

**Table 31 Annual Skate Landings (Live Weight) by Port and Market Category as a Percentage of Total Skate Landings**

Source: Dealer Weighout Database, NEFSC

\* Landings from other codes were incorporated into the 3650 category.

PORT		LIVE WEIGHT (POUNDS) OF SKATES				
		1995	1996	1997	1998	1999
NEW BEDFORD/WESTPORT, MA	3650 - Uncl. Skates	408,576	16,325	498,361	145,550	320
	% of Total 3650 Landings	5.7%	0.2%	4.2%	1.2%	0.0%
	3651 - Uncl. Wings	4,951,156	18,755,972	7,089,449	10,807,750	8,043,344
	% of Total 3651 Landings	56.3%	83.1%	57.6%	57.5%	54.7%
	<b>TOTAL</b>	<b>5,359,732</b>	<b>18,772,297</b>	<b>7,587,810</b>	<b>10,953,300</b>	<b>8,043,664</b>
	% of TOTAL LANDINGS	33.7%	59.9%	31.4%	35.7%	31.2%
POINT JUDITH, RI	3650 - Uncl. Skates	5,472,165	7,461,939	8,780,110	8,293,045	7,389,075
	% of Total 3650 Landings	76.8%	85.0%	74.2%	69.7%	66.6%
	3651 - Uncl. Wings	466,771	608,003	620,700	733,610	816,506
	% of Total 3651 Landings	5.3%	2.7%	5.0%	3.9%	5.6%
	<b>TOTAL</b>	<b>5,938,936</b>	<b>8,069,942</b>	<b>9,400,810</b>	<b>9,026,655</b>	<b>8,205,581</b>
	% of TOTAL LANDINGS	37.3%	25.7%	38.9%	29.4%	31.8%
PORTLAND, ME	3650 - Uncl. Skates	240	0	0	0	290
	% of Total 3650 Landings	0.0%	0.0%	0.0%	0.0%	0.0%
	3651 - Uncl. Wings	571,141	468,416	415,460	291,099	362,283
	% of Total 3651 Landings	6.5%	2.1%	3.4%	1.5%	2.5%
	<b>TOTAL</b>	<b>571,381</b>	<b>468,416</b>	<b>415,460</b>	<b>291,099</b>	<b>362,573</b>
	% of TOTAL LANDINGS	3.6%	1.5%	1.7%	0.9%	1.4%
ROCKLAND, ME	3650 - Uncl. Skates	0	0	0	0	0
	% of Total 3650 Landings	0.0%	0.0%	0.0%	0.0%	0.0%
	3651 - Uncl. Wings	32,071	14,047	5,178	5,786	9,711
	% of Total 3651 Landings	0.4%	0.1%	0.0%	0.0%	0.1%
	<b>TOTAL</b>	<b>32,071</b>	<b>14,047</b>	<b>5,178</b>	<b>5,786</b>	<b>9,711</b>
	% of TOTAL LANDINGS	0.2%	0.0%	0.0%	0.0%	0.0%
GLOUCESTER, MA	3650 - Uncl. Skates	1,828	0	0	0	0
	% of Total 3650 Landings	0.0%	0.0%	0.0%	0.0%	0.0%
	3651 - Uncl. Wings	377,592	263,324	194,119	283,224	510,613
	% of Total 3651 Landings	4.3%	1.2%	1.6%	1.5%	3.5%
	<b>TOTAL</b>	<b>379,420</b>	<b>263,324</b>	<b>194,119</b>	<b>283,224</b>	<b>510,613</b>
	% of TOTAL LANDINGS	2.4%	0.8%	0.8%	0.9%	2.0%

**Table 31 (cont.) Annual Skate Landings (Live Weight) by Port and Market Category as a Percentage of Total Skate Landings**

