

3.1 DESCRIPTION OF DIRECTED SKATE FISHERIES

3.1.1 The Skate Bait Fishery

3.1.1.1 Rhode Island Bait Fishery

Skates have been targeted commercially in Rhode Island for decades for utilization primarily as lobster bait. The majority of bait skates landed in Rhode Island (>90%) are little skates (*Leucoraja erinacea*), with a small percentage of winter skates (*Leucoraja ocellata*). There is also a seasonal gillnet incidental catch fishery as part of the directed monkfish gillnet fishery, in which skates (mostly winter skates) are sold both for lobster bait and as cut wings for processing. Fishermen have indicated that the market for skates as lobster bait has been relatively consistent and was increasing until the recent lobster fishery restrictions (pot limits) were implemented. The impact of the recent lobster pot limits on the skate fishery is currently unknown (see Section 5.1.2 for additional discussion of this issue).

The directed skate fishery by Rhode Island vessels occurs primarily in federal waters less than 40 fathoms from the Rhode Island/Connecticut/New York state waters boundary east to the waters south of Martha's Vineyard and Nantucket out to approximately 69 degrees. Effort on skates increases in state waters seasonally to accommodate the amplified effort in the spring through fall lobster fishery. In terms of the directed lobster bait fishery, it is estimated that between 30 – 50 Rhode Island otter trawl vessels ranging from 50 – 70 feet dominate the bait market. Ten of those vessels from RI have identified directed skate bait fishing as their sole source of income between June – October annually, with less than 5% of their trip revenues from other species during that time.

Dayboat vessels (<24 hours) directing on skates land between 20,000 – 30,000 pounds of skates per trip, while trip boats fish 2 – 3 days and land between 70,000 – 85,000 pounds per trip. Incidental catches of skates from vessels targeting either groundfish or the southern New England mixed trawl fishery (squids, scup, fluke, whiting, mackerel, monkfish, etc.) are estimated at 5,000 pounds and are often sold directly to a lobster vessel (rather than through a dealer). Otherwise, many vessels indicate they do not bother to keep skates caught incidentally due to low market value or deck/hold capacity.

As the number of vessels targeting lobsters has increased, so has the demand for skates. Skates are the preferred bait for the southern New England inshore and offshore lobster pot fishermen, as the skate meat is tough and holds up longer in the pot than other soft bait choices. Herring, mackerel, and menhaden are also used for bait, usually on trips of shorter duration, in colder water temperatures, or when skates are in short supply.

Skates caught for lobster bait are landed whole by otter trawlers and either sold 1) fresh, 2) fresh salted, or 3) salted and strung or bagged for bait by the barrel. Inshore lobster boats usually use 2 – 3 skates per string, while offshore boats may use 3 – 5 per string. Offshore boats may actually “double bait” the pots during the winter months when anticipated weather conditions prevent the gear from being regularly tended. The presence of sand fleas and parasites, water temperature, and anticipated soak time between trips are determining factors when factoring in the amount of bait per pot.

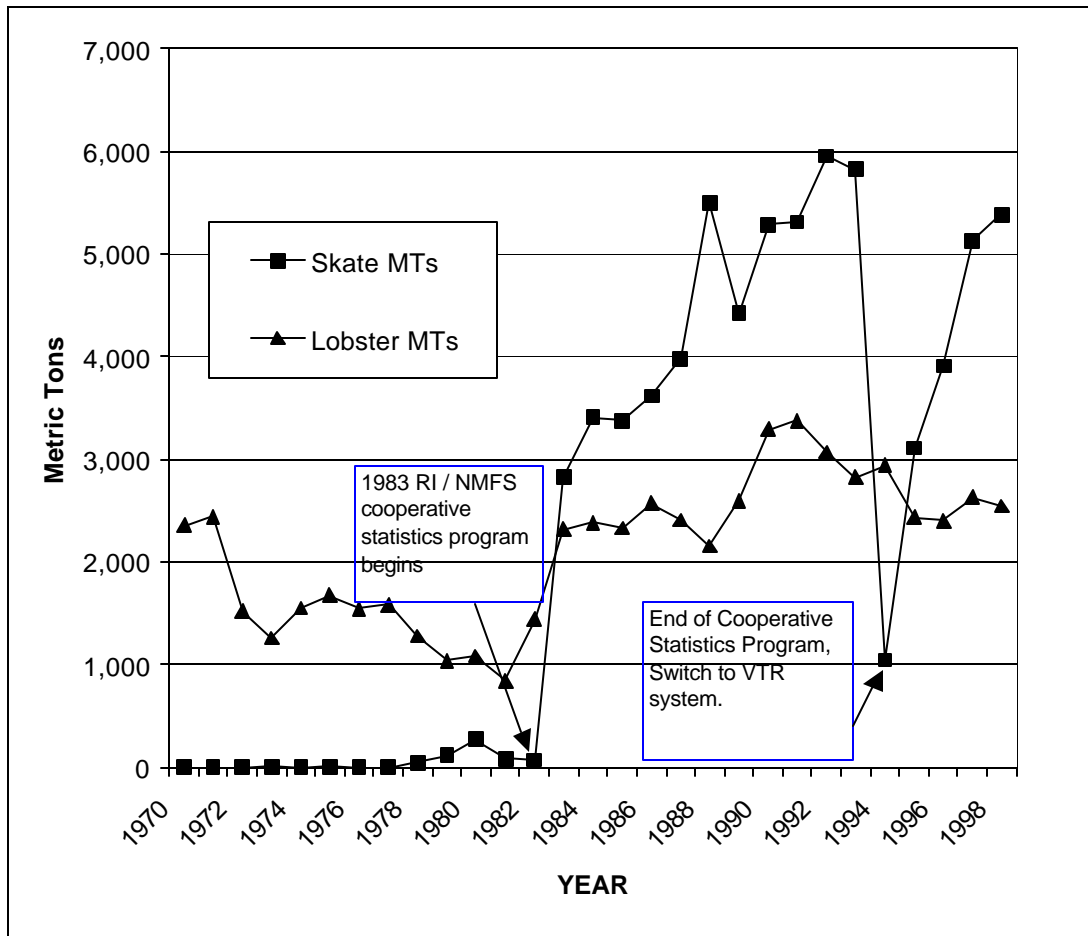
Size is a factor that drives the dockside price for bait skates. For the lobster bait market, a “dinner plate” is the preferable size to be strung and placed inside lobster pots. Little and winter skates are rarely sorted prior to landing, as fishermen acknowledge that species identification between little skates and small winter skates is very difficult. Ex-vessel skate prices remain relatively stable at an average of about \$0.06 per pound (see Section 3.7.2 for a more detailed discussion of price). Quality and cleanliness of the skate are also factors in determining the price paid by the dealer, rather than just supply and demand. The quantity of skates landed on a particular day has little effect on price because there is has been ready supply of skates available for bait from the major dealers, and the demand for lobster bait has been relatively consistent. Numerous draggers and lobster vessels have historically worked out seasonal cooperative business arrangements with a stable pricing agreement for skates.

In Rhode Island, there are two major dealers involved in the skate bait market. One reports supplying skates to 150 lobster businesses located in Point Judith, Wickford, Newport, Westerly, and Jamestown, RI, along with businesses scattered throughout Connecticut and Massachusetts. The company buys from 20 – 30 vessels throughout the year, and eleven employees are charged with offloading, salting, and stringing bait for inshore and offshore lobster vessels. The lobster businesses supplied by the company employ between 2 – 5 crewmembers per vessel. The other major skate dealer in Rhode Island supplies both local vessels and numerous offshore lobster vessels fishing in the Gulf of Maine. Skates are supplied to this dealer from draggers working out of Tiverton, RI and New Bedford, MA.

