

SKATE TABLES

Table B1.1. Total commercial landings of skate (mt) in NAFO subareas 5 and 6 by country from 1960-2005. U.S. landings are from NAFO database from 1964-1988, weighout from 1989-2005.

	US	USSR	Others	Total
1964	4081	0	2	4083
1965	2343	0	20	2363
1966	2738	0	106	2844
1967	2715	2121	62	4898
1968	2417	3974	92	6483
1969	3045	6410	7	9462
1970	1583	2544	1	4128
1971	900	5000	5	5905
1972	866	7957	0	8823
1973	1191	6754	18	7963
1974	2026	1623	2	3651
1975	752	3216	0	3968
1976	754	412	46	1212
1977	1143	240	35	1418
1978	1130	216	7	1353
1979	1280	79	1	1360
1980	1577	0	4	1581
1981	838	0	9	847
1982	878	0	0	878
1983	3603	0	0	3603
1984	4157	0	0	4157
1985	3984	0	0	3984
1986	4159	0	94	4253
1987	5078	0	0	5078
1988	7255	0	9	7264
1989	6707	0	0	6707
1990	11403	0	0	11403
1991	11332	0	0	11332
1992	12525	0	0	12525
1993	12904	0	0	12904
1994	8783	0	0	8783
1995	7217	0	0	7217
1996	14213	0	0	14213
1997	10945	0	0	10945
1998	13829	0	0	13829
1999	11684	0	0	11684
2000	13360			13360
2001	13120			13120
2002	13004			13004
2003	15005			15005
2004	16073			16073
2005	13885			13885

Table B1.2. U.S. commercial landings (mt, live wt) of skates (all species) by month from 1964-2005.

year	Month												Total	
	0	1	2	3	4	5	6	7	8	9	10	11		12
1964	4050.3	2.0	3.9	3.6	3.1	2.0	1.6	0.9	1.3	1.6	2.0	2.1	6.4	4081.0
1965	2304.4	5.4	7.2	7.5	4.3	2.4	0.4	0.6	1.2	0.6	2.3	2.6	4.2	2343.0
1966	2707.1	6.4	7.3	6.0	1.0	0.9	0.2	0.1	0.7	1.7	1.4	2.4	2.9	2738.0
1967	2643.3	15.1	7.3	18.1	7.7	3.0	1.6	0.6	0.4	1.8	6.1	2.9	7.1	2715.0
1968	2381.3	10.3	1.9	5.3	1.3	1.5	1.3	1.5	2.6	3.0	2.8	2.5	1.7	2417.0
1969	2993.4	4.1	6.2	5.7	6.2	2.5	2.3	3.1	3.2	3.0	5.0	5.7	4.6	3045.0
1970	1513.4	6.1	8.6	13.9	7.0	4.1	3.4	5.6	5.3	8.3	4.1	2.1	1.1	1583.0
1971	836.7	4.9	6.2	8.5	7.3	7.7	2.7	3.0	2.8	3.5	8.2	3.9	4.7	900.0
1972	780.1	7.2	6.9	12.1	12.3	9.1	4.9	5.7	7.8	4.3	4.2	5.9	5.5	866.0
1973	1104.1	8.3	3.9	10.4	12.4	7.1	6.7	7.1	7.0	8.1	7.1	4.7	4.1	1191.0
1974	1945.9	5.7	4.9	5.6	12.3	8.0	4.6	4.4	12.3	6.7	5.2	2.6	7.8	2026.0
1975	637.9	7.3	10.1	16.6	16.2	13.0	7.3	6.7	7.6	9.8	5.6	6.9	6.9	752.0
1976	641.8	8.4	12.5	19.2	22.4	9.6	4.3	8.1	4.7	7.0	3.1	6.3	6.8	754.0
1977	994.7	15.4	19.7	27.9	20.0	9.0	8.9	6.8	11.0	7.0	8.8	9.3	4.5	1143.0
1978	827.4	19.3	24.7	11.7	29.8	30.5	46.4	33.9	26.2	23.2	20.9	19.3	16.7	1130.0
1979	787.4	24.8	24.8	46.5	62.6	50.4	28.1	29.4	55.5	38.8	42.1	52.9	36.5	1279.6
1980	961.1	61.5	112.6	121.1	82.8	63.9	27.3	26.4	24.4	22.8	27.4	20.5	25.4	1577.2
1981	509.9	33.9	30.8	54.4	31.1	26.7	25.3	15.1	24.5	23.1	12.3	19.2	31.9	838.4
1982	449.5	30.4	23.3	54.0	47.5	58.2	18.9	25.3	35.1	32.3	34.4	31.3	38.2	878.1
1983	2720.3	84.1	95.9	134.0	95.4	102.3	76.3	44.1	66.1	53.3	37.0	56.6	37.5	3603.0
1984	3325.7	99.4	127.3	134.9	108.6	84.0	36.7	30.9	29.0	25.9	37.0	54.2	63.0	4156.5
1985	3220.7	85.4	85.5	150.6	142.7	31.6	29.9	33.2	29.9	28.8	37.7	59.3	48.6	3984.1
1986	3173.4	98.6	89.7	149.7	147.8	91.8	36.4	33.7	49.0	28.2	72.6	86.3	102.5	4159.5
1987	3638.7	83.8	114.3	207.7	227.0	245.3	106.2	40.3	53.0	33.8	87.6	101.5	139.1	5078.4
1988	5141.7	281.6	338.2	378.7	284.0	150.3	74.5	154.5	137.9	75.0	54.1	66.2	118.8	7255.5
1989	4157.8	240.1	150.3	227.1	454.3	292.6	102.6	142.2	272.3	221.9	174.8	173.0	98.4	6707.3
1990	4252.9	136.6	182.0	424.8	834.4	948.5	1174.9	763.8	818.7	624.4	265.9	542.3	433.4	11402.5
1991	4559.9	464.0	423.8	460.9	606.0	419.8	370.4	658.1	925.7	515.5	565.5	958.9	708.0	11332.3
1992	4782.2	517.3	457.7	510.1	567.1	564.3	816.2	764.4	718.2	862.3	639.1	771.1	555.4	12525.3
1993	4860.4	335.1	265.6	471.2	741.7	875.2	823.2	1005.6	859.1	712.4	535.5	864.0	555.0	12904.0
1994	175.5	338.2	309.8	291.7	501.5	855.1	1238.4	780.9	1263.7	960.6	937.7	787.3	342.9	8783.3
1995	1.0	183.7	285.7	413.6	515.5	752.0	915.7	768.4	752.2	557.7	724.8	897.2	449.7	7217.1
1996	2.3	224.6	229.3	206.5	360.1	1012.0	1389.7	1539.8	1577.6	1720.4	2440.4	2411.8	1098.4	14212.8
1997	530.8	469.9	469.9	597.5	395.5	969.4	1127.6	1181.8	1189.6	1062.3	1084.2	1305.2	1031.1	10944.8
1998	518.9	589.8	625.4	814.9	1403.4	1702.2	1643.9	1512.7	1512.7	1551.5	1224.9	1277.1	964.5	13829.2
1999	511.2	401.0	591.8	678.6	1295.5	1436.2	1039.3	1137.7	1388.8	1388.8	1055.8	1250.0	898.1	11683.9
2000	668.1	615.2	1024.2	1024.2	826.2	1187.7	1594.2	1188.5	1534.6	1270.1	946.4	1583.6	921.1	13359.9
2001	802.4	588.6	956.2	967.3	967.3	984.0	1058.2	1150.5	1465.1	1197.3	1115.1	1692.1	1143.7	13120.5
2002	742.3	730.7	783.2	1093.9	773.5	1372.6	998.7	1488.6	1488.6	1247.8	1352.1	1264.4	1156.3	13004.0
2003	548.3	447.6	857.4	1043.7	1043.7	1183.0	1632.9	1889.1	1889.1	1889.1	1993.3	1563.3	971.9	15004.9
2004	538.3	1279.4	1305.0	1305.0	1391.0	1456.9	2008.7	1557.9	1557.9	1573.6	1115.7	1541.6	1150.2	16073.4
2005	869.9	1201.7	1070.1	1070.1	1187.4	1098.5	1289.7	1650.4	1585.9	1320.7	824.4	987.2	798.7	13884.6

Table B1.3. U.S. Commercial landings (mt, live wt) of skates (all species) by state from 1964-2005. Data are from weighout database.

year	STATE													Total
	CT	DE	ME	MD	MA	NH	NJ	NY	NC	RI	VA	VA		
1964					28.2							2.4	30.7	
1965					38.1							0.4	38.6	
1966					30.1							0.8	30.9	
1967					71.1							0.5	71.7	
1968					35.7								35.7	
1969					51.6								51.6	
1970					69.0							0.6	69.6	
1971					61.9							1.4	63.3	
1972					85.2							0.7	85.9	
1973			1.5		80.9							4.6	86.9	
1974			8.8		67.2							4.1	80.1	
1975			14.9		94.8							4.4	114.1	
1976			36.2		74.9							1.1	112.2	
1977			62.6		82.0							3.7	148.3	
1978			86.9		161.8			2.9				50.9	302.6	
1979			181.1		259.0			0.7				51.5	492.2	
1980			197.5		297.5			0.4				120.7	616.1	
1981			151.2		137.3	2.2		0.8				37.0	328.4	
1982			175.0		210.4	3.9		0.1				39.3	428.7	
1983			258.8		455.0	3.3		0.6				165.0	882.7	
1984			230.8		445.4	2.6		0.7				150.8	830.8	
1985			144.5		409.3	2.3		2.4				204.9	763.3	
1986			107.6		363.8	1.1		10.8	55.0			447.2	986.1	
1987			168.9		746.2	20.6		8.9	133.1			361.9	1439.7	
1988			81.9		1376.2	51.9		10.5	172.2			420.9	2113.7	
1989	12.2		99.8		2030.1	18.6		18.2	107.7			4420.0	6707.3	
1990	146.9		47.1		5742.0	10.5		8.8	162.4			5282.1	11402.5	
1991	113.3		16.9		5696.1	12.4		125.4	56.9			5310.7	11332.3	
1992	97.0		45.1		5923.3	10.1		267.2	231.1			5950.1	12925.3	
1993	237.9		167.1		6118.5	9.5		376.1	168.2			5820.3	12904.0	
1994	175.5		442.9		6616.4	37.2		186.1	225.3			1047.1	8783.3	
1995	309.3		349.2		2926.5	24.6		291.4	141.7			3111.5	7217.1	
1996	432.0		267.4		9016.9	20.3		339.2	164.2			3908.8	14212.8	
1997	357.5		221.0		3933.4	17.0		794.8	374.5	9.4		5131.4	10944.8	
1998	441.9		162.2		6322.4	19.1		807.8	575.0	9.1		5372.5	13829.2	
1999	518.3		218.8		4809.3	26.3		636.8	396.8	2.6		4911.9	11684.0	
2000	493.8		138.0		6517.8	38.4		564.6	387.7	20.6		4825.3	13360.0	
2001	618.9		138.2		6683.5	33.2		624.7	366.8	0.1		4536.2	13120.5	
2002	367.6		137.2		6335.0	24.5		582.4	462.9	0.3		5029.6	13004.0	
2003	433.7		76.4		8098.0	14.9		448.7	353.3	0.8		5516.6	15004.9	
2004	441.7	0.0	13.3		10075.9	10.6		374.3	222.7	0.5		4882.6	16073.4	
2005	47.6		10.9		8989.2	9.4		334.8	157.5	0.5		4296.0	13884.6	

Table B1.4. U.S. Commercial landings (mt, live wt) of skates
(all species) by gear type from 1964-2005.
Landings are from weighout database.

year	gear				Total
	longline	otter trawl	other	sink gillnet	
1964	0.1	30.5		0.0	30.7
1965	0.3	38.2		0.0	38.6
1966		30.9			30.9
1967		71.7			71.7
1968		35.7			35.7
1969		51.5		0.0	51.6
1970	0.6	68.8	0.0	0.2	69.6
1971	1.1	62.0		0.1	63.3
1972	3.7	80.8	0.1	1.3	85.9
1973	7.0	77.9	1.9	0.2	86.9
1974	10.5	64.3	0.2	5.1	80.1
1975	11.7	101.4	0.1	0.8	114.1
1976	16.2	93.3	0.2	2.5	112.2
1977	13.4	126.8	0.9	7.2	148.3
1978	4.4	290.0	3.2	5.0	302.6
1979	18.4	456.0	5.8	12.0	492.2
1980	16.5	577.9	6.0	15.6	616.1
1981	5.1	311.7	1.2	10.4	328.4
1982	2.0	408.4	7.4	10.8	428.7
1983	3.4	846.2	22.5	10.6	882.7
1984	5.0	796.5	19.1	10.3	830.8
1985	3.7	721.5	17.8	20.3	763.3
1986	6.6	954.4	14.2	10.9	986.1
1987	22.4	1384.4	16.1	16.8	1439.7
1988	5.7	2070.7	22.2	15.2	2113.7
1989	30.6	6636.1	27.3	13.4	6707.3
1990	3.8	11339.6	47.7	11.5	11402.5
1991	24.3	11169.9	77.0	61.1	11332.3
1992	21.9	12242.5	35.1	225.8	12525.3
1993	63.4	11913.6	204.6	722.3	12904.0
1994	197.2	7194.4	357.4	1034.3	8783.3
1995	97.1	5777.2	400.7	942.1	7217.1
1996	51.8	12944.3	134.4	1082.3	14212.8
1997	47.7	8822.8	471.6	1602.8	10944.8
1998	53.2	11724.8	576.4	1474.8	13829.2
1999	48.5	10059.3	144.9	1431.3	11684.0
2000	34.9	11464.0	72.0	1789.0	13360.0
2001	12.0	10835.0	27.7	2245.9	13120.5
2002	32.8	9667.7	31.0	3272.4	13004.0
2003	97.1	10254.3	43.0	4610.6	15004.9
2004	136.9	10694.3	2217.0	3025.3	16073.4
2005	342.7	7744.3	2532.9	3264.7	13884.6

Table B1.5. U.S. landings (mt, live wt) of skates by species and market category from 1964-2005. Landings are from weighout database.

YEAR	Species and Market Category														Total			
	Uncl.		Winter		Little		Barndoor		Thorny		Smooth		Clearnose		Rose		Total	
	Whole	Wings	Whole	Wings	Whole	Wings	Whole	Wings	Whole	Wings	Whole	Wings	Whole	Wings	Whole	Wings		
1964	30.7																30.7	0.0
1965	38.6																38.6	0.0
1966	30.9																30.9	0.0
1967	71.7																71.7	0.0
1968	35.7																35.7	0.0
1969	51.6																51.6	0.0
1970	69.6																69.6	0.0
1971	63.3																63.3	0.0
1972	85.9																85.9	0.0
1973	86.9																86.9	0.0
1974	80.1		0.0														80.1	0.0
1975	114.1																114.1	0.0
1976	112.2																112.2	0.0
1977	148.3																148.3	0.0
1978	302.6																302.6	0.0
1979	492.2																492.2	0.0
1980	616.1																616.1	0.0
1981	328.4																328.4	0.0
1982	277.2	151.4															277.2	151.4
1983	169.6	713.0															169.6	713.0
1984	68.1	762.8															68.1	762.8
1985	68.3	695.0															68.3	695.0
1986	262.6	723.5															262.6	723.5
1987	87.5	1352.2															87.5	1352.2
1988	74.2	2039.6															74.2	2039.6
1989	4163.1	2544.2															4163.1	2544.2
1990	5002.9	6399.6															5002.9	6399.6
1991	5069.2	6262.5				0.6											5069.7	6262.5
1992	5860.5	6664.7															5860.5	6664.7
1993	5526.6	7377.5	0.0														5526.6	7377.5
1994	703.4	8079.9															703.4	8079.9
1995	3095.1	3985.5			136.6												3231.7	3985.5
1996	3981.5	10230.8	0.4		0.2												3982.0	10230.8
1997	5369.1	5575.6															5369.1	5575.6
1998	5391.8	8437.4				0.0											5391.8	8437.4
1999	5026.7	6655.2															5028.7	6655.2
2000	3633.4	8690.5	0.0		1036.0	0.1	2.1										4669.4	8690.6
2001	4399.5	8718.6	2.2		0.0	0.1	0.0										4401.7	8718.8
2002	4396.9	8606.9				0.1											4396.9	8607.1
2003	4327.8	10650.0	0.8	26.0	0.2												4328.8	10676.0
2004	998.5	8451.6	2.8	2697.5	2867.4	8.6	0.3	0.1	0.0	95.6	1.0	927.2	3.5	16.6	2.7	3873.6	12199.8	
2005	142.2	6710.1	59.3	3301.4	3465.3	15.6	0.3	5.4	1.5	126.2	0.6	1.0	32.5	16.6	5.9	3718.3	10165.6	

Table B1.7. Discards (mt) of skates (all species) by gear type, empty cells not filled in. Dashes indicate no sampling.

year	Line Trawl	Longline	Otter Trawl	Scallop Trawl	Pair Trawl	Shrimp Trawl	Sink Gill Net	Scallop Dredge	Mid-Water Lobster	Pot	Blue Crab Pots	Scottish Seine	Grand Total
1989	-	-	56,622	-	-	85	127	-	-	-	-	-	56,834
1990	-	0	77,805	-	-	258	624	-	-	-	-	-	78,687
1991	865	0	45,775	-	-	283	289	6,391	0	0	-	-	53,602
1992	1,438	30	45,334	-	0	245	452	39,705	0	0	-	-	87,204
1993	45	0	28,388	-	188	36	375	22,866	0	31	-	-	51,929
1994	0	0	32,458	-	-	13	856	10,525	0	0	-	-	43,852
1995	0	0	37,564	-	-	9	767	18,074	0	0	-	-	56,414
1996	-	-	32,693	-	-	35	1,090	18,321	0	0	-	-	52,139
1997	-	0	10,032	-	-	1	537	15,606	-	0	-	-	26,176
1998	-	-	14,051	-	-	-	593	14,626	-	0	-	-	29,270
1999	-	-	16,827	-	-	-	1,057	15,901	0	5	-	-	33,789
2000	-	-	29,121	-	-	-	1,130	12,099	0	29	-	-	42,379
2001	-	-	42,461	365	-	0	609	6,070	0	-	-	18	49,523
2002	39	-	43,740	268	-	-	2,015	15,651	0	-	12,375	7	74,095
2003	15	-	32,370	-	-	11	946	14,977	0	0	-	1	48,320
2004	29	-	27,341	161	-	0	803	4,970	1	-	-	0	33,306
2005	825	-	13,824	35	-	2	2,180	2,794	0	0	-	-	19,660

Table B1.8. Discards of skates (all species) by year, quarter, region in the otter trawl fishery.

