates Collected at Skokie Lagoons, 1981

	Clavey Rd. Bridge			Lagoon #7			Lagoon #4			Lagoon #1			Willow Rd. Bridge		
Taxa	1	2	Mean	1	2	Mean	1	2	Mean	1	2	Mean	1	2	Mean
	# individuals/m2														
ARTHROPODA															
Insecta															
Diptera															
Chaoboridae															
Chaoborus sp. (T)	—	—	—	—	X	—	—	—	—	86	—	43	—	43	22
Chironomidae															
Cryptochironomus sp. (F)	—	86	43	—	X	—	—	—	—	—	—	—	43	—	22
Glyptotendipes sp. (T)	—	—	—	—	X	—	—	—	—	—	—	—	603	172	388
Polypedilum sp. (F)	43	43	43	—	X	—	—	—	—	—	—	—	259	129	194
Procladius sp. (F)	—	—	—	43	X	43	—	—	—	86	—	43	—	—	—
Trichoptera															
Leptoceridae															
Oecetis sp. (M)	—	—	—	X	—	—	—	—	—	—	—	86	43	65	
ANNELIDA															
Oligochaeta															
Naididae															
Pristina sp. (F)	—	—	—	—	X	—	—	—	—	—	—	—	—	86	43
Specaria josinae (F)	—	—	—	—	X	—	—	—	—	—	—	—	—	86	43
Tubificidae															
Limodrilus cervix (T)	43	86	65	172	X	172	172	259	215	86	—	43	86	172	129
Limodrilus hoffmeisteri (T)	43	215	129	86	X	86	43	43	43	—	—	—	646	474	560
Peloscolex multisetosus multisotosus (T)	—	—	—	—	X	—	—	—	—	—	—	—	129	86	108
Peloscolex multisetosus longidentus (T)	X	—	—	—	—	—	—	—	215	129	172				
(immature with hair setae) (T)	—	—	—	86	X	86	—	—	—	—	—	—	43	129	86
(immature without hair setae) (T)	172	1,209	690	259	X	259	819	259	539	—	—	—	2,112	2,112	2,112
MOLLUSCA															
Pelecypoda															
Sphaeriidae (M)	43	—	22	—	X	—	—	—	—	—	—	—	—	—	—
TOTAL NUMBER OF TAXA	**5**	**5**	**6***	**5**	**X**	**5**	**3**	**3**	**3***	**3**	**0**	**3***	**10**	**12**	**13***
TOTAL NUMBERS OF INDIVIDUALS	**344**	**1,639**	**992**	**646**	**X**	**646**	**1,034**	**561**	**797**	**258**	**0**	**129**	**4,222**	**3,661**	**3,944**
TOTAL NUMBER OF TAXA	**5**	**5**	**6***	**5**	**X**	**5**	**3**	**3**	**3***	**3**	**0**	**3***	**10**	**12**	**13***
TOTAL NUMBERS OF INDIVIDUALS	**344**	**1,639**	**992**	**646**	**X**	**646**	**1,034**	**561**	**797**	**258**	**0**	**129**	**4,222**	**3,661**	**3,944**

KEY: I - intolerant of polluted conditions; M - moderately intolerant of polluted conditions; F - faculatively tolerant of polluted conditions;
T - tolerant of polluted conditions; * - total number of taxa in both replicate samples; and
1 and 2 = replicate sample analysis, except lagoon #7 (only one sample taken)

Source: Northeastern IL Planning Commission, Phase 1 Diagnostic/Feasibility Study of the Skokie Lagoons, 1983.

TABLE 21
Fishes Collected from Chicago Waterway System, 1976

REACH	4	4	4	5B	6	6	8	9A	9A	10A	10A	10A	10A	10A	10A	10A	10A	9B	Total	Percentage
STATIONS	57	58	59	55	67	60	48	68	49	171	44	186	175	182	183	185	43	50	number	of Total
CLUPEIDAE																				
Alewife	41	—	—	—	11	36	2	—	—	1	—	—	—	—	—	—	—	—	91	9
Gizzard shad	—	—	—	—	—	—	—	—	—	3	—	—	—	—	—	—	—	—	3	<1
SALMONIDAE *																				
Coho salmon *	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
OSMERIDAE																				
Rainbow smelt	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	<1
UMBRIDAE																				
Central mudminnow	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1	1	1	—	4	<1
CYPRINIDAE																				
Goldfish	18	6	—	1	12	18	7	11	1	—	12	—	10	17	15	—	1	38	167	17
Carp	12	3	2	—	10	9	3	1	1	—	10	—	6	11	17	1	—	15	101	10
Golden shiner	—	—	—	—	6	2	—	—	—	—	1	—	8	—	—	—	—	—	17	2
Emerald shiner	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	1	<1
Spottail shiner	2	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3	<1
Sand shiner	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	1	<1
Bluntnose minnow	86	—	—	—	—	—	—	—	—	—	—	10	26	—	—	—	—	—	122	1
Fathead minnow	22	1	—	—	1	61	—	1	—	—	—	—	—	—	—	—	—	—	8	9
Creek chub	—	—	—	—	—	—	—	—	—	—	2	91	4	—	—	—	—	—	97	10
Carp x goldfish	7	—	—	7	3	1	4	—	—	—	—	—	1	1	4	—	—	6	34	3
Silvery minnow *	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0	0
Longnose dace *																				
CATOSTOMIDAE																				
White sucker	—	—	—	—	—	—	—	—	—	—	—	—	3	—	—	—	—	—	3	<1
Shorthead redhorse *																				
ICTALURIDAE																				
Black bullhead	—	—	—	1	—	1	—	1	—	—	3	—	—	2	5	2	—	4	19	2
Channel catfish	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	1	<1
PERCOPSIDAE *																				
Trout-perch *	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0	0
GADIDAE *																				
Burbot *	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0	0
GASTEROSTEIDAE																				
Ninespine Stickleback	2	—	—	—	—	—	—	2	—	—	—	—	—	—	—	—	—	—	4	<1
PERCICHTHYIDAE *																				
White bass *		—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0	0
Yellow bass *	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0	0
CENTRARCHIDAE																				
Rock bass	—	—	—	—	—	63	—	—	—	—	—	—	—	—	—	—	—	—	63	6
Green sunfish	14	—	—	—	—	3	—	20	—	—	25	4	21	5	3	—	—	—	95	10
Pumpkinseed	2	—	—	—	—	4	—	—	—	—	—	—	—	—	1	—	—	—	7	1
Orangespotted Sunfish	24	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	24	2
Bluegill	—	—	—	1	—	3	—	3	—	—	5	—	14	9	3	—	—	—	38	4
Largemouth bass	—	—	—	—	—	4	—	—	—	—	—	—	—	—	—	—	—	—	4	<1
Black crappie	—	—	—	1	—	1	1	—	—	—	—	—	1	1	—	—	—	1	6	1
Green sunfish x Pumpkinseed	2	—	—	—	—	—	—	—	—	—	1	—	—	—	1	—	—	—	4	<1
White crappie *	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0	0
PERCIDAE																				
Yellow perch	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	<1
Johnny darter *	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0	0
SCIAENIDAE *																				
Freshwater drum *	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0	0
COTTIDAE *																				
Mottled sculpin *	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0	0
TOTAL NUMBER OF INDIVIDUALS	**234**	**10**	**3**	**11**	**43**	**207**	**17**	**39**	**2**	**4**	**60**	**105**	**95**	**47**	**50**	**4**	**2**	**64**	**919**	**98**
TOTAL NUMBER OF SPECIES	**14**	**3**	**2**	**5**	**6**	**14**	**5**	**7**	**2**	**2**	**9**	**3**	**11**	**8**	**9**	**3**	**2**	**5**	**27**	**—**

*Fish species present prior to 1905

SOURCE: Brigham, W.U., D. McCormick, and M.J. Wetzel, The Watersheds of northeastern Illinois: quality of the aquatic environment based upon water quality and fishery data, Northeastern Illinois Planning Commission Staff Paper No. 31, 1978.

TABLE 22
Number and Weight of Fish Collected from North Shore Channel, 1991

Species	Number Collected	Total Weight (Grams)
Alewife	234	428.96
Gizzard shad	244	14,366.96
Rainbow trout	1	1,890.00
Brown trout	5	962.90
Rainbow smelt	1	0.89
Central mudninnow	3	36.75
Grass pickerel	1	72.00
Goldfish	357	29,708.50
Carp *	41	46,052.46
Carp x goldfish hybrid	59	39,758.61
Golden shiner	606	2,065.43
Spottail shiner	195	333.59
Bluntnose minnow	3,202	2,582.10
Fathead minnow	766	993.93
White sucker *	12	4,724.50
Oriental weatherfish	4	32.26
Black bullhead *	26	3,410.44
Threespine stickleback	1	1.30
Rock bass	13	17.52
Green sunfish	167	1,986.09
Pumpkinseed sunfish	21	87.47
Orangespotted sunfish	3	34.75
Bluegill *	47	1,264.26
Largemouth bass *	6	489.02
Black crappie *	8	767.00
Green sunfish x pumpkinseed hybrid	2	2.23
Yellow perch	2	9.26
TOTAL NUMBER OF FISH	**6,027**	
TOTAL NUMBER OF SPECIES	**25**	
TOTAL NUMBER OF HYBRIDS	**2**	
TOTAL WEIGHT		**152,079.18**

*Species found in harvestable size during 1991.

Source: Dennison, et al., Comprehensive water quality evaluation: fish survey of the Chicago Waterway System during 1991, MWRDGC Report #92-17, 1992.

TABLE 23
Benthic Invertebrates Collected from North Shore Channel, 1989

COELENTERATA
- *Hydra sp.*

ANNELIDA
- Oligochaeta
  - Naididae
    - *Amphichaeta leydigi*
    - *Chaetogaster diastrophus*
    - *Chaetogaster limnaei*
    - *Chaetogaster setosus*
    - *Dero digitata*
    - *Dero furcata*
    - *Dero lodeni*
    - *Dero trifida*
    - *Haemonais waldvogeli*
    - *Nais communis*
    - *Nais elinguis*
    - *Nais pardalis*
    - *Nais pseudobtusa*
    - *Nais simplex*
    - *Nais variabilis*
    - *Ophidonais serpentina*
    - *Pristina aequiseta*
    - *Stylaria lacustris*
    - *Vejdovskyella intermedia*
  - Tubificidae
    - *Aulodrilus pigueti*
    - *Aulodrilus pluriseta*
    - *Ilyodrilus templetoni*
    - *Limnodrilus cervix*
    - *Limnodrilus cervix variant*
    - *Limnodrilus claparedianus*
    - *Limnodrilus hoffmeisteri*
    - *Limnodrilus spiralis*
    - *Limnodrilus tortilipenis*
    - *Limnodrilus udekemianus*
    - *Potamothrix moldaviensis*
    - *Quistadrilus multisetosus*
  - Hirudinea
    - *Abloglossiphonia heteroclitia*
    - *Dina parva*
    - *Glossiphonia complanata*
    - *Helobdella fusca*
    - *Helobdella stagnalis*
    - *Helobdella triserialis*
    - *Mooreobdella microstoma*
    - *Nephelopsis obscura*

CRUSTACEA
- Decapoda
  - *Cambarus robustus*
- Amphipoda
  - *Crangonyx sp.*
  - *Gammarus faciatus*
  - *Hyalella azteca*
- Isopoda
  - *Caecidotea intermedia*

INSECTA
- Ephemeroptera
  - *Caenis sp.*
- Odonata
  - Coenagrionidae
    - *Enallagma sp.*
    - *Ishnura/Anomalagrion sp.*
- Coleoptera
  - Haliplidae
    - *Haliplus sp.*
- Diptera
  - *Chironomidaes sp.*
  - *Ablabesmyia sp.*
  - *Chironomus anthracinus-gr.*
  - *Chironomus fluviatilis-gr.*
  - *Chironomus plumosus-gr.*
  - *Chironomus semi-reductus-gr.*
  - *Cladopelma sp.*
  - *Cladotanytarsus mancus-gr.*
  - *Cricotopus (I.) sylvestris-gr.*
  - *Cryptochironomus cf. fulvus*
  - *Dicrotendipes sp.*
  - *Glyptotendipes sp.*
  - *Heterotrissocladius cf. changi*
  - *Mondiamesa cf. tuberculata*
  - *Parachironomus arcuatus-gr.*
  - *Paracladopelma camptolabis-gr.*
  - *Parakiefferiella sp.*
  - *Paratanytarsus sp.*
  - *Phaenopsectra sp.*
  - *Polypedilum cf. scalaenum*
  - *Polypedilum cf. simulans/digitifer*
  - *Potthastia cf. longimanus*
  - *Procladius sp.*
  - *Pseudochironomus sp.*
  - *Tanytarsus sp.*
  - *Thienemanniella sp.*

MOLLUSCA
- Gastropoda
  - *Ferrissia parallela*
  - *Gyraulus parvus*
  - *Physella sp.*
  - *Valvta tricarinata*
- Pelecypoda
  - *Musculium lacustre f. jayense*
  - *Musculium transversum*
  - *Pisidium casertanum*
  - *Pisidium compressum*
  - *Pididium ferrugineum*
  - *Sphaerium corneum*

Source: MWRDGC, Comprehensive evaluation of water quality: distribution of benthic invertebrate species in the Chicago Waterway System during 1989, Report #90-30, 1990.

TABLE 24
Benthic Invertebrates Collected from North Shore Channel, 1990

COELENTERATA
- *Hydra sp.*

TURBELLARIA

ANNELIDA
- Oligochaeta
  - Naididae
    - *Amphichaeta leydigi*
    - *Chaetogaster diaphanus*
    - *Chaetogaster diastrophus*
    - *Dero digitata*
    - *Haemonais waldvogeli*
    - *Nais communis*
    - *Nais elinguis*
    - *Nais pardalis*
    - *Nais simplex*
    - *Nais variabilis*
    - *Ophidonais serpentina*
    - *Paranais frici*
    - *Stylaria lacustris*
    - *Vejdovskyella intermedia*
  - Tubificidae
    - *Aulodrilus limnobius*
    - *Aulodrilus pigueti*
    - *Aulodrilus pluriseta*
    - *Ilyodrilus templetoni*
    - *Limnodrilus cervix*
    - *Limnodrilus cervix variant*
    - *Limnodrilus claparedianus*
    - *Limnodrilus hoffmeisteri*
    - *Limnodrilus spiralis*
    - *Limnodrilus tortilipenis*
    - *Limnodrilus udekemianus*
    - *Potamothrix moldaviensis*
    - *Quistadrilus multisetosus*
    - *Tubifex tubifex*

HIRUDINEA
- *Erpobdella punctata punctata*
- *Helobdella stagnalis*
- *Mooreobdella microstoma*
- *Nephelopsis obscura*

CRUSTACEA
- Isopoda
  - *Caecidotea intermedia*
- Insecta
  - Ephemeroptera
    - *Caenis sp.*
  - Tricoptera
    - *Oecetis sp.*

DIPTERA
- Empididae
  - *Hemerodromia sp.*
- Psychodidae
  - *Psychoda sp.*
- Chironomidae
  - *Ablabesmyia sp.*
  - *Chironomus anthracinus-gr.*
  - *Chironomus fluviatilis-gr.*
  - *Chironomus plumosus-gr.*
  - *Cladopelma sp.*
  - *Cricotopus (I.) sylvestris-gr.*
  - *Cryptochironomus cf. digitatus*
  - *Cryptochironomus cf. fulvus*
  - *Dicrotendipes sp.*
  - *Glyptotendipes sp.*
  - *Heterotrissocladius cf. changi*
  - *Microtendipes cf. pedellus*
  - *Monodiamesa cf. tuberculata*
  - *Parachironomus arcuatus-gr.*
  - *Paracladopelma camptolabis-gr.*
  - *Parakiefferiella sp.*
  - *Paratanytarsus sp.*
  - *Polypedilium cf. convictum*
  - *Polypedilium cf. scalaenum*
  - *Polypedilum cf. simulans/digitifer*
  - *Procladius sp.*
  - *Pseudochironomus cf. articaudus*
  - *Tanytarsus sp.*

MOLLUSCA
- Gastropoda
  - *Ferrissia sp.*
  - *Gyraulus circumstriatus*
  - *Physella gyrina gyrian*
  - *Physella integra integra*
  - *Valvata tricarinata*
- Pelecypoda
  - *Musculium lacustre f. jayense*
  - *Musculium transversum*
  - *Pisidium casertanum*
  - *Pisidium compressum*
  - *Pisidium variabilis*
  - *Sphaerium corneum*

Source: Polls, et al., Comprehensive evaluation of water quality: distribution of benthic invertebrate species in the Chicago Waterway System during 1991, Report #92-22, 1991.

TABLE 25
Benthic Invertebrates Collected from North Shore Channel, 1991

COELENTERATA
- *Hydra sp.*

TURBELLARIA

ANNELIDA
- Oligochaeta
  - Naididae
    - *Amphichaeta leydigi*
    - *Chaetogaster diaphanus*
    - *Dero digitata*
    - *Dero furcata*
    - *Dero furcata/lodeni*
    - *Haemonais waldvogeli*
    - *Nais barbata*
    - *Nais communis*
    - *Nais elinguis*
    - *Nais pardalis*
    - *Nais simplex*
    - *Nais variabilis*
    - *Ophidonais serpentina*
    - *Paranais frici*
    - *Pristina aequiseta*
    - *Pristinella osborni*
    - *Pristinella sima*
    - *Slavina appendiculata*
    - *Stylaria lacustris*
    - *Vejdovskyella intermedia*
  - Tubificidae
    - *Aulodrilus pigueti*
    - *Ilyodrilus templetoni*
    - *Limnodrilus cervix*
    - *Limnodrilus cervix variant*
    - *Limnodrilus claparedianus*
    - *Limnodrilus hoffmeisteri*
    - *Limnodrilus spiralis*
    - *Limnodrilus tortiplipenis*
    - *Limnodrilus udekemianus*
    - *Potamothrix moldaviensis*
    - *Quistadrilus multisetosus*
    - *Tubifex tubifex*
  - Hirudinea
    - *Helobdella stagnalis*

CRUSTACEA
- Amphipoda
  - *Gammarus fasciatus*
  - *Gammarus sp.*
- Isopoda
  - *Caecidotea intermedius*

INSECTA
- Ephemeroptera
  - *Caenis yongi*
- Odonata
  - *Coenagrionidae*
- Diptera
  - Empididae
    - *Hemerodromia sp.*
  - Chironomidae
    - *Chironomous anthracinus-gr.*
    - *Chironomus fluviatilis-gr.*
    - *Chironomus plumosus-gr.*
    - *Cladopelma laccophilus-gr.*
    - *Cricoptopus (C.) bicinctus-gr.*
    - *Cricotopus (I.) sylvestris-gr.*
    - *Cryptochironomus cf. digitatus*
    - *Cryptochironomus cf. fulvus*
    - *Dicrotendipes modestus*
    - *Nanocladius sp.*
    - *Parachironomus arcuatus-gr.*
    - *Paracladopelma camptolabis-gr.*
    - *Parakiefferiella sp.*
    - *Phaenospectra sp.*
    - *Polypedilium cf. scalaenum*
    - *Polypedilum cf. simulans/digitifer*
    - *Procladius sp.*

MOLLUSCA
- Gastropoda
  - *Dreissena polymorpha*
  - *Physella integra integra*

Source: Polls, et al., Comprehensive evaluation of water quality: distribution of benthic invertebrate species in the Chicago Waterway System during 1991, 1992.