PORT		LIVE WEIGHT (POUNDS) OF SKATES				
		1995	1996	1997	1998	1999
PROVINCETOWN, MA	3650 - Uncl. Skates	0	0	0	200	0
	% of Total 3650 Landings	0.0%	0.0%	0.0%	0.0%	0.0%
	3651 - Uncl. Wings	118,774	88,919	273,914	1,922,542	1,252,291
	% of Total 3651 Landings	1.4%	0.4%	2.2%	10.2%	8.5%
	<b>TOTAL</b>	<b>118,774</b>	<b>88,919</b>	<b>273,914</b>	<b>1,922,742</b>	<b>1,252,291</b>
	% of TOTAL LANDINGS	0.7%	0.3%	1.1%	6.3%	4.9%
PLYMOUTH, MA	3650 - Uncl. Skates	110	0	0	35	0
	% of Total 3650 Landings	0.0%	0.0%	0.0%	0.0%	0.0%
	3651 - Uncl. Wings	14,990	80,853	28,069	40,573	40,324
	% of Total 3651 Landings	0.2%	0.4%	0.2%	0.2%	0.3%
	<b>TOTAL</b>	<b>15,100</b>	<b>80,853</b>	<b>28,069</b>	<b>40,608</b>	<b>40,324</b>
	% of TOTAL LANDINGS	0.1%	0.3%	0.1%	0.1%	0.2%
BOSTON, MA	3650 - Uncl. Skates	5,685	0	100	0	0
	% of Total 3650 Landings	0.1%	0.0%	0.0%	0.0%	0.0%
	3651 - Uncl. Wings	233,387	241,820	224,615	354,376	315,845
	% of Total 3651 Landings	2.7%	1.1%	1.8%	1.9%	2.1%
	<b>TOTAL</b>	<b>239,072</b>	<b>241,820</b>	<b>224,715</b>	<b>354,376</b>	<b>315,845</b>
	% of TOTAL LANDINGS	1.5%	0.8%	0.9%	1.2%	1.2%
CHATHAM, MA	3650 - Uncl. Skates	0	0	0	0	0
	% of Total 3650 Landings	0.0%	0.0%	0.0%	0.0%	0.0%
	3651 - Uncl. Wings	209,026	139,231	116,973	444,456	281,601
	% of Total 3651 Landings	2.4%	0.6%	1.0%	2.4%	1.9%
	<b>TOTAL</b>	<b>209,026</b>	<b>139,231</b>	<b>116,973</b>	<b>444,456</b>	<b>281,601</b>
	% of TOTAL LANDINGS	1.3%	0.4%	0.5%	1.4%	1.1%
HARWICHPORT, MA	3650 - Uncl. Skates	0	0	0	0	0
	% of Total 3650 Landings	0.0%	0.0%	0.0%	0.0%	0.0%
	3651 - Uncl. Wings	47,215	41,467	18,241	4,045	2,718
	% of Total 3651 Landings	0.5%	0.2%	0.1%	0.0%	0.0%
	<b>TOTAL</b>	<b>47,215</b>	<b>41,467</b>	<b>18,241</b>	<b>4,045</b>	<b>2,718</b>
	% of TOTAL LANDINGS	0.3%	0.1%	0.1%	0.0%	0.0%

**Table 31 (cont.) Annual Skate Landings (Live Weight) by Port and Market Category as a Percentage of Total Skate Landings**

PORT		LIVE WEIGHT (POUNDS) OF SKATES				
		1995	1996	1997	1998	1999
SANDWICH, MA	3650 - Uncl. Skates	0	0	0	0	0
	% of Total 3650 Landings	0.0%	0.0%	0.0%	0.0%	0.0%
	3651 - Uncl. Wings	41,405	194,428	172,612	1,182	29,737
	% of Total 3651 Landings	0.5%	0.9%	1.4%	0.0%	0.2%
	<b>TOTAL</b>	<b>41,405</b>	<b>194,428</b>	<b>172,612</b>	<b>1,182</b>	<b>29,737</b>
	% of TOTAL LANDINGS	0.3%	0.6%	0.7%	0.0%	0.1%
SCITUATE, MA	3650 - Uncl. Skates	5	15	0	0	0
	% of Total 3650 Landings	0.0%	0.0%	0.0%	0.0%	0.0%
	3651 - Uncl. Wings	13,235	8,685	7,716	88,476	74,316
	% of Total 3651 Landings	0.2%	0.0%	0.1%	0.5%	0.5%
	<b>TOTAL</b>	<b>13,240</b>	<b>8,700</b>	<b>7,716</b>	<b>88,476</b>	<b>74,316</b>
	% of TOTAL LANDINGS	0.1%	0.0%	0.0%	0.3%	0.3%
PORTSMOUTH, NH	3650 - Uncl. Skates	0	1,610	0	0	1,418
	% of Total 3650 Landings	0.0%	0.0%	0.0%	0.0%	0.0%
	3651 - Uncl. Wings	42,829	34,209	29,022	35,443	45,625
	% of Total 3651 Landings	0.5%	0.2%	0.2%	0.2%	0.3%
	<b>TOTAL</b>	<b>42,829</b>	<b>35,819</b>	<b>29,022</b>	<b>35,443</b>	<b>47,043</b>
	% of TOTAL LANDINGS	0.3%	0.1%	0.1%	0.1%	0.2%
CAPE MAY/WILDWOOD, NJ	3650 - Uncl. Skates	157,735	56,097	175,152	58,785	43,857
	% of Total 3650 Landings	2.2%	0.6%	1.5%	0.5%	0.4%
	3651 - Uncl. Wings	4,364	8,053	27,698	7,900	773
	% of Total 3651 Landings	0.0%	0.0%	0.2%	0.0%	0.0%
	<b>TOTAL</b>	<b>162,099</b>	<b>64,150</b>	<b>202,850</b>	<b>66,685</b>	<b>44,630</b>
	% of TOTAL LANDINGS	1.0%	0.2%	0.8%	0.2%	0.2%
BELFORD, NJ	3650 - Uncl. Skates	6,200	0	50	182,060	139,540
	% of Total 3650 Landings	0.1%	0.0%	0.0%	1.5%	1.3%
	3651 - Uncl. Wings	26,404	21,304	156,929	52,529	60,057
	% of Total 3651 Landings	0.3%	0.1%	1.3%	0.3%	0.4%
	<b>TOTAL</b>	<b>32,604</b>	<b>21,304</b>	<b>156,979</b>	<b>234,589</b>	<b>199,597</b>
	% of TOTAL LANDINGS	0.2%	0.1%	0.7%	0.8%	0.8%

