

Collection of Baseline Sociological Data to Describe
The Atlantic Menhaden (*Brevoortia tyrannus*) Fishery

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Executive Summary

This project supported the collection of sociological, anthropological, and limited economic data to provide an adequate description of the Atlantic menhaden (*Brevoortia tyrannus*) fishery. On the Atlantic coast of the United States, this fishery occurs primarily from North Carolina, northward to Maine. Menhaden is a fishery with a long history in the United States. However, the number of processors has been reduced drastically in the last 50 years. Nine menhaden reduction plants on the Atlantic coast closed permanently during the 1980s while two new operations began. In 1990, five reduction plants with 37 vessels processed Atlantic menhaden for fish meal and oil. Currently, there are only two remaining menhaden processing plants on the Atlantic coast. Omega Protein is located in Reedville, Virginia and Beaufort Fisheries is located in Beaufort, North Carolina. Of the two, Omega Protein processes about four to five times more menhaden than does Beaufort Fisheries.

The purpose of this project was to interview persons working in commercial menhaden harvesting, specifically targeting those who work in reduction facilities in NC and VA in order to gather anthropological, sociological, and to a lesser extent, economic data appropriate for inclusion in an amendment to the Atlantic Menhaden FMP.

In-person interviews were conducted involving 21 people from September to December of 2003. The in-person interviews took place in Beaufort, NC and Reedville, VA. People interviewed included:

- two plant general managers
- one plant bookkeeper
- one oils reduction plant supervisor
- one oils reduction plant machine operator
- seven menhaden fishing boat crew members (captains, mates, engineer, deck hands, etc.)
- two commercial pound netters
- two bait fishery boat captains
- two recreational fishermen who target menhaden using commercial gear
- three people from the Reedville community involved in community affairs, but not directly involved in the Menhaden fishery (including Fisherman's Museum director)

Topics of discussion included (as appropriate) work history, fishing effort, labor, race relations, current state of the industry, fishing communities, fisheries management, conflicts between user groups, and perceptions about the future.

The people who work in the menhaden industry have many things to worry about. Like all fishermen, they have to be able to find and catch the fish. But they also have to worry about competition, sometimes from non-fishery related products such as soybeans. Because menhaden are an industrial product rather than a seafood product, processors worry about additional issues such as compliance with environmental regulations of water and air quality. However, the long-term survivability of the industry may depend on the outcome of its current battles with recreational fishing interests.

Commercial menhaden harvesters and processors view the stocks as being more than adequate for the needs of both themselves and as forage food for striped bass and other fish. However, they are concerned that attacks on the menhaden industry are really attempts to eliminate commercial harvesting altogether. There is a sense that without some outside intervention their way of live may be lost in favor of recreational fishing interests. Whether or not this prophecy will be true remains to be seen.

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Menhaden (*Brevoortia spp.*) have repeatedly been listed as one the nation's most important commercial fisheries species in terms of quantity. Total menhaden landings (Gulf of Mexico and Atlantic) in 2002 were 1.4 billion pounds (633,985 metric tons) valued at \$83.6 million. Atlantic menhaden (*Brevoortia tyrannus*) landings in 2002 totaled 385.5 million pounds (174,870 metric tons) with an estimated ex-vessel value of \$22.1 million (NMFS, 2003). In North Carolina, Atlantic menhaden alone accounted for 62.4% of all finfish landed, and 13.5% of the value of all finfish landed in 2002 (NC DMF).

Historically, menhaden had many uses. It is thought Native Americans may have used menhaden for fertilizer. Colonists soon recognized the value of whole menhaden for fertilizer, and local seine fisheries gradually developed from New York to Maine. The use of whole fish as fertilizer continued into the nineteenth century. A southern fishery developed after the Civil War (Menhaden Resource Council, 2003).

The menhaden oil industry began in Rhode Island in 1811. It grew steadily, with significant mechanization, including boilers for rendering raw fish and presses for removing oil. Oil was initially used for fuel and industrial processes, while the remaining solids (scrap) were used for fertilizer. Numerous small factories were located along the coasts of the northeastern states. However, their supply was limited to fish that could be captured by the traditional shore-based seines. In 1845, the purse seine was introduced, and an adequate supply of raw material was no longer a problem. By 1870, the industry had expanded southward, with several plants in the Chesapeake Bay and North Carolina areas.

The primary use of menhaden changed from fertilizer to animal feed and other products during the period following World War I. At that time, menhaden oil was used in the manufacture of soap, linoleum, waterproof fabrics, and certain types of paints.

