

Table 1: Atlantic surfclam landings and EEZ quotas. All figures are meat weights in mt. Total landings for 1965-1981 are from NEFSC (2003) and other years were from a dealer database (CFDBS). EEZ landings for 1965-1982 are from NEFSC (2003) while later years are from a logbook database (SFOQVR). Landings for state waters are approximated as total landings - EEZ landings and may not accurately reflect state landings. Summary statistics ignore years without fishing.

Year	Total	EEZ	State	$\frac{EEZ}{Total}$	Quota
1965	19998	14968	5030	0.75	
1966	20463	14696	5767	0.72	
1967	18168	11204	6964	0.62	
1968	18394	9072	9322	0.49	
1969	22487	7212	15275	0.32	
1970	30535	6396	24139	0.21	
1971	23829	22704	1125	0.95	
1972	28744	25071	3673	0.87	
1973	37362	32921	4441	0.88	
1974	43595	33761	9834	0.77	
1975	39442	20080	19362	0.51	
1976	22277	19304	2973	0.87	
1977	23149	19490	3659	0.84	
1978	17798	14240	3558	0.8	13880
1979	15836	13186	2650	0.83	13880
1980	17117	15748	1369	0.92	13882
1981	20910	16947	3963	0.81	13882
1982	23631	16688	6943	0.71	18506
1983	23631	18592	5039	0.79	18892
1984	30530	22889	7641	0.75	18892
1985	28316	22480	5836	0.79	21205
1986	35073	24521	10552	0.7	24290
1987	27231	21744	5487	0.8	24290
1988	28506	23378	5128	0.82	24290
1989	30081	21888	8193	0.73	25184
1990	32628	24018	8610	0.74	24282
1991	30794	20615	10179	0.67	21976
1992	33164	21686	11478	0.65	21976
1993	32878	21859	11019	0.66	21976
1994	32379	21943	10436	0.68	21976
1995	30061	19627	10434	0.65	19779
1996	28834	19827	9007	0.69	19779
1997	26311	18612	7699	0.71	19779
1998	24506	18234	6272	0.74	19779
1999	26677	19577	7100	0.73	19779
2000	31093	19778	11315	0.64	19779

Continued

Table 1: Table 1 Continued

Year	Total	EEZ	State	$\frac{EEZ}{Total}$	Quota
2001	31237	22017	9220	0.7	21976
2002	32645	24006	8639	0.74	24174
2003	31526	24994	6532	0.79	25061
2004	26463	24197	2266	0.91	26218
2005	22734	21163	1571	0.93	26218
2006	25779	23573	2206	0.91	26218
2007	27091	24915	2176	0.92	26218
2008	25223	22510	2713	0.89	26218
2009	22396	20065	2331	0.9	26218
2010	19941	17984	1957	0.9	26218
2011	20044	18839	1205	0.94	26218
2012	18393	18054	339	0.98	26218
2013	18924	18551	373	0.98	26218
2014	18834	18227	607	0.97	26218
2015	18517	19119	0	1.03	26218
2016	18202	18339	0	1.01	26218
2017	17690	16902	788	0.96	26218
2018	17114	16269	845	0.95	26218
2019	16502	14986	1516	0.91	26218
2020	13182	11956	1226	0.91	26218
min	13182	6396	0	0.21	13880
max	43595	33761	24139	1.03	26218
mean	25337	19493	5857	0.79	22764

Table 2: EEZ surfclam landings (mt meats) by stock assessment area and year. Summary statistics ignore years without fishing.

Year	SVA	DMV	NJ	LI	SNE	GBK	Other	Total
1979		12087	1099					13186
1980	64	12789	2878	17				15748
1981	568	7472	8820	87				16947
1982	1705	6679	8086	94	124			16688
1983	2226	7173	8095	263	835			18592
1984	1797	5978	11905	7	382	2765	54	22889
1985	741	7856	11245		452	2185		22480
1986	529	2853	17731	18	1223	1991	176	24521
1987	378	1303	18017		1140	907		21744
1988	558	1149	19420		1512	739		23378
1989	439	3123	16532		1361	434		21888
1990	1502	3546	17886		998	7	79	24018
1991		1634	18912	15	33		21	20615
1992		1221	20399	61	5			21686
1993		3416	18378	62	3			21859
1994		3454	18418	71				21943
1995		2752	16497		378			19627
1996		2239	17480	26	82			19827
1997		1540	16999	73				18612
1998		484	17511	117	121			18234
1999		649	18755	157	16			19577
2000		2041	17513	121	103			19778
2001		3282	17719	935	81			22017
2002	64	4489	18271	1130	52			24006
2003		1432	21669	1626	267			24994
2004		1482	19197	906	2612			24197
2005		1668	16851	759	1885			21163
2006		2773	19660	245	895			23573
2007		3073	20267	1117	458			24915
2008		3261	17517	1309	423			22510
2009		1977	14834	1798	1444	11		20065
2010		1556	11065	1181	2870	1311		17984
2011		1445	12055	400	2552	2387		18839
2012		3784	6182	300	4142	3646		18054
2013		3599	5372	218	4959	4403		18551
2014		3544	6063	306	5079	3236		18227
2015		2906	6408	941	4759	4104		19119
2016		2107	6044	1234	4117	4837		18339
2017		1963	6861	519	2740	4819		16902
2018		2282	6633	525	2867	3962		16269
2019		2402	6536	378	2423	3244	2	14986

Continued

Table 2: Table 2 Continued

Year	SVA	DMV	NJ	LI	SNE	GBK	Other	Total
2020		364	6554	503	2264	2268	3	11956
min	64	364	1099	7	3	7	2	11956
max	2226	12789	21669	1798	5079	4837	176	24994
mean	219	2826	13219	414	1314	1104	7	20012

Table 3: EEZ fishing effort (hours fished by all vessels) for surfclam, by stock assessment area and year based on logbook data. Summary statistics ignore years without fishing.

Year	SVA	DMV	NJ	LI	SNE	GBK	Other	Total
1981	1337	15839	16770	204				34150
1982	2790	18050	24635	225	136			45837
1983	4190	18805	23584	536	1130			48244
1984	2603	8972	20819	27	1264	1732	42	35459
1985	397	4687	10518		1702	2608		19912
1986	236	1630	10764	38	2516	1610	675	17469
1987	262	722	11910		3781	1006		17681
1988	322	593	13175		5274	587		19950
1989	228	1616	11794		4741	389		18768
1990	1150	2065	12437		3032		898	19582
1991		1254	17243	20	107		292	18916
1992		797	21379	67				22243
1993		2423	18232	56	15			20726
1994		1930	21495	70				23495
1995		1560	18625		1058			21243
1996		1577	20994	40	287			22899
1997		1098	20383	77				21558
1998		289	19608	134	519			20550
1999		734	18146	150	148			19179
2000		1859	16787	114	368			19128
2001		2537	18461	962	148			22107
2002	112	5505	19826	1240	62			26746
2003		2366	25053	1832	177			29428
2004		3161	26403	1252	1093			31909
2005		2660	24426	1206	1325			29617
2006		5883	27224	343	1042			34492
2007		7065	34754	1576	960			44355
2008		8154	34030	2320	541			45045
2009		5667	33467	4076	2520	12		45742
2010		4125	31877	3297	5571	481		45352
2011		3097	35326	1309	7748	974		48454
2012		7402	21752	902	11475	2077		43608
2013		6139	19971	829	15928	3827		46694
2014		6675	18118	1031	17158	2946		45928
2015		6719	19508	3420	17041	4600		51287
2016		6640	23786	4498	17965	5738		58627
2017		5965	31017	2825	12413	6446		58666
2018		6684	25750	2735	10416	5749		51334
2019		7106	25216	2160	12889	5626	14	53010
2020		1371	27274	2071	13222	4785	24	48747
min	112	289	10518	20	15	12	14	17469

max	4190	18805	35326	4498	17965	6446	898	58666
mean	304	5329	20689	989	4164	1203	45	33703

Table 4: Real and nominal exvessel prices and revenues for surfclam based on dealer data. Average price was computed as total revenues divided by total landed meat weight during each year, rather than as annual averages of prices for individual trips, to reduce effects of small deliveries at relatively high prices. The consumer price index (CPI) used to convert nominal dollars to 2009 equivalent dollars is for unprocessed and packaged fish, which includes shellfish and finfish (Eric Thunberg, NEFSC, pers. comm.).

Year	CPI	Nominal.Prices	Real.Prices	Nominal.Revenue	Real.Revenue
1982	0.45	8.94	19.87	25.19	55.98
1983	0.46	7.57	16.31	23.21	49.98
1984	0.48	8.37	17.29	33.16	68.45
1985	0.50	9.34	18.62	34.30	68.38
1986	0.51	9.20	18.00	41.84	81.89
1987	0.53	7.83	14.78	27.64	52.20
1988	0.55	7.80	14.14	28.83	52.27
1989	0.58	7.78	13.45	30.33	52.47
1990	0.61	7.66	12.56	32.39	53.16
1991	0.63	7.51	11.82	29.98	47.21
1992	0.65	7.40	11.32	31.83	48.67
1993	0.67	7.83	11.62	33.37	49.53
1994	0.69	9.82	14.22	41.24	59.69
1995	0.71	10.58	14.89	41.25	58.05
1996	0.73	10.24	13.99	38.27	52.33
1997	0.75	10.31	13.78	35.19	47.03
1998	0.76	9.19	12.09	29.20	38.43
1999	0.78	8.79	11.32	30.42	39.17
2000	0.80	9.43	11.75	38.02	47.37
2001	0.83	9.76	11.83	39.55	47.91
2002	0.84	9.45	11.26	39.99	47.68
2003	0.86	9.64	11.24	39.43	45.96
2004	0.88	9.40	10.67	32.24	36.61
2005	0.91	9.41	10.33	27.73	30.45
2006	0.94	10.08	10.72	33.69	35.85
2007	0.97	10.48	10.85	36.84	38.12
2008	1.00	10.96	10.92	35.86	35.72
2009	1.00	11.46	11.46	33.30	33.30
2010	1.02	11.70	11.50	30.25	29.75
2011	1.05	11.61	11.07	30.17	28.78
2012	1.07	12.34	11.53	29.44	27.51
2013	1.09	12.11	11.14	29.71	27.35
2014	1.10	12.24	11.09	29.90	27.09
2015	1.10	12.64	11.46	30.35	27.51
2016	1.10	12.89	11.69	30.43	27.58
2017	1.10	13.88	12.58	31.83	28.86

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Table 4: Table 6 Continued

Year	CPI	Nominal.Prices	Real.Prices	Nominal.Revenue	Real.Revenue
2018	1.10	14.01	12.70	31.09	28.18
2019	1.10	14.26	12.93	30.52	27.67
2020	1.10	14.33	12.99	24.50	22.21

Table 5: Numbers of commercial trips sampled and numbers of surfclams measured in port samples from landings during 1982-2020, by region. Numbers of trips during 1982-1999 were estimated assuming 30 individuals sampled per trip, as specified in port sample instructions.

