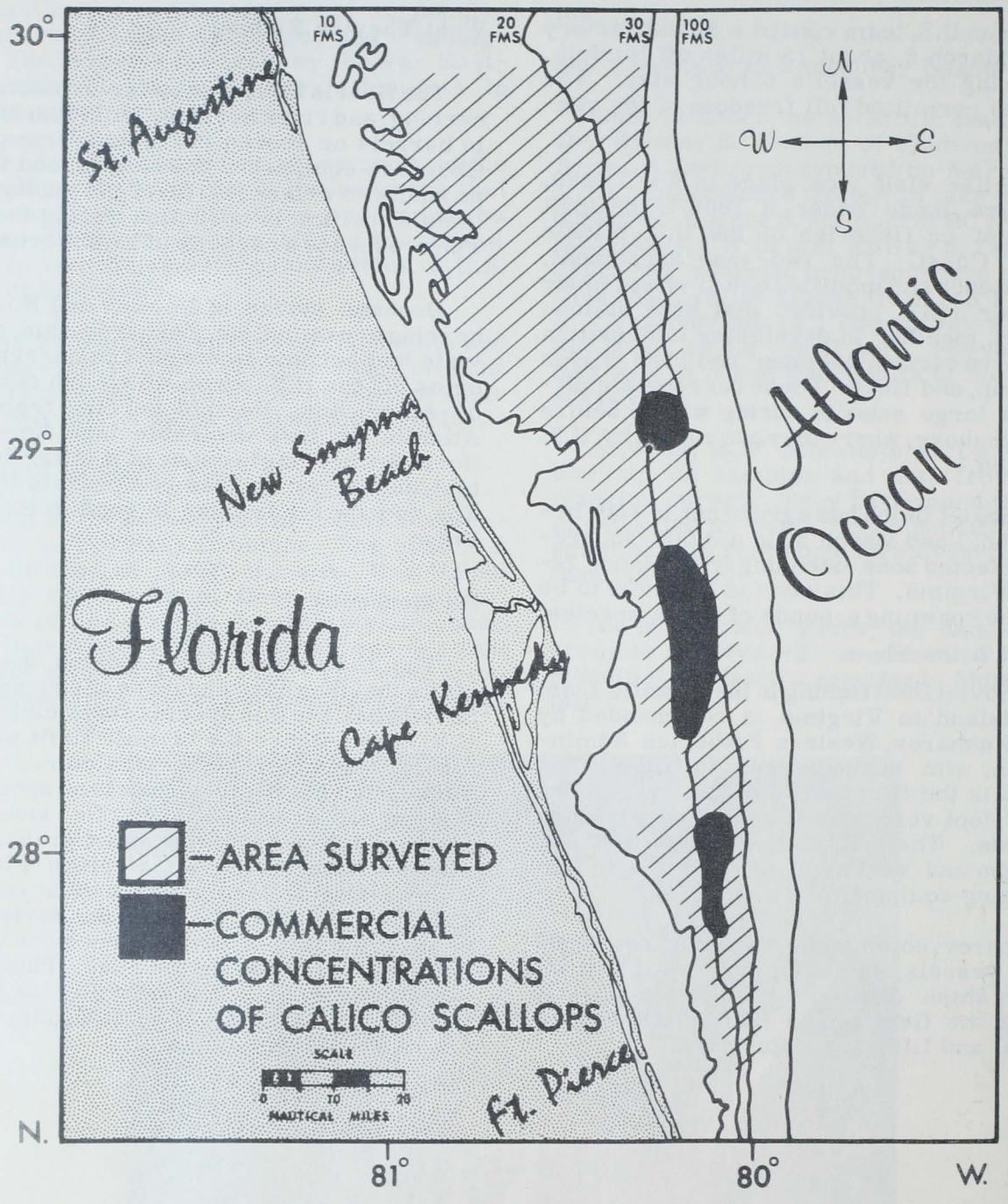
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COMMERCIAL CONCENTRATIONS OF CALICO SCALLOPS
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BCF MIAMI SCIENTISTS STUDY FLORIDA CALICO SCALLOPS

Ann Weeks

Scientists of BCF's Tropical Atlantic Biological Laboratory (TABL), Miami, Fla., conducted their tenth cruise to calico scallop grounds off Cape Kennedy from March 28 to April 3 aboard the 83-foot research vessel 'Bowers' of BCF Pascagoula, Miss.