year	Quarter Region	1			2			3			4		
		MA	NE	Total	MA	NE	Total	MA	NE	Total	MA	NE	Total
1989	nrrips	5	17	22	4	41	45	8	61	69	9	31	40
	dkratio	0.39	0.46	0.85	0.14	0.53	0.67	0.36	0.26	0.63	0.19	0.55	0.74
	mt kept	11518.8	26350.1	37868.9	6714.3	31405.5	38119.8	4064.5	25253.5	29317.9	7752.5	23253.9	31006.4
	mt discard	4512.8	12032.2	16545.1	959.5	16701.5	17660.9	1481.2	6645.4	8126.7	1451.5	12838.0	14289.5
1990	nrrips	6	19	25	14	21	35	7	19	26	9	31	40
	dkratio	0.19	1.07	1.25	0.27	0.31	0.57	0.55	0.09	0.65	0.53	0.83	1.36
	mt kept	10138.7	24999.5	35138.2	6461.9	34303.9	40765.8	6290.4	36062.4	42352.8	9441.0	30440.1	39881.1
	mt discard	1906.5	26639.7	28546.2	1721.8	10582.1	12303.9	3480.4	3307.3	6787.7	5040.2	25126.8	30166.9
1991	nrrips	14	33	47	16	32	48	4	50	54	26	70	96
	dkratio	0.00	0.44	0.45	0.27	0.36	0.63	0.30	0.13	0.43	0.50	0.28	0.78
	mt kept	16912.8	25727.2	42639.9	8472.2	36335.0	44807.2	7471.0	34737.4	42208.4	8531.8	28014.7	36546.5
	mt discard	75.6	11380.9	11456.5	2261.8	13125.6	15387.5	2224.1	4506.5	6730.6	4284.0	7916.4	12200.4
1992	nrrips	23	50	73	7	22	29	8	27	35	9	27	36
	dkratio	0.10	0.15	0.25	0.18	0.20	0.38	0.36	0.15	0.51	2.23	0.20	2.43
	mt kept	16904.2	25446.7	42350.9	9844.7	34956.2	44800.9	8824.5	32091.6	40916.1	8116.0	25267.4	33383.5
	mt discard	1685.7	3872.0	5557.7	1725.5	7039.5	8765.0	3174.9	4775.2	7950.1	18113.0	4947.9	23060.8
1993	nrrips	6	22	28	1	19	20	6	20	26	7	20	27
	dkratio	0.03	0.09	0.12	0.04	0.17	0.22	0.34	0.14	0.48	0.45	0.39	0.84
	mt kept	13935.0	21406.8	35341.9	7901.6	25493.7	33395.3	11231.0	32291.3	43522.3	8574.6	22867.3	31441.8
	mt discard	458.3	1949.5	2407.8	353.8	4454.8	4808.6	3796.3	4538.5	8334.8	3873.5	8963.0	12836.5
1994	nrrips	7	27	34	7	8	15	5	7	12	6	17	23
	dkratio	0.28	0.06	0.35	0.61	0.29	0.90	0.04	0.17	0.21	0.19	0.36	0.55
	mt kept	12155.0	19965.4	32120.4	9501.8	25000.2	34502.0	10347.3	30239.9	40587.2	8896.6	21156.9	30053.5
	mt discard	3458.5	1213.5	4672.0	5804.7	7197.6	13002.3	458.4	5012.0	5470.4	1684.6	7629.0	9313.5
1995	nrrips	14	28	42	24	14	38	55	34	89	23	36	59
	dkratio	0.59	0.24	0.83	0.37	0.57	0.93	0.19	0.08	0.26	0.61	0.17	0.78
	mt kept	10333.9	17824.5	28158.4	9046.2	22296.0	31342.2	9312.1	22265.7	31577.8	7927.5	18288.8	26216.3
	mt discard	6059.3	4257.9	10317.2	3305.4	12602.6	15908.0	1731.2	1696.9	3428.1	4867.7	3042.9	7910.6
1996	nrrips	7	13	20	23	27	50	38	37	75	27	30	57
	dkratio	0.74	0.20	0.95	0.02	0.42	0.44	0.05	0.02	0.07	0.13	0.20	0.32
	mt kept	16936.5	19091.2	36027.7	9961.4	22962.2	32923.6	7991.5	25032.9	33024.5	7188.8	23399.7	30588.5
	mt discard	12590.4	3877.6	16468.0	210.7	9573.8	9784.5	439.4	468.4	907.7	918.4	4614.4	5532.9
1997	nrrips	21	35	56	4	12	16	16	14	30	2	4	6
	dkratio	0.07	0.21	0.29	0.02	0.02	0.04	0.00	0.05	0.06	0.00	0.13	0.14
	mt kept	12575.2	20684.8	33260.0	6727.7	23291.1	30018.8	10470.8	23696.7	34167.6	8466.1	20440.2	28906.3
	mt discard	936.3	4430.1	5366.4	165.0	474.4	639.5	25.4	1277.5	1302.9	31.2	2691.8	2723.0
1998	nrrips	16	11	27	2	8	10	2	8	10	21	10	31
	dkratio	0.06	0.13	0.19	0.02	0.06	0.08	0.23	0.14	0.37	0.12	0.03	0.15
	mt kept	16831.8	22972.5	39804.3	14843.1	23525.3	38368.4	13115.2	25717.9	38833.1	8815.1	19348.0	28163.1
	mt discard	1023.2	2974.7	3997.9	342.0	1435.3	1777.3	3008.1	3663.3	6671.4	1035.4	569.4	1604.8
1999	nrrips	8	8	8	15	23	23	12	14	26	16	32	48
	dkratio	0.01	0.01	0.01	0.14	0.03	0.18	0.01	0.45	0.46	0.16	0.19	0.35
	mt kept	15344.9	18411.2	33756.1	8725.0	21760.3	30485.3	7118.7	21341.5	28460.2	7325.7	19526.1	26851.8
	mt discard	0.0	215.8	215.8	1243.8	713.5	1957.4	49.8	9699.1	9748.9	1137.6	3767.2	4904.8
2000	nrrips	26	39	65	12	64	76	18	34	52	10	39	49
	dkratio	0.05	0.10	0.15	0.02	0.27	0.29	0.01	0.21	0.22	1.15	0.42	1.56
	mt kept	14877.0	21346.9	36223.9	5950.7	21128.2	27078.9	8364.9	22829.2	31194.1	5876.9	20991.7	26868.6
	mt discard	688.1	2235.0	2923.1	126.9	5742.0	5868.9	75.2	4782.0	4857.2	6755.9	8715.7	15471.6
2001	nrrips	15	41	56	18	42	60	51	64	115	17	71	88
	dkratio	0.00	0.09	0.09	0.00	1.20	1.20	0.02	0.19	0.21	0.05	0.19	0.23
	mt kept	8094.4	24244.4	32338.8	4421.5	25921.7	30343.2	4140.7	23630.8	27771.5	6097.0	22826.9	28924.0
	mt discard	12.1	2263.5	2275.5	4.2	31189.8	31194.0	95.9	4377.6	4473.5	287.0	4230.5	4517.6
2002	nrrips	20	30	50	12	23	35	46	118	164	2	134	136
	dkratio	0.18	0.24	0.41	0.08	0.34	0.42	0.07	0.21	0.28	3.30	0.32	3.62
	mt kept	7526.3	24873.4	32399.7	3699.4	24286.7	27986.2	4023.8	22163.7	26187.5	5140.9	18687.4	23828.2
	mt discard	1329.2	5882.3	7211.5	295.0	8365.1	8660.0	295.8	4681.9	4977.6	16976.5	5914.2	22890.6
2003	nrrips	10	129	139	26	110	136	14	125	139	20	120	140
	dkratio	0.12	0.38	0.51	0.11	0.39	0.50	0.11	0.17	0.28	0.65	0.25	0.90
	mt kept	7393.9	25623.8	33017.7	2490.9	21671.6	24162.5	2985.1	20810.0	23795.1	5595.9	22225.4	27821.3
	mt discard	923.0	9743.7	10666.7	273.6	8408.8	8682.4	328.5	3576.2	3904.6	3664.6	5451.5	9116.0
2004	nrrips	64	108	172	45	95	140	68	172	240	105	206	311
	dkratio	0.08	0.25	0.33	0.06	0.40	0.46	0.02	0.11	0.14	0.13	0.12	0.25
	mt kept	7807.8	26579.0	34386.8	11345.3	27943.0	39288.2	15427.4	40193.4	55620.7	5445.7	21202.4	26648.2
	mt discard	621.8	6592.1	7213.9	675.4	11153.7	11829.1	377.0	4599.3	4976.4	695.9	2625.3	3321.1
2005	nrrips	49	122	171	22	86	108	39	386	425	45	244	289
	dkratio	0.07	0.08	0.15	0.11	0.15	0.26	0.16	0.20	0.37	0.16	0.15	0.31
	mt kept	6411.6	18855.5	25267.2	3799.1	18326.2	22125.3	4915.6	22562.7	27478.3	4081.5	18581.5	22663.0
	mt discard	423.1	1502.4	1925.5	432.6	2664.6	3097.3	802.6	4598.5	5401.1	651.7	2748.8	3400.5
Total	nrrips	303	732	1035	245	639	884	397	1190	1587	354	1122	1476

Table B1.9. Discards of skates (all species) by year, quarter, region in the sink gill net fishery.

year	Quarter Region	1			2			3			4					
		MA	NE	Total	MA	NE	Total	MA	NE	Total	MA	NE	Total			
1989	ntrips															
	dkratio					0.003	0.003			0.007	0.007		0.010	0.010		
	mt kept	431.8	2040.0	2471.9	1211.7	5244.3	6456.0	1170.4	8526.7	9697.1	463.4	5257.3	5720.7			
	mt discard	0.00	0.00	0.00	0.00	16.94	16.94	0.00	58.32	58.32	0.00	51.68	51.68			
1990	ntrips		25	25		48	48		1	31	32		1	38	39	
	dkratio		0.130	0.130		0.053	0.053		0.000	0.004	0.004		0.000	0.013	0.013	
	mt kept	700.9	1678.6	2379.5	954.8	5737.3	6692.1	837.9	10564.8	11402.6	892.6	4939.3	5831.9			
	mt discard	0.00	218.63	218.63	0.00	303.91	303.91	0.00	38.67	38.67	0.00	62.98	62.98			
1991	ntrips		16	16		176	176			489	489			277	277	
	dkratio		0.041	0.041		0.013	0.013			0.011	0.011			0.009	0.009	
	mt kept	828.6	1672.8	2501.3	1612.5	7011.9	8624.4	1767.8	7800.7	9568.5	1349.7	4459.2	5808.9			
	mt discard	0.00	68.40	68.40	0.00	92.28	92.28	0.00	87.37	87.37	0.00	40.98	40.98			
1992	ntrips	1	86	87		414	414			392	392			291	291	
	dkratio	0.000	0.119	0.119		0.034	0.034			0.006	0.006			0.009	0.009	
	mt kept	880.5	1455.1	2335.7	1951.2	5490.3	7441.5	1846.4	8376.8	10223.2	1012.4	5051.0	6063.5			
	mt discard	0.00	173.48	173.48	0.00	184.36	184.36	0.00	48.00	48.00	0.00	45.86	45.86			
1993	ntrips	1	68	69		282	282		7	140	147		11	260	271	
	dkratio	0.000	0.032	0.032		0.030	0.030		0.001	0.010	0.011		0.002	0.007	0.010	
	mt kept	1750.7	1252.2	3002.9	2380.1	6082.4	8462.5	2452.2	10138.7	12590.9	1787.7	5717.3	7505.0			
	mt discard	0.00	39.72	39.72	0.00	183.08	183.08	1.57	105.34	106.91	4.22	41.34	45.55			
1994	ntrips	55	68	123		39	15		50	23	73		74	57	131	
	dkratio	0.009	0.037	0.047		0.008	0.029		0.001	0.034	0.035		0.014	0.044	0.058	
	mt kept	1107.5	1172.4	2279.8	2461.1	6644.2	9105.3	3117.1	11326.8	14443.9	1680.3	4112.8	5793.1			
	mt discard	10.40	43.62	54.02	18.85	191.22	210.07	2.93	383.98	386.91	24.28	180.55	204.83			
1995	ntrips	153	18	171		78	42		120	46	51		97	99	30	129
	dkratio	0.013	0.084	0.096		0.019	0.036		0.000	0.009	0.009		0.014	0.028	0.042	
	mt kept	1283.7	1348.9	2632.6	2788.3	8653.6	11441.9	2096.2	10745.0	12841.2	2785.1	4708.2	7493.3			
	mt discard	16.30	112.75	129.06	53.23	315.16	368.39	0.25	97.67	97.92	39.99	131.74	171.73			
1996	ntrips	134	12	146		81	24		105	51	18		69	70	17	87
	dkratio	0.014	0.020	0.034		0.018	0.103		0.121	0.004	0.017		0.021	0.009	0.003	0.012
	mt kept	3389.9	1098.8	4488.7	4764.0	6689.6	11453.6	2943.2	10938.8	13882.0	4167.8	5000.9	9168.7			
	mt discard	47.76	21.98	69.74	84.08	689.16	773.25	12.77	182.35	195.12	36.47	15.30	51.77			
1997	ntrips	147	10	157		73	23		96	40	18		58	57	14	71
	dkratio	0.015	0.006	0.021		0.047	0.010		0.058	0.000	0.003		0.003	0.010	0.010	0.020
	mt kept	8163.2	1359.3	9522.5	4616.8	6592.9	11209.7	3548.2	8536.0	12084.1	5667.0	3813.9	9480.8			
	mt discard	125.63	7.54	133.18	218.51	68.90	287.41	1.35	22.53	23.88	55.03	37.64	92.67			
1998	ntrips	188	10	198		35	37		72	9	32		41	40	54	94
	dkratio	0.008	0.006	0.014		0.023	0.007		0.030	0.009	0.018		0.027	0.017	0.009	0.025
	mt kept	8538.8	1382.1	9921.0	5875.8	5415.3	11291.1	3267.8	9226.5	12494.3	6232.9	5000.3	11233.2			
	mt discard	71.21	8.40	79.62	135.85	38.88	174.73	30.65	161.65	192.30	103.78	43.00	146.78			
1999	ntrips	32	16	48		21	30		51	13	35		48	24	35	59
	dkratio	0.017	0.015	0.032		0.074	0.023		0.098	0.002	0.004		0.004	0.017	0.059	0.077
	mt kept	8560.1	1761.6	10321.7	5777.6	5943.7	11721.2	2697.0	5512.7	8209.8	4082.3	3816.2	7898.5			
	mt discard	146.98	26.51	173.49	430.14	138.43	568.57	4.15	13.23	17.38	70.38	226.76	297.14			
2000	ntrips	31	23	54		21	51		72	9	32		41	31	37	68
	dkratio	0.001	0.012	0.013		0.005	0.034		0.039	0.000	0.149		0.149	0.010	0.057	0.067
	mt kept	7225.6	1805.9	9031.4	4500.2	4153.9	8654.0	3568.8	4576.9	8145.8	3835.0	3795.3	7630.3			
	mt discard	4.70	22.23	26.93	22.14	140.94	163.08	0.00	684.21	684.21	38.04	218.04	256.08			
2001	ntrips	24	19	43		27	30		57	6	21		27	24	17	41
	dkratio	0.002	0.058	0.060		0.008	0.048		0.055	0.000	0.036		0.036	0.005	0.020	0.025
	mt kept	5146.0	1447.6	6593.6	4217.9	4430.2	8648.1	2829.4	4197.0	7026.4	4360.6	4889.5	9250.1			
	mt discard	9.11	84.05	93.16	33.07	210.43	243.50	0.00	153.06	153.06	22.72	96.42	119.14			
2002	ntrips	12	18	30		12	16		28	5	25		30	17	31	48
	dkratio	0.001	0.013	0.014		0.067	0.079		0.146	0.000	0.034		0.034	0.004	0.278	0.282
	mt kept	4899.9	2547.1	7447.0	3913.9	4313.5	8227.4	2844.2	4080.2	6924.4	3560.2	4405.0	7965.2			
	mt discard	2.84	33.09	35.93	261.06	341.15	602.21	0.00	137.38	137.38	14.85	1224.80	1239.65			
2003	ntrips	6	18	24		18	109		127	11	172		183		122	122
	dkratio	0.004	0.135	0.138		0.019	0.030		0.049	0.000	0.023		0.023		0.048	0.048
	mt kept	5278.3	2351.2	7629.5	4951.6	4880.3	9831.9	2441.0	5653.1	8094.1	3972.1	5034.5	9006.7			
	mt discard	19.27	316.30	335.57	93.44	147.82	241.26	0.81	128.49	129.30	0.00	239.49	239.49			
2004	ntrips	1	107	108		1	133		134	1	341		342	26	269	295
	dkratio	0.000	0.036	0.036		0.000	0.032		0.032	0.000	0.018		0.018	0.064	0.024	0.088
	mt kept	4968.4	7776.7	12745.0	4123.3	4009.8	8133.2	2966.2	4649.4	7615.6	3577.1	3362.5	6939.7			
	mt discard	0.00	281.90	281.90	0.00	126.71	126.71	0.00	85.87	85.87	229.51	79.49	309.00			
2005	ntrips	8	133	141		24	45		69		389		389	8	197	205
	dkratio	0.030	0.182	0.212		0.209	0.088		0.296		0.035		0.035	0.043	0.018	0.062
	mt kept	5093.9	1299.4	6393.2	4760.1	4255.5	9015.6	2925.2	5756.6	8681.8	3739.0	3363.0	7102.0			
	mt discard	151.75	236.98	388.72	993.77	372.65	1366.43	0.00	200.67	200.67	162.42	62.18	224.60			
Total	ntrips	793	647	1440		430	1476		1906	249	2255		2504	482	1803	2285

Table B1.10. Discards of skates (all species) by year, quarter, region in the scallop dredge fishery.

year	Quarter Region	1			2			3			4		
		MA	NE	Total	MA	NE	Total	MA	NE	Total	MA	NE	Total
1989	ntrips												
	dkratio												
	mt kept	10086.6	23291.0	33377.5	15880.9	28652.0	44532.8	10428.4	25176.9	35605.4	5278.9	18667.2	23946.0
	mt discard	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1990	ntrips												
	dkratio												
	mt kept	10987.0	17618.5	28605.6	14895.0	30679.0	45574.0	14342.6	30581.7	44924.2	7677.8	19732.3	27410.1
	mt discard	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1991	ntrips												
	dkratio												
	mt kept	10896.2	23586.6	34482.8	18918.4	31037.2	49955.5	10741.8	23977.9	34719.7	6046.7	16561.7	22608.4
	mt discard	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3366.0	3024.7	6390.7
1992	ntrips	1	2	3	1	3	4	1	2	3	1	4	5
	dkratio	0.20	0.36	0.55	0.11	0.24	0.35	0.12	0.59	0.71	0.26	0.40	0.66
	mt kept	7389.5	17974.8	25364.3	12121.3	25380.6	37501.9	11000.5	24564.0	35564.6	5325.4	18270.0	23595.4
	mt discard	1452.4	6390.4	7842.8	1274.9	6192.9	7467.8	1322.4	14390.4	15712.7	1410.8	7270.6	8681.4
1993	ntrips	3	4	7	3	4	7	1	2	3	1	3	4
	dkratio	0.45	0.20	0.65	0.52	0.14	0.66	0.53	0.18	0.71	0.76	0.52	1.28
	mt kept	4536.8	13875.1	18412.0	6136.5	13124.9	19261.4	5650.6	11626.6	17277.2	3277.8	10498.7	13776.5
	mt discard	2030.6	2758.9	4789.6	3188.3	1795.5	4983.8	2989.8	2145.0	5134.8	2506.4	5451.2	7957.7
1994	ntrips	4	3	7	3	1	4		4	4	3	5	8
	dkratio	0.38	0.20	0.57	0.05	0.17	0.22		0.08	0.08	0.50	0.21	0.71
	mt kept	5189.9	7542.7	12732.6	10500.5	9248.8	19749.4	9023.3	9236.0	18259.3	4719.4	8918.3	13637.7
	mt discard	1958.8	1472.3	3431.1	551.3	1541.6	2092.9	0.0	765.9	765.9	2356.8	1878.8	4235.6
1995	ntrips	6	3	9	2	3	5	3	2	5		5	5
	dkratio	0.26	0.32	0.59	0.39	0.04	0.44	0.07	0.26	0.33		0.83	0.83
	mt kept	5765.1	7520.0	13285.1	11081.4	13823.0	24904.4	7007.7	10248.7	17256.4	2340.3	7278.6	9618.9
	mt discard	1522.5	2424.8	3947.3	4348.7	605.9	4954.5	520.6	2619.9	3140.5	0.0	6031.6	6031.6
1996	ntrips	6	7	13	4	5	9	3	4	7	4	5	9
	dkratio	0.24	0.13	0.38	0.46	0.10	0.56	0.23	0.14	0.38	1.11	0.41	1.52
	mt kept	3368.3	5907.8	9276.1	10880.0	13675.2	24555.2	6904.9	12142.7	19047.6	2663.1	9855.3	12518.4
	mt discard	823.5	782.0	1605.5	5022.2	1378.6	6400.8	1606.2	1738.1	3344.3	2959.9	4010.7	6970.6
1997	ntrips	6	6	12	5	2	7	4	3	7	1	2	3
	dkratio	0.55	0.26	0.81	0.55	0.14	0.69	0.33	0.36	0.69	0.10	0.10	0.20
	mt kept	3375.8	7265.0	10640.9	7523.7	11622.1	19145.8	5540.9	9175.7	14716.6	2206.1	7496.9	9703.0
	mt discard	1840.2	1890.2	3730.5	4153.4	1620.5	5773.9	1803.5	3314.1	5117.6	228.2	755.8	984.0
1998	ntrips	1		1	6	2	8	3	2	5	6	6	12
	dkratio	0.10		0.10	0.38	0.13	0.52	0.47	0.64	1.11	0.60	0.27	0.87
	mt kept	3212.1	6498.3	9710.4	6420.8	9324.1	15744.9	4168.5	7997.0	12165.5	2778.4	6975.2	9753.6
	mt discard	310.1	0.0	310.1	2455.6	1236.1	3691.7	1961.9	5089.6	7051.5	1656.4	1915.9	3572.2
1999	ntrips				1	2	3	4	1	5	2	5	7
	dkratio				0.29	0.10	0.38	0.56	0.33	0.89	0.04	0.09	0.14
	mt kept	3981.4	7393.9	11375.2	11211.7	16989.1	28200.8	6866.1	16967.2	23833.3	2229.0	15535.5	17764.5
	mt discard	0.0	0.0	0.0	3198.7	1638.8	4837.5	3833.0	5673.7	9506.7	92.6	1464.1	1556.6
2000	ntrips	4	3	7	6	25	31	11	107	118	7	93	100
	dkratio	0.05	0.22	0.26	0.15	0.18	0.33	0.03	0.06	0.09	0.14	0.03	0.17
	mt kept	5085.8	9377.8	14463.5	19064.4	22542.1	41606.5	14563.1	19221.4	33784.5	5843.4	16750.7	22594.0
	mt discard	232.5	2038.5	2271.0	2945.8	4008.4	6954.3	478.3	1117.1	1595.4	823.7	454.6	1278.3
2001	ntrips		17	17	22	18	40	8	17	25	12	11	23
	dkratio		0.02	0.02	0.03	0.03	0.07	0.06	0.04	0.09	0.04	0.06	0.10
	mt kept	7693.3	15218.8	22912.1	24272.2	31980.4	56252.7	22261.8	25588.2	47850.0	14665.1	19349.4	34014.4
	mt discard	0.0	366.6	366.6	847.8	995.2	1843.1	1241.1	899.7	2140.8	555.7	1163.9	1719.5
2002	ntrips	7	4	11	1	22	23	12	22	34	7	20	27
	dkratio	0.08	0.08	0.16	0.10	0.06	0.16	0.08	0.11	0.19	0.07	0.08	0.14
	mt kept	11123.6	17851.7	28975.3	30540.0	34154.5	64694.5	28493.7	30490.7	58984.4	14310.0	19683.6	33993.6
	mt discard	835.8	1509.2	2345.0	3015.8	2132.3	5148.1	2385.2	3304.9	5690.1	962.1	1506.2	2468.3
2003	ntrips	15	14	29	14	6	20	17	17	34	15	24	39
	dkratio	0.11	0.07	0.18	0.05	0.10	0.15	0.05	0.09	0.14	0.06	0.08	0.13
	mt kept	11318.7	16164.5	27483.3	35699.1	36028.7	71727.8	31001.4	30538.0	61539.3	19571.0	22027.6	41598.6
	mt discard	1214.6	1111.0	2325.6	1739.3	3689.0	5428.2	1538.6	2863.9	4402.4	1149.6	1670.8	2820.4
2004	ntrips	9	13	22	27	28	55	56	26	82	35	54	89
	dkratio	0.08	0.09	0.17	0.04	0.04	0.07	0.03	0.06	0.09	0.05	0.04	0.09
	mt kept	16614.0	18777.6	35391.5	11961.7	16771.9	28733.6	2262.9	6101.8	8364.7	1616.5	9072.8	10689.3
	mt discard	1353.9	1662.9	3016.8	447.6	619.9	1067.5	65.7	355.2	420.9	83.1	382.1	465.1
2005	ntrips	28	33	61	24	28	52	70	43	113	38	25	63
	dkratio	0.06	0.05	0.11	0.03	0.06	0.09	0.05	0.05	0.10	0.07	0.04	0.11
	mt kept	972.3	9753.4	10725.7	1958.8	17194.4	19153.2	2204.5	14651.3	16855.7	1129.5	6036.1	7165.6
	mt discard	55.6	528.7	584.4	54.5	996.4	1050.9	101.6	733.4	835.0	76.8	246.5	323.2
Total	ntrips	90	109	199	119	149	268	193	252	445	133	263	396

