

ARTICLES

THE SURF CLAM FISHERY

By Thomas M. Groutage and Allan M. Barker*

The 1965 surf clam (*Spisula solidissima*) fishery landed a record 44 million pounds of clam meats. New Jersey landings composed 96 percent of the total; the center of the fishery was Point Pleasant. Less than 2 percent of the total landings was used for fish bait. The hydraulic jet dredge was the principal gear. Sampling at Point Pleasant, Cape May, and Wildwood, N. J., provided data about the fishery. Daily catches averaged 355 bushels at Point Pleasant and 413 bushels at Cape May-Wildwood. Clams landed for processing had a mean shell length of 151 mm. (6 in.) at Point Pleasant and 139 mm. (5½ in.) at Cape May-Wildwood.

The surf clam is the largest bivalve mollusk living on the Atlantic coast (Miner, 1950). The fishery has existed since the late 1800s and contributes about 5 percent of the total U. S. annual shellfish landings. Regular sampling of the fishery was initiated in October 1964 when a field office was established at Point Pleasant, N. J., by the Surf Clam Program, Biological Laboratory, Oxford, Md. This report is a summary of the 1965 fishery.

FISHING AREA

Surf clams were harvested in two principal areas along the New Jersey coast. The largest and most productive grounds were between Barnegat Lightship and Point Pleasant (fig. 1). Point Pleasant, the center of commercial landings, had a total surf clam fleet of about 40 vessels. A few (2 to 5) boats were based at Barnegat Inlet. Depth of clam beds ranged from 15 to 37 meters (48 to 120 feet); average depth was 22.3 meters (73 feet). Point Pleasant boats traveled 1 to 3 hours to reach the offshore clam beds. Figure 1 also shows the second fishing area off Cape May. About 8 boats operated out of Cape May and Wildwood, traveling 1 to 2 hours to the inshore or offshore beds. Clam beds in this area were 9 to 37 meters (30 to 120 feet) deep--averaging 12.3 meters (40 feet) on the inshore beds and 21.3 meters (70 feet) on the offshore beds.

Plants in Point Pleasant, Cape May, and Wildwood received clams directly as the boats

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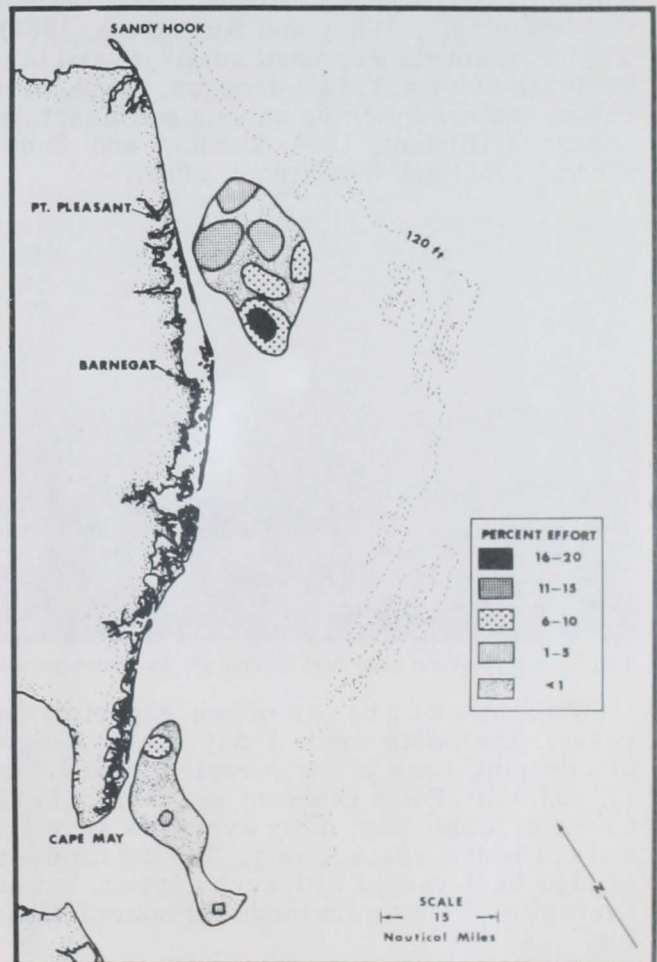


Fig. 1 - Location of surf clam dredging effort off the New Jersey coast in 1965 (percent of total New Jersey effort).

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were unloaded and processed the clams the next day. Clams or clam meats were trucked to processing plants at: Port Norris and Leesburg, N. J.; Lewes, Del.; and Pine Point, Maine. Shucking was by hand although some mechanization assisted in cleaning. Fresh meats were canned or iced for shipment to markets and restaurants.

