

## Summary of Trout and Salmon Stocking in Lake Michigan 1976-2000

Prepared by

Charles R. Bronte and Mark E. Holey

U.S. Fish & Wildlife Service Fishery Resources Office 1015 Challenger Court Green Bay, WI 54311 This report provides a summary of trout and salmon stocked into Lake Michigan from 1976-2000. Stocking information was provided by Illinois, Indiana, Michigan and Wisconsin, who stock Pacific salmon, brown trout, and splake, and the U.S. Fish and Wildlife Service, which provides all lake trout for restoration purposes. This data should be considered provisional because not all agencies have officially verified the stocking numbers. With the exception of lake trout, no attempt was made to express stocking totals in yearling equivalents, consequently numbers for all life stages stocked for a given species were added together. To accurately examine trends in adult trout and salmon abundance in Lake Michigan, detailed information on hatchery programs, genetic strains, size at stocking, and stocking practices would have to be considered.

<u>Lakewide Trends:</u> The number of trout and salmon stocked into Lake Michigan in 2000 totaled 12.4 million fish (Table 1; Figure 1), and was 0.3 million less fish than in 1999. This level of stocking was 2.0 million less than long term average of 14.5 million, and the lowest since 1977. Total stocking peaked at 17.3 million fish in 1984.

<u>Chinook Salmon:</u> Chinook salmon stocking in Lake Michigan increased to 4.4 million fish in 2000, which is about 0.2 million more than last year (Table 1; Figure 2). All states stocked more chinook salmon in 2000 than in 1999 (Tables 2-5). Annual stocking has ranged from 2.8 million fish in 1977 to 6.4 million in 1995.

<u>Coho Salmon:</u> The number of coho salmon stocked declined in 2000; 2.7 million where stocked compared to 2.8 million in 1999 (Table 1; Figure 3). Numbers of coho stocked in 2000 decreased slightly in Wisconsin and Michigan, increased in Indiana, and stayed the same in Illinois (Tables 2-5).

Rainbow Trout/Steelhead: Rainbow trout/steelhead stocking declined from 1.7 million in 1999 to 1.5 million in 2000 (Table 1; Figure 4), and was mostly due to a decline in stocking by Indiana (Tables 2-5).

<u>Brown Trout:</u> Brown trout stocking increased to 1.8 million fish in 2000 from 1.5 million in 1999 (Table 1; Figure 5). Wisconsin continues to stock the majority (69%) of brown trout (Tables 2-5).

<u>Brook Trout:</u> All of the 160,000 brook trout stocked into Lake Michigan in 2000 where in Wisconsin waters (Tables 1-2), which was 19,000 fish less 1999.

<u>Splake</u>: Only Michigan and Wisconsin stocked splake in 2000, which totaled 115,000 fish, which is a significant increase from 51,000 stocked last year (Table 1).

<u>Lake Trout:</u> There were 2.3 million lake trout stocked into Lake Michigan in 2000, which represents a 9000 fish decrease from 1999 (Tables 1, 6; Figure 1). All fish were reared to an average size of 12.2 fish/lb.

<u>Marked Fish:</u> Trout and salmon that were stocked with designated fin clips in 2000 are summarized in Table 7. Details on the studies or evaluations that include the fish marked are available from the state agency that stocked the fish.

Table 1. Total numbers of trout and salmon stocked into Lake Michigan from all jurisdictions,1976-2000.