The 5-man team was directed by Thomas J. Costello, chief of the calico scallop program; it consisted of 3 biologists and 2 technicians, much of whose research was done underwater.

What They Did

They positioned a second diving buoy near one that has been in place 6 months as a marker for an ocean-floor research station. They installed new sensing devices on the bottom, obtained scallops for age-growth and tissue study at TABL, marked and released more scallops for later study, and installed special devices on the bottom and in the water column to collect infant scallops.

Stepped-Up BCF Program

Dr. Carl J. Sindermann, TABL director, said the intensive investigation of calico scallop stocks is part of a heightened BCF effort to help U.S. commercial fishermen land satisfactory catches of profitable seafood species.

He added: "Ordinarily we in the field of marine biology do not indulge in superlatives, but the calico scallop beds--which cover 1,200 square miles just off the north Florida coast--seem nothing short of fabulous." Estimates by BCF and the fishing industry, barring catastrophes, predict an eventual annual catch, perhaps as early as 1975, of 15-20 million pounds. The figure breaks down to an expected annual catch of about a half-million pounds by each of 30 vessels.

Sindermann said: "In view of the wholesale price of about $1.35 per pound paid for calico scallops last year, it's easy to see that this exciting new fishery could be immensely valuable to our fishermen."

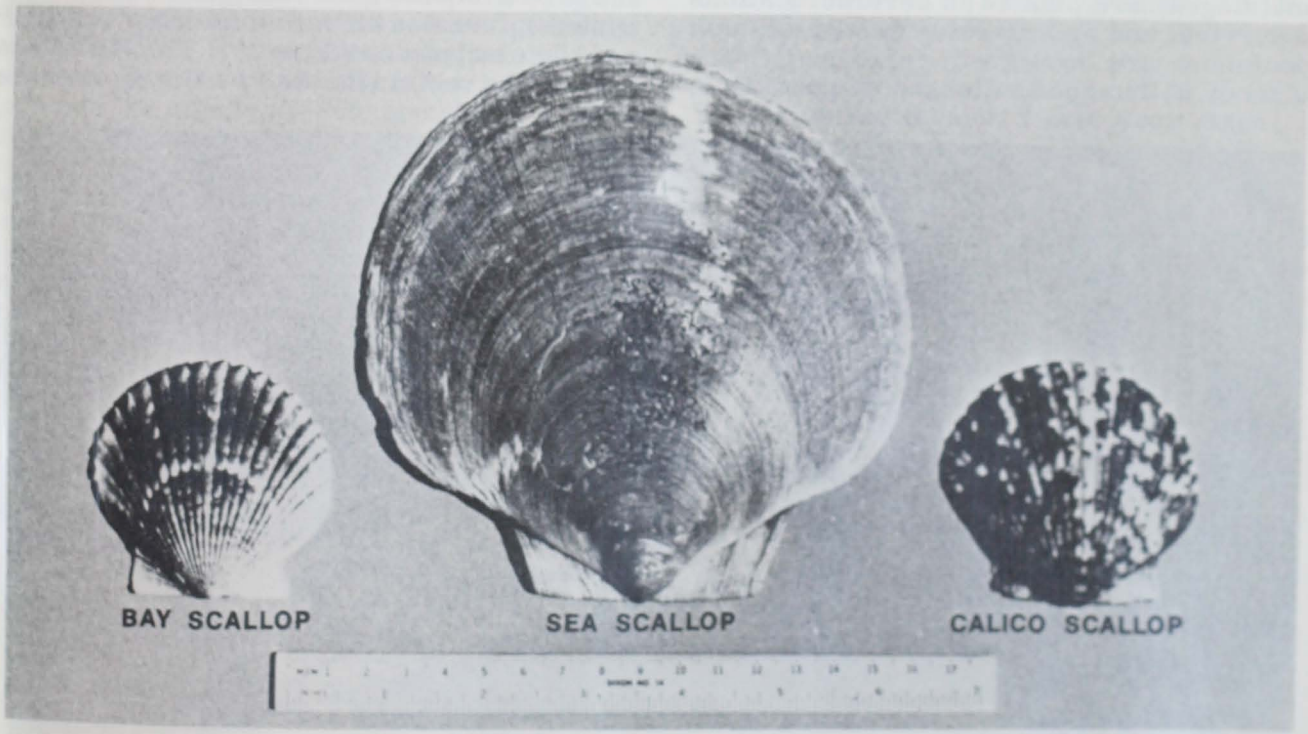

Fig. 1 - Gourmets prize the small, delicately flavored, and expensive bay scallop; most homes and restaurants buy and serve the larger sea scallop; those who have sampled the calico scallop claim that its flavor and delicacy match those of the bay scallop. The calico's edible meat is considerably larger than that of the bay scallop. Scallop fishermen are presently catching more calicos in one day than bay scallops in one year.

Field party chief Costello said that Florida landings of calico scallops in 1969 amounted to 160,300 pounds of shucked meats. He warned, however, that the shellfish were not yet available for home consumption. "Most of the catch is now sold directly to restaurant corporations. Later--when the fishery emerges from its present experimental stage--supplies will probably be abundant enough for at least limited distribution to food markets."