TABLE 26
Number and Weight of Fish Collected at Two Stations on the North Branch Chicago River, Reach 5B, 1991

SPECIES	TOTAL NUMBER COLLECTED	TOTAL WEIGHT (GRAMS)
Goldfish	106	16,398.57
Carp	85	110,638.09
Carp x goldfish hybrid	44	40,476.35
Golden shiner	55	401.81
White sucker	2	749.00
Black bullhead	4	691.94
Green sunfish	67	1,096.04
Bluegill	34	1,261.61
Green sunfish x bluegill hybrid	3	50.22
Pumpkinseed x bluegill hybrid	1	29.50
Gizzard shad	77	3,961.25
Bluntnose minnow	59	138.22
Largemouth bass	4	35.01
Alewife	5	82.89
Spottail shiner	4	8.64
Fathead minnow	4	8.98
Pumpkinseed	10	118.01
Black crappie	2	176.38
Emerald shiner	2	19.28
TOTAL	**568**	**176,341.79**

Source: Dennison, et al., Comprehensive Water Quality Evaluation: Fish Survey of the Chicago Waterway System During 1991, MWRDGC Report No. 92-17, 1992.

TABLE 27
Benthic Invertebrates Collected from North Branch Chicago River, Reach 5B, 1989

TURBELLARIA
ANNELIDA
- Oligochaeta
  - Enchytraeidae
  - Naididae
    - *Chaetogaster diaphanus*
    - *Chaetogaster limnaei*
    - *Dero digitata*
    - *Dero furcata*
    - *Dero lodeni*
    - *Haemonais waldvogeli*
    - *Nais communis*
    - *Nais elinguis*
    - *Nais pseudobtusa*
    - *Nais simplex*
    - *Nais variabilis*
    - *Ophidonais serpentina*
    - *Pristina osborni*
    - *Stylaria fossularis*
    - *Stylaria lacustris*
    - *Vejdovskyella intermedia*
  - Tubificidae
    - *Ilyodrilus templetoni*
    - *Limnodrilus cervix*
    - *Limnodrilus cervix variant*
    - *Limnodrilus claparedianus*
    - *Limnodrilus hoffmeisteri*
    - *Limnodrilus spiralis*
    - *Limnodrilus tortilipenis*
    - *Limnodrilus udekemianus*
    - *Quistadrilus multisetosus*
    - *Tubifex tubifex*
- Hirudinea
  - *Abloglossiphonia heteroclitia*
  - *Dina parva*
  - *Helobdella stagnalis*
  - *Mooreobdella microstoma*

CRUSTACEA
- Isopoda
  - *Caecidotea intermedia*

INSECTA
- Diptera
  - Chironomidae
    - *Chironomus anthracinus-gr.*
    - *Chironomus plumosus-gr.*
    - *Cladopelma sp.*
    - *Cricoptopus (C.) bicinctus*
    - *Cricotopus (I.) sylvestris-gr.*
    - *Dicrotendipes sp.*
    - *Parachironomus arcuatus-gr.*
    - *Procladius sp.*

MOLLUSCA
- Gastropoda
  - *Physella sp.*
- Pelecypoda
  - *Musculium lacustre f. jayense*
  - *Musculium transversum*
  - *Pisidium casertanum*
  - *Pisidium henslowanum*
  - *Pisidium lilljeborgi f. lilljeborgi*
  - *Pisidium subtruncatum*
  - *Sphaerium corneum*
  - *Sphaerium simile*

Source: Metropolitan Water Reclamation District of Greater Chicago, Comprehensive Water Quality Evaluation: Distribution of Benthic Invertebrate Species in the Chicago Waterway System During 1989, Report No. 90-30, 1990.

TABLE 28
Benthic Invertebrates Collected from North Branch Chicago River, Reach 5B, 1990

COELENTERATA
- *Hydra sp.*

TURBELLARIA

ANNELIDA
- Oligochaeta
  - Aeolosomatidae
  - Enchytraeidae
  - Naididae
    - *Chaetogaster diaphanus*
    - *Chaetogaster diastrophus*
    - *Dero digitata*
    - *Nais communis*
    - *Nais elinguis*
    - *Nais simplex*
    - *Nais variabilis*
    - *Ophidonais serpentina*
    - *Paranais frica*
    - *Slavina appendiculata*
    - *Stylaria lacustris*
  - Tubificidae
    - *Aulodrilus pigueti*
    - *Aulodrilus pluriseta*
    - *Ilyodrilus templetoni*
    - *Limnodrilus cervix*
    - *Limnodrilus cervix variant*
    - *Limnodrilus claparedianus*
    - *Limnodrilus hoffmeisteri*
    - *Limnodrilus udekemianus*
    - *Quistadrilus multisetosus*
    - *Tubifex*
  - Hirudinea
    - *Helobdella stagnalis*
    - *Mooreobdella microstoma*
    - *Nephelopsis obscura*
    - *Crustacea*
    - *Isopoda*
    - *Caecidotea intermedia*

INSECTA
- Diptera
  - Chironomidae
    - *Conchapelopia sp.*
    - *Cricotopus (C.) bicinctus-gr.*
    - *Cricotopus (C.) fuscus-gr.*
    - *Cricotopus (I.) sylvestris-gr.*
    - *Cryptochironomus cf. digitatus*
    - *Dicrotendipes sp.*
    - *Nanocladius sp.*
    - *Parachironomus arcuatus-gr.*
    - *Polypedilium cf. covictum/obtusum*
    - *Procladius sp.*

MOLLUSCA
- Gastropoda
  - *Ferrissia rivularis*
  - *Menetus dilatus*
  - *Physella gyriana gyrina*
- Pelecypoda
  - *Musculium lacustre f. jayense*
  - *Musculium transversum*
  - *Pisidium casertanum*
  - *Pisidium compressum*
  - *Pisidium subtruncatum*
  - *Pisidium variabile*
  - *Sphaerium corneum*
  - *Sphaerium simile*

Source: Polls, et al., Comprehensive Water Quality Evaluation-Distribution of Benthic Invertebrate Species in the Chicago Waterway System During 1990, MWRDGC Report No. 91-22, 1991.

Table 29
Benthic Invertebrates Collected from North Branch Chicago River, Reach 5B, 1991

COELENTERATA
- *Hydra sp.*

TURBELLARIA

ANNELIDA
- Oligochaeta
  - Aeolochaeta
  - Enchytraeidae
  - Naididae
    - *Chaetogaster diaphanus*
    - *Chaetogaster limnaei*
    - *Dero digitata*
    - *Nais barbata*
    - *Nais communis*
    - *Nais elinguis*
    - *Nais pseudobtusa*
    - *Nais simplex*
    - *Nais variabilis*
    - *Ophidonais serpentina*
    - *Paranais frici*
    - *Slavina appendiculata*
    - *Stylaria lacustris*
    - *Vejdovskyella intermedia*
  - Tubificidae
    - *Aulodrilus pigueti*
    - *Aulodrilus pluriseta*
    - *Ilyodrilus templetoni*
    - *Limnodrilus cervix*
    - *Limnodrilus cervix variant*
    - *Limnodrilus claparedianus*
    - *Limnodrilus hoffmeisteri*
    - *Limnodrilus spiralis*
    - *Limnodrilus udekemianus*
    - *Quistadrilus multisetosus*
    - *Tubifex tubifex*
  - Hirudinea
    - *Dina dubia*
    - *Helobdella stagnalis*
    - *Mooreobdella microstoma*

CRUSTACEA
- Isopoda
  - *Caecidotea intermedia*

INSECTA
- Diptera
  - Psychodidae
    - *Pericoma sp.*
    - *Chironomidae*
    - *Chironomus anthracinus-gr.*
    - *Chironomus plumosus-gr.*
    - *Cricotopus (C.) bicinctus-gr.*
    - *Dicrotendipes sp.*
    - *Nanocladius sp.*
    - *Parachironomus arcuatus-gr.*
    - *Procladius sp.*

MOLLUSCA
- Gastropoda
  - *Mentus (M.) dilatatus*
  - *Valvata bicarinata bicarinata*
- Pelecypoda
  - *Musculium lacustre f. jayense*
  - *Musculium jayennnse f. jayense*
  - *Musculium transversum*
  - *Pisidium adamsi/casertanum*
  - *Pisidium casertanum*
  - *Pisidium compressum*
  - *Pisidium nitidum f. pauperculum*
  - *Pisidium subtruncatum*
  - *Pisidium variabile*
  - *Sphaerium corneum*
  - *Sphaerium simile*

Source: Polls, et al., Comprehensive Water Quality Evaluation-Distribution of Benthic Invertebrate Species in the Chicago Waterway System During 1991, MWRDGC Report No. 92-22, 1992.

TABLE 30
Number and Weight of Fish Collected at Stations 18 and 19 in Reach 6 of the Chicago River, 1991

SPECIES	NUMBER OF FISH COLLECTED	TOTAL WEIGHT (GRAMS)
Alewife	4	14.46
Rainbow trout	1	853.50
Goldfish	15	4,146.50
Carp	99	300,516.85
Carp x goldfish hybrid	7	7,702.50
Black bullhead	4	844.00
Rock bass	132	4,583.97
Green sunfish	126	2,629.16
Pumpkinseed	24	380.21
Bluegill	77	680.39
Largemouth bass	48	5,921.38
Brown trout	3	67.65
Golden shiner	1	3.52
Bluntnose minnow	513	1,040.38
Threespine stickleback	1	2.29
Smallmouth bass	23	451.20
Black crappie	1	153.00
Johnny darter	3	1.83
Spottail shiner	50	183.53
Troutperch	2	4.89
Green sunfish x pumpkinseed hybrid	1	40.00
Yellow perch	11	263.66
Gizzard shad	47	2,334.46
Chinook salmon	1	17.56
Fathead minnow	2	5.51
TOTAL	**1,196**	**332,842.40**

Source: Dennison et al., Comprehensive Water Quality Evaluation: Fish Survey of the Chicago Waterway System During 1991l, MWRDGC Report No. 92-17, 1992.

TABLE 31
Benthic Invertebrates Collected from Reach 6 of the Chicago River, 1989

ANNELIDA
- Oligochaeta
  - Naididae
    - *Amphichaeta leydigi*
    - *Ophidonais serpentina*
    - *Paranais frici*
    - *Vejdovskyella intermedia*
  - Tubificidae
    - *Aulodrilus limnobius*
    - *Aulodrilus pigueti*
    - *Ilyodrilus templetoni*
    - *Limnodrilus hoffmeisteri*
    - *Limnodrilus maumeensis*
    - *Limnodrilus udekemianus*
    - *Quistadrilus multisetosus*
  - Hirudinea
    - *Helobdella stagnalis*
    - *Mooreobdella microstoma*

INSECTA
- Diptera
  - Chironomidae
    - *Chironomus anthracinus-gr.*
    - *Chironomus plumosus-gr.*
    - *Claydopelma sp.*
    - *Cryptochironomus cf. digitatus*
    - *Procladius sp.*

MOLLUSCA
- Pelecypoda
  - *Pisidium casertanum*

Source: Metropolitan Water Reclamation District of Greater Chicago, Comprehensive Water Quality Evaluation: Distribution of Benthic Invertebrate Species in the Chicago Waterway System During 1989, Report No. 90-30, 1990.

TABLE 32
Benthic Invertebrates Collected from Reach 6 of the Chicago River, 1990

TURBELLARIA
ANNELIDA
- Oligochaeta
  - Naididae
    - *Amphichaeta leydigi*
    - *Nais pardalis*
    - *Paranais frici*
    - *Vejdovskyella intermedia*
  - Tubificidae
    - *Aulodrilus limnobius*
    - *Aulodrilus pigueti*
    - *Aulodrilus pluriseta*
    - *Ilyodrilus templetoni*
    - *Limnodrilus hoffmeisteri*
    - *Limnodrilus maumeensis*
    - *Limnodrilus udekemianus*
    - *Potamothrix vejdovskyi*
    - *Quistadrilus multisetosus*
- Hirudinea
  - *Helobdella stagnalis*
  - *Mooreobdella microstoma*

CRUSTACEA
- Amphipoda
  - *Gammarus sp.*

INSECTA
- Diptera
  - Chironomidae
    - *Chironomus anthracinus-gr.*
    - *Chironomus plumosus-gr.*
    - *Cladopelma sp.*
    - *Cryptochironomus cf. digitatus*
    - *Procladius sp.*

MOLLUSCA
- Pelecypoda
  - *Pisidium punctatum*

Source: Polls, et al., Comprehensive Water Quality Evaluation: Distribution of Benthic Invertebrate Species in the Chicago Waterway System During 1990, MWRDGC Report No. 91-22, 1991.

TABLE 33
Benthic Invertebrates Collected from Reach 6 of the Chicago River, 1991

TURBELLARIA
ANNELIDA
- Oligochaeta
  - Enchytraeidae
  - Naididae
    - *Amphichaeta leydigi*
    - *Chaetogaster diaphanus*
    - *Nais pardalis*
    - *Nais variabilis*
    - *Paranais frici*
    - *Pristinella acuinata*
    - *Specaria josinae*
    - *Vejdovskyella intermedia*
  - Tubificidae
    - *Aulodrilus limnobius*
    - *Aulodrilus pigueti*
    - *Aulodrilus pluriseta*
    - *Ilyodrilus templetoni*
    - *Limnodrilus hoffmeisteri*
    - *Limnodrilus maumeensis*
    - *Limnodrilus udekemianus*
    - *Potamothrix moldaviensis*
    - *Potamothrix vejdovskyi*
    - *Quistadrilus multisetosus*

CRUSTACEA
- Amphipoda
  - *Gammarus sp.*

INSECTA
- Diptera
  - Chironomidae
    - *Chironomus anthracinus-gr.*
    - *Chironomus plumosus-gr.*
    - *Cladopelma laccophilus-gr.*
    - *Cryptochironomus cf. digitatus*
    - *Monodiamesa depectinata*
    - *Polypedilium cf. scalaenum*
    - *Polypedilium cf. simulans/digitifer*
    - *Procladius sp.*
    - *Pseudochironomus sp.*

MOLLUSCA
- Pelecypoda
  - *Dreissena polymorpha*
  - *Musculium lacustre f. jayense*
  - *Pisidium casertanum*
  - *Pisidium punctatum*
  - *Sphaerium corneum*

Source: Polls, et al., Comprehensive Water Quality Evaluation: Distribution of Benthic Invertebrate Species in the Chicago Waterway System During 1991, MWRDGC Report No. 92-22, 1992.

TABLE 34
Number and Weight of Fish Collected from One Station in Reach 7, Junction of North Branch and South Branch, 1991

SPECIES	NUMBER OF FISH COLLECTED	TOTAL WEIGHT (GRAMS)
Alewife	26	213.52
Gizzard shad	210	7,866.06
Goldfish	40	9,225.22
Carp	65	172,200.03
Carp x goldfish hybrid	8	13,839.20
Emerald shiner	2	13.77
Spottail shiner	11	23.30
Bluntnose minnow	133	328.11
Rock bass	4	707.00
Green sunfish	12	246.98
Pumpkinseed	4	124.46
Bluegill	19	740.05
Largemouth bass	7	798.73
Golden shiner	1	56.82
White perch	3	305.72
Orangespotted sunfish	1	9.00
Black crappie	1	11.00
Yellow perch	1	24.00
TOTAL	**548**	**206,732.97**

Source: Dennison et al. Comprehensive Water Quality Evaluation: Fish Survey of the Chicago Waterway System During 1991, MWRDGC Report No. 92-17, 1992.

TABLE 35
Benthic Invertebrates Collected from Reach 7 of the South Branch Chicago River, 1989

TURBELLARIA
ANNELIDA
- Oligochaeta
  - Naididae
    - *Chaetogaster diaphanus*
    - *Chaetogaster limnaei*
    - *Dero digitata*
    - *Vejdovskyella intermedia*
  - Tubificidae
    - *Aulodrilus pigueti*
    - *Aulodrilus pluriseta*
    - *Ilyodrilus templetoni*
    - *Limnodrilus cervix*
    - *Limnodrilus cervix variant*
    - *Limnodrilus hoffmeisteri*
    - *Limnodrilus spiralis*
    - *Limnodrilus udekemianus*
    - *Quistadrilus multisetosus*
  - Hirudinea
    - *Helobdella stagnalis*
    - *Mooreobdella microstoma*

INSECTA
- Diptera
  - Chironomidae
    - *Chironomus anthracinus-gr.*
    - *Chironomus plumosus-gr.*
    - *Procladius sp.*

MOLLUSCA
- Gastropoda
  - *Bithynia tentaculata*
  - *Valvata tricarinata*
- Pelecypoda
  - *Pisidium casertanum*
  - *Pisidium compressum*
  - *Sphaerium corneum*

Source: Metropolitan Water Reclamation District of Greater Chicago., Comprehensive Water Quality Evaluation: Distribution of Benthic Invertebrate Species in the Chicago Waterway System During 1989, Report No. 90-30, 1990.

TABLE 36
Benthic Invertebrates Collected from Reach 7 of the South Branch Chicago River, 1990

TURBELLARIA
ANNELIDA
- Oligochaeta
  - Naididae
    - *Chaetogaster diaphanus*
    - *Dero digitata*
    - *Stylaria lacustris*
  - Tubificidae
    - *Aulodrilus pigueti*
    - *Aulodrilus pluriseta*
    - *Ilyodrilus templetoni*
    - *Limnodrilus cervix*
    - *Limnodrilus cervix variant*
    - *Limnodrilus hoffmeisteri*
    - *Limnodrilus udekemianus*
    - *Quistadrilus multisetosus*
  - Hirudinea
    - *Helobdella stagnalis*
    - *Mooreobdella microstoma*
- Crustacea
  - Isopoda
    - *Caecidotea intermedia*

INSECTA
- Diptera
  - Chironomidae
    - *Nanocladius sp.*
    - *Procladius sp.*

MOLLUSCA
- Pelecypoda
  - *Musculium transversum*
  - *Pisidium casertanum*
  - *Pisidium compressum*
  - *Sphaerium corneum*

Source: Polls et al., Comprehensive Water Quality Evaluation: Distribution of Benthic Invertebrate Species in the Chicago Waterway System During 1990, MWRDGC Report No. 91-22, 1991.

TABLE 37
Benthic Invertebrates Collected from Reach 7 of the South Branch Chicago River, 1991

TURBELLARIA
ANNELIDA
- Oligochaeta
  - Aeolosomatidae
  - Enchytraeidae
  - Naididae
    - *Chaetogaster diaphanus*
    - *Dero digitata*
    - *Paranais frici*
    - *Stylaria lacustris*
  - Tubificidae
    - *Aulodrilus limnobius*
    - *Aulodrilus pigueti*
    - *Aulodrilus pluriseta*
    - *Ilyodrilus templetoni*
    - *Limnodrilus cervix variant*
    - *Limnodrilus hoffmeisteri*
    - *Limnodrilus udekemianus*
    - *Quistadrilus multisetosus*
  - Hirudinea
    - *Helobdella stagnalis*

CRUSTACEA
- Isopoda
  - *Caecidotea intermedia*

INSECTA
- Diptera
  - Chironomidae
    - *Chironomus plumosus-gr.*
    - *Cladopelma laccophilus-gr.*
    - *Cricotopus (C.) bicinctus-gr.*
    - *Nanocladius sp.*
    - *Procladius sp.*

MOLLUSCA
- Pelecypoda
  - *Musculium transversum*

Source: Polls, et al, Comprehensive Water Quality Evaluation: Distribution of Benthic Invertebrate Species in the Chicago Waterway System During 1991, MWRDGC Report No. 92-22, 1992.