Year	SVA		DMV		NJ		LI		SNE		GBK	
	Lengths	Trips	Lengths	Trips	Lengths	Trips	Lengths	Trips	Lengths	Trips	Lengths	Trips
1982	30	1	7756	259	7477	249			30	1		
1983	30	1	5923	197	11253	375			30	1		
1984	90	3	3066	102	12751	425			90	3	30	1
1985			1832	61	7674	256			150	5	275	15
1986	23	1	1260	42	5130	171			330	11	143	7
1987			730	24	900	30			569	19		
1988			420	14	900	30			810	27		
1989			866	29	919	31			449	15		
1990			892	30	901	30			209	7		
1991			1080	36	2272	76						
1992			1170	39	1710	57						
1993			1392	46	928	31	1127	56				
1994			119	4	900	30						
1995			720	24	510	17						
1996			1154	38	1117	37						
1997			1622	54	957	32						
1998			1560	52	690	23						
1999			1720	57	856	29						
2000			600	20	3315	111	102	8				
2001			970	33	1260	42						
2002			210	7	1111	37						
2003			60	2	2455	80						
2004			18	1	425	21						
2005			410	18	1250	62	30	1				
2006			1074	50	940	47	150	5				
2007			1582	67	1568	80	83	4				
2008			1195	55	1317	67	198	11				
2009			697	31	1148	57	441	24				
2010			450	20	1064	49	349	18			1590	80
2011			578	26	2558	119	374	20			1630	81
2012		1	919	40	1213	58	994	47			941	43
2013			604	27	1640	76	774	38			145	7
2014			325	16	1118	51	1127	56			481	23
2015			521	24	843	40	614	30			47	2
2016			336	15	888	42	191	9			30	1
2017			253	12	828	38	170	8				
2018			160	10	664	44	132	7			90	3
2019			356	17	1415	66	175	9				
2020			88	4	1780	81	143	7				
min	23	1	18	1	425	17	30	1	30	1	30	1
max	90	3	7756	259	12751	425	1127	56	1630	81	1845	93
mean	41	1	1146	41	2222	82	399	20	448	19	369	19

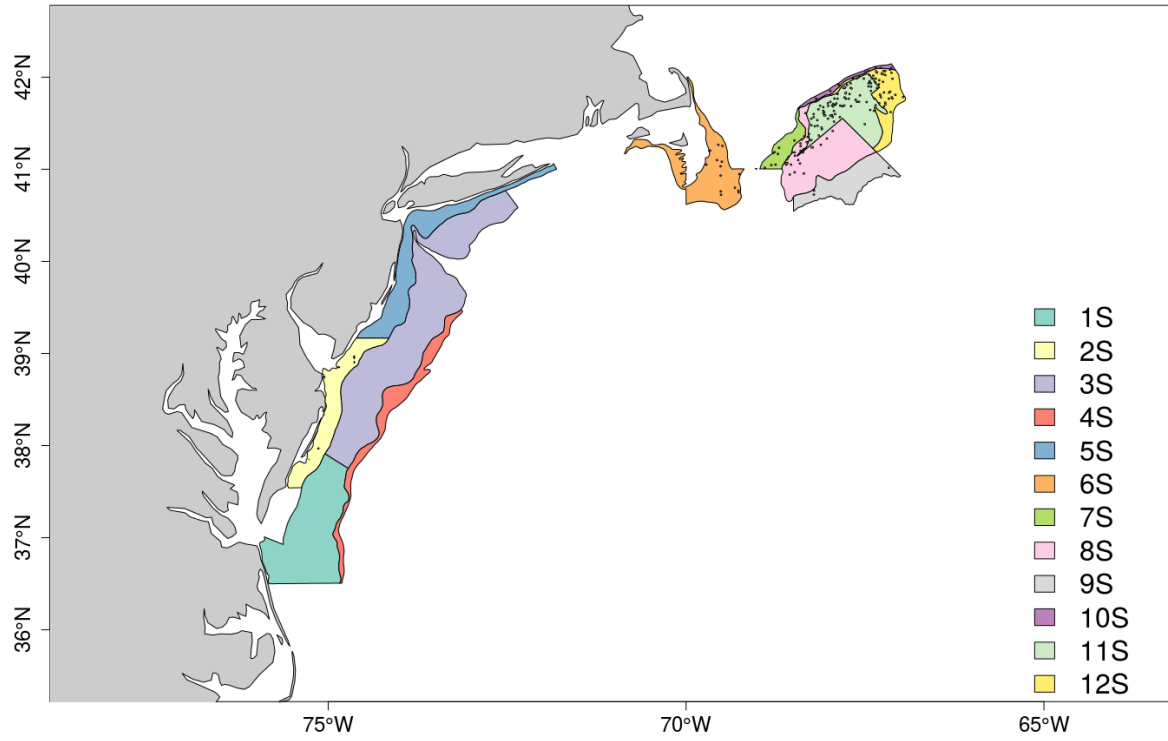


Figure 1: NEFSC surfclam survey strata.

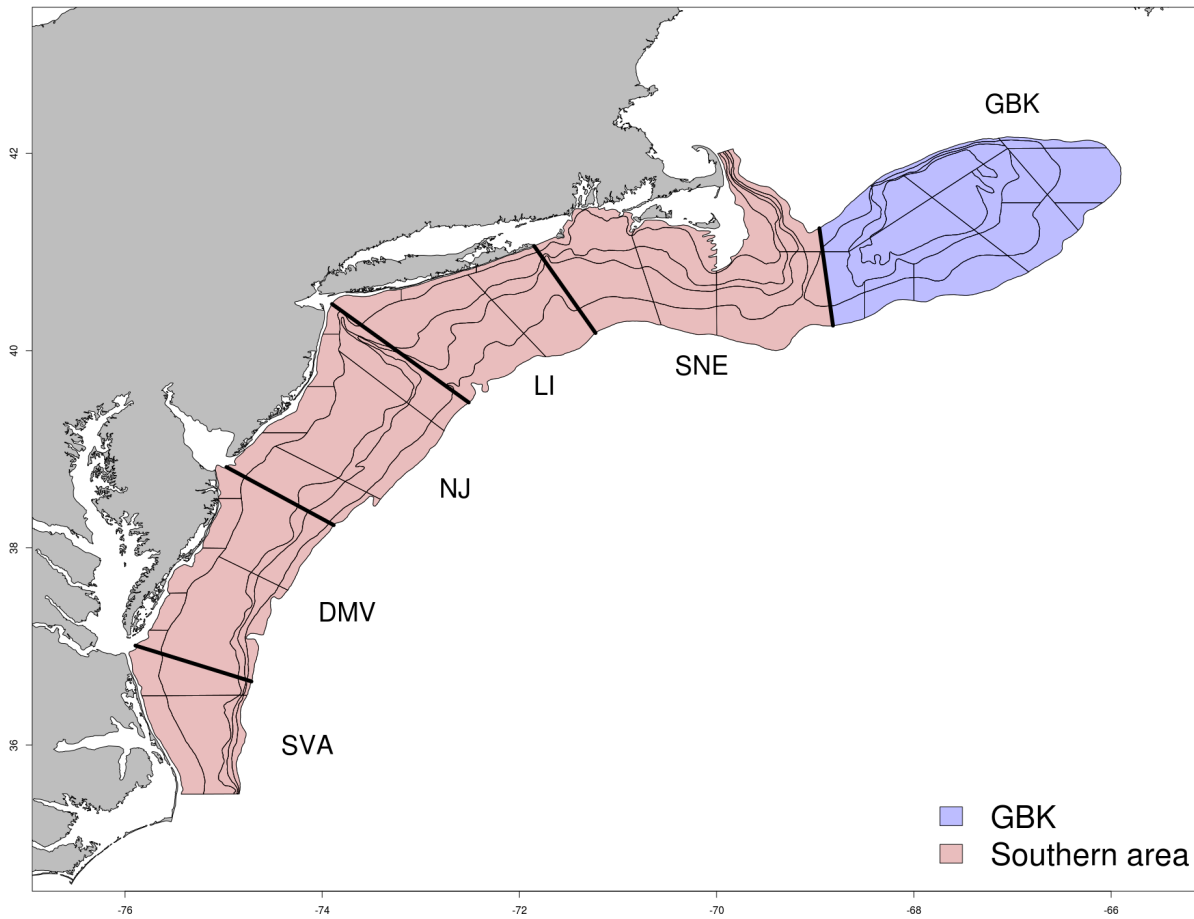


Figure 2: The surfclam regions divided into two areas.

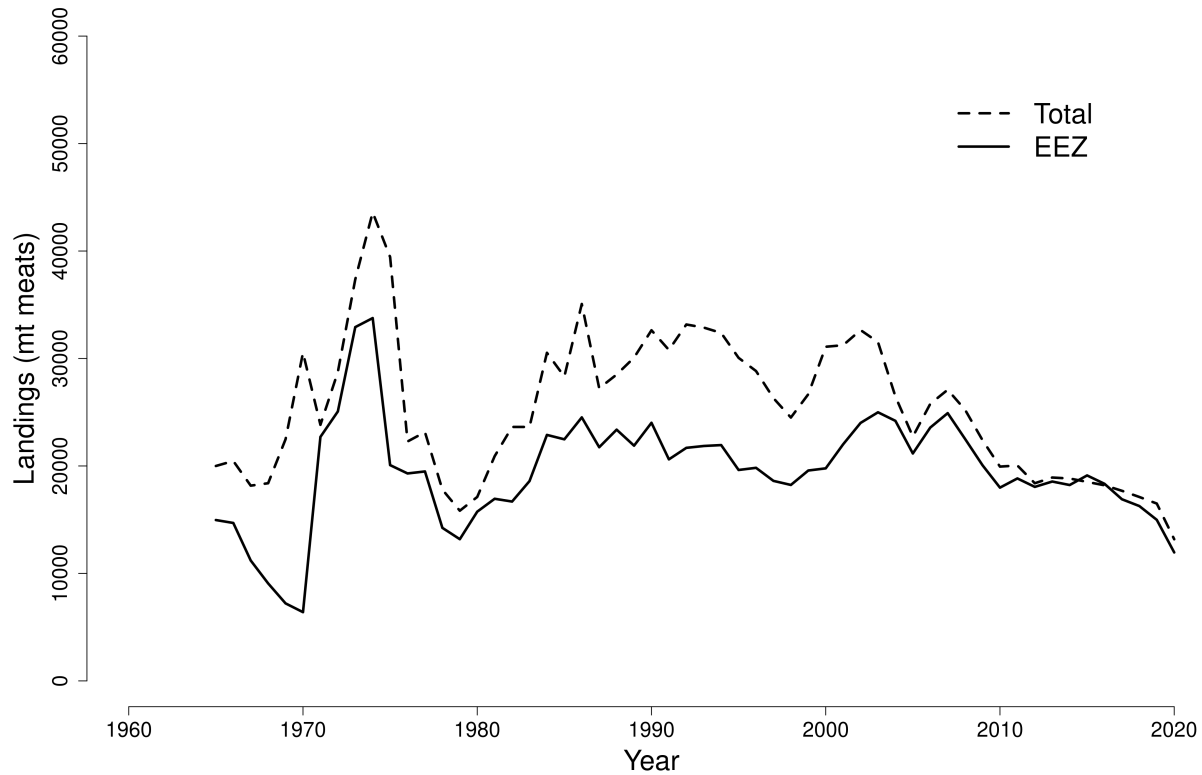


Figure 3: Surfclam landings (total and EEZ) during 1965-2020.