Approximately eighty percent of the skates landed for bait are sold as strung bait, at about \$0.85 for a string of three skates, usually 150 strings per barrel for \$127.50. Under current lobster pot limitations, the minimum bait costs for inshore areas limited to 800 pots is estimated at \$680 per trip and \$1530 per trip for offshore lobster vessels limited to 1800 pots. Offshore vessels reported carrying between 10 – 30 barrels of bait per trip, which could reflect different baiting patterns. Skates are also sold by the barrel unsalted and unstrung (\$37- 43) or by the barrel unstrung and salted (\$52). A tremendous volume of salt is used in the bait operations, up to 130,000 pounds weekly during the peak of lobster season. Barrels of skates may weigh between 500 – 600 pounds. Menhaden bait (pogies) prices vary between \$38 – \$50 per barrel, depending upon the port and the weight.

Due to direct, independent contracts between draggers and lobster vessels as well as limited reporting requirements, landings of skates are estimated to be under-documented. While bait skates are always landed (rather than transferred at sea) they are not always reported because they can be sold directly to lobster vessels, which are not required to report as dealers. In addition, anyone landing skates who does not possess a federal fisheries permit is not required to submit vessel trip reports. For additional discussion about underreporting, see Section 3.2.1. The time series of skate landings shows a significant increase in landings in the 1990s (6700mt in 1989, about 11400 mt annually from 1990 to present). Fishermen and state fisheries managers attribute the increase in skate landings in 1990 to better reporting and documentation, rather than a significant expansion of the skate fishery. The increase in landings in the Rhode Island skate fishery are coincident with the state’s implementation of a comprehensive system to document commercial fishery landings data (Figure 43).

Figure 43 Annual Landings of Skates and Lobsters in Rhode Island



3.1.1.2 Other Bait Fishery Ports

Vessels from other ports (New Bedford, and Martha’s Vineyard, MA; Block Island, Long Island, Stonington CT, and, to a lesser degree, Chatham and Provincetown, MA) have been identified as participating in the directed skate bait fishery to some extent. Suppliers indicate that some of these vessels have independent contracts with lobster vessels and supply them directly with skates on a seasonal basis.

Lobster bait usage varies regionally and from port to port, based upon preference and availability. Some lobstermen in the northern area (north of Cape Cod) prefer herring, mackerel, menhaden and hakes (whiting and red hake) for bait, which hold up in colder water temperatures; however, the larger offshore lobster vessels still indicate a preference for skates and redfish in their pots. Some offshore boats have indicated they will use soft bait during the summer months when their soak time is shorter. The offshore Gulf of Maine lobster vessels (approx. seven of them) estimate they utilize over 1.2 million pounds of skates annually for bait. Skates used by the Gulf of Maine vessels are caught by vessels fishing in the southern New England area.

3.1.1.3 The Southern New England Sink Gillnet Fishery

The southern New England sink gillnet fishery targets winter skates (*Leucoraja ocellata*) seasonally along with monkfish. Highest catch rates are in the early spring and late fall when the boats are targeting monkfish, at about a 5:1 average ratio of skates to monks (more skates than monks due to monkfish trip limits in the southern area). Little skates (*Leucoraja erinacea*) are also caught incidentally year-round in the gillnets and sold for bait. Several gillnetters indicated that they keep the bodies of the winter skates cut for wings and also salt them for bait.

Gillnetters have become more dependent upon skate incidental catch due to cutbacks in their fishery mandated by both the Monkfish and Groundfish FMPs. Gillnet vessels use 12-inch mesh when monkfishing, catching larger skates. Under the current monkfish regulations, gillnetters in southern New England are fishing with about 1/3 less nets due to monkfish trip limits, with a resultant decrease in skate catches. Southern New England fishermen have reported catching barndoor skates in the last year, which all consider to be an anomaly.

Gillnet fishermen fishing with heavier twine (.90mm) for dogfish and monkfish, primarily in the Mid-Atlantic region, do not catch as many skates in their gillnets. Fishermen reportedly went to the heavier twine to avoid catching skates. The Harbor Porpoise Take Reduction Plan also requires that fishermen west of the 72° 30' line use the heavier gear to avoid entanglements.

3.1.1.4 Regulatory Issues for the Bait Fishery

Two existing and significant regulatory limitations on the directed bait skate fishery include lobster regulations which mandate a decrease in pot limits and groundfish days-at-sea (DAS) requirements. A majority of directed skate fishermen fish in federal waters, possess multispecies permits, and fish for skates with gear capable of catching multispecies. This, in turn, means that they must use a DAS when fishing for skates unless fishing in an exempted fishery. Effort in the skate fishery is reduced during the winter months because it becomes more difficult to budget DAS usage, especially for vessels that fish for groundfish either seasonally or year-round (in addition to directing on skates). The majority of the full-time skate vessels are limited to the Fleet DAS allocation of 88 DAS per year, which they have indicated is inadequate to prosecute skates. Numerous requests for exempted fisheries in the Southern New England Regulated Mesh Area have been forwarded to NMFS in the past; one gillnet fishery and one deepwater fishery for skates has been exempted to date (see Section 5.1.1.5 for a map of these areas).

The state of Rhode Island recently increased sea sampling coverage on the directed skate vessels to document groundfish bycatch rates and skate species composition. Fishermen have identified selected areas, which can be targeted seasonally which meet the <5% groundfish bycatch standard to be exempt from DAS requirements. The data is currently being edited and will be analyzed within the next month.

For additional discussion of these issues, see Section 5.1 of this SAFE Report.

3.1.2 The Skate Wing Fishery

Determining the historical magnitude of the skate wing fishery is somewhat difficult. Skates caught both domestically and by foreign fleets were not identified by product code in the early landings records. Only in recent years have skate wing landings been identified separately from general skate landings.

In response to the New England groundfish crisis, fisheries managers and biologists encouraged the industry to switch to the species long labeled “underutilized,” namely skates, dogfish, and mackerel. The market for skate wings expanded in the mid 1980s until mid 1990, the bulk of the market being an export market. Attempts to develop domestic markets were short-lived, and the bulk of the skate wing market remains overseas.

Winter skate, thorny skate, and barndoor skate are considered sufficient in size for processing of wings. The geographic and seasonal distributions of these three large skates overlap somewhat. Thorny skates reside primarily in the Gulf of Maine. They are likely mixed most with winter skate catches from the Great South Channel. Winter skate likely dominate skate wing catches from Georges Bank and extend down the continental shelf to Cape Hatteras as well as shallow strata in the Gulf of Maine. Although the reported range of the barndoor skate is wide, the present population appears to be centered on the southern edge of Georges Bank. The population has been at low levels for many years, which suggests that little of the recent skate wing landings would be attributable to this species.

Landed skate wings are seldom identified to species. Processors state that they prefer skate wings of at least 1-1 1/4 lb. skin-on. A one-pound skinless wing is estimated to weigh about 1.3-pounds skin-on. Skate processors buy whole, hand-cut, and/or onboard machine-cut skates from vessels primarily out of Massachusetts and Rhode Island. Cutting machines were developed in 1988 in response to increasing markets for skate wings and increased participation in the fishery. However, the practice of onboard machine cutting has decreased since that time and may not exist at all anymore. Cutting machines have been somewhat problematic because they can leave wing meat on the body of the skate or cut too close to the cartilage, decreasing the quality of the product and/or requiring additional hand-cutting. Processors prefer hand-cut wings because hand-cutting generally produces a better product and higher yield. Because of the need to cut the wings, it is relatively labor-intensive to fish for skates. Many vessels have therefore opted to maximize their DAS by targeting more profitable groundfish species rather than increasing their participation in the skate fishery.

