

The Atlantic Coast Surf Clam Fishery—1972

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ABSTRACT—The 1972 surf clam fishery produced landings of 63.0 million lb of meats—11 percent more than in 1971. The entire increase was limited to Virginia ports. Landings at Virginia ports were 420 percent higher than in 1971, resulting from catch/effort records of about a ton of clam meats per h. These values are higher than has ever been observed for this fishery.

FISHING AREAS

In 1972, Cape May-Wildwood, N. J.; Point Pleasant, N. J.; Lewes, Del.; Ocean City, Md.; and Cape Charles, Va., were the major ports for surf clam vessels fishing in the Middle Atlantic Bight. Landings at Long Island, N. Y., ports decreased by 1 million lb, but increased sharply in Virginia. The Virginia fishery supplied 23.4 million lb of meats or 37 percent of the total (Table 1). The New Jersey landings of 21.0 million lb were a smaller percentage (33 percent) of the total than in 1971. If

landings at Lewes, Del., are added to New Jersey's (since the vessels fished much the same grounds), the combined catch would be 28.6 million pounds or 47 percent of the total. Landings at Cape May-Wildwood were slightly more than double those at Point Pleasant. The more than fivefold increase at Virginia ports was the most significant landing record of the year.

Areas fished by New Jersey boats in 1972 (Fig. 1) were similar to 1971 (Ropes et al., 1972). Ocean City, Md., vessels continued working beds further offshore than in 1970. The New York catch was taken off Long Beach and Fire Island, and vessels from Virginia fished offshore beds.

FLEETS

The New York fleet based at Freeport, Long Island, remained at seven vessels. Five fished full time and two part time; the latter landed clams for bait. Average catch per trip for the full-time vessels was 180 bushels (3,060 lb of meats). Total landings of 2.5 million lb of meats for food and 0.3 million lb for bait resulted from monthly landings of 166,000 to 337,000 lb of meats (Fig. 2).

The Point Pleasant fleet decreased for the sixth consecutive year—the 16 vessels were one less than in 1971 and one of these was a bait clammer. Four Atlantic City boats were included in the 1972 Point Pleasant total because some operated from both ports during

the year and fished some of the same beds. Depths fished ranged from 9.1 to 33.8 m (30-111 ft); the average depth was 22.9 m (75 ft). Most vessels landed daily, but a few overnight trips were made to distant grounds; hours fished per trip ranged from 2.0 to 18.0. Monthly averages are shown in Figure 3. The average for 1972 was 9.3 h, 0.2 more than in 1971.

The Cape May-Wildwood fleet decreased to 34—five vessels fewer than in 1971. A movement of vessels to Virginia ports was responsible for the decrease. Depths fished ranged from 3.7 to 34.1 m (12-112 ft); average depth was 17.7 m (58 ft). Most vessels landed daily, but some overnight trips were made to the southern areas. Monthly averages of hours fished per trip are shown in Figure 3. Trip effort ranged from 2.0 to 30.0 h. The average for 1972 was 8.0 h, 0.1 h higher than in 1971. Two vessels from this port regularly land their catch at Lewes, Del.; all of the clams came from areas fished by the Cape May-Wildwood fleet.

The Ocean City fleet increased to 18 vessels—five more than in 1971. Depths fished ranged from 3.1 to 35.0 m (10-115 ft); average depth was 18.3 m (60 ft). Most vessels made daily trips and worked during daylight hours. Monthly averages of hours fished per trip are shown in Figure 3. Daily effort ranged from 1.0 to 12.0 h; the average was 7.6 h.

The Virginia fleet was based at Chincoteague, Oyster, Cape Charles, Kiptopeke, and Little Creek, and increased by seven vessels in 1972. Interview data at Chincoteague indicated the catch at that port was sufficiently unlike landings at other Virginia ports to report it separately. Depths fished by vessels from Chincoteague ranged from 9.8 to 27.4 m (32-90 ft), and the average depth was 20.1 m (66 ft). Vessels from other Virginia ports fished depths ranging from 9.1 to 22.0 m (30-72 ft) at an average depth of 16.5 m (54 ft). Monthly averages of hours fished per trip ranged from 4.1 to 7.8 for vessels from Chincoteague and 5.1 to 8.2 for vessels from other Virginia ports (Fig. 4); daily effort ranged from 1 to 11 and 1 to 15, and averaged 6.1 and 6.9 h, respectively.