Following World War II the industry grew rapidly. Sharp declines in landings thereafter resulted in factory closings and fleet reductions through the 1960s and into the early 1970s. Since that time, the menhaden industry has experienced major changes in processing capacity, resource accessibility, and access to new product markets.

Nine menhaden reduction plants on the Atlantic coast closed permanently during the 1980s while two new operations began. In 1990, five reduction plants with 37 vessels processed Atlantic menhaden for fishmeal and oil. In the United States, land-based plants are currently located at Beaufort, North Carolina and Reedville, Virginia. Upper Chesapeake Bay in Maryland and the coast of New Jersey are closed to menhaden fishing operations. Most Atlantic states, however, remain open to menhaden fishing.

Currently there are only two menhaden processing plants working on the east coast of the United States. Omega Protein is located in Reedville, Virginia and Beaufort Fisheries is located in Beaufort, North Carolina. Of the two, Omega Protein processes about four to five times more menhaden than does Beaufort Fisheries. There are also a few smaller operations that fish for menhaden to be used primarily as bait for recreational fishermen and commercial crab pots.

As part of the ongoing effort to document changes in the fishery over time, the author was contracted by the Atlantic States Marine Fisheries Commission (ASMFC) to conduct interviews with persons in Virginia and North Carolina who participate in the menhaden fishery.

METHODS

The purpose of this project was to interview persons working in commercial menhaden harvesting, specifically targeting those who work in reduction facilities in NC and VA in order to gather anthropological, sociological, and to a lesser extent, economic data appropriate for inclusion in an amendment to the Atlantic Menhaden FMP.

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Topics of discussion included (as appropriate) work history, fishing effort, labor, race relations, current state of the industry, fishing communities, fisheries management, conflicts between user groups, and perceptions about the future.

The interviews were recorded on standard cassette tapes. Once all were completed, they were transcribed verbatim.

RESULTS AND DISCUSSION

Work History

Nearly all of the people interviewed for this study and who were currently worked in menhaden have done so for an average of about 25 years. Several of the people interviewed in Reedville were retired from some aspect of the menhaden industry. Menhaden processing is a field where most workers come up through the ranks, including general managers, beginning as either a crewmember or as an apprentice machine operator. All found the work to be hard, but rewarding. Several respondents said they had little formal education

and found working in menhaden to be as financially lucrative as any job they could expect. Most expected to remain working in the fishery until they retired or the factory ceased operations.

Only the general managers and few others in working at the reduction facilities were able to work 12 months a year. They did not work in menhaden when there were no fish to catch or process. The fishing season typically lasts longer in Reedville than in Beaufort. Many of the workers at Omega Protein are able to work 10 to 11 months of the year. Aside from some maintenance and net repair workers, most employees at Beaufort Fisheries work about 6 months of the year.

Fishing Effort

Omega Protein currently has 10 boats that fish for menhaden. Beaufort Fisheries has two. There are 4 menhaden bait fishery operations using nets that work the Chesapeake Bay. All the people interviewed said their used to be a lot more effort targeting menhaden. Pictures of the Beaufort waterfront from the 1950's show as many as 30 or so boats tied up at the docks. The last couple of decades has seen the closure of a processing plant in Southport, NC and the consolidation of American Protein in Reedville by Omega Protein.

According to one informant, Omega Protein had about 13 boats actively working about 25 years ago and American Protein had a similar number. Crews were also larger in past years.

Comparatively speaking, the boats targeting menhaden today are more successful than their predecessors. Reliance on spotter planes has increased individual trip catches. But still, as one general manager put it, "it's not unheard of for us to travel 30 miles in one direction to get two fish."

Labor

Much of the heavy work on menhaden boats is now mechanized. Early crews consisted of a captain, pilot, mate, one or two engineers, a cook, and as many as two dozen crewmembers to haul nets (Garrity-Blake, 1994). Nowadays, crews average approximately 14 with only 8 crew members.

Availability of labor seemed to more of an issue for Beaufort Fisheries than Omega Protein. The working season tends to be shorter and workers need additional sources of employment that they can easily leave when the fish are present. Most jobs that allow this kind of movement are low paying. So as soon as menhaden workers find better paying jobs, they leave the menhaden fishery altogether. Finding quality replacements for them is difficult.

Omega Protein employees work for most of the year and can survive financially during the periods they are not fishing. Also, a major factor is that workers in Reedville have very few options for other employment. Omega Protein is the largest employer in Northumberland County, Virginia (2001 population: 12,412). Workers in the Beaufort area (Carteret County, 2001 population: 59,901) have more alternatives for employment.

