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The Atlantic Coast Surf Clam Fishery—1973

JOHN W. ROPES, ARTHUR S. MERRILL,
and GEORGE E. WARD

ABSTRACT—The 1973 Atlantic coast surf clam fishery produced landings of 82.3 million pounds of meats, 19.0 million pounds more than in 1972. Landings at Virginia ports were 85 percent higher than in 1972 and amounted to over half of the United States total. Landings at other middle-Atlantic coast ports were generally similar to 1972.

INTRODUCTION

Landings of clams in the United States have increased since World War II and most of the increase has been from the surf clam resource of the Middle Atlantic Bight. Ropes (1972) summarized annual reports for 1965-69. The reports included information that surf clams provided meats for more than half of the United States clam products during this period. Annual reports for 1970-72 continued to give details of this important fishery, changes in landings, areas fished, and fleet activities (Ropes and Barker, 1972; Ropes, Barker, and Ward, 1972, 1975). These reports show that landings of surf clams have greatly surpassed the combined totals for traditional species, such as soft-shelled clams (*Mya arenaria*) and hard-shelled clams (*Mercenaria mercenaria*). In 1973, surf clams supplied 80 percent of the United States total of clam meats by weight. A sharp increase in Virginia landings was responsible for the record catch.

INFORMATION SOURCE

Landings data in the Middle Atlantic Bight were supplied by the National Marine Fisheries Service, Division of Statistics and Market News. Landings by vessel are generally obtainable at each port from New York through Maryland. In Virginia, only the total landings for the State are available, but base ports for vessels are known and included.

Interviews by port samplers provided specific information on fishing areas, catch, and effort in Maryland and Virginia. No interview records were obtained for vessels fishing off New York, New Jersey, and Delaware, but from personal conversations with industry representatives and vessel captains it appears that no significant new fishing areas were added to those reported for 1972 (Ropes et al., 1975).

FLEET OPERATIONS AND LANDINGS BY AREA

The number of vessels in the surf clam fleet in 1972 and 1973 and the landings by area are presented in Table 1.

In 1973 a total of 98 vessels, a decrease of 2 from 1972, made up the surf clam fishing fleet in the Middle Atlantic Bight. The Virginia fleet decreased, by 2, to 21 vessels. One vessel was based at Chincoteague, four at Oyster, one at Kiptopeke, eleven at Cape Charles, and four at Little Creek. The Division of Statistics and Market News observed that as many as 41 vessels used the Virginia ports at various times. The additional 20 vessels were migrants to the area from more northern ports. The Maryland fleet consisted of 17 vessels—1 less than in 1972. Two very efficient vessels landed their catch in Delaware, although their home port was Cape May-Wildwood. The New Jersey fleet consisted of 51 vessels. Thirty vessels were based at Cape May-Wildwood—4 fewer than in 1972; 13 at Point Pleasant—an increase of 1; and 4 vessels shifted to Atlantic City to double the fleet at 8. The New York fleet, based mostly at Freeport, Long Island, remained at 7 vessels. Three vessels from the Point Pleasant fleet quit clamming, 1 sank off Virginia, and 2 new vessels were added (1 in Maryland and 1 in Virginia) to the total fleet in 1973. This resulted in a net loss of 2 vessels.

Table 1.—Surf clam vessels and landings by area (1972-73).

Area	Number of vessels		Landings (Million lb)	
	1972	1973	1972	1973
Chincoteague to Norfolk, Va.	23	[1]21	23.4	43.3
Cape May-Wildwood, N.J.	34	30	14.8	12.5
Ocean City, Md.	18	[1]17	7.3	7.5
Lewes, Del.	2	2	8.6	6.6
Point Pleasant, N.J.	[2]12	[2]13	4.8	4.1
Atlantic City, N.J.	4	8	1.4	4.7
Long Island, N.Y.	[3]7	[3]7	2.6	3.2
Total	100	98	[4]62.9	[5]81.9

[1]Includes one part-time clammer.
[2]Includes one bait clam vessel.
[3]Includes two bait clam vessels.
[4]Total is less 0.452 million pounds of bait.
[5]Total is less 0.338 million pounds of bait.