Although values reported in Table 1 for the number of vessels in an area are for those interviewed more often in that area, some vessels made occasional

Table 1.—Surf clam landings by area (1972).

Area	Number of vessels		Landings 10 ⁶ lb	
	1971	1972	1971	1972
Chincoteague to Norfolk, Va.	16	23	4.5	23.4
Cape May-Wildwood, N. J.	39	34	28.5	14.8
Lewes, Del.	—	2	—	8.6
Ocean City, Md.	13	18	7.8	7.3
Point Pleasant, N. J.	17	16	7.1	6.2
Long Island, N. Y.	27	27	3.7	2.7
Total	92	100	51.6	63.0

¹Includes four vessels at Atlantic City and one bait clam vessel.

²Includes two bait clam vessels.

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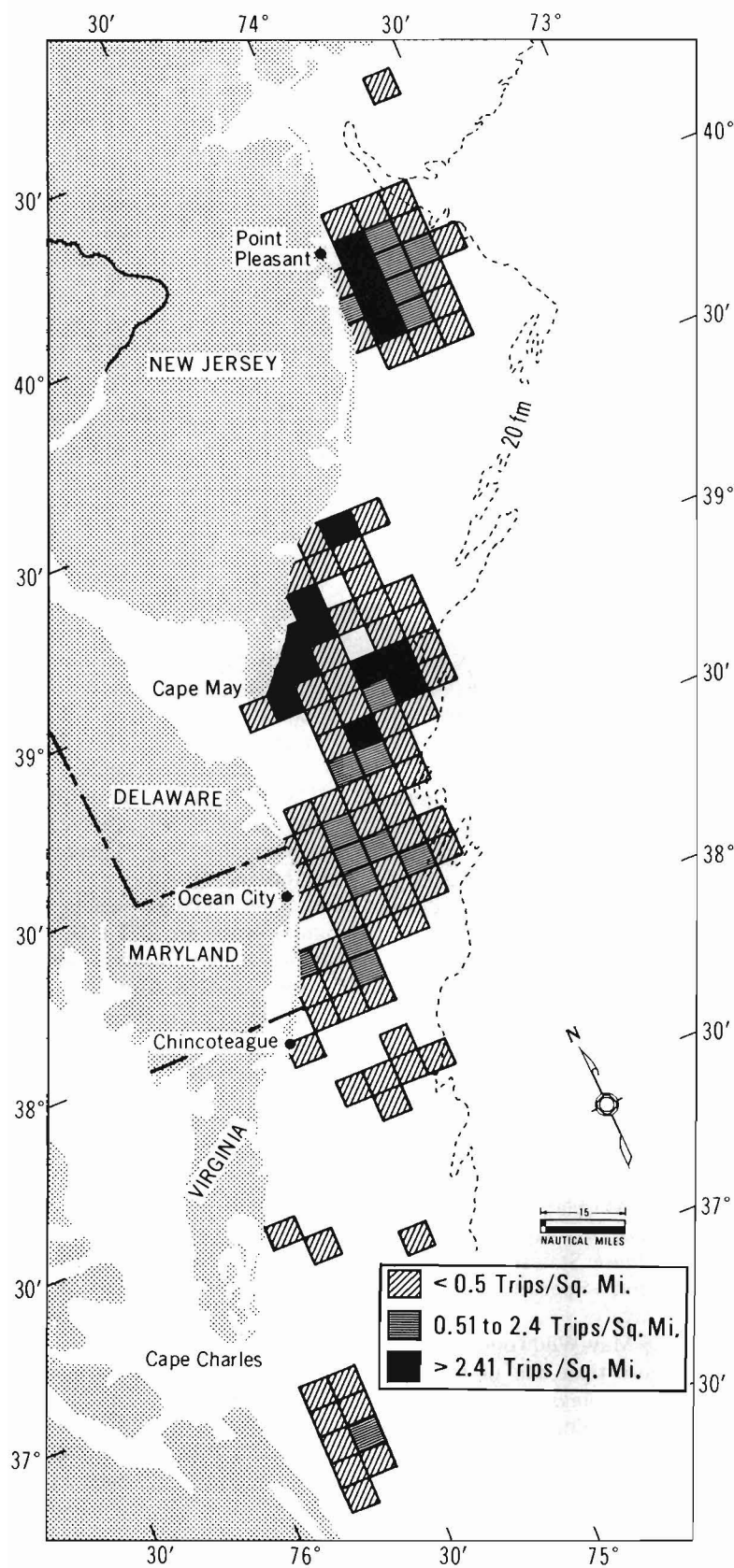