TABLE 38
Number and Weight of Fish Collected from Three Stations in Reach 8, Chicago Sanitary and Ship Canal, 1991

SPECIES	NUMBER OF FISH COLLECTED	TOTAL WEIGHT (GRAMS)
Gizzard shad	54	1692.75
Rainbow smelt	1	5.51
Goldfish	602	113,827.06
Carp	418	472,844.08
Golden shiner	47	422.76
Bluntnose minnow	628	981.52
Threespine stickleback	1	1.41
Green sunfish	7	67.63
Pumpkinseed	12	129.48
Largemouth bass	46	3,790.64
Carp x goldfish hybrid	17	12,514.61
Bluegill	12	18.94
Emerald shiner	16	75.97
Fathead minnow	24	47.99
Black bullhead	2	298.68
Alewife	1	0.79
Black crappie	1	216.00
Spottail shiner	18	27.08
Brown trout	1	454.00
TOTAL	**1,908**	**607,416.90**

Source: Dennison et al, Comprehensive Water Quality Evaluation: Fish Survey of the Chicago Waterway System During 1991, MWRDGC Report No. 92-17, 1992.

TABLE 39
Benthic Invertebrates Collected from the Chicago Sanitary and Ship Canal, Reach 8, 1989

TURBELLARIA
ANNELIDA
- Oligochaeta
  - Enchytraeidae
  - Naididae
    - *Arcteonais lomondi*
    - *Chaetogaster diaphanus*
    - *Chaetogaster diastrophus*
    - *Chaetogaster limnaei*
    - *Dero digitata*
    - *Dero furcata*
    - *Dero lodeni*
    - *Haemonais waldvogeli*
    - *Nais communis*
    - *Nais elinguis*
    - *Nais simplex*
    - *Nais variabilis*
    - *Ophidonais serpentina*
    - *Paranais frici*
    - *Stylaria lacustris*
  - Tubificidae
    - *Aulodrilus pigueti*
    - *Ilyodrilus templetoni*
    - *Limnodrilus cervix*
    - *Limnodrilus cervix variant*
    - *Limnodrilus claparedianus*
    - *Limnodrilus hoffmeisteri*
    - *Limnodrilus maumeensis*
    - *Limnodrilus spiralis*
    - *Limnodrilus udekemianus*
    - *Quistadrilus multisetosus*
    - *Tubifex tubifex*
  - Hirudinea
    - *Glossiphonia complanata*
    - *Helobdella stagnalis*
    - *Mooreobdella microstoma*

CRUSTACEA
- Isopoda
  - *Caecidotea intermedius*

INSECTA
- Odonata
  - *Coenagrion/Enallagma sp.*
- Diptera
  - Sciaridae
    - *g. nr. Corynoptera sp.*
  - Ceratopogonidae
  - Chironomidae
    - *Cricotopus (I.) sylvestris-gr.*
    - *Nanocladius sp.*
    - *Parachironomus arcuatus-gr.*
    - *Polypedilum cf. illinoense*
    - *Polypedilum cf. scalaenum*
    - *Procladius sp.*
    - *Tanypus (A.) neopunctipennis*

MOLLUSCA
- Gastropoda
  - *Amnicola limosa*
  - *Bithynia tentaculata*
  - *Cincinnatia sp.*
  - *Physella sp.*
  - *Valvata tricarinata*
- Pelecypoda
  - *Musculium lacustre f. jayense*
  - *Musculium lacustre f. lacustre*
  - *Musculium transversum*
  - *Pisidium casertanum*
  - *Pisidium compressum*
  - *Pisidium fallax*
  - *Pisidium lilljeborgi*
  - *Sphaerium corneum*

Source: Metropolitan Water Reclamation District of Greater Chicago, Comprehensive Water Quality Evaluation: Distribution of Benthic Invertebrate Species in the Chicago Waterway System During 1989, Report No. 90-30, 1990.

TABLE 40
Benthic Invertebrates Collected from the Chicago Sanitary and Ship Canal, Reach 8, 1990

COELENTERATA
- *Hydra sp.*

TURBELLARIA

ANNELIDA
- Oligochaeta
  - Enchytraeidae
  - Naididae
    - *Chaetogaster diaphanus*
    - *Chaetogaster diastrophus*
    - *Chaetogaster limnaei*
    - *Dero digitata*
    - *Haemonais waldvogeli*
    - *Nais communis*
    - *Nais elinguis*
    - *Nais pardalis*
    - *Nais pseudobtusa*
    - *Nais simplex*
    - *Nais variabilis*
    - *Ophidonais serpentina*
    - *Paranais frici*
    - *Stylaria fossularis*
    - *Stylaria lacustris*
  - Tubificidae
    - *Ilyodrilus templetoni*
    - *Limnodrilus cervix*
    - *Limnodrilus cervix variant*
    - *Limnodrilus claparedianus*
    - *Limnodrilus hoffmeisteri*
    - *Limnodrilus maumeensis*
    - *Limnodrilus udekemianus*
    - *Quistadrilus multisetosus*
    - *Tubifex tubifex*
- Hirudinea
  - *Abloglossiphonia heteroclitia*
  - *Dina parva*
  - *Erpobdella punctata punctata*
  - *Glossiphonia complanata*
  - *Helobdella fusca*
  - *Helobdella stagnalis*
  - *Helobdella transversa*
  - *Mooreobdella microstoma*

CRUSTACEA
- Isopoda
  - *Caecidotea intermedius*

INSECTA
- Odonata
  - *Enallagma sp.*
- Diptera
  - Chironomidae
    - *Cricotopus (I.) sylvestris-gr.*
    - *Dicrotendipes sp.*
    - *Parachironomus arcuatus-gr.*
    - *Procladius sp.*

MOLLUSCA
- Gastropoda
  - *Bithynia tentaculata*
  - *Physella gyrina sayi*
- Pelecypoda
  - *Musculium lacustre f. jayense*
  - *Musculium transversum*
  - *Pisidium casertanum*
  - *Pisidium compressum*
  - *Pisidium subtruncatum*
  - *Pisidium variabile*
  - *Sphaerium corneum*

Source: Polls et al, Comprehensive Water Quality Evaluation: Distribution of Benthic Invertebrate Species in the Chicago Waterway System During 1990, MWRDGC Report No. 91-22, 1991.

TABLE 41
Benthic Invertebrates Collected from the Chicago Sanitary and Ship Canal, Reach 8, 1991

COELENTERATA
- *Hydra sp.*

TURBELLARIA

ANNELIDA
- Oligochaeta
  - Aeolosomatidae
  - Enchytraeidae
  - Naididae
    - *Chaetogaster diaphanus*
    - *Chaetogaster limnaei*
    - *Dero digitata*
    - *Dero furcata*
    - *Dero pectinata*
    - *Haemonais waldvogeli*
    - *Nais communis*
    - *Nais elinguis*
    - *Nais simplex*
    - *Nais variabilis*
    - *Paranais frici*
    - *Pristina aequiseta*
    - *Slavina appendiculata*
    - *Stylaria lacustris*
  - Tubificidae
    - *Aulodrilus limnobius*
    - *Aulodrilus pigueti*
    - *Ilyodrilus templetoni*
    - *Limnodrilus cervix*
    - *Limnodrilus cervix variant*
    - *Limnodrilus claparedianus*
    - *Limnodrilus hoffmeisteri*
    - *Limnodrilus maumeensis*
    - *Limnodrilus udekemianus*
    - *Quistadrilus multisetosus*
    - *Tubifex tubifex*
  - Hirudinea
    - *Dina parva*
    - *Erpobdella punctata punctata*
    - *Glossiphonia complanata*
    - *Helobdella stagnalis*
    - *Mooreobdella microstoma*
    - *Nephelopsis obscura*

CRUSTACEA
- Amphipoda
  - *Hyalella azteca*
- Isopoda
  - *Caecidotea intermedia*

INSECTA
- Diptera
  - Psychodidae
    - *Pericoma sp.*
    - *Psychoda sp.*
  - Chironomidae
    - *Ablabesmyia sp.*
    - *Cricotopus (I.) sylvestris-gr.*
    - *Dicrotendipes sp.*
    - *Nanocladius sp.*
    - *Procladius sp.*

MOLLUSCA
- Gastropoda
  - *Amnicola limosa*
  - *Bithynia tentaculata*
  - *Ferrissia sp.*
  - *Menetus (M.) dilatatus*
- Pelecypoda
  - *Corbicula fluminea*
  - *Dreissena polymorpha*
  - *Musculium lacustre f. jayense*
  - *Musculium transversum*
  - *Pisidium casertanum*
  - *Pisidium compressum*
  - *Pisidium subtruncatum*
  - *Pisidium variabile*
  - *Sphaerium corneum*

Source: Polls et al, Comprehensive Water Quality Evaluation: Distribution of Benthic Invertebrate Species in the Chicago Waterway System During 1991, MWRDGC Report No. 92-22, 1992.

TABLE 42
Number and Weight of Fish Collected from One Station in Reach 9A, Chicago Sanitary and Ship Canal, 1991

SPECIES	NUMBER OF FISH COLLECTED	TOTAL WEIGHT (GRAMS)
Central mudminnow	1	20.00
Goldfish	29	1,501.42
Carp	23	26,897.85
Bluntnose minnow	29	107.26
Green sunfish	8	95.60
Gizzard shad	1	102.50
Carp x goldfish hybrid	3	986.03
Pumpkinseed	2	13.00
Largemouth bass	2	24.35
Spottail shiner	1	2.09
Green sunfish x pumpkinseed hybrid	1	19.00
TOTAL	**100**	**29,769.10**

Source: Dennison et al., Comprehensive Water Quality Evaluation: Fish Survey of the Chicago Waterway System During 1991, MWRDGC Report No. 92-17, 1992.

TABLE 43
Number and Weight of Fish Collected from One Station in Reach 9B, Chicago Sanitary and Ship Canal, 1991

SPECIES	NUMBER OF FISH COLLECTED	TOTAL WEIGHT (GRAMS)
Gizzard shad	11	534.61
Goldfish	17	2,915.32
Carp	55	78,895.89
Green sunfish	3	24.14
Pumpkinseed	3	6.25
Golden shiner	2	10.10
Emerald shiner	3	16.69
Bluegill	1	16.48
Carp x goldfish hybrid	2	2,919.00
Largemouth bass	6	84.00
TOTAL	**103**	**85,422.48**

Source: Dennison et al., Comprehensive Water Quality Evaluation: Fish Survey of the Chicago Waterway System During 1991, MWRDGC Report No. 92-17, 1992.

TABLE 44
Number and Weight of Fish Collected from Two Stations in Reach 10A, Cal-Sag Channel, 1991

SPECIES	NUMBER OF FISH COLLECTED	TOTAL WEIGHT (GRAMS)
Gizzard shad	105	1,844.08
Goldfish	80	18,429.52
Carp	46	51,971.84
Carp x goldfish hybrid	3	3,209.50
Fathead minnow	1	0.91
Green sunfish	31	316.46
Bluegill	22	726.60
Black crappie	2	8.41
Central mudminnow	2	9.87
Emerald shiner	5	12.55
Largemouth bass	6	484.83
Bluntnose minnow	2	12.87
Black bullhead	1	102.00
Pumpkinseed	6	68.00
Spottail shiner	1	3.27
Green sunfish x pumpkinseed hybrid	1	71.00
TOTAL	**314**	**77,271.71**

Source: Dennison et al., Comprehensive Water Quality Evaluation: Fish Survey of the Chicago Waterway System During 1991, MWRDGC Report No. 92-17, 1992.

TABLE 45
Benthic Invertebrates Collected from the Cal-Sag Channel, Reach 10A, 1989

TURBELLARIA
ANNELIDA
- Oligochaeta
  - Enchytraeidae
  - Naididae
    - *Chaetogaster diaphanus*
    - *Chaetogaster limnaei*
    - *Dero digitata*
    - *Dero lodeni*
  - Tubificidae
    - *Ilyodrilus templetoni*
    - *Limnodrilus cervix*
    - *Limnodrilus cervix variant*
    - *Limnodrilus hoffmeisteri*
    - *Limnodrilus maumeensis*
    - *Limnodrilus spiralis*
    - *Limnodrilus udekemianus*
    - *Quistadrilus multisetosus*
    - *Tubifex tubifex*
  - Hirudinea
    - *Helobdella fusca*
    - *Helobdella stagnalis*
    - *Helobdella triserialis*
    - *Mooreobdella microstoma*

INSECTA
- Odonata
  - *Perithemis tentera*
- Diptera
  - Ceratopogonidae
    - *Ceratopogon sp.*
  - Chironomidae
    - *Dicrotendipes sp.*
    - *Parachironomus arcuatus-gr.*
    - *Procladius freemani Subl. var. 1*
    - *Procladius sp.*
    - *Tanypus (Abbelopia) neopunctipennis*

MOLLUSCA
- Pelecypoda
  - *Musculium lacustre f. jayense*
  - *Musculium transversum*
  - *Sphaerium corneum*

Source: Metropolitan Water Reclamation District of Greater Chicago, Comprehensive Water Quality Evaluation: Distribution of Benthic Invertebrate Species in the Chicago Waterway System During 1989, Report No. 90-30, 1990.

TABLE 46
Benthic Invertebrates Collected from the Cal-Sag Channel, Reach 10A, 1990

ANNELIDA
- Oligochaeta
  - Naididae
    - *Chaetogaster diaphanus*
    - *Dero digitata*
    - *Ophidonais serpentina*
    - *Stylaria lacustris*
  - Tubificidae
    - *Ilyodrilus templetoni*
    - *Limnodrilus cervix*
    - *Limnodrilus cervix variant*
    - *Limnodrilus hoffmeisteri*
    - *Limnodrilus maumeensis*
    - *Limnodrilus spiralis*
    - *Limnodrilus udekemianus*
    - *Quistadrilus multisetosus*
    - *Tubifex tubifex*
  - Hirudinea
    - *Helobdella stagnalis*
    - *Mooreobdella microstoma*

INSECTA
- Odonata
  - Libelludidae
- Diptera
  - Chaoboridae
    - *Chaoborus punctipennis*
  - Chironomidae
    - *Nanocladius sp.*
    - *Parachironomus arcuatus-gr.*
    - *Procladius sp.*
    - *Tanypus sp.*

MOLLUSCA
- Gastropoda
  - *Physella sp.*
- Pelecypoda
  - *Musculium lacustre f. jayense*
  - *Musculium transversum*

Source: Polls et al., Comprehensive Water Quality Evaluation: Distribution of Benthic Invertebrate Species in the Chicago Waterway System During 1990, MWRDGC Report No. 91-22, 1991.

TABLE 47
Benthic Invertebrates Collected from the Cal-Sag Channel, Reach 10A, 1991

TURBELLARIA
ANNELIDA
- Oligochaeta
  - Naididae
    - *Chaetogaster diaphanus*
    - *Chaetogaster limnaei*
    - *Dero digitata*
  - Tubificidae
    - *Aulodrilus pluriseta*
    - *Ilyodrilus templetoni*
    - *Limnodrilus cervix*
    - *Limnodrilus cervix variant*
    - *Limnodrilus claparedianus*
    - *Limnodrilus hoffmeisteri*
    - *Limnodrilus maumeensis*
    - *Limnodrilus udekemianus*
    - *Quistadrilus multisetosus*
    - *Tubifex tubifex*
  - Hirudinea
    - *Helobdella sp.*
    - *Mooreobdella microstoma*

INSECTA
- Coleoptera
  - Elmidae
- Tricoptera
  - *Hydropsyche sp.*
- Diptera
  - Chironomidae
    - *Procladius sp.*

MOLLUSCA
- Gastropoda
  - *Bithynia tentaculata*
- Pelecypoda
  - *Musculium lacustre f. jayense*
  - *Musculium transversum*
  - *Sphaerium corneum*

Source: Polls et al., Comprehensive Water Quality Evaluation: Distribution of Benthic Invertebrate Species in the Chicago Waterway System During 1991, Report No. 92-22, 1992.

TABLE 48
Fishes Collected from the Little Calumet River, Reach 10B, 1976

SPECIES	STATION: 165	40	TOTAL
CLUPEIDAE			
gizzard shad	47	—	47
UMBRIDAE			
central mudminnow	—	1	1
CYPRINIDAE			
goldfish	19	1	20
carp	24	2	26
emerald shiner	10	—	10
bluntnose minnow	5	—	5
carp x goldfish	7	1	8
ICTALURIDAE			
black bullhead	—	1	1
POECILIIDAE			
mosquitofish	—	4	4
CENTRARCHIDAE			
green sunfish	1	55	56
pumpkinseed	1	—	1
bluegill	—	2	2
TOTAL INDIVIDUALS	**114**	**67**	**181**
TOTAL SPECIES	**7**	**7**	

Source: Brigham, W.U., D. McCormick, and M.J. Wetzel, The watersheds of Notheastern Illinois: quality of the aquatic environment based upon water quality and fishery data, 1978.

TABLE 49
Number and Weight of Fish Collected from Two Stations on the Little Calumet River, Reach 10B, 1991

SPECIES	NUMBER OF FISH COLLECTED	TOTAL WEIGHT (GRAMS)
Gizzard shad	545	15,087.13
Goldfish	108	29,741.02
Carp	112	150,754.75
Carp x goldfish hybrid	18	25,377.65
Golden shiner	9	189.53
Emerald shiner	28	130.86
Spottail shiner	16	163.24
Bluntnose minnow	12	34.14
Black bullhead	2	401.00
White perch	46	2,221.04
Green sunfish	21	211.73
Pumpkinseed	14	371.70
Bluegill	10	179.89
Green sunfish x pumpkinseed hybrid	2	52.78
Largemouth bass	18	2,768.90
Grass pickerel	1	59.00
White sucker	1	252.00
TOTAL	**963**	**227,996.36**

Source: Dennison, et al., Comprehensive Water Quality Evaluation: Fish Survey of the Chicago Waterway System During 1991, MWRDGC Report No. 92-17, 1992.

TABLE 50
Number and Weight of Fish Collected from Two Stations in Reach 10C, Calumet River, 1991

SPECIES	NUMBER OF FISH COLLECTED	TOTAL WEIGHT (GRAMS)
Alewife	1	60.00
Gizzard shad	218	20,768.48
Goldfish	7	1,987.78
Grass carp	1	9,072.00
Carp	57	153,709.31
Spottail shiner	2	18.35
Bluntnose minnow	204	548.80
Fathead minnow	8	8.91
White sucker	2	997.00
Black buffalo	1	5,925.15
White perch	53	2,355.56
Green sunfish	143	2,155.93
Pumpkinseed	69	1,459.99
Largemouth bass	129	15,754.20
Emerald shiner	91	233.28
Quillback	2	1,284.50
Channel catfish	2	1,879.50
White bass	1	553.00
Bluegill	135	2,116.15
Smallmouth bass	1	14.00
Green sunfish x pumpkinseed hybrid	5	156.79
Freshwater drum	1	809.00
Golden shiner	7	74.45
Carp x goldfish hybrid	1	715.00
Green sunfish x bluegill hybrid	4	32.00
Black bullhead	1	157.00
Black crappie	2	178.50
Yellow perch	1	3.07
Chinook salmon	1	4,110.00
TOTAL	**1,150**	**227,137.70**

Source: Dennison, et al., Comprehensive Water Quality Evaluation: Fish Survey of the Chicago Waterway System During 1991, MWRDGC Report No. 92-17, Tables AI-12,13, 1992.