GEAR AND METHODS

Clam boats (fig. 2) are modified or converted vessels (trawlers, scallopers, and oyster schooners) from other fisheries. Surf clams are taken commercially with hydraulic jet dredges (Ropes, 1960; Dumont and Sundstrom, 1961; and Sundstrom, 1957). The bait clam fishery used small jet and other types of shellfish dredges, tongs, hand rakes, and hand picking on exposed intertidal sandbars (Brandt, 1964; Dumont and Sundstrom, 1961; and Sundstrom, 1957).

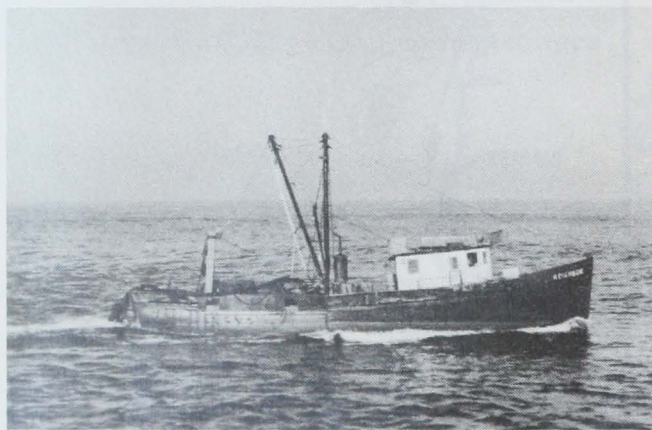


Fig. 2 - A typical surf clam boat heading for the fishing grounds.

With the exception of one experimental vessel, the boats made 1-day trips. Length of dredging time per trip varied from 1.5 to 17 hours at Point Pleasant and from 2 to 20 hours at Cape May; daily averages were 8.9 and 6.4 hours, respectively. Towing time per dredge haul varied with each captain, but an average of 4 tows were made per hour of fishing.

LANDING STATISTICS

New Jersey landings were sampled throughout the year at Point Pleasant and Cape May-Wildwood to obtain statistical data.

¹/The table "Surf Clam Catch for the Atlantic Coast of the United States," is attached as appendix to reprint (Separate No. 780) of this article. For a free copy of the Separate, write to Office of Information, U. S. Department of the Interior, Fish and Wildlife Service, BCF, Washington, D. C. 20240.

Sampling was concentrated at Point Pleasant, but weekly visits were made to the Cape May-Wildwood area. Sampling was increased to twice weekly at Cape May-Wildwood in late winter and early spring, when effort increased in this area. Over 1,000 interviews of vessel captains were obtained for information on fishing location and effort; 785 samples from landings were examined for length of commercial-size clams (17,000 clams were measured). Twenty trips were made on commercial vessels, where 7,400 clams were measured from catches made in 214 dredge hauls. The amounts of surf clams landed along the Atlantic coast were taken from "Current Fishery Statistics" bulletins.

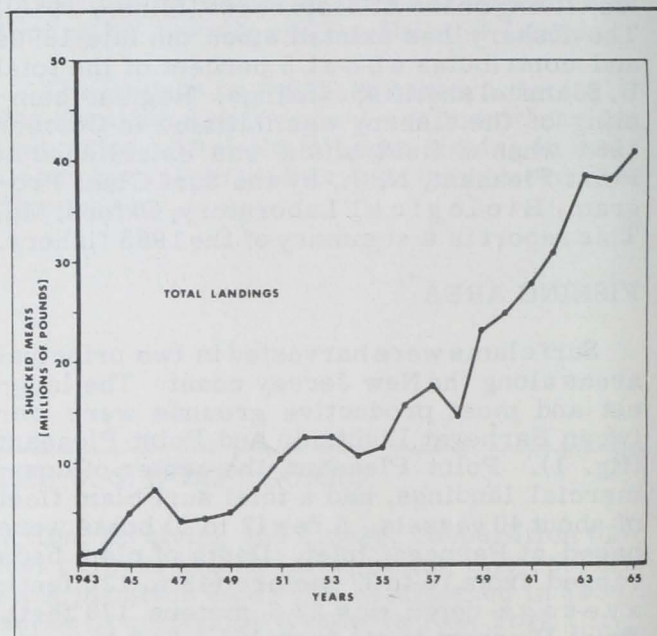


Fig. 3 - Annual surf clam landings, 1943-65.

Total landings of 44 million pounds of surf clam meats set a new high in 1965 (fig. 3 and table¹.) The previous high was 38.6 million pounds in 1963. Greater demand for the product, increased effort, and increased gear efficiency have contributed to this rise. Ninety-six percent (42.3 million pounds of meats) of the total landings were made in New Jersey, 3.4 percent (1.5 million pounds) in New York, and 0.6 percent (0.3 million pounds) in Maryland. Approximately 1.6 percent (660,000 pounds) of the total New Jersey catch, 25 percent (68,400 pounds) of the Maryland catch,

and 51 percent (766,000 pounds) of the New York catch, were used for bait in the sport fisheries.^{2/} Landings in Rhode Island and Massachusetts were insignificant and were used entirely for bait.