Figure 1.—The area and intensity of surf clam fishing by the New Jersey, Maryland, and Virginia fleet in 1972 (based on 2,523 interviews).

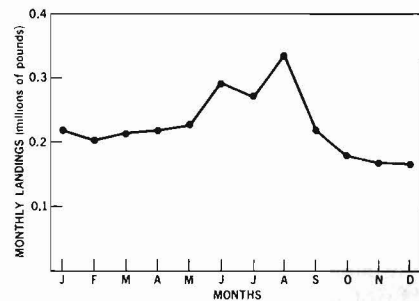


Figure 2.—Monthly landings of surf clams at New York ports - 1972.

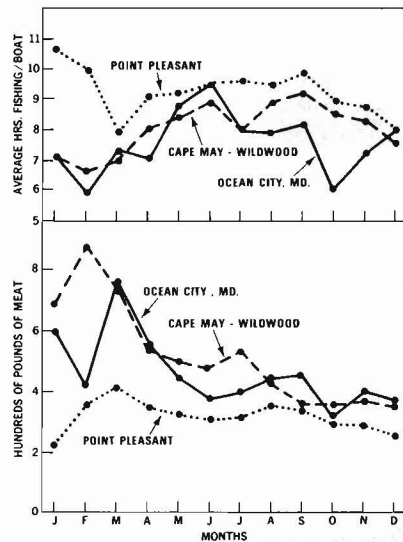


Figure 3.—Monthly averages of daily effort (upper) and catch per hour (lower) at Point Pleasant and Cape May-Wildwood, N. J., and Ocean City Md. - 1972.

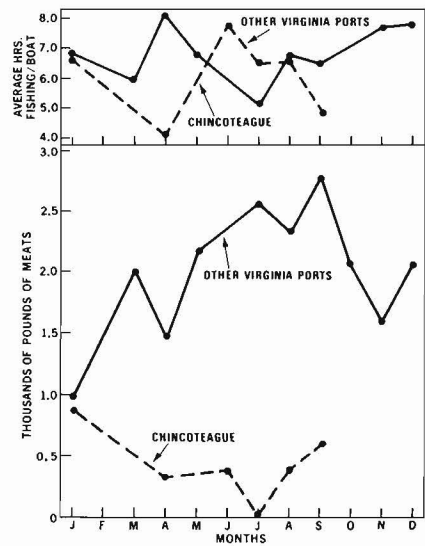


Figure 4.—Monthly averages of daily effort (upper) and catch per hour (lower) at Chincoteague and other Virginia ports - 1972.

landings elsewhere (Table 2). For example, 10 vessels that were considered migrants landed catches in Virginia to increase the total landing there to 30. Five migrant vessels landed in Cape May-Wildwood, three in Point Pleasant, and two in Ocean City. An estimate of the months of vessel effort in an area was determined by multiplying the number of vessels by the mean number of months they were interviewed. The months of vessel effort was greatest in the Cape May-Wildwood area (34 percent of the total effort), followed by Ocean City (23 percent), Virginia (22 percent), and Point Pleasant (21 percent).