New Bedford emerged early-on as the leader in production, both in landed and processed skate wings, although skate wings are landed in ports throughout the Gulf of Maine and extending down into the Mid-Atlantic. New Bedford still lands and processes the greatest share of skate wings. The majority (79%) of reported skate wing landings 1995 – 1999 were landed by otter trawl, while most of the remaining wing landings were brought in by gillnets (19%). In general, 10,000 – 15,000 pounds of landed wings is considered to be a large trip for an otter trawler. Gillnetters tend to land smaller amounts (2,000 – 3,000 pounds of wings during peak seasons). It is assumed that more vessels land skate wings as an incidental catch in mixed fisheries than as a

targeted species. Vessels landing skate wings in ports like Portland, ME, Portsmouth, NH, and Gloucester, MA are likely to be landing them incidentally while fishing for species like groundfish and monkfish.

There is also a seasonal skate wing fishery in Provincetown, MA. Buyers in Provincetown believe that most vessels land skate wings in Provincetown as incidental catch. However, 2 – 3 vessels from Provincetown reportedly target skates seasonally around Stellwagen Bank. Provincetown buyers cite market limitations as the primary reason that more effort has not expanded into this fishery. All skate wings that are landed in Provincetown are shipped to New Bedford for processing.

Fishermen and dealers also cite market limitations as a factor for low participation in the wing fishery in Rhode Island. Many of the companies that experimented with the wing market in the Rhode Island area quickly got out of it, due to low profit margins. Production has reportedly dropped by 80% since the early 1990s for some dealers in the state of Rhode Island.

There is a limited domestic demand for processed skate wings from the white tablecloth restaurant business. Winter skates landed by gillnet vessels are reported to go almost exclusively to the wing market. Some skates are cut onboard the vessel, while many are sold whole and sent for processing. Fishermen indicate that dealers prefer large-sized winter skates for the wing market (over three pounds live weight), which are caught seasonally by southern New England gillnet fishermen.

The current market for skate wings remains primarily an export market. France, Korea, and Greece are the leading importers. France prefers skate wings, a processed product that is either skinless or skinless and boneless; frozen individually wrapped in poly (IWP). The Korean market generally prefers whole processed skates, and there is a Japanese market for wings. There is also a market for skate wings in Portugal. The Portuguese market is reported to prefer barndoor skates over winter and thorny skates because they are the least stringy, most tender and flavorful of the wing skates. Interestingly, barndoor skates are said to fetch the lowest ex-vessel prices of the wing skates because they cannot be skinned by machine, as the skin tears too easily.

Brokers have also secured skates for the European and Asian markets from Argentina and Canada. Argentina initially produced a significant amount of skates, but they were reportedly of poor quality. Processing techniques have improved, and Argentina now provides the bulk of the European and Asian market. Argentina supplements their skate production with large skates produced from the U.S. west coast fishery. Canadian production of skates for the export market has diminished, as some of the industry switched toward more lucrative crab and shrimp fisheries.

There are currently four known major skate wing processors in New England and another two companies in the Mid-Atlantic. The companies reportedly buy most wings from vessels out of the New Bedford and Mid-Atlantic ports. One major skate processing facility in New Bedford reports that about 90% of its product is landed in New Bedford, with the remainder trucked from Provincetown, Scituate, and other ports primarily in Massachusetts. Processors report that while demand for the product is generally consistent, profit margins are extremely low. One processor

mentioned that the strong U.S. dollar makes the exported product more expensive.

Data of annual production of processed and exported skate products is sparse. Limited trade data was collected by NOAA/NMFS for the New England Fisheries Development Program in 1975. Reports from an international seafood trade expert at the Seafood Institute indicate that skate export poundage was tracked through “Euro Stat Data” until 1995 or 1996, then abandoned. Customs does not track the exports, and no census data exists specific to skate exports.

3.2 COMMERCIAL FISHERY LANDINGS

This section presents available commercial landings information for the northeast region skate complex. This includes total annual landings; landings by market category; landings by state, gear type, port, and area fished; Canadian skate landings; and recreational skate landings.

Note that NMFS estimates commercial skate landings from the dealer weighout database and reports total skate landings according to *live weight* (i.e., the weight of the whole skate). This means that a conversion factor is applied to all wing landings so that the estimated weight of the entire skate is reported and not just the wings. While *live weight* is necessary to consider from a biological and stock assessment perspective, it is important to remember that vessels’ revenues associated with skate landings are for *landed weight* (vessels in the wing fishery only make money for the weight of wings they sell, not the weight of the entire skate from which the wings came). In turn, the economic information presented in Section 3.7 of this SAFE Report considers the *landed weight* of skates instead of the *live weight*. However, to maintain consistency with NMFS’ data, all of the landings information presented in this section of the SAFE Report reflects *live weight*, unless otherwise specified.

3.2.1 Vessel Trip Reports vs. Dealer Weighout Reports

Skate landings are likely to be under-documented because skates have never been federally-managed, and vessels currently are not required to possess a permit specifically for skate fishing in federal waters. The owner or operator of any vessel issued a federal fishery permit (limited access or open access, with the exception of lobster permits) must submit a daily fishing log report (Vessel Trip Report, VTR) for all fishing trips, regardless of species fished for or taken. The VTR contains detailed information on various aspects of each trip, including area fished and pounds of individual species landed and/or discarded.

Under current regulations, vessels harvesting skates in federal waters that do not have a federal vessel permit for another fishery do *not* have to submit VTRs. (This could occur if a vessel that does not possess *any* federal fisheries permits fishes in one of the exempted fisheries described in Section 5.1.1.5 of this document.) However, a vessel that has a federal permit for other federal fisheries such as multispecies, scallop, dogfish, or monkfish is required to report (via VTR) all species caught and discarded on each trip, including skates, whether the skates are caught incidentally or as the target species. Because skates currently may be caught and sold by vessels without any federal permits (and therefore not reported through VTR), the amount of skate reported on the Vessel Trip Reports may be an underestimation of the total amount of skates caught and/or landed.

A fish dealer who purchases fish for which there is a federal vessel permit (monkfish, multispecies, scallops, or dogfish, for example) must have the corresponding federal dealer permit. Federally permitted dealers are required to submit a weekly report which lists all fish purchases (except surf clam and ocean quahog dealers who are required to report only surf clam and ocean quahog purchases). For example, if a dealer has a dealer permit for multispecies, the dealer must also report purchases of skates and all other species in addition to purchases of multispecies. The landings and price data from these weekly reports comprise the “dealer

Skates can currently be sold to any dealer because no federal vessel or dealer permits exist. Because skates do not have to be sold *only* to federally permitted dealers, skate landings reported by federally permitted dealers may be an underestimation of the total amount of skate purchased by dealers. One non-reporting bait dealer in New Bedford has been identified whose business is selling fish racks from local processors, in addition to skates landed on order by local vessels.

While both the VTR and the dealer weighout database are likely to under-document skate landings, the Skate PDT agreed that the dealer weighout database currently is more reliable than the VTR for several reasons. Because vessels are not required to have a specific permit to fish for skates, the total number of vessels catching skates and the proportion of the total catch that is captured in the VTR remains unknown. There may be skate fishing occurring exclusively in state waters, and there may be several vessels fishing in the southern New England exempted fisheries for skates without any other federal permits. In fact, it is likely that there are vessels fishing for skates exclusively in state waters to supply local lobster vessels with bait (in small communities on the Cape and the Islands, for example). Any of these vessels that do not possess a federal multispecies (or other) permit are not required to report their catch through a VTR.

Most dealers are likely to have at least one federal fishery permit because very few deal exclusively with skates. This means that most dealers purchasing skates are submitting weekly reports documenting purchases from all species. One dealer in RI has been identified whose business is almost entirely skates, but that dealer claims to have been voluntarily reporting skate purchases for years. The dealer data is assumed to be more reliable for skate landings at this time. In addition, dealers report skate purchases by market category/product code, which is helpful in characterizing skate fishing activity for the wing market and for the lobster bait market. Market categories for skates are also available in the VTR database, but in almost all cases, vessels report their skate landings as “unclassified skates” rather than by market category.