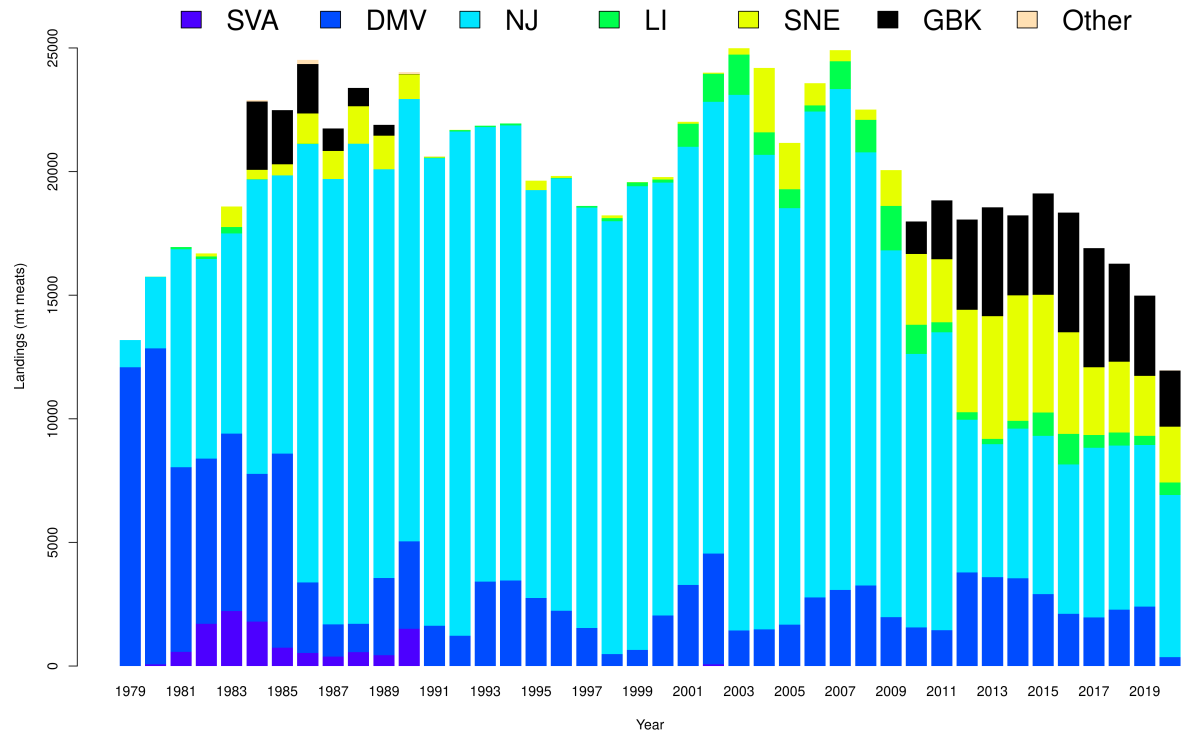


Figure 4: Surflam landings from the US EEZ during 1979-2020, by stock assessment region.

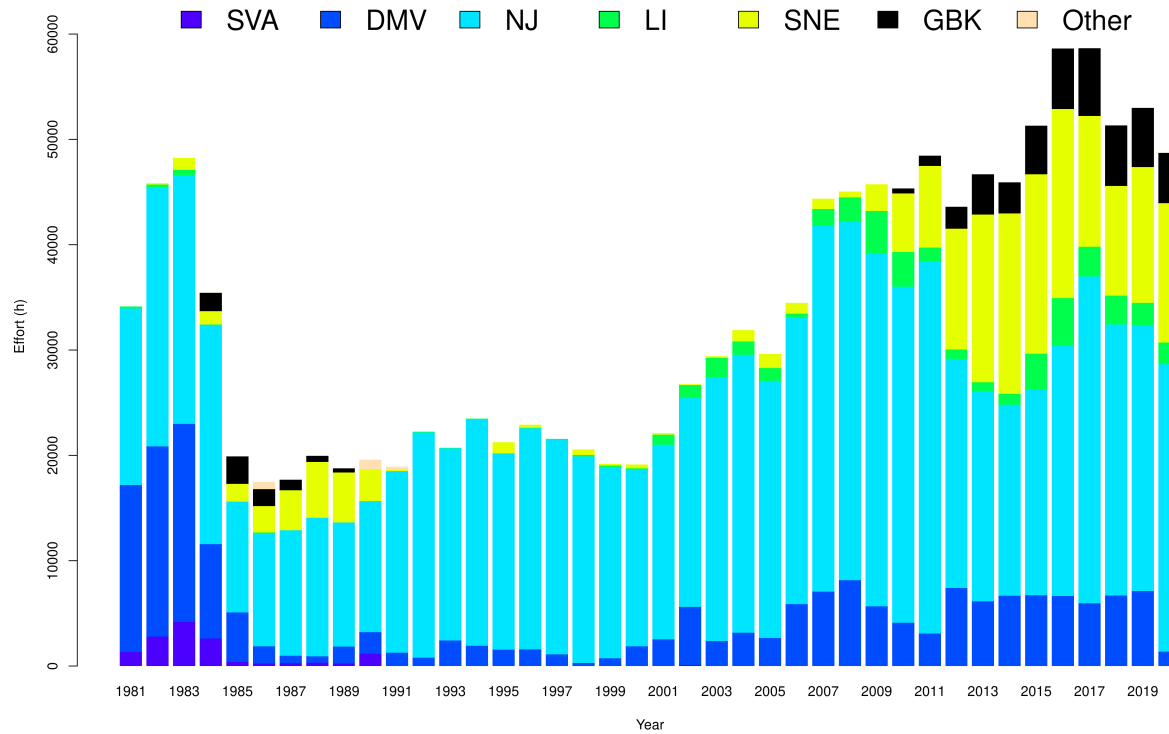


Figure 5: Surflam hours fished from the US EEZ during 1991-2020, by stock assessment region.

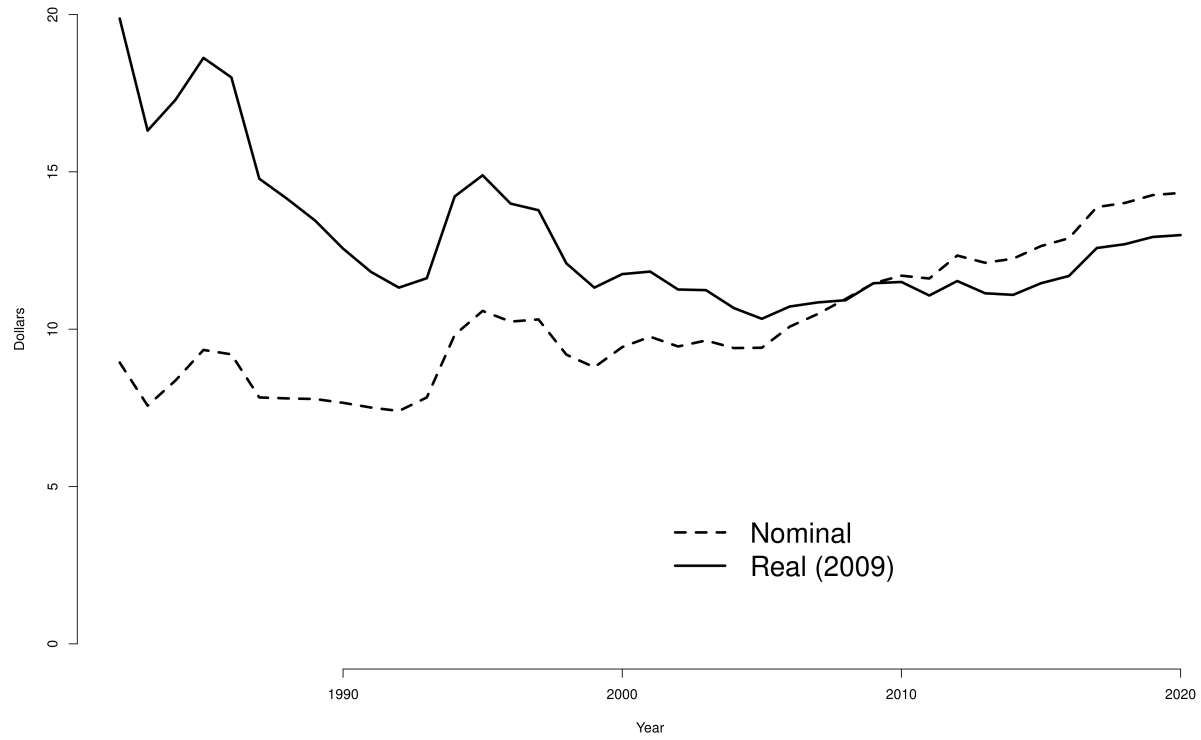


Figure 6: Nominal and 2009 dollar equivalent prices for surfclam 1981-2020.

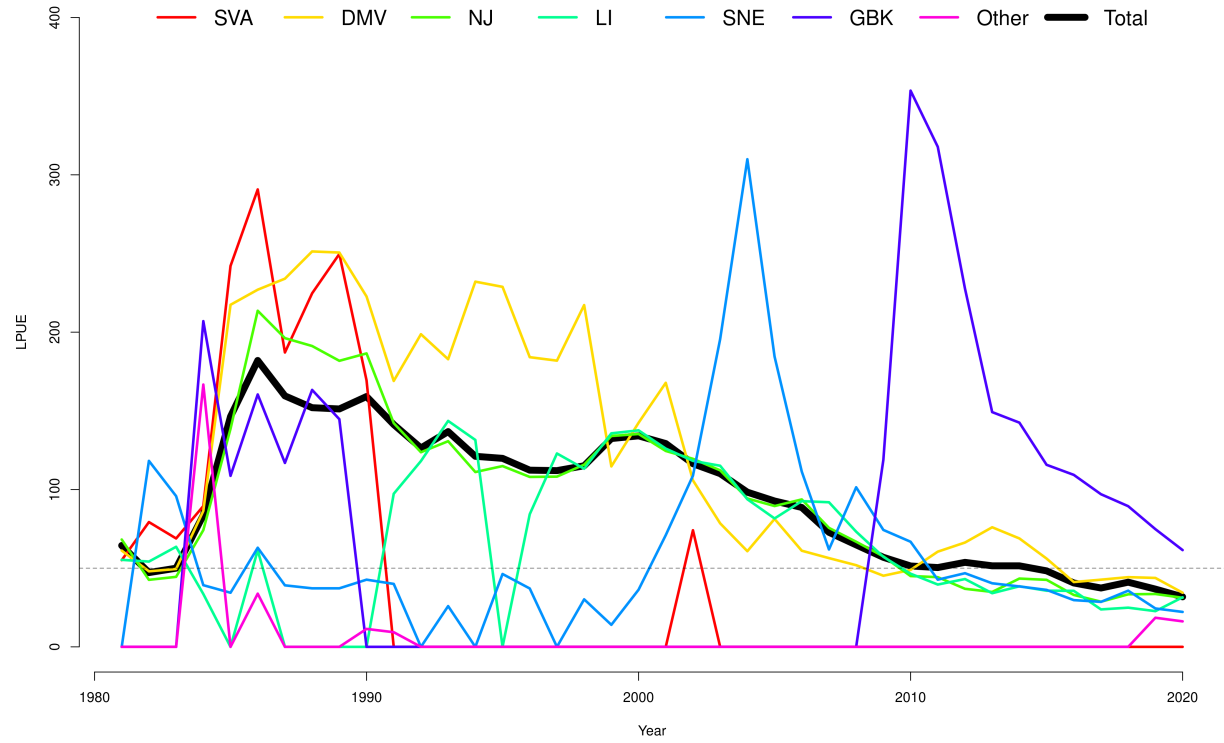


Figure 7: Nominal landings per unit effort (LPUE in bushels landed per hour fished) for surfclam, by region. LPUE is total landings in bushels divided by total fishing effort.

