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Appendix C

**Numbers of Fish Collected in the
Long River (1988-2014),
Fall Juvenile (1985-2014), and
Beach Seine (1985-2014) Surveys**

APPENDIX C
LIST OF TABLES

<u>Number</u>	<u>Title</u>
C-1	Total number of fish collected in the Long River Survey, 1988-2014
C-2	Total number of fish collected in the Fall Juvenile Survey, 1985-2014
C-3	Total number of fish collected in the Beach Seine Survey, 1985-2014

Table C-1 Total Number of Fish Collected in the Long River Survey, 1988-2014

Anadromous	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Anadromous																		
Alewife	8,200	624	60	2,727	555	1,275	1,679	293	1,787	171	235	10,231	320	5,284	183	537	641	5,479
Alosa spp.	258,802	423,742	714,369	250,755	465,613	191,558	206,819	122,644	460,957	58,794	128,111	124,710	391,708	180,190	145,643	141,877	126,035	103,618
American shad	51,162	62,755	49,242	25,128	30,345	15,867	31,213	12,120	23,378	6,744	8,887	12,185	11,567	14,048	6,732	15,676	4,711	7,126
Atlantic sturgeon	11	2	5	26	4	4	7	1	1	3	2	2	1	1	10	3	4	4
Atlantic tomcod	25,414	37,397	38,431	40,804	10,558	21,343	20,724	64,680	17,375	71,070	91,679	13,625	10,337	57,412	7,556	20,724	92,099	55,146
Blueback herring	4,992	2,568	1,230	28,397	30,496	3,290	9,315	1,412	18,354	2,358	246	4,367	1,907	1,100	578	8,760	801	1,977
Hickory shad	24,693	767	6,838	2,494	23,035	12,002	59,829	2,354	4	5	4	4	1	1	1	1	1	1
Rainbow smelt	61,072	225,498	264,907	359,994	462,382	459,384	674,881	383,781	962,335	272,329	443,766	790,358	1,376,173	1,192,084	151,199	732,410	416,917	387,265
Sea lamprey																		
Striped bass																		
Catadromous																		
American eel	789	917	848	1,372	827	1,505	921	1,388	1,230	527	519	294	468	708	262	476	365	513
Estuarine																		
Atlantic silverside	152	11	67	49	27	19	144	323	52	4	12	29	98	35	35	54	188	50
Banded killifish	5	2,274	1	1	5	3	4	24	2	2	2	1	1	1	1	1	1	13
Fat sleeper	6	1	1	2	1	7	5	7	7	1	1	1	1	1	1	1	1	1
Fourspine stickleback	301,192	589,469	13,591	908,378	44,337	87,673	159,013	130,281	51,986	22,814	36,279	23,050	24,894	13,417	28,225	17,313	36,061	24,267
Hogchoker	98	101	1	58	42	209	857	149	166	40	9	69	12	57	97	51	338	169
Inland silverside	11	1	1	9	1	1	2	2	1	1	3	1	1	1	1	1	1	1
Lined sea horse	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Mummichog	1,135	153	102	2,059	137	416	186	277	291	170	120	427	82	186	226	64	130	238
Northern pipefish	3	2	2	3	3	14	8	7	38	2	5	1	4	13	1	4	4	1
Shortnose sturgeon	2	1	1	3	3	2	2	2	3	3	1	1	4	4	1	4	4	1
Threespine stickleback	77	100	87	76	52	25	214	196	205	96	70	172	70	80	56	78	38	79
White catfish	138,753	198,953	157,348	147,232	265,656	221,021	172,995	115,842	287,690	69,844	130,785	136,518	267,801	134,744	142,260	140,645	138,513	107,406
White perch																		
Freshwater																		
Black bullhead																		
Black crappie																		
Bluegill				5			1	1	1				3			1	1	
Brindled madtom																		
Brown bullhead	1	12	33	30	4	7	18	25	31	11	8	3	8	22	1	48	36	10
Brown trout			1		1													
Carp	730	651		340	731	136	121	147	1,199	867	161	211	533	22	130	597	455	647
Catostomidae					1									4				
Central mudminnow																		
Centrarchidae	30	66	46	40	132	40	125	11	152	26	100	16	137	552	155	50	136	67
Chain pickerel									2	1		1			1			
Channel catfish				1	1			5	5	4		11	8	23	24	118	91	101
Common shiner																		
Creek chub																		
Cyprinidae	470	1,736	6,839	1,764	2,576	2,276	2,044	910	2,709	696	1,358	2,705	3,482	3,101	2,623	1,150	1,073	786
Emerald shiner											19	2		1				
Fall fish																		
Fathead minnow			1															
Freshwater drum					1	1		8	124	1	10	27	8	15	90	55	255	640
Gizzard shad		85	5	3	535	123	440	1,065	688	708	885	1,281	2,383	161	9,060	1,292	360	80
Golden shiner		1	7			1	2	11	1		1		2	1				2

Table C-1 (Continued)