				SPECIES					
Year	Lake trout	Brook trout	Brown trout	Chinook salmon	Coho salmon	Rainbow trout	Atlantic salmon	Splake	Total
1976	2,548,000	80,000	881,000	3,264,000	2,937,000	1,831,000	20,000	0	11,561,000
1977	2,390,000	623,000	1,152,000	2,818,000	3,014,000	1,202,000	19,000	0	11,218,000
1978	2,501,000	243,000	1,535,000	5,365,000	2,630,000	1,937,000	46,000	0	14,257,000
1979	2,427,000	185,000	1,213,000	5,085,000	4,000,000	2,511,000	0	0	15,421,000
1980	2,604,000	188,000	1,307,000	6,106,000	2,943,000	2,661,000	0	0	15,809,000
1981	2,295,000	208,000	1,140,000	4,797,000	2,463,000	1,939,000	20,000	0	12,862,000
1982	2,264,000	245,000	2,159,000	6,035,000	2,180,000	2,442,000	45,000	0	15,370,000
1983	2,241,000	297,000	2,219,000	6,380,000	2,364,000	2,441,000	0	20,000	15,962,000
1984	1,245,000	233,000	1,853,000	7,710,000	3,028,000	3,192,000	0	34,000	17,295,000
1985	3,024,000	316,000	1,791,000	5,955,000	2,659,000	1,764,000	0	54,000	15,563,000
1986	2,917,000	197,000	1,431,000	5,693,000	2,291,000	2,022,000	0	115,000	14,666,000
1987	1,984,000	118,000	1,342,000	5,800,000	2,304,000	1,831,000	0	18,000	13,397,000
1988	2,180,000	497,000	1,545,000	5,417,000	3,210,000	1,443,000	0	104,000	14,396,000
1989	3,332,000	150,000	1,504,000	7,859,000	2,334,000	1,844,000	0	88,000	17,111,000
1990	1,317,000	360,000	1,675,000	7,125,000	2,380,000	1,710,000	0	50,000	14,617,000
1991	2,779,000	326,000	1,384,000	6,237,000	2,471,000	1,841,000	0	396,000	15,434,000
1992	3,027,000	272,000	1,644,000	5,795,000	2,744,000	1,823,000	0	55,000	15,360,000
1993	2,699,000	294,000	1,673,000	5,491,000	1,709,000	1,806,000	0	141,000	13,813,000
1994	3,062,000	269,000	2,166,000	5,894,000	1,471,000	2,100,000	0	127,000	15,089,000
1995	2,264,000	328,000	1,868,000	6,400,000	2,398,000	1,861,000	0	191,000	15,310,000
1996	1,978,000	168,000	1,645,000	6,193,000	3,079,000	1,793,000	0	201,000	15,057,000
1997	2,235,000	53,000	1,800,000	5,534,000	2,561,000	1,869,000	0	115,000	14,167,000
1998	2,302,000	298,000	1,752,000	5,860,000	2,068,000	1,647,000	0	97,000	14,024,000
1999	2,269,000	179,000	1,539,000	4,212,000	2,817,000	1,688,000	0	51,000	12,755,000
2000	2,260,000	160,000	1,797,000	4,429,000	2,742,000	1,483,000		115,000	12,986,000
Mean	2,405,760	251,480	1,600,600	5,658,160	2,591,880	1,947,240	6,000	78,880	14,540,000
		rounded to the no	~~~~~	1.					

Table 2. Total numbers of trout and salmon stocked in Wisconsin waters of Lake Michigan, 1976-2000, excluding lake trout. Year 2000 data are estimated.