Landings of 81.9 million pounds of meats were 19.0 million pounds (30 percent) higher than in 1972 (Table 1). Virginia landings increased 85 percent over those reported for 1972, from 23.4 to 43.3 million pounds, nearly double the previous year. Monthly catches ranged from 2.3 to 3.9 million pounds and averaged 3.6 million pounds (Fig. 1). Maryland landings of 7.5 million pounds were higher than in 1972, but by only 3 percent (0.2 million pounds). Monthly catches ranged from 0.3 to 0.8 million pounds and averaged 0.6 million pounds. Delaware landings of 6.6 million pounds were 2.0 million pounds lower than in 1972; monthly catches ranged from 0.5 to 0.9 million pounds and averaged 0.6 million pounds. New Jersey landings of 21.3 million pounds were 0.3 million pounds (1 percent) higher than in 1972. Ports of landing were at Cape May-Wildwood, Point Pleasant, and Atlantic City. Landings at Cape May-Wildwood were 2.3 million pounds lower than in 1972. This port has supplied more than half of the New Jersey landings since 1967 and its

John W. Ropes, Arthur S. Merrill, and George E. Ward are with the Middle Atlantic Coastal Fisheries Center, National Marine Fisheries Service, NOAA, Oxford, MD 21564.

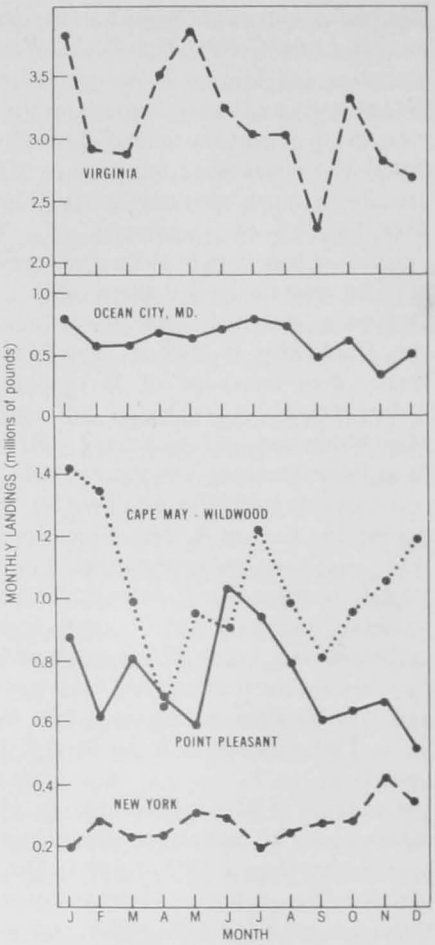

Figure 1.—Monthly 1973 landings of surf clams at ports in Virginia, Maryland, New Jersey, and New York.

contribution was 58 percent (12.5 million pounds) in 1973. Monthly catches were from 0.6 to 1.4 million pounds, averaging 1.0 million pounds. Vessels at Point Pleasant landed 4.1 million pounds. The decrease at this port was 0.7 million pounds; monthly catches were from 0.2 to 0.5 million pounds, averaging 0.4 million pounds. Vessels at Atlantic City, however, landed 4.7 million pounds, a threefold (3.3 million pound) increase over 1972. Monthly landings were from 0.2 to 0.6 million pounds and averaged 0.4 million pounds. The increase at Atlantic City more than compensated for the lower landings at Point Pleasant and Cape May-Wildwood. If the Delaware landings are added to those of New Jersey, since the vessels fished mostly the same grounds, the combined catch equals 27.9 million pounds or 34 percent of the 1973 total. New York landings of 3.2 million pounds were 0.5 million pounds higher than in 1972. Monthly landings were from 0.2 to 0.4 million pounds, averaging 0.3 million pounds.

In summary, Virginia landings were 53 percent of the 1973 total, New Jersey 26 percent, Maryland 9 percent, Delaware 8 percent, and New York 4 percent. By contrast, 1972 landings by the respective states were 37 percent, 33 percent, 12 percent, 14 percent, and 4 percent.