**Table 31 (cont.) Annual Skate Landings (Live Weight) by Port and Market Category as a Percentage of Total Skate Landings**

PORT		LIVE WEIGHT (POUNDS) OF SKATES				
		1995	1996	1997	1998	1999
POINT PLEASANT, NJ	3650 - Uncl. Skates	24,496	0	35	56,337	25,809
	% of Total 3650 Landings	0.3%	0.0%	0.0%	0.5%	0.2%
	3651 - Uncl. Wings	126,146	223,259	391,383	376,988	262,357
	% of Total 3651 Landings	1.4%	1.0%	3.2%	2.0%	1.8%
	<b>TOTAL</b>	<b>150,642</b>	<b>223,259</b>	<b>391,418</b>	<b>433,325</b>	<b>288,166</b>
	% of TOTAL LANDINGS	0.9%	0.7%	1.6%	1.4%	1.1%
MONTAUK, NY	3650 - Uncl. Skates	5,140	19,530	15,428	6	1,340
	% of Total 3650 Landings	0.1%	0.2%	0.1%	0.0%	0.0%
	3651 - Uncl. Wings	145,781	86,294	107,136	234,023	165,179
	% of Total 3651 Landings	1.7%	0.4%	0.9%	1.2%	1.1%
	<b>TOTAL</b>	<b>150,921</b>	<b>105,824</b>	<b>122,564</b>	<b>234,029</b>	<b>166,519</b>
	% of TOTAL LANDINGS	0.9%	0.3%	0.5%	0.8%	0.6%
GREENPORT, NY	3650 - Uncl. Skates	0	35	262	0	264
	% of Total 3650 Landings	0.0%	0.0%	0.0%	0.0%	0.0%
	3651 - Uncl. Wings	24,095	9,769	9,572	4,410	11,966
	% of Total 3651 Landings	0.3%	0.0%	0.1%	0.0%	0.1%
	<b>TOTAL</b>	<b>24,095</b>	<b>9,804</b>	<b>9,834</b>	<b>4,410</b>	<b>12,230</b>
	% of TOTAL LANDINGS	0.2%	0.0%	0.0%	0.0%	0.0%
HAMPTON BAY, NY	3650 - Uncl. Skates	51	3,272	2,128	15	20
	% of Total 3650 Landings	0.0%	0.0%	0.0%	0.0%	0.0%
	3651 - Uncl. Wings	97,649	178,490	589,488	962,907	652,078
	% of Total 3651 Landings	1.1%	0.8%	4.8%	5.1%	4.4%
	<b>TOTAL</b>	<b>97,700</b>	<b>181,762</b>	<b>591,616</b>	<b>962,922</b>	<b>652,098</b>
	% of TOTAL LANDINGS	0.6%	0.6%	2.5%	3.1%	2.5%
NEWPORT, RI	3650 - Uncl. Skates	6,173	368	55	278,351	0
	% of Total 3650 Landings	0.1%	0.0%	0.0%	2.3%	0.0%
	3651 - Uncl. Wings	77,812	46,258	51,782	94,288	83,262
	% of Total 3651 Landings	0.9%	0.2%	0.4%	0.5%	0.6%
	<b>TOTAL</b>	<b>83,985</b>	<b>46,626</b>	<b>51,837</b>	<b>372,639</b>	<b>83,262</b>
	% of TOTAL LANDINGS	0.5%	0.1%	0.2%	1.2%	0.3%

**Table 31 (cont.) Annual Skate Landings (Live Weight) by Port and Market Category as a Percentage of Total Skate Landings**