At Cape May-Wildwood, landings per boat-day ranged from 50 to 2,056 bushels (850-34,952 lb of meats) and averaged 254 bushels (4,318 lb). The average in 1971 was 269 bushels (4,573 lb). Monthly landings varied seasonally, with the catch declining when the boats moved offshore in good weather. Catch per hour decreased from 34 bushels (578 lb) in 1971 to 32 bushels (544 lb) in 1972. Figure 5 shows the catch per hour in the areas fished. The catch rate dropped sharply in April when the fleet moved offshore to fish for larger (150 mm) clams (Fig. 6). A total of 1,340 interviews were made in 1972; 46 percent of the trips were to inshore areas, a value equal to 1971. The average catch per hour for inshore and offshore clams was 40 bushels (680 lb) and 27 bushels (459 lb). Monthly average lengths reflected the seasonal shift in effort from inshore to offshore beds. Lengths of clams ranged from 87 to 191 mm (3.4-7.5 inches). The average length of inshore clams was 127 mm (5.0 inches); offshore clams averaged 158 mm (6.2 inches); and the average for all clams measured was 145 mm (5.7 inches—2 mm (0.1 in) larger than in 1971). A sample of 370 interviews of a total of 1,340 was analyzed in detail for catch with respect to the distance of the fishing site from shore (Table 3). The smallest clams (113 mm) were taken in greatest quantities nearest to shore. Clam size increased substantially with increasing depth and distance from shore, but catch rate decreased.

LANDING STATISTICS

Interviews by port samplers provided information on fishing areas and effort

Table 2.—Vessel occurrence in an area and average months of fishing—1972.

Vessels interviewed that fished	Area and number of vessels (mean months of fishing)				
	Point Pleasant	Cape May-Wildwood	Ocean City	Virginia	Total
Six months or more in the area shown and nowhere else	12 (10.8)	16 (9.3)	11 (9.7)	11 (8.6)	50 (9.7)
Less than 6 months in the area shown and nowhere else	0	10 (3.0)	3 (4.3)	5 (1.6)	18 (2.8)
More months in the area shown and a few months elsewhere	0	8 (4.4)	4 (8.5)	4 (7.0)	16 (6.1)
Migrants in area	¹ 3	² 5 (1.4)	2 (2.5)	³ 10 (1.7)	20 (2.1)
Total (less migrants)	12	34	18	20	84
Months of vessel effort (vessels × mean months)	141.6	231.0	158.6	147.6	678.8

¹One vessel normally lands at Long Island, N. Y.

²One vessel normally lands at Lewes, Del.

³One vessel normally lands at Little Creek, Va. Three vessels were not fully operational and were never interviewed.

Table 3.—Sample of surf clam catch from interviews of vessel captains at Cape May-Wildwood, N. J., in 1972.

Size class	Interviews	Mean shell length	Distance from shore	Mean bushels caught/day	Mean depth	Fishing time	Mean bushels
<i>mm</i>	<i>no.</i>	<i>mm</i>	<i>naut. mi.</i>	<i>no.</i>	<i>ft</i>	<i>h</i>	<i>h</i>
100-119.9	24	113.3	1.6	517.5	26.8	6.1	88.0
120-139.9	186	127.1	2.5	260.0	33.1	7.2	36.0
140-159.9	56	155.5	15.0	167.2	72.5	8.0	20.7
160-	104	163.4	16.1	168.1	77.3	8.1	20.8

in New Jersey, Maryland, and Virginia. Data on landings in the Middle Atlantic Bight were supplied by the National Marine Fisheries Service, Division of Statistics and Market News.

Landings of 63.0 million lb of meats were 11.4 million lb (22 percent) higher than in 1971. Most of the increase was due to higher landings at Virginia ports. New Jersey and Delaware produced 29.6 million lb, 6.0 million lb (17 percent) less than in 1971. Maryland landings of 7.3 million lb were lower by 6 percent (0.5 million lb), and New York landings decreased 27 percent (1.0 million lb). Virginia landings showed the most marked increase, 18.9 million lb—420 percent higher than in 1971. New Jersey landings were 47 percent of the 1972 total—Virginia, 37.1 percent; Maryland, 11.6 percent; and New York, 4.3 percent. In 1971, landings by these States were 69 percent, 9 percent, 15 percent, and 7 percent, respectively.