FISHING STATISTICS FROM INTERVIEWS

Interviews were obtained from vessel captains monthly at Oyster, Kiptopeke, and Cape Charles ports in Virginia and twice each month at the Ocean City port in Maryland from April through December, 1973. This activity resulted in a total of 82 and 210 records for the respective states. These records gave locations of vessel fishing operations, number of bushels of clams taken during the fishing trip, depths fished, hours spent fishing, and the size composition of the catch. Figure 2 shows 1,025 square nautical miles of ocean with intensity of vessel operations plotted on 5 × 5 nautical mile areas. Vessels from Virginia ports fished in 12 of the southernmost areas and those from Maryland fished in 29 of the northernmost areas. From 1 to 29 vessels operated in an area during the sampling period. The average number of trips per area was 6.6, or 0.3 trip per square mile. As a scale of intensity of fishing, less than 0.1 trip per square mile (1-2 trips per area) indicated light fishing activity, from 0.1 to 0.6 trip per square mile (3-15 trips per area) moderate fishing activity, and more than 0.6 trip per square mile (16+ trips per area) heavy fishing activity. The Virginia fleet fished most intensely in a 50 square mile area, moderately in a 75 square mile area, and lightly in a 175 square mile area. Maryland vessels concentrated in a 100 square mile

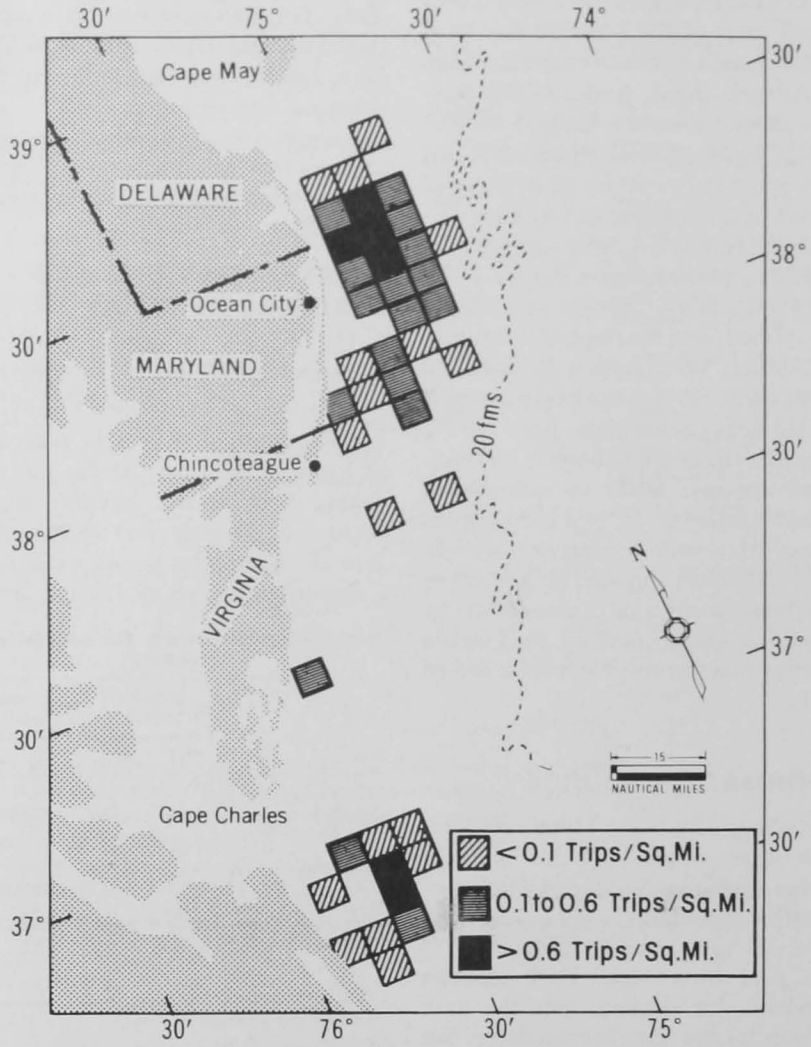

Figure 2.—The area and intensity of surf clam fishing by the Ocean City, Md., and Virginia fleet in 1973 (based on 292 interviews).

area, fished moderately in a 350 square mile area, lightly in a 275 square mile area.

Vessels interviewed from Virginia operated in fishing areas at depths of 10.7 to 22.9 m (35-74 feet), averaging 18.3 m (60 feet); in Maryland at depths of 9.1 to 29.2 m (30-90 feet), averaging 19.5 m (64 feet). Catch rates for Virginia and Maryland are shown in Figure 3. In Virginia catch rates of more than 200 bushels per hour were reported at 3 fishing areas, 100 to 199 bushels per hour at 7, and 49 bushels or less at 1 fishing area; the mean catch per hour ranged from 84 to 320 bushels (1,428-5,440 pounds) and the average was 165 bushels (2,805 pounds). In Maryland all catch rates averaged less than 49 bushels; the mean catch per hour ranged from 13 to 37 bushels (221-629 pounds) and the annual average was 23 bushels (391 pounds).