PORT		LIVE WEIGHT (POUNDS) OF SKATES				
		1995	1996	1997	1998	1999
TIVERTON, RI	3650 - Uncl. Skates	0	0	1,420,150	1,970,000	1,920,000
	% of Total 3650 Landings	0.0%	0.0%	12.0%	16.6%	17.3%
	3651 - Uncl. Wings	0	0	39,384	194,576	288,956
	% of Total 3651 Landings	0.0%	0.0%	0.3%	1.0%	2.0%
	<b>TOTAL</b>	<b>0</b>	<b>0</b>	<b>1,459,534</b>	<b>2,164,576</b>	<b>2,208,956</b>
	% of TOTAL LANDINGS	0.0%	0.0%	6.0%	7.1%	8.6%
LITTLE COMPTON, RI	3650 - Uncl. Skates	0	0	0	4,661	23,575
	% of Total 3650 Landings	0.0%	0.0%	0.0%	0.0%	0.2%
	3651 - Uncl. Wings	0	0	46,514	205,861	158,523
	% of Total 3651 Landings	0.0%	0.0%	0.4%	1.1%	1.1%
	<b>TOTAL</b>	<b>0</b>	<b>0</b>	<b>46,514</b>	<b>210,522</b>	<b>182,098</b>
	% of TOTAL LANDINGS	0.0%	0.0%	0.2%	0.7%	0.7%
STONINGTON, CT	3650 - Uncl. Skates	0	0	661,237	584,101	918,176
	% of Total 3650 Landings	0.0%	0.0%	5.6%	4.9%	8.3%
	3651 - Uncl. Wings	0	0	0	231,064	153,014
	% of Total 3651 Landings	0.0%	0.0%	0.0%	1.2%	1.0%
	<b>TOTAL</b>	<b>0</b>	<b>0</b>	<b>661,237</b>	<b>815,165</b>	<b>1,071,190</b>
	% of TOTAL LANDINGS	0.0%	0.0%	2.7%	2.7%	4.2%
GROTON, CT	3650 - Uncl. Skates	0	0	54,100	60,485	32,450
	% of Total 3650 Landings	0.0%	0.0%	0.5%	0.5%	0.3%
	3651 - Uncl. Wings	0	0	0	0	0
	% of Total 3651 Landings	0.0%	0.0%	0.0%	0.0%	0.0%
	<b>TOTAL</b>	<b>0</b>	<b>0</b>	<b>54,100</b>	<b>60,485</b>	<b>32,450</b>
	% of TOTAL LANDINGS	0.0%	0.0%	0.2%	0.2%	0.1%
OCEAN CITY, MD	3650 - Uncl. Skates	9,454	26,199	11,828	8,477	2,902
	% of Total 3650 Landings	0.1%	0.3%	0.1%	0.1%	0.0%
	3651 - Uncl. Wings	88,360	85,519	154,885	148,034	103,060
	% of Total 3651 Landings	1.0%	0.4%	1.3%	0.8%	0.7%
	<b>TOTAL</b>	<b>97,814</b>	<b>111,718</b>	<b>166,713</b>	<b>156,511</b>	<b>105,962</b>
	% of TOTAL LANDINGS	0.6%	0.4%	0.7%	0.5%	0.4%