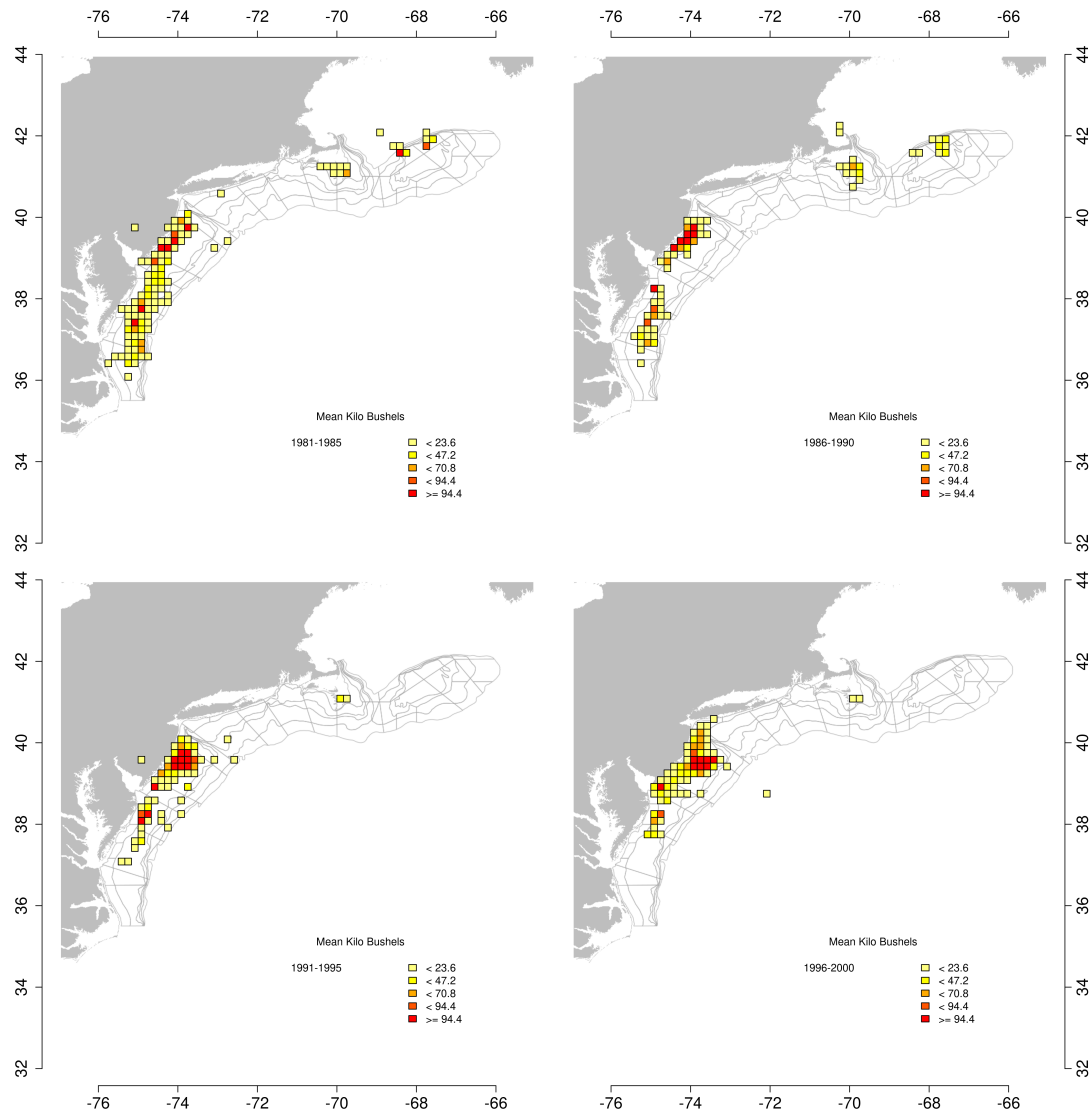


Figure 8: Average surfclam landings by ten-minute squares over time. Only squares where more the 5 kilo bushels were caught are shown.

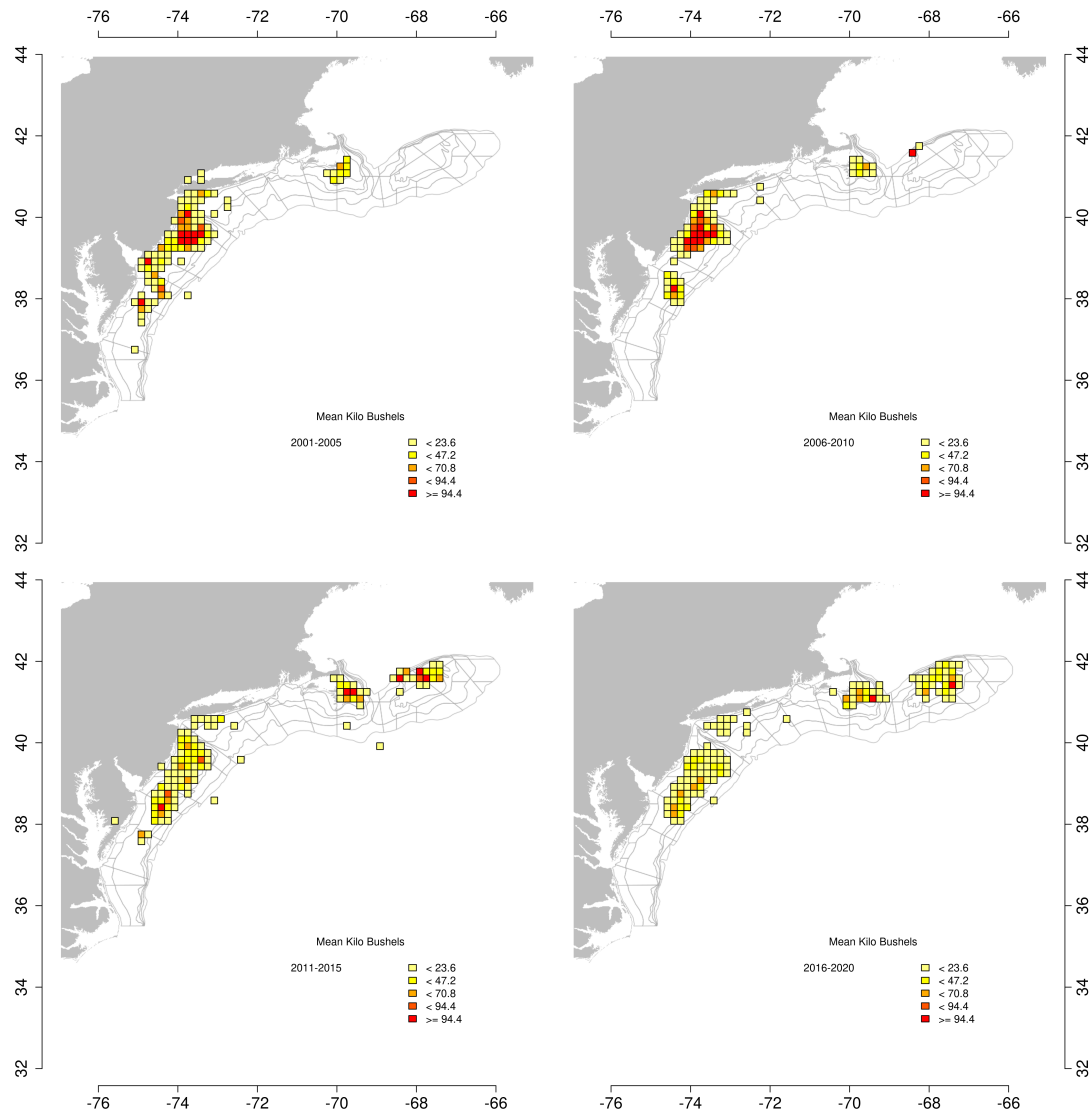


Figure 9: Average surfclam landings by ten-minute squares over time. Only squares where more the 5 kilo bushels were caught are shown.

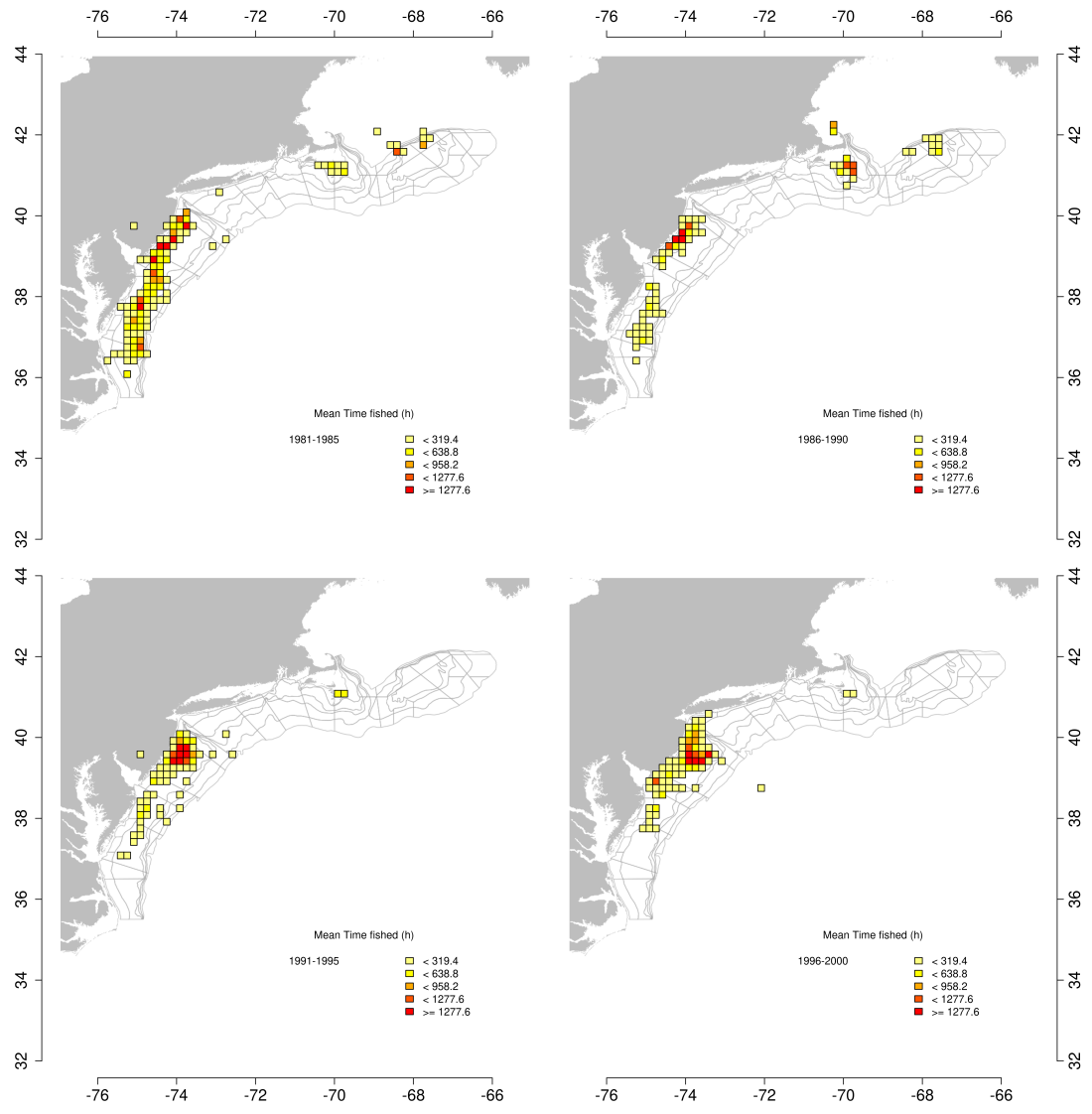


Figure 10: Average surfclam effort by ten-minute squares over time. Only squares where more the 5 kilo bushels were caught are shown.