The Cape May-Wildwood fleet has provided more than half of the total New Jersey landings since 1967. In 1972, its contribution was 71 percent (14.8 million lb of the 21.0 million lb total). If Delaware landings are added to those of Cape May-Wildwood (since the clams came from New Jersey beds), Cape May-Wildwood contributed 79 percent (23.4 million lb) to the total New Jersey landings of 29.6 million

lb. This percentage, including Delaware's landing, was less for Cape May-Wildwood, but the weight of meats was greater than in 1971 when 28.5 million lb (80 percent) were landed.

The Point Pleasant portion of the New Jersey landings increased from 20 percent in 1971 to 21 percent in 1972, but this increase was not reflected in the total landings which were 0.9 million lb less in 1972 than 1971. The landings per trip ranged from 21 to 505 bushels (357-8,585 lb of meats) and averaged 171 bushels (2,907 lb). The average in 1971 was 208 bushels (3,536 lb). Catch per hour averaged 18.5 bushels (315 lb) in 1972 and 23 bushels (391 lb) in 1971 (Fig. 3). Monthly mean catch per hour and landings were relatively stable (Fig. 3, 5). Lengths of clams ranged from 110 to 185 mm (4.0-7.3 in) and averaged 158 mm (6.2 in)—1 mm larger than in 1971. Monthly average lengths were fairly constant (Fig. 6).

The Ocean City fleet increased in 1972, but landings decreased 6 percent (7.8 million lb in 1971 to 7.3 in 1972). The decrease was caused by concentration of the fleet's effort on offshore rather than inshore beds of clams (Fig. 1). Landings per trip ranged from 15 to 832 bushels (255-14,144 lb of meats) and averaged 204 bushels (3,468 lb). Monthly mean catch per hour ranged from 19 bushels (323 lb) to 45 bushels (765 lb) and averaged 27 bushels (459 lb)