			SPECIES			
Year	Brook trout	Brown trout	Chinook salmon	Coho salmon	Rainbow trout	Tiger trout
1976	19,000	298,000	1,175,000	667,000	1,010,000	23,000
1977	623,000	798,000	872,000	492,000	673,000	28,000
1978	243,000	1,228,000	2,017,000	499,000	616,000	
1979	185,000	955,000	2,064,000	320,000	1,133,000	
1980	185,000	1,063,000	2,430,000	492,000	1,167,000	Splake ***
1981	200,000	1,014,000	1,848,000	318,000	965,000	
1982	245,000	1,841,000	2,345,000	216,000	1,042,000	
1983	297,000	1,588,000	2,432,000	356,000	1,404,000	20,000
1984	225,000	1,185,000	2,892,000	551,000	1,381,000	34,000
1985	307,000	1,170,000	2,740,000	522,000	415,000	54,000
1986	188,000	873,000	2,378,000	267,000	782,000	115,000
1987	95,000	838,000	2,263,000	624,000	544,000	0
1988*	497,000	1,050,000	1,409,000	1,020,000	291,000	29,000
1989*	150,000	973,000	2,714,000	511,000	495,000	0
1990	315,000	1,229,000	2,379,000	498,000	461,000	0
1991	326,000	982,000	1,735,000	403,000	587,000	147,000
1992	272,000	1,229,000	1,523,000	569,000	569,000	0
1993	294,000	1,247,000	1,561,000	0	679,000	40,000
1994	269,000	1,254,000	1,549,000	432,000	624,000	32,000
1995	328,000	1,317,000	1,688,000	722,000	553,000	40,000
1996	168,000	1,160,000	1,727,000	544,000	566,000	70,000
1997	53,000	1,276,000	1,706,000	456,000	529,000	0
1998	298,000	1,252,000	1,730,000	514,000	531,000	22,000
1999	179,000	1,071,000	1,196,000	572,000	496,000	0
2000	160,000	1,233,000	1,468,000	498,000	500,000	40,000
Mean	244,840	1,124,960	1,913,640	482,520	720,520	31,545

Table 3. Total numbers of trout and salmon stocked in Illinois waters of Lake Michigan, 1976-2000, excluding lake trout.

			SPECIES			
Year	Brook trout	Brown trout	Chinook salmon	Coho salmon	Rainbow trout	Atlantic salmor
1976	0	94,000	142,000	80,000	46,000	0
1977	0	42,000	347,000	103,000	176,000	0
1978	0	13,000	611,000	252,000	40,000	0
1979	0	0	183,000	289,000	215,000	0
1980	0	23,000	152,000	39,000	113,000	0
1981	0	65,000	431,000	324,000	186,000	0
1982	0	18,000	793,000	159,000	170,000	0
1983	0	51,000	534,000	0	0	0
1984	0	88,000	538,000	277,000	165,000	0
1985	0	115,000	195,000	305,000	146,000	0
1986	0	59,000	215,000	312,000	152,000	0
1987	0	88,000	539,000	187,000	94,000	0
1988	0	95,000	457,000	297,000	129,000	0
1989	0	105,000	650,000	100,000	110,000	0
1990	0	103,000	479,000	303,000	106,000	0
1991	0	114,000	496,000	313,000	134,000	0
1992	0	100,000	353,000	309,000	105,000	0
1993	0	106,000	364,000	118,000	159,000	0
1994	0	101,000	286,000	328,000	98,000	0
1995	0	98,000	363,000	308,000	99,000	0
1996	0	85,000	365,000	306,000	50,000	0
1997	0	90,000	360,000	302,000	92,000	0
1998	0	100,000	366,000	306,000	103,000	0
1999	0	103,000	305,000	302,000	85,000	0
	0	100,000	306,000	302,000	100,000	0
2000						



			005050			
			SPECIES			
Year	Brook trout	Brown trout	Chinook salmon	Coho salmon	Rainbow trout	Atlantic salmon
1976	0	200,000	0	0	179,000	0
1977	0	106,000	141,000	105,000	48,000	0
1978	0	144,000	213,000	77,000	130,000	0
1979	0	69,000	531,000	118,000	182,000	0
1980	0	116,000	621,000	169,000	70,000	0
1981	0	58,000	263,000	114,000	230,000	0
1982	0	0	313,000	160,000	164,000	0
1983	0	0	238,000	128,000	283,000	0
1984	0	0	929,000	156,000	354,000	0
1985	0	0	762,000	139,000	509,000	0
1986	0	0	698,000	133,000	606,000	0
1987	0	0	569,000	162,000	511,000	0
1988	0	0	880,000	160,000	469,000	0
1989	0	0	717,000	41,000	503,000	0
1990	0	0	630,000	114,000	539,000	0
1991	0	0	694,000	100,000	493,000	0
1992	0	0	504,000	131,000	546,000	0
1993	0	0	459,000	12,000	476,000	0
1994	0	0	537,000	84,000	551,000	0
1995	0	0	555,000	166,000	490,000	0
1996	0	0	572,000	343,000	563,000	0
1997	0	0	423,000	81,000	610,000	0
1998	0	0	594,000	148,000	464,000	0
1999	0	0	415,000	147,000	552,000	0
2000	0	0	418,000	157,000	392,000	0
Mean			507,040	125,800	396,560	