Much Work at Bed Sites

TABL marine scientists seek a better biological understanding of the life history of the bottom-dwelling mollusc. As a new fishery develops, it becomes increasingly important to know everything possible about growth and reproduction cycles, stock sizes, longevity, diseases to which the animal may fall prey, effects of fishing on the stocks, and the marine environment in which a species lives. Much of the scientific work involving calico scallops is done at the site of the beds. Specimens are marked, returned to their habitat, and retrieved later to ascertain just how far they may move in a given period; "spat" (infant stages) are planted in certain locations so survival and growth rates can be defined; specimens are examined periodically for evidence of damage by disease or predators; population rates are closely and frequently monitored; and oceanographic conditions are studied and charted.

Controlled Lab Experiments

In controlled experiments at TABL, thousands of calico-scallop eggs have been reared from moment of fertilization through several larval stages. These successful rearings are important to fishery biologists, who rely on written descriptions of the physical characteristics of myriad numbers of marine organisms, many of which change drastically as they pass from larval into adult stages. Because larval calico scallops have never before been described in the scientific literature, a marine biologist who found such larvae in a sample of seawater would be unable to do more than guess its identity.

Gear & Vessel Research

Gear and vessel research related to the calico scallop is carried out by other BCF laboratories, primarily the Exploratory Fishing and Gear Research Base at Pascagoula, Miss. One scallop-locating device that has yielded excellent results is the RUFAS (remote underwater fisheries assessment system), invented through joint efforts of BCF and the electronics industry. The RUFAS is a sled-like vehicle that can be towed over the

