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## A New Fishery For Scallops in Western Florida

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THE GULF SCALLOP, *Pecten (Aequipecten) gibbus*, has at last entered the commercial picture. For decades, shell collectors roaming the west coast of Florida have commented on the vast heaps of this species washed ashore by stormy seas, particularly in the Marco and Sanibel Island areas, and it has become a cliché to comment about "commercial possibilities of harvesting" this species. Even with periodic knee-deep windrows of fresh shell lined up on the beaches, no serious consideration was given to commercial investigation.

With the consumer acceptance of grooved shrimp, which occurred in the late 1940's, and the discovery and opening of the Dry Tortugas shrimp grounds in late 1949 and early 1950, an effective scallop catching gear, the shrimp trawl, was introduced to this general area for the first time. Several species of scallops were found within the relative'y narrow confines of the early Tortugas fishery and these momentarily excited some interest; however, as the shrimp fishing areas were more closely delineated, and shallower water exploratory probing with try-nets lessened, scallop reports decreased and the fleet limited itself to catching shrimp.

The first active exploration for commercial concentrations of the Gulf scallop was carried out in April, 1954, in conjunction with some "bad bottom" exploratory shrimp trawling conducted by the Fish and Wildlife Service exploratory fishing vessel, *Oregon*, off the southwestern coast of Florida. An examination of earlier *Oregon* shrimp trawling records (January, 1951) in this area revealed that *P. gibbus* was extensively distributed out to depths of twenty-five fathoms and that catches as high as two bushels of two inch scallops were made between five and ten fathoms off Naples. During *Oregon* Cruise No. 22, some

nineteen drags were made with a modified Biloxi-type oyster dredge, chiefly in the exact locations of previous scallop catches. The catches were now completely devoid of living scallops and test dragging with forty-foot shrimp trawls were equally ineffective. It was apparent that either the population in this area had moved or had died out.

By 1955, several small shrimp fishing areas with periodic production had been located north of the Tortugas grounds by individual vessels. In July and August, the Tampa Shrimp Producers Association, operating the trawler *Goodwill*, which had been loaned to them by Diesel Engine Sales Corporation, explored the area north of the Middle Grounds as far as Cape San Blas. Several try-net drags south of Cape St. George caught *P. gibbus* in depths of twenty-five to fifty fathoms. The size and numbers of scallops indicated an extensive bed running between the offings of Cape San Blas and Cape St. George. This information was contained in a cruise report issued by the University of Miami Marine Laboratory, which had provided a biological observer for the work.

In the fall of 1955, Captain Charles Kaufmann investigated the ten to thirty fathom area off Panama City and Apalachicola as a possible source for scrap fish. Working with the vessel *Debbie K.*, he found several areas of heavy Gulf scallop concentrations and virtually had to abandon trawling in some places. He reported catches of up to twenty bushels of scallops per fifteen minute tow. To his credit, he brought a catch of about twenty-five bushels into Panama City to see if they could be shucked and sold locally. The local facilities were apparently not capable of handling the catch, and it was dumped at sea.

In response to several requests for more information, and to the particular urging of Tom Wells of E. E. Saunders Co., Pensacola, a part of *Oregon* Cruise No. 43, in February, 1957, was spent making some fifty-four scallop dredge tows between Pensacola and Cape St. George. In July, 1957, the chartered exploratory fishing vessel *Silver Bay* continued the work with about thirty drags between Cape San Blas and Cape St. George. The gear used for this work was an eight-foot "Georges Bank" type sea scallop dredge, but constructed of two inch rings. Catches ranged up to six bushels per half hour drag, but it was subsequently discovered that eighty to ninety per cent of the scallop catch was being lost through the spaces "between" the rings. Comparative drags with this gear using a two inch stretched mesh liner conducted this summer showed capacity catches (about forty bushels) per fifteen minute tow.

To supplement the rather uncertain bay scallop (*Pecten (Aequipecten) irradians concentricus*) supply and to allow for a longer period of production each year, Mr. J. D. Holmes of the Holmes Fish Company, Panama City, began small scale exploratory fishing offshore early in 1956. Monthly trips were made to locate scallops, and observe the size and development of the individuals encountered.

During the winter of 1957-58, rather dense populations were found by running south southeast of St. Andrews Bay, a distance of approximately twenty-five miles. This bed, undoubtedly the same as originally located by Kaufmann, was found to extend from a point three miles west of St. Joe Buoy to south of St. Andrews Bay Old Pass. These bottoms lay in 40 to 120 feet of water and covered an area five to ten miles wide and ten miles long.