Over 79 percent (33.5 million pounds of meats) of the New Jersey landings were made at Point Pleasant and Barnegat. Winter weather restricted dredging in deeper waters off this area. In late January and February, about 20 boats moved from Point Pleasant and Barnegat to the Cape May-Wildwood area. The nearness of the fishing area to shore off Cape May enabled boats to operate during inclement weather. Most of these vessels returned to Point Pleasant before June. Daily landings per boat at Point Pleasant ranged from 510 to 18,820 pounds of meats (30 to 1,107 bushels) and averaged 6,035 pounds (355 bushels). Catch rate per hour of dredging averaged 678 pounds of meats (40 bushels) (fig. 5).

Cape May landings amounted to nearly 20 percent (8.4 million pounds of meats) of the New Jersey total. The shifting of effort from

Point Pleasant to Cape May-Wildwood, from February through May, accounted for high landings at Cape May-Wildwood during that period. The March total was the only one that surpassed Point Pleasant monthly totals. These large catches were produced by an extensive harvest of smaller clams from in-shore beds. In February through June, the daily catches per boat averaged 8,942 pounds of meats (526 bushels); the hourly catch rate was 1,542 pounds (90 bushels) (fig. 5). Catch diminished rapidly at Cape May in July when the boats moved offshore to catch the less numerous but larger clams (fig. 4). From July through October, the catch rate per hour was 496 pounds of meats (29 bushels). In November and December, the boats again dredged near shore and catch increased slightly to 697 pounds of meats (41 bushels) per hour (fig. 5).

Lengths of surf clams landed at Point Pleasant were relatively uniform (fig. 4). A total of 12,910 clams measured throughout the year had a mean shell length of 151 mm. (6 in.) and a range of 120 to 180 mm. ($4\frac{3}{4}$ to $7\frac{1}{8}$ in.)--fig. 6. Clams landed at Cape May-

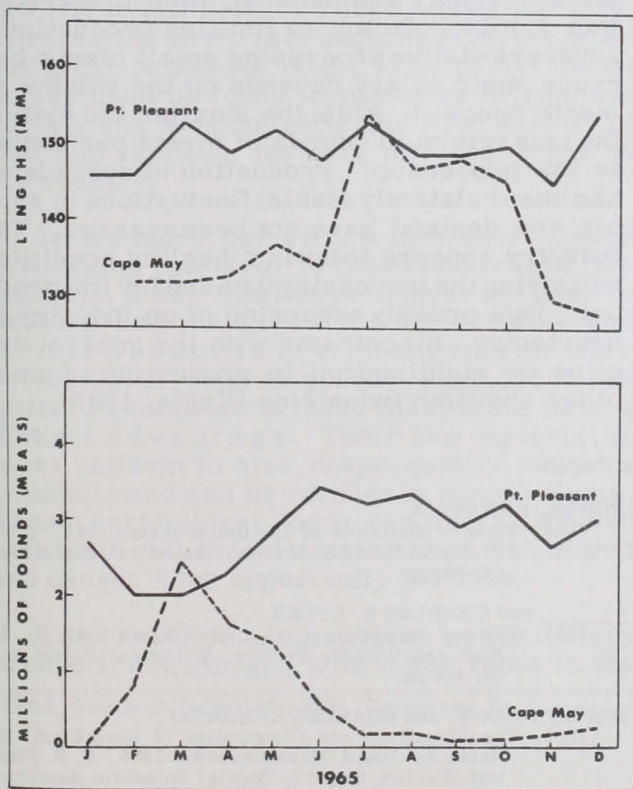


Fig. 4.- Mean lengths of surf clams and monthly landings of surf clam meats in New Jersey in 1965.