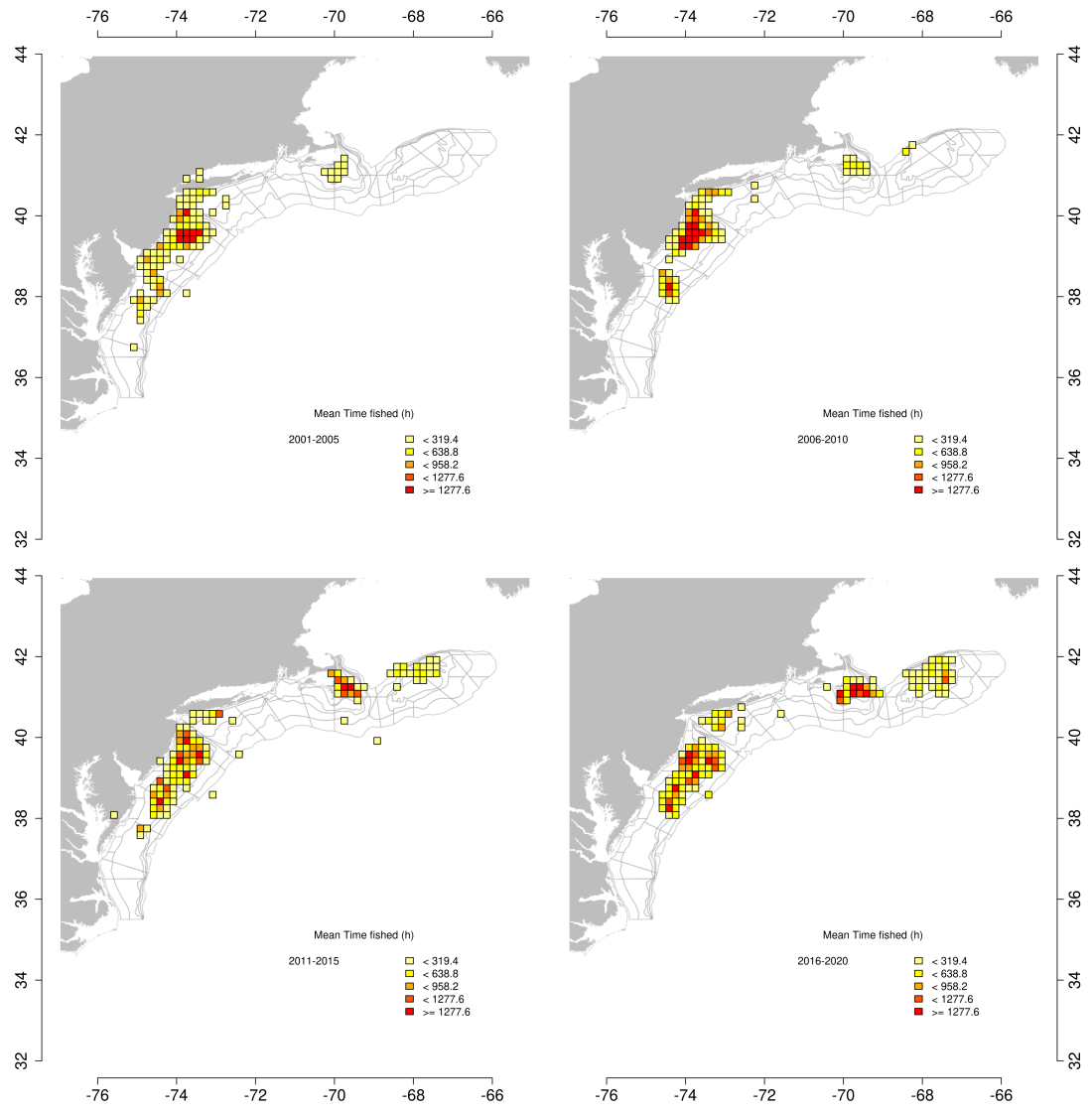


Figure 11: Average surfclam effort by ten-minute squares over time. Only squares where more the 5 kilo bushels were caught are shown.

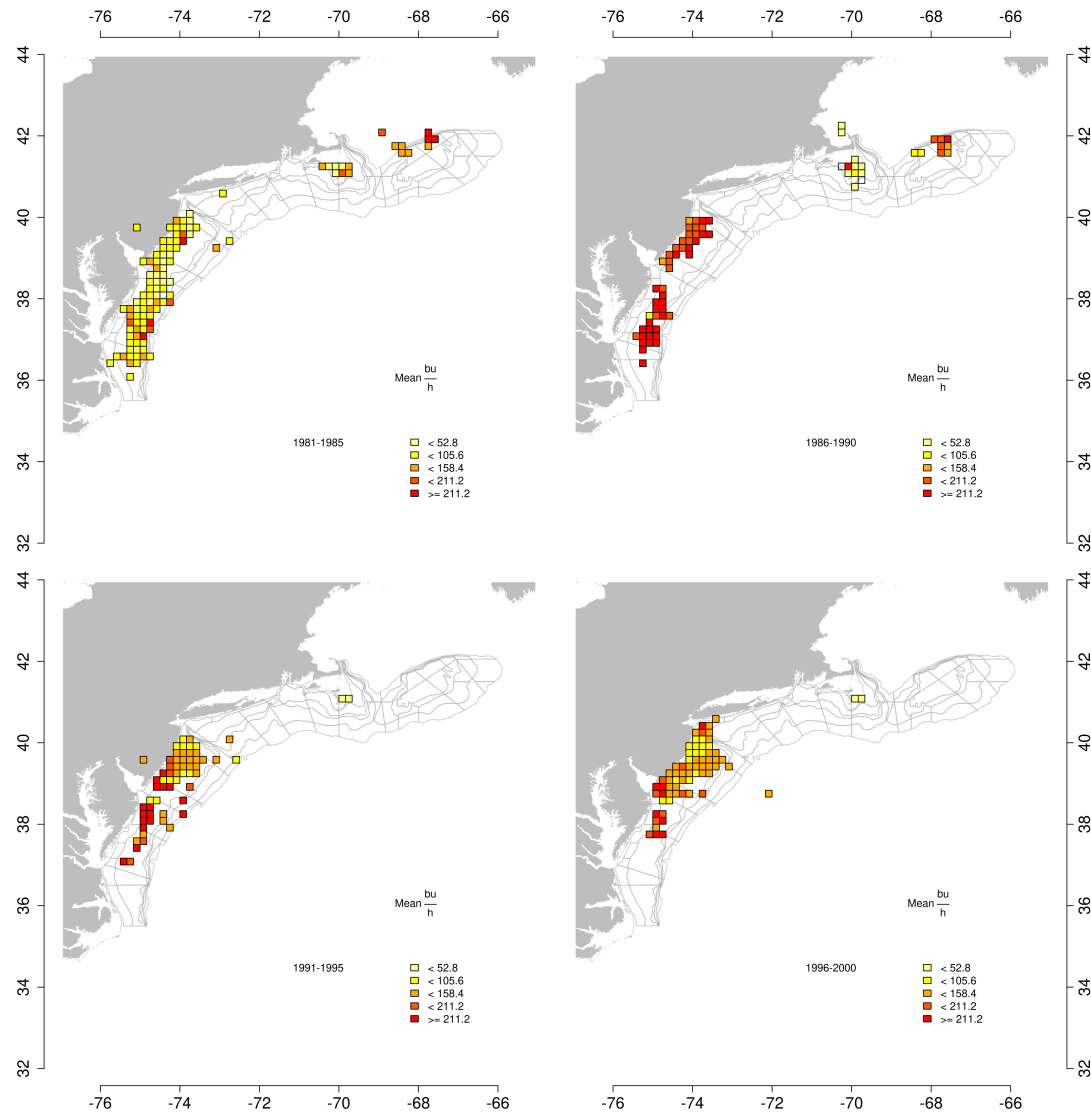


Figure 12: Average surfclam LPUE (bu. h^{-1}) by ten-minute squares over time. Only squares where more the 5 kilo bushels were caught are shown.