Race Relations

Garrity-Blake (1994) addressed racial issues in the menhaden industry. At that time she stated that earlier vestiges of racism were beginning to change. The general managers interviewed both said that race is not a factor in who gets hired for any position. The most important factors are experience and skill. However, in both communities, African-Americans, on average have lower level of educational achievement and occupy a large percent of the lower level positions.

The African Americans interviewed expressed that they felt no different in terms of discrimination on their jobs. One African-American man who was interviewed worked in a reduction facility for twenty years. He had an 8th grade education. He was clear that he did not have the skills for doing other work and was happy to have the job that he does because it paid well. He saw the job as an opportunity in a living environment that was short of job opportunities for most people.

Both general managers spoke highly of African-American employees and insisted that all workers in their plants were more like family than employees, regardless of race. One spoke of company sponsored and financed programs to

help any employee (“black, white, or green – it doesn’t matter”) who wished to advance through the ranks, including getting any necessary boating licenses.

There were three main categories of concerns expressed regarding the current state of the industry. The first concern was largely business related. The two reduction facilities were worried about staying profitable and staying competitive. The second concern was regarding fisheries management and affected all who worked the fishery. Harvesters and general managers alike were extremely concerned regarding conflicts between user groups particularly between commercial fishery interests and the interests of recreational fishermen who are concerned that there are not enough menhaden to feed the available striped bass and other prized sport fish populations.

Business Concerns

The two plant general managers spoke about some of the larger business concerns they have. Typical business concerns such as supply and demand of product were understandably important to them. But they were also concerned about markets for their products. One of the plants will shortly be undergoing a \$16-17 million expansion program designed to be able to reduce menhaden oil for human consumption as Omega-3 fatty acids. Other competitors for their products include soybeans. For these businesses, they are not just concerned with fish stocks and ability to land them, but also competition from other products.

Other business concerns include pressure from outside development, and the previously mentioned labor issues. Outside development is increasing the property values where these plants are located. There is concern that newly arrived people in the community do not understand the history, nor appreciate the positive impact the industry has had on the surrounding community.

Fisheries Management and Environmental Regulation

All harvesters and plant managers who were aware of the stock status emphasized that they were pleased that the stocks are healthy. They are resigned to having to cope and react with regulations that limit their fishing activities. One spoke of his tremendous disappointment at the fact that industry representatives were no longer on the management boards. “...they kicked us

off. It must have been about three years ago because we were involved in the menhaden business and hired a couple of sports fishermen to take our place.”

The reduction facilities agree with the way the fishery is currently being managed, however, they fear what they see as increasing influence from recreational interests. Menhaden pound net fishermen were not as happy with fisheries management. They were unhappy because they must remove their nets from the water because of sea turtle encounters. “They found three dead turtles out of three hundred in pound nets so they decided to have an industry wide closure. They had a mandatory closure on the pound net fishery for two weeks [in 2003] and this year coming up [2004] they’re talking like six weeks of closure.”

Menhaden processors must not only deal with fisheries regulatory bodies, but also with air and water quality authorities. Depending on the actions of those government agencies, they are viewed as being benign or harassment. One processor said they specifically worked with the Environmental Protection Agency on smoke stack issues and did not feel they were overly hassled. On the other hand, one general manager complained about fish kills that occurred near his processing plant had the state division of water quality visiting him “11 straight days, Saturday and Sunday included, raising hell about that [leaking] raw box. It’s been there over 100 years and never had a fish kill.”

Conflicts Between User Groups

User group conflicts represented the most salient issue for many of the people interviewed. No one interviewed stated that they ever had conflicts with other commercial fishing interests. Currently, there are 14 vessels (10 from Omega Protein, 4 independent bait vessels) whose home ports are on the Chesapeake Bay, in or near Reedville. Vessels that target menhaden tend to be larger than most other nearby fishing vessels and the commercial vessels tend to stay away from each other.

Everyone interviewed was concerned about the ongoing conflicts with groups representing recreational fishing interests. Most were seriously worried that recreational interests would win out over commercial interests. They cited

the larger number of people who fish recreationally and their lobbying power. Some expressed a feeling that there is a conspiracy against commercial fishing and recreational groups are using tactics to shut down commercial fishing altogether, especially in fisheries where there is significant recreational interest. Tactics mentioned included getting persons sympathetic to their issues appointed to management boards, lobbying state and federal legislators, misrepresenting facts, and fabricating stories to implicate commercial fisheries in the demise of recreationally valued species.