VTRs do contain information on “area fished,” which is not available in the dealer weighout data. This information is presented in Section 3.2.7 and is helpful to identify areas where skate fishing is concentrated.

3.2.2 Total Commercial Landings

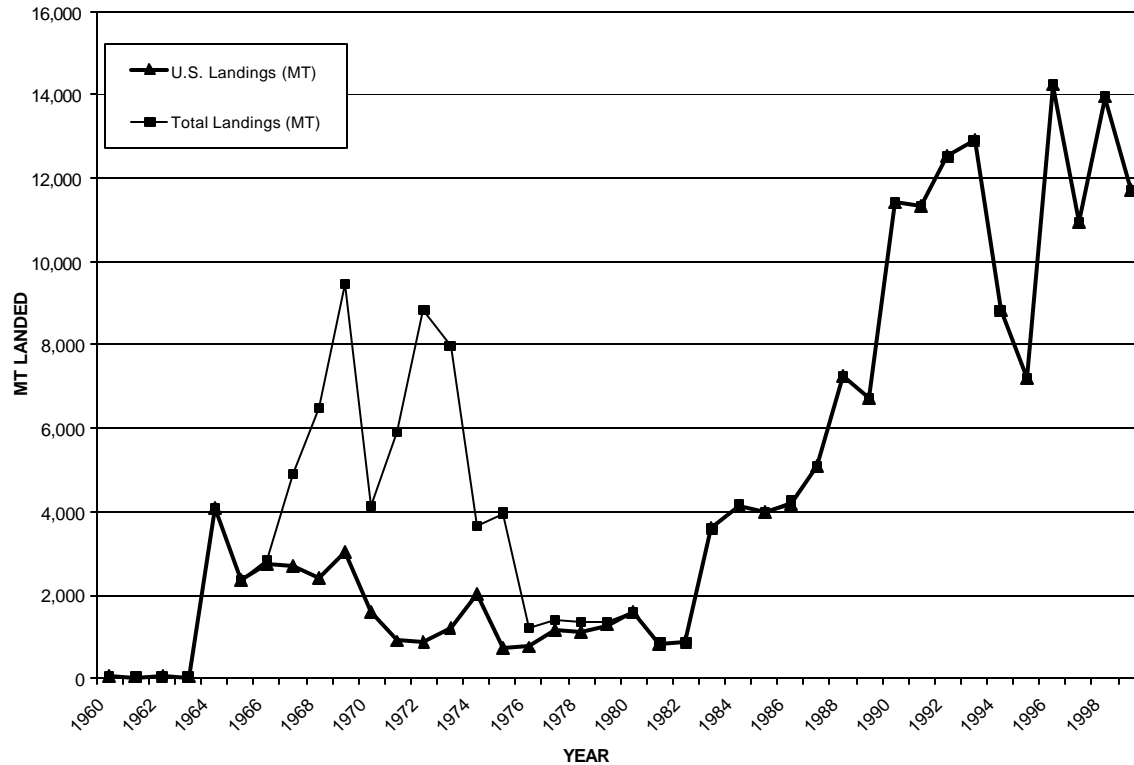
The principal commercial fishing method used to catch skates is otter trawling. Recreational and foreign landings are currently insignificant, at less than 1% of the total fishery landings. There are currently no regulations specifically governing the harvesting of skates in U.S. waters.

Skates have been reported in New England fishery landings since the late 1800s. However, commercial fishery landings, primarily from Rhode Island, never exceeded several hundred metric tons until the advent of distant-water fleets during the 1960s. Skate landings reached 9,500 mt in 1969, but declined quickly during the 1970s, falling to 800 mt in 1981 (Table 25 and Figure 44). Landings have since increased substantially, partially in response to increased demand for lobster bait and the increased export market for skate wings (see discussion in Sections 3.1.1 and 3.1.2). Landings are not reported by species, with over 99% of the landings reported as “unclassified skates.” In general, wings are taken from winter and thorny skates, the two species currently known to be used for human consumption. Bait landings are presumed to be primarily from little skate, based on areas fished and known species distribution patterns. Skate landings increased to 12,900 mt in 1993 and then declined somewhat to 7,200 mt in 1995. The 1996 documented commercial landings of 14,226 mt was the highest on record. Since then, documented landings have decreased; reported landings of skates in 1999 were 11,697 mt (Table 25 and Figure 44).

Table 25 Total Annual Landings of Skates by Country, 1960-1999

YEAR	LIVE WEIGHT OF SKATES IN MT (LBS. IN PARENTHESES)			
	U.S.	USSR	OTHERS	TOTAL
1960	61	0	0	61 (134,482 lbs.)
1961	36	0	0	36 (79,366 lbs.)
1962	44	0	0	44 (97,003 lbs.)
1963	33	0	0	33 (72,753 lbs.)
1964	4,081	0	2	4,083 (9,001,474 lbs.)
1965	2,343	0	20	2,363 (5,209,523 lbs.)
1966	2,738	0	106	2,844 (6,269,947 lbs.)
1967	2,715	2,121	62	4,898 (10,798,242 lbs.)
1968	2,417	3,974	92	6,483 (14,292,568 lbs.)
1969	3,045	6,410	7	9,462 (20,860,139 lbs.)
1970	1,583	2,544	1	4,128 (9,100,682 lbs.)
1971	900	5,000	5	5,905 (13,018,297 lbs.)
1972	866	7,957	0	8,823 (19,451,385 lbs.)
1973	1,191	6,754	18	7,963 (17,555,410 lbs.)
1974	2,026	1,623	2	3,651 (8,049,077 lbs.)
1975	752	3,216	0	3,968 (8,747,943 lbs.)
1976	754	412	46	1,212 (2,672,002 lbs.)
1977	1,143	240	35	1,418 (3,126,155 lbs.)
1978	1,130	216	7	1,353 (2,982,854 lbs.)
1979	1,280	79	1	1,360 (2,998,287 lbs.)
1980	1,577	0	4	1,581 (3,485,508 lbs.)
1981	838	0	9	847 (1,867,315 lbs.)
1982	878	0	0	878 (1,935,659 lbs.)
1983	3,603	0	0	3,603 (7,943,255 lbs.)
1984	4,157	0	0	4,157 (9,164,616 lbs.)
1985	3,984	0	0	3,984 (8,783,217 lbs.)
1986	4,159	0	94	4,253 (9,376,260 lbs.)
1987	5,078	0	0	5,078 (11,195,074 lbs.)
1988	7,255	0	9	7,264 (16,014,379 lbs.)
1989	6,717	0	0	6,717 (14,808,450 lbs.)
1990	11,403	0	0	11,403 (25,139,312 lbs.)
1991	11,332	0	0	11,332 (24,982,784 lbs.)
1992	12,525	0	0	12,525 (27,612,898 lbs.)
1993	12,904	0	0	12,904 (28,448,450 lbs.)
1994	8,829	0	0	8,829 (19,464,613 lbs.)
1995	7,222	0	0	7,222 (15,921,785 lbs.)
1996	14,226	0	0	14,226 (31,362,961 lbs.)
1997	10,952	0	0	10,952 (24,145,027 lbs.)
1998	13,942	0	0	13,942 (30,736,849 lbs.)
1999	11,697	0	0	11,697 (25,787,471 lbs.)