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Marine (cont.)																		
Lookdown																		
Moontfish							1											
Myoxocephalus spp.																		
Naked goby	279	44	1,619	8	73		1							2				
Northern kingfish		118		10	10	9	1	3	6			369	107	6	169		8	19
Northern puffer	1	5	32	279	10	2	39	1				16	1	3	1		4	2
Northern searobin	40	2	17	19	1	4	27	5	14	2	14	37	1	23	1	4		1
Northern stargazer	129						53		48	1	1	4		2	1			
Oyster toadfish		1									1	1	1			1		7
Phycidae																		35
Pinfish																	1	
Pink wormfish																		
Pleuronectidae				144						16	2	3						
Pleuronectiformes																		
Pollack																		
Radiated shanny																		
Red hake	3	1	1		1	1			9	13	19	15	2	1				1
Rock gunnel	9	2	1	5	6			35	32	54	28	17	13	49	7	44	72	71
Rough silverside	110	19		41	44	30	447	218	37	33	4	26	66	12	22	7	4	50
Sciaenidae		3				2	65											1
Scup				1														
Seaboard goby	1		312	4	19	1		1		19	4	14	77	10	234	116	2	19
Searobin	8			26		16				8	1	399		4	65	70	33	697
Sharptail goby																		
Silver anchovy	1	3					2		2			1		2			1	
Silver hake																		
Silver perch								1										
Skillfish																		
Smallmouth flounder	38		1	91	71	32	175	22	7	18	40	37	47	6	6	20	61	4
Spanish mackerel				20		2	1											
Speckled worm eel	1																	
Spot	62	1	2	19	40	20	9	146	186	76	49	52	38	90	35	193	111	40
Spotted hake							6	5	35	6	3	5					65	
Striped anchovy																		
Striped burrfish				4	3	1		1	3	18	8	9	19	8		3	3	4
Striped cuskeel																		
Striped killifish																		
Striped searobin	43	4		234	5	41	671	3	4	112	45	85	15	1	39	21	27	5
Summer flounder		24	1	39	18		7	23	11	5	8	8	26	26	10	8	22	4
Tautog	1,205	3,432		969	488	241	439	3,171	3,396	3,009	490	2,908	2,028	6,129	4,192	4,483	8,668	9,966
Tetraodontidae																		
Weakfish	1,586	2,602	122,082	6,821	1,206	1,621	2,804	623	59,707	13,345	145,785	224,618	50,800	83,380	51,266	57,429	94,647	108,943
Windowpane	8,866	5,162	49	1,500	14,953	166,221	6,917	17,602	7,074	13,902	1,635	3,210	1,816	13,095	1,563	4,134	2,192	2,557
Winter flounder	900	178	64	340	794	188	362	4,754	774	4,109	2,325	3,996	9,831	1,905	4,353	10,306	9,580	1,921
Witch flounder									1									
Wrymouth																		
Yellowtail flounder					2		1	162	2	6	13	7	1	5	2			6
Unidentified																		
Acipenseridae	4	6	18	9														
Atherinidae		1		259		16	45	19	26	44	1	4	1			1		
Cyprinodontidae		8				5				5					1			
Fundulus spp.		2	4	3	1	111	4	3	2		1	62		1		1	1	1
Gasterosteidae																		
Menidia spp.	12	7	193		2		1	1		52	11	1			1			

Table C-1 (Continued)

	2006	2007	2008	2009	2010	2011	2012	2013	2014
Freshwater (cont.)									
Emerald shiner	.	.	.	.	.	.	.	.	.
Fall fish	.	.	.	.	.	.	.	2	4
Fathead minnow	590	675	760	362	1,878	1,720	3,625	29,876	6,083
Freshwater drum	1,230	417	138	307	175	81	588	1,934	564
Gizzard shad	7	.	1	.	.	.	.	.	.
Golden shiner	.	.	.	.	.	.	.	.	.
Goldfish	.	.	.	.	.	.	.	.	.
Largemouth bass	.	16	1	.	1	.	.	.	.
Logperch	1	1	.	.	.	.	3	1	.
Northern hog sucker	.	.	.	.	.	.	.	.	.
Percidae	.	.	.	.	.	.	.	.	.
Pumpkinseed	1	1	.	1	1	1	.	.	.
Rock bass	.	.	.	.	.	.	.	.	1
Satinfin shiner	.	.	.	.	.	.	.	.	.
Silvery minnow	.	.	.	.	.	.	.	.	.
Slimy sculpin	.	.	.	.	.	.	.	.	.
Smallmouth bass	3	.	.	2	.	.	.	9	1
Spottin shiner	7	.	.	.	.	.	.	.	.
Spottail shiner	33	89	58	62	34	49	9	20	51
Tessellated darter	1,484	1,109	1,730	3,029	842	1,117	580	663	603
Walleye	105	54	12	5	20	95	3	12	13
White crappie	12	2	3	6	2	23	4	4	40
Yellow bullhead	.	.	.	.	.	.	.	.	.
Yellow perch	538	243	487	218	484	1,307	153	60	254
Marine									
American sand lance	8	12	8	2	68	39	2	6	24
Atlantic cod	.	.	1	10	.	18	.	13	1
Atlantic croaker	2,000	378	273	1,075	556	12	1,601	791	5,263
Atlantic herring	48	2	148	88	706	869	19	491	2
Atlantic mackerel	.	21	.	464	.	50	.	12	.
Atlantic menhaden	10,562	22,125	13,606	13,108	15,631	6,534	4,178	9,131	3,888
Atlantic needlefish	.	.	2	1	.	1	2	1	2
Atlantic seasnail	.	.	.	.	.	3	.	.	.
Bay anchovy	374,336	1,036,876	1,955,290	856,886	1,148,252	1,248,518	936,169	294,125	387,519
Black drum	.	.	.	.	.	.	.	.	1
Black sea bass	.	.	.	.	.	.	32	.	1
Blackcheek tonguefish	.	.	.	.	.	.	.	.	.
Blenniidae	.	.	.	1	.	.	.	.	.
Bluefish	18	28	23	18	22	29	8	20	46
Bothidae	.	.	.	.	.	.	.	.	.
Butterfish	37	20	165	133	10	12	20	46	104
Conger eel	13	55	36	15	27	8	38	28	7
Cottidae	.	.	.	.	.	.	.	.	.
Crevalle jack	.	1	1	.	.	.	.	.	.
Cunner	1,363	8,882	14,716	7,173	5,601	37,730	6,693	3,238	6,563
Cusk	.	1	.	.	.	.	.	.	.
Feather blenny	.	.	17	.	.	9	48	13	2
Fourbeard rockling	2,189	2,222	2,191	2,063	867	1,831	277	393	44
Fourspot flounder	.	.	2	.	.	28	16	3	.
Gadidae	.	.	.	.	.	.	.	1	1
Gobiidae	14,995	32,595	10,882	22,108	21,434	21,559	55,036	15,912	39,631
Goosefish	.	.	.	.	.	.	.	2	1
Grubby	620	638	788	3,647	520	1,188	141	19	55