TABLE 51
Benthic Invertebrates Collected from the Calumet River, Reach 10C, 1989

COELENTERATA
- *Hydra sp.*

TURBELLARIA

ANNELIDA
- Oligochaeta
  - Naididae
    - *Amphichaeta leydigi*
    - *Chaetogaster diaphanus*
    - *Chaetogaster setosus*
    - *Dero digitata*
    - *Nais bretscheri*
    - *Nais communis*
    - *Nais elinguis*
    - *Nais pardalis*
    - *Nais simplex*
    - *Nais variabilis*
    - *Paranais frici*
    - *Pristina acumineta*
    - *Specaria josinae*
    - *Vejdovskyella intermedia*
  - Tubificidae
    - *Aulodrilus limnobius*
    - *Aulodrilus pigueti*
    - *Aulodrilus pluriseta*
    - *Ilyodrilus templetoni*
    - *Limnodrilus cervix*
    - *Limnodrilus cervix variant*
    - *Limnodrilus claparedianus*
    - *Limnodrilus hoffmeisteri*
    - *Limnodrilus maumeensis*
    - *Limnodrilus udekemianus*
    - *Potamothrix moldaviensis*
    - *Potamothrix vejdovskyi*
    - *Quistadrilus multisetosus*
  - Hirudinea
    - *Helobdella stagnalis*
    - *Mooreobdella microstoma*

CRUSTACEA
- Amphipoda
  - *Gammarus fasciatus*

INSECTA
- Tricoptera
  - *Cyrnellus fraternus*
- Diptera
  - Ceratopogonidae
    - *Ceratopogon sp.*
  - Chironomidae
    - *Chironomus anthracinus-gr.*
    - *Cladopelma sp.*
    - *Cricotopus (C.) bicinctus*
    - *Cricotopus (C.) bicinctus-gr.*
    - *Cricotopus (I.) sp.*
    - *Cryptochironomus cf. digitatus*
    - *Cryptochironomus cf. fulvus*
    - *Dicrotendipes sp.*
    - *Monodiamesa cf. tuberculata*
    - *Nanocladius sp.*
    - *Parakiefferiella sp.*
    - *Polypedilum cf. simulans/digitifer*
    - *Procladius sp.*
    - *Tanytarsus sp.*

MOLLUSCA
- Pelecypoda
  - *Corbicula fluminea*
  - *Musculium transversum*
  - *Pisidium casertanum*
  - *Pisidium compressum*
  - *Pisidium fallax*
  - *Pisidium henslowanum*
  - *Sphaerium corneum*
  - *Sphaerium simile*

Source: Metropolitan Water Reclamation District of Greater Chicago, Comprehensive Water Quality Evaluation: Distribution of Benthic Invertebrate Species in the Chicago Waterway System During 1989, Report No. 90-30, 1990.

TABLE 52
Benthic Invertebrates Collected from the Calumet River, Reach 10C, 1990

COELENTERATA
- *Hydra sp.*

TURBELLARIA

ANNELIDA
- Oligochaeta
  - Enchytraeidae
  - Naididae
    - *Chaetogaster diaphanus*
    - *Dero digitata*
    - *Nais communis*
    - *Nais pardalis*
    - *Nais simplex*
    - *Nais variabilis*
    - *Ophidonais serpentina*
    - *Paranais frici*
    - *Pristinella sp.*
    - *Specaria josinae*
    - *Uncinais uncinais*
    - *Vejdovskyella intermedia*
  - Tubificidae
    - *Aulodrilus limnobius*
    - *Aulodrilus pigueti*
    - *Aulodrilus pluriseta*
    - *Ilyodrilus templetoni*
    - *Limnodrilus cervix variant*
    - *Limnodrilus claparedianus*
    - *Limnodrilus hoffmeisteri*
    - *Limnodrilus maumeensis*
    - *Limnodrilus udekemianus*
    - *Potamothrix moldaviensis*
    - *Potamothrix vejdovskyi*
    - *Quistadrilus multisetosus*
  - Hirudinea
    - *Mooreobdella microstoma*

CRUSTACEA
- Amphipoda
  - *Gammarus fasciatus*
  - *Gammarus pseudolimnaeus*

INSECTA
- Coleoptera
  - Carabidae
  - Nitidulidae
  - Salpingidae
- Ephemeroptera
  - *Baetid sp.*
  - *Caenis sp.*
- Odonata
  - *Coenagrionidae*
- Tricoptera
  - *Hydroptila sp.*
  - *Oecetis sp.*
- Diptera
  - Ceratopogonidae
    - *Probezzia sp.*
  - Psychodidae
    - *Psychoda sp.*
- Chironomidae
  - *Ablabesmyia (A.) mallochi var. 1*
  - *Chironomus anthracinus-gr.*
  - *Chironomus plumosus-gr.*
  - *Cricotopus (C.) bicinctus-gr.*
  - *Cricotopus (C.) festivellus-gr.*
  - *Cricotopus (C.) fuscus-gr.*
  - *Cricotopus (C.) tremulus-gr.*
  - *Cricotopus (I.) reversus-gr.*
  - *Cricotopus (I.) sylvestrus-gr.*
  - *Cryptochironomus cf. fulvus*
  - *Dicrotendipes sp.*
  - *Hydrobaenus pilipes-gr.*
  - *Monodiamesa cf. tuberculata*
  - *Nanocladius sp.*
  - *Parachironomus arcuatus-gr.*
  - *Paratendipes sp.*
  - *Parakiefferiella sp.*
  - *Polypedilum cf. simulans/digitifer*
  - *Procladius sp.*

MOLLUSCA
- Pelecypoda
  - *Corbicula fluminea*
  - *Musculium transversum*
  - *Pisidium casertanum*
  - *Pisidium compressum*
  - *Pisidium punctatum*

Source: Polls et al., Comprehensive Water Quality Evaluation: Distribution of Benthic Invertebrate Species in the Chicago Waterway System During 1990, MWRDGC Report No. 91-22, 1991.

TABLE 53
Benthic Invertebrates Collected from the Calumet River, Reach 10C, 1991

COELENTERATA
- *Hydra sp.*

TURBELLARIA

ANNELIDA
- Oligochaeta
  - Naididae
    - *Amphichaeta leydigi*
    - *Chaetogaster diaphanus*
    - *Chaetogaster diastrophus*
    - *Chaetogaster setossus*
    - *Dero digitata*
    - *Nais elinguis*
    - *Nais simplex*
    - *Paranais frici*
    - *Vejdovskyella intermedia*
  - Tubificidae
    - *Aulodrilus limnobius*
    - *Aulodrilus pigueti*
    - *Aulodrilus pluriseta*
    - *Branchiura sowerbyi*
    - *Ilyodrilus templetoni*
    - *Limnodrilus cervix variant*
    - *Limnodrilus claparedianus*
    - *Limnodrilus hoffmeisteri*
    - *Limnodrilus maumeensis*
    - *Limnodrilus spiralis*
    - *Limnodrilus udekemianus*
    - *Potamothrix moldaviensis*
    - *Potamothrix vejdovskyi*
    - *Quistadrilus multisetos*us

CRUSTACEA
- Amphipoda
  - *Gammarus fasciatus*
- Isopoda
  - *Caecidotea sp.*
- Insecta
  - Diptera
    - Ceratopogonidae
      - *Ceratopogon sp.*
    - Chironomidae
      - *Ablabesymia (A.) mallochi var. 1*
      - *Cryptochironomus cf. digitatus*
      - *Cryptochironomus cf. fulvus*
      - *Dicrotendipes cf. modestus*
      - *Dicrotendipes simpsoni*
      - *Polypedilium cf. simulans/digitifer*
      - *Procladius sp.*
- Mollusca
  - Gastropoda
    - *Amnicola limosa*
    - *Probythinella lacustis*
  - Pelecypoda
    - *Corbicula fluminea*
    - *Dreissena polymorpha*
    - *Musculium transversum*
    - *Pisidium casertanum*
    - *Pisidium compressum*
    - *Pisidium punctatum*
    - *Sphaerium simile*

Source: Polls et al., Comprehensive Water Quality Evaluation: Distribution of Benthic Invertebrate Species in the Chicago Waterway System During 1991, MWRDGC Report No. 92-22, 1992.

TABLE 54.
Water Quality Parameters Monitored by MWRD on General and Secondary Use Waters.

Temperature	Mercury	Total Iron
Ammonia	Phenols	Nickel
Total Dissolved Solids	Cyanide	Lead
pH	Fluoride	Arsenic
Fecal Coliforms	Dissolved Oxygen	Selenium
Chloride	Zinc	Barium
Radioactivity	Cadmium	Silver
Oil and Grease	Copper	Manganese
Sulfate	Chromium	Total Phosphorus

Source: Metropolitan Water Reclamation District of Greater Chicago, 1995.

TABLE 55.
Water Quality Sampling Locations on the Chicago and Calumet Waterway Systems.

Chicago Waterway System	Calumet Waterway System
County Line Rd., West Fork of North Branch	Wolf Lake, Burnham Ave.
County Line Rd., Middle Fork of North Branch	IHB RR Bridge, Grand Calumet River
County Line Rd., Skokie River	92nd St. and Ewing Ave., Calumet River
Dempster St., North Branch	130th St., Calumet River
Central Ave., North Shore	Indiana Ave., Calumet River Channel
Touhy Ave., North Shore Channel	Halsted St., Little Calumet River
Wilson Ave., North Branch	Ashland Ave., Cal-Sag Channel
Diversey Ave., North Branch	Cicero Ave., Cal-Sag Channel
Grand Ave., North Branch	Hwy. 83, Cal-Sag Channel
Outer Dr. Bridge, Mainstem	
Madison Ave., South Branch	
Damen Ave., South Branch	
Cicero Ave., Chicago Sanitary and Ship Canal	
Harlem Ave., Chicago Sanitary and Ship Canal	
Hwy. 83, Chicago Sanitary and Ship Canal	
Lemont Bridge, Chicago Sanitary and Ship Canal	

TABLE 56.
Illinois General Use Water Standards, 1992 Water Quality Parameters Estimated Percent Compliance for the Chicago and Calumet Rivers.

		Estimated Percent Compliance	
Parameter	Standard	Chicago	Calumet
Dissolved Oxygen	5.0 mg/l	83.3	83.3
pH	6.5 - 9.0	92.2	100
Total Dissolved. Solids	1000 mg/l	94.4	89.6
Chloride	500 mg/l	97.2	100
Total Iron	1.0 mg/l	95.6	72.2
Fluoride	1.4 mg/l	100	97.9
Silver	0.005 mg/l	100	97.9
Fecal Coliform	400 cts/100 ml	42.8	23.6
Temperature	Winter 60ºF	100	100
Temperature	Summer 90ºF	100	100
Ammonia	1.5 mg/l	100	100
Sulfate	500 mg/l	100	100
Phenols	0.1 mg/l	100	100
Cyanide	0.025 mg/l	100	100
Zinc	1.0 mg/l	100	100
Cadmium	0.05 mg/l	100	100
Copper	0.02 mg/l	100	100
Chromium	1.0 mg/l	100	100
Nickel	1.0 mg/l	100	100
Lead	0.1 mg/l	100	100
Mercury	0.0005 mg/l	100	100
Arsenic	1.0 mg/l	100	100
Selenium	1.0 mg/l	100	100
Barium	5.0 mg/l	100	100
Manganese	1.0 mg/l	100	100
Beta Radioactivity	100 p/l	100	100

Source: MWRD, 1993.

TABLE 57.
Secondary Contact Waters, 1992 Water Quality Parameters, Estimated Percentage Compliance for the Chicago and Calumet Rivers.

		Estimated Percentage Compliance	
Parameter	Standard	Chicago River	Calumet River
Dissolved Oxygen	3.0 mg/l	91.7	94.4
pH	6.0 - 9.0	98.6	100
Total Diss. Solids	1500 mg/l	100	100
Total Iron	2.0 mg/l	94.2	95.8
Silver	0.1 mg/l	100	100
Temperature	93ºF	100	100
Ammonia	2.5-4.0 mg/l	96.3	89.7
Phenols	0.3 mg/l	100	100
Cyanide	0.1 mg/l	100	100
Zinc	1.0 mg/l	100	100
Cadmium	0.15 mg/l	100	100
Copper	1.0 mg/l	100	100
Chromium	1.0 mg/l	100	100
Nickel	1.0 mg/l	100	100
Lead	0.1 mg/l	100	100
Mercury	0.0005 mg/l	100	100
Arsenic	1.0 mg/l	100	100
Selenium	1.0 mg/l	100	100
Barium	5.0 mg/l	100	100
Manganese	1.0 mg/l	99.3	98.6
Oil and Grease	15.0 mg/l	78.9	78.9

Source: MWRD, 1993.

TABLE 58.
Flows Captured and Pollutants Removed by the Mainstream TARP Tunnel System, 1986-1993.

Year	Total Gallons of CSO Pumped (Millions)	Total Pollutants Removed (lbs x 10^6)			
		BOD_5	TSS	NH_4-N	Total Theoretical Oxygen Demand
1986	22,946	11.48	65.26	1.19	16.94
1987	24,559	12.31	69.96	1.17	17.69
1988	22,146	13.77	61.95	1.10	18.85
1989	17,762	4.50	31.34	1.11	9.59
1990	25,585	5.92	42.11	1.58	13.19
1991	22,659	8.12	34.50	1.39	14.51
1992	21,089	9.47	39.62	2.49	20.94
1993	29,327	13.43	68.46	1.59	20.74
Total	186,073	79.00	413.12	11.62	132.45

* Total pounds of BOD_5 + (4.6 x total pounds NH_4-N).
Source: MWRD personal communication.

TABLE 59.
TARP Water Quality Assessment in the North Shore Channel, Chicago River, and Chicago Sanitary and Ship Canal.

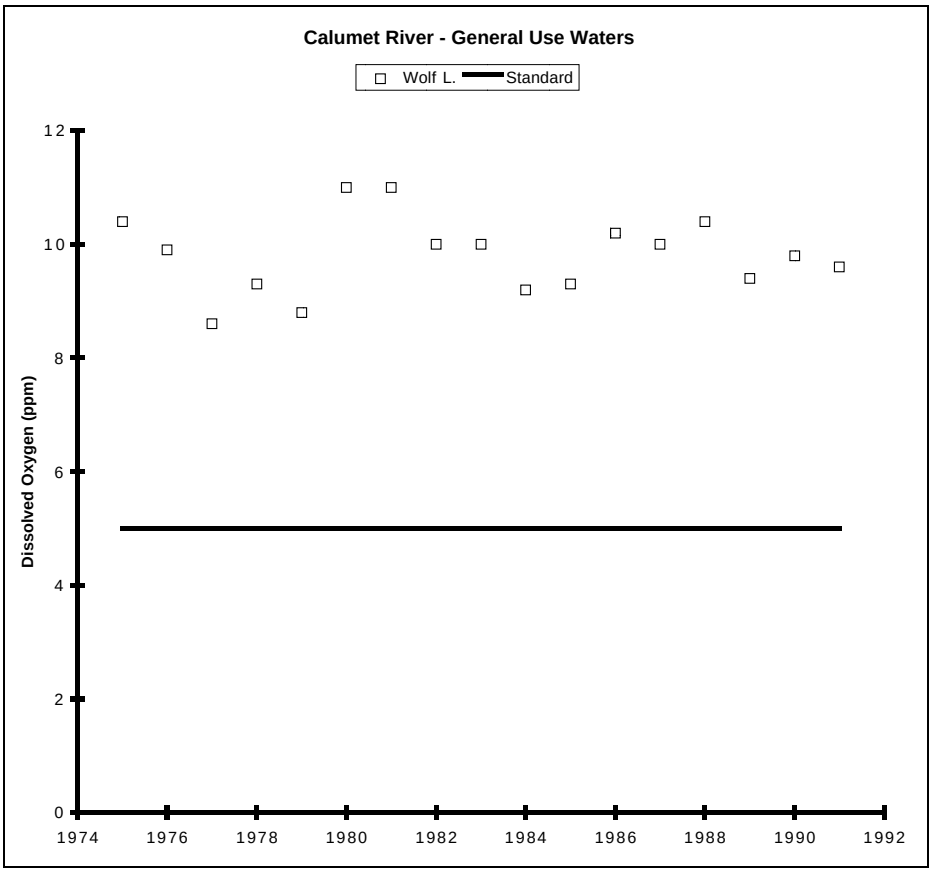
Station	Mean DO (mg/l)			Mean BOD (mg/l)		
	Pre-TARP[1]	Post-TARP[2]	Percentage Change	Pre-TARP[1]	Post-TARP[2]	Percentage Change
Touhy	7.81	7.86	+0.6	5.5	6.0	+9.1
Wilson	7.76	7.55	-2.7	6.8	5.7	-16.7
Grand	4.82	5.88	+21.9	6.7	3.3	-50.2
Damen	5.13	6.70	+30.6	4.5	2.5	-44.4
Harlem	5.53	6.87	+24.2	5.8	3.8	-34.4
Hwy. 83	4.12	5.55	+34.7	4.3	2.8	-34.1

[1]January 1979 through December 1984.
[2]January 1986 through December 1991.
Source: MWRD, 1993.

TABLE 60.
TARP Water Quality Assessment in the North Shore Channel, Chicago River, and Chicago Sanitary and Ship Canal.

Station	Mean NH_4 (mg/l)			Mean Total P (mg/l)		
	Pre-TARP[1]	Post-TARP[2]	Percentage Change	Pre-TARP[1]	Post-TARP[2]	Percentage Change
Touhy	2.9	1.6	-44.8	0.97	0.79	-18.9
Wilson	3.8	2.1	-44.7	0.97	0.80	-17.5
Grand	3.2	2.1	-34.4	1.01	0.79	-21.8
Damen	2.3	1.3	-43.5	0.64	0.46	-28.1
Harlem	2.1	1.8	-14.3	0.62	0.55	-11.3
Hwy. 83	1.9	1.7	-10.5	0.64	0.50	-21.9

[1]January 1979 through December 1984.
[2]January 1986 through December 1991.
Source: MWRD, 1993.