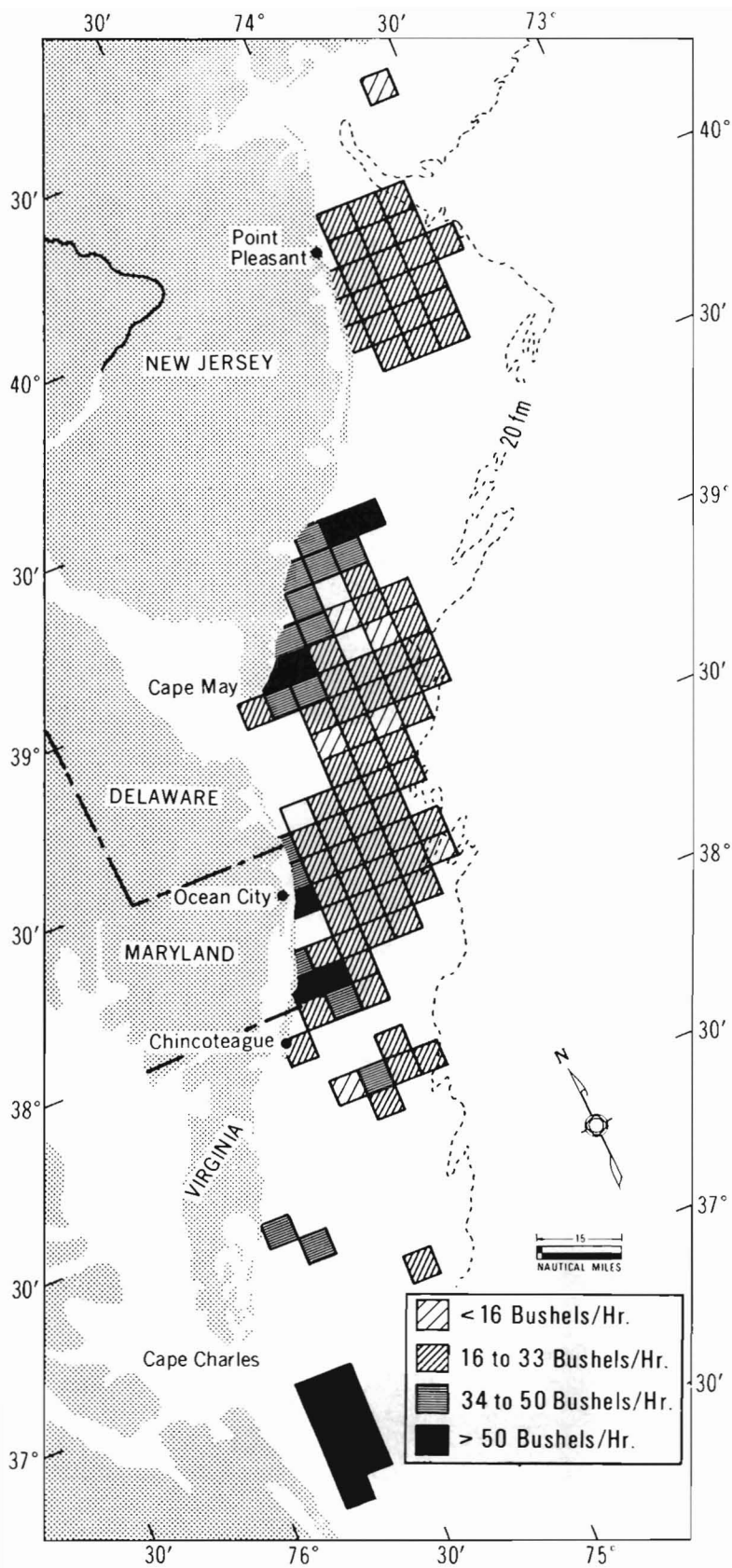


Figure 5.—Catch per hour within the area fished by the New Jersey, Maryland, and Virginia fleet in 1972 (based on 2,523 interviews).

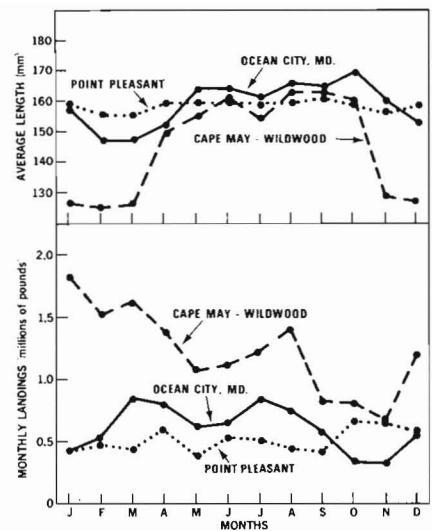


Figure 6.—Monthly mean lengths of surf clams (upper) and landings (lower) at Point Pleasant and Cape May-Wildwood, N. J., and Ocean City, Md. - 1972.

(Fig. 3). Catch rates were higher, although somewhat erratic, during January through April. Thereafter, catch rates decreased as the fleet fished mostly offshore beds (Fig. 5). Clam lengths ranged from 104 to 194 mm (4.1-7.6 in) and averaged 159 mm (6.3 in) (Fig. 6). Monthly average lengths were only slightly lower in the first 4 months of the year by a few vessels that fished inshore beds. Most of the Ocean City effort was on large offshore clams.