Table C-1 (Continued)

	2006	2007	2008	2009	2010	2011	2012	2013	2014
Marine (cont.)									
Gulf stream flounder	.	.	.	1	.	.	.	.	.
Harvestfish	.	.	1	.	2	.	.	.	17
Inshore lizardfish	.	.	.	.	.	.	.	.	.
King mackerel	.	192	2	.	.	.	.	.	.
Labridae	.	.	.	.	.	20	.	2	.
Longhorn sculpin	.	.	.	.	.	.	.	.	.
Lookdown	.	.	1	1	.	.	.	1	1
Moontfish	.	.	.	.	.	.	.	1	.
Myoxocephalus spp.	.	.	.	.	.	.	.	.	.
Naked goby	94	41	5	34	99	50	17	27	65
Northern kingfish	.	4	16	32	.	8	.	.	8
Northern puffer	1	33	5	2	.	13	269	.	21
Northern searobin	1	.	3	1	.	.	.	3	5
Northern stargazer	1	.	3	3	.	11	.	1	1
Oyster toadfish	2	.	16	1	.	.	.	1	1
Phycidae	.	.	.	.	.	.	.	.	.
Pinfish	.	.	.	.	.	.	.	.	.
Pink wormfish	.	.	.	.	.	.	.	.	5
Pleuronectidae	.	.	.	.	.	.	.	1	.
Pleuronectiformes	.	.	.	.	.	.	1	.	.
Pollack	.	.	.	.	.	1	.	1	.
Radiated shanny	.	.	.	.	.	.	.	.	.
Red hake	1	.	.	1	1	.	.	.	.
Rock gunnel	19	40	37	181	26	117	4	6	20
Rough silverside	55	144	14	123	72	34	97	31	17
Sciaenidae	.	.	.	.	.	.	.	.	.
Scup	235	68	35	27	45	16	220	218	7
Seaboard goby	20	1,028	971	280	17,988	119	2,529	.	2,365
Sharptail goby	.	.	.	.	.	.	.	.	.
Silver anchovy	.	.	.	.	1	.	.	.	.
Silver hake	.	.	.	.	.	.	.	.	.
Silver perch	.	.	.	1	.	.	37	.	.
Skillefish	.	.	.	.	.	1	184	40	11
Smallmouth flounder	29	3	13	16	1	10	15	14	39
Spanish mackerel	.	.	.	.	.	.	.	.	.
Speckled worm eel	.	.	.	.	.	.	.	.	.
Spot	5	.	3	.	.	.	3	.	.
Spotted hake	144	18	63	99	185	1	67	24	.
Striped anchovy	.	4	12	.	19	57	63	234	144
Striped burrfish	1	.	.	.	.	.	7	5	.
Striped cuskeel	.	3	1	1	6	2	.	1	2
Striped killifish	.	.	.	.	.	.	.	.	.
Striped searobin	16	9	24	72	2	4	97	7	30
Summer flounder	18	12	30	154	39	52	26	88	116
Tautog	1,177	5,281	10,313	12,889	5,560	56,700	5,455	6,047	22,551
Tetraodontidae	.	.	.	.	.	.	.	.	.
Weakfish	17,960	52,305	59,310	33,795	23,342	27,058	19,653	36,773	10,533
Windowpane	978	2,825	2,389	2,883	1,625	1,997	709	679	1,203
Winter flounder	1,312	4,015	1,155	4,744	406	3,689	643	1,673	1,342
Witch flounder	.	.	.	1	.	1	.	1	.
Wrymouth	.	.	.	.	.	.	.	.	1
Yellowtail flounder	.	.	2	1	5	9	.	2	.

Table C-1 (Continued)

	2006	2007	2008	2009	2010	2011	2012	2013	2014
Unidentified									
Acipenseridae	.	.	.	.	.	.	.	1	.
Atherinidae	.	1	9	3	.	6	.	.	.
Cyprinodontidae	.	.	6	1	.	.	.	.	.
Fundulus spp.	.	.	6	1	.	.	.	.	.
Gasterosteidae	.	.	.	.	.	.	.	.	.
Menidia spp.	3	2	2	1	.	.	3	6	.
Morone unidentifed	3,677	3,299	1,671	1,461	5,450	11,398	6,737	4,189	8,694
Petromyzontidae	1	.	1	.	.	.	.	3	.
Unidentifiable	101	550	381	34	1,013	2,010	804	1,150	1,224

Table C-1 (Continued)

Sampling Statistics for Long River Survey, 1988-2014

Start Date	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
End Date	18-Apr	17-Apr	19-Apr	15-Apr	13-Apr	12-Apr	11-Apr	6-Mar	12-Mar	11-Mar
Volume Sampled (m ³)	524,777	519,252	419,294	537,825	632,978	596,043	579,959	649,908	675,698	671,661
Sample Size	1,663	1,641	1,561	1,991	1,986	1,987	1,986	2,431	2,362	2,365
Start Date	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
End Date	2-Mar	23-Mar	7-Mar	15-Mar	4-Mar	19-Mar	2-Mar	16-Mar	8-Mar	14-Mar
Volume Sampled (m ³)	810,440	774,435	857,373	711,723	716,977	704,211	706,106	654,297	689,180	691,098
Sample Size	2,435	2,329	2,435	2,300	2,438	2,433	2,439	2,433	2,436	2,437
Start Date	2008	2009	2010	2011	2012	2013	2014			
End Date	4-Mar	16-Mar	16-Mar	14-Mar	27-Feb	13-Mar	31-Mar			
Volume Sampled (m ³)	645,337	628,594	626,562	635,472	497,795	637,842	660,344			
Sample Size	2,439	2,442	2,440	2,442	1,865	2,435	2,210			