Table B2.1. Strata from the NMFS spring/fall, winter, and scallop surveys which were combined for bootstrapping.

Spring/Fall-Offshore	Spring/Fall-Inshore	Winter Survey	Winter Rosette	Scallop Survey	
	1010	3020+3030+3040+3050	1010	1020	6060
	1020	3060+3070+3080	1020	1030	6070
	1030 +1040	3090+3100+3110	1030	1100	6100
	1050	3120+3130+3140	1050	1110+1120	6110
	1060	3150+3160+3170	1060+1070	1610	6140
	1070 +1080	3180+3190	1080	1620+1630+1640	6150
	1090	3200	1090	1650	6180
	1100	3210-3220	1100	1660	6190
	1110+1120	3230	1110	1670+1680	6220
	1130	3240+3250+3260	1610	1690	6230
	1140	3270+3280+3290	1620+1630	1700	6240
	1140+1150	3300+3310	1650	1710+1720	6250
	1160	3320	1660+1670	1740	6260
	1170	3330+3340	1690	1750+1760	6270
	1170+1180	3350	1700+1710		6280+6290
	1190	3360+3370	1730		6300
	1200	3380	1740+1750		6310
	1210	3390+3400			6330
	1220	3410			6340
	1230	3420+3430			6350
	1240	3440			6460
	1250	3450+3460			6470
	1260	3550			6490
	1270	3550+3560			6500
	1280	3580+3590+3600+3610+			6510
	1290+1300	3630+3640+3650+3660			6520
	1330+1340+1350 (1)				6530
	1360				6540
	1370				6550
	1380				6580
	1390+1400				6590
	1610+1620+1630+				6600
	1640+1650 (clearnose/rosette)				6610
	1650+1660 (winter/little)				6621+6622
	1670				6631+6631+6640
	1670+1680				6651+6652
	1690				6661+6662
	1700				6710+6720
	1710+1720				6740
	1730				
	1740				
	1750+1760				

Table B2.2. Abundance and biomass from NEFSC spring surveys for winter skate for the Gulf of Maine to Mid-Atlantic region (offshore strata 1-30,33-40,61-76). The mean index, 95% confidence intervals, individual fish weight, minimum, mean, and maximum length, 5th, 50th, and 95th percentiles of length, number of nonzero tows, and number of fish caught are presented for 1968-2006.

	weight/tow			number/tow			ind wt	length					nonzero		
	mean	lower	upper	mean	lower	upper		min	5%	50%	mean	95% max	tows	no fish	
1968	2.171	1.640	2.978	0.854	0.530	1.178	2.542	32	42	56	58.6	79	112	36	232
1969	5.913	4.283	7.543	2.790	1.907	3.672	2.119	15	25	53	53.5	79	111	68	640
1970	2.645	1.627	3.663	0.971	0.626	1.317	2.723	37	43	59	61.0	83	103	44	275
1971	3.387	2.066	4.708	1.894	0.873	2.915	1.788	15	30	48	51.8	76	103	41	513
1972	4.620	3.033	6.207	2.602	1.253	3.951	1.776	15	24	48	49.5	74	97	63	634
1973	2.905	2.024	3.786	1.257	0.824	1.689	2.311	21	32	55	55.5	79	100	49	347
1974	2.091	1.352	2.830	0.943	0.505	1.381	2.218	29	34	53	55.6	76	101	46	222
1975	2.395	1.521	3.269	0.893	0.556	1.230	2.682	17	38	59	59.4	79	99	46	227
1976	2.153	1.075	3.231	0.628	0.279	0.978	3.428	22	38	64	63.1	86	97	29	160
1977	3.111	1.815	4.408	0.838	0.513	1.163	3.712	20	29	69	64.7	93	106	35	204
1978	8.275	-0.327	16.877	1.355	0.121	2.589	6.108	43	62	79	78.5	89	96	41	395
1979	1.852	1.095	2.608	0.333	0.206	0.459	5.568	23	35	78	73.5	93	105	50	204
1980	2.990	1.751	4.229	0.538	0.331	0.745	5.559	22	45	78	74.8	97	104	49	187
1981	4.140	2.905	5.376	2.083	1.199	2.966	1.988	15	22	39	47.6	91	104	56	586
1982	5.773	3.876	7.670	2.137	1.195	3.080	2.701	15	26	46	54.9	95	109	64	707
1983	14.329	8.182	20.476	3.264	1.772	4.756	4.391	15	28	67	64.4	96	108	65	817
1984	10.480	6.816	14.144	2.948	1.694	4.201	3.555	15	22	60	59.0	94	106	59	753
1985	16.373	11.119	21.627	7.861	4.653	11.069	2.083	15	22	46	54.3	94	116	65	1891
1986	10.019	6.973	13.064	3.538	2.181	4.894	2.832	15	27	58	62.2	97	108	67	969
1987	13.126	8.428	17.824	4.821	2.926	6.716	2.723	15	29	56	60.8	97	108	69	1221
1988	14.543	10.508	18.577	7.409	4.736	10.082	1.963	15	25	43	53.4	95	107	73	1827
1989	10.141	7.736	12.546	4.252	3.095	5.409	2.385	15	25	59	61.4	94	109	74	1429
1990	7.183	5.184	9.183	5.087	2.657	7.517	1.412	15	27	41	49.9	91	105	67	1678
1991	6.965	4.012	9.918	3.239	1.979	4.499	2.150	17	29	54	58.6	93	107	57	1027
1992	5.988	3.369	8.607	5.208	0.635	9.780	1.150	15	23	42	46.2	82	106	51	1303
1993	4.761	3.392	6.131	4.305	2.561	6.049	1.106	15	25	42	46.5	82	103	62	1118
1994	1.421	0.990	1.852	1.673	1.150	2.196	0.849	20	32	43	46.5	69	99	49	519
1995	2.151	1.340	2.961	1.998	1.231	2.766	1.076	15	34	44	48.4	71	103	49	476
1996	4.547	2.499	6.594	4.470	2.384	6.556	1.017	15	34	46	49.0	68	96	56	1004
1997	3.065	1.325	4.806	1.834	0.987	2.680	1.672	15	23	51	53.5	78	93	39	458
1998	1.504	0.913	2.096	1.045	0.561	1.529	1.439	15	32	51	53.4	79	94	52	341
1999	2.968	1.303	4.632	1.876	0.870	2.883	1.582	16	27	54	54.9	79	100	52	482
2000	4.358	2.273	6.443	1.998	1.041	2.954	2.181	15	34	62	62.2	82	99	57	457
2001	3.496	1.889	5.103	2.350	0.912	3.787	1.488	20	27	44	52.1	82	100	48	556
2002	3.132	1.650	4.614	1.688	0.949	2.426	1.856	15	29	59	58.6	82	93	48	407
2003	2.799	1.471	4.127	2.047	1.164	2.931	1.367	15	29	49	53.4	82	100	61	606
2004	2.446	1.512	3.379	1.547	1.015	2.080	1.581	18	29	50	54.6	85	97	56	356
2005	1.757	0.869	2.645	1.672	0.470	2.874	1.051	15	30	45	48.6	75	97	52	375
2006	3.041	1.020	5.062	3.067	0.465	5.668	0.992	15	24	43	47.2	75	99	55	779

Table B2.3. Abundance and biomass from NEFSC autumn surveys for winter skate for the Gulf of Maine to Mid-Atlantic region (offshore strata 1-30,33-40,61-76). The mean index, 95% confidence intervals, individual fish weight, minimum, mean, and maximum length, 5th, 50th, and 95th percentiles of length, number of nonzero tows, and number of fish caught are presented for 1967-2005.

	weight/tow			number/tow			ind wt	length					nonzero		
	mean	lower	upper	mean	lower	upper		min	5%	50%	mean	95% max	tows	no fish	
1967	2.159	1.248	3.070	0.825	0.544	1.106	2.617	15	32	56	57.0	83	107	35	213
1968	1.865	1.264	2.466	0.928	0.573	1.284	2.009	15	25	51	51.8	80	100	56	227
1969	1.315	0.856	1.774	0.540	0.351	0.730	2.435	16	37	58	58.3	78	90	36	161
1970	2.996	1.663	4.328	1.357	0.576	2.138	2.208	21	33	54	56.0	77	97	53	331
1971	1.078	0.542	1.615	0.588	0.238	0.938	1.833	18	27	50	50.5	77	93	35	163
1972	2.958	2.113	3.804	2.071	1.413	2.728	1.429	15	24	42	46.9	74	96	64	592
1973	4.686	3.348	6.024	2.238	1.510	2.967	2.093	21	32	54	55.1	78	101	48	662
1974	2.097	1.418	2.777	1.024	0.672	1.376	2.048	17	30	52	53.6	77	103	39	262
1975	1.315	0.682	1.948	0.420	0.260	0.580	3.130	16	24	62	60.9	84	103	31	115
1976	2.655	0.918	4.392	0.766	0.257	1.274	3.468	19	22	70	59.9	83	98	21	190
1977	4.095	2.814	5.376	1.617	1.049	2.185	2.533	15	25	47	54.8	87	100	51	662
1978	4.989	3.778	6.199	1.042	0.777	1.307	4.787	15	36	77	73.6	94	105	94	762
1979	5.121	3.768	6.475	1.290	0.976	1.603	3.971	20	31	75	66.0	93	113	89	975
1980	6.233	3.806	8.660	1.558	1.015	2.100	4.002	15	37	66	66.4	95	108	60	602
1981	5.668	3.726	7.610	1.505	0.916	2.094	3.766	15	25	61	62.3	99	110	54	516
1982	8.306	4.780	11.831	3.889	0.502	7.275	2.136	15	22	35	46.7	92	112	45	950
1983	12.852	5.693	20.012	2.590	1.447	3.733	4.962	16	28	78	70.5	95	108	42	843
1984	13.323	8.465	18.181	3.653	2.450	4.857	3.647	15	21	55	59.0	95	110	52	1187
1985	9.182	6.552	11.811	2.665	1.842	3.488	3.446	15	32	79	69.7	97	107	37	827
1986	15.800	7.184	24.415	4.196	2.496	5.895	3.766	15	34	75	71.5	97	110	46	1089
1987	11.063	8.200	13.925	4.291	2.783	5.800	2.578	15	25	58	60.1	97	109	49	1165
1988	7.564	4.961	10.167	3.126	2.223	4.028	2.420	15	23	49	57.4	97	110	45	888
1989	5.081	3.288	6.874	2.084	1.422	2.745	2.439	15	27	59	61.0	96	106	48	720
1990	7.145	4.658	9.632	2.451	1.397	3.505	2.915	22	33	68	66.5	97	107	44	895
1991	4.724	3.627	5.821	2.631	1.866	3.396	1.796	17	31	48	56.3	94	106	58	941
1992	3.582	2.140	5.024	1.862	1.116	2.608	1.923	22	33	51	57.4	91	103	39	509
1993	1.905	1.280	2.530	1.458	0.965	1.951	1.307	16	33	48	52.8	88	104	50	452
1994	2.120	1.432	2.808	1.925	1.217	2.633	1.101	15	26	44	47.6	84	106	52	503
1995	1.985	1.214	2.757	1.769	1.047	2.491	1.122	17	31	46	49.4	77	102	43	424
1996	2.276	1.615	2.937	1.426	0.985	1.867	1.596	17	35	51	54.9	83	104	44	370
1997	2.455	1.150	3.760	1.611	0.738	2.484	1.524	19	34	54	55.5	79	101	55	415
1998	3.753	2.488	5.018	2.140	1.438	2.843	1.753	19	27	55	56.8	83	101	50	609
1999	5.089	2.080	8.098	2.642	1.320	3.963	1.927	15	31	58	58.0	80	111	53	966
2000	4.378	2.390	6.366	2.535	1.351	3.718	1.727	18	25	56	55.5	82	99	45	756
2001	3.887	2.442	5.333	2.165	1.415	2.914	1.796	15	32	58	57.8	83	98	53	601
2002	5.600	3.417	7.782	2.323	1.535	3.111	2.411	16	33	66	63.9	87	101	55	743
2003	3.386	2.111	4.662	1.498	0.928	2.068	2.260	16	33	62	63.0	87	104	43	435
2004	4.031	2.632	5.430	1.942	1.343	2.542	2.075	15	33	62	60.4	87	102	50	611
2005	2.615	1.791	3.439	1.671	1.005	2.337	1.565	18	31	52	55.1	81	98	54	475

Table B2.4. Abundance and biomass from NEFSC winter surveys for winter skate for the Georges Bank to Mid-Atlantic region (offshore strata 1-3,5-7,9-11,13-14,16,61-63,65-67,69-71,73-75). The mean index, 95% confidence intervals, individual fish weight, minimum, mean, and maximum length, 5th, 50th, and 95th percentiles of length, number of nonzero tows, and number of fish caught are presented for 1992-2006. Stratum 16 not sampled in 1993, 2000, 2002-2006. Strata 13 and 14 not sampled in 2003. Stratum 63 not sampled in 1993. Stratum 14 not sampled in 2005.

	weight/tow			number/tow			ind wt	length					nonzero		
	mean	lower	upper	mean	lower	upper		min	5%	50%	mean	95% max	tows	no fish	
1992	31.571	21.666	41.476	39.759	23.811	55.707	0.794	15	24	38	42.4	74	105	62	4042
1993	10.261	6.052	14.469	10.676	2.331	19.021	0.961	15	23	41	44.1	81	106	47	841
1994	14.439	10.586	18.293	14.216	8.465	19.966	1.016	15	29	40	45.4	81	102	33	1079
1995	23.268	14.507	32.029	35.528	18.060	52.996	0.655	15	27	40	42.2	59	104	53	3773
1996	25.239	7.110	43.369	43.515	7.434	79.596	0.580	15	25	40	41.2	56	99	59	4055
1997	11.643	7.287	15.999	12.565	7.109	18.022	0.927	15	27	45	46.9	71	98	46	1414
1998	22.464	15.878	29.050	19.950	13.556	26.344	1.126	15	26	48	49.4	74	105	60	2092
1999	21.089	13.628	28.549	18.380	10.899	25.860	1.147	15	24	49	49.0	74	101	52	1932
2000	11.315	4.814	17.815	5.697	2.799	8.596	1.986	18	27	56	57.6	88	101	33	486
2001	28.634	19.682	37.585	15.555	9.234	21.875	1.841	16	30	58	57.5	84	100	76	2025
2002	28.733	17.246	40.220	15.982	6.565	25.400	1.798	15	24	49	55.1	88	107	53	1849
2003	17.425	7.871	26.979	29.540	-6.318	64.399	0.590	15	15	28	34.8	75	99	34	1662
2004	26.618	13.793	39.444	13.833	9.244	18.422	1.924	15	31	55	58.0	86	102	58	1342
2005	19.424	8.976	29.872	16.081	6.327	25.836	1.208	16	26	48	50.3	76	95	46	972
2006	32.411	12.125	52.697	18.233	9.593	26.874	1.778	15	30	56	57.4	86	102	60	1776

Table B2.5. Abundance and biomass from NEFSC spring surveys for little skate for the Gulf of Maine to Mid-Atlantic region (offshore strata 1-30,33-40,61-76, and inshore strata 1-66). The mean index, 95% confidence intervals, individual fish weight, minimum, mean, and maximum length, 5th, 50th, and 95th percentiles of length, number of nonzero tows, and number of fish caught are presented for 1976-2006.

	weight/tow			number/tow			ind wt	length					nonzero		
	mean	lower	upper	mean	lower	upper		min	5%	50%	mean	95% max	tows	no fish	
1976	1.308	0.861	1.755	3.218	2.136	4.301	0.406	8	12	40	36.9	48	58	172	4202
1977	1.347	0.882	1.811	3.336	2.177	4.494	0.404	6	19	41	38.7	48	57	160	4218
1978	1.391	0.962	1.821	3.286	2.363	4.209	0.423	8	11	42	37.5	48	62	160	3945
1979	0.650	0.501	0.799	2.182	1.429	2.934	0.298	4	12	31	32.7	48	56	204	5684
1980	2.206	1.705	2.707	5.898	4.384	7.413	0.374	8	12	37	36.0	48	57	224	9031
1981	1.501	1.200	1.803	3.426	2.714	4.137	0.438	6	15	41	38.3	49	55	175	4113
1982	3.627	2.644	4.611	7.214	5.351	9.076	0.503	9	18	43	40.7	49	55	153	3564
1983	5.718	4.017	7.420	13.024	9.215	16.832	0.439	6	16	42	37.9	48	57	167	6365
1984	4.094	2.615	5.574	10.023	6.787	13.258	0.409	7	11	40	35.8	48	55	139	4573
1985	6.265	4.628	7.901	15.175	10.575	19.775	0.413	8	11	40	36.8	48	57	148	6535
1986	2.753	1.712	3.795	8.554	3.399	13.709	0.322	6	14	33	34.5	48	57	153	3512
1987	4.625	3.149	6.102	16.031	10.222	21.839	0.289	8	12	32	33.1	47	55	145	9584
1988	5.083	3.444	6.721	14.593	9.688	19.498	0.348	8	11	36	34.5	48	55	130	4195
1989	6.634	3.434	9.834	21.643	9.844	33.441	0.307	8	13	34	33.4	46	55	144	10760
1990	4.993	2.397	7.589	14.979	5.250	24.708	0.333	8	11	37	34.7	47	56	132	7085
1991	5.990	4.672	7.308	18.731	14.059	23.403	0.320	8	13	34	34.2	47	58	178	11986
1992	5.297	2.477	8.118	16.793	5.234	28.352	0.315	8	16	33	34.1	46	57	136	6392
1993	7.524	5.187	9.862	22.361	15.110	29.611	0.336	9	12	36	35.0	47	54	160	9574
1994	3.622	2.425	4.819	9.365	6.297	12.434	0.387	9	19	39	37.3	46	54	154	8548
1995	2.872	2.024	3.720	7.574	5.215	9.933	0.379	8	10	39	36.1	47	59	148	3801
1996	7.574	5.522	9.626	18.185	12.647	23.722	0.417	7	17	41	38.3	48	58	168	9086
1997	2.708	2.231	3.184	6.671	5.504	7.837	0.406	9	13	40	37.8	48	54	151	4840
1998	7.471	6.156	8.787	20.938	16.232	25.644	0.357	7	17	37	35.8	47	56	195	15710
1999	9.978	7.688	12.267	28.377	20.345	36.409	0.352	8	12	38	35.4	47	56	157	16406
2000	8.596	6.647	10.545	19.677	15.270	24.083	0.437	9	21	41	38.9	47	57	179	15367
2001	6.835	4.297	9.372	15.347	9.900	20.794	0.445	8	18	42	39.5	48	58	154	6978
2002	6.444	4.546	8.341	16.280	11.306	21.254	0.396	8	11	42	37.7	48	57	154	11983
2003	6.486	4.505	8.486	15.116	10.195	20.036	0.429	9	22	42	40.1	48	55	169	6919
2004	7.219	5.374	9.064	17.039	11.917	22.162	0.424	7	25	42	39.9	47	57	147	9866
2005	3.241	2.305	4.177	7.328	5.515	9.141	0.442	8	13	43	38.9	48	53	138	3108
2006	3.323	1.892	4.753	7.878	4.544	11.211	0.422	7	11	42	38.4	48	55	138	2771