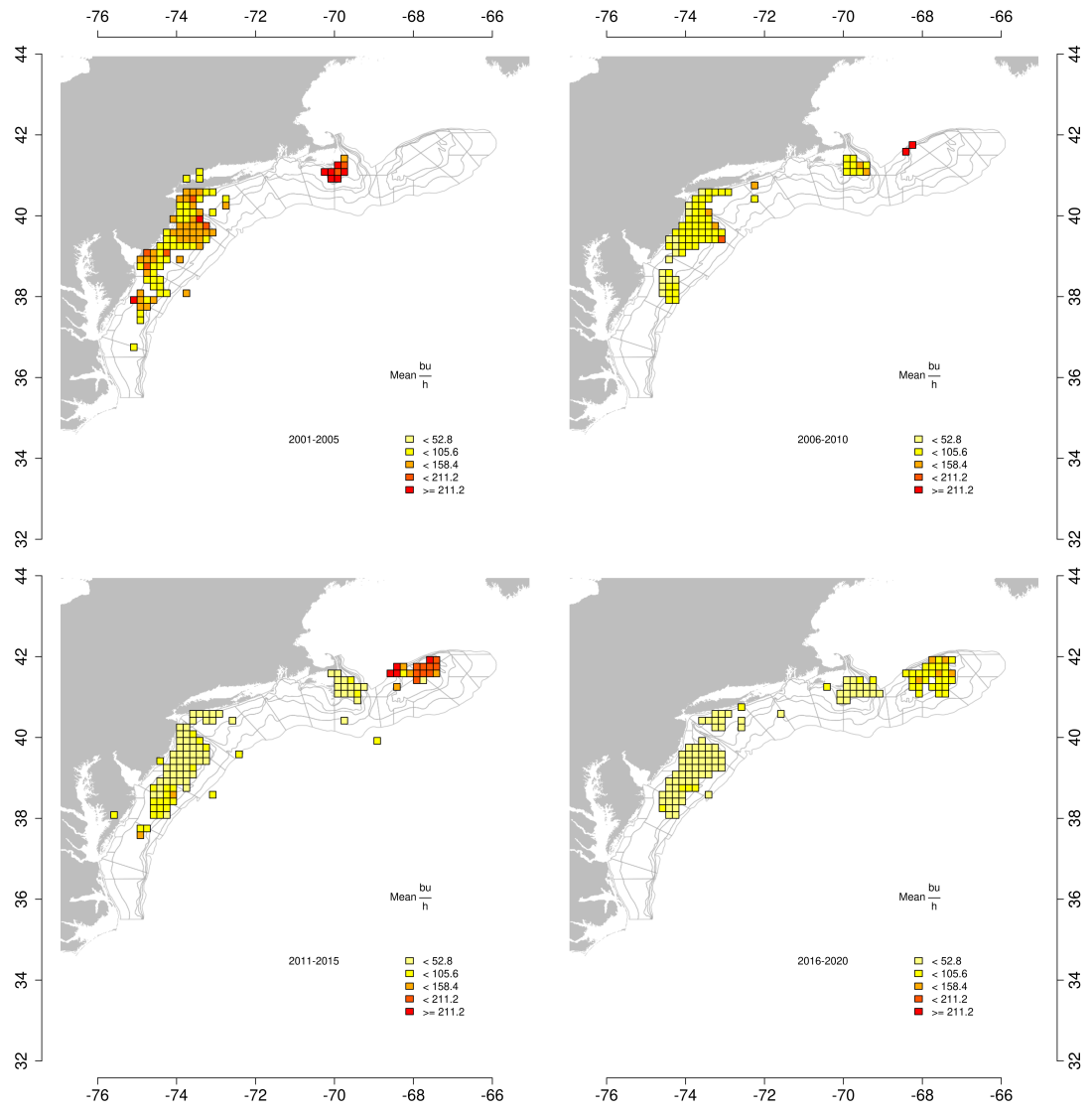


Figure 13: Average surfclam LPUE (bu. h⁻¹) by ten-minute squares over time. Only squares where more the 5 kilo bushels were caught are shown.

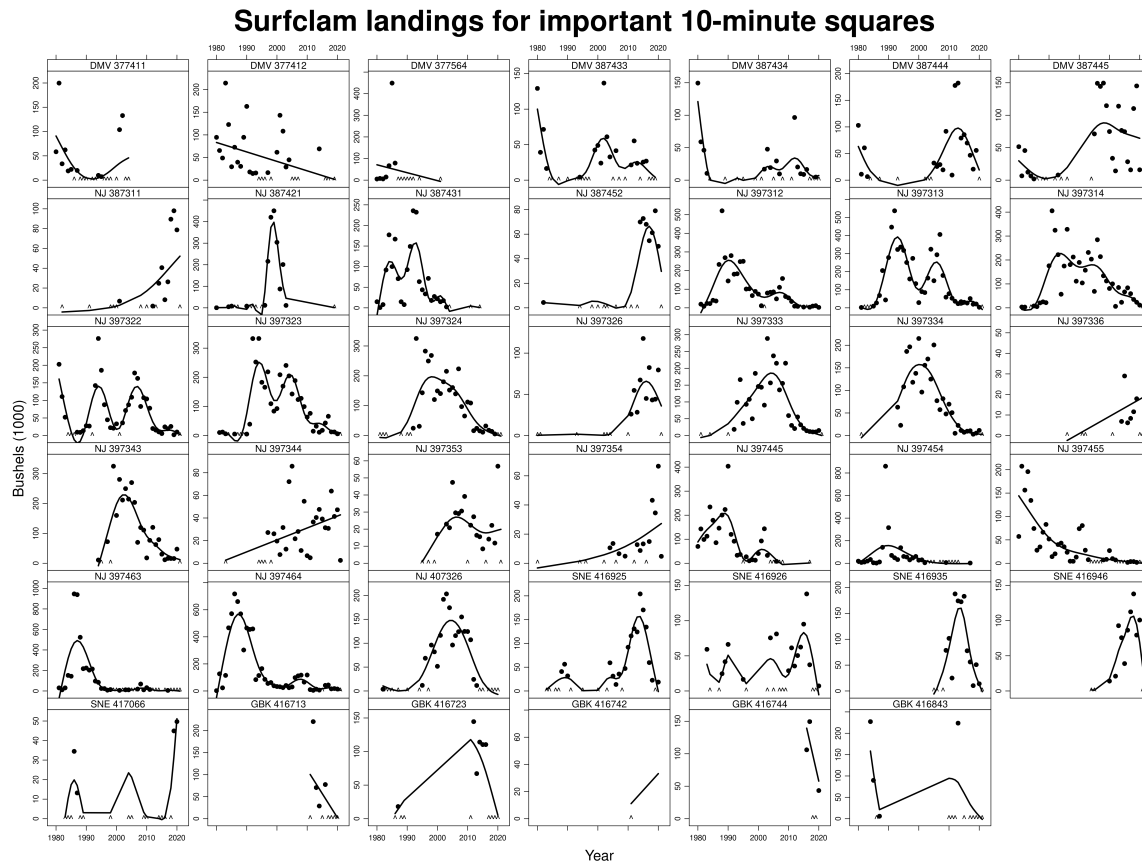


Figure 14: Annual Atlantic surfclam landings in “important” ten minute squares (TNMS) during 1980-2020 based on logbook data. Important means that a square ranked in the top 10 TNMS for total landings during any five-year period (1980-1984, 1985-1989, ...). Data for 2020 are incomplete and preliminary. To protect the privacy of individual firms, data are not plotted if the number of vessels is less than 3. Instead, a “^” is shown on the x-axis to indicate where data are missing. The solid dark line is a spline intended to show trends. The spline was fit too all available data, including data not plotted.

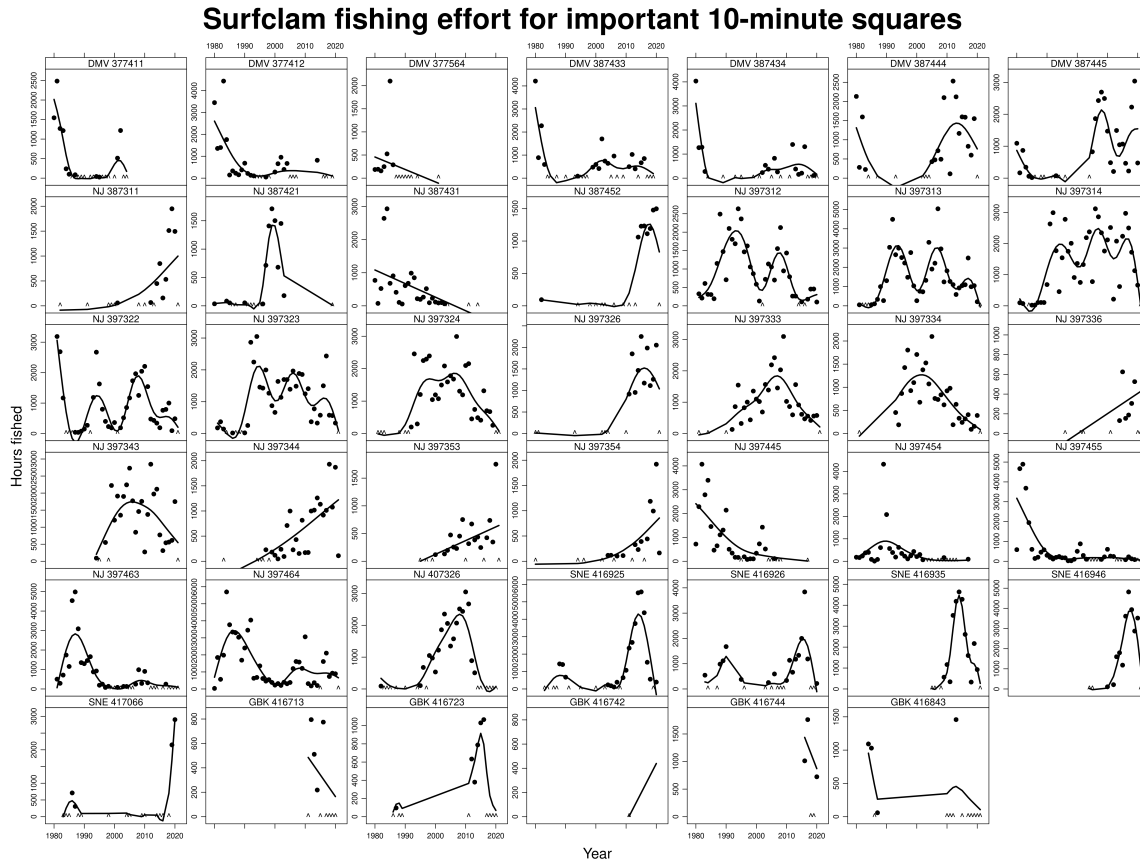


Figure 15: Annual Atlantic surfclam effort (hours y^{-1}) in “important” ten minute squares (TNMS) during 1980-2020 based on logbook data. Important means that a square ranked in the top 10 TNMS for total landings during any five-year period. Data for 2020 are incomplete and preliminary. To protect the privacy of individual firms, data are not plotted if the number of vessels is less than 3. Instead, a “^” is shown on the x-axis to indicate where data are missing. The solid dark line is a spline intended to show trends. The spline was fit too all available data, including data not plotted.