Table C-2 Total Number of Fish Collected in the Fall Juvenile Survey, 1985-2014

	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	
Anadromous																						
Alewife	1,142	564	702	379	327	459	994	790	730	719	519	830	868	97	3,925	746	2,118	379	1,077	307	1,980	
Alosa spp.	3,341	282	2,591	4,193	4,331	3,543	1,276	10,650	1,905	1,725	2,895	18,007	6,547	82	7,681	2,688	2,562	2,356	4,262	1,688	3,500	
American shad	1,717	2,166	776	1,483	3,646	1,323	1,291	3,406	961	2,095	831	2,964	1,105	310	1,407	808	1,369	598	433	400	294	
Atlantic sturgeon	96	184	149	117	63	6	10	11	7	15	15	8	40	30	18	5	23	37	39	22	12	
Atlantic tomcod	5,083	10,046	7,908	8,210	14,060	1,105	4,914	7,299	3,664	1,679	3,649	4,632	10,645	1,928	1,798	6,528	5,910	581	1,456	4,802	2,536	
Blueback herring	41,919	6,525	18,596	37,957	22,112	15,982	55,299	38,090	22,442	18,790	14,006	20,863	13,999	566	20,315	6,412	13,731	6,205	10,727	3,223	15,677	
Hickory shad	3													1							1	
Rainbow smelt	126	389	429	576	34	216	256	2,549	757	363	136			1								
Sea lamprey						1																
Striped bass	888	2,348	11,633	18,679	8,472	3,624	4,672	3,773	8,333	8,719	10,327	6,293	4,461	1,367	8,989	3,683	3,654	2,516	8,553	1,893	5,107	
Catadromous																						
American eel	1,872	2,906	2,254	2,076	1,444	342	984	1,392	1,406	1,647	1,627	1,434	722	763	738	792	566	244	310	360	376	
Estuarine																						
Atlantic silverside		2		3	1	2	18	2	29	25	33	42	19	20	19	82	13	33	10	62	22	
Banded killifish	78	12	3	3			2		6	21	24			1	1		1	2			3	
Fat sleeper															50							
Fourspine stickleback	1	9		1	1				2		1	1		1					2	1		
Hogchoker	89,948	108,036	89,042	74,672	73,613	22,760	42,916	62,358	43,064	15,581	23,823	18,422	4,861	3,964	5,696	7,452	7,243	11,320	19,446	20,370	16,413	
Inland silverside				1		2			2		4				1							
Lined sea horse											1		1				1					
Mummichog						4																
Northern pipefish	40	13	22	25	12	4	16	14	65	15	24	3	27	10	9	9	12	15	3	17	17	
Shorthose sturgeon	16	8	11	20	12	2	18	76	82	50	36	48	26	30	52	50	47	27	29	29	30	
White catfish	721	677	775	806	740	352	547	172	939	1,363	1,077	967	235	840	494	337	371	155	228	147	522	
White mullet																						
White perch	19,721	31,771	27,008	25,760	20,106	5,381	11,019	13,832	8,341	9,007	10,272	8,569	3,655	3,474	8,955	6,225	5,775	4,715	11,131	5,426	8,631	
Freshwater																						
Black bullhead	1																					
Black crappie															1							
Bluegill			1		1		1	3	2		1	1	2					1	1			
Brook trout							1															
Brown bullhead	37	127	109	171	172	17	125	177	92	278	211	251	97	167	524	549	460	501	600	476	611	
Carp	4	13	5	4	10	1	6	7	7	3	6	2	5		11	2	6	5	2	1	6	
Central mudminnow			1																			
Centrarchidae	1	4	1	5	3					4			4	2	1	1		8	7	2	2	
Channel catfish		5	10	9	12	1	4	7	38	187	95	127	66	149	331	378	507	674	1,497	995	2,974	
Cyprinidae	48											1		11	2	1						
Emerald shiner					1																	
Fall fish													1									
Fathead minnow																						
Freshwater drum					3			1	2	1	3	1		2	1	5	3	4	25		37	

Table C-2 (Continued)