Table B2.6. Abundance and biomass from NEFSC autumn surveys for little skate for the Gulf of Maine to Mid-Atlantic region (offshore strata 1-30,33-40,61-76, and inshore strata 1-66). The mean index, 95% confidence intervals, individual fish weight, minimum, mean, and maximum length, 5th, 50th, and 95th percentiles of length, number of nonzero tows, and number of fish caught are presented for 1975-2005.

	weight/tow			number/tow			ind wt	length					nonzero		
	mean	lower	upper	mean	lower	upper		min	5%	50%	mean	95% max	tows	no fish	
1975	2.379	1.508	3.249	4.858	3.063	6.654	0.490	10	18	43	40.3	49	56	118	1386
1976	2.185	1.582	2.788	4.576	3.278	5.875	0.477	8	22	43	40.6	48	58	74	1421
1977	3.172	2.271	4.072	6.589	4.683	8.495	0.481	9	22	43	40.7	49	56	122	2438
1978	2.938	2.140	3.736	5.613	3.947	7.279	0.523	10	22	44	42.0	49	62	144	3171
1979	2.902	2.343	3.461	5.944	4.790	7.098	0.488	8	21	44	41.0	49	58	177	4597
1980	2.312	1.768	2.855	5.055	4.102	6.008	0.457	9	13	43	37.9	49	55	142	2451
1981	2.779	2.175	3.382	5.847	4.479	7.215	0.475	9	19	43	39.9	49	58	111	1728
1982	5.799	2.673	8.925	15.391	6.979	23.803	0.377	9	18	36	36.4	48	56	123	3848
1983	1.990	1.340	2.639	5.244	3.268	7.219	0.379	8	17	38	36.6	49	55	100	1313
1984	2.483	1.688	3.279	5.487	3.789	7.185	0.453	10	13	43	38.3	49	56	95	1350
1985	2.423	1.629	3.217	6.103	4.006	8.199	0.397	9	17	40	37.5	49	58	119	2761
1986	1.502	1.125	1.879	4.203	2.759	5.648	0.357	10	16	36	35.7	49	55	96	1240
1987	2.311	1.532	3.090	8.104	4.084	12.124	0.285	10	14	31	32.4	48	55	96	2093
1988	1.177	0.663	1.692	3.524	2.144	4.903	0.334	9	13	34	33.8	48	56	80	1128
1989	2.321	1.091	3.552	6.698	3.574	9.823	0.347	5	13	38	35.2	48	56	100	2288
1990	1.242	0.802	1.681	3.204	1.913	4.495	0.388	9	17	40	37.3	48	54	98	1183
1991	3.552	1.494	5.610	8.854	3.301	14.408	0.401	11	24	40	39.3	47	55	102	2866
1992	1.542	1.126	1.958	4.294	2.993	5.595	0.359	6	14	38	36.0	49	63	107	1460
1993	1.180	0.805	1.555	3.136	2.174	4.099	0.376	10	14	41	36.3	49	55	115	1124
1994	1.906	1.349	2.463	4.329	3.102	5.556	0.440	9	18	42	39.4	49	59	131	1729
1995	2.682	1.795	3.569	5.527	3.739	7.316	0.485	9	21	43	41.2	48	56	118	2058
1996	2.239	1.504	2.973	5.146	3.582	6.711	0.435	9	13	42	38.1	49	60	112	1878
1997	2.148	1.533	2.763	4.825	3.407	6.243	0.445	10	21	43	40.0	49	60	109	1757
1998	2.704	1.968	3.441	5.914	4.237	7.591	0.457	10	20	43	40.2	49	57	129	1713
1999	3.210	2.344	4.076	7.698	5.042	10.355	0.417	6	21	41	38.4	48	58	143	2289
2000	2.550	1.607	3.493	5.711	3.761	7.661	0.447	10	22	43	40.1	49	63	116	1759
2001	2.845	2.032	3.658	6.044	4.265	7.823	0.471	10	22	43	41.4	49	57	130	1985
2002	3.375	2.371	4.379	7.358	5.170	9.545	0.459	9	23	43	40.8	49	54	135	2515
2003	7.740	5.218	10.261	18.199	11.697	24.702	0.425	10	18	41	39.3	48	55	141	6523
2004	2.265	1.388	3.141	4.556	2.714	6.399	0.497	8	26	43	42.3	49	57	122	2270
2005	3.766	2.281	5.252	7.606	4.698	10.515	0.495	9	21	44	41.8	49	55	122	2437

Table B2.7. Abundance and biomass from NEFSC winter surveys for little skate for the Georges Bank to Mid-Atlantic region (offshore strata 1-3,5-7,9-11,13-14,16,61-63,65-67,69-71,73-75). The mean index, 95% confidence intervals, individual fish weight, minimum, mean, and maximum length, 5th, 50th, and 95th percentiles of length, number of nonzero tows, and number of fish caught are presented for 1992-2006. Stratum 16 not sampled in 1993, 2000, 2002-2006. Strata 13 and 14 not sampled in 2003. Stratum 63 not sampled in 1993. Stratum 14 not sampled in 2005.

	weight/tow			number/tow			ind wt	length					nonzero		
	mean	lower	upper	mean	lower	upper		min	5%	50%	mean	95% max	tows	no fish	
1992	66.321	50.335	82.306	170.155	127.459	212.852	0.390	9	21	39	38.0	47	62	89	18418
1993	56.377	43.992	68.761	166.927	120.808	213.045	0.338	9	19	36	35.8	46	53	94	16026
1994	49.812	37.387	62.236	131.570	95.199	167.940	0.379	10	20	39	37.5	47	60	67	10113
1995	57.368	39.311	75.424	138.769	87.458	190.081	0.413	8	24	40	39.1	47	53	95	14530
1996	64.056	47.616	80.495	150.579	108.945	192.213	0.425	9	15	41	38.7	47	62	102	15701
1997	51.901	39.986	63.816	117.751	92.288	143.214	0.441	9	23	42	40.2	47	58	92	12084
1998	57.512	49.249	65.775	138.503	111.869	165.136	0.415	9	20	41	38.7	47	57	105	14492
1999	58.566	46.296	70.837	138.876	104.459	173.292	0.422	6	22	41	39.3	48	55	99	14740
2000	50.7247	37.806	63.643	115.572	87.597	143.547	0.439	8	20	42	39.5	47	53	92	10722
2001	47.429	38.584	56.274	105.749	85.050	126.447	0.449	8	11	42	39.7	48	63	120	12956
2002	63.3207	49.704	76.937	149.228	116.464	181.993	0.424	8	23	42	40.2	48	56	110	17329
2003	63.943	44.340	83.546	151.185	105.428	196.943	0.423	9	24	41	40.0	48	54	62	8870
2004	71.8027	50.398	87.208	162.456	128.807	196.106	0.442	10	25	41	40.5	47	54	94	13822
2005	64.149	45.820	82.478	140.444	93.239	187.648	0.457	9	25	42	40.9	47	54	68	9544
2006	59.2538	48.374	70.134	116.433	96.399	136.467	0.509	9	23	43	42.1	49	55	87	12687

Table B2.8. Abundance and biomass from NEFSC spring surveys for barndoor skate for the Gulf of Maine to Southern New England region (offshore strata 1-30, 33-40). The mean index, 95% confidence intervals, individual fish weight, minimum, mean, and maximum length, 5th, 50th, and 95th percentiles of length, number of nonzero tows, and number of fish caught are presented for 1968-2006.

	weight/tow			number/tow			ind wt	length					nonzero		
	mean	lower	upper	mean	lower	upper		min	5%	50%	mean	95% max	tows	no fish	
1968	0.374	0.075	0.673	0.138	0.026	0.249	2.716	41	46	61	71.7	115	118	10	21
1969	0.658	-0.364	1.681	0.145	-0.011	0.301	4.539	33	42	70	83.1	119	120	8	22
1970	0.111	0.033	0.188	0.047	0.017	0.078	2.350	45	44	62	68.2	104	105	9	10
1971	0.116	0.018	0.214	0.102	0.021	0.183	1.134	26	31	59	57.1	69	80	8	20
1972	0.222	0.028	0.416	0.023	0.005	0.041	9.617	63	62	119	104.7	123	124	6	6
1973	0.010	-0.001	0.022	0.017	0.000	0.034	0.621	51	51	51	54.1	59	60	3	3
1974	0.020	-0.005	0.045	0.017	-0.002	0.037	1.146	43	43	58	53.3	59	60	3	3
1975	0.001	-0.001	0.003	0.001	-0.001	0.003	0.900	60	60	60	60.0	60	60	1	1
1976	0.010	-0.010	0.030	0.006	-0.005	0.017	1.800	61	61	61	61.0	61	61	1	1
1977	0.000	0.000	0.000	0.000	0.000	0.000	-	-	-	-	-	-	-	0	0
1978	0.015	-0.009	0.040	0.016	-0.006	0.039	0.933	51	50	55	56.3	61	62	2	3
1979	0.000	0.000	0.000	0.000	0.000	0.000	-	-	-	-	-	-	-	0	0
1980	0.000	0.000	0.000	0.000	0.000	0.000	-	-	-	-	-	-	-	0	0
1981	0.000	0.000	0.000	0.000	0.000	0.000	-	-	-	-	-	-	-	0	0
1982	0.002	-0.001	0.005	0.002	-0.002	0.005	1.000	54	54	54	54.0	54	54	1	1
1983	0.000	0.000	0.000	0.000	0.000	0.000	-	-	-	-	-	-	-	0	0
1984	0.000	0.000	0.000	0.000	0.000	0.000	-	-	-	-	-	-	-	0	0
1985	0.001	0.000	0.002	0.007	-0.004	0.017	0.076	20	20	20	24.6	37	38	2	2
1986	0.003	-0.001	0.007	0.011	-0.004	0.026	0.250	33	33	41	37.5	41	42	2	2
1987	0.002	-0.002	0.006	0.007	-0.006	0.020	0.300	37	37	37	37.0	37	37	1	1
1988	0.000	0.000	0.000	0.000	0.000	0.000	-	-	-	-	-	-	-	0	0
1989	0.007	-0.007	0.021	0.006	-0.006	0.019	1.100	60	60	60	60.0	60	60	1	1
1990	0.000	0.000	0.000	0.000	0.000	0.000	-	-	-	-	-	-	-	0	0
1991	0.002	-0.002	0.006	0.007	-0.006	0.020	0.300	38	38	38	38.0	38	38	1	1
1992	0.136	-0.117	0.389	0.013	-0.006	0.032	10.397	41	41	117	98.2	124	125	2	4
1993	0.032	0.024	0.039	0.028	0.005	0.051	1.147	31	31	37	45.3	89	90	5	5
1994	0.084	-0.023	0.191	0.029	-0.001	0.059	2.926	46	46	65	70.1	120	121	4	6
1995	0.015	-0.007	0.037	0.012	-0.005	0.029	1.254	55	55	63	59.6	63	64	2	2
1996	0.062	-0.039	0.162	0.025	-0.003	0.054	2.465	23	23	66	63.2	111	112	4	6
1997	0.077	0.006	0.148	0.035	0.007	0.063	2.216	39	39	67	68.7	89	90	6	7
1998	0.169	-0.024	0.363	0.061	0.015	0.106	2.799	26	26	60	64.4	122	123	8	15
1999	0.279	-0.102	0.660	0.052	0.011	0.094	5.343	28	28	74	80.9	125	126	8	11
2000	0.473	0.246	0.699	0.138	0.076	0.200	3.419	19	20	68	71.4	125	127	14	29
2001	0.170	0.032	0.307	0.141	0.048	0.234	1.200	20	20	52	54.8	77	115	13	30
2002	0.477	0.233	0.721	0.129	0.047	0.212	3.690	35	35	66	77.3	127	133	13	26
2003	0.885	0.341	1.429	0.302	0.172	0.432	2.928	19	19	54	64.0	126	132	23	64
2004	0.103	0.039	0.167	0.111	0.032	0.189	0.928	19	19	55	50.6	81	89	12	24
2005	0.670	0.120	1.221	0.319	0.073	0.565	2.101	26	33	68	68.1	109	122	15	59
2006	1.706	-0.995	4.407	0.586	-0.087	1.260	2.910	19	19	69	69.9	123	134	22	196

Table B2.9. Abundance and biomass from NEFSC autumn surveys for barndoor skate for the Gulf of Maine to Southern New England region (offshore strata 1-30, 33-40). The mean index, 95% confidence intervals, individual fish weight, minimum, mean, and maximum length, 5th, 50th, and 95th percentiles of length, number of nonzero tows, and number of fish caught are presented for 1963-2005.

	weight/tow			number/tow			ind wt	length					nonzero		
	mean	lower	upper	mean	lower	upper		min	5%	50%	mean	95% max	tows	no fish	
1963	2.633	1.604	3.663	0.762	0.468	1.056	3.458	28	44	69	74.6	121	136	47	120
1964	1.212	0.489	1.934	0.400	0.229	0.570	3.030	40	41	69	72.7	112	122	32	63
1965	1.822	1.115	2.528	0.695	0.441	0.949	2.622	27	42	67	69.9	111	134	36	95
1966	0.811	0.394	1.229	0.459	0.243	0.675	1.767	23	38	60	63.0	88	115	26	62
1967	0.438	-0.025	0.901	0.064	0.017	0.111	6.844	45	52	65	81.0	119	120	10	14
1968	0.285	0.123	0.447	0.132	0.067	0.198	2.150	42	42	67	69.1	96	132	18	29
1969	0.054	-0.003	0.111	0.035	-0.006	0.076	1.551	51	51	62	62.0	73	74	5	8
1970	0.066	-0.046	0.178	0.011	-0.005	0.027	5.868	66	66	65	89.1	128	129	2	2
1971	0.170	-0.051	0.392	0.117	-0.077	0.311	1.455	35	35	53	54.6	63	120	6	19
1972	0.096	-0.073	0.265	0.012	-0.001	0.026	7.751	59	59	70	90.3	132	133	3	3
1973	0.004	-0.001	0.009	0.008	-0.003	0.019	0.474	41	41	47	48.7	52	53	2	3
1974	0.000	0.000	0.000	0.000	0.000	0.000	-	-	-	-	-	-	-	0	0
1975	0.017	-0.016	0.049	0.010	-0.010	0.031	1.600	70	70	70	70.0	70	70	1	2
1976	0.047	0.002	0.091	0.058	-0.003	0.119	0.810	50	50	51	54.6	61	62	7	10
1977	0.000	0.000	0.000	0.000	0.000	0.000	-	-	-	-	-	-	-	0	0
1978	0.000	0.000	0.000	0.000	0.000	0.000	-	-	-	-	-	-	-	0	0
1979	0.009	-0.008	0.026	0.003	-0.003	0.009	3.000	78	78	78	78.0	78	78	1	1
1980	0.000	0.000	0.000	0.000	0.000	0.000	-	-	-	-	-	-	-	0	0
1981	0.000	0.000	0.000	0.000	0.000	0.000	-	-	-	-	-	-	-	0	0
1982	0.000	0.000	0.000	0.000	0.000	0.000	-	-	-	-	-	-	-	0	0
1983	0.000	0.000	0.000	0.000	0.000	0.000	-	-	-	-	-	-	-	0	0
1984	0.010	-0.004	0.024	0.003	0.000	0.007	2.900	61	61	84	73.0	84	85	2	2
1985	0.004	-0.004	0.012	0.002	-0.002	0.005	2.300	70	70	70	70.0	70	70	1	1
1986	0.029	-0.018	0.077	0.015	-0.002	0.032	2.008	22	22	52	51.0	90	91	3	3
1987	0.014	-0.005	0.032	0.012	-0.004	0.027	1.200	53	53	63	58.5	63	64	2	2
1988	0.007	-0.005	0.020	0.009	-0.005	0.022	0.850	34	34	33	44.8	76	77	2	2
1989	0.005	-0.005	0.014	0.002	-0.002	0.007	2.100	71	71	71	71.0	71	71	1	1
1990	0.028	-0.022	0.078	0.010	-0.005	0.024	2.964	60	60	66	76.3	95	96	2	3
1991	0.031	0.000	0.062	0.020	0.000	0.040	1.579	54	54	61	61.3	73	74	4	5
1992	0.002	-0.002	0.007	0.004	-0.004	0.013	0.550	46	46	51	49.0	51	52	1	2
1993	0.141	-0.040	0.321	0.023	0.004	0.042	6.180	45	45	74	86.6	127	128	5	6
1994	0.035	0.001	0.069	0.044	0.006	0.082	0.790	33	33	47	49.4	75	76	6	9
1995	0.111	-0.009	0.231	0.040	-0.006	0.085	2.810	48	48	62	70.9	113	114	4	10
1996	0.042	-0.020	0.104	0.023	0.000	0.046	1.841	25	25	61	59.8	92	93	4	5
1997	0.105	-0.024	0.234	0.026	0.004	0.047	4.065	36	36	79	73.3	124	125	5	5
1998	0.089	-0.036	0.214	0.026	0.002	0.050	3.453	48	48	71	73.9	120	121	4	5
1999	0.300	0.051	0.549	0.085	0.041	0.130	3.511	23	23	54	68.0	120	121	13	15
2000	0.288	0.054	0.521	0.054	0.023	0.085	5.360	29	29	89	85.5	121	122	12	15
2001	0.543	0.050	1.036	0.149	0.052	0.247	3.635	24	40	75	75.5	121	126	16	34
2002	0.778	0.351	1.205	0.269	0.130	0.407	2.893	26	27	59	68.0	119	129	24	59
2003	0.553	0.255	0.852	0.251	0.157	0.345	2.203	22	22	48	57.1	115	120	29	55
2004	1.295	0.677	1.913	0.229	0.122	0.336	5.662	42	47	80	90.1	124	128	23	58
2005	1.036	0.482	1.590	0.360	0.207	0.513	2.877	18	25	64	68.1	118	132	29	73

Table B2.10. Abundance and biomass from NEFSC winter surveys for barndoor skate for the Georges Bank to Mid-Atlantic region (offshore strata 1-3,5-7,9-11,13-14,16,61-63,65-67,69-71,73-75). The mean index, 95% confidence intervals, individual fish weight, minimum, mean, and maximum length, 5th, 50th, and 95th percentiles of length, number of nonzero tows, and number of fish caught are presented for 1992-2006. Stratum 16 not sampled in 1993, 2000, 2002-2006. Strata 13 and 14 not sampled in 2003. Stratum 63 not sampled in 1993. Stratum 14 not sampled in 2005.