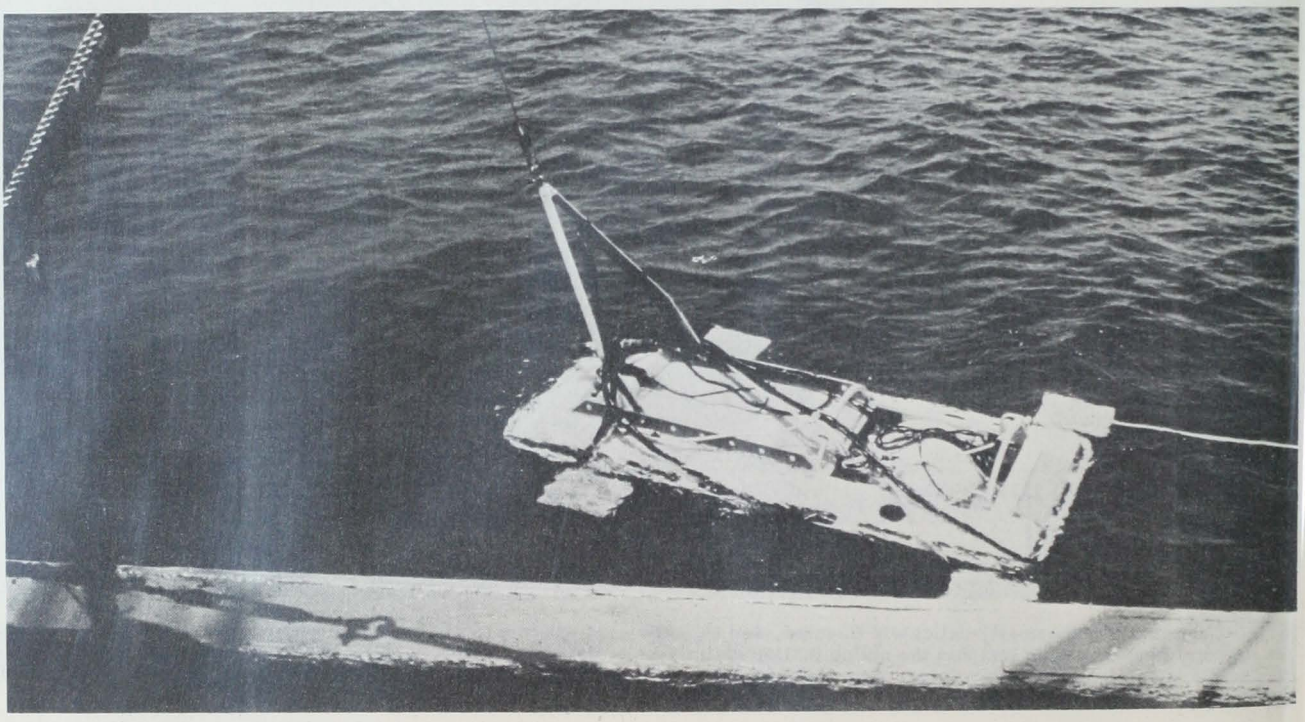

Fig. 2 - RUFAS (remote underwater fisheries assessment system). (Photo: J. B. Rivers.)

scallop beds by a surface vessel. Operated by remote control, the instrument contains a closed-circuit color television, video and audio tape recording equipment, and a high-quality movie camera.

In one recent survey, RUFAS took clear pictures of scallop beds covering 70 miles at 15 to 25 fathoms. The results pinpointed for fishermen the precise location of light, medium, and heavy concentrations of scallops. This reduced appreciably the time ordinarily spent trying to locate productive grounds.

Last year, BCF hired a Perry "Cubmobile" (a 3-passenger, deep-diving submarine) for close study of the seabed off Cape Kennedy. Several skippers of scallop vessels accompanied BCF scientists in exploratory tours of the ocean bottom.

Fishing the Scallops

In 1969, major catches of calico scallops off north Florida were made from 4 vessels designed specifically for scallop fishing and processing. Two were factory vessels capable of dredging catch, then culling, shucking, eviscerating, freezing, and packaging the scallops while at sea. The vessels generally stay out 5 to 8 days (steaming to and from scallop grounds takes only a few hours), and process as much as 200 pounds of scallop meats per hour. Fishing is continuous, night and day, with a 14-man crew working 12-hour shifts. As processing methods improve, a 1-week trip is expected to yield about 15,000 pounds of calico scallop meats. The specially equipped vessels have been so successful that their manufacturers are thinking of producing 15 more ships for the highly promising calico scallop fishery off northern Florida.

Mrs. Weeks is TABL Writer-Editor.

SHRIMP-SORTING TRAWL IN GULF OF MEXICO SO FAR INEFFECTIVE

Tests aboard the 'George M. Bowers' recently revealed that the west-coast-type shrimp-separator trawls of current design were not effective in the Gulf of Mexico. Because the fish associated with shrimp in the Gulf are small, separator trawls using vertical panels have been ineffective in sorting fish from shrimp as small fish pass through separator panel in significant amounts. Sixty-five percent of shrimp went into side bags, and 80-90% of trash fish went into fish bag or trash chute.

LONGLINER IN GULF OF MEXICO LANDS 22,000 LBS. OF SWORDFISH

The east coast longliner, 'Gulf Stream', landed 22,000 pounds of swordfish at Pascagoula, Mississippi. It was her second trip.

The catch was made during 11 days, including travel to and from grounds; 10 longline sets were made.

The first trip's landings were 18,600 pounds during 9 days; 8 sets were made.

BCF Aid Asked

As a result of Gulf Stream's landings, BCF's Exploratory Fishing and Gear Research Base in Pascagoula, Mississippi, is receiving many requests for information and assistance.