	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	
Freshwater																						
(cont.)																						
Gizzard shad	4	6	8	2	8	1	.	.	3	1	5	.	15	3	25	4	35	33	4	26	11	
Golden shiner	.	1	.	.	.	.	.	29	.	.	.	2	3	.	.	4	.	5	1	1	.
Goldfish	.	.	.	.	1	.	.	1	.	1	.	.	.	.	1	1	3	2	1	1	11
Largemouth bass	.	.	.	.	.	.	.	.	4	.	.	1	.	.	.	.	.	.	18	.	1
Logperch	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Margined madtom	.	.	1	.	.	.	1	.	.	1	.	.	.	.	.	.	.	.	.	.	.
Pumpkinseed	57	2	13	5	1	6	12	2	16	12	49	20	9	1	10	2	1	5	4	7	6	
Redbreast sunfish	1	.	.	1	2	.	.	.	.	1	3	.	.	.	.	43	.	.	.	.	.
Rock bass	.	1	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.
Satinfin shiner	.	.	.	.	.	1	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.
Silvery minnow	.	1	.	.	.	.	.	.	.	.	.	56	.	.	.	.	.	.	.	.	.
Smallmouth bass	.	.	.	.	1	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Spottail shiner	244	685	333	369	102	43	404	259	351	248	204	382	83	105	175	110	114	48	85	382	156	
Tessellated darter	89	747	197	370	120	10	187	225	306	684	228	148	100	96	131	25	26	20	153	81	41	
Trout perch
Walleye
White sucker	1	8	4	2	1	.	.	.	.	1	.	1	2	1	6	1	.	4	1	9	2
Yellow bullhead	30
Yellow perch	.	.	1	1	1	8	2	.	6
Marine																						
Atlantic croaker	1	4	7	.	1	4	.	4	18	97	336	10	183	5,028	4,015	2,280	3,894	1,479	20	8,838	8,697	
Atlantic cutlassfish	1
Atlantic herring	3
Atlantic mackerel
Atlantic menhaden	51	139	67	9	38	129	478	122	13	78	26	260	19	101	12,685	2,535	337	746	445	566	139	
Atlantic needlefish	27,902	20,988	39,348	59,244	41,475	16,465	44,815	37,264	53,437	54,615	93,826	26,168	71,630	51,368	58,298	15,533	27,794	47,096	37,511	43,166	38,534	
Bay anchovy	1	.	.	1	2	.	.	9
Black sea bass	60	51	107	116	62	82	58	82	53	37	42	39	55	27	165	53	60	56	30	31	18	
Bluefish	61	106	48	110	81	43	35	141	121	109	21	18	90	177	74	9	25	26	16	106	66	
Butterfish
Cobia
Conger eel	.	.	.	14	.	.	.	.	.	.	2	2	.	1	1	1	.	.	.	.	2
Crevalle jack	2	1	1	10	8	7	3	1	10	1	4	1	.	9	.	.	2	.	1	1	1	
Cunner	.	.	.	.	.	1	.	1	.	.	.	.	.	1	.	.	.	.	.	.	1
Feather blenny	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.
Fourspot flounder	2	2	.	1	.	1	.	.	.	25	.	.	4	1	.	.	1	.	.	.	.
Gobiidae	.	.	.	4	.	.	.	38	.	2	.	.	3	4	12	2	2	8	4	3	1	
Goosefish	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.
Gray snapper	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.
Grubby	.	.	.	2	.	.	.	.	1	.	.	.	.	.	.	.	1	.	.	.	.
Inshore lizardfish	1	.	.	1	4	.	1	4	8	1	.	.	.	.	.	71	1	.	.	.	.
Longhorn sculpin	.	.	.	.	.	.	.	.	3	.	.	.	.	.	.	.	.	.	.	.	.
Lookdown	1	.	1	1	1	.	.	.	.	1	.	.	1	1	3	2	.	.	.	.	1
Moontfish	1	1	2	.	5	.	.	1	.	.	.	.	4	4	1	3	9	5	3	9	.
Naked goby	3	6	47	9	21	1	7	30	3	1	26	.	8	4	7	7	33	5	46	8	26	
Northern kingfish	9	6	.	20	3	3	10	2	4	16	7	.	2	2	3	.	.	.	.	.	1
Northern puffer	9	1	5	3	2	.	36	3	1	.	3	.	.	1	.	.	.	3	.	.	2	

Table C-2 (Continued)

	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	
Marine (cont.)																						
Northern searobin		2	7	21	3	16	7	12	53	305	6	5	16	.	.	.	6	.	.	1	24	
Northern stargazer	1	.	.	20	.	4	3	10	2	7	.	.	6	.	2	1	3	5	1	1	2	
Oyster toadfish	.	.	.	.	.	.	.	1	.	.	.	4	.	2	3	2	1	1	1	11	13
Red hake	1	.	.	.	.	1	.	.	.	.	.	.	2	.	.	1	.	.	.	.	38
Rock gunnel	3
Rough silverside	1	.	3	1	.	.	.	3	2	.	4	.	4	1	1	2	.	.	.	.	1
Scup	1	.	.	12	.	.	3	.	.	.	8	.	.	.	.	2	5	1	8	2	2
Seaboard goby	2
Searobin	.	.	.	.	.	.	.	.	.	.	.	.	339	.	.	8	2	.	12	7	.
Silver hake	.	3	.	.	.	1	1	.	.	.	.	.	5	.	1	3	.	1	1	1	1
Silver perch	.	.	.	13	.	.	1	.	7	11	36	1	1	.	.	.	.	.	.	.	1
Smallmouth flounder	.	.	.	8	.	.	.	1	1	9	3	.	.	1	1	.	.	2	.	.	.	
Spanish mackerel	.	.	.	.	.	1	17	.	7	.	.	.	.	.	.	.	.	.	.	1	.
Spot	5	14	1	1,257	.	.	2	1.	4	.	.	30	.	.	.	1	1	.	.	.	.
Spottin butterflyfish	1	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.
Spotted hake	2	1	.	.	.	.	3	32	7	3	3	224	54	9	7	15	106	12	34	20	9
Striped anchovy	.	.	.	.	.	.	.	1	.	.	2	.	.	.	.	.	.	1	1	.	.
Striped burrfish	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Striped cuskeel	3	.	.	1	.	.	1	1	.	.	.	.	.	1	.	1	.	.	.	.	12
Striped searobin	321	148	10	101	25	26	310	54	96	648	15	.	416	294	1,498	8	123	189	236	121	37	
Summer flounder	232	447	58	7	42	35	102	56	39	32	108	41	4	2	23	4	6	2	3	9	8	
Tautog	.	.	.	2	.	3	.	1	.	.	.	.	1	.	.	.	.	.	.	.	.
Tetraodontidae	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Weakfish	2,214	1,482	749	3,777	2,842	770	5,878	756	2,332	2,416	3,773	2,202	2,713	2,039	7,412	7,147	3,567	3,806	1,952	686	4,083	
Windowpane	1	1	5	17	.	5	9	32	1	5	19	2	12	5	46	4	7	3	4	1	2	
Winter flounder	226	196	92	39	23	13	28	36	51	21	62	32	56	12	10	8	3	2	4	3	20	
Unidentified																						
Acipenseridae
Atherinidae
Morone
unidentified	1	.	.	.	3	2	.	.	.	.	.	.	2	3	.	1	.	.	35	.	.
Unidentifiable	.	.	.	.	.	.	.	.	6	.	18	1	68	.	1	.	.	.	.	.	.