	weight/tow			number/tow			ind wt	length					nonzero		
	mean	lower	upper	mean	lower	upper		min	5%	50%	mean	95% max	tows	no fish	
1992	0.000	0.000	0.000	0.000	0.000	0.000	-	-	-	-	-	-	0	0	
1993	0.123	-0.066	0.311	0.052	0.004	0.100	2.358	20	20	65	57.3	119	120	4	6
1994	0.185	-0.027	0.397	0.080	0.011	0.148	2.328	21	21	60	63.5	102	103	5	7
1995	0.362	0.121	0.603	0.198	0.056	0.340	1.828	33	33	62	63.6	88	109	11	24
1996	0.291	0.079	0.503	0.203	0.054	0.352	1.434	19	20	61	56.4	85	92	12	23
1997	0.618	0.208	1.028	0.275	0.032	0.519	2.247	35	38	65	67.7	112	117	10	28
1998	0.455	0.146	0.765	0.464	0.092	0.837	0.980	20	26	41	46.8	83	123	12	57
1999	1.053	0.347	1.760	0.709	0.318	1.099	1.486	23	27	46	53.2	113	124	22	81
2000	2.718	0.153	5.284	1.081	0.518	1.643	2.515	19	19	56	62.78	122	126	12	69
2001	1.373	0.375	2.370	0.929	0.168	1.691	1.477	19	30	60	58.7	95	127	21	107
2002	2.126	0.506	3.746	0.950	0.441	1.459	2.238	18	29	58	63.9	119	126	24	123
2003	0.872	0.429	1.316	0.776	0.227	1.324	1.125	26	31	46	52.0	90	131	11	47
2004	3.397	1.214	5.581	1.786	0.972	2.601	1.902	18	30	53	60.9	116	130	23	247
2005	1.061	0.542	1.581	1.23101	0.703	1.759	0.862	18	19	44	47.8	84	102	21	103
2006	3.015	1.519	4.511	3.171	1.622	4.719	0.951	20	29	51	52.9	78	111	37	355

Table B2.11. Abundance and biomass from NEFSC spring surveys for thorny skate for the Gulf of Maine to Southern New England region (offshore strata 1-30,33-40). The mean index, 95% confidence intervals, individual fish weight, minimum, mean, and maximum length, 5th, 50th, and 95th percentiles of length, number of nonzero tows, and number of fish caught are presented for 1968-2006.

	weight/tow			number/tow			ind wt	length					nonzero		
	mean	lower	upper	mean	lower	upper		min	5%	50%	mean	95% max	tows	no fish	
1968	3.181	2.137	4.225	1.600	1.067	2.134	1.987	12	16	44	47.8	91	105	60	252
1969	4.526	3.186	5.865	1.680	1.161	2.199	2.694	12	13	47	51.1	98	109	64	294
1970	4.202	3.229	5.174	1.990	1.478	2.502	2.112	12	16	41	48.2	95	110	84	363
1971	3.683	2.475	4.891	1.974	1.473	2.475	1.866	12	15	44	47.8	95	116	81	424
1972	4.984	3.757	6.212	2.219	1.773	2.665	2.246	12	16	47	50.7	94	110	91	443
1973	6.622	4.867	8.377	3.562	2.640	4.483	1.859	12	15	44	47.9	91	108	75	574
1974	3.774	2.939	4.608	2.450	1.938	2.962	1.540	9	14	43	45.8	87	106	81	376
1975	3.189	2.222	4.157	1.360	0.990	1.731	2.344	10	15	46	50.5	95	102	62	192
1976	2.895	2.041	3.750	1.671	1.281	2.060	1.733	13	15	43	47.2	90	106	79	339
1977	1.623	1.175	2.070	0.942	0.675	1.209	1.722	12	15	42	48.1	89	111	74	213
1978	1.250	0.806	1.695	0.800	0.579	1.020	1.564	10	15	49	46.8	83	97	71	191
1979	1.079	0.729	1.429	0.582	0.410	0.754	1.853	12	17	51	50.5	84	102	68	163
1980	2.105	1.308	2.901	1.319	0.880	1.757	1.596	11	13	37	43.6	92	100	60	250
1981	2.700	2.065	3.335	1.535	1.139	1.930	1.760	9	13	47	48.1	87	100	60	255
1982	2.345	1.685	3.004	1.144	0.878	1.411	2.049	10	17	53	52.4	85	97	62	218
1983	2.142	1.398	2.886	0.968	0.728	1.209	2.212	12	15	52	52.3	91	103	55	156
1984	1.453	0.818	2.087	0.608	0.462	0.755	2.389	12	16	51	53.0	96	100	40	97
1985	3.074	2.124	4.024	1.413	1.060	1.766	2.175	11	14	44	48.4	95	102	59	209
1986	2.619	1.974	3.263	1.718	1.377	2.058	1.525	10	15	38	44.0	83	98	69	276
1987	1.469	0.805	2.133	0.852	0.646	1.058	1.724	14	16	42	46.6	87	109	53	141
1988	1.173	0.735	1.612	1.106	0.766	1.446	1.061	11	14	32	38.5	82	98	59	176
1989	1.481	0.793	2.169	1.221	0.801	1.640	1.213	11	15	34	40.0	84	101	57	175
1990	1.565	0.833	2.296	1.097	0.688	1.506	1.427	14	16	39	44.5	82	99	49	167
1991	1.542	0.945	2.139	0.858	0.569	1.147	1.797	11	13	47	48.5	89	99	47	132
1992	1.092	0.621	1.564	0.612	0.384	0.840	1.784	14	15	47	48.4	89	102	31	86
1993	0.700	0.366	1.034	0.486	0.327	0.646	1.440	13	13	36	42.0	91	105	37	79
1994	0.435	0.242	0.629	0.439	0.270	0.609	0.991	12	12	37	39.3	67	92	39	80
1995	0.564	0.307	0.821	0.384	0.236	0.533	1.467	9	12	42	45.8	84	92	31	66
1996	0.371	0.178	0.563	0.321	0.106	0.535	1.156	12	12	36	40.8	80	93	24	63
1997	0.422	0.117	0.727	0.270	0.153	0.387	1.560	15	20	47	47.9	82	87	25	47
1998	0.480	0.209	0.752	0.334	0.236	0.431	1.440	12	14	35	40.8	89	98	42	85
1999	0.369	0.093	0.646	0.255	0.163	0.347	1.448	11	17	40	46.2	83	89	26	44
2000	0.423	0.166	0.680	0.470	0.013	0.927	0.900	12	12	24	34.0	82	89	28	103
2001	0.493	0.217	0.769	0.221	0.080	0.362	2.234	14	33	56	57.7	80	92	16	35
2002	0.333	0.138	0.529	0.248	0.127	0.369	1.340	13	15	38	42.0	88	93	24	53
2003	0.594	0.268	0.920	0.332	0.203	0.461	1.790	19	19	50	50.9	86	102	30	57
2004	0.368	0.178	0.557	0.212	0.128	0.296	1.731	15	15	47	49.3	91	95	22	48
2005	0.435	0.154	0.716	0.371	0.167	0.576	1.171	16	17	44	44.4	76	89	19	62
2006	0.201	0.035	0.366	0.186	0.020	0.352	1.079	12	14	41	41.9	83	87	15	29

Table B2.12. Abundance and biomass from NEFSC autumn surveys for thorny skate for the Gulf of Maine to Southern New England region (offshore strata 1-30, 33-40). The mean index, 95% confidence intervals, individual fish weight, minimum, mean, and maximum length, 5th, 50th, and 95th percentiles of length, number of nonzero tows, and number of fish caught are presented for 1963-2005.

	weight/tow			number/tow			ind wt	length					nonzero		
	mean	lower	upper	mean	lower	upper		min	5%	50%	mean	95% max	tows	no fish	
1963	5.371	3.788	6.954	1.672	1.305	2.039	3.213	10	15	60	60.4	99	107	65	297
1964	4.403	3.273	5.534	1.651	1.110	2.192	2.667	10	14	49	52.7	96	110	66	278
1965	4.474	3.268	5.681	1.825	1.243	2.408	2.451	10	14	45	49.6	95	107	55	352
1966	7.971	6.163	9.780	2.371	1.855	2.886	3.362	9	13	61	59.4	95	112	72	364
1967	2.712	1.422	4.001	0.982	0.383	1.580	2.763	12	14	49	52.5	95	100	54	165
1968	4.421	3.321	5.521	1.440	1.040	1.840	3.071	12	16	55	57.5	97	107	59	217
1969	5.715	4.320	7.110	1.833	1.359	2.307	3.117	12	14	55	56.7	97	106	72	289
1970	7.347	5.630	9.065	2.216	1.474	2.958	3.316	8	19	57	60.4	98	109	77	403
1971	5.357	4.149	6.565	1.434	1.095	1.774	3.735	12	18	63	64.1	99	111	69	284
1972	4.119	2.974	5.263	1.717	1.302	2.132	2.399	12	16	51	53.1	94	105	75	306
1973	4.564	3.227	5.902	1.536	1.134	1.939	2.971	12	17	59	61.2	95	111	72	274
1974	3.038	2.166	3.910	1.392	1.025	1.759	2.982	10	14	50	51.1	89	111	79	293
1975	2.474	1.483	3.464	1.027	0.716	1.338	2.409	10	12	47	50.0	94	106	70	232
1976	1.720	1.003	2.437	0.798	0.543	1.052	2.157	12	15	44	49.1	91	103	57	143
1977	3.221	2.513	3.928	1.548	1.223	1.874	2.080	10	13	49	50.7	89	107	108	446
1978	4.291	3.473	5.109	2.145	1.643	2.648	2.000	10	16	49	51.1	88	107	155	874
1979	3.612	2.750	4.474	1.283	0.864	1.702	2.815	11	21	59	59.5	89	101	134	486
1980	4.601	3.344	5.859	1.882	1.484	2.280	2.445	11	14	54	54.4	90	100	84	416
1981	3.339	2.551	4.127	1.305	0.957	1.653	2.559	12	15	55	57.1	90	103	71	223
1982	0.646	0.312	0.981	0.393	0.194	0.592	1.644	11	13	33	43.0	85	96	31	83
1983	2.409	1.553	3.266	0.833	0.589	1.077	2.892	15	20	56	58.8	93	108	49	121
1984	2.887	1.978	3.795	1.270	0.975	1.565	2.272	10	13	48	49.8	94	107	70	211
1985	2.877	1.765	3.988	1.438	1.094	1.783	2.000	12	16	49	49.6	87	103	66	260
1986	1.629	1.068	2.189	1.019	0.771	1.268	1.598	11	15	35	44.2	83	101	61	183
1987	0.944	0.590	1.297	0.841	0.600	1.082	1.123	12	14	36	40.2	78	92	49	143
1988	1.488	0.998	1.978	1.099	0.702	1.497	1.354	13	15	31	41.5	84	101	56	208
1989	1.883	0.980	2.786	1.129	0.787	1.471	1.668	12	14	40	46.2	85	101	63	198
1990	1.704	1.090	2.318	1.040	0.744	1.335	1.639	12	17	42	47.2	85	95	53	202
1991	1.632	0.519	2.745	0.921	0.591	1.251	1.772	13	15	47	49.5	86	108	54	153
1992	0.962	0.551	1.373	0.775	0.461	1.088	1.242	12	13	36	41.2	83	99	48	144
1993	1.658	0.639	2.676	0.901	0.440	1.361	1.840	12	13	47	47.8	91	101	50	157
1994	1.509	0.343	2.675	0.981	0.311	1.652	1.538	13	17	45	46.9	84	97	41	170
1995	0.783	0.331	1.235	0.639	0.183	1.095	1.226	13	14	39	42.2	72	99	37	107
1996	0.814	0.360	1.269	0.602	0.362	0.842	1.352	14	14	39	43.3	85	99	37	102
1997	0.849	0.405	1.293	0.404	0.241	0.567	2.101	12	20	50	52.3	83	99	33	79
1998	0.648	0.297	0.999	0.307	0.145	0.468	2.113	13	14	51	52.4	87	93	30	60
1999	0.479	0.249	0.710	0.326	0.195	0.457	1.469	13	14	41	46.3	87	94	38	72
2000	0.832	0.391	1.274	0.374	0.239	0.510	2.224	13	17	49	52.7	92	102	27	70
2001	0.332	0.087	0.577	0.294	0.157	0.430	1.129	16	17	44	44.1	74	82	23	60
2002	0.436	0.188	0.684	0.260	0.126	0.393	1.679	14	15	35	44.2	85	95	25	52
2003	0.742	0.450	1.035	0.930	0.168	1.691	0.798	12	14	23	34.2	74	89	34	175
2004	0.710	0.272	1.148	0.358	0.167	0.550	1.980	14	18	45	50.1	87	90	23	65
2005	0.224	0.092	0.357	0.205	-0.034	0.443	1.096	13	18	39	42.6	76	90	17	36

Table B2.13. Abundance and biomass from NEFSC spring surveys for smooth skate for the Gulf of Maine to Southern New England region (offshore strata 1-30,33-40). The mean index, 95% confidence intervals, individual fish weight, minimum, mean, and maximum length, 5th, 50th, and 95th percentiles of length, number of nonzero tows, and number of fish caught are presented for 1968-2006.

	weight/tow			number/tow			ind wt	length					nonzero		
	mean	lower	upper	mean	lower	upper		min	5%	50%	mean	95% max	tows	no fish	
1968	0.211	0.080	0.342	0.484	0.129	0.838	0.436	12	24	41	42.1	58	64	17	41
1969	0.377	0.193	0.562	0.834	0.521	1.147	0.452	11	19	48	43.3	58	63	28	82
1970	0.346	0.134	0.557	0.702	0.376	1.028	0.492	9	14	47	40.9	57	61	25	68
1971	0.800	0.395	1.205	1.185	0.650	1.719	0.675	9	20	51	48.2	61	63	40	114
1972	0.621	0.355	0.886	1.016	0.582	1.450	0.611	14	20	47	44.3	59	64	34	122
1973	1.000	0.745	1.255	1.907	1.401	2.414	0.524	9	24	45	44.2	59	65	51	179
1974	1.092	0.594	1.590	2.003	1.109	2.896	0.545	9	9	47	42.7	59	63	47	172
1975	0.240	0.133	0.346	0.383	0.224	0.543	0.626	19	25	49	46.8	59	61	22	37
1976	0.534	0.413	0.655	1.150	0.870	1.429	0.464	12	16	43	39.8	57	60	49	134
1977	0.122	0.066	0.178	0.302	0.158	0.445	0.405	15	18	40	41.4	57	60	28	45
1978	0.251	0.144	0.358	0.413	0.258	0.567	0.609	24	26	50	46.7	58	61	33	56
1979	0.218	0.097	0.340	0.410	0.163	0.657	0.533	15	19	39	40.2	54	61	27	54
1980	0.484	0.316	0.651	0.948	0.625	1.271	0.510	16	20	42	41.9	56	60	42	84
1981	0.358	0.227	0.489	0.782	0.513	1.050	0.458	8	13	38	37.2	57	65	38	70
1982	0.152	0.057	0.247	0.225	0.092	0.357	0.677	11	10	52	45.6	57	64	14	23
1983	0.363	0.219	0.507	0.531	0.335	0.727	0.683	11	21	50	47.9	57	69	25	50
1984	0.065	0.010	0.120	0.124	0.026	0.221	0.523	19	20	48	39.8	59	60	9	13
1985	0.211	0.136	0.286	0.450	0.298	0.602	0.469	18	20	41	40.4	57	63	31	59
1986	0.250	0.137	0.362	0.466	0.256	0.677	0.536	20	24	48	46.7	59	65	30	93
1987	0.069	0.029	0.108	0.105	0.044	0.166	0.655	43	42	48	50.2	59	62	12	15
1988	0.115	0.044	0.186	0.328	0.175	0.480	0.350	11	13	36	36.3	57	60	24	49
1989	0.225	0.107	0.343	0.620	0.402	0.838	0.363	13	15	37	38.8	60	63	30	88
1990	0.152	0.010	0.294	0.294	0.080	0.509	0.515	11	16	46	44.0	57	62	18	40
1991	0.137	0.073	0.200	0.237	0.136	0.337	0.576	11	17	49	47.1	59	62	22	34
1992	0.063	0.025	0.101	0.104	0.035	0.172	0.608	22	40	49	48.5	56	57	12	16
1993	0.086	0.021	0.151	0.214	0.020	0.408	0.403	21	23	42	41.2	56	58	14	35
1994	0.098	0.043	0.153	0.176	0.082	0.269	0.558	29	29	47	47.1	56	58	15	30
1995	0.101	0.050	0.152	0.234	0.119	0.349	0.432	9	20	42	41.9	55	59	18	33
1996	0.036	0.014	0.058	0.084	0.038	0.129	0.429	20	19	48	43.8	53	59	10	12
1997	0.037	0.015	0.059	0.122	0.035	0.208	0.307	17	20	36	38.9	55	58	11	22
1998	0.200	0.089	0.311	0.410	0.206	0.613	0.489	9	19	46	44.6	56	60	28	77
1999	0.243	0.068	0.418	0.925	-0.074	1.924	0.262	18	20	32	35.6	51	65	23	111
2000	0.060	0.025	0.095	0.220	-0.021	0.460	0.272	10	10	27	30.9	59	62	13	30
2001	0.058	0.020	0.096	0.125	0.058	0.192	0.466	19	28	46	44.6	57	60	16	25
2002	0.184	0.096	0.271	0.482	0.297	0.667	0.381	10	13	45	40.4	55	61	26	78
2003	0.224	0.161	0.287	0.642	0.429	0.348	0.348	14	19	40	40.4	55	59	36	95
2004	0.262	0.141	0.383	0.650	0.278	1.022	0.403	12	19	43	42.3	56	60	32	125
2005	0.457	0.125	0.788	1.207	0.288	2.126	0.378	10	27	42	42.4	53	60	22	178
2006	0.203	0.005	0.401	0.531	-0.009	1.072	0.382	19	21	41	41.3	56	62	22	71

Table B2.14. Abundance and biomass from NEFSC autumn surveys for smooth skate for the Gulf of Maine to Southern New England region (offshore strata 1-30,33-40). The mean index, 95% confidence intervals, individual fish weight, minimum, mean, and maximum length, 5th, 50th, and 95th percentiles of length, number of nonzero tows, and number of fish caught are presented for 1963-2005.

	weight/tow			number/tow			ind wt	length					nonzero		
	mean	lower	upper	mean	lower	upper		min	5%	50%	mean	95% max	tows	no fish	
1963	0.498	0.306	0.689	0.543	0.282	0.804	0.917	9	20	48	43.9	58	62	26	53
1964	0.326	0.152	0.501	0.360	0.209	0.512	0.906	9	20	42	41.7	59	64	19	35
1965	0.475	0.140	0.811	1.221	0.440	2.001	0.389	11	16	35	38.1	56	64	27	94
1966	0.323	0.175	0.471	0.867	0.519	1.216	0.372	13	17	37	38.6	58	59	28	60
1967	0.152	0.036	0.268	0.293	0.118	0.469	0.518	22	24	48	46.5	62	69	16	27
1968	0.385	0.211	0.559	0.665	0.375	0.955	0.579	17	20	48	45.9	58	62	24	56
1969	0.290	0.131	0.449	0.604	0.282	0.925	0.481	12	16	41	39.6	58	64	21	50
1970	0.232	0.121	0.343	0.530	0.289	0.771	0.437	9	13	45	38.3	59	62	25	50
1971	0.157	0.077	0.238	0.250	0.120	0.379	0.631	17	36	53	51.0	57	59	18	27
1972	0.332	0.185	0.478	0.499	0.285	0.713	0.664	16	24	49	49.8	62	64	30	52
1973	0.311	0.199	0.423	0.506	0.344	0.667	0.614	17	22	48	46.9	58	60	32	56
1974	0.123	0.055	0.192	0.180	0.088	0.273	0.684	11	11	50	48.5	60	63	13	21
1975	0.076	0.029	0.123	0.104	0.043	0.165	0.727	21	30	49	46.7	56	57	12	15
1976	0.039	0.004	0.074	0.077	0.020	0.135	0.501	17	36	41	43.9	52	60	9	10
1977	0.376	0.274	0.478	0.600	0.443	0.757	0.627	19	24	48	44.9	56	61	50	84
1978	0.450	0.240	0.661	0.635	0.359	0.912	0.709	8	25	50	48.0	59	66	49	130
1979	0.182	0.075	0.288	0.239	0.116	0.362	0.761	9	29	50	48.7	60	62	31	60
1980	0.343	0.167	0.519	0.522	0.254	0.789	0.658	15	23	52	46.4	58	62	37	60
1981	0.119	0.039	0.199	0.167	0.069	0.264	0.715	23	26	49	48.1	60	61	13	18
1982	0.039	0.007	0.071	0.074	0.025	0.123	0.521	9	9	49	41.9	63	64	11	11
1983	0.146	0.056	0.236	0.255	0.085	0.426	0.573	14	14	46	40.9	57	59	12	24
1984	0.199	0.106	0.292	0.389	0.171	0.607	0.512	14	22	37	39.2	58	71	23	39
1985	0.210	0.088	0.332	0.340	0.180	0.500	0.617	12	15	51	45.2	59	63	28	64
1986	0.209	0.118	0.300	0.392	0.216	0.567	0.534	13	21	47	45.0	63	66	24	63
1987	0.095	0.045	0.145	0.164	0.081	0.247	0.581	15	15	48	44.8	60	61	19	28
1988	0.284	0.103	0.465	0.446	0.223	0.670	0.637	20	20	51	48.3	59	65	27	90
1989	0.128	0.072	0.185	0.336	0.194	0.478	0.382	13	16	33	36.8	59	62	27	52
1990	0.194	0.120	0.268	0.332	0.202	0.462	0.584	16	23	48	46.4	58	62	27	45
1991	0.167	0.070	0.265	0.335	0.188	0.482	0.500	18	20	46	43.9	57	62	25	59
1992	0.126	0.024	0.228	0.316	0.120	0.511	0.400	12	18	43	40.0	58	60	16	56
1993	0.227	0.107	0.346	0.818	0.273	1.362	0.277	13	13	26	32.6	56	62	29	123
1994	0.099	0.030	0.169	0.269	0.105	0.433	0.370	11	11	36	38.0	57	59	17	36
1995	0.189	0.115	0.263	0.764	0.315	1.214	0.247	10	13	30	32.6	56	59	29	119
1996	0.176	0.093	0.260	0.421	0.249	0.594	0.418	15	18	46	41.6	56	59	26	55
1997	0.232	0.117	0.347	0.449	0.232	0.665	0.517	16	21	47	45.2	60	64	20	59
1998	0.028	0.005	0.051	0.108	0.021	0.194	0.263	18	17	29	35.2	51	53	11	18
1999	0.070	0.032	0.109	0.110	0.050	0.171	0.638	22	22	50	48.7	60	62	16	22
2000	0.154	0.083	0.226	0.318	0.190	0.447	0.485	10	11	45	42.3	59	73	27	55
2001	0.287	0.169	0.405	0.565	0.349	0.781	0.507	17	23	49	46.5	58	62	29	84
2002	0.111	0.067	0.155	0.209	0.140	0.278	0.533	15	24	50	46.2	60	62	25	32
2003	0.190	0.076	0.304	0.646	0.248	1.045	0.294	10	14	39	36.3	52	62	30	84
2004	0.214	0.126	0.303	0.467	0.283	0.652	0.458	18	24	47	45.3	55	59	29	58
2005	0.131	0.039	0.224	0.291	0.143	0.439	0.451	15	17	47	43.1	59	62	18	44