Figure 4 shows the mean shell lengths by fishing areas to be higher in Maryland than in Virginia. In Maryland the mean shell length from 4 areas was over 170 mm and in the remaining 25 areas ranged between 133 and 170 mm. In Virginia mean clam sizes in 6 areas ranged from 133 to 170 mm and in 5 areas were less than 133 mm. The 2 areas where the catch rate was highest (Fig. 3) contained clams with means less than 133 mm (Fig. 4).

In Virginia, day trip effort for the vessels interviewed ranged from 1.5 to 24 hours per day of fishing time; monthly averages were 7.4 to 10.4 hours (Fig. 5); and the annual average was 8.8 hours per day. Landings per trip were 80 to 3,200 bushels (1,360-54,440 pounds of meats), averaging 956 bushels (16,252 pounds). Monthly mean catch rates per hour ranged from 85 bushels (1,455 pounds) to 147 bushels (2,499 pounds), averaging 120 bushels (2,040 pounds), up 1.3 bushels (24 pounds) from 1972. Low trip landings and effort, as in earlier years, were often the result of gear breakdown which curtailed normal fishing operations. Clam lengths ranged from 86 to 170 mm (3.4-6.7 in); monthly mean lengths ranged from 133 to 139 mm (5.2-5.5 in), averaging 135 mm (5.3 in), up 2 mm from 1972.

In Maryland day trip effort for the vessels interviewed ranged from 3 to 13 hours; monthly averages ranged from 5.3 to 9.3 hours (Fig. 5); and the annual average was 7.8 hours. Landings per trip were 30 to 360 bushels (510-6,120 pounds of meats), averaging 173 bushels (2,941 pounds). Monthly mean catch rates per hour were 19-25 bushels (323-425 pounds), averaging 22 bushels (374 pounds), down 5 bushels (85 pounds) from 1972. Clam lengths ranged from 107 to 198 mm (4.2-7.8 in), averaging 161 mm (6.3 inches). Monthly mean lengths were consistently 150 mm or higher (151-167 mm or 5.9-6.6 inches) indicating most clams were taken from offshore beds. This fleet averaged 0.2 more hours of fishing time per trip in 1973 than 1972 and concentrated on offshore beds, which resulted in fairly stable catches.