Figure 44 Total Annual Landings of Skates, 1960 – 1999



3.2.3 Landings by State

Table 26 presents commercial landings of skates by individual states from 1988 – 1998. Massachusetts and Rhode Island clearly dominate the skate fishery, averaging about 10 – 11 million pounds annually across the time series. Until 1993, skate landings from MA and RI comprised 95% or more of the total reported annual landings. Between 1994 and 1998, landings from MA and RI averaged about 85% of the total annual reported landings of skates. In 1996, MA reported a high of almost 20 million pounds of skate landings. Rhode Island’s landings appear to have been less consistent over the time series, but much of the inconsistency is likely to be the consequence of reporting issues (discussed in Section 3.2.1) and changes in the way commercial fishery landings were documented/reported in the state. New Jersey, New York, Connecticut, Maine, and New Hampshire land relatively small amounts of skates, although reported skate landings from New York and New Jersey have increased in recent years to well over one million pounds. Very few skates are landed in Maryland, Virginia, or North Carolina, and Delaware did not report any skate landings for the time series.

Table 26 U.S. Landings of Skates (in Thousands of Pounds) by State, 1988-1998

Source: NMFS Fisheries Statistics Office

	THOUSANDS OF POUNDS OF SKATES										
	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
ME	180.4	221.4	103.8	37.2	99.5	368	976.3	772.4	589.6	487.2	357.7
NH	114.5	41.4	23.1	27.4	22.2	20.8	81.9	54.5	44.7	37.3	42.2
MA	3,045.2	4,482.3	12,659	12,557	13,058	13,488	14,686	6,458	19,899	8,684	14,177
CT	122.7	26.9	323.9	249.8	213.9	524.5	387	681.9	952.4	788.1	974.2
RI	12,128	9,744.3	11,645	11,708	13,117	12,831	2,308	6,860	8,622	11,312	11,858
NY	379.7	251.3	361.9	125.4	509.4	370.9	496.6	312.5	364.7	828.3	1,268
NJ	23.1	40.2	19.3	276.5	589.1	829.2	410.2	642.8	747.8	1,753	1,781
DE	0	0	0	0	0	0	0	0	0	0	0
MD	0	0	3.7	0	1.3	9.1	102.7	100.6	0	215.6	210.7
VA	1.4	1.5	2.4	1.3	1.8	5.2	14.1	38.1	18.3	17.8	52.2
NC	0	0	0	6.5	0	50.1	224	65.3	37.4	10.7	7

3.2.4 Landings by Market Category

Federally permitted dealers report most of the skates they purchase by two separate market categories: unclassified skates (code 3650) and unclassified wings (code 3651). There are also product codes specifically for little skates (3660), winter skates (3670), and barndoor skates (3680), but these are very seldom used. In Table 27, purchases reported from the little skate, winter skate, and barndoor skate codes were grouped into the “other” category to illustrate how infrequently the dealers use these three product codes. For other landings tables in this SAFE Report, the landings from these three codes were incorporated into the code for unclassified skates (3650) because the reported landed weight and live weight are the same, indicating that they were landed whole and not as wings.

Unclassified skates (3650) are assumed to be landed whole and used primarily for lobster bait. Unclassified wings (3651) are assumed to be landed as wings and used primarily for seafood consumption (most wings are exported to international seafood markets). While the landings by market category from the dealer weighout data may not be entirely complete (for reasons previously discussed), they can be examined to identify the general proportion of skate landings that are used for either the lobster bait market or the seafood market. They can also be disaggregated into individual ports to characterize skate fishing activity in the port.

According to Table 27, more pounds of skates are caught for the wing market than for the bait market. For the time series, skate wing landings (*live weight*) accounted for about 60% of the total landings. However, revenues from wing landings are generated from *landed weight*. Wing landings appear to receive a significantly higher ex-vessel price than bait landings, as fewer landed pounds of wings generated substantially higher revenues than the larger amounts of whole skates landed, presumably for the lobster bait market. In general, the proportion of skate landings reported as wings has remained consistent since 1995, with the exception of a significant increase in 1996, which is also apparent in landings data for the state of

Massachusetts, presented in Table 26.

Table 27 Total Annual Landings of Skates by Market Category

Source: Dealer Weighout Database, NEFSC

1994 is not included because it was considered an incomplete year in terms of reporting.

Revenues are generated from landed pounds.

YEAR	MARKET CODE	LANDED LBS	LIVE LBS	REVENUES (\$)
1995	3650 – Uncl. Skates	6,820,493	6,820,493	1,429,203
1995	3651 – Uncl. Wings	3,877,635	8,794,741	1,952,501
1995	Other*	301,078	301,078	18,632
	TOTAL	10,999,206	15,916,312	3,400,336
1996	3650 – Uncl. Skates	8,773,990	8,773,990	1,321,233
1996	3651 – Uncl. Wings	9,950,700	22,577,940	4,938,104
1996	Other*	1,158	1,158	509
	TOTAL	18,725,848	31,353,088	6,259,846
1997	3650 – Uncl. Skates	11,840,546	11,840,546	1,158,416
1997	3651 – Uncl. Wings	5,419,154	12,306,017	2,125,814
	TOTAL	17,259,700	24,146,563	3,284,230
1998	3650 – Uncl. Skates	11,900,533	11,900,533	797,927
1998	3651 – Uncl. Wings	8,296,749	18,801,659	3,257,527
1998	Other*	25	25	12
	TOTAL	20,197,307	30,702,217	4,055,466
1999	3650 – Uncl. Skates	11,083,701	11,083,701	717,397
1999	3651 – Uncl. Wings	6,475,155	14,702,140	2,460,861
1999	Other*	4,551	4,551	571
	TOTAL	17,563,407	25,790,392	3,178,829

*Other categories include specific codes for little skate, winter skate, and barndoor skate, but these codes are very seldom used by dealers.

3.2.5 Landings By Gear

Table 28 presents annual skate landings (from the dealer weighout database) by gear type and by market category. Table 29 presents annual skate landings (from the dealer weighout database) by gear type and by market category as a percentage of the annual total.

The otter trawl is the primary gear used to catch skates. About 50% of the skates caught with otter trawls are landed for the lobster bait market, with the other 50% landed for the wing market (Table 28). Almost all skates caught for the lobster bait fishery are caught with an otter trawl. Over the 1995-1999 time series, skate landings from otter trawls accounted for about 94% of the skate bait landings, 78% of the skate wing landings, and 85% of the total skate landings (Table 29). Gillnets are the secondary gear used to catch skates. Almost all skates that are caught with gillnets are landed as wings. Between 1995 and 1999, more than 90% of the total gillnet landings of skates were wings (Table 28). Gillnet landings of skates over the time series comprise about 20% of the total landings of wings and a very small fraction of the total landings of whole skates (Table 29).

Other gears in which skates are consistently caught include hook gear and scallop dredges. Almost 100% of the skates that are caught with hook gear are landed as wings. The ratio of whole skate landings:wing landings from scallop dredges has been inconsistent over the time series, ranging from 0.2% in 1999 to 46.6% in 1998 (Table 28). However, the overall contribution of skate landings from hook gear and scallop dredges is relatively insignificant. Hook gear averaged 0% of the total bait landings and 1% of the total wing landings, and scallop dredges averaged 0.2% of the total bait landings and 0.5% of the total wing landings over the time series (Table 29). Together, these two gear types averaged about 1% of the total skate landings between 1995 and 1999.