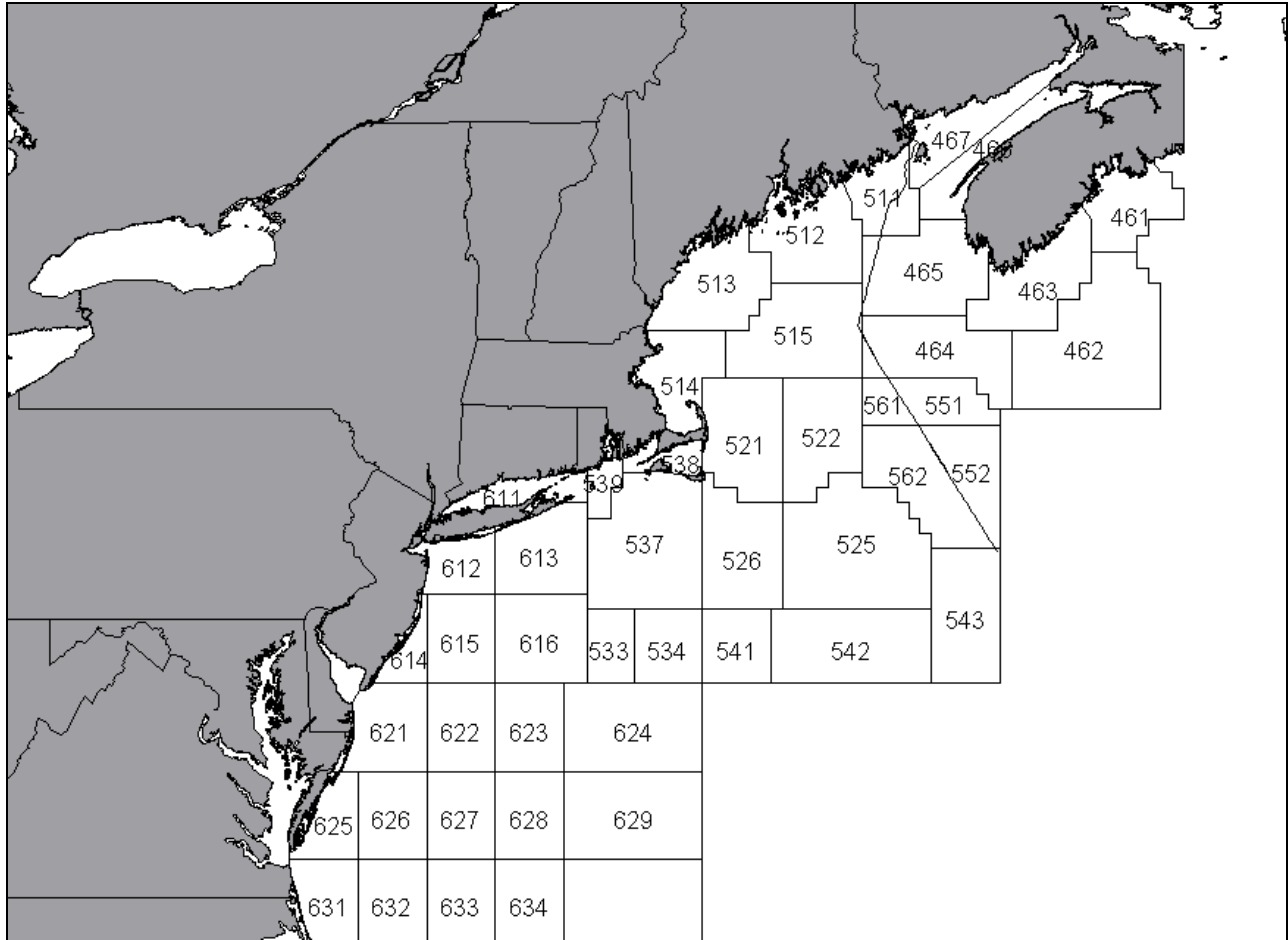
### **3.2.7 Fishing Areas**

Dealers do not report “area fished” in the dealer weighout database, so information about “area fished” must be obtained through the VTR database. Fishermen are required to report the area in which their trip (or tow) was made according to the statistical areas presented in Figure 45 or by smaller, inshore statistical areas, of which there are too many to illustrate on a map.

Table 32 presents VTR landings information from the top ten statistical areas depicted in Figure 45. Table 33 presents VTR landings information from the top reported inshore areas. Each of the inshore Sounds in Table 33 is reported through an area code specific to that Sound, rather than a more general statistical area like the ones identified in Figure 45.

Statistical Areas 537 and 539 are clearly the prime areas for skate fishing, as more than 50% of the skates landed annually were reported to have been caught in these two areas. A majority of fishing activity in these areas is likely to be associated with the directed skate fishery for lobster bait. Areas 521 and 522 are also very important areas for skate fishing, with about 8% and 6% of skate landings reported to have been caught in those areas, respectively. These areas, along with Area 562, are associated more with the skate wing fishery than the bait fishery. Another popular skate fishing area is 538, which also includes parts of Nantucket Sound and Vineyard Sound. However, the landings from Area 538 that are reported in Table 32 do not include landings from Nantucket Sound and Vineyard Sound; those landings are reported in Table 33. Skate fishing activity in Block Island Sound has increased substantially. In fact, in 1999, more than 10% of the total skate landings were reported to have been caught in Block Island Sound; this puts Block Island Sound ahead of all other areas except 537 and 539 for skate landings in 1999. On average, landings reported specifically from Block Island Sound, Vineyard Sound, and Long Island Sound collectively accounted for about 9% of the total skate landings across the 1994 – 1999 time series (Table 33).

**Figure 45 Map of Statistical Areas**



**Table 32 Top Ten VTR-Reported Statistical Areas Fished for Skates\***

Source: Vessel Trip Reports, any trips with >0 pounds of skate landings

\*Ranking based on total reported kept pounds of skates, 1994 - 1999.

\*\*1994 is considered an incomplete year in terms of logbook reporting.