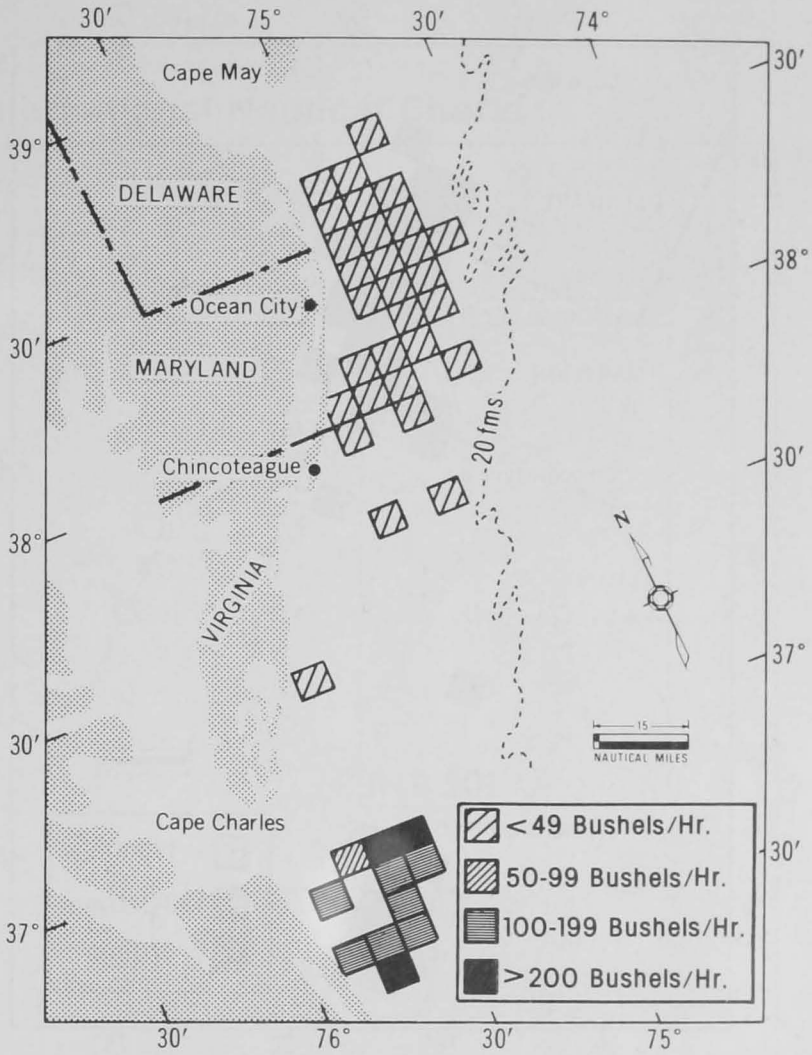

Figure 3.—Catch per hour within the area fished by the Maryland and Virginia fleet in 1973 (based on 292 interviews).

STATUS AND TRENDS OF THE FISHERY

An increase in surf clam landings at several ports indicated a general increase in effort this year on the resource in response to increased demand. Table 2 shows the landings of major commercial clams from the coastal area of Maine through Virginia for the period 1971-73. Landings of soft clams, hard clams, and ocean quahogs totaled 30.4 million pounds in 1971, but decreased by 9.2 million pounds in 1972. All three fisheries recorded lower landings in 1972—soft clams were down 4.2 million pounds, hard clams were down 4.4 million pounds, and ocean quahogs were down 0.7 million pounds. Landings for these three resources remained at about

Table 2.—Landings of major commercial clams in the northeast Atlantic (1971-73).

Year	Million lb				
	Surf clam[1]	Hard clam	Soft clam	Ocean quahog	Total
1971	40.1	15.9	12.4	2.0	70.4
1972	63.3	11.5	8.2	1.4	84.4
1973	82.3	12.0	8.0	1.3	103.6

[1]Landings of bait included.

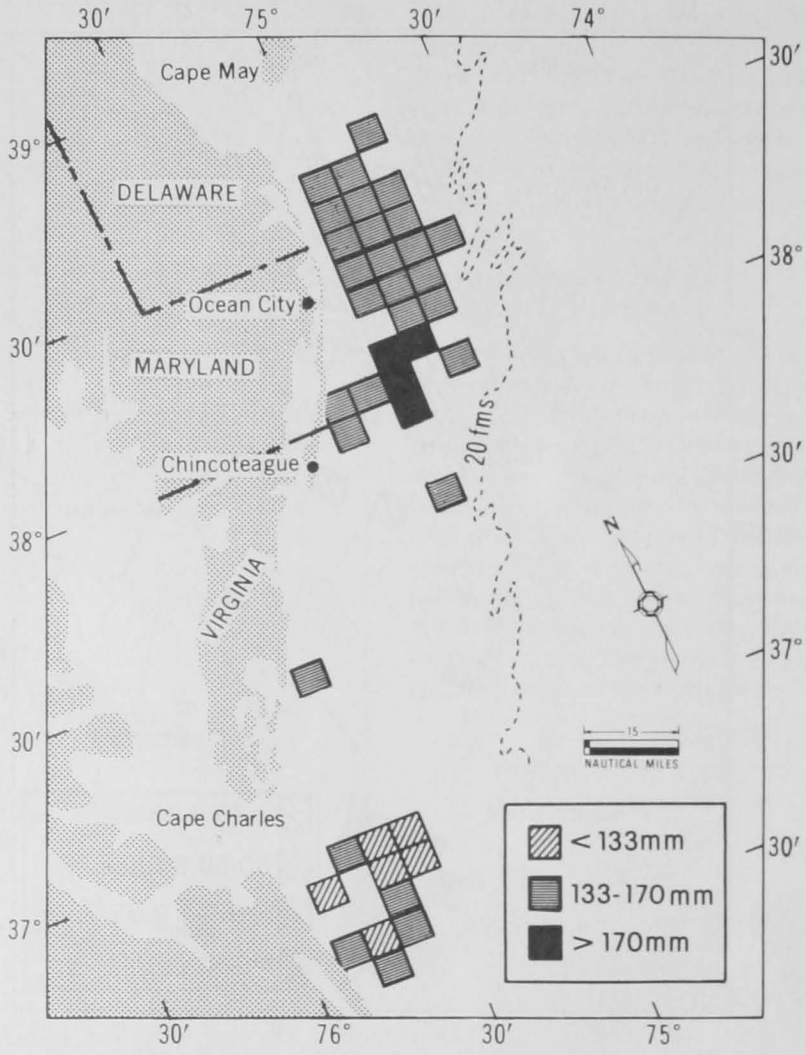

Figure 4.—Mean shell length of surf clams and area of catch by the Maryland and Virginia fleet in 1973 (based on 292 interviews).