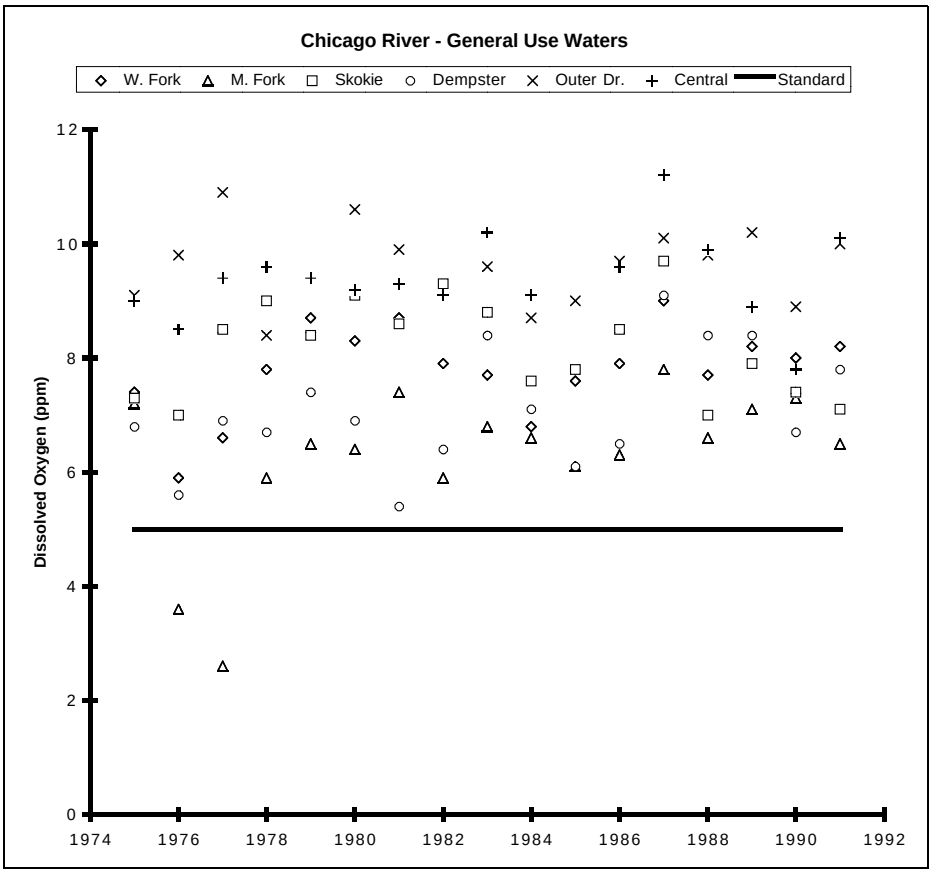
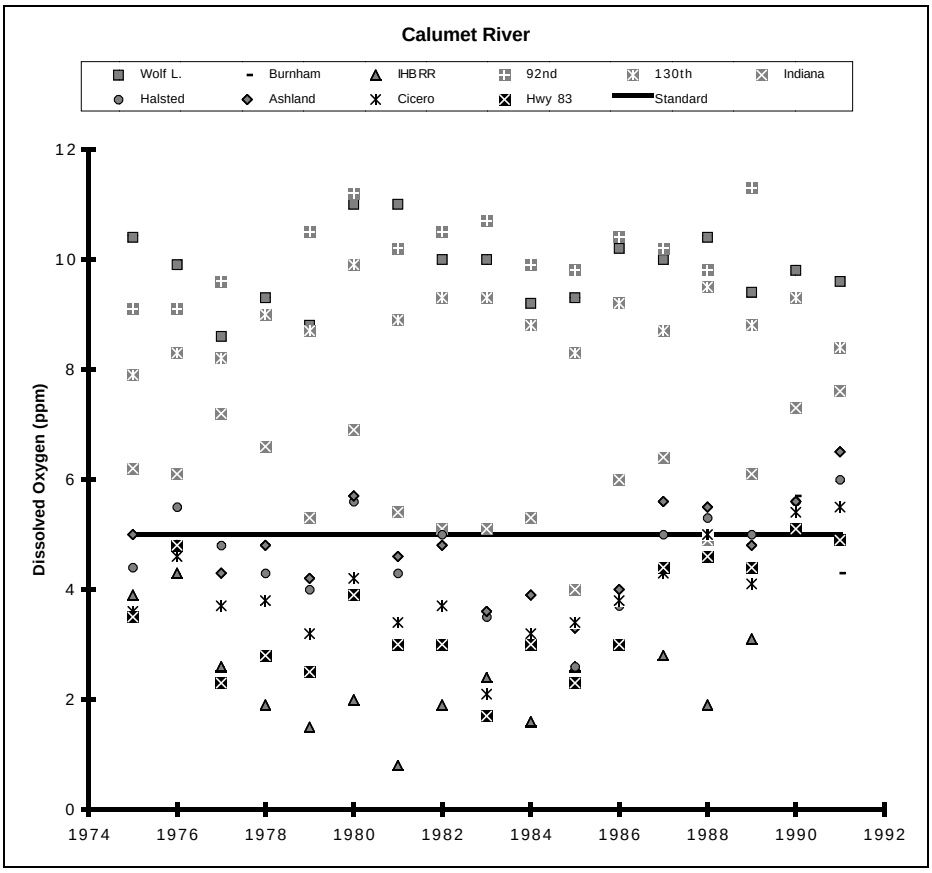


FIGURE 10
Mean Annual Dissolved Oxygen Concentration in General Use Reaches of the Chicago and Calumet River Systems, 1975-1991



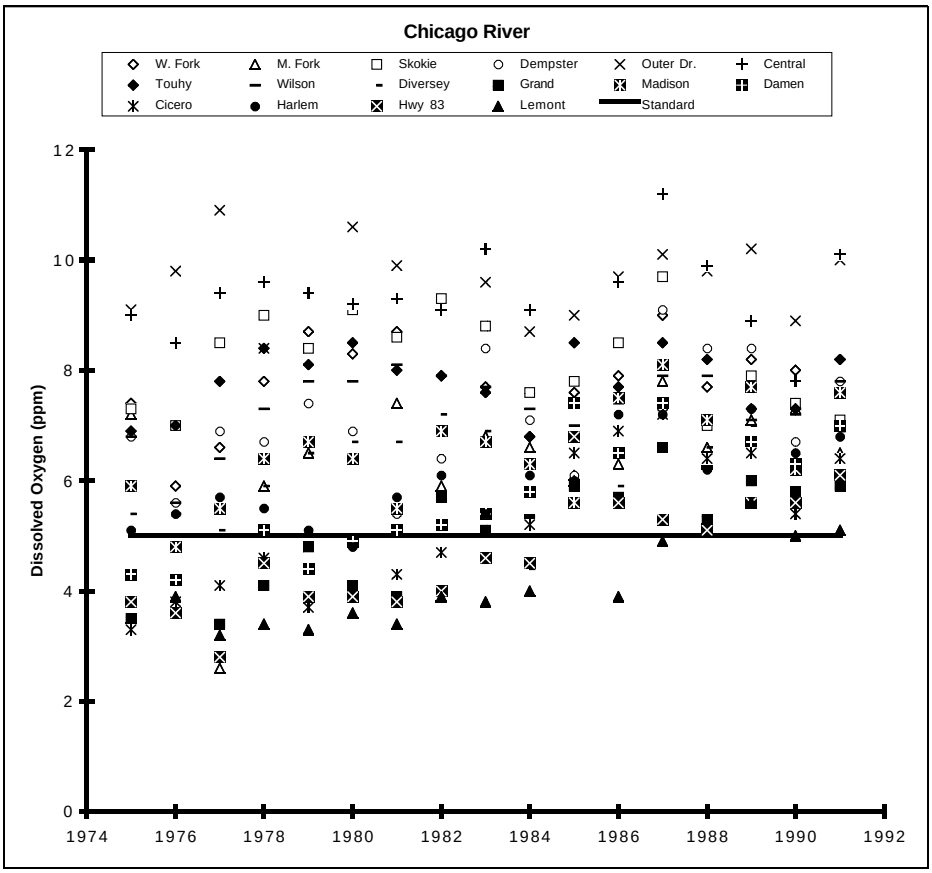
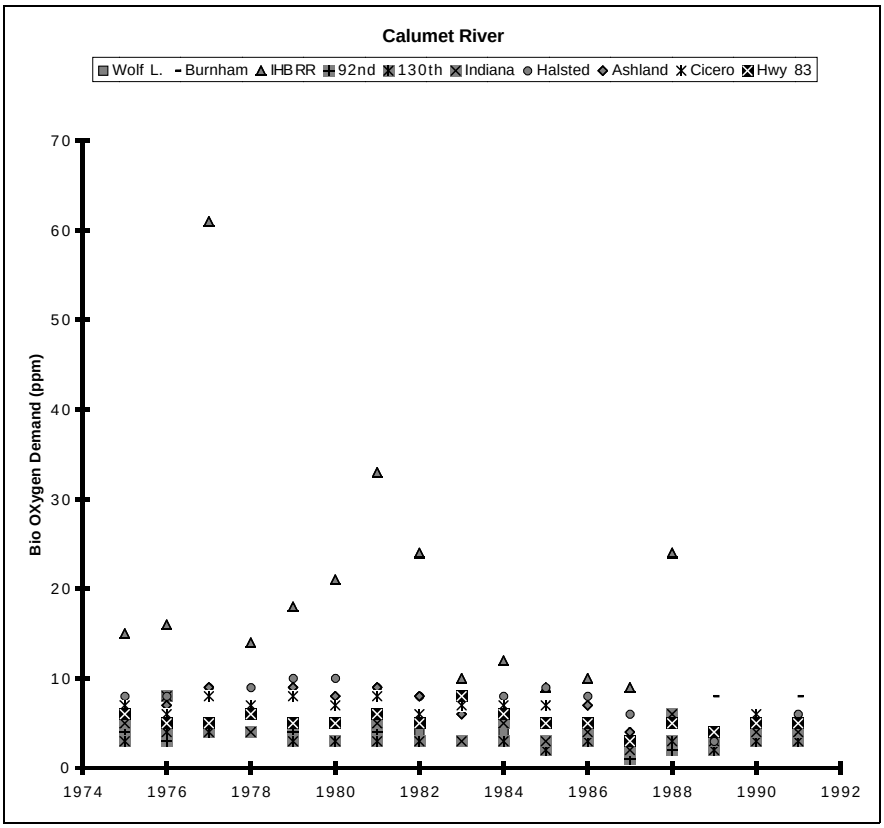


FIGURE 11
Mean Annual Dissolved Oxygen Concentration in the Chicago and Calumet River Systems, 1975-1991



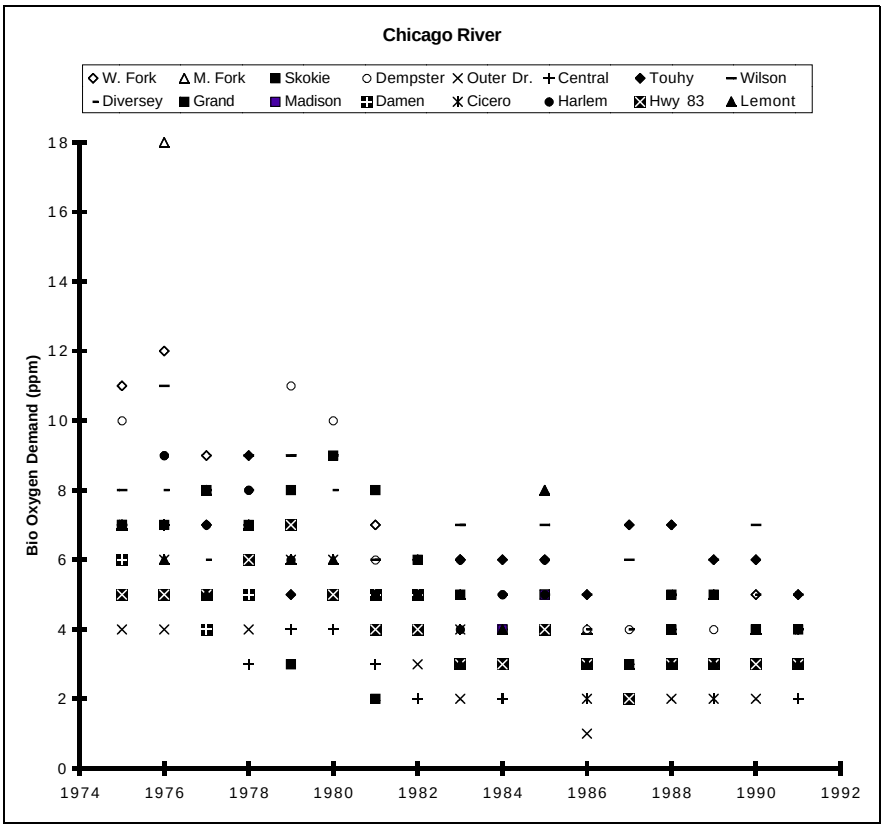
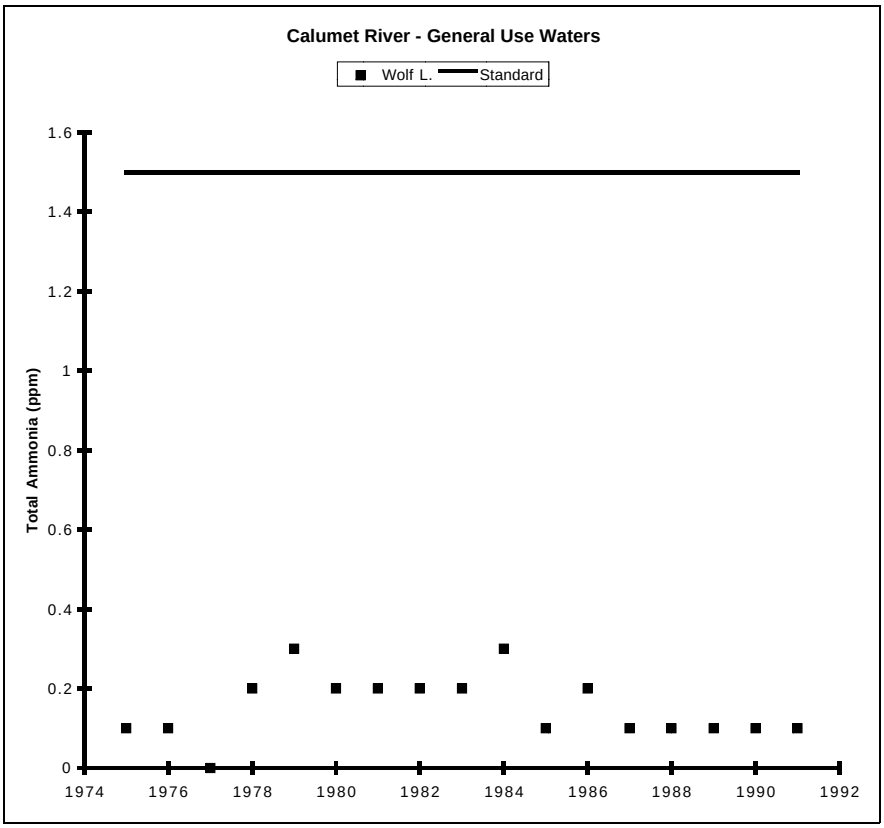


FIGURE 12
Mean Annual Biological Oxygen Demand in the Chicago and Calumet River Systems, 1975-1991



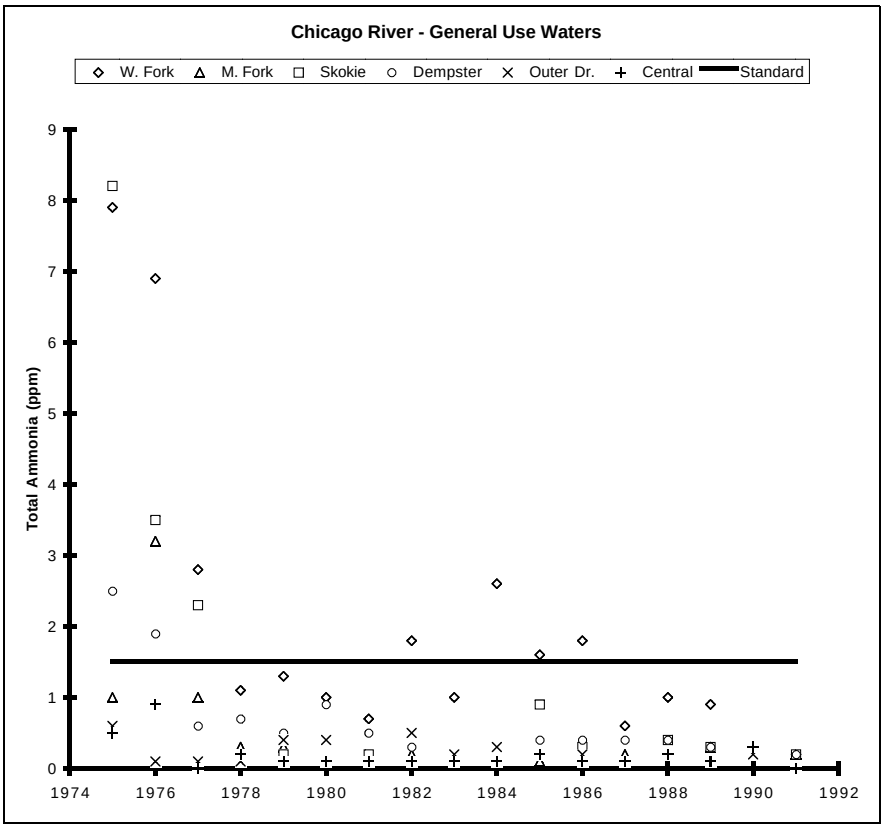
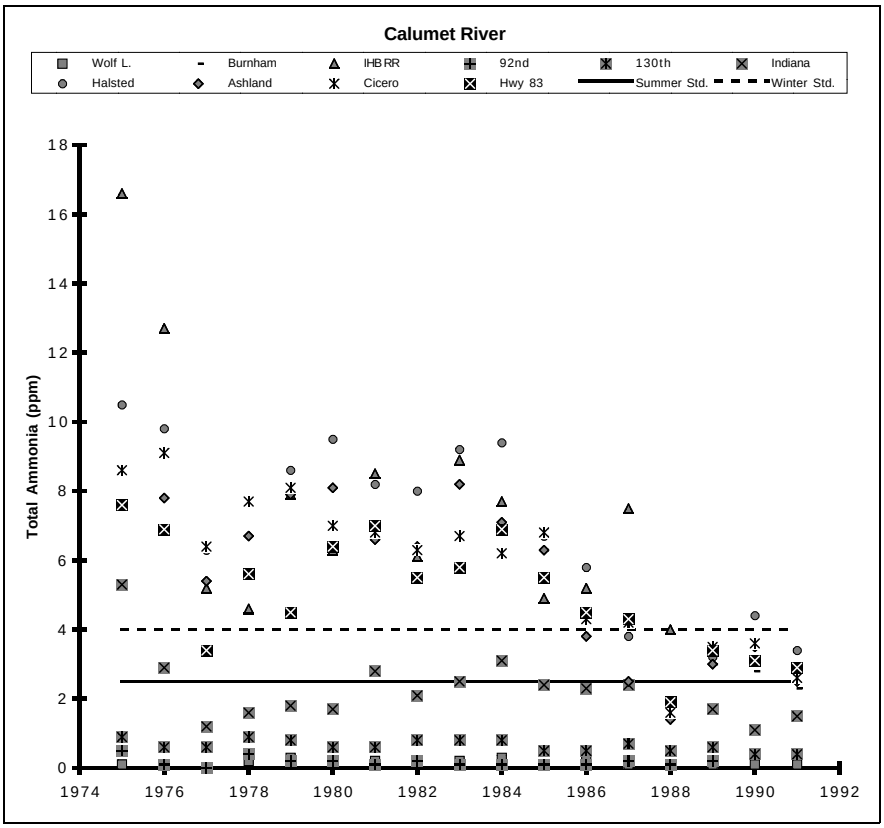


FIGURE 13
Mean Annual Total Ammonia-Nitrogen Concentrations in General Use Reaches of the Chicago and Calumet River Systems, 1975-1991