STAT. AREA		REPORTED POUNDS OF SKATES						
		1994**	1995	1996	1997	1998	1999	TOTAL
539	KEPT LBS. OF SKATES	2,070,366	5,038,870	5,540,093	4,599,750	4,132,037	5,925,519	27,306,635
	% OF TOTAL	21.1%	42.3%	27.4%	24.4%	19.3%	29.2%	26.6%
537	KEPT LBS. OF SKATES	1,669,759	2,547,120	4,656,963	6,210,757	5,951,908	3,856,833	24,893,340
	% OF TOTAL	17.0%	21.4%	23.0%	33.0%	27.8%	19.0%	24.3%
521	KEPT LBS. OF SKATES	1,546,725	724,796	2,541,425	1,050,311	1,465,324	1,234,165	8,562,746
	% OF TOTAL	15.7%	6.1%	12.5%	5.6%	6.9%	6.1%	8.4%
522	KEPT LBS. OF SKATES	802,919	456,020	1,583,771	801,182	1,479,701	1,023,113	6,146,706
	% OF TOTAL	8.2%	3.8%	7.8%	4.3%	6.9%	5.0%	6.0%
562	KEPT LBS. OF SKATES	686,515	102,743	1,457,530	314,822	359,320	276,960	3,197,890
	% OF TOTAL	7.0%	0.9%	7.2%	1.7%	1.7%	1.4%	3.1%
526	KEPT LBS. OF SKATES	727,832	174,420	1,073,439	138,294	451,967	329,750	2,895,702
	% OF TOTAL	7.4%	1.5%	5.3%	0.7%	2.1%	1.6%	2.8%
538	KEPT LBS. OF SKATES	107,899	415,178	178,134	1,344,675	631,874	135,950	2,813,710
	% OF TOTAL	1.1%	3.5%	0.9%	7.1%	3.0%	0.7%	2.7%
613	KEPT LBS. OF SKATES	102,760	185,380	239,000	662,958	600,571	942,826	2,733,495
	% OF TOTAL	1.0%	1.6%	1.2%	3.5%	2.8%	4.6%	2.7%
514	KEPT LBS. OF SKATES	132,125	191,989	354,208	241,946	767,996	608,884	2,297,148
	% OF TOTAL	1.3%	1.6%	1.7%	1.3%	3.6%	3.0%	2.2%
525	KEPT LBS. OF SKATES	119,706	129,662	215,793	488,133	621,930	556,554	2,131,778
	% OF TOTAL	1.2%	1.1%	1.1%	2.6%	2.9%	2.7%	2.1%



**Table 33 Top Three VTR-Reported Inshore Areas Fished for Skates\***

*Source: Vessel Trip Reports, any trips with >0 pounds of skate landings*

*\*Ranking based on total reported kept pounds of skates, 1994 - 1999.*

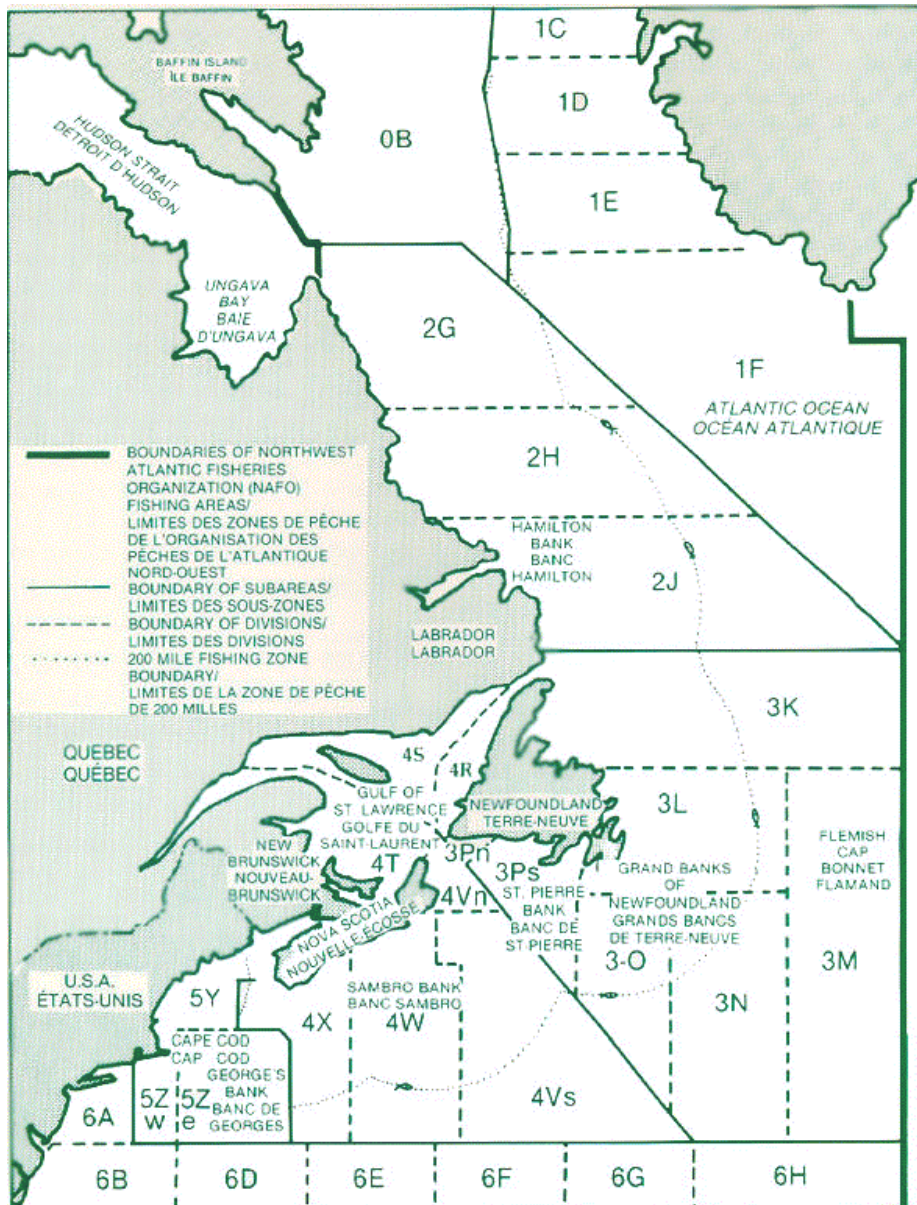
*\*\*1994 is considered an incomplete year in terms of logbook reporting.*