Table C-2 (Continued)

	2006	2007	2008	2009	2010	2011	2012	2013	2014
Anadromous									
Alewife	236	587	1,031	144	1,719	316	681	281	1,872
Alosa spp.	755	3,030	1,529	220	266	1,847	2,469	302	27,259
American shad	77	44	69	70	85	122	91	133	511
Atlantic sturgeon	14	35	24	30	19	22	62	70	77
Atlantic tomcod	1,007	1,121	1,290	2,495	430	577	74	1,063	4,871
Blueback herring	943	5,682	11,803	437	14,025	5,614	7,173	171	32,074
Hickory shad	.	.	1	.	.	2	.	.	1
Rainbow smelt	.	.	.	.	.	.	.	.	.
Sea lamprey	.	.	.	.	.	.	.	.	.
Striped bass	1,795	2,001	1,456	1,068	3,272	1,623	2,257	1,291	10,806
Catadromous									
American eel	448	163	241	350	716	168	648	824	506
Estuarine									
Atlantic silverside	29	50	14	3	41	13	69	23	108
Banded killifish	12	1	1	.	2	3	.	.	.
Fat sleeper	.	.	.	.	.	.	.	.	.
Fourspine stickleback	.	.	.	1	1	.	.	.	.
Hogchoker	15,079	12,945	36,104	42,149	40,758	31,022	58,641	63,157	26,594
Inland silverside	.	.	.	.	.	.	.	.	.
Lined sea horse	.	.	.	.	.	.	1	.	.
Mummichog	.	.	.	.	2	.	.	.	.
Northern pipefish	16	19	17	59	19	5	86	8	8
Shorthose sturgeon	28	20	17	12	30	14	14	43	20
White catfish	412	198	170	174	175	84	164	322	306
White mullet	5	.	.	.	.	.	.	.	.
White perch	7,151	3,904	8,551	9,631	15,039	7,409	6,048	4,557	6,220
Freshwater									
Black bullhead	.	.	.	.	.	.	.	.	.
Black crappie	.	.	.	.	.	.	.	.	.
Bluegill	1	.	2	.	4	3	1	.	.
Brook trout	.	.	.	.	.	.	.	.	.
Brown bullhead	505	191	278	742	835	769	1,079	225	312
Carp	2	2	3	6	7	10	19	9	6
Central mudminnow	.	.	.	.	.	.	.	.	.
Centrarchidae	.	.	2	2	.	17	1	1	.
Channel catfish	2,279	979	1,868	1,550	2,072	1,673	1,898	3,001	1,745
Cyprinidae	.	.	.	.	.	1	.	.	.
Emerald shiner	.	.	1	.	.	.	.	.	.
Fall fish	.	.	1	.	.	.	.	.	.
Fathead minnow	18	.	.	.	.	.	.	.	.
Freshwater drum	37	2	.	3	2	25	43	111	8
Gizzard shad	3	5	24	1	74	24	19	6	2
Golden shiner	2	.	.	.	1	15	6	.	1
Goldfish	.	1	.	3	.	.	5	.	3
Grass carp	.	.	.	1	.	.	.	.	.

Table C-2 (Continued)

Sampling Statistics for Fall Juvenile Survey, 1985-2014

Start Date	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
End Date	22-Jul	21-Jul	13-Jul	18-Jul	17-Jul	9-Jul	15-Jul	13-Jul	19-Jul	18-Jul	10-Jul	10-Jul
Volume Sampled (m ³)	1,886,745	2,298,278	2,035,357	1,826,628	1,590,047	1,252,910	1,707,237	1,865,365	2,010,162	2,018,414	1,782,105	1,824,729
Sample Size	1,802	2,098	1,958	1,680	1,679	1,680	1,678	1,680	1,680	1,681	1,680	1,669
Start Date	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
End Date	7-Jul	6-Jul	6-Jul	5-Jul	10-Jul	8-Jul	7-Jul	6-Jul	5-Jul	5-Jul	1-Jul	7-Jul
Volume Sampled (m ³)	1,995,403	2,214,609	2,159,879	2,174,794	2,097,800	2,105,181	1,891,049	2,106,764	2,063,565	2,014,940	1,968,928	2,073,021
Sample Size	2,015	2,130	2,085	2,113	2,084	2,128	2,131	2,128	2,128	2,129	2,130	2,130
Start Date	2009	2010	2011	2012	2013	2014						
End Date	6-Jul	6-Jul	5-Jul	2-Jul	30-Jun	30-Jun						
Volume Sampled (m ³)	1,928,891	2,027,924	1,878,662	1,300,240	1,829,970	2,179,402						
Sample Size	2,130	2,130	2,086	2,080	2,053	2,126						

Table C-3 (Continued)