Table B2.15. Abundance and biomass from NEFSC spring surveys for clearnose skate for the Mid-Atlantic region (offshore strata 61-76, inshore strata 15-44). The mean index, 95% confidence intervals, individual fish weight, minimum, mean, and maximum length, 5th, 50th, and 95th percentiles of length, number of nonzero tows, and number of fish caught are presented for 1976-2006.

	weight/tow			number/tow			ind wt	length					nonzero		
	mean	lower	upper	mean	lower	upper		min	5%	50% mean	95% max	tows	no fish		
1976	0.100	0.020	0.179	0.129	0.040	0.218	0.770	26	26	43	48.5	66	67	8	12
1977	0.509	0.297	0.722	0.500	0.260	0.741	1.017	23	23	56	52.5	63	64	17	41
1978	0.211	-0.094	0.516	0.237	-0.057	0.530	0.893	20	20	57	52.2	68	69	8	21
1979	0.109	0.010	0.209	0.125	0.004	0.247	0.875	25	25	42	50.3	77	78	6	9
1980	0.319	0.100	0.538	0.456	0.136	0.775	0.700	25	25	41	45.1	64	69	14	44
1981	0.891	-0.141	1.923	0.606	0.106	1.107	1.469	24	26	60	55.9	67	72	10	44
1982	0.328	0.165	0.491	0.368	0.126	0.610	0.892	30	32	52	53.6	66	71	14	40
1983	0.138	0.005	0.270	0.127	0.003	0.252	1.081	13	13	58	51.3	65	66	7	11
1984	0.380	0.103	0.658	0.288	0.018	0.557	1.321	48	48	62	60.7	70	74	11	25
1985	0.493	-0.166	1.151	0.436	-0.203	1.076	1.129	48	48	58	59.3	69	72	10	37
1986	0.155	0.035	0.274	0.232	0.038	0.427	0.666	27	27	44	44.8	68	69	11	15
1987	0.306	0.150	0.463	0.202	0.109	0.204	1.519	49	51	63	61.9	69	72	16	20
1988	0.340	0.171	0.508	0.300	0.097	0.502	1.134	44	44	58	57.1	67	71	11	19
1989	0.424	0.258	0.590	0.415	0.275	0.554	1.023	25	25	58	52.3	68	72	14	40
1990	0.501	0.283	0.719	0.420	0.243	0.597	1.192	30	30	59	56.2	67	72	15	52
1991	0.690	0.463	0.918	0.543	0.354	0.731	1.272	27	27	62	58.8	68	71	23	59
1992	0.748	0.324	1.172	0.489	0.218	0.760	1.529	46	46	63	63.0	68	80	23	47
1993	0.856	0.479	1.233	0.656	0.216	1.096	1.305	21	33	63	58.6	70	74	12	136
1994	0.319	0.052	0.585	0.188	0.043	0.333	1.699	51	57	65	66.0	73	74	8	24
1995	0.669	0.361	0.977	0.464	0.261	0.666	1.443	46	46	67	62.4	68	74	18	32
1996	1.224	0.194	2.254	0.948	0.255	1.641	1.291	13	27	62	59.8	70	75	30	95
1997	1.290	0.885	1.695	0.972	0.542	1.403	1.326	33	39	63	61.3	71	78	22	80
1998	0.903	0.674	1.133	0.667	0.369	0.964	1.355	26	38	62	60.2	70	74	29	81
1999	0.943	0.647	1.238	0.862	0.470	1.255	1.093	26	28	59	57.3	67	72	19	54
2000	1.391	1.046	1.736	1.140	0.789	1.491	1.221	24	40	59	59.4	70	76	31	126
2001	1.380	0.674	2.087	1.097	0.456	1.738	1.258	42	49	62	60.8	68	72	19	74
2002	0.836	0.281	1.392	0.617	0.241	0.993	1.355	29	42	62	60.5	69	74	23	59
2003	0.622	0.366	0.879	0.448	0.265	0.631	1.389	49	49	62	62.7	75	76	16	35
2004	0.433	0.050	0.815	0.376	0.049	0.703	1.151	35	35	59	56.2	70	72	9	23
2005	0.569	0.030	1.109	0.414	0.008	0.820	1.374	42	42	61	61.2	70	73	11	27
2006	0.567	0.189	0.946	0.420	0.179	0.661	1.350	36	41	63	60.7	68	72	18	39

Table B2.16. Abundance and biomass from NEFSC autumn surveys for clearnose skate for the Mid-Atlantic region (offshore strata 61-76, inshore strata 15-44). The mean index, 95% confidence intervals, individual fish weight, minimum, mean, and maximum length, 5th, 50th, and 95th percentiles of length, number of nonzero tows, and number of fish caught are presented for 1975-2005.

	weight/tow			number/tow			ind wt	length					nonzero		
	mean	lower	upper	mean	lower	upper		min	5%	50%	mean	95% max	tows	no fish	
1975	0.237	0.086	0.388	0.246	0.133	0.360	0.961	21	21	53	50.3	63	66	31	49
1976	0.302	0.189	0.415	0.348	0.236	0.459	0.869	18	34	52	52.1	64	69	26	54
1977	0.768	0.288	1.248	0.742	0.281	1.203	1.035	15	37	57	55.4	65	68	32	106
1978	0.156	0.073	0.240	0.224	0.086	0.363	0.697	10	10	44	40.8	64	66	14	23
1979	0.419	0.116	0.721	0.346	0.146	0.545	1.211	22	24	56	55.4	67	71	27	46
1980	0.685	0.408	0.961	0.549	0.322	0.775	1.248	33	37	59	58.1	69	72	32	80
1981	0.171	0.081	0.260	0.179	0.087	0.271	0.954	27	27	55	51.5	65	68	19	28
1982	0.213	0.099	0.326	0.183	0.095	0.271	1.163	32	43	59	58.3	67	72	26	37
1983	0.141	0.027	0.254	0.127	0.043	0.210	1.110	16	16	57	52.2	64	70	15	19
1984	0.178	0.064	0.293	0.189	0.063	0.315	0.945	34	37	53	54.0	67	83	20	32
1985	0.306	0.173	0.439	0.315	0.182	0.447	0.974	32	41	56	54.9	66	71	23	42
1986	0.545	-0.038	1.027	0.591	0.091	1.092	0.921	23	23	59	52.6	64	71	31	62
1987	0.320	0.176	0.465	0.289	0.167	0.412	1.107	15	41	56	55.5	69	70	23	42
1988	0.335	0.157	0.513	0.329	0.163	0.495	1.019	33	37	57	56.0	66	71	19	60
1989	0.273	0.075	0.471	0.324	0.064	0.584	0.843	37	37	52	52.7	63	70	20	39
1990	0.402	0.157	0.646	0.306	0.114	0.499	1.311	16	41	60	57.9	69	72	17	50
1991	0.922	0.279	1.566	0.816	0.339	1.294	1.130	35	39	58	57.1	69	71	35	119
1992	0.345	0.185	0.505	0.312	0.185	0.440	1.104	16	42	59	56.7	67	69	22	48
1993	0.495	0.145	0.844	0.474	0.188	0.759	1.044	35	40	57	56.8	66	73	27	104
1994	0.938	0.479	1.398	0.842	0.494	1.190	1.115	35	40	57	57.1	66	73	35	129
1995	0.331	0.189	0.473	0.426	0.233	0.618	0.777	14	14	51	45.5	66	72	25	63
1996	0.430	0.194	0.666	0.369	0.163	0.576	1.165	29	45	59	58.8	68	72	20	42
1997	0.614	0.296	0.932	0.484	0.281	0.688	1.269	43	43	61	60.2	69	77	27	60
1998	1.121	0.115	2.128	1.096	0.124	2.068	1.023	34	43	57	57.5	68	73	32	98
1999	1.053	0.536	1.570	0.928	0.525	1.332	1.134	15	32	61	57.8	69	71	41	84
2000	1.032	0.422	1.642	0.795	0.353	1.238	1.298	14	47	60	60.5	69	74	29	61
2001	1.614	1.092	2.136	1.494	0.984	2.004	1.081	13	15	59	55.2	68	73	41	221
2002	0.891	0.372	1.411	0.863	0.317	1.409	1.033	14	38	55	56.0	68	73	27	63
2003	0.661	0.417	0.906	0.640	0.456	0.823	1.034	15	30	54	54.5	71	78	38	81
2004	0.709	0.201	1.217	0.590	0.172	1.008	1.201	37	43	62	60.1	69	75	18	55
2005	0.524	0.192	0.855	0.452	0.207	0.697	1.159	26	37	62	59.6	71	74	30	71

Table B2.17. Abundance and biomass from NEFSC winter surveys for clearnose skate for the Georges Bank to Mid-Atlantic region (offshore strata 1-3,5-7,9-11,13-14,16,61-63,65-67,69-71,73-75). The mean index, 95% confidence intervals, individual fish weight, minimum, mean, and maximum length, 5th, 50th, and 95th percentiles of length, number of nonzero tows, and number of fish caught are presented for 1992-2006. Stratum 16 not sampled in 1993, 2000, 2002-2006. Strata 13 and 14 not sampled in 2003. Stratum 63 not sampled in 1993. Stratum 14 not sampled in 2005.

	weight/tow			number/tow			ind wt	length					nonzero		
	mean	lower	upper	mean	lower	upper		min	5%	50%	mean	95% max	tows	no fish	
1992	5.622	3.247	7.997	5.247	2.974	7.519	1.072	23	26	59	54.7	67	93	22	551
1993	6.013	3.818	8.208	5.973	3.852	8.093	1.007	22	33	57	54.3	67	81	23	716
1994	8.854	4.037	13.672	7.692	2.152	13.233	1.151	27	33	60	57.5	69	77	16	639
1995	7.924	2.521	13.327	6.247	1.301	11.194	1.268	24	45	61	60.2	69	76	23	737
1996	14.725	8.266	21.183	11.555	6.347	16.762	1.274	22	40	61	60.0	69	77	32	3086
1997	5.522	3.154	7.890	5.069	2.158	7.980	1.089	22	35	59	56.2	70	76	32	682
1998	6.031	4.470	7.592	4.878	3.195	6.560	1.236	22	36	60	58.3	71	88	32	1091
1999	3.826	2.335	5.317	3.022	1.586	4.459	1.266	23	37	61	59.6	70	76	30	343
2000	10.102	5.693	14.510	8.864	4.579	13.150	1.140	25	42	59	58.2	69	93	43	1449
2001	8.316	5.624	11.008	6.599	4.240	8.957	1.260	25	43	61	60.6	69	86	41	1300
2002	12.223	8.343	16.102	8.864	5.886	11.843	1.379	23	39	63	61.6	70	74	51	1704
2003	19.637	13.819	25.455	15.769	10.902	20.635	1.245	23	39	62	59.1	70	81	36	2260
2004	11.566	7.743	15.389	10.162	6.344	13.979	1.138	20	35	60	58.1	70	80	38	1880
2005	6.036	3.837	8.235	5.078	2.425	7.731	1.189	24	44	60	59.1	70	82	26	1047
2006	11.723	4.862	18.585	11.085	4.693	17.477	1.058	23	35	57	56.7	70	77	41	1916

Table B2.18. Abundance and biomass from NEFSC spring surveys for rosette skate for the Mid-Atlantic region (offshore strata 61-76). The mean index, 95% confidence intervals, individual fish weight, minimum, mean, and maximum length, 5th, 50th, and 95th percentiles of length, number of nonzero tows, and number of fish caught are presented for 1968-2006.

	weight/tow			number/tow			ind wt	length					nonzero		
	mean	lower	upper	mean	lower	upper		min	5%	50%	mean	95% max	tows	no fish	
1968	0.005	-0.002	0.012	0.014	0.000	0.029	0.356	33	33	33	34.4	35	36	3	3
1969	0.001	-0.001	0.002	0.003	-0.003	0.010	0.200	37	37	37	37.0	37	37	1	1
1970	0.000	0.000	0.000	0.000	0.000	0.000	-	-	-	-	-	-	-	0	0
1971	0.005	-0.005	0.014	0.010	-0.009	0.028	0.500	57	57	57	57.0	57	57	1	1
1972	0.000	0.000	0.001	0.003	-0.003	0.010	0.100	35	35	35	35.0	35	35	1	1
1973	0.006	-0.001	0.012	0.023	-0.006	0.052	0.240	38	38	38	38.6	41	42	4	5
1974	0.005	-0.005	0.015	0.025	-0.024	0.074	0.200	41	41	41	41.0	41	41	1	1
1975	0.001	-0.001	0.003	0.005	-0.005	0.014	0.200	38	38	38	38.5	39	39	1	2
1976	0.007	0.000	0.015	0.035	-0.003	0.073	0.208	31	31	36	36.9	44	45	4	6
1977	0.102	0.019	0.186	0.552	0.107	0.998	0.185	20	26	32	33.6	37	42	11	70
1978	0.010	0.001	0.019	0.041	0.008	0.074	0.232	12	25	35	35.3	40	41	7	10
1979	0.007	0.005	0.009	0.040	0.031	0.048	0.171	13	13	34	31.6	40	41	4	10
1980	0.072	0.030	0.115	0.373	0.167	0.580	0.194	26	27	34	35.3	41	42	15	47
1981	0.013	0.001	0.025	0.057	0.006	0.109	0.231	19	28	37	36.3	41	42	6	17
1982	0.025	0.010	0.040	0.108	0.043	0.174	0.234	22	25	37	37.4	43	44	11	20
1983	0.002	-0.001	0.004	0.012	-0.006	0.029	0.147	29	29	34	34.2	35	36	2	5
1984	0.000	0.000	0.000	0.000	0.000	0.000	-	-	-	-	-	-	-	0	0
1985	0.005	-0.001	0.011	0.059	0.040	0.079	0.080	17	17	18	21.0	29	42	3	9
1986	0.002	-0.002	0.006	0.012	-0.008	0.031	0.182	32	32	35	35.3	35	36	2	2
1987	0.003	-0.002	0.009	0.017	-0.012	0.046	0.200	35	35	36	36.7	36	37	2	2
1988	0.020	-0.001	0.041	0.111	-0.002	0.223	0.180	26	26	35	32.8	35	36	4	6
1989	0.010	-0.004	0.025	0.051	-0.036	0.137	0.200	28	28	34	34.6	40	41	2	15
1990	0.010	-0.004	0.024	0.049	-0.022	0.121	0.200	36	36	35	36.0	35	36	3	3
1991	0.036	0.014	0.058	0.143	0.057	0.228	0.253	19	33	37	37.2	40	42	7	19
1992	0.014	-0.001	0.029	0.063	0.012	0.113	0.223	24	24	37	36.0	40	41	5	5
1993	0.009	0.007	0.011	0.037	0.030	0.043	0.255	38	38	37	38.6	39	40	2	5
1994	0.005	0.001	0.009	0.021	0.006	0.035	0.243	36	36	38	38.7	40	41	4	4
1995	0.010	0.000	0.020	0.056	0.003	0.110	0.173	19	19	35	32.9	36	37	3	5
1996	0.014	-0.011	0.039	0.095	-0.013	0.203	0.149	9	9	35	29.3	42	43	5	19
1997	0.028	0.022	0.033	0.138	0.091	0.186	0.200	30	30	34	35.6	41	42	4	25
1998	0.038	0.007	0.068	0.132	0.041	0.223	0.287	32	33	38	38.0	41	42	11	15
1999	0.043	0.003	0.083	0.206	0.012	0.399	0.211	15	29	37	36.7	42	43	9	16
2000	0.026	0.009	0.043	0.106	0.040	0.171	0.247	30	32	37	38.0	41	42	7	15
2001	0.010	-0.005	0.025	0.041	-0.012	0.095	0.244	21	21	40	38.2	40	41	4	4
2002	0.019	-0.007	0.045	0.076	-0.029	0.180	0.252	12	12	38	34.1	39	40	3	5
2003	0.028	-0.002	0.057	0.115	0.003	0.226	0.241	9	24	38	37.0	39	41	5	17
2004	0.023	-0.009	0.055	0.084	-0.025	0.193	0.276	30	32	39	39.2	40	41	3	7
2005	0.050	-0.029	0.128	0.216	-0.131	0.564	0.229	13	31	37	36.7	40	41	5	21
2006	0.012	0.007	0.016	0.051	0.020	0.081	0.230	25	25	39	35.5	40	41	5	8

Table B2.19. Abundance and biomass from NEFSC autumn surveys for rosette skate for the Mid-Atlantic region (offshore strata 61-76). The mean index, 95% confidence intervals, individual fish weight, minimum, mean, and maximum length, 5th, 50th, and 95th percentiles of length, number of nonzero tows, and number of fish caught are presented for 1967-2005.