Table 28 Annual Skate Landings (Live Weight) by Gear Type and Market Category

Source: Dealer Weighout Database, NEFSC

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

GEAR TYPE	MARKET CODE	LIVE WEIGHT (POUNDS) OF SKATES				
		1995	1996	1997	1998	1999
OTTER TRAWL	3650 - Uncl. Skates	6,368,200	8,643,476	10,465,088	11,747,061	10,770,000
	3651 - Uncl. Wings	6,371,709	19,901,627	8,990,875	14,315,104	11,429,906
	TOTAL	12,739,909	28,545,103	19,455,963	26,062,165	22,199,906
	% Uncl. Skates	50.0%	30.3%	53.8%	45.1%	48.5%
	% Uncl. Wings	50.0%	69.7%	46.2%	54.9%	51.5%
GILLNET	3650 - Uncl. Skates	35,440	108,079	1,307,836	4,112	291,450
	3651 - Uncl. Wings	2,072,353	2,487,447	3,132,697	4,158,759	3,024,944
	TOTAL	2,107,793	2,595,526	4,440,533	4,162,871	3,316,394
	% Uncl. Skates	1.7%	4.2%	29.5%	0.1%	8.8%
	% Uncl. Wings	98.3%	95.8%	70.5%	99.9%	91.2%
HOOK AND LINE	3650 - Uncl. Skates	338	100	214	96	12,592
	3651 - Uncl. Wings	219,368	120,219	113,133	130,168	96,593
	TOTAL	219,706	120,319	113,347	130,264	109,185
	% Uncl. Skates	0.2%	0.1%	0.2%	0.1%	11.5%
	% Uncl. Wings	99.8%	99.9%	99.8%	99.9%	88.5%
SCALLOP DREDGE	3650 - Uncl. Skates	24,860	3,708	15,928	88,710	235
	3651 - Uncl. Wings	64,320	56,400	46,046	101,857	99,778
	TOTAL	89,180	60,108	61,974	190,567	100,013
	% Uncl. Skates	27.9%	6.2%	25.7%	46.6%	0.2%
	% Uncl. Wings	72.1%	93.8%	74.3%	53.4%	99.8%
SEINES	3650 - Uncl. Skates	0	0	0	0	871
	3651 - Uncl. Wings	1,861	1,858	1,955	60,255	14,636
	TOTAL	1,861	1,858	1,955	60,255	15,507
	% Uncl. Skates	0.0%	0.0%	0.0%	0.0%	5.6%
	% Uncl. Wings	100.0%	100.0%	100.0%	100.0%	94.4%
POTS AND TRAPS	3650 - Uncl. Skates	0	129	959	4,642	10
	3651 - Uncl. Wings	5,305	455	9,207	3,695	1,354
	TOTAL	5,305	584	10,166	8,337	1,364
	% Uncl. Skates	0.0%	22.1%	9.4%	55.7%	0.7%
	% Uncl. Wings	100.0%	77.9%	90.6%	44.3%	99.3%

Table 28 (continued) Annual Skate Landings (Live Weight) by Gear Type and Market Category

GEAR TYPE	MARKET CODE	LIVE WEIGHT (POUNDS) OF SKATES				
		1995	1996	1997	1998	1999
PELAGIC LONGLINE	3650 - Uncl. Skates	0	33	0	95	35
	3651 - Uncl. Wings	497	211	4,177	1,511	3,285
	TOTAL	497	244	4,177	1,606	3,320
	% Uncl. Skates	0.0%	13.5%	0.0%	5.9%	1.1%
	% Uncl. Wings	100.0%	86.5%	100.0%	94.1%	98.9%
OTHER DREDGES	3650 - Uncl. Skates	0	1,345	5	0	4,779
	3651 - Uncl. Wings	195	52	18	1,798	0
	TOTAL	195	1,397	23	1,798	4,779
	% Uncl. Skates	0.0%	96.3%	21.7%	0.0%	100.0%
	% Uncl. Wings	100.0%	3.7%	78.3%	100.0%	0.0%
OTHER FISHING GEAR	3650 - Uncl. Skates	8,046	5,483	1,602	1,649	780
	3651 - Uncl. Wings	17,464	9,130	5,022	26,849	27,684
	TOTAL	25,510	14,613	6,624	28,498	28,464
	% Uncl. Skates	31.5%	37.5%	24.2%	5.8%	2.7%
	% Uncl. Wings	68.5%	62.5%	75.8%	94.2%	97.3%
UNKNOWN GEAR TYPE	3650 - Uncl. Skates	684,687	12,795	48,914	54,193	7,500
	3651 - Uncl. Wings	41,669	541	2,887	1,663	3,960
	TOTAL	726,356	13,336	51,801	55,856	11,460
	% Uncl. Skates	94.3%	95.9%	94.4%	97.0%	65.4%
	% Uncl. Wings	5.7%	4.1%	5.6%	3.0%	34.6%

Hook and Line includes bottom longlines, handlines (rod and reel), and the combined troll and handline category.

Gillnet includes sink, stake, and drift gillnets.

Otter trawl includes fish, shrimp, scallop, and other otter trawls.

Seines include common, Danish, and Scottish seines.

Pots/traps include floating, fish, and lobster traps.

Other dredges include crab, conch, and surf clam/ocean quahog dredges.

Other gear includes pound nets, fyke nets, beam trawls, and trammel nets.

Table 29 Annual Skate Landings (Live Weight) by Gear Type 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.

		LIVE WEIGHT (POUNDS) OF SKATES				
GEAR TYPE		1995	1996	1997	1998	1999
OTTER TRAWL	3650 - Uncl. Skates	6,368,200	8,643,476	10,465,088	11,747,061	10,770,000
	% of Total 3650	89.4%	98.5%	88.4%	98.7%	97.1%
	3651 - Uncl. Wings	6,371,709	19,901,627	8,990,875	14,315,104	11,429,906
	% of Total 3651	72.4%	88.1%	73.1%	76.1%	77.7%
	TOTAL	12,739,909	28,545,103	19,455,963	26,062,165	22,199,906
	% of TOTAL LANDINGS	80.0%	91.0%	80.6%	84.9%	86.1%
GILLNET	3650 - Uncl. Skates	35,440	108,079	1,307,836	4,112	291,450
	% of Total 3650	0.5%	1.2%	11.0%	0.0%	2.6%
	3651 - Uncl. Wings	2,072,353	2,487,447	3,132,697	4,158,759	3,024,944
	% of Total 3651	23.6%	11.0%	25.5%	22.1%	20.6%
	TOTAL	2,107,793	2,595,526	4,440,533	4,162,871	3,316,394
	% of TOTAL LANDINGS	13.2%	8.3%	18.4%	13.6%	12.9%
HOOK AND LINE	3650 - Uncl. Skates	338	100	214	96	12,592
	% of Total 3650	0.0%	0.0%	0.0%	0.0%	0.1%
	3651 - Uncl. Wings	219,368	120,219	113,133	130,168	96,593
	% of Total 3651	2.5%	0.5%	0.9%	0.7%	0.7%
	TOTAL	219,706	120,319	113,347	130,264	109,185
	% of TOTAL LANDINGS	1.4%	0.4%	0.5%	0.4%	0.4%
SCALLOP DREDGE	3650 - Uncl. Skates	24,860	3,708	15,928	88,710	235
	% of Total 3650	0.3%	0.0%	0.1%	0.7%	0.0%
	3651 - Uncl. Wings	64,320	56,400	46,046	101,857	99,778
	% of Total 3651	0.7%	0.2%	0.4%	0.5%	0.7%
	TOTAL	89,180	60,108	61,974	190,567	100,013
	% of TOTAL LANDINGS	0.6%	0.2%	0.3%	0.6%	0.4%
SEINES	3650 - Uncl. Skates	0	0	0	0	871
	% of Total 3650	0.0%	0.0%	0.0%	0.0%	0.0%
	3651 - Uncl. Wings	1,861	1,858	1,955	60,255	14,636
	% of Total 3651	0.0%	0.0%	0.0%	0.3%	0.1%
	TOTAL	1,861	1,858	1,955	60,255	15,507
	% of TOTAL LANDINGS	0.0%	0.0%	0.0%	0.2%	0.1%

Table 29 (cont.) Annual Skate Landings (Live Weight) by Gear Type and Market Category as a Percentage of Total Skate Landings