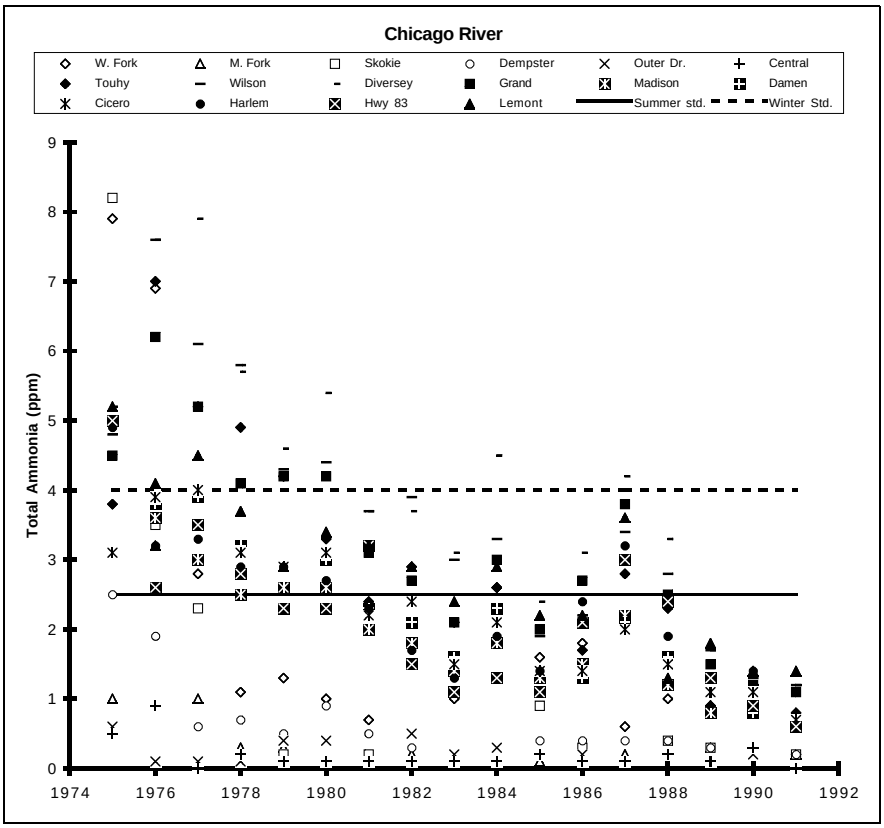
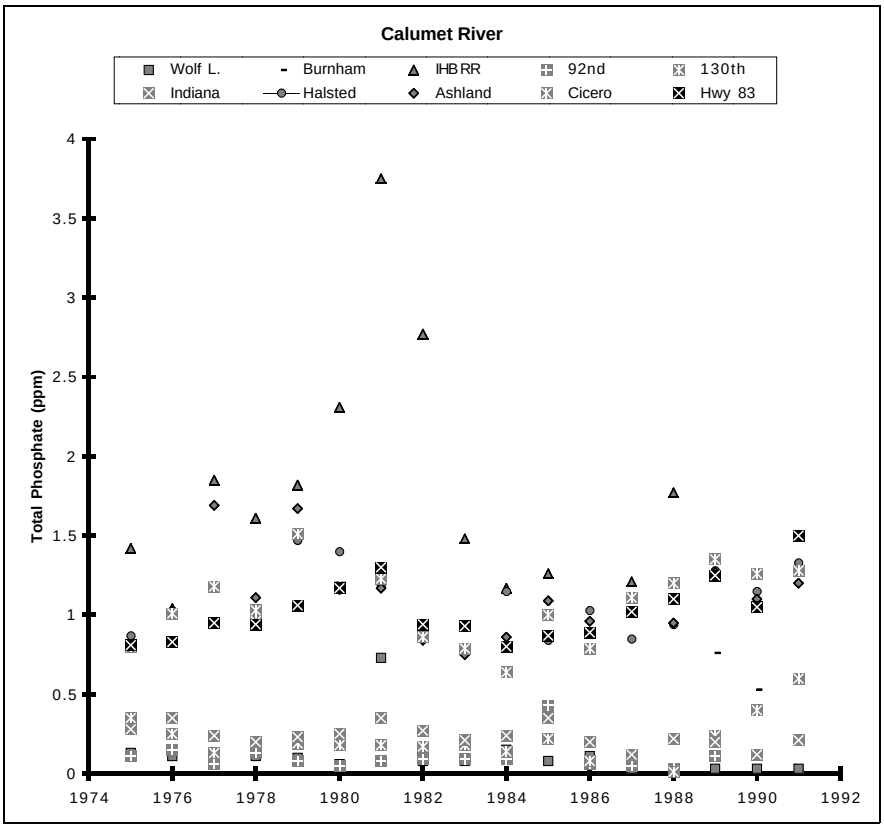


FIGURE 14
Mean Annual Total Ammonia-Nitrogen Concentrations in the Chicago and Clumet River Systems, 1975-1991



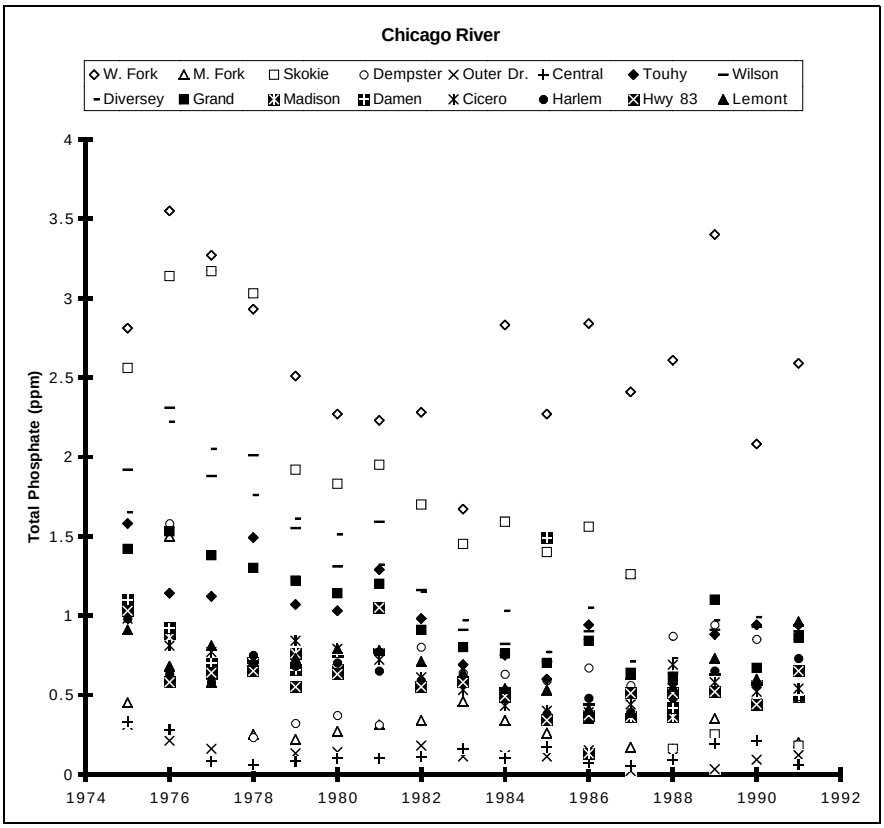
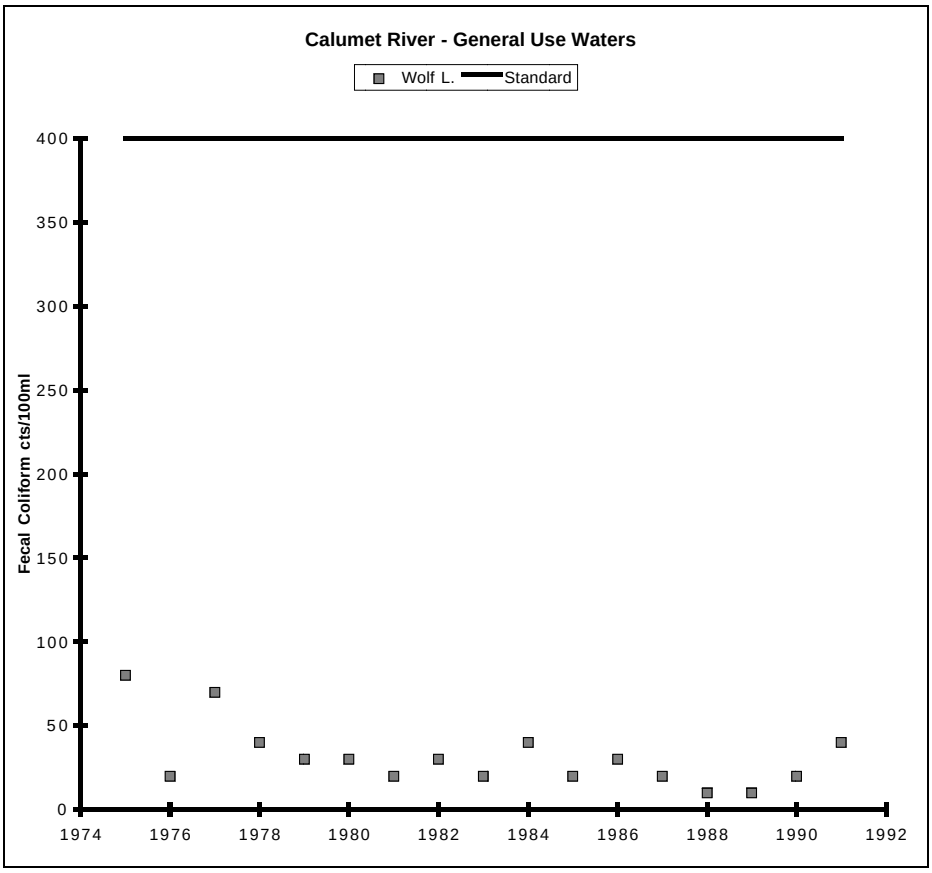


FIGURE 15
Mean Annual Total Phosphorus Concentrations at Sampling Stations in the Chicago and Calumet River Systems, 1975-1991



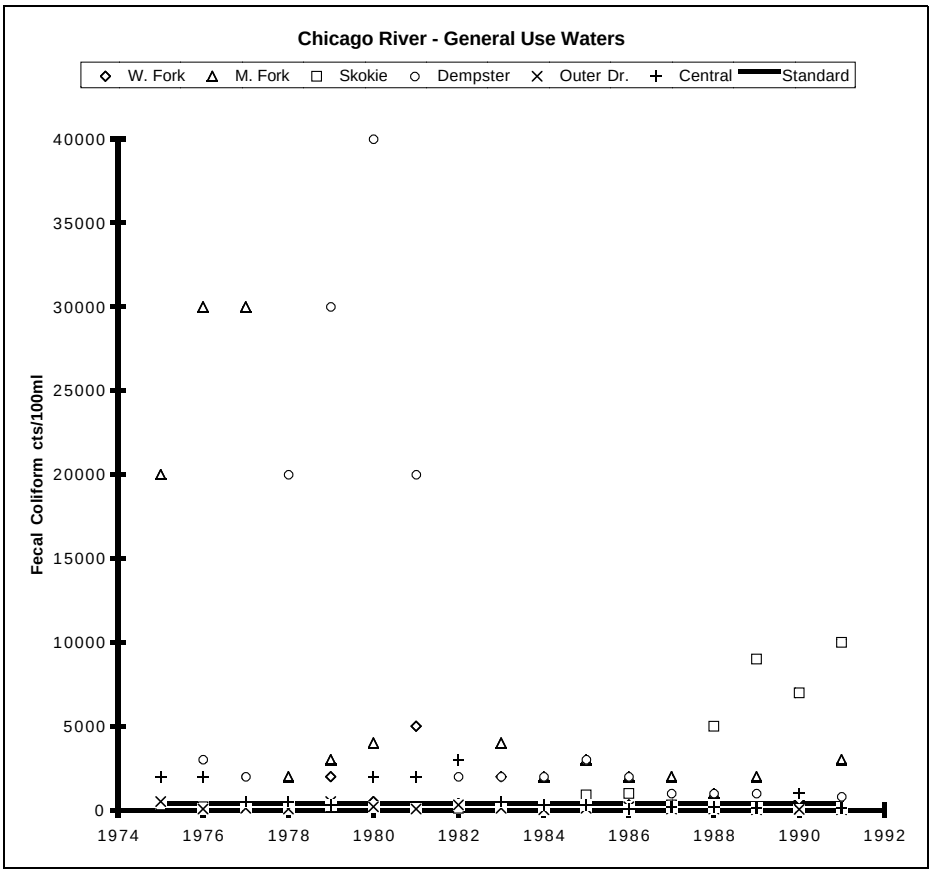
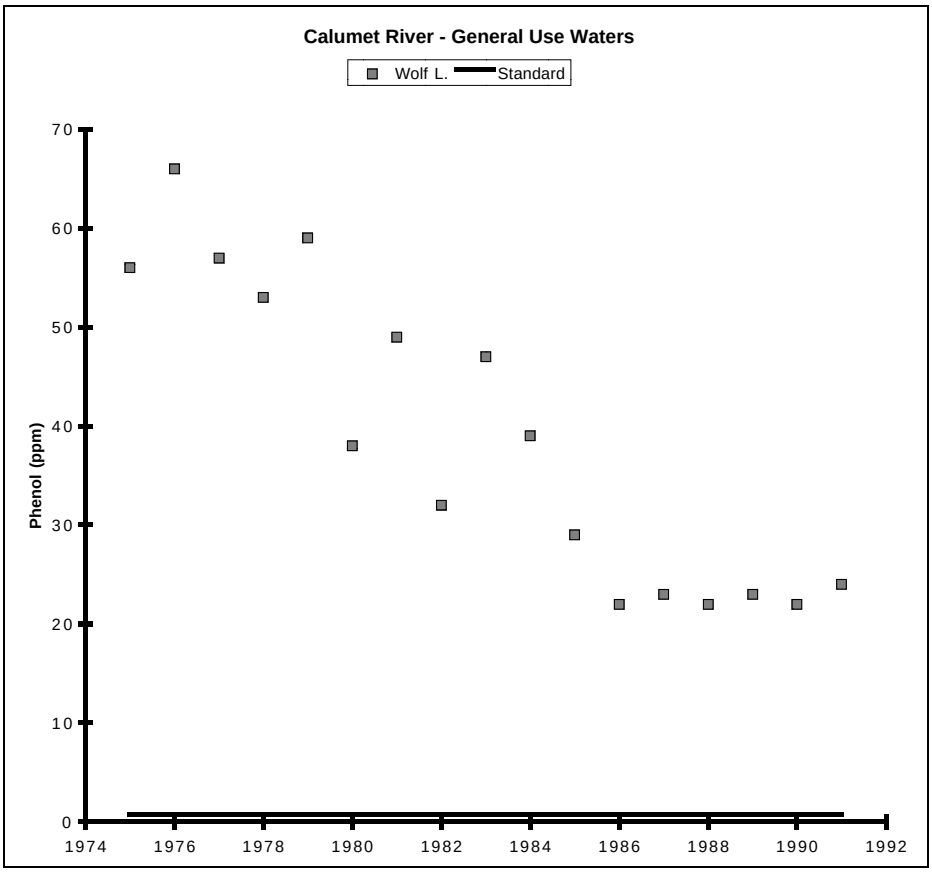


FIGURE 16
Mean Annual Fecal Coliform Counts in General Use Reaches of the Chicago and Calumet River Systems, 1975-1991



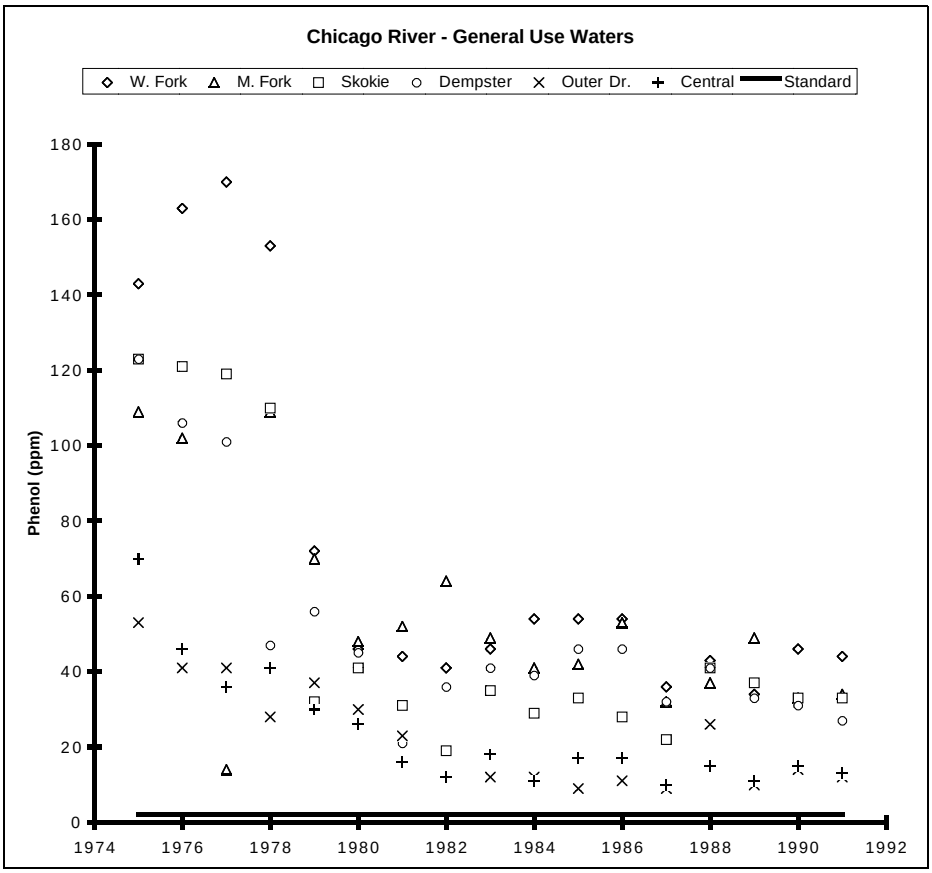
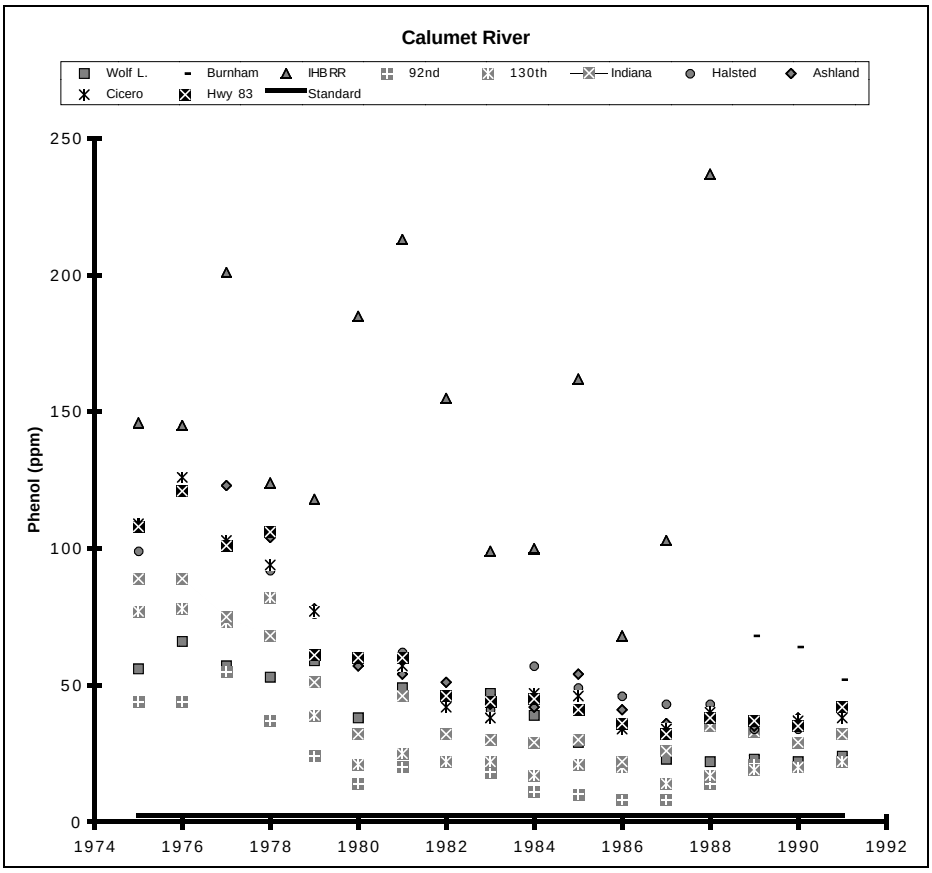


FIGURE 17
Mean Annual Phenol Concentrations in General Use Reaches of the Chicago and Calumet River Systems, 1975-1991