The Virginia fleet increased in 1972, and several other vessels fished the area on a part-time basis. Most of the vessels that fished on a full-time basis were of the stern-dredge type (Ropes, 1972). Their greater dredge size and power accounted for the increased landings at all Virginia ports, except Chincoteague. Landings per trip at Chincoteague ranged from 10 to 480 bushels (170-8,160 lb of meats) and averaged 160 bushels (2,720 lb). Monthly mean catch per hour ranged from 0.7 bushels (12 lb) to 51 bushels (867 lb) and averaged 25 bushels (425 lb) (Fig. 4). Clams ranged in length from 135 to 185 mm (5.3-7.3 in) and averaged 160 mm (6.3 in) (Fig. 7). All were from offshore beds. At other Virginia ports, landings per trip ranged from 90 to 2,272 bushels (1,530-38,624 lb of meats) and averaged 795 bushels (13,515 lb). Monthly mean catch per hour ranged from 56 bushels (952 lb of meats) to 164 bushels (2,788 lb) and averaged

118 bushels (2,006 lb) (Fig. 4). Clam lengths ranged from 106 to 160 mm (4.2-6.3 in) and averaged 133 mm (5.2 inches) (Fig. 7). Most of these clams were from beds 15 miles off Cape Henry (Fig. 1).

Figure 8 shows the average shell lengths and area of catch of surf clams in 1972. A comparison of this figure with Figures 1 and 5 shows the greater number of trips and higher catch rate made on inshore beds of small clams off New Jersey and in beds of small clams off Cape Henry, Va.

STATUS AND TRENDS OF THE FISHERY

About 40 percent of the fleet of surf clam vessels used ports in Maryland and Virginia on a full-time basis in 1972. These vessels caught 49 percent of the total landings, whereas their catch in 1971 was only 24 percent. The greatest and only increase in landings was in Virginia; landings in ports of all other states decreased. Increased surf clam fishing effort was probably prompted by closing of soft-shell clam (*Mya arenaria*) beds in Chesapeake Bay on 1 July 1972. Landings of only 1.9 million lb of shucked soft-shell clam meats were reported in 1972, whereas, for the period of 1967-71, annual landings from Chesapeake Bay have averaged 6.2 million lb. High mortalities of

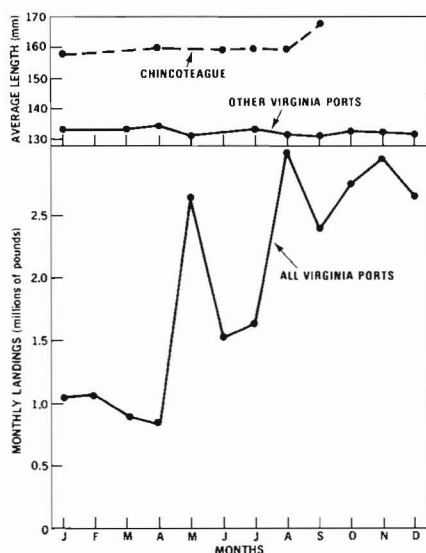


Figure 7.—Monthly mean lengths of surf clams (upper) at Chincoteague and other Virginia ports and landings (lower) at all Virginia ports - 1972.