	weight/tow			number/tow			ind wt	length					nonzero		
	mean	lower	upper	mean	lower	upper		min	5%	50%	mean	95%	max	tows	no fish
1967	0.019	0.002	0.037	0.117	0.010	0.224	0.166	10	18	34	34.3	39	42	7	17
1968	0.003	-0.001	0.008	0.023	-0.019	0.065	0.135	28	28	28	28.9	37	38	2	2
1969	0.002	-0.002	0.006	0.010	-0.009	0.028	0.200	38	38	38	38.0	38	38	1	1
1970	0.009	-0.006	0.024	0.033	-0.025	0.090	0.276	39	39	39	39.5	39	40	2	3
1971	0.001	-0.001	0.004	0.006	-0.005	0.016	0.250	40	40	40	40.5	40	41	1	2
1972	0.016	0.001	0.032	0.058	0.021	0.094	0.285	12	12	34	34.2	40	41	7	8
1973	0.012	-0.008	0.032	0.053	-0.016	0.122	0.224	16	16	28	29.0	40	41	3	5
1974	0.012	-0.002	0.026	0.079	-0.014	0.171	0.156	23	23	34	33.8	40	41	4	11
1975	0.004	-0.001	0.009	0.034	-0.001	0.070	0.122	25	25	34	33.6	38	39	4	8
1976	0.024	0.003	0.045	0.149	0.016	0.281	0.163	28	28	33	33.7	37	40	7	21
1977	0.020	-0.002	0.043	0.087	-0.011	0.185	0.231	31	31	33	35.2	40	41	5	8
1978	0.007	-0.007	0.022	0.015	-0.014	0.043	0.500	39	39	39	39.0	39	39	1	1
1979	0.010	-0.004	0.025	0.043	-0.016	0.101	0.242	22	22	35	36.1	39	40	3	6
1980	0.090	0.042	0.138	0.312	0.120	0.505	0.287	14	25	38	36.6	41	42	10	24
1981	0.079	0.011	0.148	0.296	0.052	0.539	0.268	27	28	37	37.5	41	43	10	45
1982	0.006	-0.006	0.018	0.020	-0.019	0.059	0.300	39	39	39	39.0	39	39	1	1
1983	0.001	-0.001	0.003	0.010	-0.010	0.030	0.100	12	12	12	20.7	36	37	1	3
1984	0.029	0.005	0.053	0.128	0.033	0.223	0.229	13	26	36	35.6	39	40	7	16
1985	0.005	0.004	0.007	0.036	0.019	0.054	0.146	14	14	25	28.0	35	36	5	6
1986	0.003	0.001	0.004	0.009	0.005	0.013	0.300	37	37	37	38.2	39	40	3	3
1987	0.028	0.006	0.050	0.112	0.040	0.183	0.253	11	15	38	32.7	41	42	7	10
1988	0.021	0.000	0.043	0.093	-0.002	0.188	0.228	30	30	32	35.0	41	42	5	8
1989	0.018	-0.005	0.041	0.046	-0.012	0.105	0.378	33	33	33	33.5	36	37	3	4
1990	0.023	-0.004	0.049	0.099	0.001	0.198	0.228	32	32	37	37.7	41	42	5	10
1991	0.005	-0.004	0.014	0.021	-0.009	0.051	0.237	15	15	34	31.4	34	35	3	3
1992	0.035	0.006	0.064	0.170	0.033	0.308	0.203	25	25	35	35.3	41	42	9	11
1993	0.021	0.005	0.037	0.102	0.033	0.170	0.211	25	25	37	35.1	40	41	4	8
1994	0.073	0.000	0.146	0.301	0.006	0.597	0.242	27	27	37	36.8	42	43	6	21
1995	0.039	-0.005	0.084	0.174	-0.009	0.358	0.227	19	24	35	35.1	38	39	7	13
1996	0.043	-0.014	0.100	0.273	-0.127	0.674	0.158	7	19	32	31.6	38	42	7	21
1997	0.013	0.000	0.026	0.074	-0.014	0.162	0.176	31	31	33	34.0	42	43	4	6
1998	0.050	-0.008	0.108	0.208	-0.042	0.458	0.241	33	33	37	38.1	40	41	7	22
1999	0.067	0.038	0.096	0.380	0.182	0.578	0.177	12	18	34	32.6	41	42	8	46
2000	0.033	-0.006	0.073	0.134	-0.015	0.283	0.248	26	30	35	36.5	39	40	7	10
2001	0.121	-0.007	0.249	0.472	-0.016	0.961	0.257	11	34	39	38.6	43	44	10	28
2002	0.052	0.009	0.095	0.347	0.045	0.648	0.150	8	8	30	28.0	40	42	11	29
2003	0.033	0.016	0.051	0.136	0.071	0.200	0.247	33	33	36	37.4	39	41	7	18
2004	0.048	0.003	0.092	0.231	0.030	0.432	0.206	19	29	35	35.5	37	40	8	29
2005	0.065	0.001	0.129	0.286	-0.004	0.575	0.227	30	30	35	36.4	39	40	7	24

Table B2.20. Abundance and biomass from NEFSC winter surveys for rosette skate for the Georges Bank to Mid-Atlantic region (offshore strata 1-3,5-7,9-11,13-14,16,61-63,65-67,69-71,73-75). The mean index, 95% confidence intervals, individual fish weight, minimum, mean, and maximum length, 5th, 50th, and 95th percentiles of length, number of nonzero tows, and number of fish caught are presented for 1992-2006. Stratum 16 not sampled in 1993, 2000, 2002-2006. Strata 13 and 14 not sampled in 2003. Stratum 63 not sampled in 1993. Stratum 14 not sampled in 2005.

	weight/tow			number/tow			ind wt	length					nonzero		
	mean	lower	upper	mean	lower	upper		min	5%	50%	mean	95% max	tows	no fish	
1992	0.264	0.138	0.390	1.125	0.619	1.632	0.235	16	27	36	36.4	41	45	15	230
1993	0.149	0.048	0.251	0.663	0.197	1.130	0.225	26	29	36	36.7	39	41	9	143
1994	0.199	0.148	0.249	0.761	0.608	0.914	0.261	16	28	37	36.8	40	44	15	162
1995	0.195	0.066	0.323	0.774	0.273	1.275	0.252	19	32	37	37.9	41	42	23	197
1996	0.324	0.121	0.526	1.410	0.443	2.376	0.230	19	28	36	36.3	40	46	23	899
1997	0.258	-0.051	0.567	1.079	-0.194	2.353	0.239	13	30	36	36.9	40	44	21	238
1998	0.160	0.102	0.219	0.664	0.421	0.907	0.241	15	30	36	36.5	40	45	21	350
1999	0.271	0.043	0.500	1.151	0.082	2.220	0.236	24	27	37	36.6	41	44	25	228
2000	0.344	0.198	0.491	1.357	0.725	1.989	0.254	8	28	37	37.5	43	47	34	740
2001	0.437	0.185	0.690	1.718	0.797	2.640	0.254	9	24	38	37.6	41	46	36	790
2002	0.723	0.140	1.307	2.655	0.603	4.708	0.272	8	29	38	38.3	42	47	34	913
2003	0.670	0.195	1.144	2.774	0.802	4.745	0.242	8	26	37	36.9	41	47	28	1029
2004	0.300	0.171	0.429	1.192	0.653	1.730	0.252	16	31	37	37.8	41	46	29	784
2005	0.189	0.090	0.289	0.716	0.357	1.076	0.264	12	30	38	38.2	43	45	19	281
2006	0.437	0.209	0.665	1.738	0.821	2.654	0.251	8	31	37	37.7	42	45	28	513

Table B2.21. Estimates of size at 50% maturity, length-weight parameters (Wigley et al 2003) and Von Bertalanffy Parameter estimates used to estimate SSB and to calculate Hoenig mortality estimates. Clearnose data, in parentheses, refers to diak width.

Species (Study)	L50	ln(a)	b	Linf	K	t0
Winter (Frisk 2004)	76	-13.1531	3.3199	122.1	0.07	-2.06
Little (Frisk 2004)	44	-12.4462	3.128	56.1	0.19	-1.17
Barndoor (Gedamke et al. 2005)	116	-13.3224	3.2919	166.3	0.14	-1.2912
Thorny (Sulikowski 2005, 2006)	88	-12.088	3.1197	124.0	0.12	-0.35
Smooth (Sosebee 2005)	50	-13.0139	3.1812			
Clearnose(Gelsleichter 1998; Sosebee 2005)	66	-13.8683	3.4235	94.3(61.8)	0.17	-0.88
Rosette (Sosebee 2005)	34	-12.5504	3.0718			

Table B2.22 Estimates of spawning stock biomass indices from NEFSC surveys using sizes at 50% maturity as knife-edge cutpoints.

	Winter	Little	Barndoor	Thorny	Smooth	Clearnose	Rosette
1963			0.796	3.934	0.202		
1964			0.227	2.799	0.091		
1965			0.135	2.848	0.297		
1966			0.000	4.673	0.218		
1967	0.553		0.063	1.411	0.126		0.022
1968	0.338		0.073	2.857	0.229		0.001
1969	0.183		0.000	3.668	0.190		0.002
1970	0.534		0.060	5.155	0.152		0.009
1971	0.151		0.047	3.921	0.134		0.002
1972	0.464		0.077	2.593	0.244		0.010
1973	0.892		0.000	2.987	0.189		0.001
1974	0.377		0.000	1.368	0.080		0.013
1975	0.327		0.000	1.344	0.039	0.003	0.005
1976	1.117		0.000	0.943	0.015	0.019	0.020
1977	1.863		0.000	1.450	0.201	0.076	0.015
1978	3.008		0.000	1.514	0.288	0.007	0.004
1979	3.400		0.000	1.569	0.112	0.073	0.009
1980	3.663		0.000	1.972	0.217	0.166	0.070
1981	3.513		0.000	1.312	0.079	0.016	0.070
1982	4.203	2.744	0.000	0.261	0.035	0.038	0.005
1983	7.598	4.058	0.000	1.065	0.073	0.006	0.001
1984	7.253	2.655	0.000	1.480	0.095	0.041	0.024
1985	8.514	4.184	0.000	1.077	0.169	0.069	0.003
1986	12.279	1.599	0.000	0.653	0.152	0.030	0.002
1987	7.768	2.168	0.000	0.209	0.062	0.085	0.021
1988	5.594	2.936	0.000	0.521	0.207	0.072	0.011
1989	3.753	2.832	0.000	0.709	0.073	0.028	0.002
1990	6.129	2.983	0.000	0.790	0.122	0.072	0.023
1991	3.499	2.854	0.000	0.734	0.116	0.341	0.003
1992	2.083	2.384	0.000	0.292	0.079	0.080	0.033
1993	1.012	3.875	0.134	0.700	0.146	0.110	0.018
1994	0.841	1.742	0.000	0.434	0.072	0.184	0.063
1995	0.536	1.706	0.000	0.189	0.081	0.097	0.033
1996	0.793	4.551	0.000	0.318	0.128	0.083	0.029
1997	0.664	1.601	0.052	0.333	0.167	0.269	0.009
1998	1.576	3.634	0.062	0.319	0.016	0.234	0.051
1999	1.331	5.078	0.118	0.145	0.062	0.442	0.055
2000	1.753	4.424	0.048	0.420	0.102	0.371	0.028
2001	1.397	4.783	0.250	0.066	0.226	0.376	0.129
2002	3.154	4.858	0.366	0.196	0.094	0.261	0.034
2003	1.912	4.401	0.161	0.233	0.106	0.353	0.032
2004	2.222	4.340	0.773	0.365	0.146	0.259	0.043
2005	1.005	2.455	0.285	0.047	0.082	0.253	0.057
2006		2.472					

Table B.2.23.

(EDITOR'S NOTE: BASED ON THE REVIEWER'S COMMENTS, THIS TABLE WAS NOT INCLUDED IN THIS REPORT. THE TABLE HAD ESTIMATES OF FISHING MORTALITY RATE.)

Table B3.1. Current estimates of biomass-based reference points for skates. The estimates for barndoor skate are an average of 1963-1966 biomass estimates.

	75 th percentile through 1998/1999	
	Bmsy	Bthreshold
Winter	6.46	3.23
Little	6.54	3.27
Barndoor	1.62	0.81
Thorny	4.41	2.20
Smooth	0.31	0.16
Clearnose	0.56	0.28
Rosette	0.029	0.015

Tables B.3.2 – B.3.24.

(EDITOR'S NOTE: BASED ON THE REVIEWER'S COMMENTS, THESE TABLES WERE NOT INCLUDED IN THIS REPORT. THE TABLES HAD CALCULATIONS FOR ALTERNATIVE REFERENCE POINTS.)

Table B4.1. Fishing mortality overfishing definition for skates based on the average coefficient of variation in the survey. The percentages are percent change from one three-year moving average to the next.

	Winter -20%	Little -20%	Barndoor -30%	Thorny -20%	Smooth -30%	Clearnose -30%	Rosette -60%
1992	-8.8	-7.6	-3.8	-17.6	-0.4	4.5	37.7
1993	-33.9	15.6	180.7	-1.1	6.7	5.6	-2.0
1994	-25.5	-12.6	2.0	-2.9	-13.0	0.9	110.9
1995	-21.0	-14.8	61.3	-4.3	13.8	-0.8	3.8
1996	6.2	0.4	-34.3	-21.4	-9.8	-3.6	16.4
1997	5.3	-6.5	37.3	-21.2	28.6	-19.1	-38.4
1998	26.3	35.0	-8.6	-5.5	-26.9	57.5	11.1
1999	33.2	13.5	109.2	-14.5	-24.2	28.8	22.5
2000	17.0	29.2	37.1	-0.9	-23.6	15.0	15.3
2001	1.0	-2.4	66.0	-16.1	102.3	15.4	47.1
2002	3.8	-13.9	42.5	-2.6	8.1	-4.4	-6.9
2003	-7.2	-9.6	16.5	-5.6	6.5	-10.5	0.2
2004	1.1	1.9	40.7	25.0	-12.4	-28.6	-35.4
2005	-22.9	-15.9	9.8	-11.2	3.7	-16.2	9.7
2006		-18.7					

Table B6.1. The size class, temporal, and spatial scheme for each species of skate analyzed for food habits and consumptive demand. S = small, I = immature, M = medium if small and large used; M = mature if immature used, L = large. All size class cutoffs are in cm. * small winter skates were combined with immature little skates to account for potential identification concerns.

	Barndoor Skate	Clearnose Skate	Little Skate	Rosette Skate	Smooth Skate	Thorny Skate	Winter Skate
SVSPP Code	022	024	026	025	027	028	023
Survey Strata Set	01010-01300, 01330-01400, 01351	03150-03440, 01610-01760	01010-01300, 01330-01400, 01351, 01610-01760, 03010-03660	01610-01760	01010-01300, 01330-01400, 01351	01010-01300, 01330-01400, 01351	01010-01300, 01330-01400, 01351, 01610-01760
Temporal Resolution	2000-2005, annual	1977-2005, 5 year block	1982-2005, annual	1999-2005, annual	1977-2005, 5 year block	1977-2005, 5 year block	1977-2005, annual
Size Class:							
S or I	< 80	> 60	< 30*	< 30	< 30	< 30	< 30*
M	> 80	< 60	> 30	> 30	> 30	30-60	30-60
L						> 60	> 60

Table B6.3. Diet composition of Little Skate. All values are expressed as whole numbers rather than percentages. Relmsw = relative mean stomach weight, on average for the size class and time period given. AR = animal remains, a well-digested, highly unresolved category.

Average of relmsw Size	Year	Amphipods	Polychaetes	AR	Bivalves	Canter Crabs	Crayon sp.	CRUSTA	CUMACE	DECAPO	DECCRA	EUPFAM	ISOPOD	MOLLUS	OTHFS
I	1973	75.5229	2.6145	0.7776	0	12.5426	5.9489	0.4893	0.0743	0.1311	0	0.6094	0	0.0094	0
	1974	3.1152	0.935	0	1.7917	18.68	11.7976	0.583	0	0	0	0	0	8.6485	0.1002
	1975	54.1678	10.2228	7.8196	0.2554	11.422	5.9236	4.103	0	0.0203	0	0.4873	0	0.4973	0
	1976	24.2307	25.9101	22.9743	0.7039	46.1323	5.3765	0.2278	0	0.53184	0	1.7507	0	1.7507	0.2362
	1977	41.9874	1.95485	4.4916	0.3724	16.3394	4.3551	0.79	0	1.3751	0	14.2902	0	14.2902	0
	1978	55.4855	10.74415	0.86475	0.62565	18.693225	7.3281	1.44435	0	0.1645	0	0.4064	0	0.4064	0.54185
	1979	86.2462	5.5332	0.3966	0.28609	0.09753	2.23667	5.8002	0	0	0	0	0	0.1235	0
	1980	46.686	0	0.8306	0	27.3463	14.7633	0	0	0	0	14.2857	0	9.0909	0
	1981	44.8052	0	0	0	0	0	0	0	0	0	0	0	0	0
	1982	45	25	0	0	100	0	0	0	0	0	0	0	0	0
	1983	0	0	0	0	30	0	0	0	0	0	0	0	0	0
	1984	100	0	0	0	0	0	0	0	0	0	0	0	0	0
	1985	5.2239	9.82145	0	0	0	55.1706	0	0	0	0	0	0	5.80355	0
	1986	36.6921	3.36755	14.76355	0	15.4455	0.0639	18.0275	0	0	0	7.4627	0	5.80355	0
	1987	75.42415	4.01755	3.3418	0.2705	9.6629	5.06525	0	0	0.42115	0	0	0	0.3536	0
	1988	41.7981	3.01725	45.7329	0.7975	0.26525	7.09764	0.132525	0	0	0	0	0	0	0
	1989	69.5313	0.1075	10.99075	0.19225	12.21955	6.02625	2.81055	0	0.39998	0	0	0	0.8918	0.0683
	1990	57.2468	29.92005	7.48655	0	0.1127	1.85965	0	0	2.49645	0	0.28175	0	0.28175	0
	1991	62.4026	12.981	7.07065	0.38935	2.6245	5.5276	0	0.0513	0	0	0.1848	0	0.31845	0.27625
	1992	72.6229	3.66295	8.57995	0.1877	0.0135	0.6556	0.0408	0	2.05955	0	0.48765	0	4.71735	0.07505
	1993	52.7453	4.86995	13.20905	0.6045	47.96245	1.055905	0.11025	0	0.21945	0	0.34625	0	15.35385	0.20985
	1994	59.329	3.827	18.3083	0.0301	7.7217	6.5875	0.04215	0	0.97177	0	0.6309	0	1.30595	0.001
	1995	62.12805	5.29875	24.73045	0.352	4.412785	5.3172	0.27785	0.0198	0.2331445	0.2331445	0.0093	0.20098	0	0.29435
	1996	70.7763	8.3752	10.8209	0.1444	7.1385	0.76745	0.08995	0	0.2997	0.18885	0.38655	0	0.38655	0
	1997	49.87355	2.78135	12.44975	0	3.0688	0.48865	0.007	0	0.61735	0	0.1799	0	0.1799	0.07615
	1998	75.65775	5.09465	12.44975	0.3519	12.3963	0.3755	0.053	0.02615	2.31195	0.16345	0.16345	0	1.04335	0
	1999	66.70955	2.71715	15.82975	0.2473	8.3829	0.3755	0.053	0.0372	0.4235	0.0458	2.1261	0	2.1261	0.1741
	2000	58.5002	7.2223	15.5389	0.26325	10.4683	2.24915	0.0146	0.06622	0.029535	0.58135	2.2768	0	2.2768	0.4974
	2001	23.5909	2.8502	53.4331	0.01245	2.10295	11.75655	0.16925	0	0.2535	0.06305	0	0	0.2535	0
	2002	72.2283	3.10175	12.40965	0.2098	6.2736	8.8459	0	0	0.3741	0.3286	0.614	0	2.9487	0
	2003	46.1465	5.5776	34.7175	0	54.58975	2.393575	0.1451	0	4.8785	0	0.1554	0	0.00035	0
	2004	9.9833	17.14165	10.1226	0	54.58975	2.393575	0.1451	0	4.8785	0	0.1554	0	0.00035	0
I	Total	52.89664737	7.082718664	13.32159649	0.209908772	0.721892281	11.362609298	1.350669372	0.006239298	1.828195088	1.037275439	2.741610351	0.119046491	0.196331579	0.60805
M	1973	9.3509	11.8869	9.1392	1.0927	30.2959	6.0624	2.8476	0.0652	0	0.9781	6.6	0	0.3301	0.8085
	1974	17.1761	16.6309	11.2079	0.7992	10.0717	10.4175	0.9167	0.967	2.1131	0.1011	0.3728	0	3.5639	3.8615
	1975	22.7124	24.7736	11.3597	0.9527	10.9111	3.4751	4.9181	0.198	0.2287	0.4818	1.5095	0	5.5952	1.4375
	1976	23.8271	11.2718	11.4467	8.5691	10.4906	12.0797	1.8459	0.0096	0	2.1934	1.908	0	4.4204	4.0829
	1977	18.6095	10.1578	10.1578	7.0674	22.2896	4.2996	10.46	0.0778	1.9811	0.0009	1.5844	0	3.7551	1.0402
	1978	10.001	15.9678	3.0209	1.5317	47.1393	3.0385	3.8204	0.0325	0.4166	1.53	0.0436	0	2.3264	0.0106
	1979	26.9768	16.1419	1.8496	0.4133	6.8783	2.0777	10.4186	1.3448	0.0505	26.7253	0	1.6915	0.2096	0
	1980	20.713	18.392	0.135	1.741	14.084	5.6156	0.198	0.0623	7.4051	0	0	0	0.1079	0
	1981	9.0732	8.301	4.8347	17.2959	0	6.4789	2.8569	0	15.929	0.847	0	0	3.6154	0.20145
	1982	13.748	17.8538	3.8492	8.7706	6.0323	21.2072	0.6762	0.9551	0	12.6041	0	0	0.2792	0
	1983	9.3336	6.9919	1.9744	5.7238	32.9915	0	0	0	12.8901	0	0	0	2.1957	0
	1984	24.4972	11.8478	0.574	11.7104	11.1507	0	0	0	9.7657	7.5867	0.4264	0	2.985	11.7444
	1985	6.8352	16.131	4.0668	6.9006	6.9006	6.9006	0	0	0	0	0	0	3.3389	2.1192
	1986	13.0658	11.1112	8.516	18.7736	6.8075	3.8616	0.104	0.1001	13.2322	0.138	2.8538	0	2.342	6.0675
	1987	26.1142	9.2215	9.2875	21.7286	6.0334	2.142	1.5492	0	6.3482	0	0	0	0.029	0
	1988	17.4612	10.621	0.8196	18.196	6.7101	1.2756	8.8327	0.2653	25.8005	0.2995	0.995	0	13.2704	2.3217
	1989	27.2409	9.1444	1.1104	1.8631	16.1164	9.3337	3.0275	0.0048	0	0.2653	0.9929	0	1.8594	2.9881
	1990	36.0534	12.7152	1.8785	5.2035	11.4366	7.38657	0.004	0.11182	0.76782	0.9669	1.5652	0	1.8594	2.582
	1991	30.1916	9.1244	5.128	7.8619	5.6822	4.9042	1.6128	0.0115	0.11392	0.1382	0.8485	0	8.4123	3.6377
	1992	30.5949	10.5714	17.6521	4.0907	6.2901	8.9296	0.043	0.0621	16.4467	0.2173	0.8541	0	8.3377	1.0494
	1993	21.8877	9.5611	0.90973	11.6482	10.0049	19.4798	0.3711	0.3711	13.4677	0.013	4.6828	0	2.0133	0.6338
	1994	38.9723	6.3579	10.3234	6.5699	4.0476	0.3075	0.0046	0.0104	19.0023	0.0434	0.1038	0	1.8394	0.1839
	1995	21.6962	13.2905	9.9274	10.994	11.2168	4.0476	0.0763	0.062	0	9.7969	0.6827	0.2901	1.3379	0
	1996	29.826	9.9631	7.5195	19.7085	11.2168	4.1527	0.2882	0.6391	8.7263	0.4264	2.8277	0.1238	3.5956	0
	1997	29.826	9.9631	11.0365	6.1268	11.0365	9.2365	0.8049	0.038	11.4907	0.007	7.1647	0.142	2.352	0
	1998	20.8394	14.9168	12.5657	15.2292	7.43693	6.3932	0.29927	0.008	0.00218	8.68967	0.3426	2.7892	2.6693	2.7892
	1999	27.6761	11.0634	11.1705	9.171	15.6743	3.6304	0.006	0.00218	0.1306	10.049	0.1904	2.7536	0.2061	2.3035
	2000	49.5482	8.1924	5.4309	3.9251	9.0629	4.0321	0.0041	0.0853	9.3371	0.1197	0.3371	0	1.7645	0.104
	2001	33.5795	12.0391	12.7589	5.821	5.7128	8.0728	0.4321	0.006293	5.978	0.3053	2.6175	0	0.7551	4.5832
	2002	11.269	15.3683	17.7477	1.23	8.90261	5.0613	0.3371	0.0345	0.06293	0.06293	0.61648	0	3.948	5.7482
	2003	18.39	10.9124	14.1008	7.7451	15.0199	7.451	0.04514	0.0331	8.85657	0.2652	0.5602	0	0.0745	5.0066
	2004	33.1495	10.3471	15.4235	1.953	9.4717	1.69	0.1804	0.3454	2.8807	0.3454	1.308	0	3.7031	0
	2005	12.8203	17.8528	15.2943	1.4071	13.4348	7.2221	0.0891	0.2372	8.2828	2.8807	1.9324	0	1.3602	4.77939
M	Total	22.41664848	12.39336364	8.311639394	7.358733333	11.13932242	6.810191697	3.40866303	0.110754545	0.382494848	9.629134545	0.54467568	2.184393934	1.564657576	2.835863333

