

# Aquatic Agriculture: Holstein Convention Attendees Tour Lund's Fisheries

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CAPE MAY, N.J. — A tour of Lund's Fisheries Incorporated was on the agenda during the National Holstein Convention.

The Cape May fishery's fleet of owner-operator fishing boats harvest a wide variety of fresh and frozen species every day, which include squid, mackerel, herring, monkfish, scup, and butterfish.

Twenty 80-160-foot boats and several 40-foot boats harvest the seafood, up to 300 tons in a day during the busy season. The business includes more than 120 employees during the busy season (October through April) and about 80 employees during the slow season.

Founded in 1954 by Warren Lund, the operation focused mainly on local, fresh seafood markets.

In the late 70's and early 80's Michael Byrne, vice president of the business, and Jeff Reichle noted the changing industry and saw the opportunity to harvest what the foreign fisheries had formerly taken — species such as squid and mackerel, considered "junk fish" because they were not in demand in American markets. Flounder, cod, scallops, said Byrne, could be considered "money fish."

The men spent time on Japanese ships, learning the processes involved in harvesting the seafood. They learned how to manage the fish and began to educate fishermen on proper handling techniques.

"Every year is a little different" in the export markets, said Byrne. Fish from Lund's Fisheries end up in the Mediterranean area such as Spain, Italy, and Greece or African countries such as Nigeria, Ghana, and Cameroon. Egypt also imports fish, along with China, Taiwan, Japan, Korea, Iceland, Canada, Venezuela, Brazil, Australia, and New Zealand.

Exhibiting in seafood shows such as events like the Boston Seafood Show in March or a seafood exhibition in China have

helped establish business connections with foreign countries.

Overseas markets are not the only facet of their business, however. Ten tractor-trailers travel in different directions each night, taking much smaller orders — perhaps 100 pounds per invoice — to food distribution centers in large cities along the East Coast.

### Busy, Slow Seasons

The fisheries operate on a busy and slow-season schedule. October through April, when the water temperatures in the Atlantic are changing, "fish school up and migrate," said Byrne. That alone helps the fishermen gather larger numbers of fish in more concentrated areas.

The overall range is from Cape Cod, Mass. to Cape Hatteras, N.C., but "not in one trip," according to Byrne. Although the smaller boats do complete fishing trips in one day, the larger boats are out for approximately two to three days.

Time is important, however, because "if the boat is taking fresh fish, once they put their

first bag of fish on board, the clock is ticking," he said.

Traveling to Cape Cod in the early spring, the fishing boats wait for the mackerel, for example, to come south on their migration route. The fish then make a U-turn and head back up to Cape Cod.

"A boat can be on the mackerel for two or three days and experience (inclement) weather and have to come back. When the boats go back out, the crew might not have any clue where to go.

"It's amazing how far the fish can travel — they can swim 25 to 30 miles in a day in any direction. Crews can spend three to four days just searching."

Captains, however, may not be at a total loss in looking for the fish, with the help of written logs which record where the fish have been under certain conditions in past years. Also knowing the temperature or sea bottom conditions that the fish favor will help to pinpoint the fish.

"Fish finders," computer systems located in the ship, use



Vice president of Lund's Fisheries, Michael Byrne stands on the fisher's dock with part of the fishery's fleet in the background.

the funnel, allowing for the smaller fish to swim out.

The last section of the net, then, holds the fish. Instead of pulling them aboard, most of the fish are loaded from sea-level into the chambers below deck.

While the size of the net may sound impressive, the size of the schools can be even more so. "Captains have reported steaming over 35 miles of herring," said Byrne.

Below the factory deck, the boats may hold four tanks of chilled seawater. In addition, the ship may have fish-freezing capabilities. The crew sorts the fish by eye before the fish are frozen in blocks.

Sorting is usually straightforward, as "the species separate themselves out there, they stay with their own kind," said Byrne.

Lund's also dredges for clams and catches tuna via purse seining, as opposed to dragging. During purse seining, the net is run around the school of fish. Divers flip the dolphins over the encircling net before the fish are taken aboard.

### Processing

Lund's houses their processing facilities at the dock. Once the ships dock, the fish are pumped in through large pipes to the processing facility 900 feet away by "fish pumps" that range from 40 to 80 horsepower.

While the frozen fish are already graded, the fresh fish, which constitute a much larger segment of Lund's business, must be machine-graded. The fish fall into appropriate channels of the machine that grade 35 tons of fish per hour.

Once through the grading room, they move on conveyor belts to the weighing hoppers. When the

hoppers reach a designated weight, the bottom opens up and the fish fall into a plastic-lined box. Machines give each box a five-digit code that indicates the day of processing and the vessel where the fish originated. This information is useful for quality assurance and safety.

The boxes are then moved to the freezer. Four blast chambers freeze the fish in a hurry — in 17 hours, 75 tons of fish in each chamber are frozen. The freezing chambers operate at minus 40 degrees Fahrenheit.

### Regulation

Fishing, as with any food production, is subject to regulation, according to Byrne. For example, scientists establish quotas called total allowable catches (TAC), which limit the number of seafood that fisheries can harvest.

Perhaps farmers, who count their harvest in numbers of tons, can appreciate the numbers that workers at Lund's Fisheries are familiar with. According to Byrne, Lund's Fisheries is the largest mackerel producer in the U.S., harvesting 14,000-16,000 tons of mackerel a year. The TAC for mackerel is 200,000 per fishery.



Flying fish: traveling on a cushion of refrigerated seawater, the fish are transported from the ship to the processing facility 900 feet away at Lund's dock. A smaller pipe takes the seawater back to the ship's hold. "It's a closed loop, so we don't have to keep refrigerating in the water," said Byrne.

sonar techniques to help locate the next catch.

Once the fish are found, the stern trawlers let down two large boards on either side of the ship. Once they are in the water, the large boards, connected to the boat with a cable, spread and pull the net apart.

A chain is hooked to the bottom of the net for drag and floats hold the top of the net up. Since the net is larger at the front — with enough room for a 747 to fit inside — this creates a funnel shape which is pulled behind the boat.

The grid of the mesh is larger at the beginning and smaller toward the end of



Employees pack cleaned squid. A by-product of the cleaning, "squid gurry" is sold to be made into aquaculture feed.

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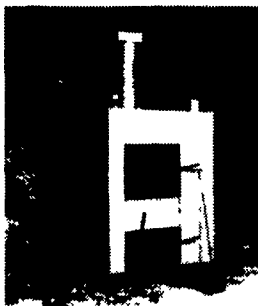
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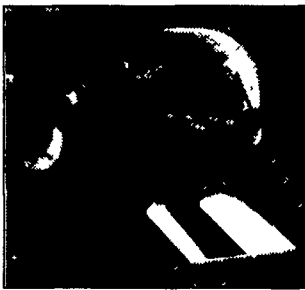
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