Table 5. Total numbers of trout and salmon stocked in Michigan waters of Lake Michigan, 1976-2000, excluding lake trout.

			SPECIES			
Year	Brook trout	Brown trout	Chinook salmon	Coho salmon	Rainbow trout	Atlantic salmor
1976	61,000	289,000	1,947,000	2,190,000	596,000	20,000
1977	0	206,000	1,458,000	2,314,000	305,000	19,000
1978	0	150,000	2,524,000	1,802,000	1,151,000	46,000
1979	0	189,000	2,307,000	3,273,000	981,000	0
1980	3,000	105,000	2,903,000	2,243,000	1,311,000	0
1981	8,000	3,000	2,255,000	1,707,000	558,000	20,000
1982	0	300,000	2,584,000	1,645,000	1,066,000	45,000
1983	0	580,000	3,176,000	1,880,000	754,000	0
1984	8,000	580,000	3,351,000	2,044,000	1,292,000	
1985	9,000	506,000	2,258,000	1,693,000	694,000	Splake ***
1986	9,000	499,000	2,402,000	1,579,000	482,000	
1987	23,000	416,000	2,429,000	1,331,000	682,000	18,000
1988	0	400,000	2,671,000	1,733,000	554,000	75,000
1989	0	426,000	3,778,000	1,682,000	736,000	88,000
1990	45,000	343,000	3,637,000	1,465,000	604,000	50,000
1991	0	288,000	3,312,000	1,655,000	627,000	249,000
1992	0	315,000	3,415,000	1,735,000	603,000	55,000
1993	0	320,000	3,107,000	1,579,000	492,000	101,000
1994	0	811,000	3,522,000	627,000	827,000	95,000
1995	0	453,000	3,794,000	1,202,000	719,000	151,000
1996	0	400,000	3,529,000	1,886,000	614,000	131,000
1997	0	434,000	3,045,000	1,722,000	638,000	115,000
1998	0	400,000	3,170,000	1,100,000	549,000	75,000
1999	0	365,000	2,296,000	1,796,000	555,000	51,000
	0	464,000	2,237,000	1,785,000	491,000	75,000
2000	0	404,000	2,237,000			

Table 6. Lake Michigan lake trout stocking by rehabilitation zone in 2000.

Fish age	Rehabilitation Zone	Grid	Number Stocked	Finclip/ Mark	Strain	Off/ Onshore
Yearlings	Northern Refuge					
	Boulder Reef	413	49,750	ADCWT	Lewis Lake	off
		413	50,500	ADCWT	Apostle Islands	off
		413	50,500	ADCWT	Isle Royale	off
	Gull Island Shoal	413	48,475	ADCWT	Lewis Lake	off
		413	50,500	ADCWT	Apostle Islands	off
		413	50,500	ADCWT	Isle Royale	off
	Richard's Reef	414	46,232	ADCWT	Lewis Lake	off
		414	50,500	ADCWT	Apostle Islands	off
		414	50,500	ADCWT	Isle Royale	off
	subtotal		447,457			
	Midlake Refuge					
	Sheboygan Reef	1706	50,500	ADCWT	Green Lake	off
		1706	50,500	ADCWT	Seneca Lake	off
	Northeast Reef	1803	50,500	ADCWT	Seneca Lake	off
		1803	50,500	ADCWT	Green Lake	off
	East Reef	1904	50,500	ADCWT	Seneca Lake	off
		1904	37,000	ADCWT	Green Lake	off
	subtotal		289,500			
	Primary Zone					
	Clay Banks	905	116,066	ADCWT	Lewis Lake	off
	Milwaukee (intended for Julian's Reef)	1901	60,500	ADCWT	Green Lake	on
	Little Traverse Bay	519	4,000	LP	Lewis Lake	on
		519	71,263	LP	Apostle Islands	on
	Old Mission Point	716	5,335	LP	Apostle Islands	off
		716	112,095	LP	Lewis Lake	off
	Acme	916	38,000	LP	Lewis Lake	off