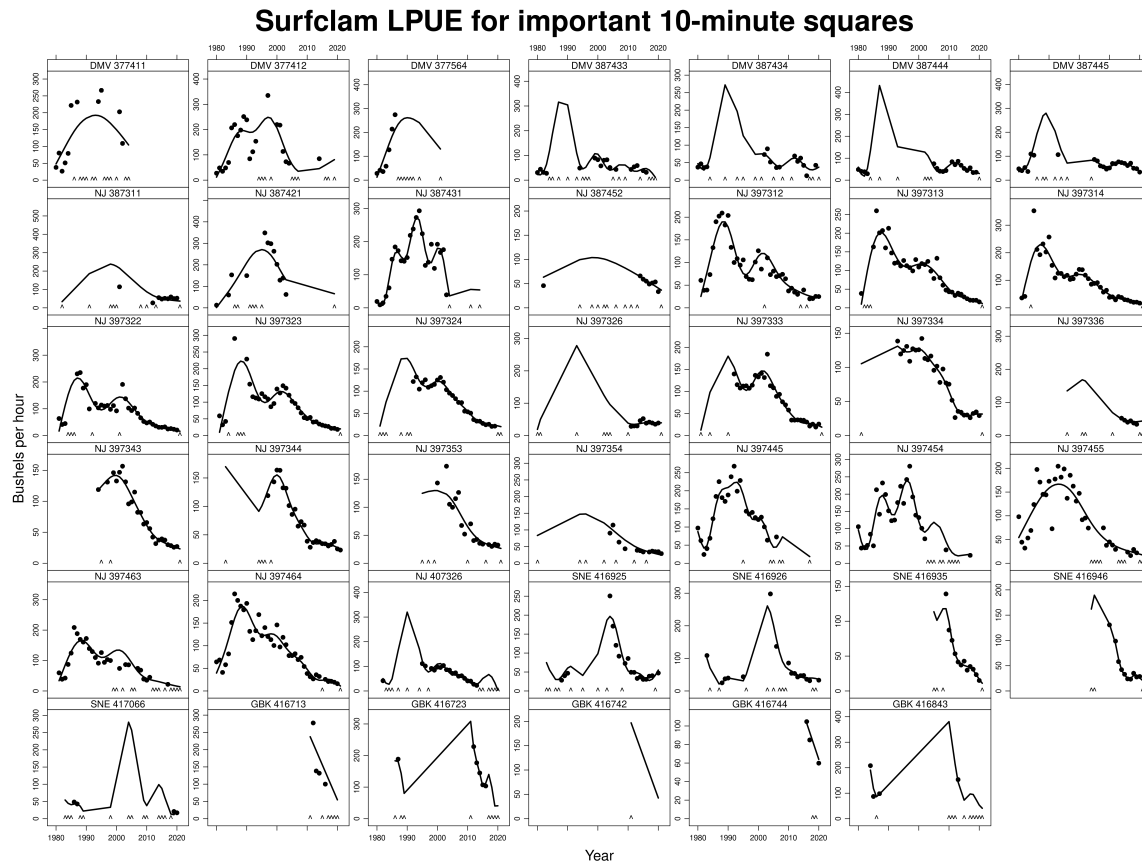


Figure 16: Annual Atlantic surfclam LPUE ($\text{bu } h^{-1}$) in “important” ten minute squares (TNMS) during 1980-2020 based on logbook data. Important means that a square ranked in the top 10 TNMS for total landings during any five-year period . Data for 2020 are incomplete and preliminary. To protect the privacy of individual firms, data are not plotted if the number of vessels is less than 3. Instead, a “A” is shown on the x-axis to indicate where data are missing. The solid dark line is a spline intended to show trends. The spline was fit too all available data, including data not plotted.

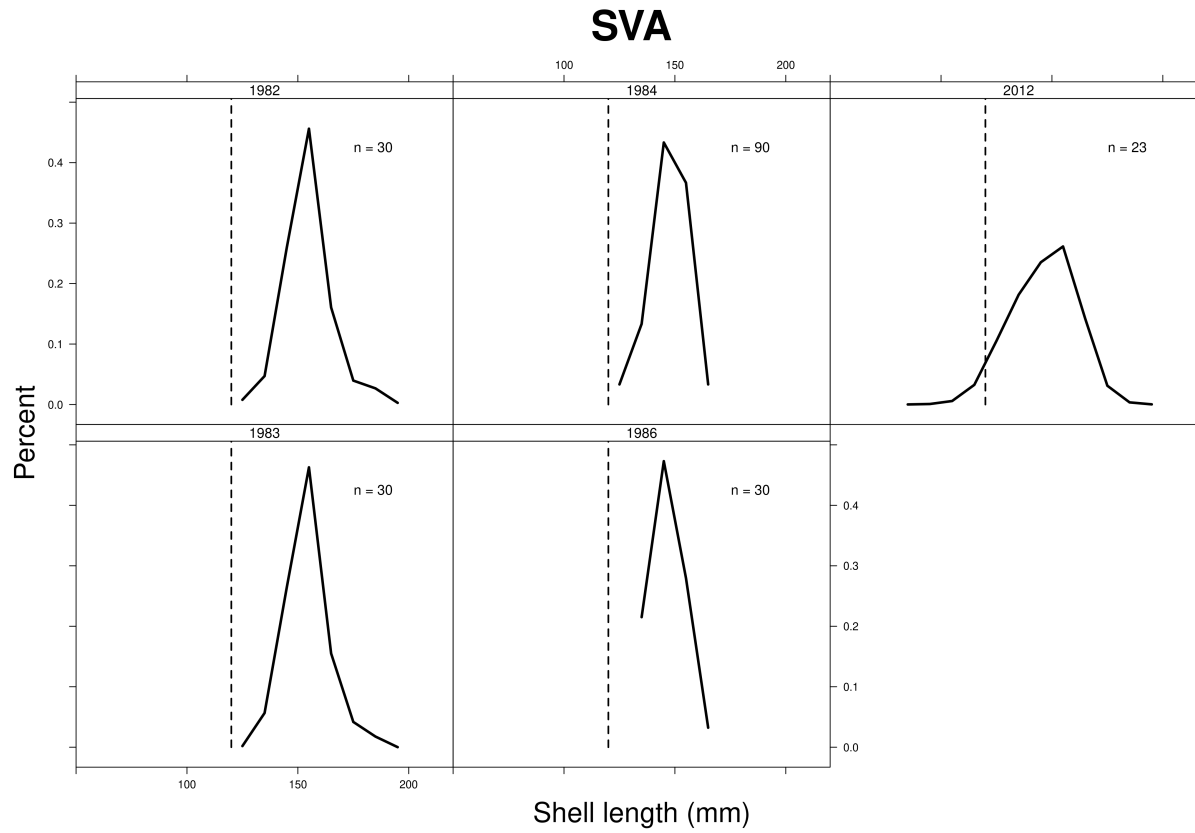


Figure 17: Length compositions of port-sampled landed surfclams from the SVA region. Sample sizes are the number of clams measured in each year.

DMV

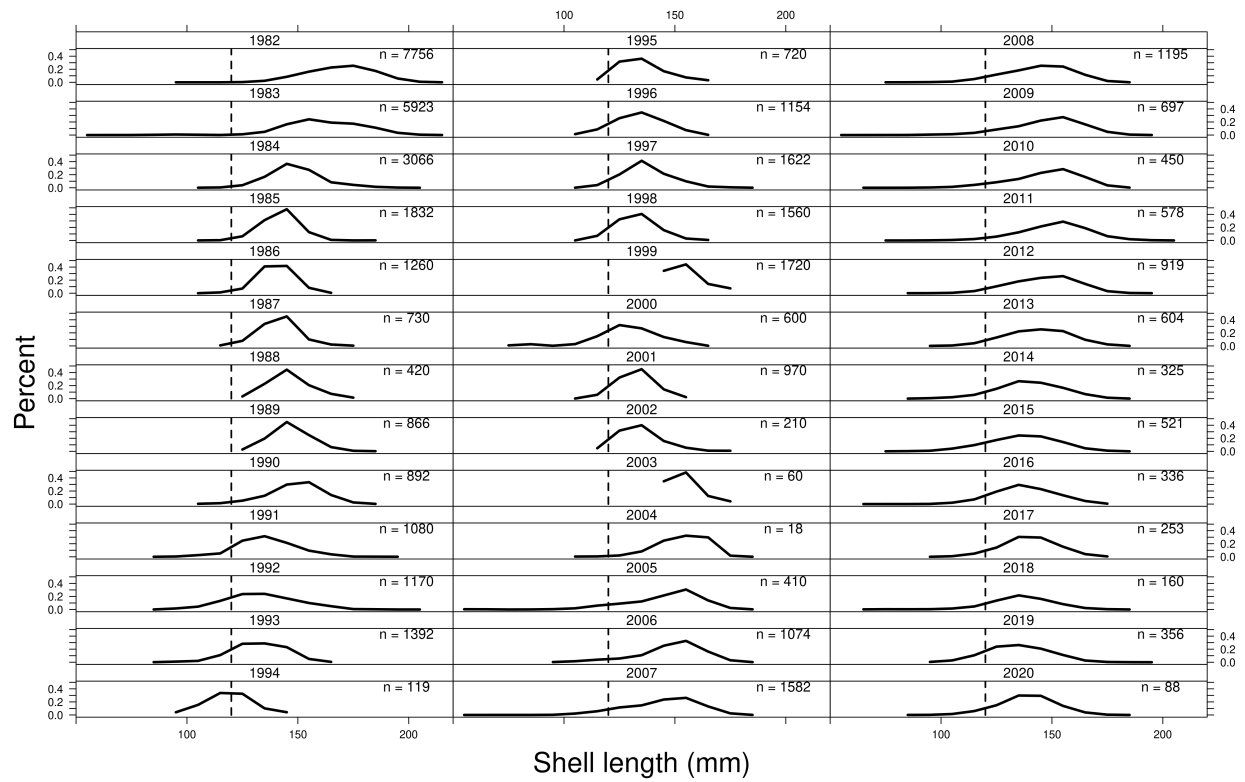


Figure 18: Length compositions of port-sampled landed surfclams from the DMV region. Sample sizes are the number of clams measured in each year.

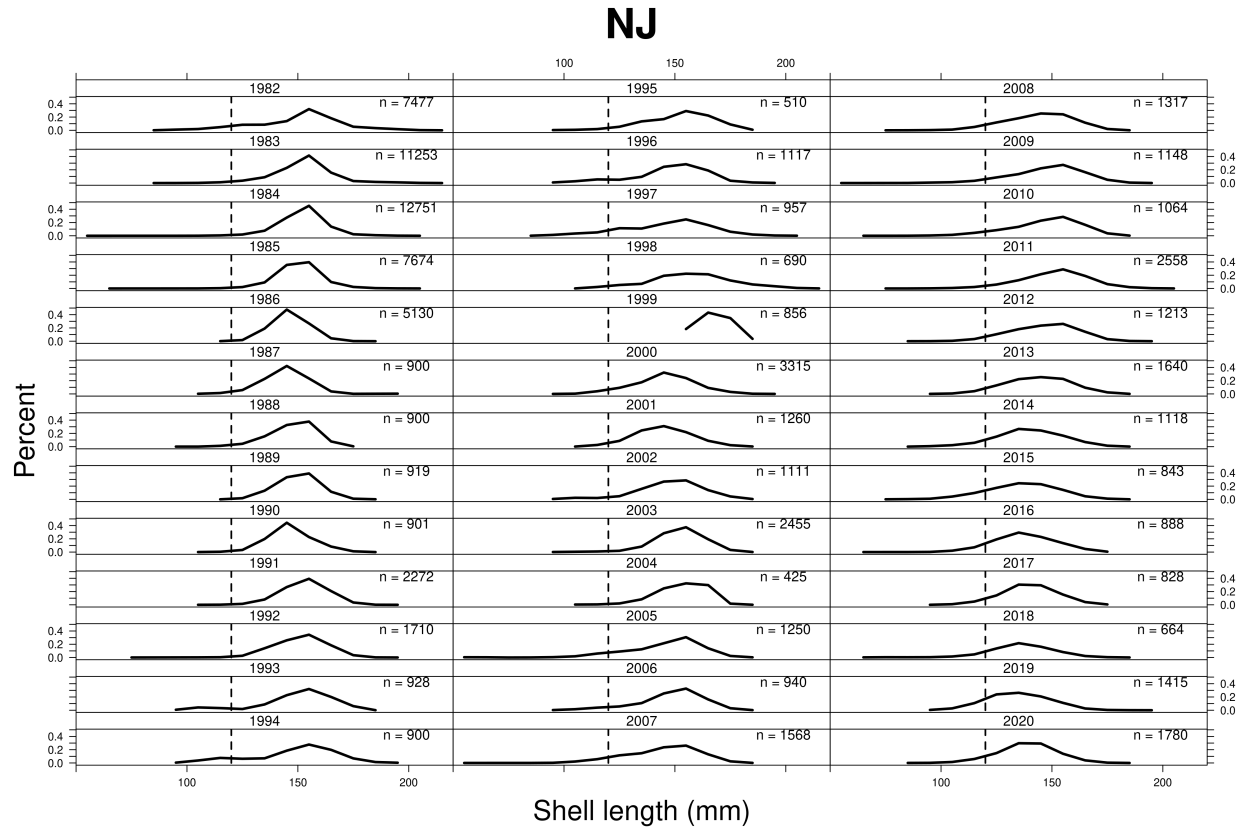


Figure 19: Length compositions of port-sampled landed surfclams from the NJ region. Sample sizes are the number of clams measured in each year.