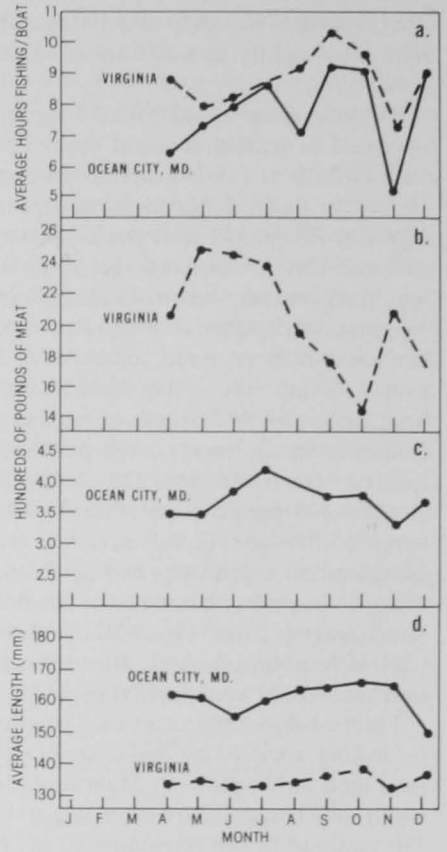

Figure 5.—Monthly averages of trip effort (a), catch per hour (b and c), and shell lengths of surf clams (d) at Maryland and Virginia ports—1973 (based on 292 interviews).

the same level in 1973. Thus, increased landings of surf clams indicate, in part, a response to lower landings of the other principal clam resources since 1971. However, total landings of all clams have increased since 1971 indicating that demand for clam products is healthy. The doubling of surf clam landings (40.1 to 82.3 million pounds) has more than compensated for decreases in landings of other clam resources.

The greatest landings of surf clams were made from beds off the Virginia coast and amounted to more than half of the United States total. Although about one-fifth of the total surf clam fleet of 98 vessels used Virginia ports as fairly permanent bases, almost as many more vessels fished the Virginia beds as port migrants. The clams were harvested at an average rate of 2,040 pounds per hour which, although only slightly higher than reported in 1972, is higher than has ever been reported for this fishery. The clams came from beds concentrated in a relatively small area compared with the beds fished by the Maryland fleet. These beds were in many of the same fishing areas reported for 1972.

The decrease in landings at Cape May-Wildwood and Lewes can be explained, even in the absence of interview data. The decrease corresponds to a reduction in landing from offshore beds of 15.2 million pounds in 1972 to 9.4 million pounds in 1973. Inshore landings (0-3 miles) were up from 8.2 million pounds in 1972 to 9.7 million pounds in 1973 (Wheeland, 1973; Thompson, 1974); not enough to compensate for offshore losses. Some offshore vessels from these ports migrated to Virginia waters.

LITERATURE CITED

Ropes, J. W. 1972. The Atlantic coast surf clam fishery 1965-69. Mar. Fish. Rev. 34(7-8):20-29.

Ropes, J. W., and A. M. Barker. 1972. The Atlantic coast surf clam fishery - 1970. Mar. Fish. Rev. 34(9-10):36-44.

Ropes, J. W., A. M. Barker, and G. E. Ward Jr. 1972. The Atlantic coast surf clam fishery—1971. Mar. Fish. Rev. 34(11-12):48.54.

_____. 1975. The Atlantic coast surf clam fishery—1972. Mar. Fish. Rev. 37(8):22-27.

Thompson, B. G. 1974. Fisheries of the United States, 1973. U.S. Dep. Commer., Natl. Mar. Fish. Serv., Current Fishery Statistics 6400, 106 p.

Wheeland, H. A. 1973. Fisheries of the United States, 1972. U.S. Dep. Commer., Natl. Mar. Fish. Serv. Current Fishery Statistics No. 6100, 101 p.

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