GEAR TYPE		LIVE WEIGHT (POUNDS) OF SKATES				
		1995	1996	1997	1998	1999
POTS AND TRAPS	3650 - Uncl. Skates	0	129	959	4,642	10
	% of Total 3650	0.0%	0.0%	0.0%	0.0%	0.0%
	3651 - Uncl. Wings	5,305	455	9,207	3,695	1,354
	% of Total 3651	0.1%	0.0%	0.1%	0.0%	0.0%
	TOTAL	5,305	584	10,166	8,337	1,364
	% of TOTAL LANDINGS	0.0%	0.0%	0.0%	0.0%	0.0%
PELAGIC LONGLINE	3650 - Uncl. Skates	0	33	0	95	35
	% of Total 3650	0.0%	0.0%	0.0%	0.0%	0.0%
	3651 - Uncl. Wings	497	211	4,177	1,511	3,285
	% of Total 3651	0.0%	0.0%	0.0%	0.0%	0.0%
	TOTAL	497	244	4,177	1,606	3,320
	% of TOTAL LANDINGS	0.0%	0.0%	0.0%	0.0%	0.0%
OTHER DREDGES	3650 - Uncl. Skates	0	1,345	5	0	4,779
	% of Total 3650	0.0%	0.0%	0.0%	0.0%	0.0%
	3651 - Uncl. Wings	195	52	18	1,798	0
	% of Total 3651	0.0%	0.0%	0.0%	0.0%	0.0%
	TOTAL	195	1,397	23	1,798	4,779
	% of TOTAL LANDINGS	0.0%	0.0%	0.0%	0.0%	0.0%
OTHER FISHING GEAR	3650 - Uncl. Skates	8,046	5,483	1,602	1,649	780
	% of Total 3650	0.1%	0.1%	0.0%	0.0%	0.0%
	3651 - Uncl. Wings	17,464	9,130	5,022	26,849	27,684
	% of Total 3651	0.2%	0.0%	0.0%	0.1%	0.2%
	TOTAL	25,510	14,613	6,624	28,498	28,464
	% of TOTAL LANDINGS	0.2%	0.0%	0.0%	0.1%	0.1%
UNKNOWN GEAR TYPE	3650 - Uncl. Skates	684,687	12,795	48,914	54,193	7,500
	% of Total 3650	9.6%	0.1%	0.4%	0.5%	0.1%
	3651 - Uncl. Wings	41,669	541	2,887	1,663	3,960
	% of Total 3651	0.5%	0.0%	0.0%	0.0%	0.0%
	TOTAL	726,356	13,336	51,801	55,856	11,460
	% of TOTAL LANDINGS	4.6%	0.0%	0.2%	0.2%	0.0%

3.2.6 Landings By Port

Table 30 presents annual skate landings (from the dealer weighout database) by port and by market category. Table 31 presents annual skate landings (from the dealer weighout database) by port and by market category as a percentage of the annual total.

The top ports, on average, landing skates (total) are New Bedford, MA; Point Judith, RI; Provincetown, MA; Portland, ME; Gloucester, MA; Point Pleasant, NJ; Hampton Bay, NY; and Stonington, CT. More recently (1997-1999), more landings of skates are being reported from ports like Tiverton, RI; Little Compton, RI; and Groton, CT. This is likely due to changes in the way skates are reported in RI and CT, not significant expansion of the skate fishery in these two states between 1997 and 1999.

Currently, the top ports, on average, landing whole skates for lobster bait are:

1. Point Judith, RI
2. Tiverton, RI
3. Stonington, CT
4. Cape May/Wildwood, NJ
5. New Bedford, MA
6. Belford, NJ and Newport, RI (only recently)

Currently, the top ports, on average, landing skate wings are:

1. New Bedford/Westport, MA
2. Provincetown, MA
3. Point Judith, RI
4. Hampton Bay, NY
5. Portland, ME
6. Gloucester, MA
7. Point Pleasant, NJ

New Bedford, MA and Point Judith RI clearly dominate skate landings, averaging about 70% of the total skate landings across the time series. New Bedford dominates skate wing landings, and Point Judith dominates skate bait landings. Between 1995 and 1999, an average of 97% of New Bedford's skate landings were classified as wings, and an average of 92% of Point Judith's skate landings were classified as whole skates, presumably bait skates (Table 30). Other than in 1996 when documented skate wing landings in Massachusetts were unusually high, New Bedford's wing landings have accounted for about 57% of the total annual wing landings (Table 31). Point Judith's bait landings have accounted for almost 75% of the total annual bait landings from 1995-1999.

Table 30 Annual Skate Landings (Live Weight) by Port and Market Category

Source: Dealer Weighout Database, NEFSC

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

PORT	MARKET CODE	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
	3651 - Uncl. Wings	4,951,156	18,755,972	7,089,449	10,807,750	8,043,344
	TOTAL	5,359,732	18,772,297	7,587,810	10,953,300	8,043,664
	% Uncl. Skates	7.6%	0.1%	6.6%	1.3%	0.0%
	% Uncl. Wings	92.4%	99.9%	93.4%	98.7%	100.0%
POINT JUDITH, RI	3650 - Uncl. Skates	5,472,165	7,461,939	8,780,110	8,293,045	7,389,075
	3651 - Uncl. Wings	466,771	608,003	620,700	733,610	816,506
	TOTAL	5,938,936	8,069,942	9,400,810	9,026,655	8,205,581
	% Uncl. Skates	92.1%	92.5%	93.4%	91.9%	90.0%
	% Uncl. Wings	7.9%	7.5%	6.6%	8.1%	10.0%
PORTLAND, ME	3650 - Uncl. Skates	240	0	0	0	290
	3651 - Uncl. Wings	571,141	468,416	415,460	291,099	362,283
	TOTAL	571,381	468,416	415,460	291,099	362,573
	% Uncl. Skates	0.0%	0.0%	0.0%	0.0%	0.1%
	% Uncl. Wings	100.0%	100.0%	100.0%	100.0%	99.9%
ROCKLAND, ME	3650 - Uncl. Skates	0	0	0	0	0
	3651 - Uncl. Wings	32,071	14,047	5,178	5,786	9,711
	TOTAL	32,071	14,047	5,178	5,786	9,711
	% Uncl. Skates	0.0%	0.0%	0.0%	0.0%	0.0%
	% Uncl. Wings	100.0%	100.0%	100.0%	100.0%	100.0%
GLOUCESTER, MA	3650 - Uncl. Skates	1,828	0	0	0	0
	3651 - Uncl. Wings	377,592	263,324	194,119	283,224	510,613
	TOTAL	379,420	263,324	194,119	283,224	510,613
	% Uncl. Skates	0.5%	0.0%	0.0%	0.0%	0.0%
	% Uncl. Wings	99.5%	100.0%	100.0%	100.0%	100.0%
PROVINCETOWN, MA	3650 - Uncl. Skates	0	0	0	200	0
	3651 - Uncl. Wings	118,774	88,919	273,914	1,922,542	1,252,291
	TOTAL	118,774	88,919	273,914	1,922,742	1,252,291
	% Uncl. Skates	0.0%	0.0%	0.0%	0.0%	0.0%
	% Uncl. Wings	100.0%	100.0%	100.0%	100.0%	100.0%

Table 30 (continued) Annual Skate Landings (Live Weight) by Port and Market Category