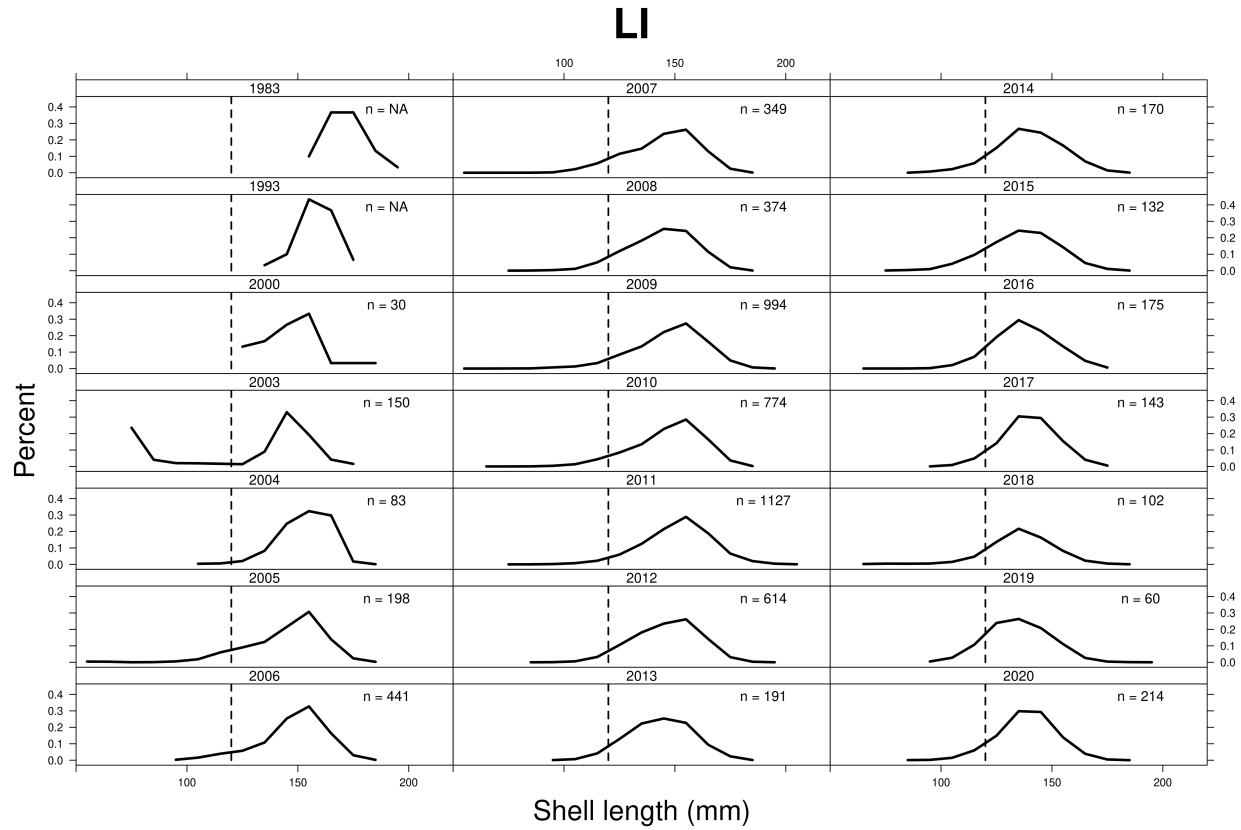


Figure 20: Length compositions of port-sampled landed surfclams from the LI region. Sample sizes are the number of clams measured in each year.

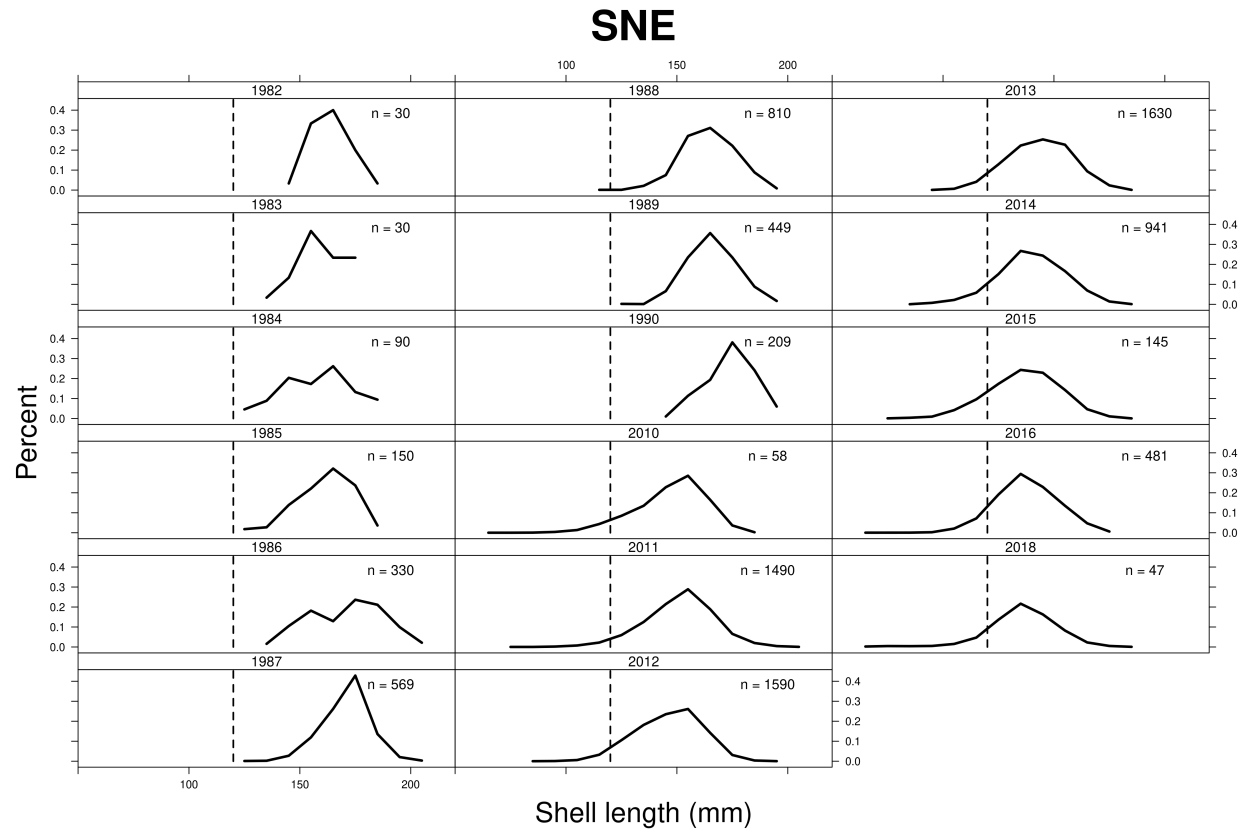


Figure 21: Length compositions of port-sampled landed surfclams from the SNE region. Sample sizes are the number of clams measured in each year.

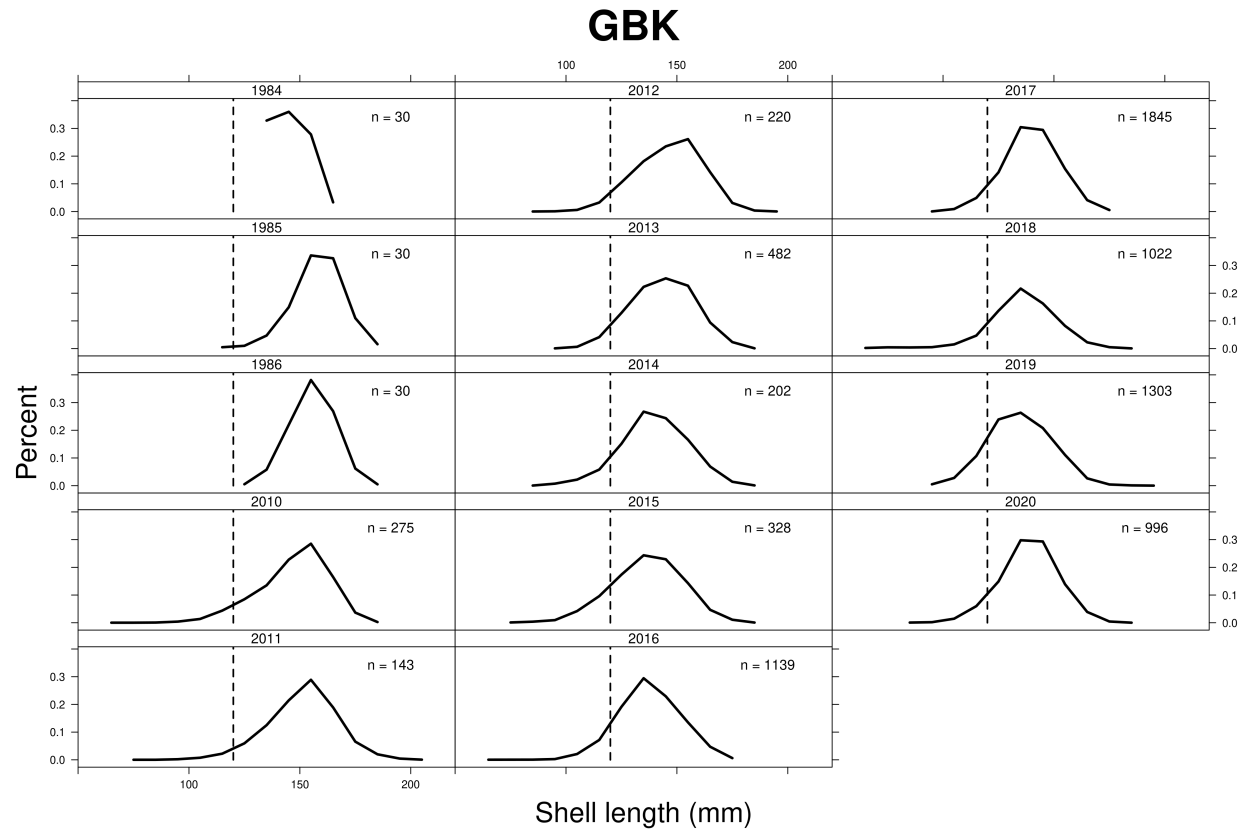


Figure 22: Length compositions of port-sampled landed surfclams from the GBK region. Sample sizes are the number of clams measured in each year.