		<b>REPORTED POUNDS OF SKATES</b>						
<b>AREA</b>		<b>1994**</b>	<b>1995</b>	<b>1996</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>TOTAL</b>
<b>BLOCK ISLAND SOUND</b>	KEPT LBS. OF SKATES	168,409	152,376	398,566	765,484	1,587,466	2,076,626	5,148,927
	<b>% OF TOTAL</b>	<b>1.7%</b>	<b>1.3%</b>	<b>2.0%</b>	<b>4.1%</b>	<b>7.4%</b>	<b>10.2%</b>	<b>5.0%</b>
<b>VINEYARD SOUND</b>	KEPT LBS. OF SKATES	147,112	521,159	448,770	722,395	812,244	954,440	3,606,120
	<b>% OF TOTAL</b>	<b>1.5%</b>	<b>4.4%</b>	<b>2.2%</b>	<b>3.8%</b>	<b>3.8%</b>	<b>4.7%</b>	<b>3.5%</b>
<b>LONG ISLAND SOUND</b>	KEPT LBS. OF SKATES	111,802	154,110	44,244	73,660	82,108	82,642	548,566
	<b>% OF TOTAL</b>	<b>1.1%</b>	<b>1.3%</b>	<b>0.2%</b>	<b>0.4%</b>	<b>0.4%</b>	<b>0.4%</b>	<b>0.5%</b>

### 3.2.8 Canadian Landings of Skates

Prior to 1994, skates were only caught incidentally in Canadian fisheries like those for groundfish. However, a Canadian directed skate fishery was initiated in recent years as a response to closures in the traditional Canadian groundfish fishery and an increasing international market (mostly France) for skate wings. The directed skate fishery evolved on the eastern Scotian Shelf, in NAFO Divisions 4Vs and 4W (Figure 46) and targets primarily winter skate (90%) with a small bycatch of thorny skate (less than 10%).

**Figure 46 Map of Northwest Atlantic Fishing Organization (NAFO) Fishing Areas**



Map Source: Nova Scotia Department of Fisheries and Aquaculture, <http://www.gov.ns.ca/fish/>

In response to the developing directed fishery and the need for additional information, Canadian officials developed a five-year Conservation Harvesting Plan (CHP) for skates in 1994. This CHP included a provision that requires the fishing industry to supply the scientific information currently lacking for this fishery through two industry/science skate surveys per year in Division 4VsW. The cooperative surveys are structured so that vessels can fish commercially while collecting scientific data for the Department of Fisheries and Oceans (DFO). Observers are required on about 50% of the trips in the fishery, and vessels are required to collect information at both DFO-dedicated tow stations and official “commercial zones.” The participating industry is responsible for the costs of entering and processing the data for DFO use. The final survey in the five-year industry survey series has recently been completed, and these data, along with those from the previous four years, will provide the basis for a full review of the Canadian skate stock and the sustainability of the directed fishery in 4VsW, which is expected to be completed in the near future.