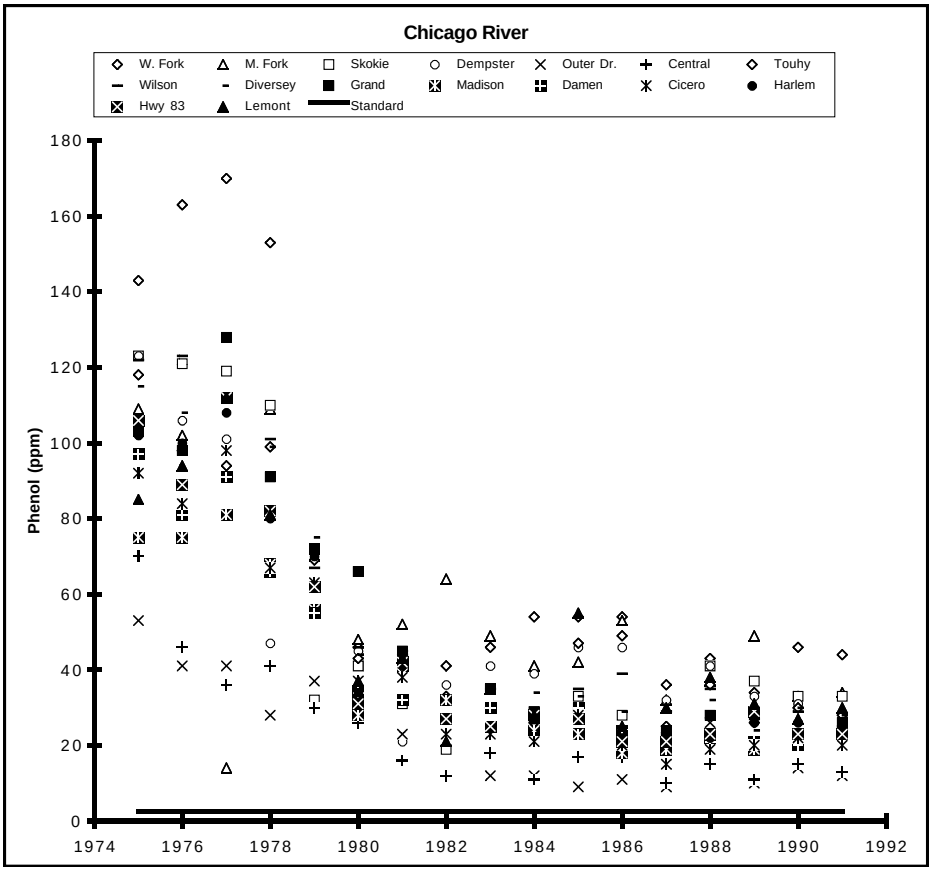
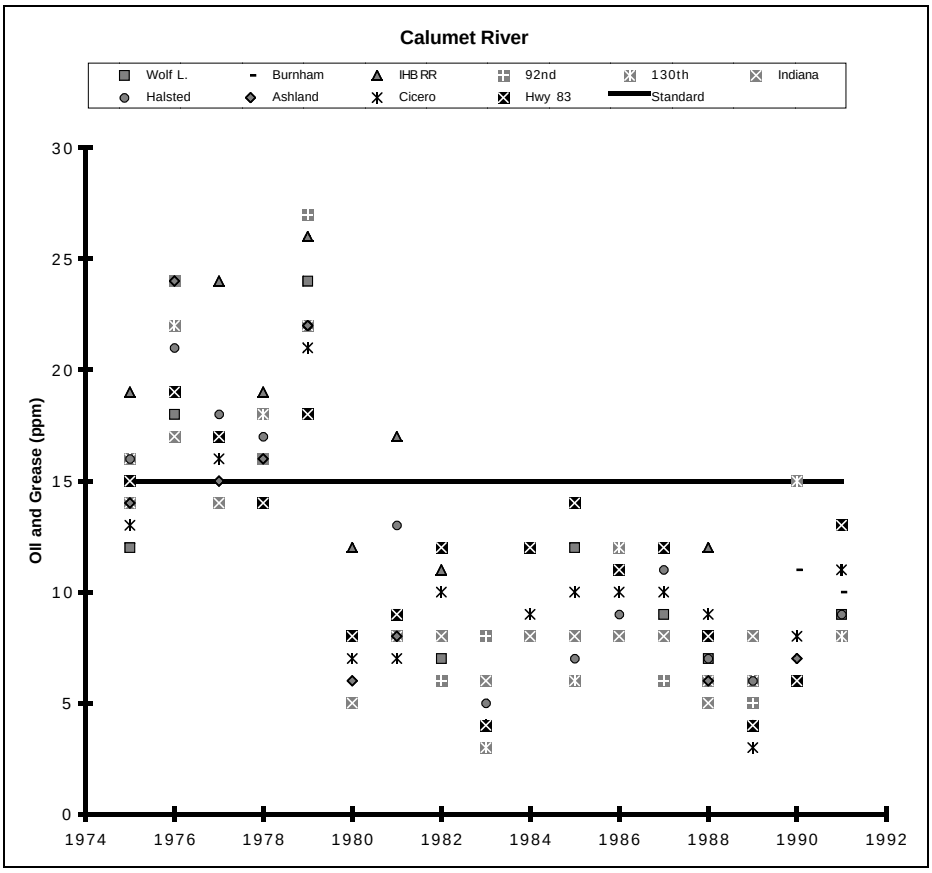


FIGURE 18
Mean Annual Phenol Concentrations in the Chicago and Calumet River Systems, 1975-1991



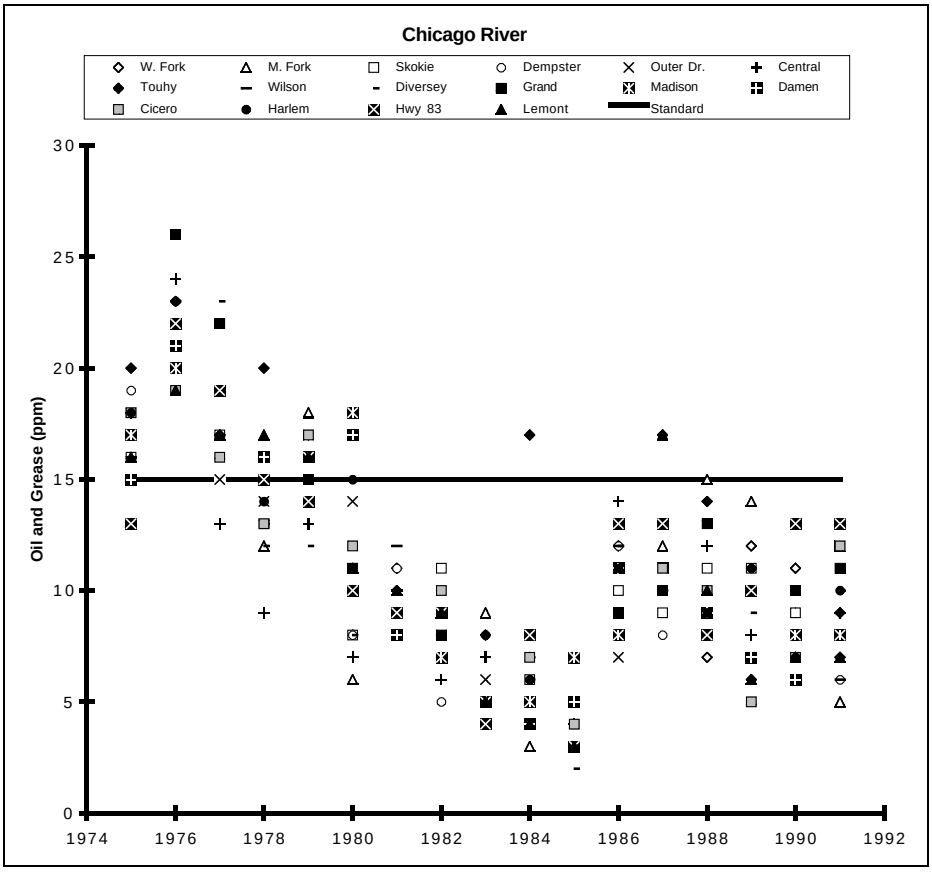
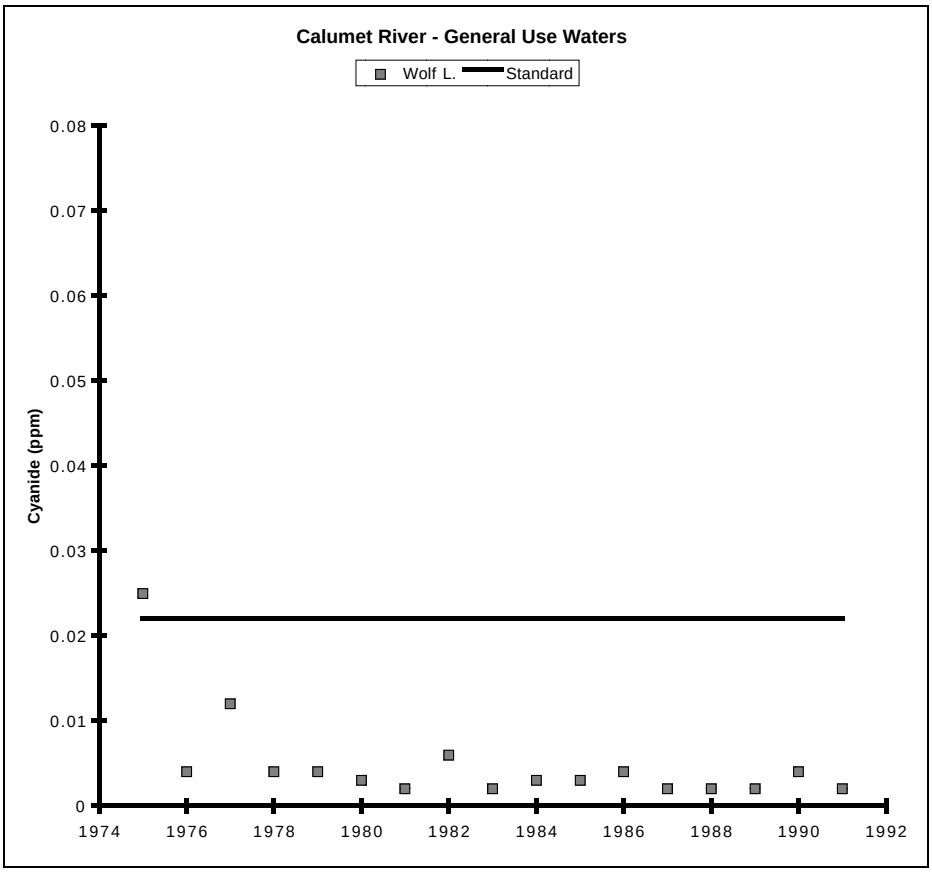


FIGURE 19
Mean Annual Oil and Grease Concentrations in the Chicago and Calumet River Systems, 1975-1991



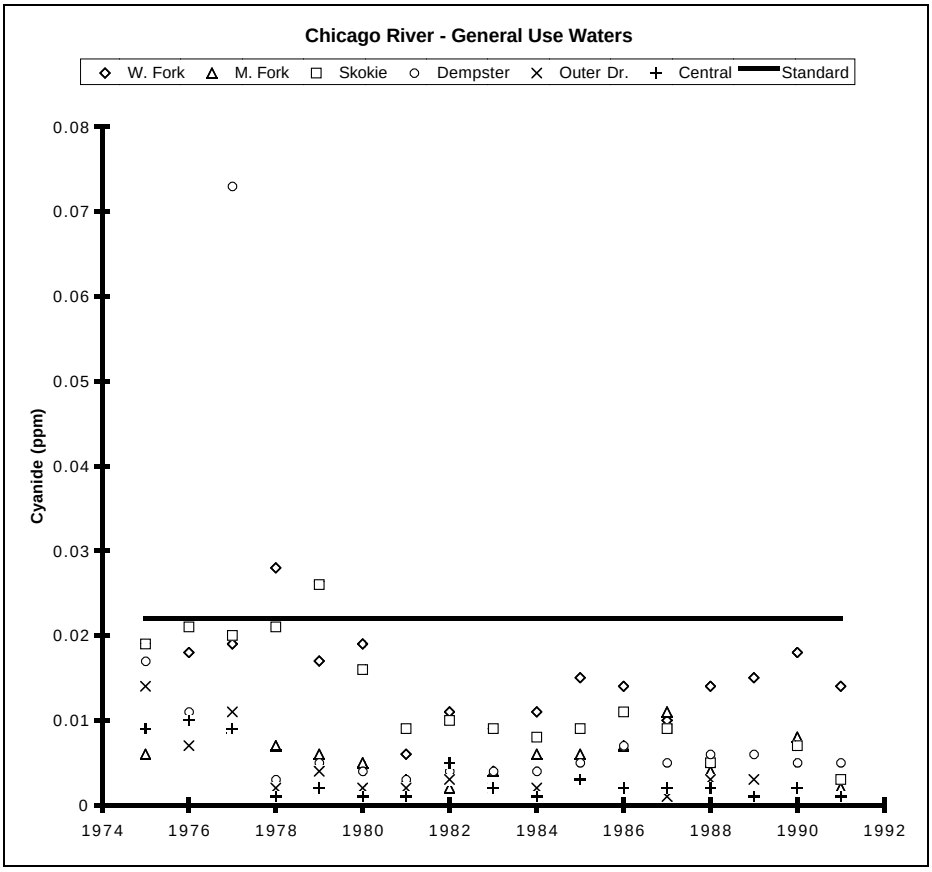
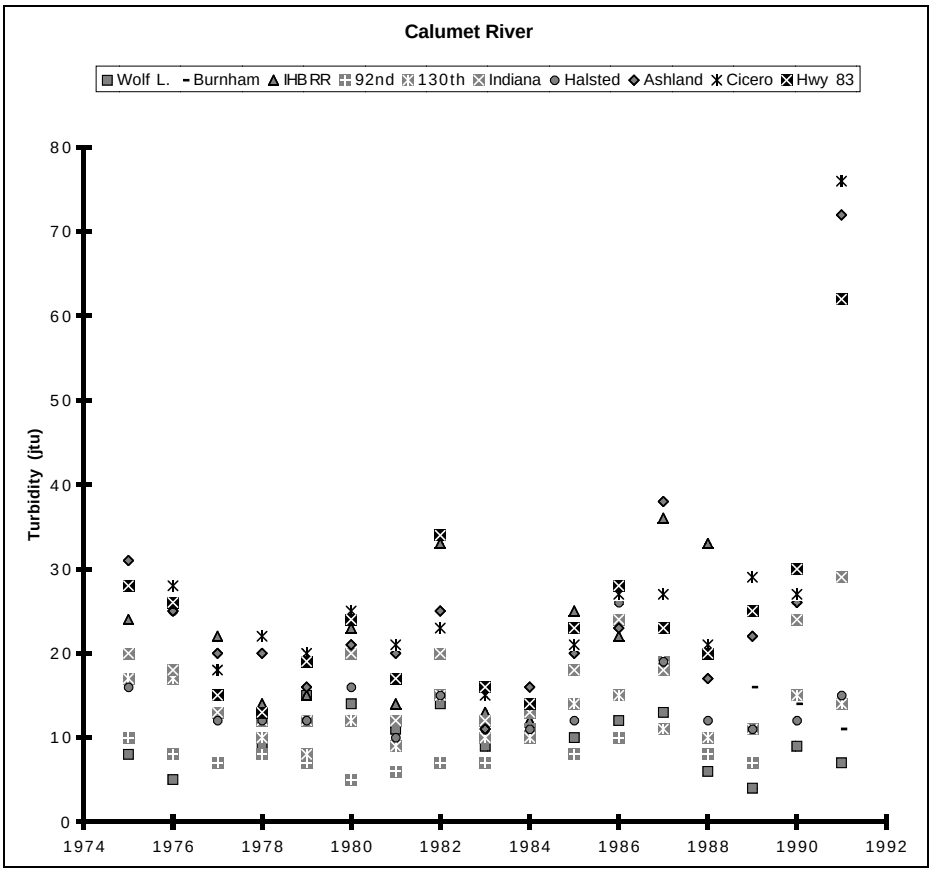


FIGURE 20
Mean Annual Total Cyanide Concentrations in General Use Reaches of the Chicago and Calumet River Systems, 1975-1991



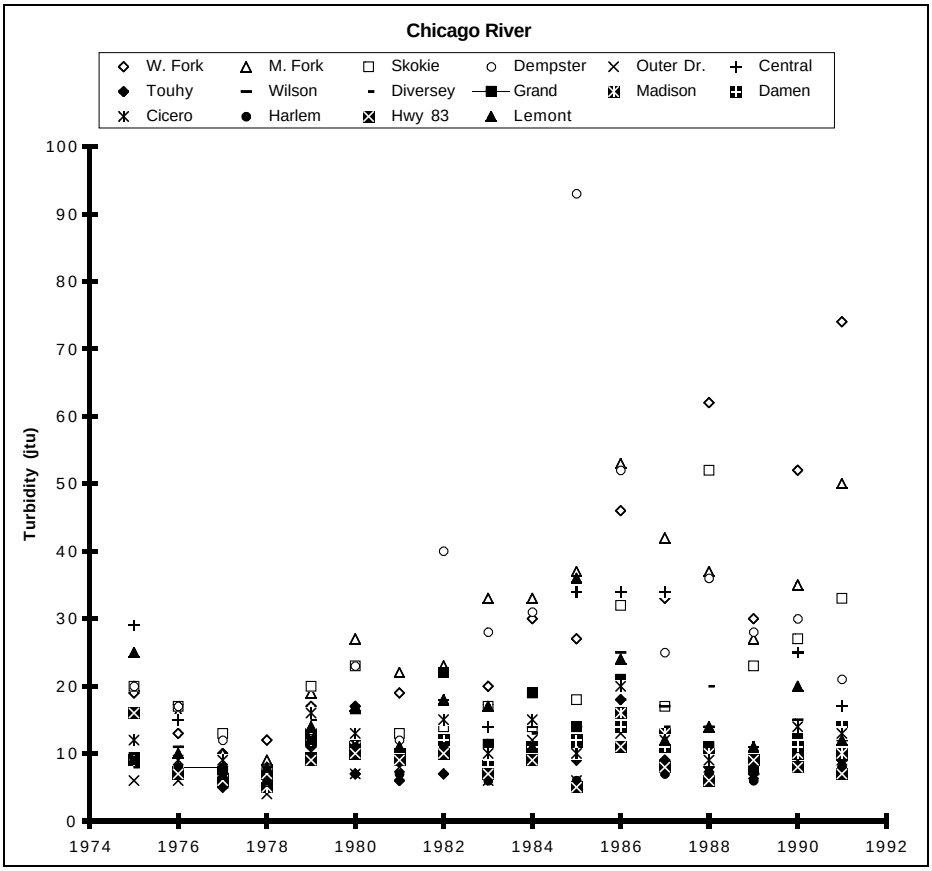
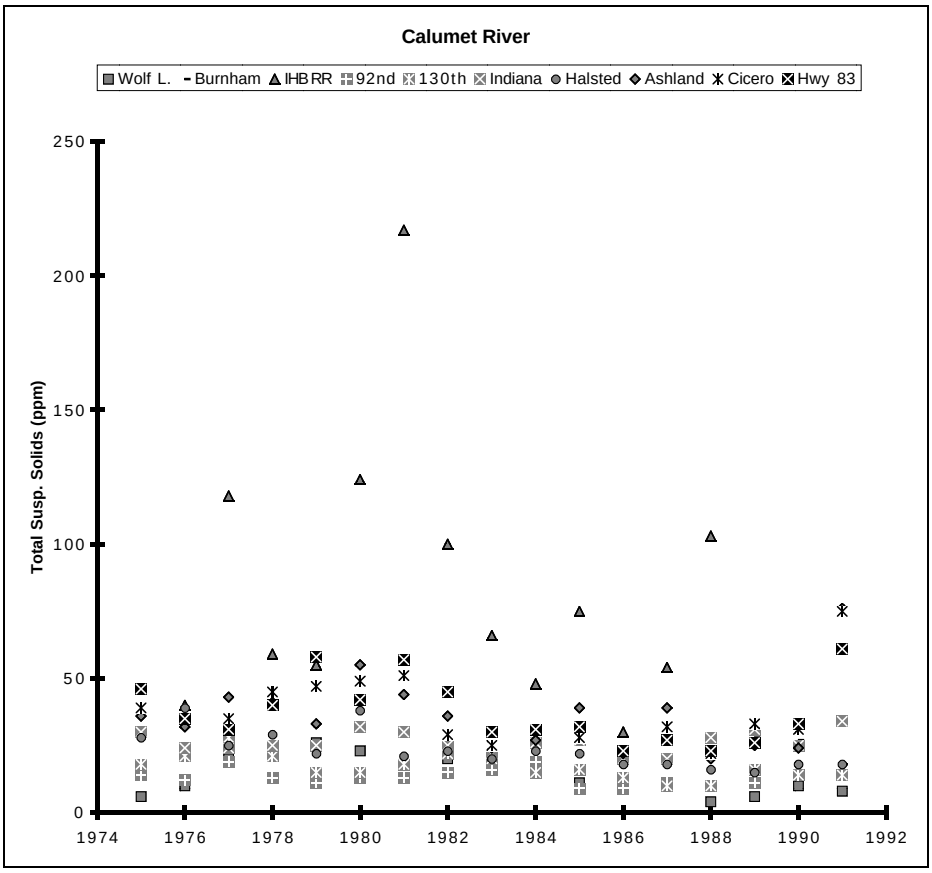