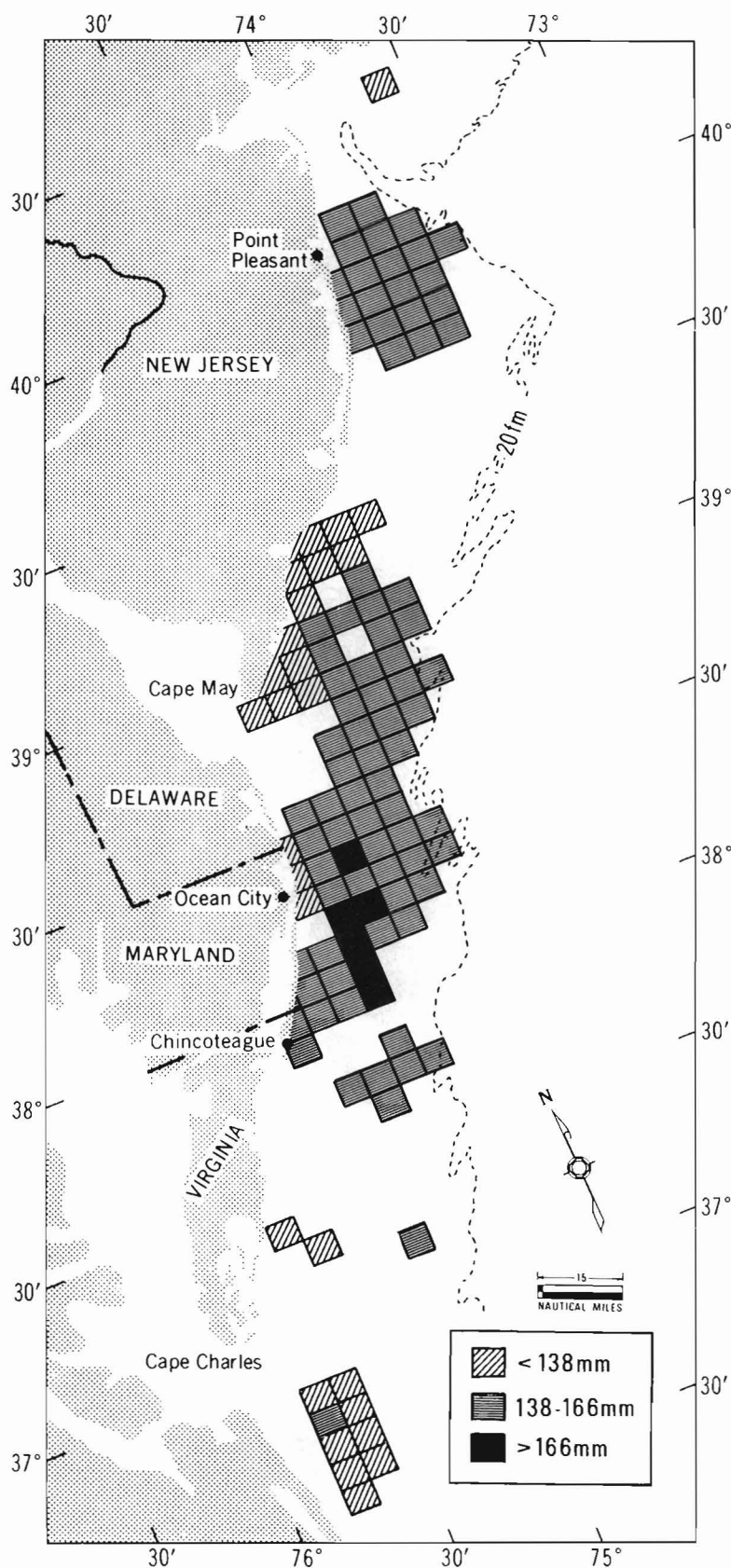


Figure 8.—Average shell length of surf clams and area of catch by the New Jersey, Maryland, and Virginia fleet - 1972.

soft-shell clams after tropical storm Agnes were given as part of the reason for closing the fishery (Shaw and Hamons, 1974). The decrease in soft clam landings increased the demand for surf clam products.

The catch rate at Point Pleasant, Cape May-Wildwood, and Ocean City decreased from 23, 34, and 33 bushels per hour, respectively, in 1971 to 18.5, 32, and 27 in 1972. The lower catch rates at all of these ports were due to the fleet concentrating greater effort on offshore rather than inshore beds of clams.

Annual average lengths of clams landed in New Jersey were only from

1 to 2 mm larger in 1972 than in 1971. Monthly averages at Point Pleasant ranged between 155 and 162 mm (6.1 and 6.4 in); those at Cape May-Wildwood ranged between 126 and 163 mm (5.0 and 6.4 in). The smaller sizes at Cape May-Wildwood were due to the fleet fishing on inshore beds during January through April and in November and December. The annual average lengths of clams landed at Point Pleasant have been gradually increasing each year from the lowest record of 149 mm (5.9 in) in 1967 to the highest of 158 mm (6.2 in) in 1972. The higher records are for the latter 4 years during the 1965-72 period. This suggests that setting,

growth, and survival of young clams to recruit size (125 mm) have been very low in the beds off Point Pleasant since 1967 when fishing effort was reduced.

The only substantial increase in landings is expected at Virginia ports, and this will probably result in a grand total greater than for 1972.

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