L	ee's Reef	815	59,800	LP	Lewis Lake o	off
		815	25,350	LP	Apostle Islands o	off
C	Greillickville	915	44,850	LP	Lewis Lake o	off
C	Good Harbor Bay	814	76,869	LP	Apostle Islands o	off
		814	9,630	LP	Lewis Lake o	off
F	Point Betsie	911	113,875	LP	Apostle Islands o	off
Т	rout Island Shoal	314	87,000	LP	Apostle Islands	off
subt	total		824,633			
Sec	ondary Zone					
	Lakeside Reef	2608	81,910	LP	Apostle Islands	off
		2608	8,090	LP	Lewis Lake o	off
	Stony Lake Reef	1609	28,851	LP	Apostle Islands	off
		1609	31,149	LP	Lewis Lake o	off
	Michiana Reef	2706	61,480	LP	Lewis Lake o	off
	Northeim Reef	1303	60,000	LP	Isle Royale c	n
Ree	Portage Lake f	1111	56,951	LP	Apostle Islands o	off
		1111	3,049	LP	Lewis Lake o	off
	Beach Reef	2410	30,000	LP	Apostle Islands o	off
	Ludington Reef	1409	60,000	LP	Apostle Islands o	off
	Kewaunee Shoal	1104	16,100	LP	Marquette o	off
		1104	17,400	LP	Lewis Lake o	off
		1104	22,480	LP	Seneca Lake o	off
Ree	S. Milwaukee f	2002	47,000	LP	Isle Royale o	off
	Wind Point Shoal	2102	33,000	LP	Green Lake o	off
		2102	13,500	LP	Apostle Islands o	off
		2102	7,000	LP	Isle Royale o	off
S	Saugatuck Reef	2211	60,600	LP	Apostle Islands o	off
S	Sheboygan	1502	60,000	LP	Isle Royale o	off
subt	total		698,560			
Gra	nd Total		2,260,150			

Table 7. A summary of trout and salmon stocked into Lake Michigan in 2000 that were marked with fin clips. Wisconsin data is incomplete.

Species/ strain	State	Location stocked	Number stocked	Fin clip
Coho Salmon	MI	Platte River	57,991	LV
Chinook Salmon	MI	Little Manistee River	100,950	ADCWT oxytetracycline
	IL	Waukegan	107,230	LV
	WI	Strawberry Creek	15,058	ADCWT
	WI	Strawberry Creek	15,057	AD
Steelhead				
Skamania	MI	Manistee River	17,484	LPRV
	WI	Milwaukee River	9,008	RMRV
	WI	Root River	37,010	RMRV
Michigan	MI	Bear River	8,000	RP
	MI	Big Rabbit River	10,000	RP
	MI	Black River	10,005	RP
	MI	Boardman River	15,000	RP
	MI	Boyne River	8,000	RP
	MI	Brevoort River	8,000	RP
	MI	Carp River	5,000	RP
	MI	Crockery Creek	5,000	RP
	MI	Elk River	10,000	RP
	MI	Fish Creek	5,000	RP
	MI	Flat River	5,000	RP
	MI	Galien River	15,000	RP
	MI	Grand River	36,129	RP
	MI	Jordon River	8,000	RP
	MI	Kalamazoo River	16,134	RP