FIGURE 21
Mean Annual Turbidity in the Chicago and Calumet River Systems, 1975-1991



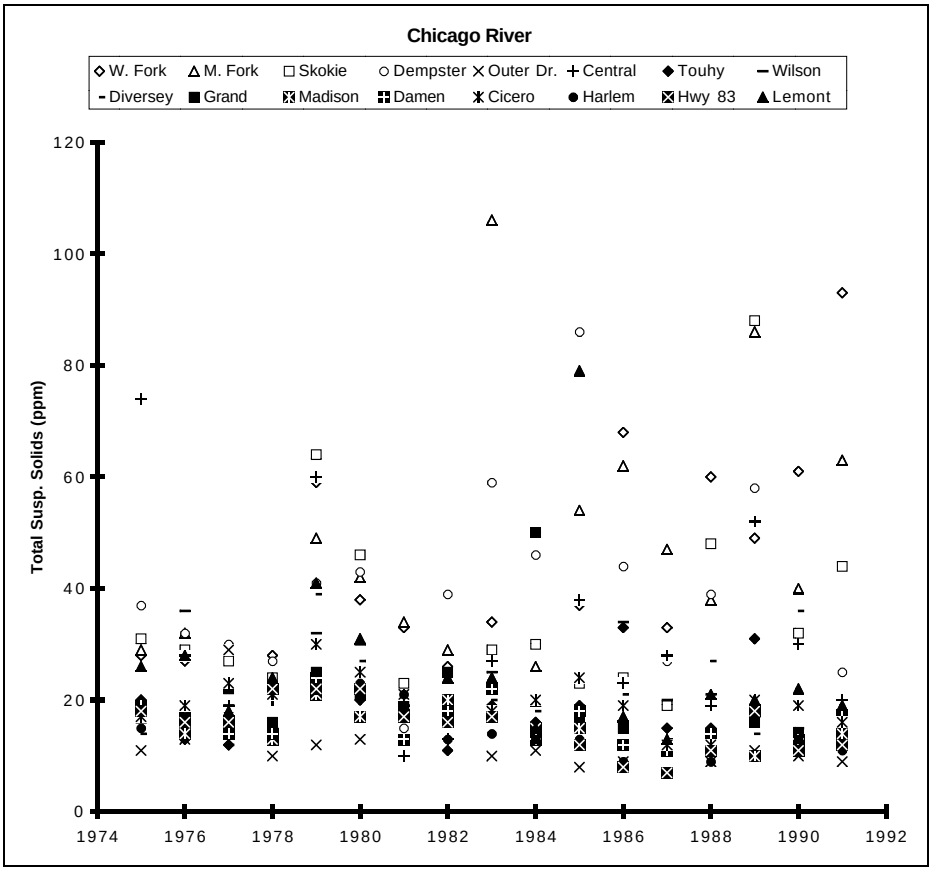


FIGURE 22
Mean Annual Total Suspended Solids Concentrations in the Chicago and Calumet River Systems, 1975-1991

LITERATURE CITED

Adamus, P.L., et al, 1991. Wetland Evaluation Technique (WET); Vol 1: Literature Review and Evaluation Rationale. Technical Report WRP-DE-2. U.S. Army Engineer Waterways Experiment Station, Vicksburg, Mississippi.

Angle, Paul and Anthony Olis. Undated. The Seventh Wonder of the America. Metropolitan Water Reclamation District of Greater Chicago. Chicago, Illinois.

Baker, F.C. 1910. The Ecology of the Skokie Marsh Area, with Special Reference to the Mollusca. Illinois Natural History Survey Bulletin 8(4):441-499.

Brigham, W.U., D. McCormick, and M.J. Wetzel. 1978. The Watershed of Northeastern Illinois: Quality of the Aquatic Environment Based Upon Water Quality and Fishery Data. Staff Paper No. 31, Northeastern Illinois Planning Commission. 251 pp.

Buisseret, David and Gerald Danzer. 1984. Skokie: A Community History Using Old Maps. Skokie Historical Society. Skokie, Illinois. 16 pp.

Butts, T.A. and R.L. Evans. 1978. Sediment Oxygen Demand Studies of Selected Northeastern Illinois Streams. Staff Paper No. 29. Northeastern Illinois Planning Commission. 177 pp.

Cain, L.P. 1978. Sanitation Strategy for a Lakefront Metropolis. Northern Illinois University Press. DeKalb, Illinois. 173 pp.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Fish and Wildlife Service. FWS/OBS-79/31.

Cummings, K.S. 1990. Letter report to J. Kent Crawford-U.S. Geological Survey summarizing mussels and crayfish species identified as part of NAWQA Study. Illinois Natural History Survey. Champaign, Illinois. 2 pp.

Dennison, S.G. 1978. Fish Survey of Northeastern Illinois Streams. Metropolitan Sanitary District of Greater Chicago. Dept. of Research and Development.

Dennison, S.G., S.J. Sedita, B. Sawyer, D.R. Zenz, and C. Lue-Hing. 1992. Comprehensive Water Quality Evaluation: Fish Survey of the Chicago Waterway System during 1991. Report No. 92-17. 61 pp.

EA Engineering, Science, and Technology. 1992. Compilation and annotation of physical, chemical, and biological data pertaining to the Chicago Sanitary and Ship Canal, Lower Des Plaines River, and Upper Illinois River, 1980-1991. Prepared for Commonwealth Edison Company. 179 pp.

EA Engineering, Science & Technology. 1994. The Upper Illinois Waterway Study: Interim Report, 1993 Fisheries Investigation, River Miles 270.2-323.2. Prepared for Commonwealth Edison Company. 530 pp.

EA Engineering, Science, and Technology. 1995. The Upper Illinois Waterway Study, Interim Report, 1994 Fisheries Investigation, River Miles 270.2-323.4. Prepared for Commonwealth Edison Company. 295 pp.

Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1. U.S. Army Waterways Experiment Station, Vicksburg, Mississippi.

Environmental Science and Engineering, Inc. 1994a. The Upper Illinois Waterway Study: Investigation of Aquatic Macrophytes within the Upper Illinois Waterway. Prepared for Commonwealth Edison Company. 1992-1993 Interim Report. Contract Report No. 593-1063-0600, St. Louis, Missouri. 32 pp.

Environmental Science and Engineering, Inc. 1994b. The Upper Illinois Waterway Study: Interim Report 1993 Benthic Invertebrate Investigation and Habitat Assessment. Prepared for Commonwealth Edison Company. Contract Report No. 593-1063-0300, St. Louis, Missouri. 72 pp.

Environmental Science and Engineering, Inc. 1995. Upper Illinois Waterway Studies, Benthic Invertebrate Program, Summary Report. Prepared for Commonwealth Edison Co. Contract Report No. 593-1063-0600, St. Louis, Missouri. 53 pp.

Essig, H. 1994. Letter of transmittal to Drew Ullberg - U.S. Fish & Wildlife Service. List of organisms collected from North Branch Chicago River-Touhy Ave (Station HCC 07) on July 6. 1989. Illinois Environmental Protection Agency, Springfield, Illinois. 2 pp.

Forbes, S.A. and R.E. Richardson. 1880.

Forbes, S.A., and R. E. Richardson. 1920. The Fishes of Illinois. 2nd ed. Il. Nat. Hist. Surv. Champaign, Illinois.

FPDCC. 1970. Parks, Forests and Recreation in the Region of Chicago Featuring the Forest Preserve District of Cook County, Illinois. Forest Preserve District of Cook County. River Forest, Illinois.

Glass, W. D. 1990. Survey for Breeding Endangered and Threatened Birds in Southern Cook County (Illinois) Wetlands. Illinois Dept of Conservation. 27 pp.

_____. 1991. Survey for Breeding Endangered and Threatened Birds in Southern Cook County (Illinois) Wetlands. Illinois Dept of Conservation. 26 pp.

Greenfield, D.W. and J.D. Rogner. 1984. An Assessment of the Fish Fauna of Lake Calumet and Its Adjacent Wetlands, Chicago, Illinois: Past, Present and Future. Trans. Illinois Academy of Science Vol 77: 7-93.

Hanson, P. C. 1981. The presettlement vegetation of the plain of Glacial Lake Chicago in Cook County, Illinois. In: The Prairie Peninsula in the "Shadow" of Transeau: Proceedings of the 6th North American Prairie Conference. R. L. Stuckey and K. J. Reese, eds. Ohio Biological Survey. Biological Notes #15.

Heidorn, R.R., W.D. Glass, D.R. Ludwig, and M.A.R. Cole. 1991. Northeastern Illinois Wetland Survey for Endangered and Threatened Birds. A Summary of Field Data: 1980-1989. Illinois Dept of Conservation - Div of Natural Heritage. Natural Heritage General Technical Report No. 1. Springfield, Illinois. 157 pp.

Hilsenhoff, William L. 1977. Aquatic Insects of Wisconsin with Generic Keys and Notes on Their Distribution. Technical Bulletin No. 89. Wisconsin Department of Natural Resources, Madison, Wisconsin. 53 pp.

_____. 1982. Using a Biotic Index to Evaluate Water Quality in Streams. Technical Bulletin No. 132. Wisconsin Department of Natural Resources, Madison Wisconsin.

Hite, R. L. and B. Bertrand. 1989. Biological Stream Characterization (BSC): A Biological Assessment of Illinois Stream Quality. Illinois State Water Plan Task Force Report #13, Illinois Environmental Protection Agency. Doc #IEPA/WPC/89-275, Springfield, Illinois. 48 pp.

Hutchison, Max. 1988. The Natural Character of Somme Woods in Cook County, Illinois: A Description of the Presettlement Features of a Natural Area Near the Present Site of Northbrook. Natural Land Institute. 14 pp.

Illinois Environmental Protection Agency. 1988. An Intensive Survey of the Des Plaines River Basin From the Wisconsin State Line to Joliet, Illinois 1983-1984. Division of Water Pollution Control. Doc #IEPA/WPC/88-014, Springfield, Illinois. 97 pp.

Illinois Environmental Protection Agency. 1989. Illinois Water Quality Report: 1988-1989. Division of Water Pollution Control, Springfield. IEPA/WPC/90-160. 351 pp.

Illinois Environmental Protection Agency. 1992. Illinois Water Quality Report. 1990-1991. State of Illinois Environmental Protection Agency, Bureau of Water. IEPA/WPC/92-055.

Karr, J.R. 1981. Assessment of Biotic Integrity Using Fish Communities. Fisheries 6(6):21-27.

Karr, J.R., K.D. Fausch, P.L. Angermeier, P.R. Yant, and I.J. Schlosser. 1986. Assessing Biological Integrity in Running Waters: A Method and Its Rationale. Illinois Natural History Survey Special Publication 5. 28 pp.

King, Kathryn and Sharon Zoars. 1990. Natural Areas Inventory and Management Recommendations: Palos and Sag Valley Divisions and Portions of the Tinley Creek Division. Report to The Nature Conservancy and Forest Preserve District of Cook County. 22 pp.

Kirschner, Robert J. 1983. Skokie Lagoons Lake Restoration Plan - Cook County, Illinois. Phase 1 -Diagnostic/Feasibility Study. USEPA Clean Lake Program. Northeastern Illinois Planning Commission, Chicago, Illinois. 253 pp.

Larson, John W. 1979. Those Army Engineers. A History of the Chicago District - U.S. Army Corps of Engineers, Chicago, Illinois. 307 pp.

Lawler, Matusky & Skelly Engineers 1993. Winter Fisheries Studies in the Upper Illinois Waterway - 1993. Prepared for Commonwealth Edison Company, Pearl River, New York. 95 pp.

Mann, R. 1965. Origin of names and histories of places, including major forests and holdings, picnic areas and recreational facilities, nature preserves, aquatic areas and wildlife refuges in the Forest Preserve District of Cook County, Illinois. Forest Preserve District of Cook County, River Forest, Illinois.

Mapes, D.R. 1979. Soil Survey of Dupage and part of Cook Counties, Illinois. U.S. Department of Agriculture, Illinois Agricultural Experiment Station Report No. 108.

Matsunaga, W.O. and P.M. Murphy. 1979. An Intensive Survey of the Skokie River, Segment A0-1 of the Des Plaines River Basin. Illinois Environmental Protection Agency, Springfield, Illinois. 69 pp.

Mayer, H.M. and R.C. Wade. 1969. Chicago: Growth of a Metropolis. University of Chicago Press, Chicago, Illinois. 510 pp.

McFall, D. 1991. A Directory of Illinois Nature Preserves. Illinois Department of Natural Resources - Division of Natural Heritage, Springfield, Illinois. 302 pp.

Meek, S.E. and S.F. Hildebrand. 1910. A Synoptic List of the Fishes Known to Occur Within 50 Miles of Chicago. Field Mus. Nat. Hist. Zool. Ser. Publ. 7:223-338.

Metropolitan Water Reclamation District of Greater Chicago. 1986. Research and Development Department 1985 Annual Report, Chicago, Illinois.

Metropolitan Water Reclamation District of Greater Chicago. 1993. Research and Development Department 1992 Annual Report, Chicago, Illinois. 377 pp.

Mierzwa, K.S. and E. Beltz. 1994. Habitat Associations and Distribution of Amphibians and Reptiles at Middle Fork Savanna, Lake County, Illinois. A Report to the Lake Forest Open Lands Association, The Nature Conservancy, and the Lake County Forest Preserve District.

Moran, R.C. 1978. Presettlement Vegetation of Lake County, Illinois, in Proceedings of the Fifth Midwest Prairie Conference. Iowa State University, Ames, Iowa. pp.12- 18.

MWRDGC. 1990. Comprehensive Water Quality Evaluation. Distribution of Benthic Invertebrate Species in the Chicago Waterway System during 1989. Report No. 90-30. 62 pp.

NAWQA. 1994 (unpublished). Preliminary Aquatic Invertebrate Data Collected at Hart Road Station on August 1, 1989 and July, 28, 1990.

Nelson, E.W. 1876. A Partial Catalogue of the Fishes of Illinois. Illinois Museum of Natural History Survey Bulletin 1:33-52.

Page, Lawrence M. 1985. The Crayfishes and Shrimps (Decapoda) of Illinois. Illinois Natural History Survey Bulletin. Vol. 33, Art. 4.

Paschke, J.E. and J.D. Alexander. 1970. Soil Survey Lake County, Illinois. U.S. Department of Agriculture, Illinois Agricultural Experiment Station Soil Report No. 88.

Polls, I., S. Dennison, B. Schmeelk, and C. Spielman. 1980. Aquatic Biological and Water Quality Survey for the U.S. Army Corps of Engineers, Chicago District. Metropolitan Sanitary District of Greater Chicago, Department of Research and Development.

Polls, I., S.J. Sedita, D.R. Zenz, and C. Lue-Hing. 1991. Comprehensive Evaluation of Water Quality. Distribution of Benthic Invertebrate Species in the Chicago Waterway System during 1990. Report No. 91-22. 62 pp.

_____ and B. Sawyer. 1992. Comprehensive Evaluation of Water Quality. Distribution of Benthic Invertebrate Species in the Chicago Waterway System during 1991. Report No. 92-22. 61 pp.

Polls, I., R. Lanyon, S.J. Sedita, D.R. Zenz, and C. Lue-Hing. 1994. Fact or fiction: Has the Water Quality Improved in Chicago Area Waterways? Report No. 94-23, Metropolitan Water Reclamation District of Greater Chicago.

Resh, V.H. and J.D. Unzicker. 1975. Water Quality Monitoring and Aquatic Organisms: The Importance of Species Identification. Journal of Water Pollution Control 47: 9-19.

Robins, C.R., R.M. Bailey, C.E. Bond, J.R. Brooker, E.A. Lachner, R.N. Lea, and W.B. Scott. 1991. Common and Scientific Names of Fishes from the United States and Canada. 5th edition. American Fisheries Society Special Publication No. 20. 183 pp.

Rosenberg, D. M. and V. H. Resh. 1993. Freshwater Biomonitoring and Benthic Macroinvertebrates. Routledge, Chapman & Hall, Inc.

Ruedebusch, Charles and Katherine Green. 1993. Natural Community Mapping Project. North Branch and Skokie Divisions. Report to the Forest Preserve District of Cook County. The Nature Conservancy. 29 pp. + maps and appendices.

Schmeelk, W.G., S.G. Dennison, and P. O'Brien. 1984. 1980 Annual Summary Report. Water Quality within the Waterways System of the Metropolitan Sanitary District of Greater Chicago. Vol. II, Biological. Metropolitan Sanitary District of Greater Chicago.

_____ 1985. 1981 Annual Summary Report. Water Quality Within the Waterways System of the Metropolitan Sanitary District of Greater Chicago. Vol. II. Biological. Metropolitan Sanitary District of Greater Chicago.

Schueler, T. 1994. The Importance of Imperviousness. Watershed Protection Techniques 1(3).

Schwartz, J. and S. Thomas. 1993. Juniperis communis Population Study at Harms Woods, Cook County Forest Preserve District. Prepared for Forest Preserve District of Cook County and The Nature Conservancy-Illinois Office. 2 pp.

Schwegman, John. 1973. Comprehensive Plan for the Illinois Nature Preserves System. Part 2. The Natural Divisions of Illinois. Illinois Nature Preserves Commission, Springfield, Illinois. 32 pp.

Sherff, E.E. 1913. Vegetation of the Skokie Marsh. Illinois Natural History Survey Bulletin 9(11): pp. 575-614.

Smith, P.W. 1979. The Fishes of Illinois. University of Illinois Press, Urbana, Illinois. 314 pp.

Southern, W., M. Brown, T.L. Houchens, and L.K. Southern. 1981. Northeastern Illinois Wetland Inventory: Cook, DuPage, Kane, Lake and McHenry Counties. Northern Illinois University for Illinois Dept. of Conservation. 6 vols. w/maps.

Tazik, Pamela P. 1995. Upper Illinois Waterway Study, Draft Summary Report, Aquatic Macrophytes. Submitted to Richard Monzingo, Commonwealth Edison Company.

Vidal, P.J. and H.L. Wight. 1975. Cook County Surface Water Resources. Illinois Department of Conservation, Division of Fisheries.

Wascher, H.L., P.T. Veale, and R.T. Odell. 1962. Will County Soils. U.S. Department of Agriculture, University of Illinois Agricultural Experiment Station Soil Report No. 80.

Warren, M.R. 1991. Identification and Enumeration of Fishes Collected for the Upper Illinois River Basin Pilot Study - National Water Quality Assessment Program. Contract report submitted to U.S. Geological Survey, Urbana, Illinois.

Willman, H. B. and John C. Frye. 1970. Pleistocene Stratigraphy of Illinois. Illinois State Geological Survey, Bulletin 94. Urbana, Illinois. 204 pp.

Willman, H.B. 1971. Summary of the Geology of the Chicago Area. Illinois State Geological Survey, Circular 460. Urbana, Illinois. 77 pp.