	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	
Freshwater																						
(cont.)																						
Common shiner	1			1			4	1	1								2					
Creek chub	1		6				134		1		2		1						1			
Cyprinidae	4	4	5	22		11	8	4	2	2	18	76	18	1,271	209	296	73	32	4	9	6	6
Emerald shiner							9	3	2	11	2	3	1	6					18	1	1	1
Fall fish	1	10			1					2		7			3	3				1		
Fathead minnow																						
Freshwater drum	3	13	100	10	7	28	22	158	38	49	61	50	139	67	140	75	45	99	51	5	5	5
Gizzard shad	460	1,223	647	676	640	817	672	787	659	760	404	460	193	472	278	296	425	489	1,031	428	349	349
Golden shiner	14	25	16	97	1	3	33	1	29	3	16	3	1	1	4		3	4	9	4	2	2
Goldfish																						
Grass carp																						
Grass pickerel																						
Green sunfish				1																		
Largemouth bass	44	71	44	57	51	34	85	55	55	74	169	29	53	120	221	46	39	67	270	78	162	162
Logperch						10		1	1			1		1	4		4	4	11	1	9	9
Longear sunfish																						
Longnose dace	1																					
Mimic shiner												1										
Northern hog sucker			1	3		1	4	2				1				1			2	3	9	9
Northern pike		2	4	2	4	2	2		3	2		2			1	2			28	12		
Pugnose shiner							2															
Pumpkinseed	740	496	609	1,070	633	724	1,195	602	774	1,535	1,648	284	619	555	771	281	647	1,084	2,039	1,271	1,576	1,576
Rainbow trout											1											
Redbreast sunfish	115	158	185	160	111	76	200	259	251	382	454	116	141	188	323	137	64	189	408	336	292	292
Redfin pickerel				2			1					3		2	1	1			4	2		
Rock bass	6	8	1	12	3		22	1	1		10	2	2	7	8	8	1	7	18	15	6	6
Rudd																						
Satfinn shiner	1	2		1		2			1		6	5	12	10	10		1	40	36	4	1	1
Silvery minnow	3	13	23	119	2	9	387	68	568	1,027	8	2,131	31	40	428	18	48	6	145	64	31	31
Smallmouth bass	7	25	8	28	25	21	25	28	30	73	81	50	26	86	176	80	45	78	157	107	121	121
Spottfin shiner	5	8	17	5					12	8	8	49	4	27	127	15	34	4	49	40	46	46
Spottail shiner	5,316	5,177	4,452	5,407	5,129	5,500	12,385	7,727	7,169	12,452	7,529	3,887	7,189	4,996	16,512	3,927	11,969	9,313	19,830	9,296	10,147	10,147
Swallowtail shiner								3							1		2		10			
Tessellated darter	1,198	1,372	820	1,697	415	479	2,385	929	1,251	1,669	700	663	1,767	1,359	3,858	760	2,140	948	4,657	2,969	1,087	1,087
Tiger muskellunge																						
Trout perch																			2			
Walleye												2								3		
White crappie		4	1	3		1	2	1						1								
White sucker	7	16	17	32	9	15	12	21	11	12	14	24	11	48	16	18	47	19	32	43	45	45
Yellow bullhead																						
Yellow perch	22	67	44	49	34	12	27	23	22	29	16	53	20	49	65	60	78	40	160	194	115	115
Marine																						
Atlantic croaker		1				26		1			7			35	5	19	3	21		7	1	1
Atlantic herring													1		4							
Atlantic menhaden	118	834	30	99	159	1,063	678	415	16	1,637	56	1,526	117	331	50,419	16,025	130	2,481	3,586	8,465	1,128	1,128
Atlantic needlefish	92	77	54	48	41	96	476	9	11	12	22	28	50	21	181	12	6	8	28	33	28	28
Bay anchovy	4,081	4,155	3,746	3,989	9,507	4,134	4,669	8,729	8,106	10,447	17,615	3,544	16,980	11,333	6,662	2,617	3,275	13,862	6,431	2,330	4,830	4,830

Table C-3 (Continued)

	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	
Marine (cont.)																						
Black drum	567	400	533	280	224	348	314	375	223	80	252	98	320	141	2,180	218	474	815	336	246	308	
Bluefish				4		1		1	9						2							
Butterfish	71	10	3	22	40	32	58	53	30	2	2	1		45	3	24	4	9	10		3	
Crevalle jack								1														
Cunner																						
Fourbeard rockling																				1		
Goosefish							1															
Gray snapper	7	1	3				2										1				1	
Grubby											1											
Inshore lizardfish				1	1		14	8	11	5	1		3	4	7			3				
King mackerel													2									
Lookdown	18	1			10	1										2						
Moonfish					3																	
Naked goby	20	9	11	4	4	7	14	22	2		9		8	5	15	2	12	20	13	24	12	
Northern kingfish	20	8		9	1	4	42	2	17	13	8	1	15	31	21	1	13	35		45	6	
Northern puffer	2	1		1			10		4		2		2		6			4			4	
Northern searobin		2					8			1							2				3	
Northern stargazer	1						1		1	1	1	1	8		1		1	9		1	2	
Orangespotted filefish																						
Oyster toadfish		1																				
Permit								1	2					2		7	5					
Pigfish																						
Pinfish																						
Red hake																						
Rough silverside	35	4	23	258	9	4		2		1	1		36						26			
Seaboard goby				1													3			3		
Searobin						1	5						1				3					
Silver hake																						
Silver perch																						
Smallmouth flounder	13	1		19			29	8	61	25	5	5	25	4	1	1				60		
Spanish mackerel	1										1		12									
Spot	35	106	4	32		1	8	2	39	24		59		3	6	15		11	1		2	
Spotfin mojarra									17	2				1								
Spotted goatfish																						
Spotted hake																						
Striped anchovy	1								1	15	25	6	4			1		57	8	2		
Striped mullet	2	6	1	1			5				2					1		1				
Striped searobin	5	16		3			34	1	11				35	21	8	1	4	7	1	14	1	
Summer flounder	48	45	4	1	2	2	46	26	20	18	10	2		7	4	5	5	11	5	10	5	
Tautog	2	5	2	20		6	31	1		1			22	1			5	2		1	2	
Weakfish	72	5		2		27	111	1	4	4	1	25	27	4	30	18	2	33	8	5	3	
Windowpane			3				1					1									1	
Winter flounder	282	80	29	41	9	23	154	35	74	45	110	6	124	28	46	68	44	55	52	105	41	

Table C-3 (Continued)