Some respondents said they have heard recreational groups feel that commercial menhaden harvest, particularly from the Chesapeake Bay, is removing a vital food source for striped bass, a fish whose numbers had been greatly reduced in the past, but now is back in record numbers. The commercial fishermen point to the stock assessment that says that Chesapeake Bay harvest of menhaden largely targets age 2 and 3 fish; however, the majority of striped bass are eating age 0 and 1 fish, along with some age 2 fish. They also pointed out that even though the striped bass are now back in record numbers, the harvest of this recovered fish stock clearly favors recreational fishermen. A commercial fisherman who sometimes uses a gill net said that the only way he could keep two striped bass for his own consumption was to go out and get a recreational fishing license, because as a commercial fisherman he was not allowed to keep any striped bass.

A few people interviewed stated the reason why the recreational fishermen are targeting menhaden is because they want to end commercial fishing altogether and will use any means to do so. There were some reports of conflicts on the water with recreational fishermen, as well. Both processing plant general managers expressed that there had been occasions when a recreational vessel would see purse seine boats heading for a school of fish, a recreational vessel would speed through the school of fish trying to break them up. However, these were represented as relatively rare occurrences.

The commercial menhaden fishermen feel as if they are the underdogs in this conflict. As one commercial fisherman put it, "the [recreational] industry and

big dollar businesses are behind them pushing for this. They have all their magazines. They've got a lot of people with a lot of money.”

Fishing Communities

Menhaden fishing was seen as being very important to the history of both the Beaufort and Reedville communities. Elijah Reed founded the town of Reedville after the Civil War. He came to Virginia's Northern Neck with the expressed purpose of finding a place to locate a menhaden processing plant. Beaufort was settled nearly two hundred years prior to the emergence of the commercial menhaden fishery in North Carolina. One town owes its identity to menhaden; the other considers menhaden to be an important part of its history.

Omega Protein is the largest employer in all of Northumberland County, Virginia, with about 250 employees most of the year. Beaufort Fisheries employs approximately 70 individuals when there are fish to harvest and process. There are many employers in Carteret County that have more workers than Beaufort Fisheries.

The employment differences between the communities have a large effect on the current role menhaden has locally. In Reedville, Omega Protein is highly visible and the company works hard to be perceived as a good community partner. All the people interviewed in Reedville, including a few who were not directly involved in the commercial harvest of menhaden perceived Omega Protein as a good corporate citizen. For example, several years ago Omega Protein made significant changes to their infrastructure to help reduce the smell from the reduction facility in response to community concerns.

One person interviewed mentioned that sometimes when new people (known locally as “come heres”) arrive in Reedville they complain about the processing facility. Over time, they realize the facility doesn't present a problem. Some people said that if Omega Protein was to close down, Reedville would cease to exist.

Beaufort Fisheries has a different relationship with its local community. Long time residents are aware of the role of menhaden in the community, but the local importance of commercial fishing to the economy was long ago supplanted

by tourism and coastal gentrification. Additionally, Beaufort Fisheries is located on a property primely situated for waterfront home development.

Tourism and coastal gentrification are issues for both communities. Many of the older fishermen used to come to Beaufort years ago as part of the menhaden fleet that followed the fish. These people, especially, look at recent developments of Beaufort with disdain. One fisherman stated that the last thing he wanted for Reedville was for it to become like Beaufort with all the expensive houses and fancy restaurants.

Perceptions About the Future

Many of the people interviewed were asked whether they would recommend to a young person a career working in menhaden. Most of the respondents were too worried about the future of the commercial fishery to recommend it. Their biggest concerns were about the outcomes of brewing user group conflicts and being able to keep competitive in the markets where menhaden are used. For most, the work is hard and the outcome is uncertain. One processor general manager said, "I've got two boys and I told both of them I'm not going to allow them to come down here. I want something better for them than this." Exceptions to this feeling were among land-based workers with steady employment working at the processing plants.

Conclusions

The people who work in the menhaden industry have many things to worry about. Like all fishermen, they have to be able to find and catch the fish. But they also have to worry about competition, sometimes from non-fishery related products such as soybeans. Because menhaden are an industrial product rather than a seafood product, processors worry about additional issues such as compliance with environmental regulations of water and air quality. However, the long-term survivability of the industry may depend on the outcome of its current battles with recreational fishing interests.

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