Table B6.4. Diet composition of Barndoor Skate. All values are expressed as whole numbers rather than percentages. Relmsw = relative mean stomach weight, on average for the size class and time period given. AR = animal remains, a well-digested, highly unresolved category.

Average of relmsw size	year	Amphipods	Polychaetes	AR	Cancer Crabs	Cephalopods	Gulf Stream FilHerings	Sculpins	Crangon sp.	Misc. Crustaceans	Other Crabs	Other Shrimp	Other Gadids	Haddock	Silver Hake	Other Fish	Pandalid Shrimp	Spot	Floundr	Red Hake
2000	0.7427	0.2991	2.8809	22.6514	1.5297	0.8498	0	0	6.2149	0.5099	18.3763	0	0	0	0	7.8522	35.3804	0	0	2.0516
2001	0.7133	0	5.9933	12.8295	0	0	0	0	13.36	1.951	0	1.0691	0	0	0	4.0691	16.133	0	0	0
2002	0	0.4252	0	99.5748	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	2.0959	0	6.0816	19.9694	1.5536	3.1072	0	0	4.1445	8.0505	3.884	0	0	6.5251	0	8.2623	34.3112	0	0	0
2004	6.8	0	6.6	0	0	0	0	0	0	86.6	0	0	0	0	0	0	0	0	0	0
2005	1.8177	2.1368	17.3875	2.5964	7.8348	0	0	0	4.4682	0.4986	2.3742	14.9872	0	0	28.49	2.018	13.2241	0	0	0
M Total	2.028266667	0.47685	6.49055	26.27025	1.819683333	0.517866667	0	0.141633333	4.897933333	16.5312	0.490633333	12.495716667	0.178183333	0	1.087516667	3.700266667	16.50816667	0	0	0.341833333
M	2000	0	2.1777	42.2249	0	6.5494	0	0	2.3578	35.3366	0.6842	1.9648	0	0	4.5946	1.4409	0	0	0	0
2001	0	2.8148	0	0.3486	0	13.0738	0	0.3061	0	0.3822	0	17.2138	0	0	19.1168	46.0198	0.9152	0	0	0
2002	0	0.5464	0	0	0	76.5027	22.9508	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	0	0	0	0.6912	0	0.8912	0	0	0	0	0	0	0	4.3779	0	31.682	0	0	1.7281	40.7634
2005	0	0	1.06778	8.58322	0.068972	0.13824	17.9153	5.90004	0.06102	0.55	0	0.13884	0.39296	0.87558	3.82336	27.5684	7.59462	8.15668	0	0
M Total																				

Table B6.5. Diet composition of Thomy Skate. All values are expressed as whole numbers rather than percentages. Relmsw = relative mean stomach weight, on average for the size class and time period given. AR = animal remains, a well-digested, highly unresolved category.

Average of relmsw size	yr5block	AMPHIP	PolyChates	AR	CANFAM	CRUSTA	DECAPO	Other Crabs	DECSHR	Euphausiids	GADFAM	ISOPOD	Silver Hake	MYXFAM	Other Fish	PAGFAM	PANFAM	Eelipouts	
1980	0.0045	31.5992	3.9862	0.0198	20.2259	0	0	0.1237	8.3622	21.6269	0	0.0934	0	0.079	0	0.5478	2.1649	0	0
1985	3.753	45.8674	4.899	0	30.3753	0	0	6.9403	0	6.9403	0	2.1773	0	1.2892	0	0	0	0	0
1990	3.1013	48.021	7.3477	0	0.4541	5.6863	1.3622	0.9415	2.1101	7.3214	0	0.8013	3.2053	0.2003	7.4659	0.1669	1.3868	0.0267	0
1995	5.6257	47.7562	7.5481	0.0282	8.431	0.3172	1.41974	4.57394	2.75967	2.9876	0.02256	0.29381	1.00584	0.2714	3.5945	0.01974	7.3759	1.4439	0
2000	3.983	39.7988	11.3891	1.7119	2.4382	1.5603	1.6588	0.0853	0.7252	3.7284	0	0.9931	0	1.6316	0	8.5634	1.3476	0.0831	0
2005	1.8674	30.532	15.1764	1.7059	5.0556	0.439	2.8705	0	6.439	2.8705	0	0.84	0	5.9285	0	7.4606	0.0831	0	0
M Total	3.54075	40.5811	8.391083333	0.577633333	7.226793333	8.91754	0.23395	3.680956667	3.398361667	7.579183333	0.00376	1.210616667	0.701856667	0.355483333	3.33145	0.122406667	4.491933333	0.48355	0
M	1980	2.9141	31.5992	3.9862	0.0198	20.2259	0	0.1237	8.3622	21.6269	0	0.0934	0	0.079	0	0.5478	2.1649	0	0
1985	3.753	45.8674	4.899	0	30.3753	0	0	6.9403	0	6.9403	0	2.1773	0	1.2892	0	0	0	0	0
1990	3.1013	48.021	7.3477	0	0.4541	5.6863	1.3622	0.9415	2.1101	7.3214	0	0.8013	3.2053	0.2003	7.4659	0.1669	1.3868	0.0267	0
1995	5.6257	47.7562	7.5481	0.0282	8.431	0.3172	1.41974	4.57394	2.75967	2.9876	0.02256	0.29381	1.00584	0.2714	3.5945	0.01974	7.3759	1.4439	0
2000	3.983	39.7988	11.3891	1.7119	2.4382	1.5603	1.6588	0.0853	0.7252	3.7284	0	0.9931	0	1.6316	0	8.5634	1.3476	0.0831	0
2005	1.8674	30.532	15.1764	1.7059	5.0556	0.439	2.8705	0	6.439	2.8705	0	0.84	0	5.9285	0	7.4606	0.0831	0	0
M Total	3.54075	40.5811	8.391083333	0.577633333	7.226793333	8.91754	0.23395	3.680956667	3.398361667	7.579183333	0.00376	1.210616667	0.701856667	0.355483333	3.33145	0.122406667	4.491933333	0.48355	0
S	1980	21.8878	38.5983	19.375	0.2323	2.8162	0	0	5.6664	0.01936	0	1.8194	0	0	0	0.37743	0	0	0
1985	7.1094	51.4458	0.7229	0	0.9639	0	0	29.1165	0	29.1165	0	7.6305	0	0	0	0	0	0	0
1990	13.9888	37.7039	15.6824	0	4.5051	0	0	6.0819	0	3.3789	0	3.8519	0	0	3.1761	0	0	0.6758	0
1995	26.1389	29.1592	21.9225	0	1.3807	0	0	1.0872	0	5.6218	0	4.0207	0	0	3.0276	0	0	1.4438	0
2000	38.4094	24.136	14.7403	0	0	0	0	0.4074	1.52775	0.45933	0.6493	0	4.4152	0	0	0	0	2.64811	0.1731
2005	12.9264	21.8365	27.2561	0	0	0	0	0.109	0	13.3842	0	1.7657	0	0	0.218	0	0	4.52316	0
M Total	20.07495	33.813283333	16.616533333	0.038716667	1.450333333	0	0	1.289405	0.108216667	9.442616667	0	3.917233333	0	0	1.070283333	0.062905	1.548478333	0.02885	0

Table B6.6. Diet composition of Smooth Skate. All values are expressed as whole numbers rather than percentages. Relmsw = relative mean stomach weight, on average for the size class and time period given. AR = animal remains, a well-digested, highly unresolved category.

Average of relmsw size	yr5block	AMPHIP	ANNELI	AR	Cancer Crabs	Crangon sp.	Misc. Crustacea	Other Decapod	Other Crabs	Decapod Shrimp	Euphausiids	GADFAM	MERBIL	MYSIDA	Pandalid Shrimp	OTHFS
I	1980	0	0	0	0	0	0	0	0	0	100	0	0	0	0	0
	1985	25.5072	0	17.3913	0	0	0	0	0	0	38.8406	0	0	0	5.7971	0
	1990	0	0	14.9425	0	0	21.7241	17.2414	0	0	0	40.3448	0	0	5.7471	0
	1995	33.7185	2.395	38.1688	0	3.7815	4.2017	0	0	0	6.8277	0	0	0	2.1008	5.8298
	2000	9.9932	2.435	44.1366	0	1.2784	19.298	0	1.8263	5.4788	7.0768	0	0	0	2.1306	4.8853
	2005	13.84378	0.966	22.92784	0	1.01198	11.24756	3.44828	0.36526	1.09576	30.54902	8.06896	0	0	3.15512	2.14302
I Total		0	0	0.974	3.8277	9.2047	7.288	16.192	0	16.6234	0	0	0	0	0.1065	42.4603
M	1980	1.0017	11.5192	10.0167	0	4.0067	4.5075	0	0	34.5576	0	0	0	0	0	30.384
	1985	1.3291	0.217	9.1141	0	1.9169	9.8085	0.2713	1.4955	3.0923	49.0786	0.7053	2.4955	0	0	4.8102
	1990	0.3283	1.4304	6.8296	0	0.4072	13.2809	0	2.794	1.5244	7.963	0	22.8866	0.0693	0	11.8357
	1995	2.2124	0.6341	10.6603	2.4559	3.1884	3.1664	0	8.62	3.2415	5.4317	0	11.5812	0.2531	0	8.634
	2000	1.3192	1.5846	13.3123	2.3746	1.9784	27.6493	0.0916	2.6112	3.7497	5.5229	0.0458	1.0535	0.3893	0	34.2183
	2005	1.031783333	2.564216667	8.4845	1.443033333	3.450383333	10.9501	2.75915	2.586783333	4.705216667	17.0923	0.125183333	6.3278	0.136366667	27.41006667	5.826283333
M Total		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table B6.7. Diet composition of Clearnose Skate. All values are expressed as whole numbers rather than percentages. Relmsw = relative mean stomach weight, on average for the size class and time period given. AR = animal remains, a well-digested, highly unresolved category.

Average of relmsw size	yr5block	analcat	AMMFAM	ANNELI	AR	BIVALV	Cancer Crabs	Cephalopods	Misc. Crustacea	DECAPO	Other Crabs	OPHFA2	Other Fish	SERFA2	SOLFAM
I	1980	0	0.497	1.7597	0.3006	30.6196	3.2767	0.2182	2.0069	34.9284	0	0	12.5642	0	0
	1985	0.80335	1.06525	2.02465	1.0842	22.74435	1.63835	8.00895	1.00345	33.2557	0	11.34335	0	0	0
	1990	1.6067	1.6335	2.2896	1.8678	14.8691	0	15.7997	0	31.586	0	10.1225	0	0	0
	1995	0	5.0256	0.6391	0	32.2353	0	12.5359	0	2.2386	33.5783	1.8737	6.0441	0	0
	2000	0	5.8414	5.973	4.1183	9.3624	6.3996	5.5937	0.1422	32.9217	0.7901	12.5543	0.2844	0	0
	2005	0	0	0	5.5127	14.8842	23.1533	0.3308	0	18.7431	4.9614	13.5612	0	0	0
I Total		0.32134	2.5995	2.13228	2.35988	20.39412	6.56592	6.89566	0.42982	24.08296	7.86596	10.13518	1.2657	0	0
M	1980	0	0	0	0	0	0	0	0	0	0	0	100	0	0
	1985	0	0	0	16.667	33.3333	0	0	0	0	0	0	50	0	0
	1990	5.9811	0.2723	0	0	27.3371	3.104	3.7212	0	26.9831	10.8913	7.5876	0	0	0
	1995	0	0.4189	0.3491	0	13.5727	0	0	0	9.6008	5.1204	66.7183	0	0	0
	2000	0.9146	0.3593	0.4717	0.7186	6.2759	0	0.8493	0	21.273	16.332	35.1313	1.5056	3.6487	0
	2005	0	0.6081	0.827	1.4975	15.4281	55.3925	0.2737	0	8.1955	0	5.4731	0	0.608116667	
M Total		1.149283333	0.276433333	0.274633333	3.147783333	15.99118333	9.749416667	0.807366667	0	11.00873333	5.390616667	44.15771667	0.250933333	0.3317	

Table B6.8. Diet composition of Rosette Skate. All values are expressed as whole numbers rather than percentages. Relmsw = relative mean stomach weight, on average for the size class and time period given. AR = animal remains, a well-digested, highly unresolved category.

Average of relmsw	year	Amphipods	Polychaetes	AR	Cancer Crabs	Cephalopods	Crangon sp.	CRUSTA	DECAPO	DECCRA	EUPFAM	ISOPOD	MYSIDA	OPHFA2	OTHFIS	Pandalid Shrimp
I	1999	39	0	25	0	0	36	0	0	0	0	0	0	0	0	0
	2000	7.5949	68.3544	3.7975	0	0	0	0	0	0	7.5949	0	0	0	0	12.6582
	2001	20.5231	14.3538	32.3077	0.5077	0	1.5385	0	0	9.2308	10	0	0	0	0	0
	2002	41.6667	0	55.5556	0	0	2.7778	0	0	0	0	0	0	0	0	0
	2003	1.476	0	15.4982	0	0	0	0	0	0	3.69	0	70.1107	0	0	0
	2004	27.4396	4.8352	19.3407	16.4396	15.956	15.3846	0	0	0	0.6044	0	0	0	0	0
	2005	33.3333	33.3333	0	0	33.3333	0	0	0	0	0	0	0	0	0	0
I Total		24.43337143	17.2681	21.64281429	2.421042857	7.041328571	7.957271429	0	0	1.318885714	3.127042857	1.317871429	10.01581429	0	1.808314286	0
M	1999	4.9591	2.7248	16.1035	0	6.812	28.0109	6.1308	0	6.485	10.8992	0	0	1.7166	2.0436	13.5695
	2000	10.8001	19.2824	5.781	3.6232	2.4155	2.8986	0.3019	1.4493	41.3225	3.1099	2.5403	0.0141	0.6341	4.1969	1.3285
	2001	3.8652	11.6428	34.2567	7.7999	1.8569	3.8175	4.1822	1.1543	4.5416	5.2278	8.2474	3.3291	2.5227	1.0874	1.2045
	2002	1.2109	35.4328	19.8984	10.6054	4.3681	0.9143	0.8127	0	2.7631	1.0402	1.2475	1.796	7.3141	4.1447	6.1764
	2003	3.9116	2.5885	26.1675	7.7745	0	7.6681	2.9048	0	30.7168	5.3685	8.5319	0	0	3.0903	0.6692
	2004	10.1379	6.0664	19.3729	8.6131	2.7056	2.2766	4.6414	0	36.5099	1.3206	0.2416	0.51	1.3206	2.3218	3.8651
	2005	12.5	11.8532	18.8578	0.4212	8.7244	19.3542	0.4091	0	1.1211	3.3895	1.8051	0.0722	12.6354	0.0722	2.4067
M Total		6.769257143	12.7987	20.06254286	5.548185714	3.840357143	9.277171429	2.768985714	0.371942857	17.63714286	4.336528571	3.230542857	0.817342857	3.734785714	2.422414286	4.174271429

Table B6.9. Comparison of total skate consumptive removal of major skate prey relative to standing biomass and production estimates of those prey (from Link et al. 2006); these estimates are integrated across the entire ecosystem for the period 1996-2000. All values are in MT. C = consumptive removal of the prey by skates, as averaged during the period 2000-2006; B = biomass, P = production.

	C	B	P
Polychaetes	3.23×10^4	4.30×10^6	1.08×10^7
Molluscs	3.24×10^4	2.80×10^6	9.27×10^6
Cephalopods	5.91×10^3	3.13×10^5	3.03×10^5
Herrings & Mackerel	5.09×10^3	2.04×10^6	7.55×10^5
Euphysiids and similar crustaceans	2.12×10^3	1.89×10^6	2.69×10^7

Table B6.10. Comparison of fishery landings of major skate prey with total skate consumptive removal of major commercially targeted skate prey across different assumed gear efficiencies used to estimate skate abundance. All values represent an average from 2000-2005 and are in MT. The C/L ratio contrasts the consumption to the fishery landings as a unitless scalar; values > 1 indicate more of the prey is consumed by skates than is removed by the fishery..

	Fishery Landings	100% Efficiency	50%	25%	10%
Illex and Loligo	2.53×10^4	5.91×10^3	1.18×10^4	2.36×10^4	5.91×10^4
C/L ratio	-	0.23	0.47	0.93	2.33
Silver Hake	9.37×10^3	2.15×10^3	4.30×10^3	8.59×10^3	2.15×10^4
C/L ratio	-	0.23	0.46	0.92	2.29
Red Hake	9.95×10^2	1.15×10^3	2.29×10^3	4.58×10^3	1.15×10^4
C/L ratio	-	1.15	2.30	4.60	11.51
Herrings	1.16×10^5	5.09×10^3	1.02×10^4	2.04×10^4	5.09×10^4
C/L ratio	-	0.04	0.09	0.18	0.44