	2006	2007	2008	2009	2010	2011	2012	2013	2014
Freshwater (cont.)									
Chain pickerel			1	1	1				2
Channel catfish	100	15	32	70	47	576	77	186	104
Comely shiner									
Common shiner				1	1		1	1	1
Creek chub									
Cutlips minnow			1						1
Cyprinidae			4	125	3	1	5	3	5
Emerald shiner	52	9	8	21	5	5	2	39	
Fall fish	2		9	1	1	4		1	
Fathead minnow	1			1	1	1		3	
Freshwater drum	14	7	9	5	10	20	8	9	23
Gizzard shad	58	116	230	113	142	597	150	112	46
Golden shiner	231	91	488	703	294	316	239	53	43
Goldfish	2	7	3	2	7	9	2	1	32
Grass carp									
Grass pickerel									
Green sunfish									
Largemouth bass	48	75	168	248	134	50	18	17	50
Logperch	3	7	3	4	3	2	1	1	5
Longear sunfish									
Longnose dace									
Mimic shiner						1			
Northern hog sucker		1	1					3	1
Northern pike	9	1	7			4		1	2
Pugnose shiner									
Pumpkinseed	569	439	3,113	1,274	1,897	782	336	130	140
Rainbow trout				1					
Redbreast sunfish	87	55	337	171	130	79	144	45	22
Redfin pickerel			5	2	1			1	
Rock bass	1		11	3	5	19			1
Rudd			7	4	10				
Satfinn shiner	3	164	46	23	11	19	2	4	11
Shield darter			1						
Silvery minnow	13	66	66	8		10	910	2	1
Smallmouth bass	81	97	57	52	107	104	52	44	44
Spottin shiner	2	96	33	80	81	41	114	99	65
Spottail shiner	4,417	13,284	15,442	9,829	14,817	14,061	7,651	2,884	8,225
Swallowtail shiner									2
Tesselated darter	1,229	1,045	2,614	3,283	2,657	2,729	851	713	1,237
Tiger muskellunge									
Trout perch			23			25			
Walleye								2	
White crappie									
White sucker	36	81	43	27	34	49	41	35	40
Yellow bullhead						1			
Yellow perch	107	142	131	49	68	76	36	57	113

Table C-3 (Continued)

	2006	2007	2008	2009	2010	2011	2012	2013	2014
Marine									
Atlantic croaker	292	.	.	.	1	1	66	7	10
Atlantic herring	4,885	6,105	1,418	4,077	91	1,093	1,400	4,852	762
Atlantic menhaden	58	96	67	48	28	86	85	17	35
Atlantic needlefish	5,376	1,314	24,902	23,457	49,286	13,720	37,405	18,898	1,560
Bay anchovy	169	719	414	244	434	253	339	408	380
Black drum	.	.	.	.	.	1	1	.	.
Bluefish	.	.	.	.	.	.	.	.	.
Butterfish	21	.	6	6	2	1	.	1	2
Crevalle jack	.	.	.	.	.	.	.	.	.
Cunner	.	.	.	.	.	.	.	.	.
Fourbeard	.	.	.	.	.	.	.	.	.
rockling	.	.	.	.	.	.	.	.	.
Fourspot flounder	.	.	2	.	.	.	.	.	.
Goosefish	.	.	.	.	.	.	.	.	.
Gray snapper	.	1	.	.	.	.	.	.	.
Grubby	.	.	.	.	.	.	.	.	.
Inshore lizardfish	1	.	6	.	8	.	2	1	.
King mackerel	.	.	.	.	.	.	.	.	1
Lookdown	.	.	.	2	.	.	.	.	.
Moonfish	.	.	1	.	.	.	.	.	.
Naked goby	5	19	34	15	25	71	12	5	75
Northern kingfish	6	59	32	8	5	7	59	7	9
Northern puffer	.	1	1	.	.	.	10	.	1
Northern sea robin	.	.	.	.	.	.	.	.	2
Northern stargazer	.	2	1	.	.	.	.	.	.
Orangespotted filefish	.	.	.	.	.	.	.	.	.
Oyster toadfish	.	.	.	.	.	1	1	.	.
Permit	.	1	.	.	.	.	.	.	.
Pigfish	.	.	.	.	.	1	.	.	.
Pinfish	.	.	.	.	.	.	.	3	.
Red hake	.	.	.	.	.	.	.	.	.
Rough silverside	9	.	19	.	.	.	.	.	.
Seaboard goby	.	.	.	1	.	.	.	.	.
Searobin	.	.	2	.	.	.	2	.	.
Silver hake	.	.	.	.	.	.	.	.	.
Silver perch	.	.	.	.	.	86	235	.	6
Smallmouth flounder	.	2	.	2	.	.	.	.	.
Spanish mackerel	.	.	.	.	.	.	.	.	1
Spot	22	.	.	1	.	1	158	22	.
Spotfin mojarra	.	.	.	.	.	.	.	.	.
Spotted goatfish	.	.	.	.	.	.	.	.	.
Spotted hake	2	.	.	.	.	.	.	.	.
Striped anchovy	4	1	3	.	4	1	157	82	4
Striped mullet	24	.	7	11	27	.	33	1	2
Striped searobin	1	12	11	.	.	.	11	.	.
Summer flounder	12	3	11	21	14	8	5	5	50
Tautog	.	11	.	.	.	.	.	.	.

Table C-3 (Continued)

Sampling Statistics for Beach Seine Survey, 1985-2014

Start Date	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
End Date	16-Jul 21-Nov	15-Jul 21-Nov	24-Jun 13-Nov	14-Jun 3-Nov	13-Jun 2-Nov	18-Jun 24-Oct	24-Jun 1-Nov	23-Jun 28-Oct	1-Jul 4-Nov	27-Jun 2-Nov	19-Jun 26-Oct	18-Jun 23-Oct
Sample Size	1,000	1,000	1,101	1,100	1,100	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Start Date	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
End Date	16-Jun 23-Oct	15-Jun 21-Oct	14-Jun 22-Oct	13-Jun 18-Oct	19-Jun 25-Oct	18-Jun 23-Oct	17-Jun 22-Oct	15-Jun 21-Oct	14-Jun 20-Oct	12-Jun 19-Oct	11-Jun 18-Oct	17-Jun 24-Oct
Sample Size	1,000	1,000	994	1,000	952	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Start Date	2009	2010	2011	2012	2013	2014						
End Date	15-Jun 22-Oct	15-Jun 22-Oct	14-Jun 20-Oct	11-Jun 18-Oct	10-Jun 17-Oct	9-Jun 17-Oct						
Sample Size	1,000	1,000	1,000	1,000	1,000	1,000						