A Total Allowable Catch (TAC) for the directed skate fishery in 4VsW was set in 1994 and every year thereafter to ensure that the fishery would not expand beyond sustainable levels during the five years of exploratory fishing and cooperative data collection. In addition, vessels participating in the directed skate fishery are required to use a minimum mesh of 254 mm (10-inches). Initially, about six vessels participated in this “exploratory” fishery, and that number has since decreased to about two vessels primarily due to market limitations. Landings in the directed fishery have ranged from 2,152 tons in 1994 to 525 tons in 1998 (Table 34). The TAC has been lowered almost every year since 1994 in response to interim assessments, concerns over the response of winter skate to directed fishing, and decreasing participation in the fishery. While winter skate range from south of Georges Bank to the Gulf of St. Lawrence, they are near their northern limit of distribution on the offshore banks of the eastern Scotian Shelf. From observations of discontinuities in distribution, Canadian scientists believe that the winter skates in Division 4VsW are probably part of a separate stock (although very little work has been completed on skate stock delineation).

**Table 34 Landings of Skates (in tons) in Canadian 4VsW Exploratory Directed Fishery**

*Discards in the directed skate fishery are estimated based on bycatch from Canadian groundfish directed fisheries.*

YEAR	TONS OF SKATES						
	1993	1994	1995	1996	1997	1998	1999
<b>TAC for Directed Fishery</b>	N/A	2,000	1,600	1,600	1,200	1,200	600
<b>Foreign Landings</b>	465	12	70	103	32	30	N/A
<b>Canadian Landings</b>	166	2,152	1,530	1,654	1,048	525	N/A
<b>Estimated Discards</b>	289	136	126	81	68	51	N/A
<b>TOTAL Catch</b>	920	2,300	1,726	1,838	1,148	606	N/A

In addition to the directed winter skate fishery in Division 4VsW, DFO is aware of some limited longline fishing for thorny skates in the Grand Banks, Divisions 3L, 3N, 3O, and 3Ps depicted in Figure 46. Information specific to this directed fishery is currently unavailable, and the magnitude and extent of this fishery is unknown, although it is considered to be relatively small and limited. Table 35 reports a time series of total landings of skates (all species) from the Atlantic coast of Canada. The emergence of a directed fishery for skates in 1994 is quite apparent. Skate landings that are not attributable to either the directed fishery in 4VsW or the

directed fishery in 3LNOPs are assumed to be incidental catches that occur in other fisheries like groundfish. Canadian officials speculate that a significant component of skate incidental catch is discarded.

**Table 35 Landings of Skates (in tons) from the Atlantic Coast of Canada**

<b>YEAR</b>	<b>TONS OF SKATES</b>
1989	79
1990	125
1991	1,135
1992	496
1993	323
1994	6,378
1995	6,263
1996	3,900
1997	4,374
1998	2,958

### **3.3 RECREATIONAL FISHERY CATCH**

In general, skates have little to no recreational value and are not intentionally pursued in any recreational fisheries. Catch information for Atlantic coast skates and rays from the Marine Recreational Fishery Statistics Survey (MRFSS) is presented in Table 36 and

Table 37. Recreational skate catches between 1990 and 1999 ranged from a high of 92,402 fish in 1994 to a low of 46,685 fish in 1998. Massachusetts, Connecticut, Rhode Island, New Jersey, Delaware, and Virginia report the largest recreational skate catches over the time series, but the annual catch estimates for each of those states appear to be rather inconsistent and do not illustrate any clear trends. Recreational fishers in Maine did not report catching any skates between 1990 and 1999. Catch estimates from Delaware, Maryland, Virginia, and North Carolina suggest that some of the skates/rays caught recreationally are either clearnose or rosette skate, or other species of skates/rays that are not included in the northeast complex.

Reliability of skate recreational catch estimates from MRFSS is a concern. The shaded cells in Table 36 and Table 37 indicate that the catch estimate is associated with a proportional standard error (PSE) of 0.2 or less. PSEs provide a measure of precision and represent another way to express error associated with a point estimate. Estimates with a PSE of 0.2 or less are considered to be more reliable than those with higher PSEs, and generally, PSEs of 0.2 or less are considered acceptable for fisheries data. Note that very few cells in Table 36 and *none* in Table 37 are shaded. This suggests that skate recreational catch data from MRFSS are not very reliable. Since skates are not valuable and heavily-fished recreational species, the number of MRFSS intercepts from which these estimates are derived is likely to have been very low. The fewer intercepts from which to extrapolate total catch estimates there are, the less reliable the total catch estimates will be. This is why none of the catch estimates for individual states have a PSE less than 0.2; these estimates are likely to have been based on very few intercepts in each state.