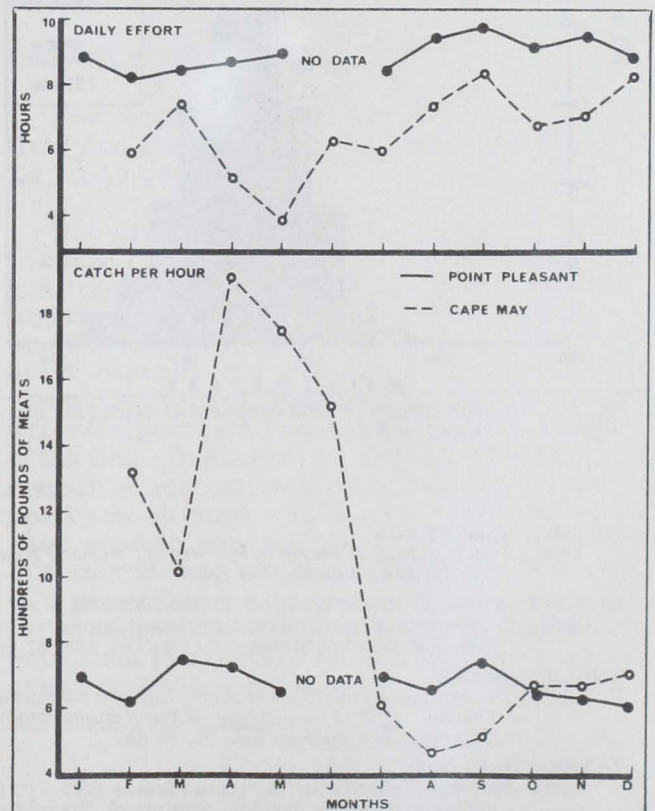


Fig. 5 - Monthly averages of daily effort and catch per hour at Point Pleasant and Cape May, New Jersey, 1965.

^{2/}Data provided in personal communications from BCF, Office of Statistical Services, Fishery Reporting Specialists, in the respective states.

Wildwood had a smaller mean length than Point Pleasant clams; for 4,466 Cape May clams measured throughout the year, the range was 105 to 180 mm. ($4\frac{1}{8}$ to $7\frac{1}{8}$ in.) and the mean length was 139 mm. ($5\frac{1}{2}$ in.)--fig. 6. The difference in lengths between clams in the inshore and offshore beds is evident in figure 4; the lengths for February through June, and for November and December, were determined from inshore clams.

At Point Pleasant, amounts of small clams (less than 130 mm. or 5 in.) discarded at sea

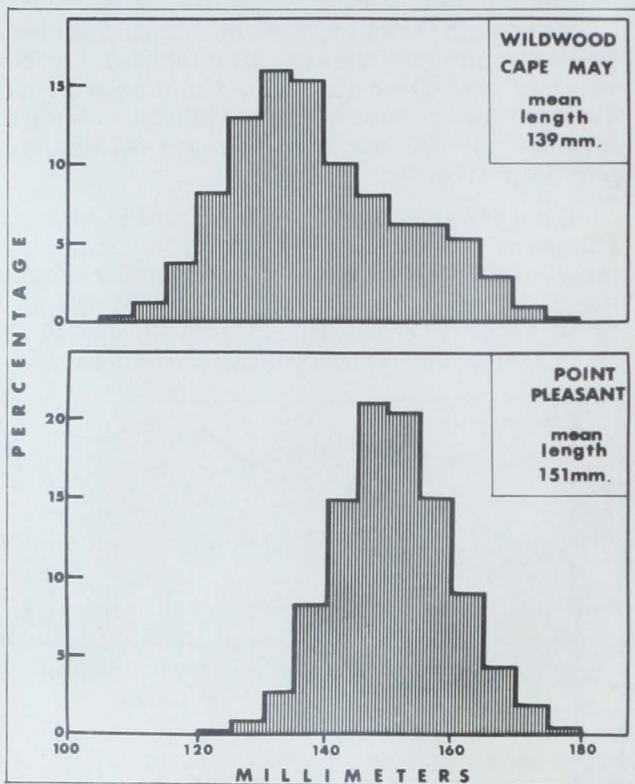


Fig. 6 - Surf clam lengths in 1965 commercial catch (139 mm. = $5\frac{1}{2}$ in. and 151 mm. = 6 in.).

were negligible--about 1 bushel per 200 bushels landed. No clams were discarded in the Cape May-Wildwood area.

STATUS AND TRENDS OF THE FISHERY

Information from interviews with vessel captains indicates fishing effort has increased in the last few years. The average length of surf clams caught in the Barnegat Lightship area, however, has remained at about 150 mm. (6 in.).

Many factors affect the catch and effort of the surf clam fleet. Weather is perhaps the most important limiting factor in boat operation, hampers proper dredging, and increases hazards to the crews in handling dredges. Data in this report do not emphasize the importance of wind because the larger, more efficient boats were able to fish during adverse weather and make higher catches than the fleet average during good fishing conditions.

The industry imposed catch quotas at various times to compensate for slight fluctuations in supply and demand. Size preference was a minor factor in limiting production--shuckers dislike processing small clams because their salary depends on the volume of meats shucked. Also, the smaller the clams, the less return in pounds of meats per bushel to the processor. Production of surf clams has been relatively stable; fluctuations in supply and demand have not been marked. The industry appears to be in a healthy condition, satisfying the increasing demand for its product. This orderly expansion of an industry is heartening. It contrasts with the general decline or stabilization in production of many other shellfish industries (Engle, 1966).

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