Although heavy concentrations of scallops were encountered, the scallops were not large enough for exploitation until February, 1958. In March of 1958,

two boats started to work the grounds. This was expanded to four boats during the first part of April.

The vessels, which operated during March, 1958, were about forty-five feet long, cruised at ten miles per hour and carried a crew of three men. On a typical trip, the boat left the dock about 3:00 a.m. and arrived on the grounds in about three hours. Scallops were caught for about five hours, after which the return trip was made. The catch was usually unloaded about midafternoon of the day the trip was made.

Scallops were first captured by shrimp trawls and later by dragging a four foot wide dredge with a bag six feet long.

An average production was 150 baskets per trip, the baskets being wire mesh tubs that are standard equipment of most Florida wholesalers for handling and weighing fish and shellfish.

One tub of unshucked scallops (about 500) would yield about five pounds of meats. A gallon of meats could be produced from one and three-fifths tubs. Accordingly, the average trips would net about ninety-three gallons of meats.

The yield was not steady throughout the season. In February, 130-140 were needed to produce a pound of meat, whereas in March and April, 100 unshucked scallops yielded a pound of meat. It has also been noted that no effort at size grading was made, at least early in the commercial development. Most of the lots we have examined have contained meats varying in size from about one-half inch to one inch in diameter. Size uniformity which could easily be attained by the use of grading screens would undoubtedly provide a more attractive pack and might provide some beneficial sales promotion features.

Yield began to dip again in August and by September, fishing was considered no longer profitable. The decline in amount of meat per animal appears to be related to spawning. During the spring when yield is highest, gonads are highly developed. Later in the summer, presumably after spawning, the animals become moribund and the muscle is only weakly attached to the valves.

Production of 1,200-2,000 gallons per week, which was attained by Holmes, gives little information concerning the amount that might be realized. During the period of development of the fishery the price per gallon for scallop meats was extremely low nationally. This made enlargement of the Panama City fishery unattractive and no additional boats joined the original four.

The fishermen working the new beds state that scallops were in great abundance and production could have been several times what it was. The poor market price made the operation unprofitable.

An experimental scallop fishing operation was tried from Apalachicola during late spring and summer of this year. The grounds worked were those first noted by the *Silver Bay* and represent the inner limits of the area found by the *Goodwill*, which lie off Cape San Blas in fifteen to sixteen fathoms. Due to the poor market condition, the operation stopped. No production data is available on this venture.

There is considerable conviction among the Gulf scallop fishermen that few individuals of the fished stocks survive until late fall, and they propose a short life expectancy as has been previously noted in the case of the bay scallop (Murdock, 1955). The random samples measured during the *Oregon* and *Silver Bay* work are insufficient for definite growth determination, due primarily to the time factors involved, but the samples do not agree with the conclusions reached by the commercial fishermen. Maximum shell diameter meas-

urements show two well delineated size groups that very probably represent year classes. These samples contained from 744 to 2,109 measurements. Several variables are present in these data, chiefly, that they are from several different areas within the so-called grounds, and that the original exploratory gear (without the liner) undoubtedly had some size selectivity. However, the size frequency peaks are well defined and well separated and tentatively indicate that growth proceeds at approximately one inch per year. In July, the one year olds are at approximately 20-22 mm and preponderately range from 15-25 mm. At twenty months they range from 23 to 32 mm and average 28 mm. At twenty-four months they range from about 46 to 64 mm and average about 54 mm. The data show little appreciable change between twenty-four and thirty-two months. However, at thirty-six months the range is about 65 to 76 mm and averages about 70 mm. Other exploratory data strongly indicates shifting of population "centers" and the moving of year classes could well create the picture as outlined by the fishermen. On the other hand, the picture presented by the inadequate size frequency data now at hand should not be given too much importance. The material for growth studies is available at Panama City and some priority should be given to obtaining this important and useful information.

There is also some question concerning the taxonomy of *P. gibbus*. In the past the variations in certain shell characteristics have been considered sub-specific by some workers, and merely ecological variations by others. In its various "forms," the species is known to range from North Carolina to the northeastern coast of South America. It is not too surprising, therefore, to note that these newly worked grounds off Cape San Blas are stocked with a "form" which might be considered atypical from the better known areas of Marco and Sanibel Islands.

What is the future of this fishery? We do not know any of the factors of abundance, or what cyclic movements may occur. However, at this time the prospects are good that it will undergo some expansion and eventually provide a substantial part of the state's scallop production. The limited fishing has not approached the production potential. The recent surveys show the present grounds to extend beyond the areas so far fished, with heavy crops of young scallops now present.

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