	MI	Macatawa River	9,750	RP
	MI	Manistee River	52,009	RP
	MI	Manistique River	8,000	RP
	MI	Menominee River	10,000	RP
	MI	Muskegon River	55,000	RP
	MI	Paw Paw River	10,005	RP
	MI	Pentwater River, north branch	3,500	RP
	MI	Pentwater River, south branch	3,500	RP
	MI	Prairie Creek	5,092	RP
	MI	Rogue River	34,010	RP
	MI	Ruby Creek	12,000	RP
	MI	St. Joseph River	50,000	RP
	MI	Sturgeon River	20,000	RP
	MI	Whitefish River	37,001	RP
Arlee	IL	Chicago	55,000	RPLV
	IL	Evanston	10,000	RPLV
	IL	Highland Park	10,000	RPLV
	IL	Waukegan	25,000	RPLV
Chambers Ck.	WI	Root River	27,287	LMLV
Brown trout	MI	Ludington	5,000	RV
	WI	Kewaunee River	31,021	ADRM
	WI	Menominee River	31,000	ADRM
	WI	Root River	28,000	ADRM
	WI	Stone Quarry	3,192	ADRM

Fig. 1 Lake Michigan Trout and Salmon Stocking Lakewide, 1976-2000.

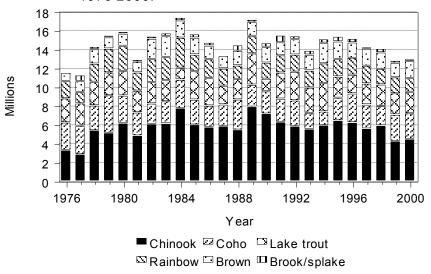
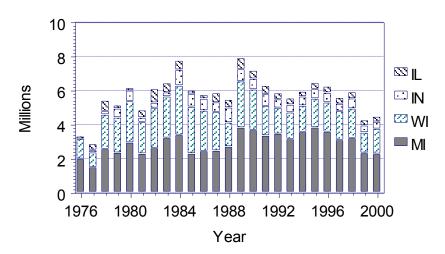


Fig. 2 Chinook Salmon Stocking in Lake Michigan, 1976-00.



..

Fig. 3 Coho Salmon Stocking in Lake Michigan, 1976-00.

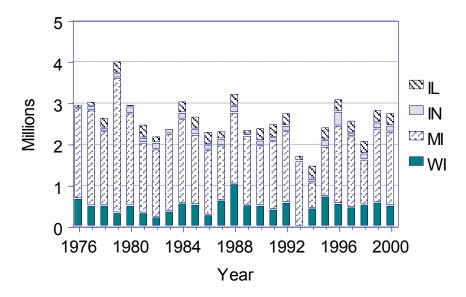


Fig. 4 Rainbow Trout Stocking in Lake Michigan, 1976-00.

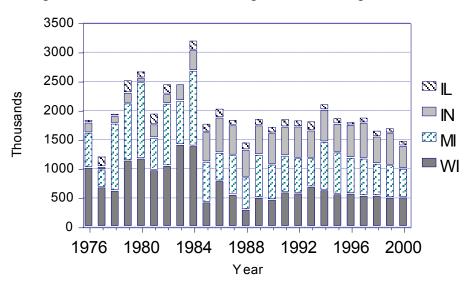


Fig. 5 Brown Trout Stocking in Lake Michigan, 1976-00.

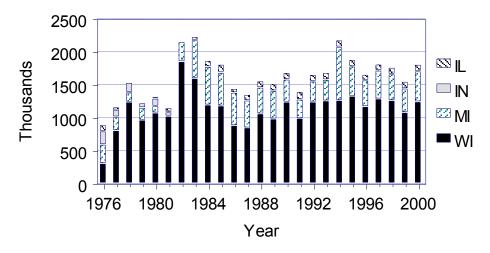


Fig. 6. Lake Trout Stocking in Lake Michigan by Rehabilitation Zone, 1985-2000 (yearling = 2.4 fall fingerling).