PORT	MARKET CODE	LIVE WEIGHT (POUNDS) OF SKATES				
		1995	1996	1997	1998	1999
PLYMOUTH, MA	3650 - Uncl. Skates	110	0	0	35	0
	3651 - Uncl. Wings	14,990	80,853	28,069	40,573	40,324
	TOTAL	15,100	80,853	28,069	40,608	40,324
	% Uncl. Skates	0.7%	0.0%	0.0%	0.1%	0.0%
	% Uncl. Wings	99.3%	100.0%	100.0%	99.9%	100.0%
BOSTON, MA	3650 - Uncl. Skates	5,685	0	100	0	0
	3651 - Uncl. Wings	233,387	241,820	224,615	354,376	315,845
	TOTAL	239,072	241,820	224,715	354,376	315,845
	% Uncl. Skates	2.4%	0.0%	0.0%	0.0%	0.0%
	% Uncl. Wings	97.6%	100.0%	100.0%	100.0%	100.0%
CHATHAM, MA	3650 - Uncl. Skates	0	0	0	0	0
	3651 - Uncl. Wings	209,026	139,231	116,973	444,456	281,601
	TOTAL	209,026	139,231	116,973	444,456	281,601
	% Uncl. Skates	0.0%	0.0%	0.0%	0.0%	0.0%
	% Uncl. Wings	100.0%	100.0%	100.0%	100.0%	100.0%
HARWICHPORT, MA	3650 - Uncl. Skates	0	0	0	0	0
	3651 - Uncl. Wings	47,215	41,467	18,241	4,045	2,718
	TOTAL	47,215	41,467	18,241	4,045	2,718
	% Uncl. Skates	0.0%	0.0%	0.0%	0.0%	0.0%
	% Uncl. Wings	100.0%	100.0%	100.0%	100.0%	100.0%
SANDWICH, MA	3650 - Uncl. Skates	0	0	0	0	0
	3651 - Uncl. Wings	41,405	194,428	172,612	1,182	29,737
	TOTAL	41,405	194,428	172,612	1,182	29,737
	% Uncl. Skates	0.0%	0.0%	0.0%	0.0%	0.0%
	% Uncl. Wings	100.0%	100.0%	100.0%	100.0%	100.0%
SCITUATE, MA	3650 - Uncl. Skates	5	15	0	0	0
	3651 - Uncl. Wings	13,235	8,685	7,716	88,476	74,316
	TOTAL	13,240	8,700	7,716	88,476	74,316
	% Uncl. Skates	0.0%	0.2%	0.0%	0.0%	0.0%
	% Uncl. Wings	100.0%	99.8%	100.0%	100.0%	100.0%
PORTSMOUTH, NH	3650 - Uncl. Skates	0	1,610	0	0	1,418
	3651 - Uncl. Wings	42,829	34,209	29,022	35,443	45,625
	TOTAL	42,829	35,819	29,022	35,443	47,043
	% Uncl. Skates	0.0%	4.5%	0.0%	0.0%	3.0%
	% Uncl. Wings	100.0%	95.5%	100.0%	100.0%	97.0%

Table 30 (continued) Annual Skate Landings (Live Weight) by Port and Market Category

PORT	MARKET CODE	LIVE WEIGHT (POUNDS) OF SKATES				
		1995	1996	1997	1998	1999
CAPE MAY/WILDWOOD, NJ	3650 - Uncl. Skates	157,735	56,097	175,152	58,785	43,857
	3651 - Uncl. Wings	4,364	8,053	27,698	7,900	773
	TOTAL	162,099	64,150	202,850	66,685	44,630
	% Uncl. Skates	97.3%	87.4%	86.3%	88.2%	98.3%
	% Uncl. Wings	2.7%	12.6%	13.7%	11.8%	1.7%
BELFORD, NJ	3650 - Uncl. Skates	6,200	0	50	182,060	139,540
	3651 - Uncl. Wings	26,404	21,304	156,929	52,529	60,057
	TOTAL	32,604	21,304	156,979	234,589	199,597
	% Uncl. Skates	19.0%	0.0%	0.0%	77.6%	69.9%
	% Uncl. Wings	81.0%	100.0%	100.0%	22.4%	30.1%
POINT PLEASANT, NJ	3650 - Uncl. Skates	24,496	0	35	56,337	25,809
	3651 - Uncl. Wings	126,146	223,259	391,383	376,988	262,357
	TOTAL	150,642	223,259	391,418	433,325	288,166
	% Uncl. Skates	16.3%	0.0%	0.0%	13.0%	9.0%
	% Uncl. Wings	83.7%	100.0%	100.0%	87.0%	91.0%
MONTAUK, NY	3650 - Uncl. Skates	5,140	19,530	15,428	6	1,340
	3651 - Uncl. Wings	145,781	86,294	107,136	234,023	165,179
	TOTAL	150,921	105,824	122,564	234,029	166,519
	% Uncl. Skates	3.4%	18.5%	12.6%	0.0%	0.8%
	% Uncl. Wings	96.6%	81.5%	87.4%	100.0%	99.2%
GREENPORT, NY	3650 - Uncl. Skates	0	35	262	0	264
	3651 - Uncl. Wings	24,095	9,769	9,572	4,410	11,966
	TOTAL	24,095	9,804	9,834	4,410	12,230
	% Uncl. Skates	0.0%	0.4%	2.7%	0.0%	2.2%
	% Uncl. Wings	100.0%	99.6%	97.3%	100.0%	97.8%
HAMPTON BAY, NY	3650 - Uncl. Skates	51	3,272	2,128	15	20
	3651 - Uncl. Wings	97,649	178,490	589,488	962,907	652,078
	TOTAL	97,700	181,762	591,616	962,922	652,098
	% Uncl. Skates	0.1%	1.8%	0.4%	0.0%	0.0%
	% Uncl. Wings	99.9%	98.2%	99.6%	100.0%	100.0%
OCEAN CITY, MD	3650 - Uncl. Skates	9,454	26,199	11,828	8,477	2,902
	3651 - Uncl. Wings	88,360	85,519	154,885	148,034	103,060
	TOTAL	97,814	111,718	166,713	156,511	105,962
	% Uncl. Skates	9.7%	23.5%	7.1%	5.4%	2.7%
	% Uncl. Wings	90.3%	76.5%	92.9%	94.6%	97.3%

Table 30 (continued) Annual Skate Landings (Live Weight) by Port and Market Category

PORT	MARKET CODE	LIVE WEIGHT (POUNDS) OF SKATES				
		1995	1996	1997	1998	1999
NEWPORT, RI	3650 - Uncl. Skates	6,173	368	55	278,351	0
	3651 - Uncl. Wings	77,812	46,258	51,782	94,288	83,262
	TOTAL	83,985	46,626	51,837	372,639	83,262
	% Uncl. Skates	7.4%	0.8%	0.1%	74.7%	0.0%
	% Uncl. Wings	92.6%	99.2%	99.9%	25.3%	100.0%
TIVERTON, RI	3650 - Uncl. Skates	0	0	1,420,150	1,970,000	1,920,000
	3651 - Uncl. Wings	0	0	39,384	194,576	288,956
	TOTAL	0	0	1,459,534	2,164,576	2,208,956
	% Uncl. Skates	N/A	N/A	97.3%	91.0%	86.9%
	% Uncl. Wings	N/A	N/A	2.7%	9.0%	13.1%
LITTLE COMPTON, RI	3650 - Uncl. Skates	0	0	0	4,661	23,575
	3651 - Uncl. Wings	0	0	46,514	205,861	158,523
	TOTAL	0	0	46,514	210,522	182,098
	% Uncl. Skates	N/A	N/A	0.0%	2.2%	12.9%
	% Uncl. Wings	N/A	N/A	100.0%	97.8%	87.1%
STONINGTON, CT	3650 - Uncl. Skates	0	0	661,237	584,101	918,176
	3651 - Uncl. Wings	0	0	0	231,064	153,014
	TOTAL	0	0	661,237	815,165	1,071,190
	% Uncl. Skates	N/A	N/A	100.0%	71.7%	85.7%
	% Uncl. Wings	N/A	N/A	0.0%	28.3%	14.3%
GROTON, CT	3650 - Uncl. Skates	0	0	54,100	60,485	32,450
	3651 - Uncl. Wings	0	0	0	0	0
	TOTAL	0	0	54,100	60,485	32,450
	% Uncl. Skates	N/A	N/A	100.0%	100.0%	100.0%
	% Uncl. Wings	N/A	N/A	0.0%	0.0%	0.0%